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HOUSE OF REPRESENTATIVES

REPORT
109–173

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2005

JULY 18, 2005.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BOEHLERT, from the Committee on Science, submitted the following

## R E P O R T

together with

## ADDITIONAL VIEWS

[To accompany H.R. 3070]

The Committee on Science, to whom was referred the bill (H.R. 3070) to reauthorize the human space flight, aeronautics, and science programs of the National Aeronautics and Space Administration, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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# I. AMENDMENT

The amendment is as follows:
Strike all after the enacting clause and insert the following:

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) SHORT TITLE.—This Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 2005".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Findings.
Sec. 3. Definitions.

TITLE I—GENERAL PRINCIPLES AND REPORTS

Sec. 101. Responsibilities, policies, and plans.
Sec. 102. Reports.
Sec. 103. Baselines and cost controls.
Sec. 104. Prize authority.
Sec. 105. Foreign launch vehicles.
Sec. 106. Safety management.
Sec. 107. Lessons learned and best practices.
Sec. 108. Commercialization plan.
Sec. 109. Study on the feasibility of use of ground source heat pumps.

TITLE II—AUTHORIZATION OF APPROPRIATIONS

Sec. 201. Structure of budgetary accounts.
Sec. 202. Fiscal year 2006.
Sec. 203. Fiscal year 2007.
Sec. 204. ISS research.
Sec. 205. Test facilities.
Sec. 206. Proportionality.
Sec. 207. Limitations on authority.
Sec. 208. Notice of reprogramming.
Sec. 209. Cost overruns.
Sec. 210. Official representational fund.
Sec. 211. International Space Station cost cap.

TITLE III—SCIENCE

Subtitle A—General Provisions

Sec. 301. Performance assessments.
Sec. 302. Status report on Hubble Space Telescope servicing mission.
Sec. 303. Independent assessment of Landsat-NPOESS integrated mission.
Sec. 304. Assessment of science mission extensions.
Sec. 305. Microgravity research.
Sec. 306. Coordination with the National Oceanic and Atmospheric Administration.

Subtitle B—Remote Sensing

Sec. 311. Definitions.
Sec. 312. Pilot projects to encourage public sector applications.
Sec. 313. Program evaluation.
Sec. 314. Data availability.
Sec. 315. Education.

Subtitle C—George E. Brown, Jr. Near-Earth Object Survey

Sec. 321. George E. Brown, Jr. Near-Earth Object Survey.

TITLE IV—AERONAUTICS

Sec. 401. Definition.

Subtitle A—National Policy for Aeronautics Research and Development

Sec. 411. Policy.

Subtitle B—NASA Aeronautics Breakthrough Research Initiatives

Sec. 421. Environmental aircraft research and development initiative.
Sec. 422. Civil supersonic transport research and development initiative.
Sec. 423. Rotorcraft and other runway-independent air vehicles research and development initiative.

Subtitle C—Other NASA aeronautics research and development activities

Sec. 431. Fundamental research and technology base program.
Sec. 432. Airspace systems research.
Sec. 433. Aviation safety and security research.
Sec. 434. Zero-emissions aircraft research.
Sec. 435. Mars aircraft research.
Sec. 436. Hypersonics research.

Sec. 437. NASA aeronautics scholarships.
Sec. 438. Aviation weather research.
Sec. 439. Assessment of wake turbulence research and development program.
Sec. 440. University-based centers for research on aviation training.

TITLE V—HUMAN SPACE FLIGHT

Sec. 501. International Space Station completion.
Sec. 502. Human exploration priorities.
Sec. 503. GAO assessment.

TITLE VI—OTHER PROGRAM AREAS

Subtitle A—Space and Flight Support

Sec. 601. Orbital debris.
Sec. 602. Secondary payload capability.

Subtitle B—Education

Sec. 611. Institutions in NASA's minority institutions program.
Sec. 612. Program to expand distance learning in rural underserved areas.
Sec. 613. Charles "Pete" Conrad Astronomy Awards.
Sec. 614. Review of education programs.
Sec. 615. Equal access to NASA's education programs.

TITLE VII—MISCELLANEOUS AMENDMENTS

Sec. 701. Retrocession of jurisdiction.
Sec. 702. Extension of indemnification.
Sec. 703. NASA scholarships.
Sec. 704. Independent cost analysis.
Sec. 705. Limitations on off-shore performance of contracts for the procurement of goods and services.

TITLE VIII—INDEPENDENT COMMISSIONS

Sec. 801. Definitions.

Subtitle A—International Space Station Independent Safety Commission

Sec. 811. Establishment of Commission.
Sec. 812. Tasks of the Commission.
Sec. 813. Sunset.

Subtitle B—Human Space Flight Independent Investigation Commission

Sec. 821. Establishment of Commission.
Sec. 822. Tasks of the Commission.

Subtitle C—Organization and Operation of Commissions

Sec. 831. Composition of Commissions.
Sec. 832. Powers of Commission.
Sec. 833. Public meetings, information, and hearings.
Sec. 834. Staff of Commission.
Sec. 835. Compensation and travel expenses.
Sec. 836. Security clearances for Commission members and staff.
Sec. 837. Reporting requirements and termination.

**SEC. 2. FINDINGS.**

The Congress finds the following:

(1) On January 14, 2004, the President unveiled the Vision for Space Exploration to guide United States policy on human space exploration.

(2) The President's vision of returning humans to the Moon and working toward a sustainable human presence there and then venturing further into the solar system provides a sustainable rationale for the United States human space flight program.

(3) As we enter the Second Space Age, the National Aeronautics and Space Administration should continue to support robust programs in space science, aeronautics, and earth science as it moves forward with plans to send Americans to the Moon, Mars, and worlds beyond.

(4) The National Aeronautics and Space Administration's programs can advance the frontiers of science, expanding understanding of our planet and of the universe, and contribute to American prosperity.

(5) The United States should honor its international commitments to the International Space Station program.

(6) The United States must remain the leader in aeronautics and aviation. Any erosion of this preeminence is not in the Nation's economic or security interests. Past Federal investments in aeronautics research and development have benefited the economy and national security of the United States and improved the quality of life of its citizens.

(7) Long-term progress in aeronautics and space requires continued Federal investment in fundamental research, test facilities, and maintenance of a skilled civil service workforce at NASA's Centers.

(8) An important part of NASA's mission is education and outreach.

**SEC. 3. DEFINITIONS.**

In this Act:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of the National Aeronautics and Space Administration.

(2) ISS.—The term "ISS" means the International Space Station.

(3) NASA.—The term "NASA" means the National Aeronautics and Space Administration.

# TITLE I—GENERAL PRINCIPLES AND REPORTS

**SEC. 101. RESPONSIBILITIES, POLICIES, AND PLANS.**

(a) GENERAL RESPONSIBILITIES.—

(1) PROGRAMS.—The Administrator shall ensure that NASA carries out a balanced set of programs that shall include, at a minimum, programs in—

(A) human space flight, in accordance with subsection (b);

(B) aeronautics research and development; and

(C) scientific research, which shall include, at a minimum—

(i) robotic missions to study planets, and to deepen understanding of astronomy, astrophysics, and other areas of science that can be productively studied from space;

(ii) earth science research and research on the Sun-Earth connection through the development and operation of research satellites and other means;

(iii) support of university research in space science and earth science; and

(iv) research on microgravity, including research that is not directly related to human exploration.

(2) CONSULTATION AND COORDINATION.—In carrying out the programs of NASA, the Administrator shall—

(A) consult and coordinate to the extent appropriate with other relevant Federal agencies, including through the National Science and Technology Council;

(B) work closely with the private sector, including by—

(i) encouraging the work of entrepreneurs who are seeking to develop new means to launch satellites, crew, or cargo;

(ii) contracting with the private sector for crew and cargo services to the extent practicable; and

(iii) using commercially available products (including software) and services to the extent practicable to support all NASA activities; and

(C) involve other nations to the extent appropriate.

(b) VISION FOR SPACE EXPLORATION.—The Administrator shall manage human space flight programs to strive to achieve the following goals:

(1) Returning Americans to the Moon no later than 2020.

(2) Launching the Crew Exploration Vehicle as close to 2010 as possible.

(3) Increasing knowledge of the impacts of long duration stays in space on the human body using the most appropriate facilities available.

(4) Enabling humans to land on and return from Mars and other destinations on a timetable that is technically and fiscally possible.

(c) AERONAUTICS.—

(1) IN GENERAL.—The President of the United States, through the Administrator, and in consultation with other Federal agencies, shall develop a national aeronautics policy to guide the aeronautics programs of NASA through 2020.

(2) CONTENT.—At a minimum, the national aeronautics policy shall describe for NASA—

(A) the priority areas of research for aeronautics through fiscal year 2011;

(B) the basis on which and the process by which priorities for ensuing fiscal years will be selected;

(C) the facilities and personnel needed to carry out the aeronautics program through fiscal year 2011; and

(D) the budget assumptions on which the national aeronautics policy is based, which for fiscal years 2006 and 2007 shall be the authorized level for aeronautics provided in title II of this Act.

(3) CONSIDERATIONS.—In developing the national aeronautics policy, the President shall consider the following issues, which shall be discussed in the transmittal under paragraph (5):

(A) The extent to which NASA should focus on long-term, high-risk research or more incremental research, and the expected impact on the United States aircraft and airline industries of that decision.

(B) The extent to which NASA should address military and commercial needs.

(C) How NASA will coordinate its aeronautics program with other Federal agencies.

(D) The extent to which NASA will fund university research, and the expected impact of that funding on the supply of United States workers for the aeronautics industry.

(E) The extent to which the priority areas of research listed pursuant to paragraph (2)(A) should include the activities authorized by title IV of this Act, the discussion of which shall include a priority ranking of all of the activities authorized in title IV and an explanation for that ranking.

(4) CONSULTATION.—In the development of the national aeronautics policy, the Administrator shall consult widely with academic and industry experts and with other Federal agencies. The Administrator may enter into an arrangement with the National Academy of Sciences to help develop the national aeronautics policy.

(5) SCHEDULE.—The Administrator shall transmit the national aeronautics policy to the Committee on Appropriations and the Committee on Science of the House of Representatives, and to the Committee on Appropriations and the Committee on Commerce, Science, and Transportation of the Senate, not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007 to the Congress. The Administrator shall make available to those committees any study done by a nongovernmental entity that was used in the development of the national aeronautics policy.

(d) SCIENCE.—

(1) IN GENERAL.—The Administrator shall develop a policy to guide the science programs of NASA through 2016.

(2) CONTENT.—At a minimum, the policy shall describe—

(A) the missions NASA will initiate, design, develop, launch, or operate in space science and earth science through fiscal year 2016, including launch dates;

(B) a priority ranking of all of the missions listed under subparagraph (A), and the rationale for the ranking;

(C) the budget assumptions on which the policy is based, which for fiscal years 2006 and 2007 shall be consistent with the authorizations provided in title II of this Act; and

(D) the facilities and personnel needed to carry out the policy through fiscal year 2016.

(3) CONSIDERATIONS.—In developing the science policy under this subsection, the Administrator shall consider the following issues, which shall be discussed in the transmittal under paragraph (6):

(A) What the most important scientific questions in space science and earth science are.

(B) The relationship between NASA's space and earth science activities and those of other Federal agencies.

(4) CONSULTATION.—In developing the policy under this subsection, the Administrator shall draw on decadal surveys and other reports in planetary science, astronomy, solar and space physics, earth science, and any other relevant fields developed by the National Academy of Sciences. The Administrator shall also consult widely with academic and industry experts and with other Federal agencies.

(5) HUBBLE SPACE TELESCOPE.—The policy developed under this subsection shall address plans for a human mission to repair the Hubble Space Telescope consistent with section 302 of this Act.

(6) SCHEDULE.—The Administrator shall transmit the policy developed under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007 to the Congress. The Administrator shall make available to those committees any study done by a nongovernmental entity that was used in the development of the policy.

(e) FACILITIES.—

(1) IN GENERAL.—The Administrator shall develop a plan for managing NASA's facilities through fiscal year 2015. The plan shall be consistent with the policies and plans developed pursuant to this section.

(2) CONTENT.—At a minimum, the plan shall describe—

(A) any new facilities NASA intends to acquire, whether through construction, purchase, or lease, and the expected dates for doing so;

(B) any facilities NASA intends to significantly modify, and the expected dates for doing so;

(C) any facilities NASA intends to close, and the expected dates for doing so;

(D) any transaction NASA intends to conduct to sell, lease, or otherwise transfer the ownership of a facility, and the expected dates for doing so;

(E) how each of the actions described in subparagraphs (A), (B), (C), and (D) will enhance the ability of NASA to carry out its programs;

(F) the expected costs or savings expected from each of the actions described in subparagraphs (A), (B), (C), and (D);

(G) the priority order of the actions described in subparagraphs (A), (B), (C), and (D);

(H) the budget assumptions of the plan, which for fiscal years 2006 and 2007 shall be consistent with the authorizations provided in title II of this Act; and

(I) how facilities were evaluated in developing the plan.

(3) SCHEDULE.—The Administrator shall transmit the plan developed under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2008 to the Congress.

(f) WORKFORCE.—

(1) IN GENERAL.—The Administrator shall develop a human capital strategy to ensure that NASA has a workforce of the appropriate size and with the appropriate skills to carry out the programs of NASA, consistent with the policies and plans developed pursuant to this section. The strategy shall cover the period through fiscal year 2011.

(2) CONTENT.—The strategy shall describe, at a minimum—

(A) any categories of employees NASA intends to reduce, the expected size and timing of those reductions, the methods NASA intends to use to make the reductions, and the reasons NASA no longer needs those employees;

(B) any categories of employees NASA intends to increase, the expected size and timing of those increases, the methods NASA intends to use to recruit the additional employees, and the reasons NASA needs those employees;

(C) the steps NASA will use to retain needed employees; and

(D) the budget assumptions of the strategy, which for fiscal years 2006 and 2007 shall be consistent with the authorizations provided in title II of this Act, and any expected additional costs or savings from the strategy by fiscal year.

(3) SCHEDULE.—The Administrator shall transmit the strategy developed under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007 to the Congress. At least 60 days before transmitting the strategy, NASA shall provide a draft of the strategy to its Federal Employee Unions for a 30-day consultation period after which NASA shall respond in writing to any written concerns provided by the Unions.

(4) LIMITATION.—NASA may not initiate any buyout offer or Reduction in Force until 60 days after the strategy required by this subsection has been transmitted to the Congress in accordance with paragraph (3). NASA may not implement any Reduction in Force or other involuntary separations prior to October 1, 2006.

(g) CENTER MANAGEMENT.—

(1) IN GENERAL.—The Administrator shall conduct a study to determine whether any of NASA's centers should be operated by or with the private sector by converting a center to a Federally Funded Research and Development Center or through any other mechanism.

(2) CONTENT.—The study shall, at a minimum—

(A) make a recommendation for the operation of each center and provide reasons for that recommendation; and

(B) describe the advantages and disadvantages of each mode of operation considered in the study.

(3) CONSIDERATIONS.—In conducting the study, the Administrator shall take into consideration the experiences of other relevant Federal agencies in operating laboratories and centers and any reports that have reviewed the mode of operation of those laboratories and centers, as well as any reports that have reviewed NASA's centers.

(4) SCHEDULE.—The Administrator shall transmit the study conducted under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than May 31, 2006.

(h) BUDGETS.—The proposed budget for NASA submitted by the President for each fiscal year shall be accompanied by documents showing—

(1) the budget for each element of the human space flight program;

(2) the budget for aeronautics;

(3) the budget for space science;

(4) the budget for earth science;

(5) the budget for microgravity science;

(6) the budget for education;

(7) the budget for technology transfer programs;

(8) the budget for the Integrated Financial Management Program, by individual element;

(9) the budget for the Independent Technical Authority, both total and by center;

(10) the budget for public relations, by program;

(11) the comparable figures for at least the 2 previous fiscal years for each item in the proposed budget;

(12) the amount of unobligated funds and unexpended funds, by appropriations account—

(A) that remained at the end of the fiscal year prior to the fiscal year in which the budget is being presented that were carried over into the fiscal year in which the budget is being presented;

(B) that are estimated will remain at the end of the fiscal year in which the budget is being presented that are proposed to be carried over into the fiscal year for which the budget is being presented; and

(C) that are estimated will remain at the end of the fiscal year for which the budget is being presented; and

(13) the budget for safety, by program.

(i) GENERAL AND ADMINISTRATIVE EXPENSES.—NASA shall make available, upon request from the Committee on Science of the House of Representatives or the Committee on Commerce, Science, and Transportation of the Senate, information on Corporate and Center General and Administrative Costs and Service Pool costs, including—

(1) the total amount of funds being allocated for those purposes for any fiscal year for which the President has submitted an annual budget request to Congress;

(2) the amount of funds being allocated for those purposes for each center, for headquarters, and for each directorate; and

(3) the major activities included in each cost category.

(j) NASA TEST FACILITIES.—

(1) REVIEW.—The Director of the Office of Science and Technology Policy shall commission an independent review of the Nation's long-term strategic needs for test facilities and shall submit the review to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate. The review shall include an evaluation of the facility needs described pursuant to subsection (c)(2)(C).

(2) LIMITATION.—The Administrator shall not close or mothball any aeronautical test facilities identified in the 2003 independent assessment by the RAND Corporation, entitled "Wind Tunnel and Propulsion Test Facilities: An Assessment of NASA's Capabilities to Serve National Needs" as being part of the minimum set of those facilities necessary to retain and manage to serve national needs, as well as any other NASA test facilities that were in use as of January 1, 2004, until the review conducted under paragraph (1) has been transmitted to the Congress.

**SEC. 102. REPORTS.**

(a) IMMEDIATE ISSUES.—Not later than September 30, 2005, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on each of the following items:

(1) The research agenda for the ISS and its proposed final configuration.

(2) The number of flights the Space Shuttle will make before its retirement, the purpose of those flights, and the expected date of the final flight.

(3) A description of the means, other than the Space Shuttle, that may be used to ferry crew and cargo to and from the ISS.

(4) A plan for the operation of the ISS in the event that the Iran Nonproliferation Act of 2000 is not amended.

(5) A description of the launch vehicle for the Crew Exploration Vehicle.

(6) A description of any heavy lift vehicle NASA intends to develop, the intended uses of that vehicle, and whether the decision to develop that vehicle has undergone an interagency review.

(7) A description of the intended purpose of lunar missions and the architecture for those missions.

(8) The program goals for Project Prometheus.

(9) A plan for managing the cost increase for the James Webb Space Telescope.

(b) CREW EXPLORATION VEHICLE.—The Administrator shall not enter into a development contract for the Crew Exploration Vehicle until at least 30 days after the Administrator has transmitted to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report describing—

(1) the expected cost of the Crew Exploration Vehicle through fiscal year 2020, based on the specifications for that development contract;

(2) the expected budgets for each fiscal year through fiscal year 2020 for human space flight, aeronautics, space science, and earth science—

(A) first assuming inflationary growth for the budget of NASA as a whole and including costs for the Crew Exploration Vehicle as projected under paragraph (1); and

(B) then assuming inflationary growth for the budget of NASA as a whole and including at least two cost estimates for the Crew Exploration Vehicle that are higher than those projected under paragraph (1), based on NASA's past experience with cost increases for similar programs, along with a description of the reasons for selecting the cost estimates used for the calculations under this subparagraph and the probability that the cost of the Crew Exploration Vehicle will reach those estimated amounts; and

(3) the extent to which the Crew Exploration Vehicle will allow for the escape of the crew in the event of an emergency.

(c) SPACE COMMUNICATIONS STUDY.—

(1) STUDY.—The Administrator shall develop a plan for updating NASA's space communications architecture for both low-Earth orbital operations and deep space exploration so that it is capable of meeting NASA's needs over the next 20 years. The plan shall also include life-cycle cost estimates, milestones, estimated performance capabilities, and 5-year funding profiles. The plan shall also include an estimate of the amounts of any reimbursements NASA is likely to receive from other Federal agencies during the expected life of the upgrades described in the plan. The plan shall include a description of the following:

(A) Projected Deep Space Network requirements for the next decade, including those in support of human space exploration missions.

(B) Upgrades needed to support Deep Space Network requirements.

(C) Cost estimates for the maintenance of existing Deep Space Network capabilities.

(D) Cost estimates and schedules for the upgrades described in subparagraph (B).

(2) CONSULTATIONS.—The Administrator shall consult with other relevant Federal agencies in developing the plan under this subsection.

(3) REPORT.—The Administrator shall transmit the plan under this subsection to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than February 17, 2007.

(d) PUBLIC RELATIONS.—Not later than December 31, 2005, the Administrator shall transmit a plan to the Committee on Appropriations and the Committee on Science of the House of Representatives, and to the Committee on Appropriations and the Committee on Commerce, Science, and Transportation of the Senate, describing the activities that will be undertaken as part of the national awareness campaign required by the report of the Committee on Appropriations of the House of Representatives accompanying the Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006, and the expected cost of those activities. NASA may undertake activities as part of the national awareness campaign prior to the transmittal of the plan required by this subsection, but not until 15 days after notifying the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate of any activity. The plan required by this subsection shall include the estimated costs of any activities undertaken pursuant to notice under the preceding sentence.

(e) JOINT DARK ENERGY MISSION.—The Administrator and the Director of the Department of Energy Office of Science shall jointly transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, not later than the date on which the President submits the proposed budget for the Federal Government for fiscal year 2007, a report on plans for a Joint Dark Energy Mission. The report shall include the amount of funds each agency intends to expend on the Joint Dark Energy Mission for each of the fiscal years 2007 through 2011, and any specific milestones for the development and launch of the Mission.

(f) SHUTTLE EMPLOYEE TRANSITION.—The Administrator shall consult with other appropriate Federal agencies and with NASA contractors and employees to develop a transition plan for Federal and contractor personnel engaged in the Space Shuttle program. The plan shall include actions to assist Federal and contractor personnel to take advantage of training, retraining, job placement, and relocation programs, and any other actions that NASA will take to assist the employees. The plan shall also describe how the Administrator will ensure that NASA and its contractors will have an appropriate complement of employees to allow for the safest possible use of the Space Shuttle through its final flight. The Administrator shall transmit the plan to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 90 days after the date of enactment of this Act.

(g) OFFICE OF SCIENCE AND TECHNOLOGY POLICY.—

(1) STUDY.—The Director of the Office of Science and Technology Policy shall conduct a study to determine—

(A) if any research and development programs of NASA are unnecessarily duplicating aspects of programs of other Federal agencies; and

(B) if any research and development programs of NASA are neglecting any topics of national interest that are related to the mission of NASA.

(2) REPORT.—Not later than March 1, 2006, the Director of the Office of Science and Technology Policy shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report that—

(A) describes the results of the study under paragraph (1);

(B) lists the research and development programs of Federal agencies other than NASA that were reviewed as part of the study, which shall include any program supporting research and development in an area related to the programs of NASA, and the most recent budget figures for those programs of other agencies;

(C) recommends any changes to the research and development programs of NASA that should be made to eliminate unnecessary duplication or address topics of national interest; and

(D) describes mechanisms the Office of Science and Technology Policy will use to ensure adequate coordination between NASA and Federal agencies that operate related programs.

**SEC. 103. BASELINES AND COST CONTROLS.**

(a) CONDITIONS FOR DEVELOPMENT.—

(1) IN GENERAL.—NASA shall not enter into a contract for the development phase of a major program unless the Administrator determines that—

(A) the technical, cost, and schedule risks of the program are clearly identified and the program has developed a plan to manage those risks; and

(B) the program complies with all relevant policies, regulations, and directives of NASA.

(2) REPORT.—The Administrator shall transmit a report describing the basis for the determination required under paragraph (1) to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate at least 30 days before entering into a contract for development under a major program.

(3) NONDELEGATION.—The Administrator may not delegate the determination requirement under this subsection.

(b) MAJOR PROGRAM ANNUAL REPORTS.—

(1) REQUIREMENT.—Not later than February 15 of each year following the date of enactment of this Act, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on each major program for which NASA proposes to expend funds in the subsequent fiscal year. Reports under this section shall be known as Major Program Annual Reports.

(2) BASELINE REPORT.—The first Major Program Annual Report for each major program shall include a Baseline Report that shall, at a minimum, include—

(A) the purposes of the program and key technical characteristics necessary to fulfill those purposes;

(B) an estimate of the life-cycle cost for the program, with a detailed breakout of the development cost and an estimate of the annual costs until the development is completed;

(C) the schedule for the development, including key program milestones; and

(D) the name of the person responsible for making notifications under subsection (c), who shall be an individual whose primary responsibility is overseeing the program.

(3) INFORMATION UPDATES.—For major programs with respect to which a Baseline Report has been previously submitted, each subsequent Major Program Annual Report shall describe any changes to the information that had been provided in the Baseline Report, and the reasons for those changes.

(c) NOTIFICATION.—

(1) REQUIREMENT.—The individual identified under subsection (b)(2)(D) shall immediately notify the Administrator any time that individual has reasonable cause to believe that, for the major program for which he or she is responsible—

(A) the development cost of the program is likely to exceed the estimate provided in the Baseline Report of the program by 15 percent or more; or

(B) a milestone of the program is likely to be delayed by 6 months or more from the date provided for it in the Baseline Report of the program.

(2) REASONS.—Not later than 7 days after the notification required under paragraph (1), the individual identified under subsection (b)(2)(D) shall transmit to the Administrator a written notification explaining the reasons for the change in the cost or milestone of the program for which notification was provided under paragraph (1).

(3) NOTIFICATION OF CONGRESS.—Not later than 5 days after the Administrator receives a written notification under paragraph (2), the Administrator shall transmit the notification to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(d) FIFTEEN PERCENT THRESHOLD.—Not later than 30 days after receiving a written notification under subsection (c)(2), the Administrator shall determine whether the development cost of the program is likely to exceed the estimate provided in the Baseline Report of the program by 15 percent or more, or whether a milestone is likely to be delayed by 6 months or more. If the determination is affirmative, the Administrator shall—

(1) transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, not later than 14 days after making the determination, a report that includes—

(A) a description of the increase in cost or delay in schedule and a detailed explanation for the increase or delay;

(B) a description of actions taken or proposed to be taken in response to the cost increase or delay; and

(C) a description of any impacts the cost increase or schedule delay will have on any other program within NASA; and

(2) if the Administrator intends to continue with the program, promptly initiate an analysis of the program, which shall include, at a minimum—

(A) the projected cost and schedule for completing the program if current requirements of the program are not modified;

(B) the projected cost and the schedule for completing the program after instituting the actions described under paragraph (1)(B); and

(C) a description of, and the projected cost and schedule for, a broad range of alternatives to the program.

NASA shall complete an analysis initiated under paragraph (2) not later than 6 months after the Administrator makes a determination under this subsection. The Administrator shall transmit the analysis to the Committee on Science of the House of Representatives and Committee on Commerce, Science, and Transportation of the Senate not later than 30 days after its completion.

(e) THIRTY PERCENT THRESHOLD.—If the Administrator determines under subsection (d) that the development cost of a program will exceed the estimate provided in the Baseline Report of the program by more than the lower of 30 percent or $1,000,000,000, then, beginning 1 year after the date the Administrator transmits a report under subsection (d)(1), the Administrator shall not expend any additional funds on the program, other than termination costs, unless the Congress has subse-

quently authorized continuation of the program by law. If the program is continued, the Administrator shall submit a new Baseline Report for the program no later than 90 days after the date of enactment of the Act under which Congress has authorized continuation of the program.

(f) DEFINITIONS.—For the purposes of this section—

(1) the term "development" means the phase of a program following the formulation phase and beginning with the approval to proceed to implementation, as defined in NASA's Procedural Requirements 7120.5c, dated March 22, 2005;

(2) the term "development cost" means the total of all costs, including construction of facilities and civil servant costs, from the period beginning with the approval to proceed to implementation through the achievement of operational readiness, without regard to funding source or management control, for the life of the program;

(3) the term "life-cycle cost" means the total of the direct, indirect, recurring, and nonrecurring costs, including the construction of facilities and civil servant costs, and other related expenses incurred or estimated to be incurred in the design, development, verification, production, operation, maintenance, support, and retirement of a program over its planned lifespan, without regard to funding source or management control; and

(4) the term "major program" means an activity approved to proceed to implementation that has an estimated life-cycle cost of more than $100,000,000.

**SEC. 104. PRIZE AUTHORITY.**

The National Aeronautics and Space Act of 1958 (42 U.S.C. 2451, et seq.) is amended by inserting after section 313 the following new section:

"PRIZE AUTHORITY

"SEC. 314. (a) IN GENERAL.—The Administration may carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of the space and aeronautical activities of the Administration. The Administration may carry out a program to award prizes only in conformity with this section.

"(b) TOPICS.—In selecting topics for prize competitions, the Administrator shall consult widely both within and outside the Federal Government, and may empanel advisory committees.

"(c) ADVERTISING.—The Administrator shall widely advertise prize competitions to encourage participation.

"(d) REQUIREMENTS AND REGISTRATION.—For each prize competition, the Administrator shall publish a notice in the Federal Register announcing the subject of the competition, the rules for being eligible to participate in the competition, the amount of the prize, and the basis on which a winner will be selected.

"(e) ELIGIBILITY.—To be eligible to win a prize under this section, an individual or entity—

"(1) shall have registered to participate in the competition pursuant to any rules promulgated by the Administrator under subsection (d);

"(2) shall have complied with all the requirements under this section;

"(3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and

"(4) shall not be a Federal entity or Federal employee acting within the scope of their employment.

"(f) LIABILITY.—(1) Registered participants must agree to assume any and all risks and waive claims against the United States Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise. For the purposes of this subparagraph, the term 'related entity' means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.

"(2) Participants must obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss, as determined by the Administrator, from claims by—

"(A) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant's insurance policy and registered participants agreeing to

indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and

"(B) the United States Government for damage or loss to Government property resulting from such an activity.

"(g) JUDGES.—For each competition, the Administration, either directly or through a contract under subsection (h), shall assemble a panel of qualified judges from both within and outside the Administration to select the winner or winners of the prize competition on the basis described pursuant to subsection (d). Judges for each competition shall include individuals from the private sector. A judge may not—

"(1) have personal or financial interests in, or be employees, officers, directors, or agents of, any entity that is a registered participant in a competition; or

"(2) have a familial or financial relationship with an individual who is a registered participant.

"(h) ADMINISTERING THE COMPETITION.—The Administrator may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this section.

"(i) FUNDING.—(1) The Administrator may accept funds from other Federal agencies and from the private sector for cash prizes under this section. Such funds shall not increase the amount of a prize after the amount has been announced pursuant to subsection (d). The Administrator may not give any special consideration to any private sector entity in return for a donation.

"(2) Funds appropriated for the program under this section shall remain available until expended, and may be transferred, reprogrammed, or expended for other purposes only after the expiration of 10 fiscal years after the fiscal year for which the funds were originally appropriated. No provision in this section permits obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. 1341).

"(3) No prize may be announced under subsection (d) until all the funds for that prize have been appropriated or obligated for such purpose by a private sector source.

"(4) No prize competition under this section may offer a prize in an amount greater than $10,000,000 unless 30 days have elapsed after written notice has been provided to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

"(j) USE OF NASA NAME AND INSIGNIA.—A registered participant in a competition under this section may use the Administration's name, initials, or insignia only after prior review and written approval by the Administration.

"(k) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and nonproliferation laws, and related regulations.".

**SEC. 105. FOREIGN LAUNCH VEHICLES.**

(a) ACCORD WITH SPACE TRANSPORTATION POLICY.—NASA shall not launch a mission on a foreign launch vehicle except in accordance with the Space Transportation Policy announced by the President on December 21, 2004.

(b) INTERAGENCY COORDINATION.—NASA shall not launch a mission on a foreign launch vehicle unless NASA commenced the interagency coordination required by the Space Transportation Policy announced by the President on December 21, 2004, at least 90 days before entering into a development contract for the mission.

(c) APPLICATION.—This section shall not apply to any mission for which development has begun prior to the date of enactment of this Act, including the James Webb Space Telescope.

**SEC. 106. SAFETY MANAGEMENT.**

Section 6 of the National Aeronautics and Space Administration Authorization Act, 1968 (42 U.S.C. 2477) is amended—

(1) by inserting "(a) IN GENERAL.—" before "There is hereby";

(2) by striking "plans referred to it" and inserting "plans referred to it, including evaluating the National Aeronautics and Space Administration's compliance with the return-to-flight and continue-to-fly recommendations of the Columbia Accident Investigation Board,";

(3) by inserting "and the Congress" after "advise the Administrator";

(4) by striking "and with respect to the adequacy of proposed or existing safety standards and shall" and inserting ", with respect to the adequacy of proposed or existing safety standards, and with respect to management and culture. The Panel shall also"; and

(5) by adding at the end the following:

"(b) ANNUAL REPORT.—The Panel shall submit an annual report to the Administrator and to the Congress. In the first annual report submitted after the date of enactment of the National Aeronautics and Space Administration Authorization Act

of 2005, the Panel shall include an evaluation of the Administration's safety management culture. Each annual report shall include an evaluation of the Administration's compliance with the recommendations of the Columbia Accident Investigation Board.".

**SEC. 107. LESSONS LEARNED AND BEST PRACTICES.**

(a) IN GENERAL.—The Administrator shall provide an implementation plan describing NASA's approach for obtaining, implementing, and sharing lessons learned and best practices for its major programs and projects not later than 180 days after the date of enactment of this Act. The implementation plan shall be updated and maintained to ensure that it is current and consistent with the burgeoning culture of learning and safety that is emerging at NASA.

(b) REQUIRED CONTENT.—The implementation plan shall contain at a minimum the lessons learned and best practices requirements for NASA, the organizations or positions responsible for enforcement of the requirements, the reporting structure, and the objective performance measures indicating the effectiveness of the activity.

(c) INCENTIVES.—The Administrator shall provide incentives to encourage sharing and implementation of lessons learned and best practices by employees, projects, and programs, as well as penalties for programs and projects that are determined not to have demonstrated use of those resources.

**SEC. 108. COMMERCIALIZATION PLAN.**

(a) IN GENERAL.—The Administrator, in consultation with other relevant agencies, shall develop a commercialization plan to support the human missions to the Moon and Mars, to support Low-Earth Orbit activities and Earth science missions and applications, and to transfer science research and technology to society. The plan shall identify opportunities for the private sector to participate in the future missions and activities, including opportunities for partnership between NASA and the private sector in conducting research and the development of technologies and services. The plan shall include provisions for developing and funding sustained university and industry partnerships to conduct commercial research and technology development, to proactively translate results of space research to Earth benefits, to advance United States economic interests, and to support the vision for exploration.

(b) REPORT.—Not later than 180 days after the date of enactment of this Act, the Administrator shall submit a copy of the plan to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

**SEC. 109. STUDY ON THE FEASIBILITY OF USE OF GROUND SOURCE HEAT PUMPS.**

(a) IN GENERAL.—The Administrator shall conduct a feasibility study on the use of ground source heat pumps in future NASA facilities or substantial renovation of existing NASA facilities involving the installation of heating, ventilating, and air conditioning systems.

(b) CONTENTS.—The study shall examine—

(1) the life-cycle costs, including maintenance costs, of the operation of such heat pumps compared to generally available heating, cooling, and water heating equipment;

(2) barriers to installation, such as availability and suitability of terrain; and

(3) such other issues as the Administrator considers appropriate.

(c) DEFINITION.—In this section, the term "ground source heat pump" means an electric-powered system that uses the Earth's relatively constant temperature to provide heating, cooling, or hot water.

# TITLE II—AUTHORIZATION OF APPROPRIATIONS

**SEC. 201. STRUCTURE OF BUDGETARY ACCOUNTS.**

Section 313 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2459f) is amended to read as follows:

**"SEC. 313. BUDGETARY ACCOUNTS.**

"Appropriations for the Administration for fiscal year 2007 and thereafter shall be made in four accounts, 'Science, Aeronautics, and Education', 'Exploration Systems', 'Space Operations', and an account for amounts appropriated for the necessary expenses of the Office of the Inspector General. Appropriations shall remain available for two fiscal years, unless otherwise specified in law. Each account shall include the planned full costs of Administration activities.".

**SEC. 202. FISCAL YEAR 2006.**

There are authorized to be appropriated to NASA for fiscal year 2006 $16,471,050,000, as follows:

(1) For Science, Aeronautics and Education (including amounts for construction of facilities), $6,870,250,000 of which—

(A) $962,000,000 shall be for Aeronautics;

(B) $150,000,000 shall be for a Hubble Space Telescope servicing mission; and

(C) $24,000,000 shall be for the National Space Grant College and Fellowship Program.

(2) For Exploration Systems (including amounts for construction of facilities), $3,181,100,000.

(3) For Space Operations (including amounts for construction of facilities), $6,387,300,000.

(4) For the Office of Inspector General, $32,400,000.

**SEC. 203. FISCAL YEAR 2007.**

There are authorized to be appropriated to NASA for fiscal year 2007 $16,962,000,000, as follows:

(1) For Science, Aeronautics and Education (including amounts for construction of facilities), $7,331,600,000 of which—

(A) $990,000,000 shall be for Aeronautics; and

(B) $24,000,000 shall be for the National Space Grant College and Fellowship Program.

(2) For Exploration Systems (including amounts for construction of facilities), $3,589,200,000.

(3) For Space Operations (including amounts for construction of facilities), $6,007,700,000.

(4) For the Office of Inspector General, $33,500,000.

**SEC. 204. ISS RESEARCH.**

The Administrator shall allocate at least 15 percent of the funds budgeted for ISS research to research that is not directly related to supporting the human exploration program.

**SEC. 205. TEST FACILITIES.**

(a) CHARGES.—The Administrator shall establish a policy of charging users of NASA's test facilities for the costs associated with their tests at a level that is competitive with alternative test facilities. As a general principle, NASA shall not seek to recover the full costs of the operation of those facilities from the users. The Administrator shall not implement a policy of seeking full cost recovery for a facility until at least 30 days after transmitting a notice to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(b) FUNDING ACCOUNT.—The Administrator shall establish a funding account that shall be used for all test facilities. The account shall be sufficient to maintain the viability of test facilities during periods of low utilization.

**SEC. 206. PROPORTIONALITY.**

If the total amount appropriated for NASA pursuant to section 202 or 203 is less than the amount authorized under such section, the amounts authorized under each of the accounts specified in such section shall be reduced proportionately.

**SEC. 207. LIMITATIONS ON AUTHORITY.**

Notwithstanding any other provision of this Act, no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for the particular program by section 202 or 203, unless a period of 30 days has passed after the receipt, by each such Committee, of notice given by the Administrator containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such a proposed action. NASA shall keep the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate fully and currently informed with respect to all activities and responsibilities within the jurisdiction of those Committees.

**SEC. 208. NOTICE OF REPROGRAMMING.**

If any funds authorized by this Act are subject to a reprogramming action that requires notice to be provided to the Appropriations Committees of the House of Representatives and the Senate, notice of such action shall concurrently be provided to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

**SEC. 209. COST OVERRUNS.**

When reprogramming funds to cover unexpected cost growth within a program, the Administrator shall, to the maximum extent practicable, protect funds intended for fundamental and applied Research and Analysis.

**SEC. 210. OFFICIAL REPRESENTATIONAL FUND.**

Amounts appropriated pursuant to this Act may be used, but not to exceed a total of $35,000 in any fiscal year, for official reception and representation expenses.

**SEC. 211. INTERNATIONAL SPACE STATION COST CAP.**

Section 202 of the National Aeronautics and Space Administration Authorization Act of 2000 (42 U.S.C. 2451 note) is repealed.

# TITLE III—SCIENCE

## Subtitle A—General Provisions

**SEC. 301. PERFORMANCE ASSESSMENTS.**

(a) IN GENERAL.—Performance of each discipline in the Science account of NASA shall be reviewed and assessed by the National Academy of Sciences at 5-year intervals.

(b) TIMING.—Beginning with the first fiscal year following the date of enactment of this Act, the Administrator shall select at least one discipline for review under this section. The Administrator shall select disciplines so that all disciplines will have received their first review within six fiscal years of the date of enactment of this Act.

(c) REPORTS.—Each year, beginning with the first fiscal year after the date of enactment of this Act, the Administrator shall transmit a report to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate—

(1) setting forth in detail the results of any external review under subsection (a);

(2) setting forth in detail actions taken by NASA in response to any external review; and

(3) including a summary of findings and recommendations from any other relevant external reviews of NASA's science mission priorities and programs.

**SEC. 302. STATUS REPORT ON HUBBLE SPACE TELESCOPE SERVICING MISSION.**

It is the sense of the Congress that the Hubble Space Telescope is an extraordinary instrument that has provided, and should continue to provide, answers to profound scientific questions. In accordance with the recommendations of the National Academy of Sciences, all appropriate efforts should be expended to complete the Space Shuttle servicing mission. Upon successful completion of the planned return-to-flight schedule of the Space Shuttle, the schedule for a Space Shuttle servicing mission to the Hubble Space Telescope shall be determined, unless such a mission would compromise astronaut safety. Not later than 60 days after the landing of the second Space Shuttle mission for return-to-flight certification, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a status report on plans for a Hubble Space Telescope servicing mission.

**SEC. 303. INDEPENDENT ASSESSMENT OF LANDSAT-NPOESS INTEGRATED MISSION.**

(a) ASSESSMENT.—In view of the importance of ensuring continuity of Landsat data and in view of the challenges facing the National Polar-Orbiting Environmental Satellite System program, the Administrator shall seek an independent assessment of the costs as well as the technical, cost, and schedule risks associated with incorporating the Landsat instrument on the first National Polar-Orbiting Environmental Satellite System spacecraft versus undertaking a dedicated Landsat data "gap-filler" mission followed by the incorporation of the Landsat instrument on the second National Polar-Orbiting Environmental Satellite System spacecraft. The assessment shall also include an evaluation of the budgetary requirements of each of the options under consideration.

(b) REPORT.—The Administrator shall transmit the independent assessment to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 180 days after the date of enactment of this Act.

**SEC. 304. ASSESSMENT OF SCIENCE MISSION EXTENSIONS.**

(a) ASSESSMENT.—The Administrator shall carry out annual termination reviews within each of the Science disciplines to assess the cost and benefits of extending the date of the termination of data collection for those missions which are beyond their primary goals. In addition:

(1) Not later than 60 days after the date of enactment of this Act, the Administrator shall carry out such an assessment for the following missions: FAST, TIMED, Cluster, Wind, Geotail, Polar, TRACE, Ulysses, and Voyager.

(2) For those missions that have an operational component, the National Oceanic and Atmospheric Administration shall be consulted and the potential benefits of instruments on missions which are beyond their primary goals taken into account.

(b) REPORT.—Not later than 30 days after completing the assessments required by subsection (a)(1), the Administrator shall transmit a report on the assessment to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

**SEC. 305. MICROGRAVITY RESEARCH.**

(a) IN GENERAL.—The Administrator shall—

(1) not later than 60 days after the date of enactment of this Act, provide to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate an assessment of microgravity research planned for implementation aboard the ISS that includes the identification of research which can be performed in ground-based facilities and then validated in space;

(2) ensure the capacity to support ground-based research leading to space-based basic and applied scientific research in a variety of disciplines with potential direct national benefits and applications that can advance significantly from the uniqueness of microgravity and the space environment; and

(3) carry out, to the maximum extent practicable basic, applied, and commercial ISS research activities such as molecular crystal growth, animal research, basic fluid physics, combustion research, cellular biotechnology, low temperature physics, and cellular research at a level which will sustain the existing scientific expertise and research capabilities.

(b) ON-ORBIT CAPABILITIES.—The Administrator shall ensure that the on-orbit analytical capabilities of the ISS are sufficient to support any diagnostic human research and on-orbit characterization of molecular crystal growth, cellular research, and other research that NASA believes is necessary to conduct, but for which NASA lacks the capacity to return the materials that need to be analyzed to Earth.

(c) ASSESSMENT OF POTENTIAL SCIENTIFIC USES.—The Administrator shall assess further potential scientific uses of the ISS for other applications, such as technology development, development of manufacturing processes, Earth observation and characterization, and astronomical observations.

**SEC. 306. COORDINATION WITH THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.**

(a) JOINT WORKING GROUP.—The Administrator and the Administrator of the National Oceanic and Atmospheric Administration shall appoint a Joint Working Group, which shall review and monitor missions of the two agencies to ensure maximum coordination in the design, operation, and transition of missions. The Joint Working Group shall also prepare the transition plans required by subsection (c).

(b) COORDINATION REPORT.—Not later than February 15 of each year, the Under Secretary of Commerce for Oceans and Atmosphere and the Administrator shall jointly transmit a report to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on how the earth science programs of the National Oceanic and Atmospheric Administration and NASA will be coordinated during the fiscal year following the fiscal year in which the report is transmitted.

(c) COORDINATION OF TRANSITION PLANNING AND REPORTING.—The Administrator, in conjunction with the Administrator of the National Oceanic and Atmospheric Administration, shall evaluate all NASA missions for their potential operational capabilities and shall prepare transition plans for all existing and future Earth observing systems found to have potential operational capabilities and all National Oceanic and Atmospheric Administration operational space-based systems.

(d) LIMITATION.—The Administrator shall not transfer any NASA earth science mission or Earth observing system to the National Oceanic and Atmospheric Administration until the transition plan required under subsection (c) has been approved by the Administrator and the Administrator of the National Oceanic and Atmospheric Administration and until financial resources have been identified to support

the transition or transfer in the President's budget request for the National Oceanic and Atmospheric Administration.

# Subtitle B—Remote Sensing

**SEC. 311. DEFINITIONS.**

In this subtitle—

(1) the term "geospatial information" means knowledge of the nature and distribution of physical and cultural features on the landscape based on analysis of data from airborne or spaceborne platforms or other types and sources of data;

(2) the term "high resolution" means resolution better than five meters; and

(3) the term "institution of higher education" has the meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

**SEC. 312. PILOT PROJECTS TO ENCOURAGE PUBLIC SECTOR APPLICATIONS.**

(a) IN GENERAL.—The Administrator shall establish a program of grants for competitively awarded pilot projects to explore the integrated use of sources of remote sensing and other geospatial information to address State, local, regional, and tribal agency needs.

(b) PREFERRED PROJECTS.—In awarding grants under this section, the Administrator shall give preference to projects that—

(1) make use of commercial data sets, including high resolution commercial satellite imagery and derived satellite data products, existing public data sets where commercial data sets are not available or applicable, or the fusion of such data sets;

(2) integrate multiple sources of geospatial information, such as geographic information system data, satellite-provided positioning data, and remotely sensed data, in innovative ways;

(3) include funds or in-kind contributions from non-Federal sources;

(4) involve the participation of commercial entities that process raw or lightly processed data, often merging that data with other geospatial information, to create data products that have significant value added to the original data; and

(5) taken together demonstrate as diverse a set of public sector applications as possible.

(c) OPPORTUNITIES.—In carrying out this section, the Administrator shall seek opportunities to assist—

(1) in the development of commercial applications potentially available from the remote sensing industry; and

(2) State, local, regional, and tribal agencies in applying remote sensing and other geospatial information technologies for growth management.

(d) DURATION.—Assistance for a pilot project under subsection (a) shall be provided for a period not to exceed 3 years.

(e) REPORT.—Each recipient of a grant under subsection (a) shall transmit a report to the Administrator on the results of the pilot project within 180 days of the completion of that project.

(f) WORKSHOP.—Each recipient of a grant under subsection (a) shall, not later than 180 days after the completion of the pilot project, conduct at least one workshop for potential users to disseminate the lessons learned from the pilot project as widely as feasible.

(g) REGULATIONS.—The Administrator shall issue regulations establishing application, selection, and implementation procedures for pilot projects, and guidelines for reports and workshops required by this section.

**SEC. 313. PROGRAM EVALUATION.**

(a) ADVISORY COMMITTEE.—The Administrator shall establish an advisory committee, consisting of individuals with appropriate expertise in State, local, regional, and tribal agencies, the university research community, and the remote sensing and other geospatial information industry, to monitor the program established under section 312. The advisory committee shall consult with the Federal Geographic Data Committee and other appropriate industry representatives and organizations. Notwithstanding section 14 of the Federal Advisory Committee Act, the advisory committee established under this subsection shall remain in effect until the termination of the program under section 312.

(b) EFFECTIVENESS EVALUATION.—Not later than December 31, 2009, the Administrator shall transmit to the Congress an evaluation of the effectiveness of the program established under section 312 in exploring and promoting the integrated use of sources of remote sensing and other geospatial information to address State, local,

regional, and tribal agency needs. Such evaluation shall have been conducted by an independent entity.

**SEC. 314. DATA AVAILABILITY.**

The Administrator shall ensure that the results of each of the pilot projects completed under section 312 shall be retrievable through an electronic, Internet-accessible database.

**SEC. 315. EDUCATION.**

The Administrator shall establish an educational outreach program to increase awareness at institutions of higher education and State, local, regional, and tribal agencies of the potential applications of remote sensing and other geospatial information.

# Subtitle C—George E. Brown, Jr. Near-Earth Object Survey

**SEC. 321. GEORGE E. BROWN, JR. NEAR-EARTH OBJECT SURVEY.**

(a) SHORT TITLE.—This section may be cited as the "George E. Brown, Jr. Near-Earth Object Survey Act".

(b) FINDINGS.—The Congress makes the following findings:

(1) Near-Earth objects pose a serious and credible threat to humankind, as many scientists believe that a major asteroid or comet was responsible for the mass extinction of the majority of the Earth's species, including the dinosaurs, nearly 65,000,000 years ago.

(2) Similar objects have struck the Earth or passed through the Earth's atmosphere several times in the Earth's history and pose a similar threat in the future.

(3) Several such near-Earth objects have only been discovered within days of the objects' closest approach to Earth, and recent discoveries of such large objects indicate that many large near-Earth objects remain undiscovered.

(4) The efforts taken to date by NASA for detecting and characterizing the hazards of near-Earth objects are not sufficient to fully determine the threat posed by such objects to cause widespread destruction and loss of life.

(c) DEFINITIONS.—For purposes of this section the term "near-Earth object" means an asteroid or comet with a perihelion distance of less that 1.3 Astronomical Units from the Sun.

(d) NEAR-EARTH OBJECT SURVEY.—

(1) SURVEY PROGRAM.—The Administrator shall plan, develop, and implement a Near-Earth Object Survey program to detect, track, catalogue, and characterize the physical characteristics of near-Earth objects equal to or greater than 100 meters in diameter in order to assess the threat of such near-Earth objects to the Earth. It shall be the goal of the Survey program to achieve 90 percent completion of its near-Earth object catalogue (based on statistically predicted populations of near-Earth objects) within 15 years after the date of enactment of this Act.

(2) AMENDMENTS.—Section 102 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451) is amended—

(A) by redesignating subsection (g) as subsection (h);

(B) by inserting after subsection (f) the following new subsection:

"(g) The Congress declares that the general welfare and security of the United States require that the unique competence of the National Aeronautics and Space Administration be directed to detecting, tracking, cataloguing, and characterizing near-Earth asteroids and comets in order to provide warning and mitigation of the potential hazard of such near-Earth objects to the Earth."; and

(C) in subsection (h), as so redesignated by subparagraph (A) of this paragraph, by striking "and (f)" and inserting "(f), and (g)".

(3) ANNUAL REPORT.—The Administrator shall transmit to the Congress, not later than February 28 of each of the next 5 years beginning after the date of enactment of this Act, a report that provides the following:

(A) A summary of all activities taken pursuant to paragraph (1) for the previous fiscal year.

(B) A summary of expenditures for all activities pursuant to paragraph (1) for the previous fiscal year.

(4) INITIAL REPORT.—The Administrator shall transmit to Congress not later than 1 year after the date of enactment of this Act an initial report that provides the following:

(A) An analysis of possible alternatives that NASA may employ to carry out the Survey program, including ground-based and space-based alternatives with technical descriptions.

(B) A recommended option and proposed budget to carry out the Survey program pursuant to the recommended option.

(C) An analysis of possible alternatives that NASA could employ to divert an object on a likely collision course with Earth.

# TITLE IV—AERONAUTICS

**SEC. 401. DEFINITION.**

For purposes of this title, the term "institution of higher education" has the meaning given that term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

## Subtitle A—National Policy for Aeronautics Research and Development

**SEC. 411. POLICY.**

It shall be the policy of the United States to reaffirm the National Aeronautics and Space Act of 1958 and its identification of aeronautical research and development as a core mission of NASA. Further, it shall be the policy of the United States to promote aeronautical research and development that will expand the capacity, ensure the safety, and increase the efficiency of the Nation's air transportation system, promote the security of the Nation, protect the environment, and retain the leadership of the United States in global aviation.

## Subtitle B—NASA Aeronautics Breakthrough Research Initiatives

**SEC. 421. ENVIRONMENTAL AIRCRAFT RESEARCH AND DEVELOPMENT INITIATIVE.**

(a) OBJECTIVE.—The Administrator may establish an initiative with the objective of developing, and demonstrating in a relevant environment, within 10 years after the date of enactment of this Act, technologies to enable the following commercial aircraft performance characteristics:

(1) NOISE.—Noise levels on takeoff and on airport approach and landing that do not exceed ambient noise levels in the absence of flight operations in the vicinity of airports from which such commercial aircraft would normally operate.

(2) ENERGY CONSUMPTION.—Twenty-five percent reduction in the energy required for medium to long range flights, compared to aircraft in commercial service as of the date of enactment of this Act. This reduction may be achieved by a combination of improvements to—

(A) specific fuel consumption;

(B) lift-to-drag ratio; and

(C) structural weight fraction.

(3) EMISSIONS.—Nitrogen oxides on take-off and landing that are reduced by 50 percent relative to aircraft in commercial service as of the date of enactment of this Act.

(b) STUDY.—

(1) REQUIREMENT.—The Administrator shall enter into an arrangement for the National Research Council to conduct a study to identify and quantify new markets that would be created, as well as existing markets that would be expanded, by the incorporation of the technologies developed pursuant to this section into future commercial aircraft. The study shall identify whether any of the performance characteristics specified in subsection (a) would need to be made more stringent in order to create new markets or expand existing markets. The National Research Council shall seek input from at least the aircraft manufacturing industry, academia, and the airlines in carrying out the study.

(2) REPORT.—A report containing the results of the study conducted under paragraph (1) shall be provided to Congress not later than 18 months after the date of enactment of this Act.

**SEC. 422. CIVIL SUPERSONIC TRANSPORT RESEARCH AND DEVELOPMENT INITIATIVE.**

The Administrator may establish an initiative with the objective of developing, and demonstrating in a relevant environment, within 20 years after the date of enactment of this Act, technologies to enable overland flight of supersonic civil transport aircraft with at least the following performance characteristics:

(1) Mach number of at least 1.4.

(2) Range of at least 4,000 nautical miles.

(3) Payload of at least 24 passengers.

(4) Noise levels on takeoff and on airport approach and landing that meet community noise standards in place at airports from which such commercial supersonic aircraft would normally operate at the time the aircraft would enter commercial service.

(5) Shaped sonic boom signatures sufficiently low to permit overland flight over populated areas.

(6) Nitrogen oxide, carbon dioxide, and water vapor emissions consistent with regulations likely to be in effect at the time of this aircraft's introduction.

**SEC. 423. ROTORCRAFT AND OTHER RUNWAY-INDEPENDENT AIR VEHICLES RESEARCH AND DEVELOPMENT INITIATIVE.**

The Administrator may establish a rotorcraft and other runway-independent air vehicles initiative with the objective of developing and demonstrating in a relevant environment, within 10 years after the date of enactment of this Act, technologies to enable significantly safer, quieter, and more environmentally compatible operation from a wider range of airports under a wider range of weather conditions than is the case for rotorcraft and other runway-independent air vehicles in service as of the date of enactment of this Act.

## Subtitle C—Other NASA Aeronautics Research and Development Activities

**SEC. 431. FUNDAMENTAL RESEARCH AND TECHNOLOGY BASE PROGRAM.**

(a) OBJECTIVE.—In order to ensure that the Nation maintains needed capabilities in fundamental areas of aeronautical research, the Administrator shall establish a program of long-term fundamental research in aeronautical sciences and technologies that is not tied to specific development projects.

(b) ASSESSMENT.—The Administrator shall enter into an arrangement with the National Research Council for an assessment of the Nation's future requirements for fundamental aeronautics research and whether the Nation will have a skilled research workforce and research facilities commensurate with those requirements. The assessment shall include an identification of any projected gaps, and recommendations for what steps should be taken by the Federal Government to eliminate those gaps.

(c) REPORT.—The Administrator shall transmit the assessment, along with NASA's response to the assessment, to Congress not later than 2 years after the date of enactment of this Act.

**SEC. 432. AIRSPACE SYSTEMS RESEARCH.**

(a) OBJECTIVE.—The Airspace Systems Research program shall pursue research and development to enable revolutionary improvements to and modernization of the National Airspace System, as well as to enable the introduction of new systems for vehicles that can take advantage of an improved, modern air transportation system.

(b) ALIGNMENT.—Not later than 2 years after the date of enactment of this Act, the Administrator shall align the projects of the Airspace Systems Research program so that they directly support the objectives of the Joint Planning and Development Office's Next Generation Air Transportation System Integrated Plan.

**SEC. 433. AVIATION SAFETY AND SECURITY RESEARCH.**

(a) OBJECTIVE.—The Aviation Safety and Security Research program shall pursue research and development activities that directly address the safety and security needs of the National Airspace System and the aircraft that fly in it. The program shall develop prevention, intervention, and mitigation technologies aimed at causal, contributory, or circumstantial factors of aviation accidents.

(b) PLAN.—Not later than 1 year after the date of enactment of this Act, the Administrator shall transmit to Congress a 5-year prioritized plan for the research to be conducted within the Aviation Safety and Security Research program. The plan shall be aligned with the objectives of the Joint Planning and Development Office's Next Generation Air Transportation System Integrated Plan.

**SEC. 434. ZERO-EMISSIONS AIRCRAFT RESEARCH.**

(a) OBJECTIVE.—The Administrator may establish a zero-emissions aircraft research program whose objective shall be to develop and test concepts to enable a hydrogen fuel cell-powered aircraft that would have no hydrocarbon or nitrogen oxide emissions into the environment.

(b) APPROACH.—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

**SEC. 435. MARS AIRCRAFT RESEARCH.**

(a) OBJECTIVE.—The Administrator may establish a Mars Aircraft project whose objective shall be to develop and test concepts for an uncrewed aircraft that could operate for sustained periods in the atmosphere of Mars.

(b) APPROACH.—The Administrator may establish a program of competitively awarded grants available to teams of researchers that may include the participation of individuals from universities, industry, and government for the conduct of this research.

**SEC. 436. HYPERSONICS RESEARCH.**

The Administrator may establish a hypersonics research program whose objective shall be to explore the science and technology of hypersonic flight using air-breathing propulsion concepts, through a mix of theoretical work, basic and applied research, and development of flight research demonstration vehicles.

**SEC. 437. NASA AERONAUTICS SCHOLARSHIPS.**

(a) ESTABLISHMENT.—The Administrator shall establish a program of scholarships for full-time graduate students who are United States citizens and are enrolled in, or have been accepted by and have indicated their intention to enroll in, accredited Masters degree programs in aeronautical engineering at institutions of higher education. Each such scholarship shall cover the costs of room, board, tuition, and fees, and may be provided for a maximum of 2 years.

(b) IMPLEMENTATION.—Not later than 180 days after the date of enactment of this Act, the Administrator shall publish regulations governing the scholarship program under this section.

(c) COOPERATIVE TRAINING OPPORTUNITIES.—Students who have been awarded a scholarship under this section shall have the opportunity for paid employment at one of the NASA Centers engaged in aeronautics research and development during the summer prior to the first year of the student's Masters program, and between the first and second year, if applicable.

**SEC. 438. AVIATION WEATHER RESEARCH.**

The Administrator may carry out a program of collaborative research with the National Oceanic and Atmospheric Administration on convective weather events, with the goal of significantly improving the reliability of 2-hour to 6-hour aviation weather forecasts.

**SEC. 439. ASSESSMENT OF WAKE TURBULENCE RESEARCH AND DEVELOPMENT PROGRAM.**

(a) ASSESSMENT.—The Administrator shall enter into an arrangement with the National Research Council for an assessment of Federal wake turbulence research and development programs. The assessment shall address at least the following questions:

(1) Are the Federal research and development goals and objectives well defined?

(2) Are there any deficiencies in the Federal research and development goals and objectives?

(3) What roles should be played by each of the relevant Federal agencies, such as NASA, the Federal Aviation Administration, and the National Oceanic and Atmospheric Administration, in wake turbulence research and development?

(b) REPORT.—A report containing the results of the assessment conducted pursuant to subsection (a) shall be provided to Congress not later than 1 year after the date of enactment of this Act.

**SEC. 440. UNIVERSITY-BASED CENTERS FOR RESEARCH ON AVIATION TRAINING.**

(a) IN GENERAL.—The Administrator may award grants to institutions of higher education (or consortia thereof) to establish one or more Centers for Research on Aviation Training under cooperative agreements with appropriate NASA Centers.

(b) PURPOSE.—The purpose of the Centers shall be to investigate the impact of new technologies and procedures, particularly those related to the aircraft flight deck and to the air traffic management functions, on training requirements for pilots and air traffic controllers.

(c) APPLICATION.—An institution of higher education (or a consortium of such institutions) seeking funding under this section shall submit an application to the Administrator at such time, in such manner, and containing such information as the Administrator may require, including, at a minimum, a 5-year research plan.

(d) AWARD DURATION.—An award made by the Administrator under this section shall be for a period of 5 years and may be renewed on the basis of—

(1) satisfactory performance in meeting the goals of the research plan proposed by the Center in its application under subsection (c); and

(2) other requirements as specified by the Administrator.

# TITLE V—HUMAN SPACE FLIGHT

**SEC. 501. INTERNATIONAL SPACE STATION COMPLETION.**

(a) ELEMENTS, CAPABILITIES, AND CONFIGURATION CRITERIA.—The Administrator shall ensure that the ISS will be able to—

(1) be used for a diverse range of microgravity research, including fundamental, applied, and commercial research;

(2) have an ability to support crew size of at least 6 persons;

(3) support Crew Exploration Vehicle docking and automated docking of cargo vehicles or modules launched by either heavy-lift or commercially-developed launch vehicles; and

(4) be operated at an appropriate risk level.

(b) CONTINGENCY PLAN.—The transportation plan to support ISS shall include contingency options to ensure sufficient logistics and on-orbit capabilities to support any potential period during which the Space Shuttle or its follow-on crew and cargo systems is unavailable, and provide sufficient prepositioning of spares and other supplies needed to accommodate any such hiatus.

(c) CERTIFICATION.—Not later than 60 days after the date of enactment of this Act, and before making any change in the ISS assembly sequence in effect on the date of enactment of this Act, the Administrator shall certify in writing to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate NASA's plan to meet the requirements of subsections (a) and (b).

**SEC. 502. HUMAN EXPLORATION PRIORITIES.**

(a) IN GENERAL.—The Administrator shall—

(1) construct an architecture and implementation plan for NASA's human exploration program that is not critically dependent on the achievement of milestones by fixed dates; and

(2) determine the relative priority of each of the potential elements of NASA's implementation plan for its human exploration program in case funding shortfalls or cost growth necessitate the adjustment of NASA's implementation plan.

(b) PRIORITIES.—Development of a Crew Exploration Vehicle with a robust crew escape system, development of a launch system for the Crew Exploration Vehicle, and definition of an overall architecture and prioritized implementation plan shall be the highest priorities of the human exploration program over the period governed by this Act.

**SEC. 503. GAO ASSESSMENT.**

Not later than 9 months after the date of enactment of this Act, the Comptroller General shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate an assessment of the milestones and estimated costs of the plans submitted under section 102(a)(7).

# TITLE VI—OTHER PROGRAM AREAS

## Subtitle A—Space and Flight Support

**SEC. 601. ORBITAL DEBRIS.**

The Administrator, in conjunction with the heads of other Federal agencies, shall take steps to develop or acquire technologies that will enable NASA to decrease the risks associated with orbital debris.

**SEC. 602. SECONDARY PAYLOAD CAPABILITY.**

The Administrator is encouraged to provide the capabilities to support secondary payloads on United States launch vehicles, including freeflyers, for satellites or scientific payloads.

# Subtitle B—Education

**SEC. 611. INSTITUTIONS IN NASA'S MINORITY INSTITUTIONS PROGRAM.**

The matter appearing under the heading "national aeronautics and space administration—SMALL AND DISADVANTAGED BUSINESS" in title III of the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1990 (42 U.S.C. 2473b; 103 Stat. 863) is amended by striking "Historically Black Colleges and Universities and" and inserting "Historically Black Colleges and Universities that are part B institutions (as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2))), Hispanic-serving institutions (as defined in section 502(a)(5) of that Act (20 U.S.C. 1101a(a)(5))), Tribal Colleges or Universities (as defined in section 316(b)(3) of that Act (20 U.S.C. 1059c(b)(3))), Alaskan Native-serving institutions (as defined in section 317(b)(2) of that Act (20 U.S.C. 1059d)(b)(2))), Native Hawaiian-serving institutions (as defined in section 317(b)(4) of that Act (20 U.S.C. 1059d(b)(4))), and".

**SEC. 612. PROGRAM TO EXPAND DISTANCE LEARNING IN RURAL UNDERSERVED AREAS.**

(a) IN GENERAL.—The Administrator shall develop or expand programs to extend science and space educational outreach to rural communities and schools through video conferencing, interpretive exhibits, teacher education, classroom presentations, and student field trips.

(b) PRIORITIES.—In carrying out subsection (a), the Administrator shall give priority to existing programs—

(1) that utilize community-based partnerships in the field;

(2) that build and maintain video conference and exhibit capacity;

(3) that travel directly to rural communities and serve low-income populations; and

(4) with a special emphasis on increasing the number of women and minorities in the science and engineering professions.

**SEC. 613. CHARLES "PETE" CONRAD ASTRONOMY AWARDS.**

(a) SHORT TITLE.—This section may be cited as the "Charles 'Pete' Conrad Astronomy Awards Act".

(b) DEFINITIONS.—For the purposes of this section—

(1) the term "amateur astronomer" means an individual whose employer does not provide any funding, payment, or compensation to the individual for the observation of asteroids and other celestial bodies, and does not include any individual employed as a professional astronomer;

(2) the term "Minor Planet Center" means the Minor Planet Center of the Smithsonian Astrophysical Observatory;

(3) the term "near-Earth asteroid" means an asteroid with a perihelion distance of less than 1.3 Astronomical Units from the Sun; and

(4) the term "Program" means the Charles "Pete" Conrad Astronomy Awards Program established under subsection (c).

(c) PETE CONRAD ASTRONOMY AWARD PROGRAM.—

(1) IN GENERAL.—The Administrator shall establish the Charles "Pete" Conrad Astronomy Awards Program.

(2) AWARDS.—The Administrator shall make awards under the Program based on the recommendations of the Minor Planet Center.

(3) AWARD CATEGORIES.—The Administrator shall make one annual award, unless there are no eligible discoveries or contributions, for each of the following categories:

(A) The amateur astronomer or group of amateur astronomers who in the preceding calendar year discovered the intrinsically brightest near-Earth asteroid among the near-Earth asteroids that were discovered during that year by amateur astronomers or groups of amateur astronomers.

(B) The amateur astronomer or group of amateur astronomers who made the greatest contribution to the Minor Planet Center's mission of cataloguing near-Earth asteroids during the preceding year.

(4) AWARD AMOUNT.—An award under the Program shall be in the amount of $3,000.

(5) GUIDELINES.—(A) No individual who is not a citizen or permanent resident of the United States at the time of his discovery or contribution may receive an award under this section.

(B) The decisions of the Administrator in making awards under this section are final.

**SEC. 614. REVIEW OF EDUCATION PROGRAMS.**

(a) IN GENERAL.—The Administrator shall enter into an arrangement with the National Research Council of the National Academy of Sciences to conduct a review and evaluation of NASA's science, technology, engineering, and mathematics education program. The review and evaluation shall be documented in a report to the Administrator and shall include such recommendations as the National Research Council determines will improve the effectiveness of the program.

(b) REVIEW.—The review and evaluation under subsection (a) shall include—

(1) an evaluation of the effectiveness of the overall program in meeting its defined goals and objectives;

(2) an assessment of the quality and educational effectiveness of the major components of the program, including an evaluation of the adequacy of assessment metrics and data collection requirements available for determining the effectiveness of individual projects;

(3) an evaluation of the funding priorities in the program, including a review of the funding level and funding trend for each major component of the program and an assessment of whether the resources made available are consistent with meeting identified goals and priorities; and

(4) a determination of the extent and the effectiveness of coordination and collaboration between NASA and other Federal agencies that sponsor science, technology, engineering, and mathematics education activities.

(c) REPORT TO CONGRESS.—Not later than 18 months after the date of enactment of this Act, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate the report required under subsection (a).

**SEC. 615. EQUAL ACCESS TO NASA'S EDUCATION PROGRAMS.**

The Administrator shall strive to ensure equal access for minority and economically disadvantaged students to NASA's Education programs. Not later than 1 year after the date of enactment of this Act, and every 2 years thereafter, the Administrator shall submit a report to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the efforts by the Administrator to ensure equal access for minority and economically disadvantaged students under this section, and the results of such efforts.

# TITLE VII—MISCELLANEOUS AMENDMENTS

**SEC. 701. RETROCESSION OF JURISDICTION.**

The National Aeronautics and Space Act of 1958 (42 U.S.C. 2451 et seq.) is amended by adding at the end of title III the following new section:

"RETROCESSION OF JURISDICTION

"SEC. 316. (a) Notwithstanding any other provision of law, the Administrator may relinquish to a State all or part of the legislative jurisdiction of the United States over lands or interests under the control of the Administrator in that State.

"(b) For purposes of this section, the term 'State' means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.".

**SEC. 702. EXTENSION OF INDEMNIFICATION.**

Section 309 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 458c) is amended in subsection (f)(1) by striking "December 31, 2002" through "September 30, 2005" and inserting, "December 31, 2010, except that the Administrator may extend the termination date to a date not later than September 30, 2015, if the Administrator has entered into an arrangement with the National Academy of Public Administration to determine the impact on private parties and the Federal Government of eliminating this section".

**SEC. 703. NASA SCHOLARSHIPS.**

(a) AMENDMENTS.—Section 9809 of title 5, United States Code, is amended—

(1) in subsection (a)(2) by striking "Act." and inserting "Act (42 U.S.C. 1885a or 1885b).";

(2) in subsection (c) by striking "require." and inserting "require to carry out this section.";

(3) in subsection (f)(1) by striking the last sentence; and

(4) in subsection (g)(2) by striking "Treasurer of the" and all that follows through "by 3" and inserting "Treasurer of the United States".

(b) REPEAL.—The Vision 100—Century of Aviation Reauthorization Act is amended by striking section 703 (42 U.S.C. 2473e).

**SEC. 704. INDEPENDENT COST ANALYSIS.**

Section 301 of the National Aeronautics and Space Administration Authorization Act of 2000 (42 U.S.C. 2459g) is amended—

(1) by striking "Phase B" in subsection (a) and inserting "implementation";

(2) by striking "$150,000,000" in subsection (a) and inserting "$250,000,000";

(3) by striking "Chief Financial Officer" each place it appears in subsection (a) and inserting "Administrator";

(4) by inserting "and consider" in subsection (a) after "shall conduct"; and

(5) by striking subsection (b) and inserting the following:

"(b) IMPLEMENTATION DEFINED.—In this section, the term 'implementation' means all activity in the life cycle of a project after preliminary design, independent assessment of the preliminary design, and approval to proceed into implementation, including critical design, development, certification, launch, operations, disposal of assets, and, for technology programs, development, testing, analysis and communication of the results.".

**SEC. 705. LIMITATIONS ON OFF-SHORE PERFORMANCE OF CONTRACTS FOR THE PROCUREMENT OF GOODS AND SERVICES.**

(a) CONVERSIONS TO CONTRACTOR PERFORMANCE OF ADMINISTRATION ACTIVITIES.—Except as provided in subsection (c), an activity or function of the Administration that is converted to contractor performance under Office of Management and Budget Circular A–76 may not be performed by the contractor or any subcontractor at a location outside the United States.

(b) CONTRACTS FOR THE PROCUREMENT OF SERVICES.—(1) Except as provided in subsection (c), a contract for the procurement of goods or services that is entered into by the Administrator may not be performed outside the United States unless it is to meet a requirement of the Administration for goods or services specifically at a location outside the United States.

(2) The President may waive the prohibition in paragraph (1) in the case of any contract for which the President determines in writing that it is necessary in the national security interests of the United States for goods or services under the contract to be performed outside the United States.

(3) The Administrator may waive the prohibition in paragraph (1) in the case of any contract for which the Administrator determines in writing that essential goods or services under the contract are only available from a source outside the United States.

(c) EXCEPTION.—Subsections (a) and (b)(1) shall not apply to the extent that the activity or function under the contract was previously performed by Federal Government employees outside the United States.

(d) CONSISTENCY WITH INTERNATIONAL AGREEMENTS.—The provisions of this section shall not apply to the extent that they are inconsistent with obligations of the United States under international agreements.

(e) ANNUAL REPORT.—The Administrator shall submit to Congress, not later than 120 days after the end of each fiscal year, a report on the contracts performed overseas and amount of purchases by NASA from foreign entities in that fiscal year. Such report shall separately indicate the dollar value of contracts for which the provisions of this section were waived and the dollar value of items for which the Buy American Act was waived pursuant to obligations of the United States under international agreements.

# TITLE VIII—INDEPENDENT COMMISSIONS

**SEC. 1. DEFINITIONS.**

For purposes of this title—

(1) the term "Commission" means a Commission established under this title; and

(2) the term "incident" means either an accident or a deliberate act.

# Subtitle A—International Space Station Independent Safety Commission

**SEC. 811. ESTABLISHMENT OF COMMISSION.**

(a) ESTABLISHMENT.—The President shall establish an independent, nonpartisan Commission within the executive branch to discover and assess any vulnerabilities of the International Space Station that could lead to its destruction, compromise the health of its crew, or necessitate its premature abandonment.

(b) DEADLINE FOR ESTABLISHMENT.—The President shall issue an executive order establishing a Commission within 30 days after the date of enactment of this Act.

**SEC. 812. TASKS OF THE COMMISSION.**

The Commission established under section 811 shall, to the extent possible, undertake the following tasks:

(1) Catalog threats to and vulnerabilities of the ISS, including design flaws, natural phenomena, computer software or hardware flaws, sabotage or terrorist attack, number of crewmembers, and inability to adequately deliver replacement parts and supplies, and management or procedural deficiencies.

(2) Make recommendations for corrective actions.

(3) Provide any additional findings or recommendations related to ISS safety.

(4) Prepare a report to Congress, the President, and the public.

**SEC. 813. SUNSET.**

The Commission established under this subtitle shall expire not later than one year after the date on which the full Commission membership is appointed.

# Subtitle B—Human Space Flight Independent Investigation Commission

**SEC. 821. ESTABLISHMENT OF COMMISSION.**

(a) ESTABLISHMENT.—The President shall establish an independent, nonpartisan Commission within the executive branch to investigate any incident that results in the loss of—

(1) a Space Shuttle;

(2) the International Space Station or its operational viability;

(3) any other United States space vehicle carrying humans that is being used pursuant to a contract with the Federal Government; or

(4) a crew member or passenger of any space vehicle described in this subsection.

(b) DEADLINE FOR ESTABLISHMENT.—The President shall issue an executive order establishing a Commission within 7 days after an incident specified in subsection (a).

**SEC. 822. TASKS OF THE COMMISSION.**

A Commission established pursuant to this subtitle shall, to the extent possible, undertake the following tasks:

(1) Investigate the incident.

(2) Determine the cause of the incident.

(3) Identify all contributing factors to the cause of the incident.

(4) Make recommendations for corrective actions.

(5) Provide any additional findings or recommendations deemed by the Commission to be important, whether or not they are related to the specific incident under investigation.

(6) Prepare a report to Congress, the President, and the public.

# Subtitle C—Organization and Operation of Commissions

**SEC. 831. COMPOSITION OF COMMISSIONS.**

(a) NUMBER OF COMMISSIONERS.—A Commission established pursuant to this title shall consist of 15 members.

(b) SELECTION.—The members of a Commission shall be chosen in the following manner:

(1) The President shall appoint the members, and shall designate the Chairman and Vice Chairman of the Commission from among its members.

(2) Four of the 15 members appointed by the President shall be selected by the President in the following manner:

(A) The majority leader of the Senate, the minority leader of the Senate, the Speaker of the House of Representatives, and the minority leader of the House of Representatives shall each provide to the President a list of candidates for membership on the Commission.

(B) The President shall select one of the candidates from each of the 4 lists for membership on the Commission.

(3) In the case of a Commission established under subtitle A, the President shall select one candidate from a list of candidates for membership on the Commission provided by the President of the collective-bargaining organization including the largest member of NASA engineers.

(4) No officer or employee of the Federal Government shall serve as a member of the Commission.

(5) No member of the Commission shall have, or have pending, a contractual relationship with NASA.

(6) The President shall not appoint any individual as a member of a Commission under this section who has a current or former relationship with the Administrator that the President determines would constitute a conflict of interest.

(7) To the extent practicable, the President shall ensure that the members of the Commission include some individuals with experience relative to human carrying spacecraft, as well as some individuals with investigative experience and some individuals with legal experience.

(8) To the extent practicable, the President shall seek diversity in the membership of the Commission.

(9) The President may waive the prohibitions in paragraphs (5) and (6) with respect to the selection of not more than 2 members of a Commission established under subtitle A.

(c) DEADLINE FOR APPOINTMENT.—All members of a Commission established under subtitle A shall be appointed no later than 60 days after issuance of the executive order establishing the Commission. All members of a Commission established under subtitle B shall be appointed no later than 30 days after the incident.

(d) INITIAL MEETING.—A Commission shall meet and begin operations as soon as practicable.

(e) QUORUM; VACANCIES.—After its initial meeting, a Commission shall meet upon the call of the Chairman or a majority of its members. Eight members of a Commission shall constitute a quorum. Any vacancy in a Commission shall not affect its powers, but shall be filled in the same manner in which the original appointment was made.

**SEC. 832. POWERS OF COMMISSION.**

(a) HEARINGS AND EVIDENCE.—A Commission or, on the authority of the Commission, any subcommittee or member thereof, may, for the purpose of carrying out this title—

(1) hold such hearings and sit and act at such times and places, take such testimony, receive such evidence, administer such oaths; and

(2) require, by subpoena or otherwise, the attendance and testimony of such witnesses and the production of such books, records, correspondence, memoranda, papers, and documents,

as the Commission or such designated subcommittee or designated member may determine advisable.

(b) CONTRACTING.—A Commission may, to such extent and in such amounts as are provided in appropriation Acts, enter into contracts to enable the Commission to discharge its duties under this title.

(c) INFORMATION FROM FEDERAL AGENCIES.—

(1) IN GENERAL.—A Commission may secure directly from any executive department, bureau, agency, board, commission, office, independent establishment, or instrumentality of the Government, information, suggestions, estimates, and statistics for the purposes of this title. Each department, bureau, agency, board, commission, office, independent establishment, or instrumentality shall, to the extent authorized by law, furnish such information, suggestions, estimates, and statistics directly to the Commission, upon request made by the Chairman, the chairman of any subcommittee created by a majority of the Commission, or any member designated by a majority of the Commission.

(2) RECEIPT, HANDLING, STORAGE, AND DISSEMINATION.—Information shall only be received, handled, stored, and disseminated by members of the Commis-

sion and its staff consistent with all applicable statutes, regulations, and Executive orders.

(d) ASSISTANCE FROM FEDERAL AGENCIES.—

(1) GENERAL SERVICES ADMINISTRATION.—The Administrator of General Services shall provide to a Commission on a reimbursable basis administrative support and other services for the performance of the Commission's tasks.

(2) OTHER DEPARTMENTS AND AGENCIES.—In addition to the assistance prescribed in paragraph (1), departments and agencies of the United States may provide to the Commission such services, funds, facilities, staff, and other support services as they may determine advisable and as may be authorized by law.

(3) NASA ENGINEERING AND SAFETY CENTER.—The NASA Engineering and Safety Center shall provide data and technical support as requested by a Commission.

**SEC. 833. PUBLIC MEETINGS, INFORMATION, AND HEARINGS.**

(a) PUBLIC MEETINGS AND RELEASE OF PUBLIC VERSIONS OF REPORTS.—A Commission shall—

(1) hold public hearings and meetings to the extent appropriate; and

(2) release public versions of the reports required under this Act.

(b) PUBLIC HEARINGS.—Any public hearings of a Commission shall be conducted in a manner consistent with the protection of information provided to or developed for or by the Commission as required by any applicable statute, regulation, or Executive order.

**SEC. 834. STAFF OF COMMISSION.**

(a) APPOINTMENT AND COMPENSATION.—The Chairman, in consultation with Vice Chairman, in accordance with rules agreed upon by a Commission, may appoint and fix the compensation of a staff director and such other personnel as may be necessary to enable the Commission to carry out its functions.

(b) DETAILEES.—Any Federal Government employee, except for an employee of NASA, may be detailed to a Commission without reimbursement from the Commission, and such detailee shall retain the rights, status, and privileges of his or her regular employment without interruption.

(c) CONSULTANT SERVICES.—A Commission may procure the services of experts and consultants in accordance with section 3109 of title 5, United States Code, but at rates not to exceed the daily rate paid a person occupying a position at level IV of the Executive Schedule under section 5315 of title 5, United States Code. Any consultant or expert whose services are procured under this subsection shall disclose any contract or association it has with NASA or any NASA contractor.

**SEC. 835. COMPENSATION AND TRAVEL EXPENSES.**

(a) COMPENSATION.—Each member of a Commission may be compensated at not to exceed the daily equivalent of the annual rate of basic pay in effect for a position at level IV of the Executive Schedule under section 5315 of title 5, United States Code, for each day during which that member is engaged in the actual performance of the duties of the Commission.

(b) TRAVEL EXPENSES.—While away from their homes or regular places of business in the performance of services for the Commission, members of a Commission shall be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as persons employed intermittently in the Government service are allowed expenses under section 5703(b) of title 5, United States Code.

**SEC. 836. SECURITY CLEARANCES FOR COMMISSION MEMBERS AND STAFF.**

The appropriate Federal agencies or departments shall cooperate with a Commission in expeditiously providing to the Commission members and staff appropriate security clearances to the extent possible pursuant to existing procedures and requirements. No person shall be provided with access to classified information under this title without the appropriate security clearances.

**SEC. 837. REPORTING REQUIREMENTS AND TERMINATION.**

(a) INTERIM REPORTS.—A Commission may submit to the President and Congress interim reports containing such findings, conclusions, and recommendations for corrective actions as have been agreed to by a majority of Commission members.

(b) FINAL REPORT.—A Commission shall submit to the President and Congress, and make concurrently available to the public, a final report containing such findings, conclusions, and recommendations for corrective actions as have been agreed to by a majority of Commission members. Such report shall include any minority views or opinions not reflected in the majority report.

(c) TERMINATION.—

(1) IN GENERAL.—A Commission, and all the authorities of this title with respect to that Commission, shall terminate 60 days after the date on which the final report is submitted under subsection (b).

(2) ADMINISTRATIVE ACTIVITIES BEFORE TERMINATION.—A Commission may use the 60-day period referred to in paragraph (1) for the purpose of concluding its activities, including providing testimony to committees of Congress concerning its reports and disseminating the final report.

## II. PURPOSE OF THE BILL

The purpose of H.R. 3070, the National Aeronautics and Space Administration Act of 2005, is to reauthorize the human space flight, aeronautics, and science programs of the National Aeronautics and Space Administration (NASA).

## III. BACKGROUND AND NEED FOR THE LEGISLATION

NASA is at a pivotal point in its history, particularly with regard to the future of its human space flight program. For several years, the human space flight program has lacked a clear vision and concrete set of long-term goals. The tragic demise of the Space Shuttle *Columbia* on February 1, 2003 served as a catalyst for a thorough review of the agency's long-term goals for human space flight. This review resulted in a major policy announcement by the President on January 14, 2004 in which he proposed to send American astronauts back to the Moon and on to Mars, as well as to other destinations.

The Congress, as a whole, has yet to fully debate the merits of the proposed policy and the balance it must strike with other key agency missions, such as aeronautics, space science, and earth science. Clearly, such a significant proposal requires close examination by the Congress. H.R. 3070 provides the legislative vehicle to examine and debate the future of NASA and to set the policies and plans at this pivotal time.

Since 2002, NASA has been operating without an authorization. The last NASA authorization bill that was enacted into law was on October 30, 2000 as Public Law 106–391, the National Aeronautics and Space Administration Act of 2000. That Act authorized funding for NASA through fiscal year 2002.

## IV. SUMMARY OF HEARINGS

Over the past four years the Committee on Science and its Subcommittee on Space and Aeronautics have held numerous hearings on nearly every major aspect of NASA's programs. A listing of those hearings is provided below.

April 3, 2001, "Vision 2001: Future Space." (Subcommittee)

April 4, 2001, "Space Station Cost Overruns."

May 2, 2001, "NASA Posture." (Subcommittee)

May 15, 2001, "The Aerospace Industrial Base." (Subcommittee)

June 20, 2001, "Space Launch Initiative: A Program Review." (Subcommittee)

July 19, 2001, "Developing the Next Generation Air Traffic Management System." (Subcommittee)

October 11, 2001, "Space Planes and X-Vehicles." (Subcommittee)

November 7, 2001, "The Space Station Task Force Report."

February 27, 2002, "NASA's Fiscal Year 2003 Budget Request."

March 7, 2002, "A Review of Civil Aeronautics Research and Development." (Subcommittee)

April 18, 2002, "Space Shuttle and Space Launch Initiative." (Subcommittee)

May 9, 2002, "NASA Science Priorities." (Subcommittee)

July 18, 2002, "NASA's Workforce and Management Challenges." (Subcommittee)

October 3, 2002, "The Threat of Near-Earth Asteroids." (Subcommittee)

March 6, 2003, "A Review of Aeronautics R&D at FAA and NASA." (Subcommittee)

March 12, 2003, "The Aerospace Commission Report and NASA Workforce."

May 8, 2003, "NASA's Integrated Space Transportation Plan and Orbital Space Plan Program." (Subcommittee)

June 11, 2003, "U.S.-Russian Cooperation in Space." (Subcommittee)

September 4, 2003, "The Columbia Accident Investigation Board Report."

October 16, 2003, "The Future of Human Space Flight."

October 29, 2003, "NASA's Organizational and Management Challenges in the Wake of the Columbia Disaster."

February 12, 2004, "The President's Vision for Space Exploration."

March 10, 2004, "Perspectives on the President's Vision for Space Exploration."

March 18, 2004, "NASA-Department of Defense Cooperation in Space Transportation." (Subcommittee)

April 1, 2004, "Lunar Science and Resources: Future Options." (Subcommittee)

July 15, 2004, "Contests and Prizes: How Can They Help Advance Space Exploration?" (Subcommittee)

February 2, 2005, "Options for Hubble Science."

February 17, 2005, "NASA Fiscal Year 2006 Budget Proposal."

March 16, 2005, "The Future of Aeronautics at NASA." (Subcommittee)

April 20, 2005, "Future Markets in Commercial Space." (Subcommittee)

April 28, 2005, "NASA Earth Sciences."

June 28, 2005, "The Future of NASA."

## V. Committee Actions

On June 27, 2005, Mr. Calvert and Mr. Boehlert introduced H.R. 3070, the National Aeronautics and Space Administration Act of 2005. The bill was referred to the Subcommittee on Space and Aeronautics.

On June 29, 2005, the Subcommittee on Space and Aeronautics met to consider H.R. 3070. The Subcommittee considered the following amendments to the bill:

1. Mr. Calvert offered a manager's amendment that made a number of additions and clarifying changes to the underlying bill. The amendment—

- Added a reference to the present era as the "Second Space Age" in a finding of the underlying bill that relates to NASA's multiple missions in human space flight, aeronautics and science.
- Added a requirement that the Administrator include a description of the steps NASA will use "to retain needed employees" in the human capital strategy required by the underlying bill.
- Struck a provision in the bill requiring NASA to annually report its General and Administrative expenses with the President's budget and creates a new provision requiring NASA to produce such information upon request from the Committee.
- Added a requirement that NASA report in the President's annual budget the amount of unobligated funds carried over from the previous fiscal year. (The underlying bill already required NASA to report its expected unobligated balances both for the fiscal year in which the President's budget is proposed and for the fiscal year covered by the proposed budget.)
- Added a requirement that NASA report to the Committee on "the extent to which the Crew Exploration Vehicle will allow for the escape of the crew in the event of an emergency."
- Allows NASA to begin to carry out the "national awareness campaign" (which the FY06 House Science, State, Justice and Commerce Appropriations bill directed NASA to undertake) before NASA completes a report describing how NASA plans to carry out the campaign, as required by the underlying bill, so long as NASA first notifies the Committee of actions it takes.
- Added a requirement that the Office of Science and Technology Policy (OSTP) include a list of all the R&D programs of Federal agencies other than NASA that OSTP will have reviewed in conducting a study that the underlying bill requires to determine whether NASA's research programs are duplicative of those in other agencies or neglectful of any related national needs.

The amendment was adopted by a voice vote.

2. Ms. Jackson Lee offered an amendment requiring NASA to provide budget information on its safety program. This amendment was adopted by a voice vote.

The motion to adopt the bill as amended was approved by the Subcommittee by a roll call vote, with 10 voting in favor and 6 voting present. Mr. McCaul moved that the Subcommittee favorably report the bill, H.R. 3070, as amended, to the Full Committee. The motion was approved by a roll call vote, with 10 voting in favor and 6 voting present.

On July 14, 2005, the Committee met to consider H.R. 3070. The Committee considered the following amendments:

1. Mr. Boehlert offered a managers amendment in the nature of a substitute, co-sponsored by Mr. Gordon, Mr. Calvert, and Mr. Udall. The amendment—

- Authorizes funding for two years, fiscal year 2006 and fiscal year 2007, instead of one year. Creates four budget accounts; specifies funding for each, and calls out specific authorization levels for Aeronautics. For fiscal year 2006, it authorizes $150 million for preparation of a Hubble servicing mission.

- Drops language mandating the space shuttle retirement in 2010, leaving the bill silent on the issue.
- Provides more specific direction, but no specific funding level for International Space Station research.
- Endorses a servicing mission for the Hubble Space Telescope.
- Includes language making it more difficult for NASA to transfer money among accounts.
- Adds a Title for aeronautics programs that NASA may consider in establishing a national aeronautics policy.
- Includes the text of H.R. 426, The Remote Sensing Applications Act of 2005, which was passed by the Committee on May 17, 2005.

The amendment was adopted by a voice vote.

2. Mr. Rohrabacher offered and withdrew an amendment to amend the Iran Nonproliferation Act of 2000.

3. Mr. Melancon offered and withdrew an amendment to provide enhanced-use leasing authority at NASA facilities.

4. Ms. Jackson Lee offered and withdrew an amendment to provide specific funding levels for Historically Black Colleges and University education programs.

5. Ms. Jackson Lee offered and withdrew an amendment to establish the Dr. Mae C. Jemison Grant program to work with minority serving institutions.

6. Ms. Jackson Lee offered and withdrew an amendment to provide specific funding levels for Hispanic Serving Institution education programs.

7. Mr. Costello offered an amendment that would have deleted language in section 705 of H.R. 3070 exempting contracts that are inconsistent with obligations under international agreements. The amendment was defeated by a roll call vote, with 18 voting in favor and 18 voting against.

8. Mr. Costello offered an amendment to section 705 of H.R. 3070 requiring NASA to report annually on the contracts performed overseas and the amounts of purchases by NASA from foreign entities. The amendment was agreed to by voice vote.

The Chairman's motion to adopt the bill, as amended, was agreed to by a roll call vote, with 36 voting in favor and 0 against. Mr. Gordon moved that the Committee favorably report the bill, H.R. 3070, as amended, to the House with the recommendation that the bill as amended do pass, and that the staff be instructed to make technical and conforming changes to the bill as amended and prepare the legislative report and that the Chairman take all necessary steps to bring the bill before the House for consideration. With a quorum present, the motion was agreed to by a voice vote.

## VI. Summary of Major Provisions of the Bill, as Amended

The major provisions of the legislation are that it:

- Endorses the broad goals of the President's Vision for Space Exploration.
- Authorizes funding for the National Aeronautics and Space Administration for fiscal year 2006 and fiscal year 2007. Funding for fiscal year 2006 is $16.471 billion, which is approximately $15 million more than the President's request and the same as House Appropriations. For fiscal year 2007, the bill

authorizes $16.962 billion, which is the same as the President's request.

• Charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space science, earth science and microgravity research. It encourages NASA to work with entrepreneurs and to involve other nations to the extent appropriate.

• Directs NASA to strive to ensure the International Space Station will be able to conduct a broad range of research activities, and be accessible by the Crew Exploration Vehicle.

• Directs NASA to strive to: return Americans to the Moon no later than 2020, launch a Crew Exploration Vehicle as close to 2010 as possible, and conduct research on the impacts of space on the human body to enable long-duration space exploration.

• Requires the President, through the Administrator, to develop a national aeronautics policy to guide NASA's aeronautics programs. The report is due with the President's fiscal year 2007 budget request.

• Requires NASA to develop a policy to guide NASA's programs in space and earth science, drawing on the work of the National Academy of Sciences, and requires the agency to prioritize its scientific missions. The report is due with the President's fiscal year 2007 budget request.

• Endorses a Hubble Space Telescope servicing mission.

• Requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. The report is due with the President's fiscal year 2008 budget request.

• Requires NASA to develop a human capital strategy to ensure that it has a workforce of the appropriate size and with the appropriate skills. It limits NASA's flexibility to reduce its workforce during fiscal year 2006. The report is due with the President's fiscal year 2007 budget request.

• Requires annual reporting on programs costing over $100 million and internal and Congressional reviews of any such program that experiences large cost overruns or schedule delays.

• Urges NASA to use commercial providers to support human missions to the Moon and Mars, to support missions to the International Space Station, and to transfer science research and technology to society.

• Provides NASA the authority to conduct competitions for cash prizes, modeled after the X-Prize won in 2004 by airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovative technology development.

• Requires NASA to report to Congress on its plans in a number of areas, including its strategy for sending humans to the Moon, the costs of the Crew Exploration Vehicle, a plan for updating the U.S. system of space communications and satellites, and a plan for helping NASA's Shuttle workforce make the transition to other jobs.

• The legislation includes several additional provisions, including an extension of NASA's indemnification authority, pro-

grams addressing near-Earth asteroids and comets, and a requirement for better coordination between NASA and the National Oceanic and Atmospheric Administration (NOAA) on earth science missions.

## VII. SECTION-BY-SECTION ANALYSIS OF THE BILL, AS AMENDED

*Sec. 1. Short title*

The "National Aeronautics and Space Administration Authorization Act of 2005."

*Sec. 2. Findings*

Urges the National Aeronautics and Space Administration (NASA) to maintain robust programs in space science, earth science, and aeronautics while it moves forward with plans to send Americans to the Moon, Mars, and beyond.

*Sec. 3. Definitions*

### TITLE I—GENERAL PRINCIPLES AND REPORTS

*Sec. 101. Responsibilities, policies, and plans*

Charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space and earth science and microgravity. Encourages NASA to work with entrepreneurs, use commercial services to the extent practicable, and to involve other nations to the extent appropriate.

Directs NASA to carry out the Vision for Space Exploration by striving to: return Americans to the Moon no later than 2020, launch a Crew Exploration Vehicle (CEV) as close to 2010 as possible, and conduct research on the impacts of space on the human body to enable long-duration space exploration.

Requires the President, through the Administrator, to develop a national aeronautics policy to guide NASA's aeronautics programs through 2020, taking into account several priority areas. Directs the policy be delivered to Congress with the fiscal year (FY) 2007 budget request.

Requires NASA to develop a policy to guide agency space and earth science programs through 2016. Requires the policy to prioritize the agency's scientific missions and address NASA's plans on servicing the Hubble Space Telescope. Directs the policy be delivered to Congress with the FY 2007 budget request.

Requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. Directs the plan be delivered to Congress with the FY 2008 budget request.

Requires NASA to develop a human capital strategy to retain needed employees and ensure that it has a workforce of the appropriate size and with the appropriate skills to carry out programs and policies of this Act. Limits NASA's flexibility in initiating buyouts or Reductions in Force until 60 days after the plan is submitted with the President's budget for FY 2007, and prohibits any final action on Reduction in Force or other involuntary separations prior to October 1, 2006.

Requires NASA to conduct a study evaluating whether any of its centers should be operated by or with the private sector. Directs the study be delivered to Congress by May 31, 2006.

Directs the President's budget for NASA to include documents showing the requests for human space flight, aeronautics, space science, earth science, safety, microgravity science, education, technology transfer programs, and comparable figures for each activity for each of the two previous fiscal years and directs that documents be available on administrative expenses.

Requires the Office of Science and Technology Policy (OSTP) to commission an independent review of the Nation's long-term strategic needs for test facilities, and prohibits the closure or mothballing of any facility identified in the 2003 RAND Corporation study entitled "Wind Tunnels and Propulsion Test Facilities: An Assessment of NASA's Capabilities to Serve National Needs," as well as any test facilities in use as of January 1, 2004 until the report is delivered to Congress.

*Sec. 102. Reports*

Requires NASA to report certain details regarding the Vision for Space Exploration and other NASA programs by the end of FY 2005.

Requires NASA to report estimated costs of the CEV and the impact of those costs, and potential cost increases, on other agency programs through 2020.

Requires NASA to report its plans for updating the system of space communications and architecture to carry out lunar and deep space missions.

Requires NASA to submit a report to Congress describing its plans to carry out the "awareness campaign" required by the report accompanying the FY 2006 House Science, State, Justice, and Commerce Appropriations Bill.

Requires NASA to develop a transition plan for government and contractor personnel engaged in the Space Shuttle program.

Requires NASA and the Department of Energy jointly to describe their plans to develop a proposed astronomy research mission to study dark energy.

Requires the Director of OSTP to conduct a study to evaluate whether any research NASA conducts is unnecessarily duplicating aspects of programs of other Federal agencies or whether it is neglecting areas of research in the national interest related to NASA's mission.

*Sec. 103. Baselines and cost controls*

Requires NASA to report annually on the status (including cost, schedule and performance) of "major" programs. Requires notification to Congress and an internal evaluation in the event that any major program exceeds its originally estimated development cost by more than 15 percent or exceeds its originally planned schedule by more than six months. Requires Congress to evaluate whether to continue the major program in the event that it exceeds its originally estimated development cost by more than 30 percent or $1 billion. Defines major programs as those with life-cycle costs of over $100,000,000.

*Sec. 104. Prize authority*

Authorizes NASA to conduct competitions for cash prizes, modeled after the X-Prize won in 2004 by famed airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of NASA's space and aeronautical activities. Gives NASA the authority to accept private funds and funds from other agencies for cash prizes. Does not limit the amount of a prize, but requires NASA first to report to the Congress before offering any prize worth more than $10,000,000.

*Sec. 105. Foreign launch vehicles*

Requires NASA to launch missions on foreign launch vehicles only in accordance with the President's Space Transportation Policy, announced December 21, 2004. Grandfathers in any mission for which any development has begun prior to the date of enactment, including the James Webb Space Telescope.

*Sec. 106. Safety management*

Amends Sec. 6 of the National Aeronautics and Space Administration Act of 1958 to encourage continued compliance with the Columbia Accident Investigation Board (CAIB) recommendations and to require an annual report, including in the first year's report an evaluation of NASA's safety management culture.

*Sec. 107. Lessons learned and best practices*

Requires NASA to provide an implementation plan within 180 days of enactment describing NASA's approach for sharing lessons learned and best practices among its major programs and projects. Additionally, requires NASA to provide incentives for sharing and implementing lessons learned and best practices within the agency.

*Sec. 108. Commercialization plan*

Directs NASA, in consultation with other appropriate agencies, to develop a commercialization plan within 180 days of enactment to support human missions to the Moon and Mars, low earth orbit activities, Earth science missions and applications, and transfer of science research and technology to society.

*Sec. 109. Study on the feasibility of use of ground source heat pumps*

Directs NASA to conduct a feasibility study on the use of ground-source heat pumps for energy conservation in future NASA facilities or major renovations of existing facilities.

## TITLE II—AUTHORIZATION OF APPROPRIATIONS

*Sec. 201. Structure of budgetary accounts*

Amends Sec. 313 of the National Aeronautics and Space Act of 1958 such that, starting in FY07, appropriations shall be made in four accounts: 'Science, Aeronautics, and Education', 'Exploration Systems', 'Space Operations', and 'Inspector General'.

*Sec. 202. Fiscal year 2006*

Authorizes NASA at $16,471,050,000 for FY06, the same amount provided in the House Science, State, Justice and Commerce Appropriations Bill for FY 2005 (approximately $15 million above the President's FY 2006 request).

The Authorization includes the following breakdown:

Science, Aeronautics and Education: $6,870,250,000, of which $962,000,000 for Aeronautics; $150,000,000 for a Hubble Space Telescope Servicing Mission; and $24,000,000 for the Space Grant program;

Exploration Systems: $3,181,000,000;

Space Operations: $6,387,300,000;

Inspector General: $32,400,000.

*Sec. 203. Fiscal year 2007*

Authorizes NASA at $16,962,000,000 for FY07, the same as the President's Budget Request for FY07.

The Authorization includes the following breakdown:

Science, Aeronautics and Education: $7,331,600,000, of which $990,000,000 for Aeronautics; $24,000,000 for the Space Grant program;

Exploration Systems: $3,589,200,000;

Space Operations: $6,007,700,000;

Inspector General: $33,500,000.

*Sec. 204. ISS research*

Requires NASA to allocate at least 15 percent of the funds obligated for research aboard the International Space Station (ISS) to research not directly related to the human exploration program.

*Sec. 205. Test facilities*

Requires NASA to establish a policy of charging users of NASA test facilities a competitive price for the costs associated with their use, and as a general rule not to seek to recover the full cost of the facilities operation. Requires Congressional notice if the Administrator decides to seek full cost for the use of a facility. Directs NASA to establish a funding account for test facilities.

*Sec. 206. Proportionality*

Specifies that if the total amounts appropriated pursuant to Sec. 202 and 203 are less than the amounts authorized in those sections, the amounts authorized for each of the accounts specified in sections 202 and 203 will be reduced proportionally.

*Sec. 207. Limitations on authority*

Requires the Administrator to give 30 days notice to Congress before NASA funds a program in excess of the amount authorized for the program in Sec. 202 or 203.

*Sec. 208. Notice of reprogramming*

Requires that any reprogramming action that requires notice to the Appropriations Committees, also require notice to the House Science Committee and the Senate Commerce, Science and Transportation Committee.

*Sec. 209. Cost overruns*

Requires NASA to protect funds intended for fundamental and applied Research and Analysis when reprogramming funds to cover unexpected cost growth within a program.

*Sec. 210. Official representational fund*

Limits the amount of funds to be used for receptions and representational expenses to $35,000 in any fiscal year.

*Sec. 211. International Space Station cap*

Repeals the cost cap on the ISS enacted in the NASA Authorization Act of 2000.

## TITLE III—SCIENCE

### Subtitle A—General Provisions

*Sec. 301. Performance assessments*

Requires the National Academy of Sciences to evaluate the performance of each discipline within NASA within six fiscal years and every five years thereafter.

*Sec. 302. Status report on Hubble space telescope mission*

Requires the Administrator to determine, upon completion of the second shuttle flight after return to flight, the schedule for a Hubble servicing mission, unless such a mission would compromise astronaut safety. Also requires a report on the status of the Hubble Servicing mission to be submitted not later than 60 days after the landing of the second Shuttle flight.

*Sec. 303. Independent assessment of Landsat-NPOESS integrated mission*

Requires the Administrator to seek an independent assessment of the costs and risks associated with incorporating the Landsat instrument on the first National Polar Orbiting Environmental Satellite System. Also requires that the Administrator transmit the assessment to Congress within 180 days of enactment.

*Sec. 304. Assessment of science mission extensions*

Directs the Administrator to carry out annual reviews within each of the science disciplines to assess the cost and benefits of extending the termination date for those missions that are beyond their originally scheduled termination dates. Requires that a termination review be held within 60 days of enactment for certain specified missions (i.e., FAST, TIMED, Cluster, Wind, Geotail, Polar, TRACE, Ulysses, and Voyager) and requires that a report on the results of specified reviews be transmitted to Congress within 30 days of completion. Also requires that for missions with an operational component, NASA consult with the National Oceanic and Atmospheric Administration (NOAA) and take the operational benefits into account.

*Sec. 305. Microgravity research*

Requires NASA to carry out, to the maximum extent practicable, basic, applied, and commercial research aboard the ISS. Requires

the Administrator to transmit to Congress, not later than 60 days after enactment, an assessment of microgravity research planned for the ISS.

*Sec. 306. Coordination with the National Oceanic and Atmospheric Administration*

Requires NASA and NOAA to appoint a Joint Working Group to coordinate each agency's earth science activities. Requires the two agencies to evaluate NASA's earth science missions for their potential applicability to NOAA's mission and to prepare a transition plan for those found to have potential applicability. Prohibits the transfer of any Earth science mission from NASA to NOAA until the mission's transition plan has been approved by both agencies and funds are identified in NOAA's budget. Requires an annual report to Congress from NASA and NOAA on how the earth science activities of each agency will be coordinated in the coming fiscal year.

Subtitle B—Remote Sensing

*Sec. 311. Definitions*

Defines several terms used throughout the bill. Defines the term 'geospatial information' to mean knowledge of the nature and distribution of physical and cultural features on the landscape based on analysis of data from airborne or space borne platforms or other types and sources of data.

*Sec. 312. Pilot projects to encourage public sector applications*

Directs the Administrator to establish a program of competitively awarded grants for pilot projects to explore the integrated use of sources of remote sensing and other geospatial information to address State, local, regional, and tribal agency needs. Specifies certain preferences in awarding such grants, to include making use of commercial data sets, including high resolution commercial satellite imagery and derived satellite data products, existing public data sets where commercial data sets are not available or applicable, or the fusion of such data sets. Directs NASA to seek opportunities to assist in the development of commercial applications and to assist State, local, regional, and tribal agencies in applying these technologies for growth management and wildland fire observation. Restricts assistance for such pilot projects to no more than 3 years. Requires each recipient of such a grant to report to NASA on the results of the pilot project and conduct a workshop for potential users to disseminate lessons learned from the project. Authorizes the Administrator to issue regulations for the conduct of the pilot projects.

*Sec. 313. Program evaluation*

Directs the Administrator to establish an advisory committee to monitor the program established under Sec. 312. Directs the Administrator to transmit to the Congress an evaluation of the program established under Sec. 312 by an independent entity no later than December 31, 2009.

*Sec. 314. Data availability*

Directs the NASA Administrator to ensure that the results of each of the pilot projects completed under Sec. 312 are retrievable through an electronic, Internet-accessible database.

*Sec. 315. Education*

Directs the Administrator to establish an educational outreach program to increase awareness at institutions of higher education and State, local, regional, and tribal agencies of the potential applications of remote sensing and other geospatial information.

Subtitle C—George E. Brown, Jr. Near-Earth Object Survey

*Sec. 321. George E. Brown, Jr. Near-Earth Object Survey*

Directs the Administrator of NASA to establish a Near-Earth Object (NEO) Survey program to detect, track, catalogue, and characterize the physical characteristics of NEOs equal to or greater than 100 meters in diameter in order to assess the threat of such NEOs to the Earth. Amends the National Aeronautics and Space Act of 1958 to include a Congressional declaration that the general welfare and security of the United States require that the unique competence of NASA in science and engineering systems be directed to detecting, tracking, cataloguing, and characterizing NEOs in order to provide warning and mitigation of the potential hazard of such NEOs to the Earth. Requires the Administrator to submit each year for the next five years a report summarizing the activities the Administrator takes with regard to the NEO Survey program and a summary of expenditures, and a plan and budget request for the program.

TITLE IV—AERONAUTICS

*Sec. 401. Definitions*

Defines the term "institution of higher education" as having the meaning given that term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

*Sec. 411. Policy*

Reaffirms that Aeronautics is a core mission of NASA.

Subtitle B—NASA Aeronautics Breakthrough Research Initiatives

*Sec. 421. Environmental aircraft research and development initiative*

Permits the Administrator to establish an initiative with the objective of developing, and demonstrating in a relevant environment, technologies to enable commercial aircraft not to exceed ambient noise levels in the vicinity of airports, to consume 25 percent less fuel for medium to long-range flights, and to produce 50 percent fewer nitrogen oxides on takeoff and landing.

*Sec. 422. Civil supersonic transport research and development initiative*

Permits the Administrator to establish an initiative with the objective of developing, and demonstrating in a relevant environment,

technologies to enable overland flight of supersonic civil transport aircraft that do not exceed community standards for noise or emission regulations likely to exist at the time of the aircraft's operation.

*Sec. 423. Rotorcraft and other runway-independent air vehicles research and development initiative*

Permits the Administrator to establish an initiative with the objective of developing, and demonstrating in a relevant environment, technologies to enable significantly safer, quieter and more environmentally compatible operation of rotorcraft and other runway-independent air vehicles.

Subtitle C—Other NASA Aeronautics Research and Development Activities

*Sec. 431. Fundamental research and technology base program*

Requires the Administrator to establish a program of long-term fundamental research in aeronautical sciences and technologies that is not tied to specific development projects.

*Sec. 432. Airspace systems research*

Requires the Administrator to pursue research and development to enable revolutionary improvements to and modernization of the National Airspace System.

*Sec. 433. Aviation safety and security research*

Requires that NASA's Aviation Safety and Security Research program pursue research and development activities that directly address the safety and security needs of the National Airspace System and the aircraft that fly in it.

*Sec. 434. Zero-emissions aircraft research*

Permits the Administrator to establish a research program with the objective of developing test concepts to enable a hydrogen fuel cell-powered aircraft that would emit no hydrocarbons or nitrogen oxides.

*Sec. 435. Mars aircraft research*

Permits the Administrator to establish a project with the objective of developing and testing concepts for an uncrewed aircraft that could operate for sustained periods in the atmosphere of Mars.

*Sec. 436. Hypersonics research*

Permits the Administrator to establish a research program with the objective of exploring the science and technology of hypersonic flight using air-breathing propulsion concepts.

*Sec. 437. NASA aeronautics scholarships*

Requires the Administrator to establish a program of scholarships for full-time graduate students who are U.S. citizens in accredited Masters degree programs in aeronautical engineering at institutions of higher education.

*Sec. 438. Aviation weather research*

Permits the Administrator to carry out a collaborative research program with NOAA on convective weather events with the goal of significantly improving the reliability of two-hour to six-hour aviation weather forecasts.

*Sec. 439. Assessment of wake turbulence research and development program*

Requires the Administrator to enter into an arrangement with the National Research Council of the National Academy of Sciences for an assessment of Federal wake turbulence research and development programs.

*Sec. 440. University-based centers for research on aviation training*

Permits the Administrator to award grants to institutions of higher education to establish one or more centers for research on aviation training to investigate the impact of new technologies and procedures on training requirements for pilots and air traffic controllers.

## TITLE V—HUMAN SPACE FLIGHT

*Sec. 501. International Space Station completion*

Requires NASA to ensure that the ISS is capable of diverse microgravity research, supporting a crew of 6 persons, and supporting the docking of the CEV as well as other needed vehicles. Requires NASA to report to Congress on contingency plans for the ISS during periods for which the Shuttle or other systems are not available.

*Sec. 502. Human exploration priorities*

Requires NASA to construct an architecture and implementation plan for human exploration that establishes relative priorities for each potential element of the plan. Establishes that the top three priorities of the human exploration program shall be the development of this architecture, the development of a CEV, and a CEV launch vehicle.

*Sec. 503. GAO assessment*

Requires the Comptroller General to conduct an assessment of the milestones and estimated costs of the lunar exploration architecture plan. The Act requires NASA to submit to Congress under Sec. 102, and to report the results of the assessment to Congress within six months of enactment of this Act.

## TITLE VI—OTHER PROGRAM AREAS

*Sec. 601. Orbital debris*

Requires NASA to take steps to develop or acquire technologies to enable NASA to reduce the risks associated with orbital debris.

*Sec. 602. Secondary payload capability*

Encourages NASA to provide the capability to support secondary payloads on U.S. launch vehicles for satellites or scientific payloads.

## Subtitle B—Education

*Sec. 611. Institutions in NASA's minority institutions program*

Amends Title III of the VA–HUD Appropriations Act of 1990 (involving NASA establishing a goal of awarding at least 8 percent of the total value of the agency's contracts to small businesses or other organizations owned or controlled by socially and economically disadvantaged individuals) to specifically include Historically Black Colleges and Universities that are Part B institutions, Hispanic-serving institutions, Tribal Colleges or Universities, Alaskan Native-serving institutions, and Native Hawaiian-serving institutions.

*Sec. 612. Program to expand distance learning in rural underserved areas*

Encourages NASA to expand educational outreach programs to rural communities and schools, and gives priority to schools with certain programs.

*Sec. 613. Charles "Pete" Conrad astronomy awards*

Authorizes the NASA Administrator to establish the Charles 'Pete' Conrad Astronomy Awards program, make awards under the Program based on the recommendations of the Minor Planet Center, and make one award annually in each of two categories if eligible discoveries or contributions are made. Establishes two award categories as follows: (1) an award to the amateur astronomer or group of amateur astronomers who in the preceding calendar year discovered the intrinsically brightest near-Earth asteroid among the near-Earth asteroids that were discovered during that year by amateur astronomers or groups of amateur astronomers; and (2) the amateur astronomer or group of amateur astronomers who made the greatest contribution to the Minor Planet Center's mission of cataloguing near-Earth asteroids during the preceding year. Limits awards to recipients that are U.S. citizens or permanent residents and to amount of no greater than $3,000. Establishes that the Administrator's decisions in making the awards are final.

*Sec. 614. Review of education program*

Requires NASA to arrange with the National Academy of Sciences to conduct a review of NASA's education programs including funding priorities as well as the quality and effectiveness of the program.

*Sec. 615. Equal access to NASA's education programs*

Requires the Administrator to strive to ensure equal access for minority and economically disadvantaged students to NASA's education programs.

## TITLE VII—MISCELLANEOUS AMENDMENTS

*Sec. 701. Retrocession of jurisdiction*

Grants NASA the authority to allow State and local law enforcement authorities to enforce speeding, drunk driving, and other laws on NASA property, including at NASA's centers.

*Sec. 702. Extension of indemnification*

Grants NASA an extension of authority to indemnify developers of experimental aerospace vehicles with which NASA is involved in a cooperative partnership.

*Sec. 703. NASA scholarships*

Makes technical amendments to the NASA Scholarship program.

*Sec. 704. Independent cost analysis*

Amends Sec. 301 of the NASA Authorization Act of 2000 by increasing the amount a project costs that could trigger an independent cost analysis from $150,000,000 to $250,000,000 and by requiring the Administrator, rather than the chief financial officer, to conduct the independent cost analysis.

*Sec. 705. Limitations on off-shore performance of contracts for procurement of goods and services*

Limits contractor performance or contracts for procurement of goods and services to domestic entities, consistent with U.S. international agreements. Requires NASA to report annually on the contracts performed overseas and the amount of purchases by NASA from foreign entities.

## TITLE VIII—INDEPENDENT COMMISSIONS

*Sec. 801. Definitions*

### Subtitle A—International Space Station Independent Safety Commission

*Sec. 811. Establishment of commission*

Requires the President to establish a Commission to assess ISS vulnerabilities within 30 days.

*Sec. 812. Tasks of the commission*

Requires the Commission to catalogue the threats to the ISS and its vulnerabilities, to make recommendations for corrective actions, and to prepare a report to the public, the Congress and the President within one year of establishment.

*Sec. 813. Sunset*

Sunsets the Commission within one year after its establishment.

### Subtitle B—Human Space Flight Independent Investigation Commission

*Sec. 821. Establishment of commission*

Requires the President to establish a Commission to investigate any incident that results in the loss of a space shuttle, the ISS, or any other U.S. space vehicle carrying humans pursuant to a contract with the federal Government within seven days of the incident.

*Sec. 822. Tasks of the commission*

Requires the Commission to investigate and determine the cause of the incident and all its contributing factors, to make rec-

ommendations for corrective action, and report to the public, the Congress, and the President.

Subtitle C—Organization and Operation of Commissions

*Sec. 831. Composition of commissions*

Requires the Commissions in Subtitles A and B to consist of 15 members chosen by the President, with four members being nominated by the majority and minority of the House and the Senate Leadership, and one member being nominated by the collective-bargaining organization that includes the largest number of NASA engineers.

*Sec. 832. Powers of commission*

Establishes that the Commissions in Subtitles A and B may hold hearings and take testimony as necessary to carry out their charges.

*Sec. 833. Public meetings, information, and hearings*

Requires the Commissions in Subtitles A and B to hold public hearings to the extent appropriate and release public versions of their reports.

*Sec. 834. Staff of commission*

Allows the Chairmen of the Commissions in Subtitles A and B to appoint and fix the compensation of staff. Allows non-NASA detailees and consultants to provide services to the Commissions.

*Sec. 835. Compensation and travel expenses*

Sets limits for compensation and travel expenses for members of the Commissions in Subtitles A and B.

*Sec. 836. Security clearances for commission members and staff*

Requires the appropriate Federal Agencies or departments to cooperate with the Commissions in Subtitles A and B in expeditiously providing appropriate security clearances to the extent possible.

*Sec. 837. Reporting requirements and termination*

Requires that the Commissions in Subtitles A and B produce final reports with all findings, conclusions, and recommendations agreed to by the Commissions and any minority views and opinions. Requires the Commissions to be terminated 60 days after the final reports are submitted.

## VIII. Committee Views

*Sec. 101(a)(1). NASA's mission*

The Committee expects NASA to continue to support productive programs in human space flight, aeronautics and science, including space science, earth science and microgravity. While NASA will obviously have to set priorities among the many demands in each of those areas, it must continue to support robust programs in all of those pursuits. In making funding and programmatic decisions, human space flight, aeronautics and science programs must each

be evaluated on their own merits. For that reason, this Act directs NASA to move ahead with the President's Vision for Human Space Exploration, while coming up with separate "visions" to guide the other NASA programs. The Committee is pleased with Administrator Griffin's commitment to operate NASA as a multi-mission agency.

*Sec. 101(a)(2)(B). Commercial products and services*

The Committee expects NASA to use commercially available products and services to the extent practicable to support all Administration activities—administrative and office activities, as well as mission specific activities where commercial products, particularly software products, can be adapted to meet NASA's needs relatively easily. Such products include a wide range of commercially available engineering analysis software and simulation tools to aid in the design, testing, planning, and operation of complex aircraft, spacecraft, and mission operations.

The Committee also expects NASA to pursue commercial arrangements to purchase crew and cargo transportation services both before and after the retirement of the Shuttle. NASA should review its policies and procurement strategies to make it easier for the agency to enter into commercial arrangements for space transportation services. For example, NASA should utilize the market offered by the crew and cargo requirements for the international space station to encourage commercial providers to develop and supply commercial space transportation services. Under such an arrangement, rather than NASA entering into a prime contract with detailed specifications on how to build a vehicle, it would instead specify the performance criteria of a set of services that, if met, the government would agree to buy at a fixed price. Such an approach potentially offers affordable and credible risk mitigation for assured access to space.

*Sec. 101(a)(2)(C). International cooperation*

The Committee believes that international cooperation is an important aspect of NASA's mission. NASA needs to work with the space station international partners and should honor its agreements with them. Those agreements allow for negotiations. The Committee understands that NASA may need to discuss potential changes to the configuration of the International Space Station (ISS) with the international partners once NASA completes its planning for the future of the Shuttle and ISS programs.

The Committee notes that one central aspect of international cooperation requires Congressional review. The Administration has proposed an amendment to the Iran Nonproliferation Act. The Committee intends to address that issue in this Act before it is sent to the President.

The Committee encourages NASA to engage potential partners in the Vision for Human Space Exploration as early in the planning process as possible.

*Sec. 101(c). Aeronautics plan*

The Committee believes a robust civil aeronautics research and development program is critical to maintaining U.S. leadership in aeronautics and aviation. The Committee is deeply troubled by the

downward trend over the last decade in funding for NASA's aeronautics program and the lack of a clear set of goals and priorities. Therefore, it is essential that the Administration develop a national aeronautics policy to guide government investments in civil aeronautics research so that scarce resources may be applied to the highest priority areas.

In developing the national aeronautics policy, the President, acting through the Administrator, should examine the needs across the civil and military aeronautics sectors, and to establish priority areas of research that NASA should address. Title IV of the bill contains several areas of aeronautics research that NASA must consider including in the policy. But before deciding on any particular area of research, NASA must answer fundamental questions about the nature of its aeronautics programs, such as whether they should contribute to incremental improvements in aviation technology, and what the impact will be on industry if they do not.

As with all the plans and policies required by section 101, the Committee expects NASA to consult widely in developing its plans. In cases in which the National Academy of Sciences (or other groups) have relevant ongoing studies, NASA should draw on those efforts. But NASA may not delay the transmittal of the reports required by section 101 to wait for the completion of another entity's work.

The Committee understands that NASA will have to update and revise the plans and policies required by section 101 in the future. By asking for an aeronautics policy that outlines plans through 2020, for example, the Committee is not attempting to bind NASA to that policy for the next 15 years. But NASA and the Congress need a clear understanding of what the outlook is for NASA programs to allow for sensible planning and budgeting.

*Sec. 101(d). Science plan*

The priority ranking required by this subsection is a single ranking of all the missions that NASA lists pursuant to paragraph (2)(A), not a ranking categorized by theme or any other category.

*Sec. 101(h) and (i). Budget submission*

The Committee is extremely disappointed in the lack of detail on funding provided in the fiscal year 2006 budget justification. NASA is reminded that the primary purpose of budget justifications is to provide needed information to the Congress, and the documents must provide sufficient detail and year-to-year comparability to allow the budget to be analyzed meaningfully. This Act does not list every area in which the Committee expects better detailed information, but rather focuses on areas that are especially critical and/or have been especially problematic.

The Committee expects the budget justifications to provide comparable numbers on the prior year, current year, and requested funding levels for each program, project or activity funded within each division and directorate in each account; and detailed information on all proposed changes being requested. NASA shall submit to the Committee not later than October 15, 2005, a template for its fiscal year 2007 budget justification document that complies with this direction.

The Committee also requests that NASA discontinue the practice of including the Integrated Financial Management Program (IFMP) within the General and Administrative (G&A) portion of the budget. The Committee directs that NASA budget for, and manage the IFMP as a program in its own right, and provide a breakout of the five-year budget for the IFMP and each of its elements as part of the annual budget submission to the Congress.

The Committee is also concerned about the lack of clarity regarding amounts of G&A and service pool costs provided in the annual budget submission, and how these costs are being charged to programs. To facilitate a more complete understanding of these costs and how they relate to each other, NASA should be prepared to provide the Committee, upon request, with detailed information about Corporate G&A, Center G&A, and service pool costs. This information should include how much G&A and service pool funds are to be spent by each Center and by Headquarters and by each Mission Directorate, as well as for the major activities included under each category.

In the budget justification document for fiscal year 2006, NASA listed major activities and corresponding budget amounts included in Corporate G&A, such as the Chief Information Officer and Chief Engineer. However, one of the activities listed, "Headquarters Corporate Activities" made up over 40 percent ($373 million) of the total Corporate G&A budget without further elaboration. More information about what this particular portion of Corporate G&A comprises is necessary. In addition, the Committee directs NASA to provide more information on the amounts spent for major activities under Center G&A and service pools. For example, for Center G&A, NASA should be prepared to disclose how much each Center spends on maintenance, public affairs, construction of facilities, and Center support. Center support would include areas such as human resources, security, procurement, and financial management.

*Sec. 102(a)(9). James Webb Space Telescope*

The Committee was alarmed to learn of the magnitude of the projected increase in cost for the James Webb Space Telescope, especially since the increase is coming at a relatively early stage in the program. The Webb telescope is a top priority for the science community and enjoys wide support in Congress and with the public, but it still needs to compete against other NASA priorities. NASA needs to provide the Committee with a comprehensive plan describing how the agency plans to proceed with the program. This plan should include an explanation for the projected cost increase, a description of the actions being taken to address the cost increase, and a baseline for the program, including an explanation of any significant changes in the technical capabilities of the Webb telescope, as well as a revised schedule and projected cost.

*Sec. 102(b). Crew Exploration Vehicle (CEV) costs*

Congress needs to understand the full funding implications of building the CEV before NASA commits to this major project. That statement should not be interpreted as lack of support for the CEV, but rather as a recognition of how central CEV development will be to NASA's activities and budget in the coming years.

For that reason, before NASA enters into a CEV development contract, but after NASA has a good sense of what CEV development is likely to cost, NASA must report the expected development cost to the Committees of jurisdiction. This is not a transmittal of the development contract itself or a detailed description of a yet-to-be-signed contract. What the Committees are seeking is a realistic estimate for the total cost of the program that includes contract costs, government costs and reserves.

Along with the estimate of expected costs, the Act requires NASA to calculate two other cost estimates for the CEV based on historic experience with cost growth in relevant programs. NASA should consult the September 2004 Congressional Budget Office report, A Budgetary Analysis of NASA's New Vision for Space Exploration, in developing the cost estimates.

The Act then requires NASA to prepare new "sand charts" covering the period through 2020 that show the expected figures for NASA's primary program areas using each of the CEV cost estimates required by this subsection. All three sand charts should assume inflationary growth for NASA's total funding throughout the period.

*Sec. 102(c). Space communications*

The Committee recognizes the vital role that space communications play in current space operations for NASA, as well as other federal agencies, and the role space communications will play in future science and exploration missions. The Committee is concerned that NASA has not adequately funded plans to continue to support its users, particularly users of the Tracking and Data Relay Satellite System and the Deep Space Network. Without sufficient planning and investment NASA could find itself with limited capabilities that will not meet critical mission needs. Therefore, NASA, in consultation with relevant federal agencies, must develop and implement a long-term plan to meet all projected requirements for its space communications.

*Sec. 102(e). Joint Dark Energy Mission*

Within the last four years the discovery of dark energy has stirred tremendous excitement in the science community, yet, very little is known about this mysterious phenomenon. The Committee understands that the Department of Energy and NASA have been collaborating on concepts for a Joint Dark Energy Mission (JDEM). However, the Committee has received inconsistent and conflicting information regarding plans for JDEM. While this Act does not require the JDEM mission to be undertaken, the Committee encourages the mission because of its enormous scientific potential. The Act requires the Department of Energy and NASA to jointly submit a single report describing the status of JDEM.

*Sec. 103. Baselines and cost controls*

Section 103 is designed to help both NASA and Congress spot potential cost growth and schedule problems early in the development phase of a major program. The provision is not intended to discourage risk taking, but is meant to encourage managers to identify risks as early as possible when they are more readily managed and solutions are more easily implemented.

Under the Act, a Baseline Report is required whenever a major program completes the required reviews and is approved to proceed to implementation, as defined in NASA Procedural Requirement (NPR) 7120.5C, dated March 22, 2005. After the Baseline Report, the Act requires NASA to report on a major program through an Annual Report, which is to be provided as part of the annual agency budget submittal to the Congress, until the major program enters operation. For flight systems and ground support projects Major Program Annual Reports would be due during Phase C and D implementation, as defined in NPR 7120.5C, dated March 22, 2005.

The legislation defines development to be the phase of a program following the formulation phase and beginning with the approval to proceed to implementation and ending with the achievement of operational readiness. Therefore, in general, the provision does not apply to programs that are in the formulation phase or operational. However, programs that are in the formulation phase at the time of enactment that have contracts already in place that include the development phase, such as the James Webb Space Telescope, must submit a Baseline Report and subsequent Major Program Annual Reports in the same manner and timing as those that have already entered into development. NASA should notify the Committee as soon as possible following enactment of this Act of any other programs in the formulation phase that have contracts in place that cover any part of the development phase.

The provision defines a "major program" as an activity with a life-cycle cost estimate greater than $100 million. Such major activities include many of NASA's traditional space and ground system programs, but would also include major mission support programs, such as the Integrated Financial Management Program, and major facility construction projects if the total cost is greater than $100 million. The Committee expects that NASA will provide individual Baseline Reports and Major Program Annual Reports and not lump separate development programs together into a single program for reporting purposes under this provision. For example, NASA must not aggregate all of the Mars missions together as one Mars program. The individual Mars missions are separate development projects and should be reported as such. This same philosophy of reporting should be carried out across the agency's programs.

In the case of the International Space Station, the Committee directs NASA to submit a Baseline Report and annual updates because space station assembly is not yet complete and has not yet achieved full operational readiness. In the case of the Space Shuttle, the Committee does not require a Baseline Report or annual updates for the program as a whole, but would expect that such reports would be submitted for those development projects or upgrades that are undertaken as part of the Space Shuttle program that meet the spending threshold for a "major program."

*Sec. 104. Prizes*

The Committee encourages NASA to spur technology development through the offering of prizes. Any prize program must be conducted in accordance with this Act. NASA must work to ensure that nothing about a contest—the way the technology or activity is

described, the way winners will be judged, the judges themselves—introduces a bias.

The Act makes clear that no prize competition can be announced until the full amount of the announced prize is in hand, whether from Federal appropriations or outside funds or both. NASA may subsequently increase the announced size of the prize, but again only if the additional amount is in hand. NASA may accept private contributions toward a prize, but must make sure that there is no quid pro quo, real or apparent, with regard to private contributions, and that the contribution will not raise conflict of interest issues either in the prize program or any other NASA program.

The Act makes clear that funds appropriated for the prize competition are "no year" funds. Such funds are absolutely unavailable for any other purpose and may not be reprogrammed until at least 10 years have elapsed from the initial appropriation. Any funds reprogrammed after 10 years would be available for only two years after the reprogramming (like other NASA funds).

Under the Act, federal employees may participate in prize competitions in the same fashion as any other eligible party as long as they are not acting within the scope of their federal employment, and are abiding by all applicable Federal regulations regarding outside activities.

*Sec. 105. Use of foreign launch vehicles*

The Committee was very disturbed by the way NASA handled the use of a foreign launch vehicle, the European Ariane, for the James Webb Space Telescope. In that case, NASA basically assumed in its planning that the Ariane would be used for the Webb, and then sought approval for the rocket's use at a point when a disapproval would have created significant problems for the mission.

While the Committee recognizes the importance and the benefits of international cooperation, such cooperation should not be pursued by waiting until it is too late or too costly for the interagency coordination process to materially inform the final decision. The Committee expects NASA to initiate the interagency coordination process as early in the program as possible. Further, the Committee directs that NASA include funds for a U.S. launch vehicle in its budget for any program contemplating the use of a foreign launch vehicle until final approval to use a foreign launch vehicle has been granted.

*Sec. 106. Safety management*

The Committee acknowledges the outstanding work of the Columbia Accident Investigation Board (CAIB), headed by retired Admiral Harold W. Gehman, Jr., in evaluating both the proximate cause of the Columbia accident, as well as the management and organizational causes that contributed to the accident. The Committee also appreciates the excellent work and persistence of the Stafford-Covey Return to Flight Task Group in evaluating NASA's compliance with the CAIB recommendations. Included in those recommendations are management and organizational changes designed to improve overall system safety through increased emphasis on technical rigor and independent lines of communication in management reporting.

Many of the CAIB recommendations go beyond fixing the proximate cause of the Columbia accident, and will require ongoing evaluation and oversight. Indeed, NASA has decided to have the new Independent Technical Authority work on projects agency-wide, and the Committee applauds that decision. The Committee is therefore increasing the role of the Aerospace Safety Advisory Panel to include continuing evaluation of NASA's compliance with the CAIB's return-to-flight and continue-to-fly recommendations.

*Sec. 201. Budgetary structure*

The Act establishes a budgetary structure for NASA for fiscal year 2007 and thereafter that consists of the following four appropriation accounts: "Science, Aeronautics, and Education," "Exploration Systems," "Space Operations," and "Inspector General".

The Science, Aeronautics, and Education appropriation account shall include all of the programs in the current Science (including both space science and earth science), Aeronautics, and Education lines proposed in the fiscal year 2006 request, except that the Robotic Lunar Exploration Program shall be transferred to the Exploration Systems appropriation account, as NASA has proposed.

The Exploration Systems appropriation account shall include all programs currently in the Exploration Systems line in the fiscal year 2006 budget request, as well as the Robotic Lunar Exploration Program, the Space and Flight Support line and the ISS Crew and Cargo services line, which are transferred from the Space Operations account.

The Space Operations appropriation account shall consist of the International Space Station and Space Shuttle programs only.

*Secs. 202 and 203. Authorizations*

The Act authorizes $6,870,200,000 for fiscal year 2006 for Science, Aeronautics and Education, which includes $962,000,000 for aeronautics, an increase of $109,700,000 over the request, but flat funding with fiscal year 2005, based on the most recent Operating Plan. The account also includes $150,000,000 for a Hubble servicing mission, which was not included in the request. And the account includes $24,000,000 for the Space Grant College and Fellowship Program. The Act does not specify how money should be allocated within the account beyond those breakouts. In calculating the authorization levels in the account for fiscal year 2006, the Committee assumed that money would be needed above the requested level to begin addressing projected cost increases for the Webb Space Telescope, as well as to provide additional funding to restore the Glory mission as suggested in the report accompanying the House appropriation for NASA.

For fiscal year 2007, the bill provides $7,331,600,000. Again the Act does not specify breakdowns beyond those in subparagraphs (A) and (B). The Committee's assumptions included providing funding above the requested level for a Hubble servicing mission, the Webb Space Telescope, Glory and the Global Precipitation Mission.

The Act does not provide any breakdown of funding within the Exploration Systems account because NASA is still determining the details and funding for the programs in that account. The Act makes clear that development of the CEV is the highest priority in the account. The Committee believes that nuclear power may even-

tually be required for long duration human missions on the surface of the Moon, but is not critical to returning humans to the Moon by 2020.

The Committee, therefore, believes that Project Prometheus is a lower priority for the near-term than technologies necessary to return to the Moon.

The authorizations for Space Operations (which includes only Space Shuttle and ISS funding) and the Inspector General are at the requested levels.

The Committee supports the Administrator's general philosophy of handling budget shortfalls by cutting or eliminating lower-priority programs rather than reducing all programs. As the CAIB pointed out, for too long, NASA and the Congress have attempted to do too much within a constrained NASA budget.

*Sec. 205. Test facilities*

The Committee is concerned that NASA's implementation of full cost accounting to calculate charges for use of its facilities, including wind tunnels and other testing facilities, has driven many traditional commercial customers to overseas facilities. The Committee strongly believes that the current full cost pricing policy is counterproductive to U.S. interests. Therefore, the Committee directs NASA to adopt a pricing policy that is competitive, and to establish a test facilities funding account that the agency can use to supplement receipts from commercial and other users.

*Sec. 206. Proportionality*

This section includes standard authorizing language describing how to calculate the authorization levels in the paragraphs and subparagraphs in sections 202 and 203, if appropriated levels for the agency as a whole are lower than authorized. The recalculated authorization levels are the ones on which the limitation in section 207 would apply.

*Secs. 207 and 208. Operating plans*

In keeping with these sections, the Committee directs NASA to transmit any Operating Plan to the authorizing Committees at the same time as the transmittal to the appropriations Committees.

*Sec. 301. Performance assessments*

The Committee intends the term "discipline" to mean astronomy and astrophysics, planetary and lunar exploration, solar and space physics, earth science, microgravity research, space biology and medicine, and the origins and evolution of life.

*Sec. 302. Hubble Space Telescope*

The Hubble Space Telescope is a national treasure. The Committee concurs with the Administrator's decision to move forward with the planning of a Hubble servicing mission while waiting until completion of the two space shuttle test flights to determine whether a Shuttle servicing mission can be accomplished with reasonable safety.

*Sec. 304. Assessment of science missions*

The Committee notes that the reporting requirement in this section applies only to the nine missions identified in subsection (a)(1), and assumes that the assessment of these missions will be contained within a single report.

*Sec. 306. Coordination with the National Oceanic and Atmospheric Administration (NOAA)*

NASA and NOAA have complementary responsibilities and must work together more closely to ensure that both agencies' missions are accomplished in the most efficient manner. The Committee is pleased that the agencies are setting up a Joint Working Group, an effort to deal with issues that the National Academy of Sciences had recommended handling through a new Interagency Transition Office.

NASA and NOAA must cooperate through all phases of related missions. They cannot wait, for example, until a NASA mission is about to end to determine whether NOAA has an interest in seeing the mission continue or in adapting its technology to a NOAA mission. Similarly, NASA cannot simply assume that NOAA can offer a platform for a NASA instrument. The Committee will scrutinize closely the reports transmitted under subsection (b) to ensure that coordination is adequate.

*Subtitle B of Title III. Remote Sensing Applications Act of 2005*

The text of the subtitle is identical to H.R. 426, the Remote Sensing Applications Act of 2005, as reported by the Committee on May 17, 2005, except that it does not include any authorization levels for funding. The Committee report for H.R. 426 is House Report 109–157.

*Subtitle C of Title III. George E. Brown, Jr. Near-Earth Object Survey Act of 2005*

The text of the subtitle is nearly identical to H.R. 1022, the George E. Brown, Jr. Near-Earth Object Survey, as reported by the Committee on May 17, 2005, except that it does not include any authorization levels for funding. The Committee report for H.R. 1022 is House Report 109–158.

*Sec. 502. Architecture plan*

The human exploration plan required by this section may have milestones. However, the plan should be sufficiently robust and flexible that if the milestones begin to slip for any reason, the entire program would not have to be significantly altered or scrapped.

*Sec. 613. Charles "Pete Conrad" Astronomy Awards Act of 2005*

The text of the section is identical to H.R. 1023, the Charles "Pete Conrad" Astronomy Awards, as reported by the Committee on March 17, 2005 and passed by the House on May 10, 2005, except that it does not include any authorization of funding. The Committee report for H.R. 1023 is House Report 109–37.

*Sec. 614. Review of education programs*

The Committee is concerned that there has been scant review of the productivity of NASA's education programs, particularly those

at the K–12 level. Therefore, the Committee is requiring a review by the National Academy of Sciences of the efficacy of the agency's education programs. The review should examine which programs are most successful and why, and which programs are not having an impact and why.

The Committee expects all future NASA education program grants to include an evaluation component as part of the grant. That is, some of the grant funds should be set-aside for an independent evaluation of the success of the particular project.

*Sec. 705. Limitations on off-shore contracts*

The limitations on the performance of off-shore contracts in section 705 do not apply to international barter arrangements, such as the agreements with the international partners on the International Space Station.

## IX. Cost Estimate

Due to time constraints, neither a cost estimate and comparison prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act of 1974, nor a statement required by section 308(a) of the Congressional Budget Act of 1974 were included in the report as required by House rule XIII, clauses 3(c)(2) and (3). When received by the Committee they will appear in the Congressional Record.

## X. Congressional Budget Office Cost Estimate

The Committee believes that H.R. 3070 will not increase direct spending. In addition, the authorization level in H.R. 3070 for fiscal year 2006 is identical to that for the National Aeronautics and Space Administration in H.R. 2862, the Fiscal Year 2006 Science, State, Justice, Commerce, and Related Agencies Appropriations Act, as approved on June 16, 2005 by the House of Representatives. The legislation's authorization level for fiscal year 2007 is identical to that proposed for the National Aeronautics and Space Administration for fiscal year 2007 in the President's Budget Request for Fiscal Year 2006.

## XI. Compliance With Public Law 104–4 (Unfunded Mandates)

H.R. 3070 contains no unfunded mandates.

## XII. Committee Oversight Findings and Recommendations

The Committee on Science's oversight findings and recommendations are reflected in the body of this report.

## XIII. Statement on General Performance Goals and Objectives

Pursuant to rule XIII, clause 3(c)(4) of the House of Representatives the general performance goals and objectives of H.R. 3070 are to authorize the human space flight, aeronautics, and science programs of the National Aeronautics and Space Administration.

## XIV. Constitutional Authority Statement

Article I, section 8 of the Constitution of the United States grants Congress the authority to enact H.R. 3070.

## XV. Federal Advisory Committee Statement

The functions of the advisory committee authorized in H.R. 3070 are not currently being nor could they be performed by one or more agencies or by enlarging the mandate of another existing advisory committee.

## XVI. Congressional Accountability Act

The Committee finds that H.R. 3070 does not relate to the terms and conditions of employment or access to public services or accommodations within the meaning of section 102(b)(3) of the Congressional Accountability Act (Public Law 104–1).

## XVII. Statement on Preemption of State, Local, or Tribal Law

This bill is not intended to preempt any State, local, or tribal law.

## XVIII. Changes in Existing Law Made by the Bill, as Reported

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

**NATIONAL AERONAUTICS AND SPACE ACT OF 1958**

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TITLE I—SHORT TITLE, DECLARATION OF POLICY, AND DEFINITIONS

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DECLARATION OF POLICY AND PURPOSE

SEC. 102. (a) * * *

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*(g) The Congress declares that the general welfare and security of the United States require that the unique competence of the National Aeronautics and Space Administration be directed to detecting, tracking, cataloguing, and characterizing near-Earth asteroids and comets in order to provide warning and mitigation of the potential hazard of such near-Earth objects to the Earth.*

**[**(g)**]** *(h)* It is the purpose of this Act to carry out and effectuate the policies declared in subsections (a), (b), (c), (d), (e), **[**and (f)**]** *(f), and (g).*

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## TITLE III—MISCELLANEOUS

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EXPERIMENTAL AEROSPACE VEHICLE

SEC. 309. (a) * * *

* * * * * * *

(f) TERMINATION.—

(1) IN GENERAL.—The provisions of this section shall terminate on [December 31, 2002, except that the Administrator may extend the termination date to a date not later than September 30, 2005] *December 31, 2010, except that the Administrator may extend the termination date to a date not later than September 30, 2015, if the Administrator has entered into an arrangement with the National Academy of Public Administration to determine the impact on private parties and the Federal Government of eliminating this section*, if the Administrator determines that such extension is in the interests of the United States.

* * * * * * *

[FULL COST APPROPRIATIONS ACCOUNT STRUCTURE

[SEC. 313. (a) Appropriations for the Administration for fiscal year 2005 and thereafter shall be made in three accounts, "Exploration capabilities", "Science, aeronautics and exploration", and an account for amounts appropriated for the necessary expenses of the Office of Inspector General. Appropriations shall remain available for 2 fiscal years. Each account shall include the planned full costs of the Administration's related activities.

[(b) To ensure the safe, timely, and successful accomplishment of Administration missions, the Administration may transfer amounts for Federal salaries and benefits; training, travel and awards; facility and related costs; information technology services; publishing services; science, engineering, fabricating and testing services; and other administrative services among accounts, as necessary.

[(c) The unexpired balances of prior appropriations to the Administration for activities authorized under this Act may be transferred to the new account established for such activity in subsection (a). Balances so transferred may be merged with funds in the newly established account and thereafter may be accounted for as one fund under the same terms and conditions.]

***SEC. 313. BUDGETARY ACCOUNTS.***

*Appropriations for the Administration for fiscal year 2007 and thereafter shall be made in four accounts, "Science, Aeronautics, and Education", "Exploration Systems", "Space Operations", and an account for amounts appropriated for the necessary expenses of the Office of the Inspector General. Appropriations shall remain available for two fiscal years, unless otherwise specified in law. Each account shall include the planned full costs of Administration activities.*

*PRIZE AUTHORITY*

*SEC. 314. (a) IN GENERAL.—The Administration may carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of the space and aeronautical activities of the Administration. The Administration may carry out a program to award prizes only in conformity with this section.*

*(b) TOPICS.—In selecting topics for prize competitions, the Administrator shall consult widely both within and outside the Federal Government, and may empanel advisory committees.*

*(c) ADVERTISING.—The Administrator shall widely advertise prize competitions to encourage participation.*

*(d) REQUIREMENTS AND REGISTRATION.—For each prize competition, the Administrator shall publish a notice in the Federal Register announcing the subject of the competition, the rules for being eligible to participate in the competition, the amount of the prize, and the basis on which a winner will be selected.*

*(e) ELIGIBILITY.—To be eligible to win a prize under this section, an individual or entity—*

*(1) shall have registered to participate in the competition pursuant to any rules promulgated by the Administrator under subsection (d);*

*(2) shall have complied with all the requirements under this section;*

*(3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and*

*(4) shall not be a Federal entity or Federal employee acting within the scope of their employment.*

*(f) LIABILITY.—(1) Registered participants must agree to assume any and all risks and waive claims against the United States Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise. For the purposes of this subparagraph, the term "related entity" means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.*

*(2) Participants must obtain liability insurance or demonstrate financial responsibility in amounts to compensate for the maximum probable loss, as determined by the Administrator, from claims by—*

*(A) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant's insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and*

*(B) the United States Government for damage or loss to Government property resulting from such an activity.*

*(g) JUDGES.—For each competition, the Administration, either directly or through a contract under subsection (h), shall assemble a panel of qualified judges from both within and outside the Administration to select the winner or winners of the prize competition on the basis described pursuant to subsection (d). Judges for each competition shall include individuals from the private sector. A judge may not—*

*(1) have personal or financial interests in, or be employees, officers, directors, or agents of, any entity that is a registered participant in a competition; or*

*(2) have a familial or financial relationship with an individual who is a registered participant.*

*(h) ADMINISTERING THE COMPETITION.—The Administrator may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this section.*

*(i) FUNDING.—(1) The Administrator may accept funds from other Federal agencies and from the private sector for cash prizes under this section. Such funds shall not increase the amount of a prize after the amount has been announced pursuant to subsection (d). The Administrator may not give any special consideration to any private sector entity in return for a donation.*

*(2) Funds appropriated for the program under this section shall remain available until expended, and may be transferred, reprogrammed, or expended for other purposes only after the expiration of 10 fiscal years after the fiscal year for which the funds were originally appropriated. No provision in this section permits obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. 1341).*

*(3) No prize may be announced under subsection (d) until all the funds for that prize have been appropriated or obligated for such purpose by a private sector source.*

*(4) No prize competition under this section may offer a prize in an amount greater than $10,000,000 unless 30 days have elapsed after written notice has been provided to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.*

*(j) USE OF NASA NAME AND INSIGNIA.—A registered participant in a competition under this section may use the Administration's name, initials, or insignia only after prior review and written approval by the Administration.*

*(k) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and nonproliferation laws, and related regulations.*

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*RETROCESSION OF JURISDICTION*

*SEC. 316. (a) Notwithstanding any other provision of law, the Administrator may relinquish to a State all or part of the legislative jurisdiction of the United States over lands or interests under the control of the Administrator in that State.*

*(b) For purposes of this section, the term "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, Guam, American Samoa, the Northern Mariana Islands, and any other commonwealth, territory, or possession of the United States.*

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## SECTION 6 OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT, 1968

SEC. 6. *(a) IN GENERAL.*—There is hereby established an Aerospace Safety Advisory Panel consisting of a maximum of nine members who shall be appointed by the Administrator for terms of six years each. The Panel shall review safety studies and operations [plans referred to it] *plans referred to it, including evaluating the National Aeronautics and Space Administration's compliance with the return-to-flight and continue-to-fly recommendations of the Columbia Accident Investigation Board,* and shall make reports thereon, shall advise the Administrator *and the Congress* with respect to the hazards of proposed or existing facilities and proposed operations [and with respect to the adequacy of proposed or existing safety standards and shall], *with respect to the adequacy of proposed or existing safety standards, and with respect to management and culture. The Panel shall also* perform such other duties as the Administrator may request. One member shall be designated by the Panel as its Chairman. Members of the Panel who are officers or employees of the Federal Government shall receive no compensation for their services as such, but shall be allowed necessary travel expenses (or in the alternative, mileage for use of privately owned vehicles and a per diem in lieu of subsistence not to exceed the rates and amounts prescribed in 5 U.S.C. 5702, 5704), and other necessary expenses incurred by them in the performance of duties vested in the Panel, without regard to the provisions of subchapter I, chapter 57 of title 5 of the United States Code, the Standardized Government Travel Regulations, or 5 U.S.C. 5731. Members of the Panel appointed from outside the Federal Government shall each receive compensation at a rate not to exceed the per diem rate equivalent to the rate for GS–18 for each day such member is engaged in the actual performance of duties vested in the Panel in addition to reimbursement for travel, subsistence, and other necessary expenses in accordance with the provisions of the foregoing sentence. Not more than four such members shall be chosen from among the officers and employees of the National Aeronautics and Space Administration.

*(b) ANNUAL REPORT.—The Panel shall submit an annual report to the Administrator and to the Congress. In the first annual report submitted after the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2005, the Panel shall include an evaluation of the Administration's safety management culture. Each annual report shall include an evaluation of the Administration's compliance with the recommendations of the Columbia Accident Investigation Board.*

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## NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2000

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# TITLE II—INTERNATIONAL SPACE STATION

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**[SEC. 202. COST LIMITATION FOR THE INTERNATIONAL SPACE STATION.**

[(a) LIMITATION OF COSTS.—

[(1) IN GENERAL.—Except as provided in subsections (c) and (d), the total amount obligated by the National Aeronautics and Space Administration for—

[(A) costs of the International Space Station may not exceed $25,000,000,000; and

[(B) space shuttle launch costs in connection with the assembly of the International Space Station may not exceed $17,700,000,000.

[(2) CALCULATION OF LAUNCH COSTS.—For purposes of paragraph (1)(B)—

[(A) not more than $380,000,000 in costs for any single space shuttle launch shall be taken into account; and

[(B) if the space shuttle launch costs taken into account for any single space shuttle launch are less than $380,000,000, then the Administrator shall arrange for a verification, by the General Accounting Office, of the accounting used to determine those costs and shall submit that verification to the Congress within 60 days after the date on which the next budget request is transmitted to the Congress.

[(b) COSTS TO WHICH LIMITATION APPLIES.—

[(1) DEVELOPMENT COSTS.—The limitation imposed by subsection (a)(1)(A) does not apply to funding for operations, research, or crew return activities subsequent to substantial completion of the International Space Station.

[(2) LAUNCH COSTS.—The limitation imposed by subsection (a)(1)(B) does not apply—

[(A) to space shuttle launch costs in connection with operations, research, or crew return activities subsequent to substantial completion of the International Space Station;

[(B) to space shuttle launch costs in connection with a launch for a mission on which at least 75 percent of the shuttle payload by mass is devoted to research; nor

[(C) to any additional costs incurred in ensuring or enhancing the safety and reliability of the space shuttle.

[(3) SUBSTANTIAL COMPLETION.—For purposes of this subsection, the International Space Station is considered to be substantially completed when the development costs comprise 5 percent or less of the total International Space Station costs for the fiscal year.

[(c) NOTICE OF CHANGES TO SPACE STATION COSTS.—The Administrator shall provide with each annual budget request a written

notice and analysis of any changes under subsection (d) to the amounts set forth in subsection (a) to the Senate Committees on Appropriations and on Commerce, Science, and Transportation and to the House of Representatives Committees on Appropriations and on Science. In addition, such notice may be provided at other times, as deemed necessary by the Administrator. The written notice shall include—

[(1) an explanation of the basis for the change, including the costs associated with the change and the expected benefit to the program to be derived from the change;

[(2) an analysis of the impact on the assembly schedule and annual funding estimates of not receiving the requested increases; and

[(3) an explanation of the reasons that such a change was not anticipated in previous program budgets.

[(d) FUNDING FOR CONTINGENCIES.—

[(1) NOTICE REQUIRED.—If funding in excess of the limitation provided for in subsection (a) is required to address the contingencies described in paragraph (2), then the Administrator shall provide the written notice required by subsection (c). In the case of funding described in paragraph (3)(A), such notice shall be required prior to obligating any of the funding. In the case of funding described in paragraph (3)(B), such notice shall be required within 15 days after making a decision to implement a change that increases the space shuttle launch costs in connection with the assembly of the International Space Station.

[(2) CONTINGENCIES.—The contingencies referred to in paragraph (1) are the following:

[(A) The lack of performance or the termination of participation of any of the International countries party to the Intergovernmental Agreement.

[(B) The loss or failure of a United States-provided element during launch or on-orbit.

[(C) On-orbit assembly problems.

[(D) New technologies or training to improve safety on the International Space Station.

[(E) The need to launch a space shuttle to ensure the safety of the crew or to maintain the integrity of the station.

[(3) AMOUNTS.—The total amount obligated by the National Aeronautics and Space Administration to address the contingencies described in paragraph (2) is limited to—

[(A) $5,000,000,000 for the International Space Station; and

[(B) $3,540,000,000 for the space shuttle launch costs in connection with the assembly of the International Space Station.

[(e) REPORTING AND REVIEW.—

[(1) IDENTIFICATION OF COSTS.—

[(A) SPACE SHUTTLE.—As part of the overall space shuttle program budget request for each fiscal year, the Administrator shall identify separately—

[(i) the amounts of the requested funding that are to be used for completion of the assembly of the International Space Station; and

[(ii) any shuttle research mission described in subsection (b)(2).

[(B) INTERNATIONAL SPACE STATION.—As part of the overall International Space Station budget request for each fiscal year, the Administrator shall identify the amount to be used for development of the International Space Station.

[(2) ACCOUNTING FOR COST LIMITATIONS.—As part of the annual budget request to the Congress, the Administrator shall account for the cost limitations imposed by subsection (a).

[(3) VERIFICATION OF ACCOUNTING.—The Administrator shall arrange for a verification, by the General Accounting Office, of the accounting submitted to the Congress within 60 days after the date on which the budget request is transmitted to the Congress.

[(4) INSPECTOR GENERAL.—Within 60 days after the Administrator provides a notice and analysis to the Congress under subsection (c), the Inspector General of the National Aeronautics and Space Administration shall review the notice and analysis and report the results of the review to the committees to which the notice and analysis were provided.]

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# TITLE III—MISCELLANEOUS

**SEC. 301. REQUIREMENT FOR INDEPENDENT COST ANALYSIS.**

(a) REQUIREMENT.—Before any funds may be obligated for [Phase B] *implementation* of a project that is projected to cost more than [$150,000,000] *$250,000,000* in total project costs, the [Chief Financial Officer] *Administrator* for the National Aeronautics and Space Administration shall conduct *and consider* an independent life-cycle cost analysis of such project and shall report the results to Congress. In developing cost accounting and reporting standards for carrying out this section, the [Chief Financial Officer] *Administrator* shall, to the extent practicable and consistent with other laws, solicit the advice of expertise outside of the National Aeronautics and Space Administration.

[(b) DEFINITION.—For purposes of this section, the term "Phase B" means the latter stages of project formulation, during which the final definition of a project is carried out and before project implementation (which includes the Design, Development, and Operations Phases) begins.]

*(b) IMPLEMENTATION DEFINED.—In this section, the term "implementation" means all activity in the life cycle of a project after preliminary design, independent assessment of the preliminary design, and approval to proceed into implementation, including critical design, development, certification, launch, operations, disposal of as-*

*sets, and, for technology programs, development, testing, analysis and communication of the results.*

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## DEPARTMENTS OF VETERANS AFFAIRS AND HOUSING AND URBAN DEVELOPMENT, AND INDEPENDENT AGENCIES APPROPRIATIONS ACT, 1990

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### TITLE III

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### NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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#### SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS

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#### ADMINISTRATIVE PROVISIONS

#### SMALL AND DISADVANTAGED BUSINESS

The NASA Administrator shall annually establish a goal of at least 8 per centum of the total value of prime and subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained, which funds will be made available to small business concerns or other organizations owned or controlled by socially and economically disadvantaged individuals (within the meaning of section 8(a) (5) and (6) of the Small Business Act (15 U.S.C. 637(a) (5) (6)), including [Historically Black Colleges and Universities and] *Historically Black Colleges and Universities that are part B institutions (as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2))), Hispanic-serving institutions (as defined in section 502(a)(5) of that Act (20 U.S.C. 1101a(a)(5))), Tribal Colleges or Universities (as defined in section 316(b)(3) of that Act (20 U.S.C. 1059c(b)(3))), Alaskan Native-serving institutions (as defined in section 317(b)(2) of that Act (20 U.S.C. 1059d)(b)(2))), Native Hawaiian-serving institutions (as defined in section 317(b)(4) of that Act (20 U.S.C. 1059d(b)(4))), and* minority educational institutions (as defined by the Secretary of Education pursuant to the General Education Provisions Act (20 U.S.C. 1221 et seq.)).

To facilitate progress in reaching this goal, the NASA Administrator shall submit within one year from enactment of this Act a plan describing the process to be followed to achieve the prescribed level of participation in the shortest practicable time.

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## SECTION 9809 OF TITLE 5, UNITED STATES CODE

### § 9809. Science and technology scholarship program

(a)(1) * * *

(2) Individuals shall be selected to receive scholarships under this section through a competitive process primarily on the basis of academic merit, with consideration given to financial need and the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act *(42 U.S.C. 1885a or 1885b)*.

* * * * * * *

(c) An individual seeking a scholarship under this section shall submit an application to the Administrator at such time, in such manner, and containing such information, agreements, or assurances as the Administrator may require *to carry out this section*.

* * * * * * *

(f)(1) The period of service for which an individual shall be obligated to serve as an employee of the Administration is, except as provided in subsection (h)(2), 24 months for each academic year for which a scholarship under this section is provided. **[**Under no circumstances shall the total period of obligated service be more than 4 years.**]**

* * * * * * *

(g)(1) * * *

(2) Scholarship recipients who, for any reason, fail to begin or complete their service obligation after completion of academic training, or fail to comply with the terms and conditions of deferment established by the Administrator pursuant to subsection (f)(2)(B), shall be in breach of their contractual agreement. When recipients breach their agreements for the reasons stated in the preceding sentence, the recipient shall be liable to the United States for an amount equal to—

(A) * * *

(B) the interest on the amounts of such awards which would be payable if at the time the awards were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the **[**Treasurer of the United States, multiplied by 3**]** *Treasurer of the United States*.

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## Section 703 of the Vision 100—Century of Aviation Reauthorization Act

**[SEC. 703. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION SCIENCE AND TECHNOLOGY SCHOLARSHIP PROGRAM.**

**[**(a)(1) The Administrator of the National Aeronautics and Space Administration shall establish a National Aeronautics and Space Administration Science and Technology Scholarship Program to award scholarships to individuals that is designed to recruit and prepare students for careers in the National Aeronautics and Space Administration.

**[**(2) Individuals shall be selected to receive scholarships under this section through a competitive process primarily on the basis of academic merit, with consideration given to financial need and the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act.

[(3) To carry out the Program the Administrator shall enter into contractual agreements with individuals selected under paragraph (2) under which the individuals agree to serve as full-time employees of the National Aeronautics and Space Administration, for the period described in subsection (f)(1), in positions needed by the National Aeronautics and Space Administration and for which the individuals are qualified, in exchange for receiving a scholarship.

[(b) In order to be eligible to participate in the Program, an individual must—

[(1) be enrolled or accepted for enrollment as a full-time student at an institution of higher education, as a junior or senior undergraduate or graduate student, in an academic field or discipline described in the list made available under subsection (d);

[(2) be a United States citizen or permanent resident; and

[(3) at the time of the initial scholarship award, not be an employee (as defined in section 2105 of title 5, United States Code).

[(c) An individual seeking a scholarship under this section shall submit an application to the Administrator at such time, in such manner, and containing such information, agreements, or assurances as the Administrator may require.

[(d) The Administrator shall make publicly available a list of academic programs and fields of study for which scholarships under the Program may be utilized and shall update the list as necessary.

[(e)(1) The Administrator may provide a scholarship under the Program for an academic year if the individual applying for the scholarship has submitted to the Administrator, as part of the application required under subsection (c), a proposed academic program leading to a degree in a program or field of study on the list made available under subsection (d).

[(2) An individual may not receive a scholarship under this section for more than 4 academic years, unless the Administrator grants a waiver.

[(3) The dollar amount of a scholarship under this section for an academic year shall be determined under regulations issued by the Administrator, but shall in no case exceed the cost of attendance.

[(4) A scholarship provided under this section may be expended for tuition, fees, and other authorized expenses as established by the Administrator by regulation.

[(5) The Administrator may enter into a contractual agreement with an institution of higher education under which the amounts provided for a scholarship under this section for tuition, fees, and other authorized expenses are paid directly to the institution with respect to which the scholarship is provided.

[(f)(1) The period of service for which an individual shall be obligated to serve as an employee of the National Aeronautics and Space Administration is, except as provided in subsection (h)(2), 24 months for each academic year for which a scholarship under this section is provided.

[(2)(A) Except as provided in subparagraph (B), obligated service under paragraph (1) shall begin not later than 60 days after the individual obtains the educational degree for which the scholarship was provided.

[(B) The Administrator may defer the obligation of an individual to provide a period of service under paragraph (1) if the Administrator determines that such a deferral is appropriate. The Administrator shall prescribe the terms and conditions under which a service obligation may be deferred through regulation.

[(g)(1) Scholarship recipients who fail to maintain a high level of academic standing, as defined by the Administrator by regulation, who are dismissed from their educational institutions for disciplinary reasons, or who voluntarily terminate academic training before graduation from the educational program for which the scholarship was awarded, shall be in breach of their contractual agreement and, in lieu of any service obligation arising under such agreement, shall be liable to the United States for repayment within 1 year after the date of default of all scholarship funds paid to them and to the institution of higher education on their behalf under the agreement, except as provided in subsection (h)(2). The repayment period may be extended by the Administrator when determined to be necessary, as established by regulation.

[(2) Scholarship recipients who, for any reason, fail to begin or complete their service obligation after completion of academic training, or fail to comply with the terms and conditions of deferment established by the Administrator pursuant to subsection (f)(2)(B), shall be in breach of their contractual agreement. When recipients breach their agreements for the reasons stated in the preceding sentence, the recipient shall be liable to the United States for an amount equal to—

[(A) the total amount of scholarships received by such individual under this section; plus

[(B) the interest on the amounts of such awards which would be payable if at the time the awards were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States,

multiplied by 3.

[(h)(1) Any obligation of an individual incurred under the Program (or a contractual agreement thereunder) for service or payment shall be canceled upon the death of the individual.

[(2) The Administrator shall by regulation provide for the partial or total waiver or suspension of any obligation of service or payment incurred by an individual under the Program (or a contractual agreement thereunder) whenever compliance by the individual is impossible or would involve extreme hardship to the individual, or if enforcement of such obligation with respect to the individual would be contrary to the best interests of the Government.

[(i) For purposes of this section—

[(1) the term "cost of attendance" has the meaning given that term in section 472 of the Higher Education Act of 1965;

[(2) the term "institution of higher education" has the meaning given that term in section 101(a) of the Higher Education Act of 1965; and

[(3) the term "Program" means the National Aeronautics and Space Administration Science and Technology Scholarship Program established under this section.

[(j)(1) There is authorized to be appropriated to the National Aeronautics and Space Administration for the Program $10,000,000 for each fiscal year.

[(2) Amounts appropriated under this section shall remain available for 2 fiscal years.

[(k) The Administrator may provide temporary internships to full-time students enrolled in an undergraduate or post-graduate program leading to an advanced degree in an aerospace-related or aviation safety-related field of endeavor.]

## XIX. Committee Recommendations

On July 14, 2005 a quorum being present, the Committee on Science favorably reported H.R. 3070, National Aeronautics and Space Administration Act of 2005, as amended, by a voice vote, and recommended its enactment.

## XX. ADDITIONAL VIEWS

The Administration has made outsourcing of federal jobs a priority through its aggressive implementation of OMB Circular A–76. The continued trends of increased outsourcing of jobs overseas and the decline in manufacturing jobs here in the U.S. have eroded the standard of living for many of our citizens.

The use of government spending to maintain jobs and a decent standard of living for the people who pay the taxes is one of our most important tools for promoting economic growth. My amendment, which is included as Section 705 of H.R. 3070, ensures that any federal job that is converted to a private sector job does not result in the transfer of a U.S. job to a non-U.S. job. It directs NASA to ensure that contracts are awarded to firms employing people here in the U.S. when it is possible to do so.

Unfortunately, the Majority transformed my provision from one which emphasized the protection of American jobs to one that emphasized the protection of trade agreements. Subsection (d) of Section 705, reads: "The provisions of this section shall not apply to the extent that they are inconsistent with obligations of the United States under international agreements."

I offered an amendment to strike this language that failed on a party line vote of 18 to 18. The Majority's language encourages the Administration to err on the side of protecting trade agreements at the expense of American jobs. In the balancing of interests, I believe that emphasis is exactly backwards. It is unfortunate the Majority believes that trade agreements deserve a higher level of protection than American jobs. The Majority's language is unnecessary. There is no shortage of consideration for our trade agreements. I only wish I could say the same for our manufacturing base and our workers.

JERRY F. COSTELLO.

# XXI. PROCEEDINGS OF THE MARKUP BY THE SUBCOMMITTEE ON SPACE AND AERONAUTICS ON H.R. 3070, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2005

**WEDNESDAY, JUNE 29, 2005**

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON SPACE AND AERONAUTICS,
COMMITTEE ON SCIENCE,
*Washington, DC.*

The Subcommittee met, pursuant to call, at 2:15 p.m., in Room 2318 of the Rayburn House Office Building, Hon. Ken Calvert [Chairman of the Subcommittee] presiding.

Chairman CALVERT. Good afternoon. The Committee will come to order.

Pursuant to notice, the Subcommittee on Space and Aeronautics meets to consider the following measures: H.R. 3070, the *National Aeronautics and Space Administration Authorization Act of 2005.* I ask unanimous consent for the authority to recess the Subcommittee at any point during consideration of these matters. Without objection, so ordered.

We will now proceed with the markup, beginning with the opening statement. I will begin.

Today, as the new Chairman of six months of the Space and Aeronautics Subcommittee, I am delighted to preside over today's markup of the NASA authorization bill for 2006. I also sit on the House Armed Services Committee, a committee that produces an authorizing bill every year and increasing its influence as an authorizing committee. If we want a seat at the table, we must be a part of the process. Authorizing committees need to protect and use our jurisdiction. I want to keep our committee on track in its oversight of NASA, the largest agency under the Science Committee's jurisdiction. I look forward to continuing to work with Chairman Boehlert and the Members of the Subcommittee today to get this bill on the first step of being enacted.

I have enjoyed working with Mr. Udall on all three committees on which we are Members. I look forward to working with the other Members as well, since the Committee has traditionally been very bipartisan in its outlook and efforts. I have been talking with Mr. Udall and Mr. Gordon, and I am confident that we can get a bipartisan bill out in a timely matter. It is very important to go to Full Committee markup the week of July 11 when we return from

our July 4 District work period and then to the House Floor the week of July 18. If we miss those windows, we will be forced to move during the busy fall time period when prospects for precious Floor time, as we all know, grows slimmer. Also, by the time we will trail the appropriators on conferencing our bill with the Senate.

NASA is ready to work with the provisions in our bill, and we must all know that we have a long way to go before we get a bill at the President's desk. The Senate marked up their authorization bill last week, and we are hoping to get it through the Senate Floor some time in July. We have an opportunity to get a meaningful proactive bill out this year for the first time in a long time.

Our general approach to this authorization is to get NASA back on track so we can move forward in a constructive way, giving Dr. Griffin the flexibility he needs while providing the Congress with the proper tools to perform an effective oversight. The bill represents the first time the vision for space exploration has been endorsed officially by the House of Representatives. Due to the concern from both sides of the aisle regarding the direction that the rest of NASA is proceeding, we have asked for a comparable strategic plan for aeronautics and the science programs. We have asked for these to be submitted with the fiscal year 2007 President's budget request so that in the next year's authorization we will have the information we need to do a successful oversight, construct a more prospective—or prescriptive NASA authorization.

In addition to this, we have directed NASA to develop a Human Capital Strategy to avoid any Reduction In Force or buyouts until this plan is submitted with the fiscal year 2007 President's budget request as well. NASA facilities will have a parallel study, but we will allow an additional year for the strategic plan, because this is really even more dependent on NASA's overall strategic plan.

We requested that the Director of the Office of Science and Technology Policy conduct a study to address the duplication of research and technology programs among federal agencies and whether research throughout the Federal Government presents opportunities for collaboration and how it relates to our national interests. We will also direct the OSTP to report back to Congress on the funding invested by the government in each area. We have included a cost control language that is similar to that in this year's House Armed Services Committee's Defense Authorization bill, which requires NASA to report on the Congress annually on the status of major programs. Defined as a major program, the life cycle costs greater than $100 million. In the event that a major program is expected to exceed its regional estimated development costs by 15 percent, or the schedule by more than six months, NASA is required to notify Congress. If the development costs is expected to exceed original estimated development costs by 30 percent, Congress will have to evaluate whether to continue the program at all.

The bill contains authorization for a NASA prize structure, modeled off the X–Prize that was one last year by the famed aeronautics and space engineer, Burt Rutan, and his SpaceShipOne team. We do not limit the amount of the prize, but we do require NASA to report to the Congress before offering any prize greater than $10 million.

We have a couple of other housekeeping provisions that are included in this bill as well. H.R. 1022, the George E. Brown, Jr. Near Earth Object Survey bill, that was passed previously by this Committee, and H.R. 1023, the *Charles "Pete" Conrad Astronomy Awards Act,* also previously passed by this committee. We have authorized NASA's top line of $16.471 billion as the level that the House Appropriations bill included. This is about $15 million more than the President's fiscal year 2006 request. No other funding levels for those programs are including.

I am looking forward to getting started today and taking the first step in producing a 2006 NASA authorization bill.

[The prepared statement of Chairman Calvert follows:]

PREPARED STATEMENT OF CHAIRMAN KEN CALVERT

Today, as the new Chairman of six months of the Space and Aeronautics Subcommittee, I am delighted to preside over today's markup of the NASA Authorization bill for 2006. This is nearly an historic occasion since we have only had two authorization bills since 1993—a one-year bill in 1993 and a three-year bill in 2000. I also sit on the House Armed Services Committee, a committee that produces an authorizing bill every year, and know that if we don't get a bill out each year, our relevancy as an authorizing committee is in real question. If we want a "seat at the table," we must be part of the process. If we don't exert our jurisdiction, we could be threatened with a loss of this jurisdiction. I want to get our committee back on track in its oversight of NASA, the largest agency under the Science Committee's jurisdiction. I look forward to working with the rest of the Members of the Subcommittee today to get this bill on the first step to being enacted.

I have enjoyed working with Mr. Udall on all three committees on which we are Members. I look forward to working with the other Members as well, since this committee has traditionally been very bipartisan in its outlook and efforts. I have been talking with both Mr. Udall and Mr. Gordon and am confident that we can get a bipartisan bill out in a timely manner. It is very important to go to Full Committee markup the week of July 11, when we return from our July 4 District Work Period and then to the House floor, the week of July 18. If we miss those windows, we will be forced to move during the busy fall time period when prospects for precious floor time grow slim. Also, by then we will trail the appropriators on conferencing our bill with the Senate.

NASA is ready to work with the provisions in our bill, but we all know that we have a long way to go before we get a bill to the President's desk. The Senate marked up their Authorization bill last week and is hoping to get through the Senate floor sometime in July. We have a real opportunity to get a meaningful, proactive bill out this year for the first time in a long time.

Our general approach to this authorization is to get NASA back on track so that we can move forward in a constructive way, giving Dr. Griffin the flexibility he needs while providing the Congress with the proper tools to perform effective oversight. This bill represents the first time that the Vision for Space Exploration has been endorsed officially by the House of Representatives. Due to concern from both sides of the aisle regarding the direction that the rest of NASA is proceeding, we have asked for a comparable strategic plan for aeronautics and for the science programs. We have asked for these to be submitted with the FY 2007 President's Budget Request, so that in next year's Authorization we will have the information we need to do successful oversight and to construct a more prescriptive NASA Authorization.

In addition to this, we have directed NASA to develop a Human Capital Strategy and to avoid any Reduction In Force or buyouts until this plan is submitted with the FY 2007 President's budget request as well. NASA facilities will have a parallel study, but we allow an additional year for this strategic plan because this is really even more dependent on NASA's overall strategic plan.

We have requested that the Director of the Office of Science and Technology Policy (OSTP) conduct a study to address the duplication of research and technology programs among federal agencies and whether research throughout the Federal Government presents opportunities for collaboration and how it relates to for the national interest. We also direct OSTP to report back to the Congress on the funding invested by the government in each area.

We have included cost control language that is similar to that of this year's House Armed Services Committee's Defense Authorization bill, which requires NASA to report to the Congress annually on the status of "major" programs, defined as a program with a life cycle cost greater than $100 million. In the event that a major program is expected to exceed its original estimated development cost by 15 percent or the schedule by more than six months, NASA is required to notify Congress. If the development cost is expected to exceed original estimated development cost by 30 percent, Congress will have to evaluate whether to continue the program at all.

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We have a couple of housekeeping provisions that are included in this bill as well as H.R. 1022, the *George E. Brown., Jr. Near-Earth Object Survey* bill, that was passed previously by this committee, and H.R. 1023, the *Charles "Pete" Conrad Astronomy Awards Act,* also previously passed by this committee.

We have also authorized NASA's top line at $16.471 billion as the level that the House Appropriations bill included. This is about $15 million above the President's FY 2006 request. No other funding levels for programs are included.

I am looking forward to getting started today and taking the first step in producing a 2006 NASA Authorization bill.

Chairman CALVERT. And I would like to recognize Mr. Udall for his opening remarks.

Mr. UDALL. Thank you, Mr. Chairman.

I would like to take this opportunity first to yield to the Ranking Member on the Full Committee, Mr. Gordon from Tennessee, for his remarks.

Mr. GORDON. Thank you, Mr. Udall.

I would like to take a few minutes to explain why I plan to withhold my support for H.R. 3070 at this subcommittee markup.

Before doing that, however, I would first like to commend Chairman Calvert for his commitment to enacting a NASA authorization bill this year. I am in strong agreement with him that this Committee needs to meet its legislative and oversight responsibilities with respect to NASA if we are to be relevant. And one of the fundamental ways we can do that is through the process of reauthorizing NASA's programs in space and aeronautics on a regular and timely basis. So I applaud his desire to do a NASA authorization bill. And I want to work with him and Chairman Boehlert to produce the best bill possible.

Unfortunately, the schedule we were presented with did not make it possible for Democratic Members of the Subcommittee to develop a thoughtful response to the bill in time for today's markup. As you know, the Majority did not have a draft bill ready to be shared with us, with Members, as well as the stakeholders until last Friday. In addition, we were not able to hear from NASA Administrator regarding his plans and priorities and plans until yesterday. That does not provide Members enough time to discuss and assess the Administrator's testimony. Neither does it provide adequate time for Members to develop amendments to address areas of concern in the bill.

That should not be surprising, given the fact that the Majority has informed us that it took them at least three months to develop the bill in front of us today. Given the Democrats were not included in that bill preparation effort, it is understandable that we will need some time to prepare an appropriate response. I would prefer this markup be delayed to allow thoughtful consideration of this

bill. However, I understand Chairman Calvert's interest in moving forward today. Given that, I do not plan to try to block this bill today but instead will abstain from supporting it in this subcommittee markup.

I plan to—then plan to focus my efforts on making the Full Committee's consideration of this bill a productive exercise.

Before I close, I want to make it clear that my objections to the bill before us today are not just based on concerns about process. Mr. Udall and I have serious reservations about the bill in its present form, and I will yield back to him at this point so that he can outline some of the reasons we feel that way.

Thank you.

[The prepared statement of Mr. Gordon follows:]

PREPARED STATEMENT OF REPRESENTATIVE BART GORDON

I'd like to thank Mr. Udall for yielding to me.

I would like to take a few minutes to explain why I plan to withhold my support from H.R. 3070 at this subcommittee markup.

Before doing that, however, I would first like to commend Chairman Calvert for his commitment to enacting a NASA Authorization bill this year.

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Thank you.

Mr. UDALL. Thank you, Ranking Member Gordon.

I just want to begin by expressing my agreement with the sentiments that Ranking Member Gordon shared with all of us surrounding the process issues leading up to the introduction and the markup of the bill today. I also want to associate myself with his remarks when it comes to the sentiments he has expressed toward

Chairman Calvert and Chairman Boehlert and the need to get a NASA reauthorization bill passed through the House.

But as Mr. Gordon indicated, we have some substantive concerns with the bill as well, and I hope we can address them in front of the Full Committee when we return from our recess.

And if I would, let me mention just a few of them.

First, as we have communicated to our colleagues on the Majority side, the bill fundamentally does not address the issue of ensuring there is a productive balance between NASA's core missions, that is science, aeronautics, and human space flight, including the human exploration agenda. The bill expresses the sentiment that balance is desirable, but it does nothing to make it a reality. And since it is a one-year authorization bill with just a single funding number, it lacks the funding direction provided by a traditional, multi-year authorization, such as under consideration by the Senate.

In essence, the bill provides no meaningful policy or funding guidance to NASA, with one major exception that I will mention in a minute. Nor does it provide any meaningful constraints on NASA's actions over the coming year. Basically, as long as NASA files the required reports, many of which simply codify the things that NASA provides as a part of its annual budget request, NASA can do whatever it wants to do over the coming year. Rather than providing policy guidance to NASA, the bill simply asks NASA to tell us what they want to do.

There is one area, however, where the bill does lay out crisp policy guidance. Namely, it codifies in the law the major milestones of the President's exploration initiative. You might ask why does that matter. Well, in the absence of any other binding provisions in the bill to maintain a balance among NASA's core missions, a provision that directs NASA to return humans to the Moon by 2020, for example, has the effect of making that the Agency's highest priority. And NASA would be perfectly justified in interpreting that provision as a license, indeed, an imperative, to take money from NASA's other activities, if necessary, to ensure that that deadline is met.

That is not my idea of either a go-as-you-can-pay or a balanced approach to exploration, but that is what this bill would have NASA do.

There are other major concerns, but in the interest of time, I will save most of them for another day. Instead, I would just note that the bill does not include any of the provisions of H.R. 2358, the *Aeronautics R&D Revitalization Act,* a bill that I and a group of bipartisan co-sponsors believe is urgently needed to address the crisis in aeronautics facing our Nation. I find this omission to be troubling and intend to work for its inclusion in the final version of the NASA bill.

I hope my comments provide some insight on the decision by Mr. Gordon and me to withhold our support for this bill in its current form. NASA is of crucial importance to the Nation, and I know that we can work together to craft a bill that will seriously address the issues facing the Agency.

Thank you, Mr. Chairman, and I would yield back the time that I do not have remaining.

[The prepared statement of Mr. Udall follows:]

PREPARED STATEMENT OF REPRESENTATIVE MARK UDALL

Thank you. I want to express my agreement with the sentiments expressed by Ranking Member Gordon regarding the process issues surrounding this bill.

However, as he has indicated, we also have some substantive concerns with the bill before us today.

These are concerns that I hope that we will be able to address when this bill is marked up by the Full Committee.

Let me mention just a few of them.

First, as we have communicated to our colleagues on the Majority side, this bill fundamentally does not address the issue of ensuring that a productive balance is maintained between NASA's core missions—science, aeronautics, and human space flight—including human exploration.

The bill expresses the sentiment that such a balance is desirable, but does nothing to make it a reality.

And since it is a one-year authorization bill with just a single funding number, it lacks the funding direction provided by a more traditional multi-year authorization, such is under consideration by the Senate.

In essence, the bill provides no meaningful policy or funding guidance to NASA with one major exception that I will mention in a minute, nor does it provide any meaningful constraints on NASA's actions over the coming year.

Basically, as long as NASA files the required reports—many of which simply codify things that NASA provides as part of its annual budget request—NASA can do whatever it wants to do over the coming year.

Rather than providing policy guidance to NASA, this bill simply asks NASA to tell us what they want to do.

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Well, in the absence of any other binding provisions in the bill to maintain a balance among NASA's core missions, a provision that directs NASA to return humans to the Moon by 2020, for example, has the effect of making that the Agency's highest priority.

And NASA would be perfectly justified in interpreting that provision as a license—indeed an imperative—to take money from NASA's other activities if necessary to ensure that that deadline is meant.

That's not my idea of either a "go-as-you-can-pay" or a "balanced" approach to exploration—but that's what this bill would have NASA do.

There are other major concerns, but in the interests of time I will save most of them for another day.

Instead, I would just note that the bill does not include any of the provisions of H.R. 2358, the *Aeronautics R&D Revitalization Act*—a bill that I and a group of bipartisan co-sponsors believe is urgently needed to address the crisis in aeronautics that is facing this nation.

I find this omission to be troubling and intend to work for its inclusion in the final version of the NASA bill.

Well, I hope my comments provide some insight into the decision by Mr. Gordon and me to withhold our support for this bill in its current form.

NASA is important to the Nation.

I hope we can work together to craft a bill that will seriously address the issues facing the Agency.

Chairman CALVERT. I thank the gentleman for his comments and look forward to working with him and Mr. Gordon in the coming days to have a successful bill.

And at this time, I would like to recognize the Chairman of the Full Committee, Mr. Boehlert.

Chairman BOEHLERT. Thank you very much, Mr. Calvert.

First of all, let me start by commending you. You have seized this opportunity in your new chairmanship of this very important subcommittee in a very responsible and professional way, and you are providing some really good leadership, and I thank you for that

on behalf of the entire Committee, on both sides of the aisle, I might add. I think I can speak for my colleagues.

And like Ranking Member Gordon, I, too, want a thoughtful response to the issue. And like Mr. Udall, with whom I team on a number of issues, I, too, seek a productive balance. But it should come as no surprise that we are at this point. We have been talking for over a year on reauthorizing NASA, and we have been working toward that objective. I would assume, and I think it is fair to assume this, but there has been ongoing dialogue Member to Member, staff to staff about the subject in general. Now we are getting down to the specifics, and we have provided something that is on the table for consideration, and I would expect that we would have every right to assume that we would get a response from our colleagues in the Democratic Party, and they would have some thoughtful ideas and probably some improvements to this bill and additions, maybe some suggested deletions. But in the spirit of this Committee, which has, I think, served the Congress and the American people so well in working cooperatively, I would anticipate that the next week will be used to good advantage while Members are on their District work period. And incidentally most of us, I know Republican and Democrat alike from talking with my colleagues, will actually be working back home in the District, not off to some exotic place like we would like to go on vacation. But the staffs, as always, will be working back here, on both sides of the aisle, to talk things through, and so then when we get back, hopefully we can have some paper from both sides. We have got something from our side, and we would welcome and be most receptive to any specific proposals the other side, and I don't mean to phrase it in that way, but the other side. It is like we are two opponents. We are not opponents, we are partners in this whole process. So then the final analysis, we can go forward.

I mean, the funding is only for 1 year, but it really is a multi-year bill. And we are making a number of changes in law. And I think all of us walked away from the hearing yesterday with Administrator Griffin very confident that the Agency is in good hands, with a decisive professional who knows the business, who is committed to the proposition that we will have a safe program, the safest program humanly possible in terms of human space flight, but also recognizes how much importance we attach to having a balanced program. Mr. Udall, you and I are particularly concerned about that with Earth science and space science and some of the other activities not being neglected so that everything will focus on just one phase of a multi-faceted agency.

Right now, understandably, we are all sort of zeroing in on the big moment expected to come on July 13, and we are planning toward that day, and that is occupying a disproportionate share of a lot of people's attention. But in the meantime, I would hope our staffs could work well together and we can continue the relationship we have enjoyed these many years under my chairmanship and produce a product that will be worthy of support on both sides of the aisle and will have, as I like to say, fingerprints of all of the Members all over it.

Thank you very much.

Chairman CALVERT. I thank the Chairman. And without objection, Members may place their statements in the record at this point.

[The prepared statement of Mr. Honda follows:]

PREPARED STATEMENT OF REPRESENTATIVE MICHAEL M. HONDA

Chairman Calvert and Ranking Member Udall, usually I would begin by thanking you for holding this markup, but today I cannot. I believe the timing of this markup is inappropriate the bill was first provided to the minority on Friday afternoon, and a major hearing with the NASA Administrator was held just yesterday morning.

We have been hearing that a NASA authorization bill was coming for years now, but did not get to see it until a few days ago and are now being asked to mark it up without sufficient time to review the bill and develop amendments to address what we believe are the shortcomings with the bill. The bill contains only one number, the overall funding level, for one year. Members from both sides of the aisle have expressed concerns about the balance of the Agency, but the bill provides no funding guidance for this year and those beyond as to what we actually mean by balance. Since we were not allowed time to develop amendments prior to today's markup, I will not be offering any, but I intend to do so when this bill comes before the Full Committee.

Also, by holding this markup only one day after the testimony by Administrator Griffin, the impression I get is that the Majority doesn't care at all about what he told us, since there is no opportunity to incorporate elements of his testimony in the bill. For example, in response to one of my questions, Administrator Griffin testified that he does not believe there is any benefit to converting NASA's Field Centers into Federally Funded Research and Development Centers (FFRDCs), and yet one of the elements of the bill we are marking up to day is a report on that very subject.

Mr. Chairman, this is a very unusual authorization bill. It is very different from the traditional authorization bill passed by the Senate Commerce, Science, and Transportation Committee, which means that your rationale for holding a quick markup, so that we can rapidly get this bill into conference so it can be signed into law, is a false one. Reconciling this bill with the Senate's may well be impossible, and so I again express my disapproval over the scheduling of this markup at this time.

[The prepared statement of Ms. Jackson Lee follows:]

PREPARED STATEMENT OF REPRESENTATIVE SHEILA JACKSON LEE

Mr. Chairman,

NASA is at a very pivotal moment in its history and therefore it is the responsibility of this committee to ensure that the future of NASA is one of continued progress. After the tragic *Columbia* Space Shuttle accident this Congress and this committee were forced to reevaluate the NASA's purpose. I have stated that safety must be the number one priority of NASA, however this should not deter NASA from pushing the boundaries of technology and discovery.

While I support this NASA Authorization it does not ally all of my concerns. I have been supportive of President Bush's *Vision for Space Exploration* because I firmly believe that the investment we make today in science and exploration will pay large dividends in the future. Similarly, I do not want to put a cap on the frontiers of our discovery, NASA should aim high and continue to push our nation at the forefront of space exploration. However, I find it hard to be more supportive of the President's plan, when I have no real specifics as to what this plan will entail. Large missions of this sort require detailed planning and as a Members of Congress we deserve to know how exactly the President's plan proposes to accomplish its objectives so that we can set out the proper resources and provide the necessary oversight. In addition, the President stated that the fundamental goal of his directive for the Nation's space exploration program is ". . .to advance U.S. scientific, security, and economic interests through a robust space exploration program." I could not agree more with that statement; unfortunately, this President's own budget does not meet the demands of his ambitious agenda. One year after the Administration laid out a five-year funding plan for NASA that was intended to demonstrate the affordability and sustainability of the exploration initiative, the Administration submitted a budget proposal for 2006 that would reduce that funding plan by $2.5 billion over the next four years. For example, in 2006, the Administration is seeking

$546 million less than it said would be needed for NASA in 2006 in the five-year funding plan that accompanied last year's request. In fact 75 percent of the $2.5 billion shortfall will fall to NASA's science and aeronautics programs. This kind of under-funding for vital programs is unacceptable. Again, it is even more alarming because the President has not provided a detailed plan as to how he intends to accomplish his space exploration agenda; certainly draining money from the budget will not help that cause. I hope that this NASA Authorization will address these budget shortfall issues and provide a more thorough and clear plan as to when these NASA goals can be accomplished.

Again, while I am supporting this Authorization in Subcommittee today, I continue to hold concerns about this bill's clarity. I hope the majority side of this committee will work with the minority to address the concerns of all Members of this committee in advance of a Full Committee markup. Among the issues I will push are the role and work of minority serving institutions with NASA and safety especially abroad the International Space Station. I believe all of us on this committee support the mission of NASA, but we must continue to give it structure.

Chairman CALVERT. We will now consider H.R. 3070, the *National Aeronautics and Space Administration Authorization Act of 2005.* I ask unanimous consent that the bill is considered as read and open to amendment at any point, that Members proceed with the amendments in order of their roster. Without objection, so ordered.

The first amendment on the roster is a manager's amendment offered by the Chairman.

I have an amendment at the desk. The Clerk will report the amendment.

The CLERK. Amendment to H.R. 3070 offered by Mr. Calvert of California. Page 2, line 6, insert "as we enter—"

Chairman CALVERT. I would ask unanimous consent to dispense with the reading and that the amendment is considered en bloc. Without objection, so ordered.

I recognize myself to explain the amendment.

Members will find the text of the amendment as well as a summary in their packets. This amendment makes a number of small, clarifying changes and also accommodates a number of our Members by including their proposed amendments. Some of these include a report from NASA on the extent to which the CEV will allow for crew escape and a description of the steps NASA will take to retain needed employees as it develops the human capital strategy that the underlying bill calls for.

If there is any discussion on these—on this amendment—if there is no further discussion on the amendment, if no, the vote occurs on the amendment. All of those in favor will say aye. Those opposed, no. The ayes have it, and the amendment is agreed to.

The second amendment that is on the roster is offered by the gentlewoman from Texas, Ms. Jackson Lee, which I am prepared to accept.

Ms. Jackson Lee, you are ready to proceed with your amendment?

Ms. JACKSON LEE. Yes, Mr. Chairman.

Chairman CALVERT. I would—okay, if the Clerk will report the amendment.

The CLERK. Amendment to H.R. 3070 offered by Ms. Jackson Lee of Texas, page 15, line 6, strike "and—"

Chairman CALVERT. I would ask for unanimous consent to dispense with the reading. Without objection, so ordered.

The gentlewoman is recognized for five minutes to explain the amendment.

Ms. JACKSON LEE. I thank you very much, Mr. Chairman, and I can see the point that a NASA authorization bill is extremely important, and I appreciate the work that has been done, but I join my colleagues, Mr. Udall, and certainly, Mr. Gordon, to hope that as we move along, that we will have an expanded opportunity to share in the vision.

This amendment, which I appreciate, I will briefly summarize, and—to acknowledge the importance of this amendment. Simply, this amendment deals with requiring the NASA, in its budget process, to include a line item as it relates to safety. One year after the Administration laid out a five-year plan for NASA that was intended to demonstrate the affordability and sustainability of the exploration initiative, the Administration submitted a budget. But in that budget, in the budget that NASA has, they do not offer—they do not have in there the provisions dealing with safety. So this amendment simply asks NASA to submit in its budget request a line item for safety. When the question was asked by me, they were not able to give a specific answer. They indicated that they thought it was around $40 million. With the International Space Station and our return to human Space Shuttle and our efforts to go to the moon, I think that this is a helpful amendment to give Congress guidance on how we can encourage NASA to encourage or utilize more dollars for safety.

With that, I would ask my colleagues to support the amendment, and I ask unanimous consent that my entire statement may be submitted in the record.

Chairman CALVERT. Without objection, so ordered.

[The prepared statement of Ms. Jackson Lee follows:]

PREPARED STATEMENT OF REPRESENTATIVE SHEILA JACKSON LEE

We are in agreement on both sides of the aisle that safety must be the number one priority of NASA as it moves forward. I want to thank the Chairman of the Space and Aeronautics Subcommittee Mr. Calvert for accepting my amendment, which would require NASA to report in its budget submission how much is spent on safety funding each year. I believe this is a concrete step in allowing Congress to examine whether proper resources are being allocated towards ensuring the safety of our NASA personnel.

Earlier this year during the NASA Budget hearing I asked officials how much money in the NASA Budget was dedicated to safety. The response I received was that money for safety activities was not put in its own separate budget function but spread throughout the NASA budget. When this question was probed further and submitted in writing to NASA the response I received was that while safety is one of NASA's core values and is embedded in all that they do throughout the Agency, they could only approximate a figure of $400 million in their FY 2006 budget request. Furthermore, this figure also did not include many programs which they had not determined the amount of money spent on safety activities. My amendment will require that such clear and precise safety funding numbers are provided each year.

My amendment will be especially helpful to members of this committee as well as to Members of the Appropriations and Budget Committee. This language will allow Members of Congress to clearly see how safety funding is increasing or decreasing over a period of time and whether the amount being requested is sufficient for the missions NASA seeks to undertake. While there is clearly much work to be done to ensure the safety of NASA personnel, I believe my amendment is one that will pay immediate dividends on this vital issue.

Chairman CALVERT. Any discussion on this amendment? I am prepared to accept this amendment. I think it works towards safe-

ty, which I know the gentlelady from Houston has been very concerned about. And if there is no further discussion, the vote occurs on the amendment. All of those in favor, say aye. Those opposed, no. And the agreement is agreed to.

Any further amendments?

Hearing none, the vote is on the bill, H.R. 3070, the *National Aeronautics and Space Administration Act of 2005,* as amended. All of those in favor, say aye. All of those opposed——

Mr. UDALL. Mr. Chairman, on that question, I would ask for a recorded vote.

Chairman CALVERT. There is a request for a recorded vote. Those in favor of the bill will signify by saying aye. Those opposed, no. The Clerk will please record the vote.

The CLERK. Mr. Calvert.

Chairman CALVERT. Aye.

The CLERK. Mr. Calvert votes yes.

Mr. Hall.

Mr. HALL. Aye.

The CLERK. Mr. Hall votes yes.

Mr. Smith.

Mr. SMITH. Aye.

The CLERK. Mr. Smith votes yes.

Mr. Rohrabacher.

Mr. ROHRABACHER. Aye.

The CLERK. Mr. Rohrabacher votes yes.

Mr. Bartlett.

[No response.]

The CLERK. Mr. Lucas.

Mr. LUCAS. Yes.

The CLERK. Mr. Lucas votes yes.

Mr. Forbes.

Mr. FORBES. Yes.

The CLERK. Mr. Forbes votes yes.

Mr. Bonner.

Mr. BONNER. Aye.

The CLERK. Mr. Bonner votes yes.

Mr. Feeney.

[No response.]

The CLERK. Mr. McCaul.

Mr. MCCAUL. Aye.

The CLERK. Mr. McCaul votes yes.

Mr. Boehlert.

Chairman BOEHLERT. Aye.

The CLERK. Mr. Boehlert votes yes.

Mr. Udall.

Mr. UDALL. Present.

The CLERK. Mr. Udall votes present.

Mr. Wu.

[No response.]

The CLERK. Mr. Honda.

Mr. HONDA. Present.

The CLERK. Mr. Honda votes present.

Mr. Miller.

Mr. MILLER. Present.

The CLERK. Mr. Miller votes present.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
The CLERK. Ms. Jackson Lee votes aye.
Mr. Sherman.
[No response.]
The CLERK. Mr. Costa.
Mr. COSTA. Present.
The CLERK. Mr. Costa votes present.
Mr. Green.
[No response.]
The CLERK. Mr. Melancon.
Mr. MELANCON. Present.
The CLERK. Mr. Melancon votes present.
Mr. Chairman, yes, 10; present, 5.
Chairman CALVERT. And the motion is agreed to.
The CLERK. Mr. Gordon is not recorded.
Mr. GORDON. Present.
The CLERK. Mr. Gordon votes present.
Mr. Chairman, yes, 10; present, 6.

**SUBCOMMITTEE ON SPACE AND AERONAUTICS**
**ROLL CALL – 109th CONGRESS**

**DATE:** 6/29/05 **SUBJECT:** Motion to adopt the bill, as amended: agreed to by a roll call vote – Y-10; Present-6.

| Rm. | Phone | Member | Yes | No | Not Voting | Present | Absent |
|---|---|---|---|---|---|---|---|
| 2246 | 53665 | Mr. Calvert, R-CA | X | | | | |
| 2405 | 56673 | Mr. Hall, R-TX | X | | | | |
| 2184 | 54236 | Mr. Smith, R-TX | X | | | | |
| 2338 | 52415 | Mr. Rohrabacher, R-CA | X | | | | |
| 2412 | 52721 | Mr. Bartlett, R-MD | | | | | |
| 2342 | 55565 | Mr. Lucas, R-OK | X | | | | |
| 307 | 56365 | Mr. Forbes, R-VA | X | | | | |
| 315 | 54931 | Mr. Bonner, R-AL | X | | | | |
| 323 | 52706 | Mr. Feeney, R-FL | | | | | |
| 415 | 52401 | Mr. McCaul, R-TX | X | | | | |
| 2246 | 53665 | Mr. Boehlert, R-NY | X | | | | |
| ***240*** | ***52161*** | ***Mr. Udall, D-CO*** | | | | X | |
| ***1023*** | ***50855*** | ***Mr. Wu, D-OR*** | | | | | |
| ***1713*** | ***52631*** | ***Mr. Honda, D-CA*** | | | | X | |
| ***1722*** | ***53032*** | ***Mr. Miller, D-NC*** | | | | X | |
| ***2435*** | ***53816*** | ***Ms. Jackson Lee, D-TX*** | X | | | | |
| ***1030*** | ***55911*** | ***Mr. Sherman, D-CA*** | | | | | |
| ***1004*** | ***53341*** | ***Mr. Costa, D-CA*** | | | | X | |
| ***1529*** | ***57508*** | ***Mr. Green, D-TX*** | | | | | |
| ***404*** | ***54031*** | ***Mr. Melancon, D-LA*** | | | | X | |
| ***2304*** | ***54231*** | ***Mr. Gordon, D-TN*** | | | | X | |
| | | | | | | | |
| | | **TOTAL** | 10 | | | 6 | |

Attest: s/ Tom Hammond (Clerk)

Chairman CALVERT. And the amendment is agreed to.

I recognize Mr. McCaul to offer a motion.

Mr. MCCAUL. Mr. Chairman, I offer a motion to report. I move that the Subcommittee favorably report the bill H.R. 3070, as amended, to the Full Committee. And further, I ask unanimous consent that the staff be instructed to make all necessary technical and conforming changes to the bill, as amended, in accordance with the recommendations of the Subcommittee.

Chairman CALVERT. The question is on the motion to report the bill favorably. Those in favor of the motion will signify by saying aye.

Mr. UDALL. Mr. Chairman, I would ask, in this question, for a recorded vote.

Chairman CALVERT. The gentleman asks for a recorded vote. The Clerk will please call the role.

The CLERK. Mr. Calvert.

Chairman CALVERT. Aye.

The CLERK. Mr. Calvert votes yes.

Mr. Hall.

Mr. HALL. Aye.

The CLERK. Mr. Hall votes yes.

Mr. Smith.

Mr. SMITH. Aye.

The CLERK. Mr. Smith votes yes.

Mr. Rohrabacher.

Mr. ROHRABACHER. Yes.

The CLERK. Mr. Rohrabacher votes yes.

Mr. Bartlett.

[No response.]

The CLERK. Mr. Lucas.

Mr. LUCAS. Yes.

The CLERK. Mr. Lucas votes yes.

Mr. Forbes.

Mr. FORBES. Yes.

The CLERK. Mr. Forbes votes yes.

Mr. Bonner.

Mr. BONNER. Aye.

The CLERK. Mr. Bonner votes yes.

Mr. Feeney.

[No response.]

The CLERK. Mr. McCaul.

Mr. MCCAUL. Aye.

The CLERK. Mr. McCaul votes yes.

Mr. Boehlert.

Chairman BOEHLERT. Aye.

The CLERK. Mr. Boehlert votes yes.

Mr. Udall.

Mr. UDALL. Present.

The CLERK. Mr. Udall votes present.

Mr. Wu.

[No response.]

The CLERK. Mr. Honda.

Mr. HONDA. Present.

The CLERK. Mr. Honda votes present.

Mr. Miller.
Mr. MILLER. Present.
The CLERK. Mr. Miller votes present.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
The CLERK. Ms. Jackson Lee votes aye.
Mr. Sherman.
[No response.]
The CLERK. Mr. Costa.
Mr. COSTA. Present.
The CLERK. Mr. Costa votes present.
Mr. Green.
[No response.]
The CLERK. Mr. Melancon.
Mr. MELANCON. Present.
The CLERK. Mr. Melancon votes present.
Mr. Gordon.
Mr. GORDON. Present.
The CLERK. Mr. Gordon votes present.
Mr. Chairman, yes, 10; present, 6.

**SUBCOMMITTEE ON SPACE AND AERONAUTICS**
**ROLL CALL – 109th CONGRESS**

**DATE:** 6/29/05 **SUBJECT:** Motion to report the bill, as amended: agreed to by a roll call vote – Y-10; Present-6.

| Rm. | Phone | Member | Yes | No | Not Voting | Present | Absent |
|---|---|---|---|---|---|---|---|
| 2246 | 53665 | Mr. Calvert, R-CA | X | | | | |
| 2405 | 56673 | Mr. Hall, R-TX | X | | | | |
| 2184 | 54236 | Mr. Smith, R-TX | X | | | | |
| 2338 | 52415 | Mr. Rohrabacher, R-CA | X | | | | |
| 2412 | 52721 | Mr. Bartlett, R-MD | | | | | |
| 2342 | 55565 | Mr. Lucas, R-OK | X | | | | |
| 307 | 56365 | Mr. Forbes, R-VA | X | | | | |
| 315 | 54931 | Mr. Bonner, R-AL | X | | | | |
| 323 | 52706 | Mr. Feeney, R-FL | | | | | |
| 415 | 52401 | Mr. McCaul, R-TX | X | | | | |
| 2246 | 53665 | Mr. Boehlert, R-NY | X | | | | |
| ***240*** | ***52161*** | ***Mr. Udall, D-CO*** | | | | X | |
| ***1023*** | ***50855*** | ***Mr. Wu, D-OR*** | | | | | |
| ***1713*** | ***52631*** | ***Mr. Honda, D-CA*** | | | | X | |
| ***1722*** | ***53032*** | ***Mr. Miller, D-NC*** | | | | X | |
| ***2435*** | ***53816*** | ***Ms. Jackson Lee, D-TX*** | X | | | | |
| ***1030*** | ***55911*** | ***Mr. Sherman, D-CA*** | | | | | |
| ***1004*** | ***53341*** | ***Mr. Costa, D-CA*** | | | | X | |
| ***1529*** | ***57508*** | ***Mr. Green, D-TX*** | | | | | |
| ***404*** | ***54031*** | ***Mr. Melancon, D-LA*** | | | | X | |
| ***2304*** | ***54231*** | ***Mr. Gordon, D-TN*** | | | | X | |
| | | | | | | | |
| | | **TOTAL** | 10 | | | 6 | |

Attest: s/ Tom Hammond (Clerk)

Chairman CALVERT. The ayes have it, and the bill is favorably recorded.

Without objection, the motion to reconsider is laid upon the table.

I want to thank the Members for their attendance. This concludes this subcommittee markup.

[Whereupon, at 2:35 p.m., the Subcommittee was adjourned.]

# Appendix:

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H.R. 3070, SECTION-BY-SECTION ANALYSIS, SUMMARY OF H.R. 3070, AMENDMENT ROSTER, SUMMARY OF MANAGER'S AMENDMENT OFFERED BY MR. CALVERT

F:\TB\SP\NASA05_001.XML H.L.C.

Ken Calvert

(Original Signature of Member)

109TH CONGRESS
1ST SESSION

# H. R. 3070

To reauthorize the human space flight, aeronautics, and science programs of the National Aeronautics and Space Administration, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

Mr. CALVERT (for himself ~~and [see attached list of cosponsors]~~ and Mr. Boehlert) introduced the following bill; which was referred to the Committee on

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# A BILL

To reauthorize the human space flight, aeronautics, and science programs of the National Aeronautics and Space Administration, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE.**

This Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 2005".

1 **SEC. 2. FINDINGS.**

2 The Congress finds that—

3 (1) on January 14, 2004, the President un-
4 veiled the Vision for Space Exploration to guide
5 United States policy on human space exploration;

6 (2) the National Aeronautics and Space Admin-
7 istration should continue to support robust programs
8 in space science, aeronautics, and earth science as it
9 moves forward with plans to send Americans to the
10 Moon, Mars, and worlds beyond; and

11 (3) the National Aeronautics and Space Admin-
12 istration's programs can advance the frontiers of
13 science, expanding understanding of our planet and
14 of the universe, and contribute to American pros-
15 perity.

16 **SEC. 3. DEFINITIONS.**

17 For the purposes of this Act—

18 (1) the term "Administration" means the Na-
19 tional Aeronautics and Space Administration; and

20 (2) the term "Administrator" means the Ad-
21 ministrator of the National Aeronautics and Space
22 Administration.

23 **SEC. 4. RESPONSIBILITIES, POLICIES, AND PLANS.**

24 (a) GENERAL RESPONSIBILITIES.—

25 (1) PROGRAMS.—The Administrator shall en-
26 sure that the Administration carries out a balanced

1 set of programs that shall include, at a minimum,
2 programs in—
3 (A) human space flight, in accordance with
4 subsection (b);
5 (B) aeronautics research and development;
6 and
7 (C) scientific research, which shall include,
8 at a minimum—
9 (i) robotic missions to study planets,
10 and to deepen understanding of astronomy,
11 astrophysics, and other areas of science
12 that can be productively studied from
13 space;
14 (ii) earth science research and re-
15 search on the Sun-Earth connection
16 through the development and operation of
17 research satellites and other means; and
18 (iii) support of university research in
19 space science and earth science.
20 (2) CONSULTATION AND COORDINATION.—In
21 carrying out the programs of the Administration, the
22 Administrator shall—
23 (A) consult and coordinate to the extent
24 appropriate with other relevant Federal agen-

1 cies, including through the National Science
2 and Technology Council;
3 (B) work closely with the private sector,
4 including by—
5 (i) encouraging the work of entre-
6 preneurs who are seeking to develop new
7 means to send satellites, crew, or cargo to
8 outer space;
9 (ii) contracting with the private sector
10 for crew and cargo services to the extent
11 practicable; and
12 (iii) using commercially available
13 products (including software) and services
14 to the extent practicable to support all Ad-
15 ministration activities; and
16 (C) involve other nations to the extent ap-
17 propriate.
18 (b) VISION FOR SPACE EXPLORATION.—
19 (1) GOALS.—The Administrator shall manage
20 human space flight programs so as to achieve the
21 following goals:
22 (A) Returning Americans to the Moon no
23 later than 2020.
24 (B) Launching the Crew Exploration Vehi-
25 cle as close to 2010 as possible.

1 (C) Increasing knowledge of the impacts of
2 long duration stays in space on the human body
3 using the most appropriate facilities available.
4 (D) Enabling humans to land on and re-
5 turn from Mars and other destinations on a
6 timetable that is technically and fiscally pos-
7 sible.
8 (2) SPACE SHUTTLE.—The Space Shuttle shall
9 not be launched after December 31, 2010.
10 (c) AERONAUTICS.—
11 (1) IN GENERAL.—The President of the United
12 States, through the Administrator, and in consulta-
13 tion with other Federal agencies, shall develop a na-
14 tional aeronautics policy to guide the aeronautics
15 programs of the Administration through 2020.
16 (2) CONTENT.—At a minimum, the national
17 aeronautics policy shall describe for the
18 Administration—
19 (A) the priority areas of research for aero-
20 nautics through fiscal year 2011;
21 (B) the basis on which and the process by
22 which priorities for ensuing fiscal years will be
23 selected;

1 (C) the facilities and personnel needed to
2 carry out the aeronautics program through fis-
3 cal year 2011; and
4 (D) the budget assumptions on which the
5 national aeronautics policy is based.
6 (3) CONSIDERATIONS.—In developing the na-
7 tional aeronautics policy, the President shall con-
8 sider the following issues, which shall be discussed
9 in the transmittal under paragraph (5):
10 (A) The extent to which the Administra-
11 tion should focus on long-term, high-risk re-
12 search or more incremental research, and the
13 expected impact on the United States aircraft
14 and airline industries of that decision.
15 (B) The extent to which the Administra-
16 tion should address military and commercial
17 needs.
18 (C) How the Administration will coordi-
19 nate its aeronautics program with other Federal
20 agencies.
21 (D) The extent to which the Administra-
22 tion will fund university research, and the ex-
23 pected impact of that funding on the supply of
24 United States workers for the aeronautics in-
25 dustry.

1 (4) CONSULTATION.—In the development of the
2 national aeronautics policy, the Administrator shall
3 consult widely with academic and industry experts
4 and with other Federal agencies. The Administrator
5 may enter into an arrangement with the National
6 Academy of Sciences to help develop the national
7 aeronautics policy.
8 (5) SCHEDULE.—The Administrator shall
9 transmit the national aeronautics policy to the Com-
10 mittee on Appropriations and the Committee on
11 Science of the House of Representatives, and to the
12 Committee on Appropriations and the Committee on
13 Commerce, Science, and Transportation of the Sen-
14 ate, not later than the date on which the President
15 submits the proposed budget for the Federal Gov-
16 ernment for fiscal year 2007 to the Congress. The
17 Administrator shall make available to those commit-
18 tees any study done by a nongovernmental entity
19 that was used in the development of the national
20 aeronautics policy.
21 (d) SCIENCE.—
22 (1) IN GENERAL.—The Administrator shall de-
23 velop a policy to guide the science programs of the
24 Administration through 2020.

1 (2) CONTENT.—At a minimum, the policy shall
2 describe—
3 (A) the missions the Administration will
4 initiate, design, develop, launch, or operate in
5 space science and earth science through fiscal
6 year 2011, including launch dates;
7 (B) a priority ranking of all of the mis-
8 sions listed under subparagraph (A), and the
9 rationale for the ranking;
10 (C) the budget assumptions on which the
11 policy is based; and
12 (D) the facilities and personnel needed to
13 carry out the science policy through fiscal year
14 2011.
15 (3) CONSIDERATIONS.—In developing the
16 science policy under this subsection, the Adminis-
17 trator shall consider the following issues, which shall
18 be discussed in the transmittal under paragraph (6):
19 (A) What the most important scientific
20 questions in space science and earth science
21 are.
22 (B) The relationship between the Adminis-
23 tration's space and earth science activities and
24 those of other Federal agencies.

1 (4) CONSULTATION.—In developing the policy
2 under this subsection, the Administrator shall draw
3 on decadal surveys and other reports in planetary
4 science, astronomy, solar and space physics, earth
5 science, and any other relevant fields developed by
6 the National Academy of Sciences. The Adminis-
7 trator shall also consult widely with academic and
8 industry experts and with other Federal agencies.
9 (5) HUBBLE SPACE TELESCOPE.—The policy
10 developed under this subsection shall address plans
11 for a human mission to repair the Hubble Space
12 Telescope.
13 (6) SCHEDULE.—The Administrator shall
14 transmit the policy developed under this subsection
15 to the Committee on Science of the House of Rep-
16 resentatives and the Committee on Commerce,
17 Science, and Transportation of the Senate not later
18 than the date on which the President submits the
19 proposed budget for the Federal Government for fis-
20 cal year 2007 to the Congress. The Administrator
21 shall make available to those committees any study
22 done by a nongovernmental entity that was used in
23 the development of the policy.
24 (c) FACILITIES.—

1 (1) IN GENERAL.—The Administrator shall de-
2 velop a plan for managing the Administration's fa-
3 cilities through fiscal year 2015. The plan shall be
4 consistent with the policies and plans developed pur-
5 suant to this section.
6 (2) CONTENT.—At a minimum, the plan shall
7 describe—
8 (A) any new facilities the Administration
9 intends to acquire, whether through construc-
10 tion, purchase, or lease, and the expected dates
11 for doing so;
12 (B) any facilities the Administration in-
13 tends to significantly modify, and the expected
14 dates for doing so;
15 (C) any facilities the Administration in-
16 tends to close, and the expected dates for doing
17 so;
18 (D) any transaction the Administration in-
19 tends to conduct to sell, lease, or otherwise
20 transfer the ownership of a facility, and the ex-
21 pected dates for doing so;
22 (E) how each of the actions described in
23 subparagraphs (A), (B), (C), and (D) will en-
24 hance the ability of the Administration to carry
25 out its programs;

1 (F) the expected costs or savings expected
2 from each of the actions described in subpara-
3 graphs (A), (B), (C), and (D);
4 (G) the priority order of the actions de-
5 scribed in subparagraphs (A), (B), (C), and
6 (D);
7 (H) the budget assumptions of the plan;
8 and
9 (I) how facilities were evaluated in devel-
10 oping the plan.
11 (3) SCHEDULE.—The Administrator shall
12 transmit the plan developed under this subsection to
13 the Committee on Science of the House of Rep-
14 resentatives and the Committee on Commerce,
15 Science, and Transportation of the Senate not later
16 than the date on which the President submits the
17 proposed budget for the Federal Government for fis-
18 cal year 2008 to the Congress.
19 (f) WORKFORCE.—
20 (1) IN GENERAL.—The Administrator shall de-
21 velop a human capital strategy to ensure that the
22 Administration has a workforce of the appropriate
23 size and with the appropriate skills to carry out the
24 programs of the Administration, consistent with the
25 policies and plans developed pursuant to this section.

1 The strategy shall cover the period through fiscal
2 year 2011.
3 (2) CONTENT.—The strategy shall describe, at
4 a minimum—
5 (A) any categories of employees the Ad-
6 ministration intends to reduce, the expected size
7 and timing of those reductions, the methods the
8 Administration intends to use to make the re-
9 ductions, and the reasons the Administration no
10 longer needs those employees;
11 (B) any categories of employees the Ad-
12 ministration intends to increase, the expected
13 size and timing of those increases, the methods
14 the Administration intends to use to recruit the
15 additional employees, and the reasons the Ad-
16 ministration needs those employees; and
17 (C) the budget assumptions of the strat-
18 egy, and any expected additional costs or sav-
19 ings from the strategy by fiscal year.
20 (3) SCHEDULE.—The Administrator shall
21 transmit the strategy developed under this sub-
22 section to the Committee on Science of the House of
23 Representatives and the Committee on Commerce,
24 Science, and Transportation of the Senate not later
25 than the date on which the President submits the

1 proposed budget for the Federal Government for fis-
2 cal year 2007 to the Congress.
3 (4) LIMITATION.—The Administration may not
4 initiate any buyout offer or Reduction in Force until
5 60 days after the strategy required by this sub-
6 section has been transmitted to the Congress in ac-
7 cordance with paragraph (3).
8 (g) CENTER MANAGEMENT.—
9 (1) IN GENERAL.—The Administrator shall con-
10 duct a study to determine whether any of the Ad-
11 ministration's centers should be operated by or with
12 the private sector by converting a center to a Feder-
13 ally Funded Research and Development Center or
14 through any other mechanism.
15 (2) CONTENT.—The study shall, at a
16 minimum—
17 (A) make a recommendation for the oper-
18 ation of each center and provide reasons for
19 that recommendation; and
20 (B) describe the advantages and disadvan-
21 tages of each mode of operation considered in
22 the study.
23 (3) CONSIDERATIONS.—In conducting the
24 study, the Administrator shall take into consider-
25 ation the experiences of other relevant Federal agen-

1 cies in operating laboratories and centers and any
2 reports that have reviewed the mode of operation of
3 those laboratories and centers, as well as any reports
4 that have reviewed the Administration's centers.
5 (4) SCHEDULE.—The Administrator shall
6 transmit the study conducted under this subsection
7 to the Committee on Science of the House of Rep-
8 resentatives and the Committee on Commerce,
9 Science, and Transportation of the Senate not later
10 than May 31, 2006.
11 (h) BUDGETS.—The proposed budget for the Admin-
12 istration submitted by the President for each fiscal year
13 shall be accompanied by documents showing—
14 (1) the budget for each element of the human
15 space flight program;
16 (2) the budget for aeronautics;
17 (3) the budget for space science;
18 (4) the budget for earth science;
19 (5) the Corporate and Center General and Ad-
20 ministrative expenses and Service Pool costs for each
21 center and for headquarters, and for each direc-
22 torate;
23 (6) the budget for the Integrated Financial
24 Management Program, by individual element;

1 (7) the budget for the Independent Technical
2 Authority, both total and by center;
3 (8) the budget for public relations, by program;
4 (9) the comparable figures for at least the 2
5 previous fiscal years for each item in the proposed
6 budget; and
7 (10) the amount of unobligated funds and un-
8 expended funds, by appropriations account, that will
9 be carried over into the year for which the budget
10 is being presented, and the estimated amount of un-
11 obligated funds and unexpended funds that will re-
12 main at the end of the year for which the budget is
13 being presented.

14 **SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

15 There are authorized to be appropriated to the Ad-
16 ministration for fiscal year 2006 $16,471,050,000.

17 **SEC. 6. REPORTS.**

18 (a) IMMEDIATE ISSUES.—Not later than September
19 30, 2005, the Administrator shall transmit to the Com-
20 mittee on Science of the House of Representatives and the
21 Committee on Commerce, Science, and Transportation of
22 the Senate a report on each of the following items:
23 (1) The research agenda for the International
24 Space Station and its proposed final configuration.

1 (2) The number of flights the Space Shuttle
2 will make before its retirement, the purpose of those
3 flights, and the expected date of the final flight.
4 (3) A description of the means, other than the
5 Space Shuttle, that may be used to ferry crew and
6 cargo to the International Space Station.
7 (4) A plan for the operation of the Inter-
8 national Space Station in the event that the Iran
9 Nonproliferation Act of 2000 is not amended.
10 (5) A description of the launch vehicle for the
11 Crew Exploration Vehicle.
12 (6) A description of any heavy lift vehicle the
13 Administration intends to develop, the intended uses
14 of that vehicle, and whether the decision to develop
15 that vehicle has undergone an interagency review.
16 (7) A description of the intended purpose of
17 lunar missions and the architecture for those mis-
18 sions.
19 (8) The program goals for Project Prometheus.
20 (9) A plan for managing the cost increase for
21 the James Webb Space Telescope.
22 (b) CREW EXPLORATION VEHICLE.—The Adminis-
23 trator shall not enter into a development contract for the
24 Crew Exploration Vehicle until at least 30 days after the
25 Administrator has transmitted to the Committee on

1 Science of the House of Representatives and the Com-
2 mittee on Commerce, Science, and Transportation of the
3 Senate a report describing—
4 (1) the expected cost of the Crew Exploration
5 Vehicle through fiscal year 2020, based on the speci-
6 fications of that development contract; and
7 (2) the expected budgets for each fiscal year
8 through fiscal year 2020 for human space explo-
9 ration, aeronautics, space science, and earth
10 science—
11 (A) first assuming inflationary growth for
12 the budget of the Administration as a whole
13 and including costs for the Crew Exploration
14 Vehicle as projected under paragraph (1); and
15 (B) then assuming inflationary growth for
16 the budget of the Administration as a whole
17 and including at least two cost estimates for the
18 Crew Exploration Vehicle that are higher than
19 those projected under paragraph (1), based on
20 the Administration's past experience with cost
21 increases for similar programs, along with a de-
22 scription of the reasons for selecting the cost
23 estimates used for the calculations under this
24 subparagraph and the probability that the cost

1 of the Crew Exploration Vehicle will reach those
2 estimated amounts.
3 (c) SPACE COMMUNICATIONS.—Not later than Feb-
4 ruary 15, 2007, the Administrator shall transmit to the
5 Committee on Science of the House of Representatives
6 and the Committee on Commerce, Science, and Transpor-
7 tation of the Senate a plan for updating the space commu-
8 nications and navigation architecture for both low Earth
9 orbit and deep space exploration so that it is capable of
10 handling the activities described pursuant to section 4(b)
11 and (d). The plan shall include life-cycle cost estimates,
12 milestones, estimated performance capabilities, and 5-year
13 funding profiles. The Administrator shall consult with
14 other relevant Federal agencies in developing the plan
15 under this subsection and shall include in the plan an esti-
16 mate of the amount of any reimbursements the Adminis-
17 tration is likely to receive from other Federal agencies dur-
18 ing the expected life of the upgrades described in the plan.
19 (d) PUBLIC RELATIONS.—The Administration shall
20 not initiate the national awareness campaign required by
21 the report of the Committee on Appropriations of the
22 House of Representatives accompanying the Science,
23 State, Justice, Commerce, and Related Agencies Appro-
24 priations Act, 2006 until 30 days after the Administrator
25 has transmitted a report to the Committee on Appropria-

1 tions and the Committee on Science of the House of Rep-
2 resentatives, and to the Committee on Appropriations and
3 the Committee on Commerce, Science, and Transportation
4 of the Senate, describing the activities that will be under-
5 taken as part of the awareness campaign and their ex-
6 pected cost.

7 (e) JOINT DARK ENERGY MISSION.—The Adminis-
8 trator and the Director of the Department of Energy Of-
9 fice of Science shall jointly transmit to the Committee on
10 Science of the House of Representatives and the Com-
11 mittee on Commerce, Science, and Transportation of the
12 Senate, not later than the date on which the President
13 submits the proposed budget for the Federal Government
14 for fiscal year 2007, a report on plans for a Joint Dark
15 Energy Mission. The report shall include the amount of
16 funds each agency intends to expend on the Joint Dark
17 Energy Mission for each of the fiscal years 2007 through
18 2011, and specific milestones for the development and
19 launch of the Mission.

20 (f) SHUTTLE EMPLOYEE TRANSITION.—The Admin-
21 istrator shall consult with other appropriate Federal agen-
22 cies and with Administration contractors and employees
23 to develop a transition plan for Federal and contractor
24 personnel engaged in the Space Shuttle program. The plan
25 shall include actions to assist Federal and contractor per-

1 sonnel to take advantage of training, retraining, job place-
2 ment, and relocation programs, and any other actions that
3 the Administration will take to assist the employees. The
4 Administrator shall transmit the plan to the Committee
5 on Science of the House of Representatives and the Com-
6 mittee on Commerce, Science, and Transportation of the
7 Senate not later than 90 days after the date of enactment
8 of this Act.

9 (g) OFFICE OF SCIENCE AND TECHNOLOGY POL-
10 ICY.—

11 (1) STUDY.—The Director of the Office of
12 Science and Technology Policy shall conduct a study
13 to determine—

14 (A) if any research and development pro-
15 grams of the Administration are unnecessarily
16 duplicating aspects of programs of other Fed-
17 eral agencies; and

18 (B) if any research and development pro-
19 grams of the Administration are neglecting any
20 topics of national interest that are related to
21 the mission of the Administration.

22 (2) REPORT.—Not later than March 1, 2006,
23 the Director of the Office of Science and Technology
24 Policy shall transmit to the Committee on Science of
25 the House of Representatives and the Committee on

1 Commerce, Science, and Transportation of the Sen-
2 ate a report that—
3 (A) describes the results of the study
4 under paragraph (1);
5 (B) recommends any changes to the re-
6 search and development programs of the Ad-
7 ministration that should be made to eliminate
8 unnecessary duplication or address topics of na-
9 tional interest; and
10 (C) describes mechanisms the Office of
11 Science and Technology Policy will use to en-
12 sure adequate coordination between the Admin-
13 istration and Federal agencies that operate re-
14 lated programs.

15 **SEC. 7. BASELINES AND COST CONTROLS.**

16 (a) CONDITIONS FOR DEVELOPMENT.—
17 (1) IN GENERAL.—The Administration shall
18 not enter into a contract for the development phase
19 of a major program unless the Administrator deter-
20 mines that—
21 (A) the technical, cost, and schedule risks
22 of the program are clearly identified and the
23 program has developed a plan to manage those
24 risks; and

(B) the program complies with all relevant policies, regulations, and directives of the Administration.

(2) REPORT.—The Administrator shall transmit a report describing the basis for the determination required under paragraph (1) to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate at least 30 days before entering into a contract for development under a major program.

(3) NONDELEGATION.—The Administrator may not delegate the determination requirement under this subsection.

(b) MAJOR PROGRAM ANNUAL REPORTS.—

(1) REQUIREMENT.—Not later than February 15 of each year following the date of enactment of this Act, the Administrator shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on each major program for which the Administration proposes to expend funds in the subsequent fiscal year. Reports under this section shall be known as Major Program Annual Reports.

1 (2) BASELINE REPORT.—The first Major Pro-
2 gram Annual Report for each major program shall
3 include a Baseline Report that shall, at a minimum,
4 include—
5 (A) the purposes of the program and key
6 technical characteristics necessary to fulfill
7 those purposes;
8 (B) an estimate of the life-cycle cost for
9 the program, with a detailed breakout of the
10 development cost and an estimate of the annual
11 costs until the development is completed;
12 (C) the schedule for the development, in-
13 cluding key program milestones; and
14 (D) the name of the person responsible for
15 making notifications under subsection (c), who
16 shall be an individual whose primary responsi-
17 bility is overseeing the program.
18 (3) INFORMATION UPDATES.—For major pro-
19 grams with respect to which a Baseline Report has
20 been previously submitted, each subsequent Major
21 Program Annual Report shall describe any changes
22 to the information that had been provided in the
23 Baseline Report, and the reasons for those changes.
24 (c) NOTIFICATION.—

1 (1) REQUIREMENT.—The individual identified
2 under subsection (b)(2)(D) shall immediately notify
3 the Administrator any time that individual has rea-
4 sonable cause to believe that, for the major program
5 for which he or she is responsible—
6 (A) the development cost of the program is
7 likely to exceed the estimate provided in the
8 Baseline Report of the program by 15 percent
9 or more; or
10 (B) a milestone of the program is likely to
11 be delayed by 6 months or more from the date
12 provided for it in the Baseline Report of the
13 program.
14 (2) REASONS.—Not later than 7 days after the
15 notification required under paragraph (1), the indi-
16 vidual identified under subsection (b)(2)(D) shall
17 transmit to the Administrator a written notification
18 explaining the reasons for the change in the cost or
19 milestone of the program for which notification was
20 provided under paragraph (1).
21 (3) NOTIFICATION OF CONGRESS.—Not later
22 than 5 days after the Administrator receives a writ-
23 ten notification under paragraph (2), the Adminis-
24 trator shall transmit the notification to the Com-
25 mittee on Science of the House of Representatives

1 and the Committee on Commerce, Science, and
2 Transportation of the Senate.
3 (d) FIFTEEN PERCENT THRESHOLD.—Not later
4 than 30 days after receiving a written notification under
5 subsection (c)(2), the Administrator shall determine
6 whether the development cost of the program is likely to
7 exceed the estimate provided in the Baseline Report of the
8 program by 15 percent or more, or whether a milestone
9 is likely to be delayed by 6 months or more. If the deter-
10 mination is affirmative, the Administrator shall—
11 (1) transmit to the Committee on Science of the
12 House of Representatives and the Committee on
13 Commerce, Science, and Transportation of the Sen-
14 ate, not later than 14 days after making the deter-
15 mination, a report that includes—
16 (A) a description of the increase in cost or
17 delay in schedule and a detailed explanation for
18 the increase or delay;
19 (B) a description of actions taken or pro-
20 posed to be taken in response to the cost in-
21 crease or delay; and
22 (C) a description of any impacts the cost
23 increase or schedule delay will have on any
24 other program within the Administration; and

1 (2) if the Administrator intends to continue
2 with the program, promptly initiate an analysis of
3 the program, which shall include, at a minimum—
4 (A) the projected cost and schedule for
5 completing the program if current requirements
6 of the program are not modified;
7 (B) the projected cost and the schedule for
8 completing the program after instituting the ac-
9 tions described under paragraph (1)(B); and
10 (C) a description of, and the projected cost
11 and schedule for, a broad range of alternatives
12 to the program.
13 The Administration shall complete an analysis initiated
14 under paragraph (2) not later than 6 months after the
15 Administrator makes a determination under this sub-
16 section. The Administrator shall transmit the analysis to
17 the Committee on Science of the House of Representatives
18 and Committee on Commerce, Science, and Transpor-
19 tation of the Senate not later than 30 days after its com-
20 pletion.
21 (e) THIRTY PERCENT THRESHOLD.—If the Adminis-
22 trator determines under subsection (d) that the develop-
23 ment cost of a program will exceed the estimate provided
24 in the Baseline Report of the program by more than the
25 lower of 30 percent or $1,000,000,000, then, beginning

1 1 year after the date the Administrator transmits a report
2 under subsection (d)(1), the Administrator shall not ex-
3 pend any additional funds on the program, other than ter-
4 mination costs, unless the Congress has subsequently au-
5 thorized continuation of the program by law. If the pro-
6 gram is continued, the Administrator shall submit a new
7 Baseline Report for the program no later than 90 days
8 after the date of enactment of the Act under which Con-
9 gress has authorized continuation of the program.
10 (f) DEFINITIONS.—For the purposes of this section—
11 (1) the term "development" means the phase of
12 a program following the formulation phase and be-
13 ginning with the approval to proceed to implementa-
14 tion, as defined in the Administration's Procedural
15 Requirements 7120.5c, dated March 22, 2005;
16 (2) the term "development cost" means the
17 total of all costs, including construction of facilities
18 and civil servant costs, from the period beginning
19 with the approval to proceed to implementation
20 through the achievement of operational readiness,
21 without regard to funding source or management
22 control, for the life of the program;
23 (3) the term "life-cycle cost" means the total of
24 the direct, indirect, recurring, and nonrecurring
25 costs, including the construction of facilities and civil

1 servant costs, and other related expenses incurred or
2 estimated to be incurred in the design, development,
3 verification, production, operation, maintenance,
4 support, and retirement of a program over its
5 planned lifespan, without regard to funding source
6 or management control; and
7 (4) the term "major program" means an activ-
8 ity approved to proceed to implementation that has
9 an estimated life-cycle cost of more than
10 $100,000,000.

11 **SEC. 8. PRIZE AUTHORITY.**

12 The National Aeronautics and Space Act of 1958 (42
13 U.S.C. 2451, et seq.) is amended by inserting after section
14 313 the following new section:

15 "PRIZE AUTHORITY

16 "SEC. 314. (a) IN GENERAL.—The Administration
17 may carry out a program to competitively award cash
18 prizes to stimulate innovation in basic and applied re-
19 search, technology development, and prototype demonstra-
20 tion that have the potential for application to the perform-
21 ance of the space and aeronautical activities of the Admin-
22 istration. The Administration may carry out a program
23 to award prizes only in conformity with this section.
24 "(b) TOPICS.—In selecting topics for prize competi-
25 tions, the Administrator shall consult widely both within

1 and outside the Federal Government, and may empanel
2 advisory committees.
3 "(c) ADVERTISING.—The Administrator shall widely
4 advertise prize competitions to encourage participation.
5 "(d) REQUIREMENTS AND REGISTRATION.—For each
6 prize competition, the Administrator shall publish a notice
7 in the Federal Register announcing the subject of the com-
8 petition, the rules for being eligible to participate in the
9 competition, the amount of the prize, and the basis on
10 which a winner will be selected.
11 "(e) ELIGIBILITY.—To be eligible to win a prize
12 under this section, an individual or entity—
13 "(1) shall have registered to participate in the
14 competition pursuant to any rules promulgated by
15 the Administrator under subsection (d);
16 "(2) shall have complied with all the require-
17 ments under this section;
18 "(3) in the case of a private entity, shall be in-
19 corporated in and maintain a primary place of busi-
20 ness in the United States, and in the case of an in-
21 dividual, whether participating singly or in a group,
22 shall be a citizen or permanent resident of the
23 United States; and

1 "(4) shall not be a Federal entity or Federal
2 employee acting within the scope of their employ-
3 ment.
4 "(f) LIABILITY.—(1) Registered participants must
5 agree to assume any and all risks and waive claims against
6 the United States Government and its related entities, ex-
7 cept in the case of willful misconduct, for any injury,
8 death, damage, or loss of property, revenue, or profits,
9 whether direct, indirect, or consequential, arising from
10 their participation in a competition, whether such injury,
11 death, damage, or loss arises through negligence or other-
12 wise. For the purposes of this subparagraph, the term 're-
13 lated entity' means a contractor or subcontractor at any
14 tier, and a supplier, user, customer, cooperating party,
15 grantee, investigator, or detailee.
16 "(2) Participants must obtain liability insurance or
17 demonstrate financial responsibility in amounts to com-
18 pensate for the maximum probable loss, as determined by
19 the Administrator, from claims by—
20 "(A) a third party for death, bodily injury, or
21 property damage, or loss resulting from an activity
22 carried out in connection with participation in a
23 competition, with the Federal Government named as
24 an additional insured under the registered partici-
25 pant's insurance policy and registered participants

1 agreeing to indemnify the Federal Government
2 against third party claims for damages arising from
3 or related to competition activities; and
4 "(B) the United States Government for damage
5 or loss to Government property resulting from such
6 an activity.
7 "(g) INTELLECTUAL PROPERTY.—The Federal Gov-
8 ernment shall not, by virtue of offering or providing a
9 prize under this section, be entitled to any intellectual
10 property rights derived as a consequence of, or direct rela-
11 tion to, the participation by a registered participant in a
12 competition authorized by this section. This subsection
13 shall not be construed to prevent the Administration from
14 negotiating a license for the use of intellectual property
15 developed for a prize competition under this section.
16 "(h) JUDGES.—For each competition, the Adminis-
17 tration, either directly or through a contract under sub-
18 section (i), shall assemble a panel of qualified judges from
19 both within and outside the Administration to select the
20 winner or winners of the prize competition on the basis
21 described pursuant to subsection (d). Judges for each
22 competition shall include individuals from the private sec-
23 tor. A judge may not—
24 "(1) have personal or financial interests in, or
25 be employees, officers, directors, or agents of, any

1 entity that is a registered participant in a competi-
2 tion; or
3 "(2) have a familial or financial relationship
4 with an individual who is a registered participant.
5 "(i) ADMINISTERING THE COMPETITION.—The Ad-
6 ministrator may enter into an agreement with a private,
7 nonprofit entity to administer the prize competition, sub-
8 ject to the provisions of this section.
9 "(j) FUNDING.—(1) The Administrator may accept
10 funds from other Federal agencies and from the private
11 sector for cash prizes under this section. Such funds shall
12 not increase the amount of a prize after the amount has
13 been announced pursuant to subsection (d). The Adminis-
14 trator may not give any special consideration to any pri-
15 vate sector entity in return for a donation.
16 "(2) Funds appropriated for the program under this
17 section shall remain available until expended, and may be
18 transferred, reprogrammed, or expended for other pur-
19 poses only after the expiration of 10 fiscal years after the
20 fiscal year for which the funds were originally appro-
21 priated. No provision in this section permits obligation or
22 payment of funds in violation of the Anti-Deficiency Act
23 (31 U.S.C. 1341).
24 "(3) No prize may be announced under subsection
25 (d) until all the funds for that prize have been appro-

1 priated or obligated for such purpose by a private sector
2 source.
3 "(4) No prize competition under this section may
4 offer a prize in an amount greater than $10,000,000 un-
5 less 30 days have elapsed after written notice has been
6 provided to the Committee on Science of the House of
7 Representatives and the Committee on Commerce,
8 Science, and Transportation of the Senate.
9 "(k) USE OF NASA NAME AND INSIGNIA.—A reg-
10 istered participant in a competition under this section may
11 use the Administration's name, initials, or insignia only
12 after prior review and written approval by the Administra-
13 tion.
14 "(l) COMPLIANCE WITH EXISTING LAW.—The Fed-
15 eral Government shall not, by virtue of offering or pro-
16 viding a prize under this section, be responsible for compli-
17 ance by registered participants in a prize competition with
18 Federal law, including licensing, export control, and non-
19 proliferation laws, and related regulations.".
20 **SEC. 9. MISCELLANEOUS AMENDMENTS.**
21 (a) RETROCESSION OF JURISDICTION.—The Na-
22 tional Aeronautics and Space Act of 1958 (42 U.S.C.
23 2451 et seq.) is amended by adding at the end of title
24 III the following new section:

1 "RETROCESSION OF JURISDICTION

2 "SEC. 316. (a) Notwithstanding any other provision
3 of law, the Administrator may relinquish to a State all
4 or part of the legislative jurisdiction of the United States
5 over lands or interests under the control of the Adminis-
6 trator in that State.

7 "(b) For purposes of this section, the term 'State'
8 means any of the several States, the District of Columbia,
9 the Commonwealth of Puerto Rico, the United States Vir-
10 gin Islands, Guam, American Samoa, the Northern Mar-
11 iana Islands, and any other commonwealth, territory, or
12 possession of the United States.".

13 (b) NASA SCHOLARSHIPS.—

14 (1) AMENDMENTS.—Section 9809 of title 5,
15 United States Code, is amended—

16 (A) in subsection (a)(2) by striking "Act."
17 and inserting "Act (42 U.S.C. 1885a or
18 1885b).";

19 (B) in subsection (c) by striking "require."
20 and inserting "require to carry out this sec-
21 tion.";

22 (C) in subsection (f)(1) by striking the last
23 sentence; and

24 (D) in subsection (g)(2) by striking
25 "Treasurer of the" and all that follows through

1 "by 3" and inserting "Treasurer of the United
2 States".
3 (2) REPEAL.—The Vision 100—Century of
4 Aviation Reauthorization Act is amended by striking
5 section 703 (42 U.S.C. 2473e).
6 (c) VEHICLE INDEMNIFICATION.—Section 309 of the
7 National Aeronautics and Space Act of 1958 (42 U.S.C.
8 458c) is amended in subsection (f)(1) by striking "Decem-
9 ber 31, 2002" through "September 30, 2005" and insert-
10 ing, "December 31, 2010, except that the Administrator
11 may extend the termination date to a date not later than
12 September 30, 2015, if the Administrator has entered into
13 an arrangement with the National Academy of Public Ad-
14 ministration to determine the impact on private parties
15 and the Federal Government of eliminating this section".
16 (d) ISS COST CAP.—Section 202 of the National
17 Aeronautics and Space Administration Authorization Act
18 of 2002 is repealed.
19 **SEC. 10. FOREIGN LAUNCH VEHICLES.**
20 (a) ACCORD WITH SPACE TRANSPORTATION POL-
21 ICY.—The Administration shall not launch a mission on
22 a foreign launch vehicle except in accordance with the
23 Space Transportation Policy announced by the President
24 on December 21, 2004.

1 (b) INTERAGENCY COORDINATION.—The Adminis-
2 tration shall not launch a mission on a foreign launch vehi-
3 cle unless the Administration commenced the interagency
4 coordination required by the Space Transportation Policy
5 announced by the President on December 21, 2004, at
6 least 90 days before entering into a development contract
7 for the mission.

8 **SEC. 11. COORDINATION WITH THE NATIONAL OCEANIC**
9 **AND ATMOSPHERIC ADMINISTRATION.**

10 (a) COORDINATING INDIVIDUALS.—For each earth
11 science mission undertaken by the Administration, the Ad-
12 ministrator and the Administrator of the National Oceanic
13 and Atmospheric Administration shall each appoint one
14 individual to coordinate activities related to the mission
15 and to make any appropriate plans for the mission making
16 the transition from an Administration mission to a Na-
17 tional Oceanic and Atmospheric Administration mission.

18 (b) COORDINATION REPORT.—Not later than Feb-
19 ruary 15 of each year, the Under Secretary of Commerce
20 for Oceans and Atmosphere and the Administrator shall
21 jointly transmit a report to the Committee on Science of
22 the House of Representatives and the Committee on Com-
23 merce, Science, and Transportation of the Senate on how
24 the earth science programs of the National Oceanic and
25 Atmospheric Administration and the Administration will

1 be coordinated during the fiscal year following the fiscal
2 year in which the report is transmitted.

3 **SEC. 12. CHARLES "PETE" CONRAD ASTRONOMY AWARDS.**

4 (a) SHORT TITLE.—This section may be cited as the
5 "Charles 'Pete' Conrad Astronomy Awards Act".

6 (b) DEFINITIONS.—For the purposes of this
7 section—

8 (1) the term "amateur astronomer" means an
9 individual whose employer does not provide any
10 funding, payment, or compensation to the individual
11 for the observation of asteroids and other celestial
12 bodies, and does not include any individual employed
13 as a professional astronomer;

14 (2) the term "Minor Planet Center" means the
15 Minor Planet Center of the Smithsonian Astro-
16 physical Observatory;

17 (3) the term "near-Earth asteroid" means an
18 asteroid with a perihelion distance of less than 1.3
19 Astronomical Units from the Sun; and

20 (4) the term "Program" means the Charles
21 "Pete" Conrad Astronomy Awards Program estab-
22 lished under subsection (c).

23 (c) PETE CONRAD ASTRONOMY AWARD PROGRAM.—

1 (1) IN GENERAL.—The Administrator shall es-
2 tablish the Charles "Pete" Conrad Astronomy
3 Awards Program.
4 (2) AWARDS.—The Administrator shall make
5 awards under the Program based on the rec-
6 ommendations of the Minor Planet Center.
7 (3) AWARD CATEGORIES.—The Administrator
8 shall make one annual award, unless there are no el-
9 igible discoveries or contributions, for each of the
10 following categories:
11 (A) The amateur astronomer or group of
12 amateur astronomers who in the preceding cal-
13 endar year discovered the intrinsically brightest
14 near-Earth asteroid among the near-Earth as-
15 teroids that were discovered during that year by
16 amateur astronomers or groups of amateur as-
17 tronomers.
18 (B) The amateur astronomer or group of
19 amateur astronomers who made the greatest
20 contribution to the Minor Planet Center's mis-
21 sion of cataloguing near-Earth asteroids during
22 the preceding year.
23 (4) AWARD AMOUNT.—An award under the
24 Program shall be in the amount of $3,000.

1 (5) GUIDELINES.—(A) No individual who is not
2 a citizen or permanent resident of the United States
3 at the time of his discovery or contribution may re-
4 ceive an award under this section.
5 (B) The decisions of the Administrator in mak-
6 ing awards under this section are final.

7 **SEC. 13. GEORGE E. BROWN, JR. NEAR-EARTH OBJECT SUR-**
8 **VEY.**

9 (a) SHORT TITLE.—This section may be cited as the
10 "George E. Brown, Jr. Near-Earth Object Survey Act".
11 (b) FINDINGS.—The Congress makes the following
12 findings:
13 (1) Near-Earth objects pose a serious and cred-
14 ible threat to humankind, as many scientists believe
15 that a major asteroid or comet was responsible for
16 the mass extinction of the majority of the Earth's
17 species, including the dinosaurs, nearly 65,000,000
18 years ago.
19 (2) Similar objects have struck the Earth or
20 passed through the Earth's atmosphere several times
21 in the Earth's history and pose a similar threat in
22 the future.
23 (3) Several such near-Earth objects have only
24 been discovered within days of the objects' closest
25 approach to Earth, and recent discoveries of such

1 large objects indicate that many large near-Earth
2 objects remain undiscovered.
3 (4) The efforts taken to date by the Adminis-
4 tration for detecting and characterizing the hazards
5 of near-Earth objects are not sufficient to fully de-
6 termine the threat posed by such objects to cause
7 widespread destruction and loss of life.
8 (c) DEFINITIONS.—For purposes of this section the
9 term "near-Earth object" means an asteroid or comet with
10 a perihelion distance of less that 1.3 Astronomical Units
11 from the Sun.
12 (d) NEAR-EARTH OBJECT SURVEY.—
13 (1) SURVEY PROGRAM.—The Administrator
14 shall plan, develop, and implement a Near-Earth
15 Object Survey program to detect, track, catalogue,
16 and characterize the physical characteristics of near-
17 Earth objects equal to or greater than 100 meters
18 in diameter in order to assess the threat of such
19 near-Earth objects to the Earth. It shall be the goal
20 of the Survey program to achieve 90 percent comple-
21 tion of its near-Earth object catalogue (based on sta-
22 tistically predicted populations of near-Earth ob-
23 jects) within 15 years after the date of enactment of
24 this Act.

1 (2) AMENDMENTS.—Section 102 of the Na-
2 tional Aeronautics and Space Act of 1958 (42
3 U.S.C. 2451) is amended—
4 (A) by redesignating subsection (g) as sub-
5 section (h);
6 (B) by inserting after subsection (f) the
7 following new subsection:
8 "(g) The Congress declares that the general welfare
9 and security of the United States require that the unique
10 competence of the National Aeronautics and Space Ad-
11 ministration be directed to detecting, tracking, cata-
12 loguing, and characterizing near-Earth asteroids and com-
13 ets in order to provide warning and mitigation of the po-
14 tential hazard of such near-Earth objects to the Earth.";
15 and
16 (C) in subsection (h), as so redesignated
17 by subparagraph (A) of this paragraph, by
18 striking "and (f)" and inserting "(f), and (g)".
19 (3) ANNUAL REPORT.—The Administrator shall
20 transmit to the Congress, not later than February
21 28 of each of the next 5 years beginning after the
22 date of enactment of this Act, a report that provides
23 the following:

1 (A) A summary of all activities taken pur-
2 suant to paragraph (1) for the previous fiscal
3 year.
4 (B) A summary of expenditures for all ac-
5 tivities pursuant to paragraph (1) for the pre-
6 vious fiscal year.
7 (4) INITIAL REPORT.—The Administrator shall
8 transmit to Congress not later than 1 year after the
9 date of enactment of this Act an initial report that
10 provides the following:
11 (A) An analysis of possible alternatives
12 that the the Administration may employ to
13 carry out the Survey program, including
14 ground-based and space-based alternatives with
15 technical descriptions.
16 (B) A recommended option and proposed
17 budget to carry out the Survey program pursu-
18 ant to the recommended option.
19 (C) An analysis of possible alternatives
20 that the Administration could employ to divert
21 an object on a likely collision course with Earth.

SECTION-BY-SECTION ANALYSIS OF H.R. 3070, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2005

**Sec. 1. Short Title.**

The "National Aeronautics and Space Administration Authorization Act of 2005".

**Sec. 2. Findings.**

Urges NASA to maintain robust programs in space science, Earth science, and aeronautics while it moves forward with plans to send Americans to the Moon, Mars, and beyond.

**Sec. 3. Definitions.**

**Sec. 4. Responsibilities, Policies, and Plans.**

Charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space and Earth science. Encourages NASA to work with entrepreneurs, use commercial services to the extent practicable, and to involve other nations to the extent appropriate.

Directs NASA to carry out the Vision for Space Exploration by returning Americans to the Moon no later than 2020, launching a Crew Exploration Vehicle as close to 2010 as possible, and conducting research on the impacts of space on the human body to enable long-duration space exploration. Retires the Shuttle at the end of 2010 to enable agency resources to be devoted to the Vision.

Requires the President, through the Administrator, to develop a national aeronautics policy to guide NASA's aeronautics programs through 2020. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a policy to guide agency space and Earth science programs through 2020. Requires the policy to prioritize the Agency's scientific missions and address NASA's plans on servicing the Hubble Space Telescope. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. Directs the plan be delivered to Congress with the 2008 budget request.

Requires NASA to develop a human capital strategy to ensure that it has a workforce of the appropriate size and with the appropriate skills to carry out programs and policies of this Act. Limits NASA's flexibility in offering buyouts or subjecting employees to Reductions in Force until 60 days after the plan is submitted with the President's budget for fiscal year 2007.

Requires NASA to conduct a study evaluating whether any of it centers should be operated by or with the private sector. Directs the study be delivered to Congress by May 31, 2006.

Directs the President's budget for NASA to include documents showing the requests for aeronautics, space science, Earth science, and agency administrative expenses, and comparable figures for each activity for each of the two previous fiscal years.

**Sec. 5. Authorization of Appropriations.**

Authorizes to be appropriated to NASA $16,471,050,000 for fiscal year 2006, the same amount provided in the House Science, State, Justice and Commerce Appropriations Bill for FY 2005. This amount is approximately $15 million above the President's FY 2006 request.

**Sec. 6. Reports.**

Requires NASA to report certain details regarding the Vision for Space Exploration and for other NASA programs by the end of this fiscal year.

Requires NASA to report estimated costs of the Crew Exploration Vehicle and the impact of those on other agency programs through 2020.

Requires NASA to report its plans for updating the system of space communications and navigation architecture to carry out lunar and deep space missions.

Requires NASA to submit a report to Congress describing its plans to carry out the "awareness campaign" required by the report accompanying the FY 2006 House Science, State, Justice, and Commerce Appropriations Bill.

Requires NASA to develop a transition plan for government and contractor personnel engaged in the Space Shuttle program.

Requires NASA and the Department of Energy jointly to describe their plans to develop a proposed astronomy research mission to study dark energy.

Requires the Director of the Office of Science and Technology Policy (OSTP) to conduct a study to evaluate whether any research NASA conducts is unnecessarily

duplicating aspects of programs of other federal agencies or whether it is neglecting areas of research in the national interest related to NASA's mission.

**Sec. 7. Baselines and Cost Controls.**

Adapts language that currently applies to the Department of Defense to require NASA to report annually on the status (including cost, schedule and performance) of "major" programs. Requires notification to Congress and an internal evaluation of any major program that exceeds its originally estimated development cost by more than 15 percent or exceeds its originally planned schedule by more than six months. Requires Congress to evaluate whether to continue the major program in the event that it exceeds its originally estimated development cost by more than 30 percent or $1 billion. Defines major programs as those with life-cycle costs of over $100,000,000.

**Sec. 8. Prize Authority.**

Gives NASA authority to conduct competitions for cash prizes, modeled after the X–Prize won last year by famed airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovative technology development. Allows NASA to enter into an agreement with a private, non-profit entity to administer prize competitions. Gives NASA the authority to accept private funds and funds from other agencies for cash prizes. Does not limit the amount of a prize, but requires NASA first to report to the Congress before offering any prize worth more than $10,000,000.

**Sec. 9. Miscellaneous.**

Grants NASA authority it is seeking to give State and local law enforcement officers jurisdiction over NASA-owned research centers to allow them to enforce speeding, drunk driving, and other laws.

Makes technical amendments to the NASA Scholarship program.

Grants NASA an extension it is seeking on an expiring provision in the *Space Act of 1958,* which allows NASA to indemnify developers of experimental aerospace vehicles with which NASA is involved in a cooperative partnership.

Repeals the limitation on expenditures (cost cap) for the International Space Station.

**Sec. 10. Foreign Launch Vehicles.**

Requires NASA to launch missions on foreign launch vehicles only in accordance with the President's Space Transportation Policy, announced December 21, 2004.

**Sec. 11. Coordination with the National Oceanic and Atmospheric Administration.**

Requires NASA and the National Oceanic and Atmospheric Administration (NOAA) to coordinate their respective Earth science activities to ensure that any technologies developed in NASA's Earth science programs can be efficiently transferred to NOAA.

**Sec. 12. Charles "Pete" Conrad Astronomy Awards.**

Includes the text of H.R. 1023, a bill to authorize the NASA Administrator to establish an awards program in honor of Charles "Pete" Conrad, astronaut and space scientist, for recognizing the discoveries made by amateur astronomers of asteroids with near-Earth orbit trajectories.

**Sec. 13. George E. Brown, Jr. Near-Earth Object Survey**

Includes the text of H.R. 1022, a bill authorizing NASA to conduct a Near-Earth Object Survey program to detect, track, catalogue, and characterize certain near-Earth asteroids and comets.

SHORT SUMMARY OF H.R. 3070, THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2005

*Overall Mission:* The bill charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space and Earth science. It encourages NASA to work with entrepreneurs and to involve other nations to the extent appropriate.

*Vision for Space Exploration:* The bill directs NASA to return Americans to the Moon no later than 2020, launch a Crew Exploration Vehicle as close to 2010 as possible, and conduct research on the impacts of space on the human body to enable long-duration space exploration. The bill directs NASA to retire the Shuttle at the end of 2010.

*New Policies and Plans:* The bill requires the Administration to develop policies and plans to guide NASA's efforts in missions other than human space flight and in managing its facilities and workforce:

- The bill requires the President, through the Administrator to develop a national aeronautics policy to guide NASA's aeronautics programs. The report is due with the President's FY 2007 budget request.
- It requires NASA to develop a policy to guide NASA's programs in space and Earth science, drawing on the work of the National Academy of Sciences, and requires the agency to prioritize its scientific missions. The bill requires the policy to describe NASA's plans in regard to servicing the Hubble Space Telescope. The report is due with the President's FY 2007 budget request.
- The bill requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. The report is due with the President's FY 2008 budget request.
- The bill also requires NASA to develop a human capital strategy to ensure that it has a workforce of the appropriate size and with the appropriate skills. It limits NASA's flexibility to reduce its workforce until 60 days after the plan is submitted. The report is due with the President's FY 2007 budget request.

*Transparency in Program Management:* The bill provides incentives for good program management by requiring annual reporting on programs costing over $100 million and initiating reviews of any such program that experiences large cost overruns or schedule delays.

*Prizes:* Gives NASA the authority to conduct competitions for cash prizes, modeled after the X–Prize won last year by famed airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovative technology development.

*Reports:* The bill requires NASA to report to Congress on its plans in a number of areas, including its strategy for sending humans to the Moon, the costs of the Crew Exploration Vehicle, a plan for updating the U.S.'s system of space communications and navigation satellites, and a plan for helping NASA's Shuttle workforce make the transition to other jobs.

*Miscellaneous Provisions:* The bill includes several miscellaneous provisions, including an extension of NASA's indemnification authority, programs addressing near-Earth asteroids and comets, and a requirement for better coordination between NASA and the National Oceanic and Atmospheric Administration (NOAA) on Earth science missions.

*Funding:* The bill authorizes to be appropriated to NASA $16,471,050,000 for fiscal year 2006, the same amount provided in the House Science, State, Justice and Commerce Appropriations Bill for FY 2005, or approximately $15 million above the President's FY 2006 request.

**COMMITTEE ON SCIENCE**
**SUBCOMMITTEE ON SPACE AND AERONAUTICS**
**MARKUP**

**JUNE 29, 2005**

**AMENDMENT ROSTER**

**H.R. 3070, National Aeronautics and Space Administration Authorization Act of 2005.**

--Motion to adopt the bill, as amended: agreed to by a roll call vote: Y-10; Present-6.
--Motion to report the bill, as amended: agreed to by a roll call vote: Y-10; Present-6.

| No. | Sponsor | Description | Results |
|---|---|---|---|
| 1 | Mr. Calvert | Manager's Amendment | Adopted by voice vote |
| 2 | Ms. Jackson Lee | Requiring NASA to provide annual Budget information regarding safety. | Adopted by voice vote |
| | | | |
| | | | |
| | | | |
| | | | |

## AMENDMENTS TO H.R. 3070

## OFFERED BY MR. CALVERT OF CALIFORNIA

Page 2, line 6, insert "as we enter the Second Space Age," after "(2)".

Page 4, line 7, strike "send" and insert "launch".

Page 4, lines 7 and 8, strike "to outer space".

Page 8, line 13, strike "science".

Page 12, line 16, strike "and".

Page 12, after line 16, insert the following new subparagraph and redesignate the subsequent subparagraph accordingly:

1 (C) the steps the Administration will use
2 to retain needed employees; and

Page 14, lines 19 through 22, strike paragraph (5) and redesignate the remaining paragraphs accordingly.

Page 15, lines 7 through 13, amend paragraph (9), as so redesignated by the previous amendment, to read as follows:

3 (9) the amount of unobligated funds and unex-
4 pended funds, by appropriations account—

1 (A) that remained at the end of the fiscal
2 year prior to the fiscal year in which the budget
3 is being presented that were carried over into
4 the fiscal year in which the budget is being pre-
5 sented;
6 (B) that are estimated will remain at the
7 end of the fiscal year in which the budget is
8 being presented that are proposed to be carried
9 over into the fiscal year for which the budget is
10 being presented; and
11 (C) that are estimated will remain at the
12 end of the fiscal year for which the budget is
13 being presented.

Page 15, after line 13, insert the following new subsection:

14 (i) GENERAL AND ADMINISTRATIVE EXPENSES.—
15 The Administration shall make available, upon request
16 from the Committee on Science of the House of Represent-
17 atives or the Committee on Commerce, Science, and
18 Transportation of the Senate, information on Corporate
19 and Center General and Administrative Costs and Service
20 Pool costs, including—
21 (1) the total amount of funds being allocated
22 for those purposes for any fiscal year for which the

1 President has submitted an annual budget request
2 to Congress;
3 (2) the amount of funds being allocated for
4 those purposes for each center, for headquarters,
5 and for each directorate; and
6 (3) the major activities included in each cost
7 category.

Page 16, line 6, after "cargo to" insert "and from".

Page 17, line 6, strike "of" and insert "for".

Page 17, line 6, strike "and".

Page 17, lines 8 and 9, strike "exploration" and insert "flight".

Page 18, line 2, strike the period and insert "; and".

Page 18, after line 2, insert the following new paragraph:

8 (3) the extent to which the Crew Exploration
9 Vehicle will allow for the escape of the crew in the
10 event of an emergency.

Page 18, line 19, through page 19, line 6, amend subsection (d) to read as follows:

11 (d) PUBLIC RELATIONS.—Not later than December
12 31, 2005, the Administrator shall transmit a plan to the
13 Committee on Appropriations and the Committee on

1 Science of the House of Representatives, and to the Com-
2 mittee on Appropriations and the Committee on Com-
3 merce, Science, and Transportation of the Senate, describ-
4 ing the activities that will be undertaken as part of the
5 national awareness campaign required by the report of the
6 Committee on Appropriations of the House of Representa-
7 tives accompanying the Science, State, Justice, Commerce,
8 and Related Agencies Appropriations Act, 2006, and the
9 expected cost of those activities. The Administration may
10 undertake activities as part of the national awareness
11 campaign prior to the transmittal of the plan required by
12 this subsection, but not until 15 days after notifying the
13 Committee on Science of the House of Representatives
14 and the Committee on Commerce, Science, and Transpor-
15 tation of the Senate of any activity. The plan required by
16 this subsection shall include the estimated costs of any ac-
17 tivities undertaken pursuant to notice under the preceding
18 sentence.

Page 19, line 18, strike "and specific" and insert "and any specific".

Page 21, after line 4, insert the following new subparagraph and redesignate the subsequent subparagraphs accordingly:

19 (B) lists the research and development pro-
20 grams of Federal agencies other than the Ad-

1 ministration that were reviewed as part of the
2 study, which shall include any program sup-
3 porting research and development in an area re-
4 lated to the programs of the Administration,
5 and the most recent budget figures for those
6 programs of other agencies;

SUMMARY OF MANAGER'S AMENDMENT TO H.R. 3070 OFFERED BY MR. CALVERT

The Amendment makes a number of additions and small clarifying changes to the underlying bill, H.R. 3070, the *National Aeronautics and Space Administration Authorization Act of 2005.*

The more significant changes the amendment makes include the following:

- Adds a reference to the present era as the "Second Space Age" in a finding of the underlying bill that relates to NASA's multiple missions in human space flight, aeronautics and science.
- Adds a requirement that the Administrator include a description of the steps NASA will use "to retain needed employees" in the human capital strategy required by the underlying bill.
- Strikes a provision in the bill requiring NASA to annually report its General and Administrative expenses with the President's budget and creates a new provision requiring NASA to produce such information upon request from the Committee.
- Adds a requirement that NASA report in the President's annual budget the amount of unobligated funds carried over into the current year from the previous fiscal year. (The underlying bill already requires NASA to report its expected unobligated balances that will remain at the end of the current year and at the end of the following year.)
- Adds a requirement that NASA report to the Committee on "the extent to which the Crew Exploration Vehicle will allow for the escape of the crew in the event of an emergency."
- Adds flexibility to the requirement in the underlying bill concerning the "national awareness campaign" (which the FY06 House Science, State, Justice and Commerce Appropriations bill directed NASA to undertake) by making it clear that awareness campaign activities can begin immediately but require Congressional notice.
- Adds a requirement that the Office of Science and Technology Policy (OSTP) include a list of all the R&D programs of federal agencies other than NASA that OSTP will have reviewed in conducting a study that the underlying bill requires to determine whether NASA's research programs are duplicative of those in other agencies or neglectful of any related national needs.

## AMENDMENT TO H.R 3070

## OFFERED BY MS. JACKSON-LEE OF TEXAS

Page 15, line 6, strike "and".

Page 15, line 13, stike the period and insert "; and".

Page 15, after line 13, add the following new paragraph:

1 (11) the budget for safety, by program.

# XXII. PROCEEDINGS OF THE FULL COMMITTEE MARKUP ON H.R. 3070, THE NASA AUTHORIZATION BILL OF 2005

**THURSDAY, JULY 14, 2005**

HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
*Washington, DC.*

The Committee met, pursuant to call, at 11:15 a.m., in room 2318 of the Rayburn House Office Building, Hon. Sherwood L. Boehlert (Chairman of the Committee) presiding.

Chairman BOEHLERT. Before we get to the important work of the day, the markup of the NASA authorization bill, let me point out to members that we are awaiting word from NASA on return to flight. As soon as we have word when, we will notify everyone by e-mail, so stay tuned. They are meeting—the NASA team is meeting as we speak, and we may have something early afternoon about the intentions.

And let me point out to all of you who came down to the Cape yesterday, thank you very much. We witnessed a NASA success story in the making. The success was that they identified the problem, and they scrubbed their flight before the problem became something that was more serious. And so we congratulate the team at NASA, and we commend them to continue their hard work with the hope and expectation that shortly we will be able to return to flight and continue exploration.

Good morning. The Committee on Science will come to order.

Pursuant to notice, the Committee on Science meets to consider the following measure: H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005. I ask unanimous consent for the authority to recess the Committee at any point during consideration of these matters, and without objection, it is so ordered.

We will now proceed with the markup, beginning with the opening statements. And I will start with mine.

I want to welcome everyone to this morning's important markup. We have been talking about doing a NASA bill on this Committee for a long time, and we have been delayed by the Columbia tragedy, by changes in plans at NASA, and by changes in leadership at NASA. But now this morning, we are finally ready to go. I am confident that we won't have any last-minute glitches at the launch.

I will talk about the bill in detail when we get to the appropriate point in the markup. For now, let me just thank Chairman Calvert

for his steadfast leadership on this bill. He has kept everyone focused and moving forward. And I want to especially thank Mr. Gordon and Mr. Udall for their willingness to engage in meaningful deliberations, at both the member and staff level, to talk about the issues in detail, to swap points of view, and in the end, to develop a package that we can all embrace.

We can now move forward as a unified team when we negotiate with the Senate. Those negotiations will not be easy. The Senate bill places far too much emphasis on the status quo and fails to make the kinds of choices necessary to give NASA a forward-looking and sustainable program. We have got our work cut out for us, but the good news is that we will continue to work as a team.

Once again, let me commend the principals involved, Mr. Gordon, Subcommittee Chair Calvert, and Subcommittee Ranking Member, Mr. Udall.

We expect the bill to come to the Floor next week. So at least the House part of the process will have moved at a rapid pace from Subcommittee to the Floor.

I should say that there are some issues we are putting off today. Most significant is the Iran Non-proliferation Act. We received the Administration proposal right before the July 4 recess, and we are still reviewing it, as is the International Relations Committee.

I do not think that a final NASA bill should come to the Floor until we have resolved this issue. And I think we will resolve in a timely fashion, but I have no idea, at this point, what the resolution will be. So I appreciate the urgency of the issue, and I know Mr. Rohrabacher will offer and withdraw an amendment on INA today to spark some discussion. I hope we will be able to move forward on this issue soon.

There are also a variety of technical drafting issues and provisions from NASA and some of our members that we could not get in time for this markup, given the time required to negotiate the bipartisan compromise. Those will be handled in a bipartisan manager's amendment on the Floor.

So let me conclude by saying that I am pleased that we are at the point we are today. We have a strong, thoughtful, truly bipartisan bill that will strengthen NASA and move it forward. Let us start our countdown to launching this bill.

[The statement of Mr. Boehlert follows:]

**CONGRESSMAN SHERWOOD BOEHLERT (R-NY)**
**OPENING STATEMENT FOR NASA MARK-UP**
**July 14, 2005**

I want to welcome everyone to this morning's important mark-up. We have been talking about doing a NASA bill on this Committee for a long time, and we've been delayed by the Columbia tragedy, by changes in plans at NASA, and by changes in leadership at NASA. But now this morning, we're finally ready to go. I'm confident that we won't have any last minute glitches at this launch.

I'll talk about the bill in detail when we get to the appropriate point in the mark-up. For now, let me just thank Chairman Calvert for his steadfast leadership on this bill. He has kept everyone focused on moving forward. I also want to thank Mr. Gordon and Mr. Udall for their willingness to sit down, at both the Member and staff level, to talk about issues in detail and, in the end, to compromise.

We can now move forward as a unified team when we negotiate with the Senate. Those negotiations will not be easy. The Senate bill places far too much emphasis on the status quo and fails to make the kinds of choices necessary to give NASA a forward-looking and sustainable program. We've got our work cut out for us, and we'll work as a team.

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So let me conclude by saying that I'm pleased that we're at the point we are today. We have a strong, thoughtful, truly bipartisan bill that will strengthen NASA and move it forward. Let's start our countdown to launching this bill.

Mr. Gordon.

Chairman BOEHLERT. Mr. Gordon.

Mr. GORDON. Thank you, Mr. Chairman, and good morning everyone.

When the Space and Aeronautics Subcommittee marked up H.R. 3070 shortly before the 4th of July recess, Representative Udall and I expressed some significant concerns that we and other members of the Committee's Democratic caucus had about the bill.

At that time, we discussed some of the essential principles that we believe should be reflected in the NASA authorization.

First, we believe that NASA is and should remain a multi-mission agency with a robust set of R&D activities in science, aeronautics, and human space flight.

Second, we support the goal of human exploration beyond low-Earth orbit. We just want to make sure that it is going to be properly paid for and not funded by cannibalizing NASA's other important missions.

To that end, we believe it is important to do what we can to ensure that adequate firewalls exist between NASA's accounts so that a productive balance is maintained between NASA's core missions while still providing sufficient flexibility to deal with emergencies. We also think that providing multi-year funding guidance in the NASA authorization is another important way of supporting an appropriate balance among the agency's programs.

Third, we also think it is important to establish priorities within NASA's exploration programs, as well as the agency's other accounts. The fiscal situation is only going to get worse over the next few years, and we need to be sure that NASA's exploration program is spending its money wisely and focusing on the highest priority tasks.

In that regard, we believe that the development of the Crew Exploration Vehicle should be the highest priority for the next several years, along with planning to better define the overall exploration architecture and its prioritized implementation plan.

Fourth, we believe that since the Nation has invested significant taxpayer funds in the development of an International Space Station, NASA should ensure that we make sure of its potential to advance fundamental and applied science, not just to support the exploration initiative. And of course, we should honor our international commitments to the International Space Station program.

Finally, we also believe that while goals can be useful, it isn't wise to try to write them into law as hard deadlines. Both safety considerations and common sense argue that NASA needs to have flexibility to accommodate changing situations, whether technical, operational, or budgetary in nature. And I am pleased that the manager's amendment avoids such hard deadlines.

Having said all of that, the Democratic members of the Committee decided that the most appropriate response to our unhappiness with H.R. 3070 would be to offer a responsible alternative that reflects those principles.

And that is what we did. With useful input from all of the Democratic members of our Committee, as well as provisions from the Senate's version, we drafted H.R. 3250, which was formally introduced earlier this week.

The provisions in that bill provided the basis for very constructive negotiations between Chairman Boehlert and Chairman Calvert over the last week. As a result, many of the provisions from H.R. 3250 are now incorporated in part or in total in the manager's amendment that we will consider shortly.

Thus, if the manager's amendment is adopted, the NASA authorization bill will include some of the following: multi-year funding guidance; legislative language and restructuring budgetary accounts to help provide funding firewalls and ensure balance is maintained; increased funding for NASA's science programs; funding for fundamental, applied, and commercial microgravity research; funding for the Hubble servicing mission; funding for a revitalized aeronautics R&D program at NASA, with policy guidance from Representative Udall's aeronautics bill; provisions to address workforce and infrastructure issues; priorities for the human exploration program, as well as a number of other provisions that some of my colleagues would like to discuss.

Mr. Chairman, we have a rocky—we had a rocky start, but I believe we have ended up with a good bill. I want to thank you and Chairman Calvert for your willingness to listen to our suggestions for addressing issues of concern. And I think that the bill, as amended by our manager's amendment, is a good one, and one that I will be happy to support.

Thank you, and I yield back the balance of my time.

[The statement of Mr. Gordon follows:]

## OPENING STATEMENT

**U.S. Rep. Bart Gordon (D-TN)**
**Ranking Member, Committee on Science**

**Full Cmte. Markup: *H.R. 3070, THE NASA AUTHORIZATION BILL of 2005***

**July 14, 2005**

Good morning. When the Space and Aeronautics Subcommittee marked up H.R. 3070 shortly before the 4th of July recess, Rep. Udall and I expressed some significant concerns that we and other members of the Committee's Democratic caucus had about the bill.

At that time, we discussed some essential principles that we believe should be reflected in the NASA Authorization.

First, we believe that NASA is and should remain a multi-mission agency with a robust set of R&D activities in science, aeronautics, and human space flight.

Second, we support the goal of human exploration beyond low Earth orbit. We just want to make sure that it is properly paid for, and not funded by cannibalizing NASA's other important missions.

To that end we believe it is important to do what we can to ensure that adequate firewalls exist between NASA's accounts so that a productive balance is maintained between NASA's core missions—while still providing sufficient flexibility to deal with emergencies. We also think that providing multiyear funding guidance in the NASA Authorization is another important way of supporting an appropriate balance among the agencies programs.

Third, we also think it is important to establish priorities within NASA's exploration program – as well as within the agency's other accounts. The fiscal situation is only going to get worse over the next few years, and we need to be sure that NASA's exploration program is spending its money wisely and focusing on the highest priority tasks.

In that regard, we believe that development of the Crew Exploration Vehicle should be the highest priority for the next several years, along with planning to better define the overall exploration architecture and its prioritized implementation plan.

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Finally, we also believe that while goals can be useful, it isn't wise to try to write them into law as hard deadlines. Both safety considerations and common sense argue that NASA needs to have the flexibility to accommodate changing situations, whether technical, operational, or budgetary in nature. I'm pleased that the Manager's amendment avoids such hard deadlines.

Having said all that, the Democratic Members of the Committee decided that the most appropriate response to our unhappiness with H.R. 3070 would be to offer a responsible alternative that reflected those principles.

And that is what we did. With useful input from all the Democratic Members of our Committee, as well as provisions from the Senate's version, we drafted H.R. 3250, which was formally introduced earlier this week.

The provisions in that bill provided the basis for very constructive negotiations with Chairman Boehlert and Chairman Calvert over the last week. As a result, many of the provisions from H.R. 3250 are now incorporated in part or in total in the Manager's amendment that we will consider shortly.

Thus, if the Manager's amendment is adopted, the NASA Authorization bill will now include:

* Multiyear funding guidance,
* Legislative language and restructured budgetary accounts to help provide funding firewalls and ensure balance is maintained,
* Increased funding for NASA's science programs,
* Funding for fundamental, applied, and commercial microgravity research,
* Funding for a Hubble servicing mission,
* Funding for a revitalized aeronautics R&D program at NASA, with policy guidance from Rep. Udall's aeronautics bill,
* Provisions to address workforce and infrastructure issues,
* Priorities for the Human Exploration program; as well as a number of other provisions that some of my colleagues would like to discuss.

Mr. Chairman, we had a rocky start, but I believe we have ended up with a good bill. I want to thank you and Chairman Calvert for your willingness to listen to our suggestions for addressing issues of concern. I think that the bill as amended by our Managers' amendment is a good one, and one that I will be happy to support.

Thank you and I yield back the balance of my time.

Chairman BOEHLERT. Thank you very much, Mr. Gordon.

Thank you very much for emphasizing the constructive working partnership we have that produces, on this Committee, results that we all can be proud of.

With that, I recognize Mr. Calvert, the Chairman of the Subcommittee on Space and Aeronautics. Let me point out, this is his maiden voyage as Chairman, and he has done an outstanding job. He has been tireless in his effort. He is getting out all across the country to the NASA facilities. No one has worked any harder or deserves any more credit than Mr. Calvert.

Mr. Chairman, you are recognized.

Mr. CALVERT. Thank you, Mr. Chairman.

And I know we are all disappointed about the Shuttle Discovery's scrubbed mission yesterday, but we are looking forward to NASA safely returning to flight soon.

Our civil space program excites the world. In a Gallup poll released this week, more than ¾ of the American public support a new plant for space exploration. Yesterday, almost 50 members of the House and several Senators went to launch—went to the launch to witness the return of flight nearly 2½ years since the Columbia accident.

Today's markup is also a great event. We are having a Full Committee markup of the NASA authorization bill for 2005. The last time that we had a NASA authorization bill was in 2000. I want to commend the Chairman, Chairman Boehlert, and Ranking Members Gordon and Udall, for their cooperation in carefully crafting a bipartisan bill for our markup today. It has taken numerous meetings of the principals and long, hard hours of staff work on both sides to come to this very complex and balanced agreement. As mentioned, we are going to offer a bipartisan manager's amendment to the bill that members of the Space and Aeronautics Subcommittee marked up 2 weeks ago and reflects the agreements made over the last couple of weeks.

The bill endorses the President's Vision for Space Exploration, the first time this has been done since the President announced the Vision January 14, 2004. The NASA Authorization Bill of 2005 is a balanced 2-year bill with support for human space flight, science, and aeronautics.

Because NASA is undergoing a major transformation with its new Administrator, Dr. Mike Griffin, we have asked for a number of strategic plans in the areas of aeronautics, science, human capital and facilities, including the test facilities. The bill addresses the need for NASA to make better use of commercial products, including software, as well as to work with entrepreneurs in accomplishing NASA's goals. We also included a version of the "Nunn-McCurdy" cost containment language that has been crafted for NASA and its development programs. Also, by remaining silent on the Shuttle program's length of operation, the bill provides the Administrator the flexibility to move forward with his plan to retire the Shuttle program in 2010. Ending the Shuttle program at this time will free up funding to accelerate the development of the Crew Exploration Vehicle and to help to close the gap between the Shuttle and the CEV.

NASA has promised Congress a number of other reports this fall in such areas as the number of Shuttle flights planned before its retirement, a description of the Crew Exploration Vehicle, a description of any heavy-lift vehicle that NASA may plan to develop, a plan for servicing the Hubble Space Telescope following the second test flight of the Shuttle, and the research agenda for the International Space Station and its proposed final configuration. These are key issues before the agency that Congress will examine over the next year. We have asked the Office of Science and Technology Policy to look at R&D programs across the Federal Government and to document all programs that may be duplicative in multiple agencies and also those that may have fallen through the cracks. We have also asked for NASA to consider various business models as it looks to the agency's restructuring. All of this information will enable Congress to craft legislation in the future which parallels the exciting changes and challenges NASA will face in the coming years.

Again, I want to thank the Committee leadership and our working—hardworking staff for their efforts in putting together this bill. We hope to have a bill on the Floor, I hope, next week, and hopefully to conference with the Senate once their bill clears the Senate Floor. This is an important milestone for the Science Committee. I appreciate the hard work of the Chairman.

With that, I yield back the balance of my time.

[The statement of Mr. Calvert follows:]

# OPENING STATEMENT
# CHAIRMAN KEN CALVERT
# CHAIRMAN, SPACE AND AERONAUTICS SUBCOMMITTEE
# COMMITTEE ON SPACE
# U.S. HOUSE OF REPRESENTATIVES
# JULY 14, 2005

Although we are all disappointed about the Space Shuttle Discovery's scrubbed mission yesterday, we are looking forward to NASA safely returning to flight in the next few days. Our civil space program excites the world. In a Gallup poll released this week, more than three-fourths of the American public support a new plan for space exploration. Yesterday, nearly 50 Members of the House of Representatives and several Senators went to the launch to witness the return to flight after nearly two and a half years since the Columbia accident.

Today's markup is a great event. We are having a full committee markup of the NASA Authorization bill for 2005. The last time that we had a NASA Authorization bill was in 2000. I want to commend Chairman Boehlert and Ranking Members Gordon and Udall for their cooperation in carefully crafting this bipartisan bill for our mark up today. It has taken numerous meetings of the principals and long, hard hours of staff work on both sides to come to this very complex and balanced agreement. We will be offering a bipartisan Manager's amendment to the bill that Members of the Space and Aeronautics Subcommittee marked up two weeks ago and reflects the agreements made over the last couple of weeks.

The bill endorses the President's Vision for Space Exploration – the first time that this has been done since the President announced his Vision January 14, 2004. The NASA Authorization bill of 2005 is a very balanced two-year bill with support for human spaceflight, science, and aeronautics.

Because NASA is undergoing a major transformation with its new Administrator, Dr. Mike Griffin, we have asked for a number of strategic plans in the areas of aeronautics, science, human capital and facilities, including the test facilities. The bill addresses the need for NASA to make better use of commercial products, including software, as well as to work with entrepreneurs in accomplishing NASA's goals. We also include a version of "Nunn-McCurdy" cost containment language that has been crafted for NASA and its development programs. Also, by remaining silent on the Shuttle program's length of operation, the bill provides the Administrator the flexibility to move forward with his plan to retire the Shuttle program in 2010. Ending the Shuttle program at this time will free up funding to accelerate the development of the Crew Exploration Vehicle (CEV) and to help to close the gap between the Shuttle and the CEV.

NASA has promised Congress a number of other reports this fall in such areas as the number of Shuttle flights planned before its retirement; a description of the Crew

Exploration Vehicle; a description of any heavy lift vehicle that NASA may plan to develop; a plan for servicing the Hubble Space Telescope following the second test flight of the Shuttle; and the research agenda for the International Space Station and its proposed final configuration. These are key issues currently before the Agency that Congress will examine over the next year. We have asked the Office of Science and Technology Policy to look at R&D programs across the Federal Government and to document all programs that may be duplicative in multiple agencies and also those that may have fallen through the cracks. We have also asked for NASA to consider various business models as it looks at the Agency's restructuring. ALL of this information will enable Congress to craft legislation in the future which parallels the exciting changes and challenges NASA will face in the coming years.

Again, I want to thank our Committee leadership and our hardworking staff for their efforts in putting together this bill. We hope to have the bill on the Floor next week, and, hopefully to conference with the Senate once their bill clears the Senate floor. This is an important milestone for the Science Committee.

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Chairman BOEHLERT. Thank you very much, Mr. Calvert.

And now your partner in this venture, Mr. Udall from Colorado, who has also worked unselfishly and tirelessly to produce the product we have before us today.

You are recognized, Mr. Udall, for any comments you might care to make.

Mr. UDALL. Thank you, Mr. Chairman.

Let me start by thanking you, Ranking Member Gordon, and my friend, Subcommittee Chairman Mr. Calvert, for your work to reach a consensus on the bill.

I know we share the same goal, which is a reauthorization bill that will give NASA clear direction for their future missions, like Hubble, aeronautics, and the moon-Mars initiative. And the manager's amendment provides a balanced policy directive to NASA that will allow the agency to continue to work toward the moon-Mars initiative, but also continue its vital research in the agency's other core areas.

As I and Ranking Member Gordon had mentioned during the Subcommittee markup of the bill, a NASA authorization bill should ensure a productive balance is maintained between NASA's core missions: science, aeronautics, and human space flight, including human exploration. In particular, I am interested in establishing protections for the science and aeronautics programs, as these missions have encountered the most uncertainty recently with regard to funding and the continuation of many projects.

By reorganizing NASA's budget accounts, I believe this will establish the proper protections to ensure that cost overruns in one account will not be taken out of another.

Many of the missions, both for human space exploration and science, are anxiously awaiting the return to flight of the Space Shuttle, which I am confident, as everybody on this Committee is, will soon successfully be undertaken. One of these missions is the Hubble servicing mission. A National Research Council report called the Hubble space telescope: "the most powerful astronomical facility ever built." Hubble has provided inspiration worldwide to young and old, scientists and non-scientists alike. And after the public outcry about a possible cancellation of a mission to Hubble, I am pleased to see that this amendment not only includes a servicing mission, but also authorizes $150 million to be used for Hubble.

Turning to aeronautics, progress in aeronautics is crucial to the health of the Nation's air transportation industry, which in turn is crucial both to the continued strength of our domestic economy and to our international competitiveness. When Dr. Griffin testified before our Committee, he stated, "NASA does its best when our aeronautics programs are focused around key technical demonstrations, which are of a groundbreaking nature." I would wholeheartedly agree with this statement, and this is why I introduced legislation that names three breakthrough R&D initiatives in subsonic, supersonic, and rotorcraft.

As we see other countries making increased investments into their aeronautics industry, it is even more important that we continue breakthrough research that will benefit our aeronautics in-

dustry, the Department of Defense, and NASA's other program areas.

I want to also highlight another title of the amendment that will allow cities and municipalities better access to remote sensing data. In my home State of Colorado and cities throughout our country, we are faced with a real problem of excess growth and sprawl. We now have technology using geospatial data from satellites that can produce very accurate maps that show information about vegetation, flood plains, transportation, soil types, and many other things. The amendment includes provisions that would establish in NASA a program of grants for competitively-awarded pilot projects.

Let me move also to the manager's amendment and what it does in regards to education and outreach within NASA. It is no secret to members of this Committee that the United States is falling behind in producing graduates in the so-called "stem disciplines": science, technology, engineering, and math. Every mission performed at NASA can inspire young students to continue to study the stem subjects. NASA's education programs are key to reaching these students at a young age. In that regard, I am particularly pleased by the authorization figures for the space grant program. This successful program provides hands-on experience to college students regarding space and science fields.

And then lastly, I believe this amendment makes important steps to keep the NASA workforce informed of organizational changes and allow proper study and evaluation of any of these changes. Maintaining core competencies within NASA is dependent on maintaining a sufficient workforce. Working closely with the NASA workforce is important, and I believe the manager's amendment makes strides to do this.

So Mr. Chairman, in closing, I am pleased, as well, that we have been able to come to a consensus. I appreciate very much the open dialogue that occurred, and I look forward to working with you, the Ranking Member, and all of the members of the Committee as we move this bill to the Floor and convene our negotiations with the Senate in the conference.

And I yield back.

[The statement of Mr. Udall follows:]

**Rep. Mark Udall**
**NASA Authorization**
**July 14, 2005**

First, I would like to thank you, Mr. Chairman, Ranking Member Gordon and the subcommittee Chairman, Mr. Calvert for your work to reach a consensus on this bill.

I think we share the same goal – a reauthorization bill that will give NASA clear direction for their future missions like Hubble, aeronautics, and the Moon/Mars initiative.

This amendment provides a balanced policy directive to NASA that will allow the agency to continue to work toward the Moon/Mars initiative, but also continue its vital research in the agency's other core areas.

As I and Ranking Member Gordon had mentioned during the subcommittee markup of this bill, a NASA Authorization bill should ensure a productive balance is maintained between NASA's core missions—science, aeronautics, and human space flight—including human exploration.

In particular, I am interested in establishing protections for the science and aeronautic programs, as these missions have encountered the most uncertainty recently with regard to funding and the continuation of many projects.

By reorganizing NASA's budget accounts, I believe this will establish the proper protections to ensure that cost over runs in one account will not be taken out of another.

Many of the missions both for human space exploration and science are anxiously awaiting the return-to-flight of the Space

Shuttle - which I am confident NASA will soon successfully complete. One of these missions is the Hubble Servicing Mission.

A National Research Council report called the Hubble Space Telescope 'the most powerful astronomical facility ever built."

Hubble has provided inspiration worldwide to young and old, scientists and non-scientists alike.

After the public outcry from the possible cancellation of a servicing mission to Hubble, I am pleased to see that this amendment not only includes a servicing mission but also authorizes $150 million to be used specifically for Hubble.

NASA's aeronautics program has historically provided vital research and development that has allowed the United States to be a global leader in aeronautics.

Progress in aeronautics is crucial to the health of the Nation's air transportation industry, which in turn is crucial both to the continued strength of our domestic economy and to our international competitiveness.

When Dr. Griffin testified before this committee he stated "NASA does its best when our aeronautics programs are focused around key technical demonstrations, which are of a ground breaking nature."

I whole heartedly agree with this statement and this is why I introduced legislation that names three "breakthrough" R&D initiatives in subsonic, supersonic, and rotorcraft.

As we see other countries making increased investments into their aeronautics industry, it is even more important that we continue

break-through research that will benefit the aeronautics industry, the Department of Defense, and NASA's other program areas.

This amendment includes many of the provisions from my bill and I think is an important step towards ensuring the United States remains a leader in aeronautics.

I would like to thank members on both sides of the aisle who have supported the inclusion of these provisions.

I would also like to highlight another title of this amendment that will allow cities and municipalities better access to remote sensing data.

In my home state of Colorado and in cities throughout our country, we are faced with a real problem of excess growth and sprawl.

We now have technology — using geospatial data from satellites — that can produce very accurate maps that show information about vegetation, wildlife habitat, flood plains, transportation corridors, soil types, and many other things.

The amendment includes provisions that would establish in NASA a program of grants for competitively awarded pilot projects.

The purpose would be to explore the integrated use of sources of remote sensing and other geospatial information to address state, local, regional, and tribal agency needs.

State and local governments and communities can use geospatial information in a variety of applications – in such areas as urban land-use planning, coastal zone management and erosion control, transportation corridors, environmental planning, and agricultural and forest management.

These provisions allow cities and municipalities access to data from many available commercial sources, as well as public.

I believe it is important that we continue to encourage commercial involvement in our space missions, including through research. There are several partnerships with the science community and industry that perform research on the International Space Station.

This amendment speaks to the need to preserve fundamental, applied, and commercial life sciences and other microgravity research that allows commercial participation in the research performed on Station.

This amendment also includes important provisions regarding the education and outreach within NASA.

It is no secret to members of this committee that the United States is falling behind in producing graduates in STEM disciplines.

Every mission performed at NASA can inspire young students to continue to study the STEM subjects. NASA's education programs are key to reaching these students at a young age.

I am particularly pleased by the authorization figures for the Space Grant program. This successful program provides hands-on experience to college students regarding space and science fields.

Lastly, I believe this amendment makes important steps to keep the NASA workforce informed of organization changes, and allow proper study and evaluation of any of these changes.

Maintaining core competencies within NASA is dependent on maintaining a sufficient workforce. Working closely with the NASA workforce is important and I believe this amendment makes strides to do this.

Again, I am pleased to see that we were able to come to a consensus on this bill and appreciate the open dialog that occurred as we negotiated the details of the bill.

I look forward to working with the Chairman and Ranking Member and the other members of the Science Committee as this bill moves to the floor.

Chairman BOEHLERT. Thank you very much.

Without objection, members may place statements in the record at this point.

[The statements of Ms. Johnson of Texas, Mr. Honda, Mr. Lincoln Davis and Ms. Jackson Lee follow:]

SENIOR DEMOCRATIC WHIP

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SUBCOMMITTEE ON AVIATION
SUBCOMMITTEE ON RAILROADS

COMMITTEE ON SCIENCE
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DEMOCRATIC STEERING AND POLICY COMMITTEE

CHAIR, TEXAS DEMOCRATIC DELEGATION

CONGRESSIONAL BLACK CAUCUS
CHAIR, 107TH CONGRESS

*Eddie Bernice Johnson*
Congress of the United States
30th District, Texas

PLEASE RESPOND TO:
WASHINGTON OFFICE:
1511 LONGWORTH BUILDING
WASHINGTON, DC 20515-4330
(202) 225-8885

DALLAS OFFICE:
3102 MAPLE AVENUE
SUITE 600
DALLAS, TX 75201
(214) 922-8885

SOUTH/EAST DALLAS OFFICE:
8344 EAST R.L. THORNTON FREEWAY
SUITE 222
DALLAS, TX 75228
(214) 324-0080

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**STATEMENT OF CONGRESSWOMAN EDDIE BERNICE JOHNSON**

**U.S. HOUSE OF REPRESENTATIVES**
**COMMITTEE ON SCIENCE**

**NASA AUTHORIZATION**

**Thursday, July 14, 2005**

The decisions we make today will play a critical role in the future of NASA. Our policy choices must address the real challenges that NASA will be facing in the coming years.

For decades NASA – in particular the human space flight program - has attracted some of our best and brightest. The scientific and technological advances developed by the NASA program have truly been unmatched. It is tough to measure NASA's impact on our society, and even more difficult to image what our world would be like today if not for the "Race to Space."

This Congress needs a comprehensive authorization that will address the needs of developing and retaining our best scientists. Under funding and dismantling parts of NASA will negatively impact new research and technology. We must not fall behind other countries in this field. If the United States wants to continue to be on the technological forefront, NASA authorization must have a balanced approach that includes a strong dedication to science, aeronautics, and human exploration.

PRINTED ON RECYCLED PAPER

# Statement for the Record

The Honorable Michael M. Honda
Committee on Science
Markup of NASA Authorization Legislation
7/14/2005

Chairman Boehlert, Ranking Member Gordon, Chairman Calvert, and Ranking Member Udall, I thank you and your staff for all of the hard work that went into getting us to where we are today – standing together behind a bill that members from both sides of the aisle can support.

I have had a number of concerns about the way things were proceeding at NASA that I felt needed to be addressed in an authorization bill, and so I'm very happy that the bill we are considering today contains provisions that target those very areas.

I was concerned, along with many other members of this committee, that the singular focus on manned space exploration was going to drain resources from other parts of the agency's mission.

Scientific activities work in astrobiology, the life sciences, and nanotechnology which can contribute to the exploration mission in the long term, but were losing out in a battle for resources with exploration systems acquisition in the short term.

In addition, air traffic management and other important aviation and aeronautics programs that are an equally important part of the agency's mission were being given the short shrift.

I am pleased that this bill enables us to move forward in the area of exploration and also provides funding for those other activities which are critical not only to manned space exploration but also to other priorities within the space program and NASA's aeronautics mission.

And I am hopeful that the renewed focus on science programs will ensure that existing scientific and technical collaborations between NASA centers and outside partners such as universities continue as previously envisioned.

I am also happy to see that this bill brings some rationality to the agency's workforce strategy. The process had appeared to be driven by a desire to shed civil servants solely to reduce the number of employees, without much thought about the competencies that would be lost or the impact it would have on long-time NASA employees.

This bill would bring about the development of a workforce strategy that ensures the workforce is the appropriate size and has the appropriate skills to get the job done.

The process for developing the strategy allows the NASA federal employees unions to participate in a consultation period before the plan is provided to Congress, and prohibits any Reductions in Force until after the strategy has been transmitted to Congress.

I am a bit concerned about the date specified in the bill, however, because it is inconsistent with a promise made to this committee by the acting Administrator at our February hearing on the agency's budget.

I hope that as we move forward we can make the bill and the testimony consistent.

I could go on and on about the things I am glad to see in this bill, but in the interest of time I'll end by noting that I am pleased that the bill seeks to honor our existing international partnerships on the International Space Station.

I am particularly supportive of continuing our partnership on biological research on the International Space Station, and am glad the bill contains language supporting life science work on the space station.

It seems clear to me that to accomplish this work, the Space Station will need to include the centrifuge module, and I hope that both the House and Senate will explicitly recognize this in the final conference report.

I would like to once again thank the Chairmen and Ranking Members and all of the staff on both sides of the aisle for all of your hard work on this bill and for reaching an agreement that you can all be proud of and that we can be proud to support.

## STATEMENT

## FULL COMMITTEE MARKUP OF
## H.R. 3070, NASA Authorization Act of 2005
## BY
## THE HONORABLE LINCOLN DAVIS (D-TN)

**July 14, 2005**

Mr. Chairman, I am pleased that the Science Committee is marking up H.R. 3070, the NASA Authorization Act of 2005. The bill we have come up with represents the meaningful things that come as a result of bipartisan negotiations. The Science Committee has had a history of working together to see that Members' interests are considered from both sides of the aisle.

I am particularly pleased that the compromise bill language will include plenty of money to carry out a research and aeronautics program as well as a space program. In Tennessee's Fourth Congressional District, Arnold Engineering Development Center in Tullahoma, Tennessee, contains the world's premier flight simulation test facility. AEDC and other such facilities are critically important as we continue to improve our flight technologies. The space program should not come at the sacrifice of our aeronautics and broader research efforts. I believe that as legislators, it is our duty to guide how federal monies are spent and provide direction to agencies such as NASA.

Today, Mr. Costello offered two amendments concerning job outsourcing within NASA. Like him, I am concerned that far too many American jobs, especially good, high-paying technical jobs, are being given to workers and companies overseas. These jobs are the lifeblood of this great nation, and rural areas such as my District suffer perhaps more than others because there are few jobs in

these areas it the first place. I hope that Congress will push harder towards doing something to address this crisis.

Thank you again, Mr. Speaker and Ranking Member, for your work to produce an overall good piece of legislation designed to serve NASA and the American public well.

**Congresswoman Sheila Jackson Lee**

**Markup Statement**

**HR 3070**
***NASA Authorization Act of 2005***

July 14, 2005

Mr. Chairman,

NASA is at a very pivotal moment in its history and therefore it is the responsibility of this Committee to ensure that the future of NASA is one of continued progress. After the tragic Colombia Space Shuttle accident this

Congress and this Committee were forced to reevaluate the NASA's purpose. I have stated that safety must be the number one priority of NASA, however this should not deter NASA from pushing the boundaries of technology and discovery.

I am proud to support this NASA Authorization as it now incorporates the Democratic provisions in this Committee. While, I have been supportive of President Bush's *Vision for Space Exploration* because I firmly believe that the investment we make today in science and exploration will pay large dividends in the future. Similarly, I do not want to put a cap on the frontiers of our discovery, NASA should aim high and continue to push our nation at the forefront of space exploration. However, I find it hard to be more supportive of the President's plan, when I have no real specifics as to what this plan will

entail. Large missions of this sort require detailed planning and as a Members of Congress we deserve to know how exactly the President's plan proposes to accomplish its objectives so that we can set out the proper resources and provide the necessary oversight. In addition, the President stated that the fundamental goal of his directive for the Nation's space exploration program is "...to advance U.S. scientific, security, and economic interests through a robust space exploration program." I could not agree more with that statement; unfortunately, this President's own budget does not meet the demands of his ambitious agenda. One year after the Administration laid out a five-year funding plan for NASA that was intended to demonstrate the affordability and sustainability of the exploration initiative, the Administration submitted a budget proposal for 2006 that would reduce that funding plan by $2.5 billion over the

next four years. For example, in 2006, the Administration is seeking $546 million less than it said would be needed for NASA in 2006 in the five-year funding plan that accompanied last year's request. In fact 75 percent of the $2.5 billion shortfall will fall to NASA's science and aeronautics programs. This kind of under-funding for vital programs is unacceptable. Again, it is even more alarming because the President has not provided a detailed plan as to how he intends to accomplish his space exploration agenda; certainly draining money from the budget will not help that cause. I hope that this NASA Authorization will address these budget shortfall issues and provide a more thorough and clear plan as to when these NASA goals can be accomplished.

Chairman BOEHLERT. We will now consider H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005. I ask unanimous consent that the bill is considered as read and open to amendment at any point and that members proceed with the amendments in the order of the roster. Without objection, so ordered.

Chairman BOEHLERT. The first amendment on the roster is an amendment offered in the nature of a substitute, offered by the Chair. I ask unanimous consent that the amendment in the nature of a substitute be treated as original text for purposes of amendment under the 5-Minute Rule. Without objection, so ordered.

I have an amendment at the desk. The Clerk will report.

Ms. TESSIERI. Amendment in the nature of a substitute to H.R. 3070 offered by Mr. Boehlert of New York, for himself, Mr. Gordon of Tennessee, Mr. Calvert of California, and Mr. Udall of Colorado.

Chairman BOEHLERT. As I mentioned in my opening statement, we have reached a thoughtful, bipartisan compromise, which is embodied in this substitute. I want to thank everyone who helped put together this compromise over many, many days and hours of negotiating, including the staff, but especially including the staff on both sides of the aisle, and Tim Brown from the Legislative Counsel's office, who worked to get us the formal language back so quickly.

The principles behind this substitute are the same as the principles that underlie the bill Mr. Calvert and I introduced. We need a multi-mission NASA with a balanced set of programs, and we need to move away from the current human space flight activities so we will be able to implement the President's vision for human space flight.

This substitute includes virtually all of the language that appeared in our bill, H.R. 3070, while bringing in many provisions from the Democrat proposal. Because of the compromise, the bill will now provide more specificity about authorization levels for fiscal years 2006 and 2007, will make those levels more enforceable, and will endorse a Hubble servicing mission, with the obvious caveat that it should not be done if the safety calculus changes. I think these are all very worthy provisions.

The substitute also includes several provisions that were lacking in the Democrat bill, perhaps most importantly an endorsement of the goal of returning to the moon by the year 2020. The substitute is also less prescriptive than the Democrat version was about both the aeronautics program and the Space Station research program.

The thorniest issues in the negotiation were what to do about the current human space flight program. I have to say, this surprised me because the Station and Shuttle, which now account for about 40 percent of NASA's budget, eat up funds that should go to science and aeronautics and to the President's vision, all stated priorities of this Committee's leadership on both sides of the aisle.

I think we have come to a reasonable compromise on these points.

On Shuttle retirement, the substitute is silent, which allows the Administration to go ahead with its plan to retire the Shuttle by 2010.

That retirement date is essential to have a forward-looking space program. The Shuttle is a magnificent achievement, as anyone who has seen it can attest. But as we learned again just yesterday, it is also a hellaciously complex and balky piece of equipment, outdated in many ways, and certainly not as safe as one would prefer, and it eats up a huge amount of money, whether it flies or not. We have to move on.

As for the Space Station, we all want to see the International Space Station used to the extent possible, given our investment in this facility. But we should be using it only to the extent that research could not be performed better elsewhere and only to the extent that the International Space Station does not consume funds that could be spent more productively elsewhere. Those criteria significantly narrow the ISS research agenda.

The substitute includes more direction about Space Station research than does H.R. 3070 and specifically requires that some of the research not be directed at human exploration.

That is not what I would have preferred, but it is a reasonable compromise, especially given that, unlike the Democrat bill, the substitute lets the Administration decide how much money to devote to Space Station research.

So this is really a true compromise. Both sides got some things, both sides gave up some things. What is important is the future the bill outlines for NASA.

The substitute, in effect, endorses the President's vision, points us back to the moon, and provides the funding necessary to move ahead with the development of the Crew Exploration Vehicle. At the same time, the substitute provides more funding for science and aeronautics than the President requested. And the substitute allows NASA to move ahead with its plans to gradually move away from its current human space flight programs.

In short, the substitute will give us a bill we can all be proud of. I look forward to working with my colleagues to preserve its key features in Congress.

[The statement of Mr. Boehlert follows:]

**CONGRESSMAN SHERWOOD BOEHLERT (R-NY)**
**DESCRIPTION OF BILL FOR NASA MARK-UP**
**July 14, 2005**

As I mentioned in my opening statement, we have reached a thoughtful bipartisan compromise, which is embodied in this Substitute. I want to thank everyone who helped put together this compromise over many hours of negotiation, including the staff on both sides of the aisle, and Tim Brown from the Legislative Counsel's office, who worked to get us the formal language back so quickly.

The principles behind this Substitute are the same as the principles that underlay the bill Mr. Calvert and I introduced – we need a multi-mission NASA with a balanced set of programs, and we need to move away from the current human space flight activities to implement the President's vision for human space flight.

This Substitute includes virtually all of the language that appeared in our bill, H.R. 3070, while bringing in many provisions from the Democrat bill. Because of the compromise, the bill will now provide more specificity about authorization levels for fiscal 2006 and 2007, will make those levels more enforceable, and will endorse a Hubble servicing mission, with the obvious caveat that it should not be done if the safety calculus changes. I think those are all worthy provisions.

The Substitute also includes several provisions that were lacking in the Democrat bill, perhaps most importantly an endorsement of the goal of returning to the moon by 2020. The Substitute also is less prescriptive than the Democrat version was about both the aeronautics program and the Space Station research program.

The thorniest issues in the negotiation were what to do about the current human space flight program. I have to say, this surprised me because the Station and Shuttle, which now account for about 40 percent of NASA's budget, eat up funds that should go to science and aeronautics, and to the President's vision – all stated priorities of this Committee's leadership on both sides of the aisle.

I think we've come to a reasonable compromise on these points.

On Shuttle retirement, the Substitute is silent, which allows the Administration to go ahead with its plan to retire the Shuttle by 2010.

That retirement date is essential to have a forward-looking space program. The Shuttle is a magnificent achievement as anyone who has seen it can attest. But as we learned again yesterday, it is also a hellaciously complex and balky piece of equipment, outdated in many ways, and certainly not as safe as one would prefer.
And it eats up a huge amount of money whether it flies or not. We have to move on.

As for Space Station, we all want to see the ISS used to the extent possible, given our investment in the facility. But we should be using it only to the extent that research could not be performed better elsewhere and only to the extent that ISS does not consume funds that could be spent more productively elsewhere. Those criteria significantly narrow the ISS research agenda.

The Substitute includes more direction about ISS research than does H.R. 3070, and specifically requires that some of the research not be directed at human exploration.

That's not what I would have preferred, but it's a reasonable compromise, especially given that, unlike the Democrat bill, the Substitute lets the Administration decide how much money to devote to ISS research.

So this is a true compromise. Both sides got some things, both sides gave up some things. What's important is the future the bill outlines for NASA.

The Substitute, in effect, endorses the President's vision, points us back to the moon, and provides the funding necessary to move ahead with the development of the Crew Exploration Vehicle. At the same time, the Substitute provides more funding for science and aeronautics than the President requested. And the substitute allows NASA to move ahead with its plans to gradually move away from its current human space flight programs.

In short, the substitute will give us a bill we can all be proud of. I look forward to working with my colleagues to preserve its key features in conference.

Thank you.

Chairman BOEHLERT. Is there any further discussion on the amendment? If not, the vote occurs on the amendment. All in favor, say aye. Opposed, no. The ayes seem to have it.

The second amendment on the roster is offered by the gentleman from California, Mr. Rohrabacher. Counsel is going to give me some counsel. Unanimous consent to vacate the vote. We have just—we have got the substitute as the base text for the amendment. And so we will proceed with the amendments—proposed amendments to the substitute, and then we will pass the substitute, as amended.

Mr. Sherman, I see you nodding yes, and when you nod yes, that always makes me happy.

The second amendment on the roster is offered by the gentleman from California, Mr. Rohrabacher.

Mr. Rohrabacher, are you ready to proceed?

Mr. ROHRABACHER. Yes, thank you very much.

Chairman BOEHLERT. Would you be so kind as to share with all of us in the audience the proud photograph you have?

Mr. ROHRABACHER. Here are new astronauts in the making, three of them.

Chairman BOEHLERT. For those of you who don't know, Mr. Rohrabacher is the proud father of infant triplets, and he is one of the premier surfers in the Congress, and he is getting his youngsters in the water early in preparation for getting them on the surfboard.

Mr. ROHRABACHER. Right. Until they can float in space, they will be floating in the water. So——

Chairman BOEHLERT. You may proceed with your amendment, Mr. Rohrabacher.

Mr. ROHRABACHER. Thank you, Mr. Chairman. And as you know, I do plan to withdraw this amendment, and I thank you very much.

Mr. Chairman, I ask——

Chairman BOEHLERT. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to H.R. 3070 offered by Mr. Rohrabacher of California.

Mr. ROHRABACHER. Mr. Chairman, I ask consent to insert in the record a written statement.

Chairman BOEHLERT. Without objection, so ordered.

*1*

Statement of the Honorable Dana Rohrabacher

Thank you, Mr. Chairman. I ask consent that the record note that Mr. McCaul of Texas should be listed as a co-sponsor of my amendment. Finally, I do intend to withdraw my amendment once other Members have the opportunity to speak on this matter.

Six years ago this Committee crafted Section 6 and part of Section 7 of the Iran Nonproliferation Act to pursue certain space policy goals, as well as non-proliferation concerns under the jurisdiction of another committee.

Today we know Section 6 hasn't worked out on either score. Regarding space, it may have been useful early on, but long ago it became a net minus.

Since the *Columbia* tragedy, Russia's government and industry have borne the burden of supporting our crews at ISS. The Russians have proven themselves to be reliable and dependable partners in space. Even so, for these 30 months NASA could not buy any goods or services from Russia to improve those crews' safety or research productivity.

Looking forward, things will get worse. Russia's obligation to provide crew rescue and transfer services to NASA expires next April, when the 11th Soyuz capsule to visit ISS returns to Earth. But the first impact is this October, when intensive training for the 12th Soyuz crew must begin.

As Dr. Griffin told us recently, with no crew rescue capability, our astronauts cannot stay at ISS between Shuttle flights. So we'll be risking human lives to fly the Shuttle to assemble and service a Space Station occupied and used exclusively by other countries for the next 5 to 7 years. You don't have to be a "robots in space" fanatic to think that's a lousy deal for America's taxpayers and scientists.

As it now stands, INA blocks NASA from buying any Russian space goods or services for human spaceflight… *forever*. Ironically, the Pentagon can launch satellites using Russian rocket engines but Mike Griffin's NASA cannot buy those same rockets – or

many other innovative commercial services – to affordably re-supply ISS or perform other human exploration missions.

As a former chair of the space subcommittee, I think that's wasteful and stupid. As a senior member and subcommittee chair of the International Relations Committee, this inconsistency weakens U.S. nonproliferation policy.

So for both space and security reasons, the Administration has proposed a change that preserves the INA's key nonproliferation provisions, while allowing NASA to buy Russian space goods and services for the Station and exploration projects beyond Russia's original ISS commitments. **This Administration proposal is NASA's #1 legislative request to the Congress this year**. We need to get this done or there will be serious consequences.

My amendment does exactly what was requested: it deletes the *prospective* half of the definition of Section 6's key term: "extraordinary payments in connection with the international space station".

With your indulgence, I would like to make a few other points:

First, this proposal is long overdue. We tried to get the former Administrator to avoid this crisis, and failed. Now we have new leadership, and an acceptable proposal before us.

Second, I want to thank Mr. Hall, who while he was Ranking Member, as well as Mr. Gordon and our former colleague Mr. Lampson, repeatedly offered their bipartisan support for fixing the INA. They generously tried to solve a problem facing a Republican President, and I appreciate that.

Third, some may wish to not only carefully consider but actually try to rewrite this proposal. But we have neither the time nor, in my opinion, any good space policy reason to delay action. The part of the INA this amendment changes is already overwhelmingly counterproductive to the goals of this bill.

Finally, NASA doesn't need a partial or temporary fix. It needs a prompt, complete, and permanent solution to this. If we want Mike Griffin and his team to open the space frontier, we should remove obsolete and destructive barriers in America's way.

Thank you, Mr. Chairman, and I yield back.

Mr. ROHRABACHER. And I ask consent that the record note that Mr. McCaul of Texas should be listed as a co-sponsor of my amendment.

Chairman BOEHLERT. Without objection, so ordered.

Mr. ROHRABACHER. Finally, I do intend to withdraw my amendment, as I said, but the other members should have an opportunity to speak on this as well, if they have their thoughts on the matter.

Six years ago, this Committee crafted Section 6 of part of Section—and part of Section 7 of the Iran Non-proliferation Act to pursue certain space goals, as well as non-proliferation concerns under the jurisdiction of another committee. I was a strong supporter of both the sections of the bill as well as the overall bill itself, in terms of the non-proliferation act.

Today, we know Section 6 hasn't worked on either score, either for American's space program, or in any way affecting the non-proliferation of weapons to Iran. Regarding space, it may have been useful early on, but long ago, this became a net minus.

Since the Columbia tragedy, Russia's government and industry have borne the burden of supporting our crews at the International Space Station. The Russians have proven themselves to be reliable and dependable partners in space. Even so, for these 30 months NASA could not buy any goods or services from Russia to improve those crews' safety or research or productivity.

Now however, looking forward, things are bound to get worse in—very shortly. Russia's obligation to provide crew rescue and transfer services to NASA expires next April, when the 11th Soyuz capsule visit to the International Space Station returns to Earth. But the first impact is this October, when intensive training for the 12th Soyuz crew must begin.

As Dr. Griffin told us recently, with no crew rescue capability, our astronauts can not stay at the International Space Station between Shuttle flights. So we will be risking human lives to fly the Shuttle to assemble and service the Space Station occupied and used exclusively by other countries for the next 5 to 7 years. That is screwy. You don't have to be a "robots in space" fanatic to think that that is a lousy deal for America's taxpayers and our scientists.

And as it now stands, the INA blocks NASA from buying any Russian space goods or services for human space flight forever. That is forever. Ironically, the Pentagon can launch satellites using Russian rocket engines, but Mike Griffin's NASA can not buy those very same rockets, or any other innovative commercial services, to affordably resupply Space Station or perform any other human exploration missions.

As a former Chair of the Space Subcommittee, I think that is wasteful and stupid. As a senior member of the Subcommittee and Chair of the International Relations Committee, Subcommittee on Oversight and Investigations, I believe that this inconsistency weakens our U.S. non-proliferation policy.

So for both space and security reasons, the Administration has proposed a change that preserves the non-proliferation provisions in the INA, while allowing NASA to buy Russian space goods and services for Station and exploration projects beyond Russia's original Space Station commitments. And let me note very emphatically, Mr. Chairman, this Administration proposal is NASA's num-

ber one legislative request to the Congress this year. Without it, Space Station is going to go in a horrible direction in terms of the United States of America. As I say, we will be excluded from it after paying for it and actually supplying it. We need to get this done or there will be serious consequences.

My amendment does exactly what was requested by the Administration: it deletes the prospective half of the definition of Section 6's key term, that is, "extraordinary payments in connection with the International Space Station".

With your indulgence, I would like to make just a couple other points.

First, this proposal is long overdue. I have tried to get the former Administrators and Administrations, let me note, the Clinton Administration and the Bush Administration, to drop the ball on this very important piece of legislation. And Mr. Sherman and I have long supported the non-proliferation act, and we have tried our best to get the Administrations to implement it by offering not just the stick, which is part of what we are talking about today, but a carrot approach to the Russians to get them to cease their cooperation with the Iranians. Unfortunately, that cooperation on that nuclear power project is over now, and the Russians have completed their contribution.

I want to thank Mr. Hall, who, while serving as Ranking Member, as well as Mr. Gordon and our former colleague Mr. Lampson, for repeatedly offering their bipartisan support to fix this non-proliferation act. They generously tried to solve the problem facing the—our Republican President, and also the problem faced Bill Clinton before him.

Third, and finally, some may wish to not only carefully consider, but to actually try to rewrite this proposal. I understand that. We have people working on that, but we do not have time nor, in my opinion, good space policy to delay action much further. The part of the INA that this amendment changes is already overwhelmingly counterproductive to the goals of this authorization bill as well as the goals of the non-proliferation act.

Chairman BOEHLERT. Thank you very much. I appreciate the gentleman's willingness to——

Mr. ROHRABACHER. Thank you very much.

Chairman BOEHLERT [continuing]. Offer and withdraw his amendment on this important topic. And I agree that a resolution on the issue created by the Iranian non-proliferation act must be a part of this bill before we send it to the President's desk.

And I will now recognize, in the following order, Ms. Woolsey, Mr. McCaul, and Mr. Sherman. You are recognized.

Ms. WOOLSEY. Thank you, Mr. Chairman.

And I know this amendment is going to be withdrawn, but I appreciate your letting me speak to it, because I want to emphasize the importance of non-proliferation, particularly with regard to future space travel.

I have introduced the Nuclear Non-proliferation Treaty Commitments Act in order to encourage the United States to live up to its international commitments to disarm its large nuclear weapons stockpiles. And I believe that we need to ban all use of nuclear

weapons in space, something that we can do under the jurisdiction of the Science Committee.

So I look forward to further review of Mr. Rohrabacher's vision. I look forward to the goal and supporting the goal to prevent nuclear proliferation of space and anything we can do to strengthen the United States' non-proliferation policy. So I look forward to working with all of you on that.

Thank you.

Mr. CALVERT [presiding]. The gentlelady yields back the balance of her time.

Mr. McCaul.

Mr. MCCAUL. Thank you, Mr. Chairman.

And I thank Congressman Rohrabacher for sponsoring this important amendment. We also share something else, in addition to supporting this amendment. I am the proud father of triplets as well. They will turn 4 in August. So we are thinking of maybe starting a caucus.

Mr. Chairman, according to President Bush, Secretary of State Condoleezza Rice, and NASA Administrator Michael Griffin, this is one of the most important issues concerning NASA that we will address in the 109th Congress. We are all against the proliferation of nuclear weapons. We are also dedicated to manned space flight and the International Space Station.

As a member of the Space Subcommittee, I believe this amendment will provide NASA with the much-needed fix to the Iran Nuclear Non-proliferation Act. As a member of the International Relations Committee, I also believe that this amendment will correct this legislation but will not usurp its worthy purpose of preventing the proliferation of nuclear weapons.

As a supporter of the President's Vision for Space Exploration, Congressman Rohrabacher's amendment will further President Bush's objective to achieve our goal of exploring the moon, Mars, and beyond. And so I urge my colleagues on this Committee, and the International Relations Committee, to support this valuable amendment, and I look forward to working with Congressman Rohrabacher to make sure this legislation is adopted.

Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentleman.

The gentleman yields back the balance of his time.

The gentleman from Los Angeles, California, Mr. Sherman.

Mr. SHERMAN. Well, I know how it pleases the Chairman for me to nod affirmatively but I must shake my head in opposition to this amendment, I even though it will be withdrawn, and to the concept of making a similar change before this bill reaches the President's desk.

It is interesting to find out we have got triplets and triplets. My side has often wondered why there are so many Republicans. Now we know.

We need to balance, on the one hand, our efforts to prevent Iran from having nuclear weapons versus our desire to meet, in full, our timetable of commitments to the International Space Station. I would say that the former is probably more important than the latter. One, nuclear bombs smuggled into an American city is such a thought that it dwarfs even our efforts in space.

The current law is just fine. It allows the President to certify that in the prior year Russia has not contributed to the Iranian nuclear program. So if Russia simply stops its efforts in 2005 to help Iran develop nuclear weapons, then in 2006, we have no problem. This is not an amendment designed to prevent the Russians from being punished for sins of the past. It is an amendment designed to allow the Russians to continue to help the Iranian nuclear program.

Now I would certainly support any clarifying changes to statute necessary to protect our astronauts in a life-threatening circumstance, but we already have language in the bill that says that there is a waiver if cooperation with the Russians is necessary or payment to the Russians is necessary to prevent a loss of life or grievous injuries. If that language in the statute needs to be clarified, fine.

But what the proposed amendment does is it eviscerates the entire section. It says we can make payments to Russia notwithstanding their cooperation with Iran on nuclear weapons and the Iranian nuclear program, except we can't pay Russia to do the things they have already agreed to do with their own money, which is something they have never asked us to do. So it basically strikes Section 6 out of the law.

We should involve, of course, the International Relations Committee, a Committee that will think first of the nuclear proliferations program of Iran and is somewhat less involved, of course, with our space program.

I look forward to, if necessary, making a change in this bill that would allow us, and I frankly wouldn't want to go this far, to say we can make payments to Russia to assure the success of the International Space Station mission until 2012. But I would hope not to go that far, but even that, it is only part of the way down the road, whereas the amendment, which will be withdrawn by the gentleman, goes all of the way down the road to completely eviscreating Section 6.

Finally, the gentleman points out that we have not been effective in preventing Iran from moving forward with its nuclear weapons program. This is true, but that is because we don't have a comprehensive and effective policy to put economic pressure on Iran, to deal effectively with Russian contributions to the Iranian nuclear program, et cetera. We have ignored the Iran-Libya Sanctions Act, or at least the Administration has refused to enforce it. It is not the right action of this Congress to say, "Well, the current program isn't working, so let us do absolutely nothing. Let us remove those elements that we already have in current law." Instead, Section 6 should be part of an overall program to prevent Russia from cooperating with the Iranian program and to prevent Iran from going forward with its nuclear weapons program.

Let me reemphasize, the President makes an annual certification, so we can leave the statute alone, and if Russia does not aid Iran in its nuclear program in 2005, then we are totally free to move forward with payments to Russia in 2006. If—and in fact, if the President is able to certify that Russia did not help Iran's nuclear program in 2004, then the problem the gentleman is worried about doesn't even exist. The President just has to certify that

which he would be preferred to certify. The reason this change is being proposed is the President can't certify that Iran did not receive aid to its nuclear program from Russia in 2004, and he doubts that he will be able to make that certification for 2005. And that is why we need to keep Section 6 in the Iran Non-proliferation Act of 2000. And that is why I hope that we don't make any significant change to current statute.

And I yield back.

Mr. CALVERT. The gentleman's time is expired.

Does the gentleman from California wish to withdraw his amendment?

Mr. ROHRABACHER. Yes, I ask unanimous consent for 1 minute to——

Mr. CALVERT. The gentleman is recognized for 1 minute.

Mr. ROHRABACHER. I think Mr. Sherman has made some very poignant points today. And Mr. Sherman and I have been standing together for a long time on this Iranian issue, and I appreciate the leadership that he has provided over the years on that and some of the points he has made today. I am going to be withdrawing my amendment. I hope those who are working on the wording that will try to meet this problem will take into consideration some of what Mr. Sherman told us today.

Let me note that I do not believe, however, that the American space program should bear the brunt of the cost of trying to accomplish what Mr. Sherman and I agree on as the noble goal, not only a noble goal, but an essential goal for American security and is dealing with this nuclear threat of the Iranians.

So with that said, I would withdraw—ask unanimous consent to withdraw my amendment.

Mr. CALVERT. The gentleman asks unanimous consent to withdraw his amendment. Any objection? Seeing none, the amendment has been withdrawn.

Next is the third amendment on the roster offered by the gentleman from Louisiana, Mr. Melancon. Are you ready to proceed with your amendment, sir?

Mr. MELANCON. Yes, Mr. Chairman. I have the amendment at the desk.

Mr. CALVERT. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to the amendment in the nature of a substitute offered by Mr. Melancon of Louisiana.

Mr. CALVERT. I would ask unanimous consent to dispense with the reading. Without objection, so ordered.

The gentleman is recognized for 5 minutes to explain his amendment.

Mr. MELANCON. Thank you, Mr. Chairman.

As with the previous amendment, I intend to withdraw, but I would like to make this statement and to commend the Chairman, Mr. Gordon, Mr. Calvert, and Mr. Udall for their efforts in putting together this amendment that will be presented on the Floor of the House next week.

My amendment is—there is funding pressure to reduce the NASA infrastructure operating costs. That will continue as NASA transitions to the new space exploration program. NASA will have to bear the cost of maintaining unused infrastructure until it is

needed by the exploration program or eliminate the infrastructure. Additional funds or alternate revenues are required to meet these challenges. Enhanced use lease, EUL, provides government agencies the capability to receive full market value consideration for sale or leasing on all the parts of their agency's facilities.

The EUL authority has been granted to the Department of Energy, Veterans Administration, and the Department of Defense to help transition and redevelop facilities affected by BRAC or other facility closings. NASA was granted EUL authority in 2003, the 2003 appropriations bill for use only at the Ames Research Center and the Kennedy Space Center. The Senate NASA Authorization Act of 2005 grants NASA authority for all centers to retain the net proceeds for sale or lease of real property and to utilize those funds for real property needs.

This provision will allow NASA to directly apply those proceeds to maintain NASA real property instead of using critical program dollars needed to execute NASA's mission. Expanded EUL authority for NASA will help develop underutilized facilities and utilize the revenue to pay operating costs to retain the infrastructure not immediately needed by the exploration program.

The EUL authority helps avoid potential costly shutdowns and start-up costs in the facilities that may not be immediately needed by the exploration program. Enhanced use lease allows NASA to maximize the revenue potential, because it authorizes NASA to charge a fair market value.

EUL authority gives NASA maximum flexibility and capability to use the revenues earned from leasing unused portions of MAF to maintain the infrastructure without reallocating funds from other programs. And therefore, the recommendation of the House NASA reauthorization amendment bill includes similar provisions as the Senate authorization bill does, allowing all of NASA to retain the proceeds from sales and/or lease of underutilized infrastructure to help pay for its real property needs.

I thank you for the opportunity to——

Mr. GORDON. Would the gentleman yield?

Mr. MELANCON. Yes, I would.

Mr. GORDON. Let me just very quickly say that my friend from Louisiana has a very good amendment. There is similar language in the Senate bill, as he pointed out. It was in our original Democratic substitute, however, the Majority, and I agree, was concerned that it would be a joint referral that could slow this process down. You certainly have my commitment, and I think the rest of us, our commitment to concur with the Senate on this important amendment.

Thank you.

Chairman BOEHLERT. Thank you very much.

The gentleman's time is expired.

Just let me say, I support the amendment offered by—the intent of the amendment offered by the gentleman from Louisiana, but I can't accept it now. Lest you think this is just another example of political double talk, I support it but can't accept it. The reason I can't accept it, as Mr. Gordon has just pointed out, this would waive laws that are not in the jurisdiction of the Science Committee. However, I can assure you that I hope to work with you

and Mr. Gordon as we move toward the Floor, as we negotiate the bill in conference. The intent is absolutely right on target, and we are with you.

Mr. MELANCON. Mr. Chairman, if I could, then, I would ask unanimous consent to withdraw the amendment.

Chairman BOEHLERT. Without objection, so ordered.

The fourth amendment on the roster is the amendment offered by the gentlelady from Texas, Ms. Jackson Lee.

Ms. Jackson Lee, are you ready?

Ms. Jackson Lee is conferring with Mr. Gordon, and I will confer with all of you.

We—you don't get to this juncture when you have people on both sides of the center aisle essentially agreeing by accident. It takes a lot of hard work on the part of all. And particularly the staff. The staff on this Committee, you know, it is great. As I point out that we may come to some agreement at 9:30 or 10 o'clock at night on something very complex and say, "Okay." We shake hands. Mr. Gordon and I shake hands. And off we go into the twilight and say to the staff, "Fix it." And they have got to—what they have got to fix takes, you know, hours more work, and we expect to come in the next morning and have it ready to go. And lo and behold, it was, which is an outstanding tribute to our respective staffs.

And now that we have acknowledged their fine work, let me acknowledge the fine work of another valued member of this Committee, Ms. Jackson Lee.

Are you ready to proceed?

Ms. JACKSON LEE. Yes, Mr. Chairman.

I have an amendment at the desk.

Chairman BOEHLERT. The Clerk will report the amendment.

Ms. TESSIERI. Amendment to the amendment in the nature of a substitute offered by Ms. Jackson Lee of Texas.

Chairman BOEHLERT. The gentlelady will proceed.

Ms. JACKSON LEE. Mr. Chairman, I know that in the course of my being in the Homeland Security Committee this morning, there have been many accolades given regarding NASA, and certainly members who were able to participate yesterday in the proposed historic opportunity were reflecting on the importance of man's exploration and women's exploration into space. And I want to echo that and thank both the Chairman and the Ranking Member for the opportunity to join them for what was a historic day, because it was America's commitment to return to space exploration. And it was also America's commitment to safety and detail. And that is what our friends at NASA are doing today. And I want to thank the astronauts, as well, offering themselves for service to America, and, of course, their families.

My amendment tracks the value that we place on NASA and the value of space exploration and the value of diversity and inclusion and training. The historically black colleges and universities, our institutions, and I will have a later amendment dealing with Hispanic-serving institutions, but these are institutions which many national officials—NASA officials have reflected on as contributing to the increased diversity around the question of math and science, but also around the question of professionals at the new restored NASA. Dr. Griffin said that he will be looking to internal expertise

to rebuild NASA for its mission, not only in space, but to Mars and to the moon and to continue "our" prominence. I don't like to use the word "dominance". I like to use the word "prominence" in space. So it is a full employment, a full involvement amendment to restore $69.2 million into the historically black colleges account and to be able to assist NASA and to be able to follow its new guidelines.

The fact is that this year HBCUs face a $13 million cut in their allotment for NASA education funds. Clearly, this money could make a significant difference in the future diversity of the science community. Renowned writer, scholar, and educator W.E.B. DuBois, Dr. Walter Massey, former Director of the National Science Foundation, and President of Morehouse College, actor and director Spike Lee, Dr. Deborah Hyde, one of our only four African American female neurosurgeons, the honorable Louis Sullivan, and many others are distinctive, distinguished, and successful graduates from historically black colleges and universities.

For most of America's history, African Americans who received a college education could only get it from HBCUs. Today, HBCUs remain one of the surest ways for an African American, or a student of any race, to receive a high-quality education. Seven of the top eleven producers of African American baccalaureates in engineering are HBCUs. Number one, North Carolina A&T University, Southern University A&M, Florida A&M, and Howard University, and I would add Prairie View A&M in Houston in the Texas area. Many of you have universities as well, and certainly one of the outstanding producers of physical sciences degrees is Xavier University.

But one of the gleaming examples was a surprise for me yesterday as I walked into the area where the viewers were supposed to gather for the launch of the Space Shuttle. And there, lo and behold, was a young woman who had received a Ph.D. from Texas Southern University on environmental sciences, but that was not really the issue. She happened to be an individual who participated in a NASA program that I encouraged her to participate in some many years ago. I had lost contact with her. She had no interest, no knowledge, absolutely no exposure to NASA or its responsibilities. She just happened to be a Ph.D. candidate, and we were looking for an individual who might carry our message of more African Americans in this discipline. Well, that one experience, and it happened to be a visit to the Space Shuttle that did not launch that time, she now is a Ph.D. She now is associated with NASA. She is now writing proposals to associate historically black colleges with the NASA program. And I could not over-talk her with respect to her loyalty, commitment, and interest in NASA.

I would only say to you that this is a worthwhile investment, and I would hope my colleagues would find a way, Ranking Member and Mr. Chairman, to work with me that we might see this come to fruition. I ask my colleagues to support this amendment. But whether it is today, whether we can find common ground, I think this is a worthwhile investment and has proven itself well.

I would conclude my remarks by saying it is my understanding that NASA has a global fund, and that they expend funds accordingly. And I welcome that fund, but I do think we have been very

effective and successful with funds that are so designated to be helpful in moving the investment in America along for all of us to assure our place in space.

With that, I yield back.

Mr. GORDON. Would the gentlelady yield?

Ms. JACKSON LEE. I would be happy to yield.

Mr. GORDON. Just very quickly, let me concur with the premise that my friend from Texas has put forth in that we do have a deficiency in math and science and technical students in this country. We have a very fertile ground with minority students as well as women, and I know you are going to address that in your next amendment. These amendments would have been in our base bill, but because of the tightness of getting everything done, we didn't get all of the information in time, but in conference, you can be well assured that your purpose will be our purpose.

Chairman BOEHLERT. The gentlelady has three amendments, am I correct?

Ms. JACKSON LEE. Yes.

Chairman BOEHLERT. And as I understand, based upon the assurance that collectively we will work cooperatively, that you intend, after you make your remarks, to withdraw the amendments?

Ms. JACKSON LEE. Mr. Chairman, if you would yield.

Chairman BOEHLERT. I would be—it is your time.

Ms. JACKSON LEE. Well, if you—if I——

Chairman BOEHLERT. We will allow you a little extra time. You know the—your indulgence of the Chair.

Ms. JACKSON LEE. Unanimous consent.

First, I would certainly like to bring the amendments up, but obviously with the generosity of my Ranking Member and, as we well know, the fact that the Science Committee has really had the champion reputation of being bipartisan, I would like to colloquy or inquire of the Chairman.

We would have to work together, and I would hope that I could inquire of the Chairman to work with us on these items and for him to possibly see the relevance of finding a way to focus on these issues that we have discussed over the time. So I inquire of the Chairman——

Chairman BOEHLERT. I readily know the relevance of the distinguished lady's presentations. And I would point out that the bill already requires NASA to work with minority institutions, so does current law. That is very important, because that is fertile ground. And I am so pleased that the lady continually talks about humans in space, rather than men in space, because I proudly point out that the Commander of the Space Shuttle Discovery ready to launch is a very distinguished woman who had the good fortune to be born in upstate New York, my neck of the woods, Colonel Eileen Collins.

So you are addressing subject matter that needs to be addressed in a thoughtful, deliberative way, and we will be glad to work with you as we proceed. And if you would like, I would be glad to—if your intention is, as I understand your intention, to offer the three amendments and then withdraw, based upon the assurance that we will work cooperatively, I would grant you some additional time and offer them and withdraw them en bloc.

Ms. JACKSON LEE. I would be happy to do that on behalf of my colleagues who are here. And I would like to call up amendment number five and amendment number seven. And I thank my——

Chairman BOEHLERT. Without objection, so ordered to have them considered en bloc.

Congresswoman Sheila Jackson Lee

Statement on

**JACKSON LEE AMENDMENT #4 TO**

**NASA AUTHORIZATION**

**HBCU FUNDING**

March 17, 2005

Mr. Chairman,

My amendment would restore funding for Historically Black Colleges and Universities in the amount of $69,200,000 in FY 2006 and $71,200,000 in FY 2007 according to the guidelines of the new substitute NASA Authorization bill. The fact is that this year HBCU's face a $13 million dollar cut in their allotment from NASA education funds. Clearly, this money could make a significant difference in the future diversity of the science community.

Renowned writer and scholar educator W.E.B. Du Bois. Dr. Walter Massey--former director of the National Science Foundation and President of Morehouse College. Actor and director Spike Lee. Dr. Deborah Hyde--one of only four African American female neurosurgeons in the United States. The Honorable Louis Sullivan--

former U.S. Secretary of Health and Human Services. What do these individuals, all successful and distinct in their own have in common? They are all graduates of Historically Black Colleges and Universities. For most of America's history, African Americans who received a college education could only get it from an HBCU. Today, HBCUs remain one of the surest ways for an African American, or student of any race, to receive a high quality education.

Seven of the top eleven producers of African American baccalaureates in engineering were HBCUs, including #1 North Carolina A&T State University. The top three producers of African American baccalaureates in health professions (#1 Southern University and A&M College, #2 Florida A&M University and #3 Howard University were HBCUs. The twelve top producers of African American baccalaureates in the physical sciences,

including #1 Xavier University of Louisiana, were all HBCUs. I hope every Member of this Committee can agree on the importance of HBCU's and I hope they will support my amendment to restore their funding to a proper level.

Congresswoman Sheila Jackson Lee

Statement on

**JACKSON LEE AMENDMENT #5 TO**

**NASA AUTHORIZATION**

**Dr. Mae C. Jemison Grant Program**

March 17, 2005

Mr. Chairman,

My amendment would establish the Dr. Mae C. Jemison Grant Program to work with minority serving institutions to bring more women of color into the fields of space and aeronautics. This amendment would authorize $500,000 for both FY2006 and FY2007 in accordance with the new substitute NASA Authorization bill. Clearly, there is a lack of women of color in the sciences and this amendment would take a strong step towards rectifying the problem.

This grant program would be named in honor of Dr. Mae Jemison blasted into orbit aboard the space shuttle Endeavour on September 12, 1992 making her the world's first woman of color to go into space, and the city of Chicago's first astronaut in U.S. history. As a young girl and teenager she was always interested in science,

especially astronomy, and was encouraged by her parents and teachers to pursue not only her science studies, but also dance and art. She went on to receive her Bachelor of Science in Chemical Engineering and a BA in Afro-American Studies from Stanford and her medical doctorate at Cornell University she joined NASA in 1987. Jemison continues to serve as a role model to women and African Americans. She told Newsweek, "One of the things that I'm very concerned about is that as African-Americans, as women, many times we do not feel that we have the power to change the world and society as a whole." With her life and accomplishments she has proven that idea truly wrong.

My amendment would establish a grant program in honor of Dr. Mae Jemison that would support minority serving institutions in their endeavors to bring more women of color like Dr. Jemison into the space sciences. Dr.

Jemison's contributions to the field not only as a scientist but also as a business entrepreneur have been paramount. Dr. Jemison is a national role model to all women, particularly those of color. She has been committed not only to her interest in science but also dedication to the concerns of her community. It is important that we continue to facilitate the development of leaders such as Dr. Mae Jemison. We can not allow this lack of true diversity in the fields of space and aeronautics to continue unabated. I urge support for my amendment.

CCNGRESSWOMAN SHEILA JACKSON Lee

Statement Amendment Number 7 to NASA Authorization Bill

Hispanic serving Institution Funding

July 14, 2005

Mr. Chairman, my amendment would restore funding for Hispanic Serving Institutions in the amount of $46,400,000 in FY2006 AND $46,400,000 in FY 2007 according to guidelines of the new substitute NASA authorization bill. The fact is that Hispanic Serving Institutions have suffered dramatic cuts because of lower funding this year.

According to the Hispanic Association of Colleges and Universities Hispanics are historically underrepresented in the areas of science, technology, engineering and mathematics.

Hispanics are now the largest and fastest-growing population group in the United States. The Hispanic culture has a rich and varied history. But Hispanics are still

underrepresented in institutions of higher learning. According to Antonio R. Flores, Ph.D President and CEO, Hispanic Association of Colleges and Universities (HACU), "Hispanics historically have also suffered the highest rate of high school dropout. Only ten percent of Hispanics have graduated from college." Hispanic Serving Institutions or HSIs are making strides in shaping the success of Hispanics in higher education. To be considered an HSI, the Hispanic enrollment at a college or university must be at least 25 percent of the total student enrollment.

HSIs receive only half the federal funding per student, on average, accorded to every other degree-granting institution. Yet, despite record annual federal funding increases HACU has won for HSIs in each of the past several years, HSIs are a long way from federal funding parity with non-HSIs.

Ms. JACKSON LEE. Let me thank the Chairman and the Ranking Member for their commitment to working with me, and I will detail very briefly for my colleagues the amendments and suggest to you why I would not want this Committee to rule negatively on what I think are worthwhile investments in human capital, if you will.

Might I begin by saying that the next amendment was named after Dr. Mae C. Jemison? It is a grant program of $500,000 to assist with encouraging young women to participate in math and science. And I think there have been many of my colleagues, including Congresswoman Woolsey and Johnson and others who are here, and Hooley and the distinguished gentlemen of this panel, who have found that the focus on young girls and women in the sciences can be very productive. I happened, Mr. Chairman, to have been at Commander Collins', I believe, first launch. It was, at that time, scrubbed. And I think a number of women went down, because it was so much of a historic occasion. But we know of her great excellence and her humble beginnings. And it is a testament to if you invest in young women, great things can happen.

This is a program in tribute to Dr. Jemison, who we all know is an outstanding member of the astronaut corps and the first African American woman who went into space. And that amendment speaks for itself.

Let me explain the second amendment that has to do with Hispanic-serving institutions, and it will restore funding in the amount of $46.4 million. That is a growing population of institutions. Again, in joining my colleague, I saw the great need for investing in Texas in Hispanic-serving institutions to encourage the training of Hispanic Americans in the idea of engineering sciences and math and science.

So the two amendments offer an investment in human capital, and I would ask my colleagues to support them as we move through conference.

And I would ask, at this time—let me just yield to the Ranking Member on the last two amendments, which deal with Hispanic-serving and investment in young women, the Mae Jemison, before I proceed with my conclusion.

Mr. GORDON. As I mentioned earlier, I think that we have a deficit in our science and math students. If you look at all of the statistics, you will see that women and minorities are our most fertile ground to increase that. And as I said earlier, these are good points that are raised. I have a 4-year-old daughter that I hope is a great something. Mathematician would be nice, also.

So you know, again, you raised good points, and we certainly want to support them.

Ms. JACKSON LEE. I thank you. Let me thank you very much. And let me thank the Committee for the amendments I have in the bill on equal access and safety, and I will look forward to working with the Chairman and the Ranking Member on these three amendments through conference.

And with that, I ask unanimous consent to withdraw amendments four, five, and seven.

Chairman BOEHLERT. Without objection, so ordered.

The sixth amendment on the roster, I am looking for Mr. Costello to see if he has arrived. I understand he is en route.

Mr. GORDON. Yes, sir. Mr. Chairman, if I might strike the last word.

Chairman BOEHLERT. The gentleman is recognized.

Mr. GORDON. As we all know, as we look around this country, we are seeing outsourcing as a problem all across the country. Mr. Costello has been a great champion of trying to find out what is the problem and how do we address it. He is trying to do this again with this particular authorization. He has asked for a study to determine what really is the impact of NASA's purchasing processes and where is it going. Is it going offshore? Is it going here? And I think he will—and I will yield now to him to better explain his amendment.

Chairman BOEHLERT. The gentleman from Illinois is recognized.

Mr. COSTELLO. Mr. Chairman, I thank you and the Ranking Member. If I can catch my breath.

Chairman BOEHLERT. While you are catching your breath, the Clerk will report the amendment.

Ms. TESSIERI. Amendment to the amendment in the nature of a substitute offered by Mr. Costello of Illinois.

Chairman BOEHLERT. The amendment to the amendment offered by Mr. Costello of Illinois, a very distinguished member of this Committee, is your breath caught?

Mr. COSTELLO. It is, indeed, Mr. Chairman.

Chairman BOEHLERT. The gentleman is recognized.

Mr. COSTELLO. Mr. Chairman. Thank you. I apologize. I was over on the Floor during general debate.

Let me explain my amendment, if I can, please.

The two provisions in the amendment concern contracting issues with NASA. As you will recall, I offered an amendment before this Committee concerning NOAA that is similar to this amendment today concerning NASA.

One, it prohibits federal jobs from being outsourced to foreign nations, with few exceptions. It requires NASA contracts for goods and services to be performed here in the United States. In cases where NASA issues a contract for goods or services to a private sector contractor, NASA would have to ensure that the contract work is done here in the United States. The amendment further provides exceptions to that policy. The NASA Administrator may waive the requirement if an essential instrument or service is only produced outside the United States or is only produced by a non-U.S. manufacturer.

In addition, Mr. Chairman, the President may waive the requirement, if it is in the interest of national security. The restriction does not apply to goods and services that are currently being used outside of the United States or to a job contracted that is being performed by U.S. federal workers outside of the United States.

Simply put, my provision does not prohibit any existing work or service that is going on overseas today. It only prohibits NASA from moving a job that is currently in the United States or from producing a good that is currently made in the United States from changing the status quo and going abroad, unless the reasons for doing so meet the exceptions that I have listed.

We, on both sides of the aisle, I think, should agree that NASA should be getting their goods and services here in the United

States, not abroad. I have—as I said, I have come to the Committee before to talk about outsourcing. The Ranking Member, Mr. Gordon and I, in this very room, hosted a roundtable discussion with a number of experts on the issue of outsourcing to try and determine what the problem is, where the jobs are going, and what the future looks like. I don't think that we can continue to ignore the fact that outsourcing and off-shoring is ongoing and sit on the sidelines and do nothing about it. That is why I am offering the amendment today.

And I am pleased that the Majority, and the Chairman, in particular, accepted my "buy American and protect American jobs" provision in today's NASA authorization bill. Unfortunately, I have to oppose the language added by the Majority that protects international trade agreements than protecting American jobs and goods.

Let me just say, in short, Mr. Chairman, I think this Committee ought to be in the business of providing the support that we should provide to NASA, but whenever possible, I believe that NASA should be spending the U.S. taxpayers' money here in the United States. The jobs should remain here in the United States. And goods and services that they contract for should be contracted with companies that, in fact, are taxpaying companies and individuals operating here in the United States.

And with that, Mr. Chairman, I ask for your support and the support of the entire Committee.

Chairman BOEHLERT. Thank you very much, Mr. Costello.

This is the same debate we had, a rather extensive debate, on the NOAA bill, H.R. 50. But this language is even more problematic than the language that we had in that bill. NASA has international partners for whom it buys launch vehicles and other equipment. You know. And what we are trying to say, we ought to ensure the prohibition and job outsourcing only when consistent with intentional treaties or obligations.

So I will reluctantly, but enthusiastically, oppose the amendment for those very sound reasons.

And the Chair recognizes the gentleman from Tennessee, Mr. Gordon.

Mr. GORDON. Thank you, Mr. Chairman.

And I would like to yield to my more articulate friend from Illinois.

Mr. COSTELLO. Thank you. And I thank the Ranking Member.

Mr. Chairman, we did have this extensive debate before, and I would use the same argument today that I used then, and that is this Committee should not be in the business of attempting to interpret trade agreements. As we debated the NOAA authorization bill, I made the point then and will make the point again today, that the International Trade Commission has never challenged a provision like this before. And I will say again, as I said then, let us let a court decide if we have gone too far. If we are going to err on the side of caution, let us err on the side of the American worker, not on our international trade agreements. And certainly, the track before the Committee today, I think, is clear. We can either be aggressive about protecting jobs here in this country or be aggressive about protecting and interpreting international trade

agreements. That should be a job left up to bodies other than the United States Congress.

So with that, Mr. Chairman, I yield back the balance of my time and know that I can count on your support.

Chairman BOEHLERT. Thank you very much, Mr. Costello.

Mr. Calvert.

Mr. CALVERT. I must object to the amendment by my good friend from Illinois. He is my good friend. But I want to point out to the Committee, we have an International Space Station. We have Canadians supplying the arm. We have the Japanese, hopefully, that will be able to deliver their Centrifuge, which I know that both people—both sides of the aisle is interested in working with the Japanese on. We have the European Space Agency, which is also involved in International Space Station. I know that my—many of my friends on the other side of the aisle absolutely welcome support on the International Space Station and their participation, financial participation, in order for us to complete the Station and to make sure that we have the support necessary to continue that program.

NASA is not NOAA. And I—and NASA is truly working with international partners in a peaceful way in our civil space program. So I would hope that members would not support this amendment. This is not a—this amendment would not serve NASA well, nor would it serve our continued efforts with the International Space Station and our continued efforts to get back to the moon and Mars and beyond.

Thank you.

Mr. GORDON. Would you yield, briefly?

Mr. CALVERT. Yes, sir.

Mr. GORDON. I just want to point out that we do have international partners, but their contributions really are either broader or in kind, and that we are really not purchasing from those. And we are glad to have that bargain. We are glad to have that in kind, but I just wanted to point that out.

Mr. CALVERT. I thank the gentleman.

Chairman BOEHLERT. You are recognized, Mr. Lipinski.

Mr. LIPINSKI. Thank you, Mr. Chairman.

One thing I just wanted to point out, I went down for the launch yesterday, but I had some time to stop in a gift shop. And I went and looked in the gift shop for a little gift to take home to my wife. And everything that I picked up, except one, said "Made in China". The one that wasn't made in China was made in Taiwan. So I just wanted to mention that. I noted that there in the gift shop, and hopefully something can—it isn't directly impacted by this, but hopefully we can do something about that, also.

Chairman BOEHLERT. I hope you didn't disappoint your wife when you got home.

The Chair recognizes Dr. Schwarz. Do you seek recognition? Is there anyone else who seeks recognition on this issue?

If not, the vote occurs on the amendment offered by Mr. Costello. All in favor, say aye. Opposed, nay. The nays appear to have it, and the amendment is——

Mr. COSTELLO. Mr. Chairman, I—with that, I would ask for a roll call vote.

Chairman BOEHLERT. The gentleman seeks a roll call vote.
The Clerk will call the roll.
Ms. TESSIERI. Mr. Boehlert.
Chairman BOEHLERT. No.
Ms. TESSIERI. Mr. Boehlert votes no.
Mr. Hall.
[No response.]
Ms. TESSIERI. Mr. Smith.
Mr. SMITH. No.
Ms. TESSIERI. Mr. Smith votes no.
Mr. Weldon.
[No response.]
Ms. TESSIERI. Mr. Rohrabacher.
[No response.]
Ms. TESSIERI. Mr. Calvert.
Mr. CALVERT. No.
Ms. TESSIERI. Mr. Calvert votes no.
Mr. Bartlett.
[No response.]
Ms. TESSIERI. Mr. Ehlers.
Mr. EHLERS. No.
Ms. TESSIERI. Mr. Ehlers votes no.
Mr. Gutknecht.
Mr. GUTKNECHT. No.
Ms. TESSIERI. Mr. Gutknecht votes no.
Mr. Lucas.
Mr. LUCAS. No.
Ms. TESSIERI. Mr. Lucas votes no.
Mrs. Biggert.
Mrs. BIGGERT. No.
Ms.TESSIERI. Mrs. Biggert votes no.
Mr. Gilchrest.
Mr. GILCHREST. No.
Ms. TESSIERI. Mr. Gilchrest votes no.
Mr. Akin.
Mr. AKIN. No.
Ms. TESSIERI. Mr. Akin votes no.
Mr. Johnson.
Mr. JOHNSON. No.
Ms. TESSIERI. Mr. Johnson votes no.
Mr. Forbes.
[No response.]
Ms. TESSIERI. Mr. Bonner.
Mr. BONNER. No.
Ms. TESSIERI. Mr. Bonner votes no.
Mr. Feeney.
Mr. FEENEY. No.
Ms. TESSIERI. Mr. Feeney votes no.
Mr. Inglis.
Mr. INGLIS. No.
Ms. TESSIERI. Mr. Inglis votes no.
Mr. Reichert.
Mr. REICHERT. No.
Ms. TESSIERI. Mr. Reichert votes no.

Mr. Sodrel.
Mr. SODREL. No.
Ms. TESSIERI. Mr. Sodrel votes no.
Mr. Schwarz.
Mr. SCHWARZ. No.
Ms. TESSIERI. Mr. Schwarz votes no.
Mr. McCaul.
Mr. MCCAUL. No.
Ms. TESSIERI. Mr. McCaul votes no.
Chairman BOEHLERT. How is Mr. Hall recorded?
Mr. HALL. Votes no.
Ms. TESSIERI. Mr. Hall votes no.
Mr. Gordon.
Mr. GORDON. Aye.
Ms. TESSIERI. Mr. Gordon votes yes.
Mr. Costello.
Mr. COSTELLO. Aye.
Ms. TESSIERI. Mr. Costello votes yes.
Ms. Johnson.
[No response.]
Ms. TESSIERI. Ms. Woolsey.
Ms. WOOLSEY. Aye.
Ms. TESSIERI. Ms. Woolsey votes yes.
Ms. Hooley.
Ms. HOOLEY. Aye.
Ms. TESSIERI. Ms. Hooley votes yes.
Mr. Udall.
Mr. UDALL. Aye.
Ms. TESSIERI. Mr. Udall votes yes.
Mr. Wu.
Mr. WU. Yes.
Ms. TESSIERI. Mr. Wu votes yes.
Mr. Honda.
Mr. HONDA. Aye.
Ms. TESSIERI. Mr. Honda votes yes.
Mr. Miller.
Mr. MILLER. Aye.
Ms. TESSIERI. Mr. Miller votes yes.
Mr. Davis.
[No response.]
Ms. TESSIERI. Mr. Carnahan.
Mr. CARNAHAN. Yes.
Ms. TESSIERI. Mr. Carnahan votes yes.
Mr. Lipinski.
Mr. LIPINSKI. Aye.
Ms. TESSIERI. Mr. Lipinski votes yes.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
Ms. TESSIERI. Ms. Jackson Lee votes yes.
Mr. Sherman.
Mr. SHERMAN. Aye.
Ms. TESSIERI. Mr. Sherman votes yes.
Mr. Baird.
Mr. BAIRD. Aye.

Ms. TESSIERI. Mr. Baird votes yes.
Mr. Matheson.
Mr. MATHESON. Aye.
Ms. TESSIERI. Mr. Matheson votes yes.
Mr. Costa.
Mr. COSTA. Aye.
Ms. TESSIERI. Mr. Costa votes yes.
Mr. Green.
Mr. GREEN. Yes.
Ms. TESSIERI. Mr. Green votes yes.
Mr. Melancon.
Mr. MELANCON. Yes.
Ms. TESSIERI. Mr. Melancon votes yes.
Mr. Moore.
Mr. MOORE. Yes.
Ms. TESSIERI. Mr. Moore votes yes.
Mr. COSTELLO. Mr. Chairman, can I ask what the vote is right now?
Chairman BOEHLERT. Mr. Costello, who was somewhat delinquent in showing up, now is very anxious to proceed. We are just trying to—I am just trying to survey the House and see where we are, make sure all of my happy members are here. My understanding is that we have another member about to arrive momentarily.
The Clerk will report.
Ms. TESSIERI. Mr. Chairman, 18, yes; 18, no.
Chairman BOEHLERT. The amendment is defeated. Yes, she voted. Ms. Jackson Lee——
Ms. TESSIERI. Ms. Jackson Lee recorded as yes.
Chairman BOEHLERT. So the amendment on a tie vote is defeated.
We will then proceed.
Mr. COSTELLO. Mr. Chairman.
Chairman BOEHLERT. Yes. Who seeks? Mr. Costello.
Mr. COSTELLO. Mr. Chairman, I have another amendment and ask immediate consideration that it be considered at this point.
Chairman BOEHLERT. Mr. Costello, you are recognized.
Offer the amendment.
Mr. COSTELLO. Mr. Chairman, thank you.
I will be very brief.
Mr. Chairman, this amendment establishes an annual reporting requirement for contracts, goods, and services procured by NASA. The report enables Congress to better track NASA's compliance with the procurement limitations included in Section 705 of the bill. The report also enables Congress to better track NASA's compliance with the Buy America Act. The information in the report would also allow Congress to better understand the impact of international trade agreements affecting government procurement. NASA would have to report on the waivers to the Buy America Act and contracts awarded despite the procurement limitations of Section 705 that are due to U.S. obligations under international trade agreements.
Mr. Chairman, in short, let me just say that if we are not going to adopt my previous amendment that failed adoption here in the

Committee, we ought to at least adopt this amendment so we have a better understanding of what NASA is doing with their contracts and with their goods and services.

Chairman BOEHLERT. Let the Chair thank the very distinguished gentleman from Illinois for offering a very thoughtful amendment that is deserving of our support, and the Chair is prepared to accept the amendment.

Mr. COSTELLO. Mr. Chairman, I thank you and will quit while I am ahead.

Chairman BOEHLERT. All right. All in favor of Mr. Costello's amendment, say aye. Opposed, no. The ayes appear to have it, and the gentleman's very fine amendment is passed.

Are there any other amendments to the amendment in the nature of a substitute?

If not, the vote occurs on the amendment in the nature of a substitute, as amended. All in favor, say aye. Opposed, no. And the ayes appear to have it.

Are there any other amendments? Hearing none, the vote is on the bill H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005, as amended. All in favor, say aye. Opposed, no. In the opinion of the Chair, the ayes have it.

And I would think we—our members are here. Let me ask for a recorded vote to show the strength and unity of this Committee as we go forward.

The Clerk will call the roll.

Ms. TESSIERI. Mr. Boehlert.

Chairman BOEHLERT. Aye.

Ms. TESSIERI. Mr. Boehlert votes yes.

Mr. Hall.

Mr. HALL. Aye.

Ms. TESSIERI. Mr. Hall votes yes.

Mr. Smith.

Mr. SMITH. Aye.

Ms. TESSIERI. Mr. Smith votes yes.

Mr. Weldon.

[No response.]

Ms. TESSIERI. Mr. Rohrabacher.

[No response.]

Ms. TESSIERI. Mr. Calvert.

Mr. CALVERT. Aye.

Ms. TESSIERI. Mr. Calvert votes yes.

Mr. Bartlett.

Mr. BARTLETT. Aye.

Ms. TESSIERI. Mr. Bartlett votes yes.

Mr. Ehlers.

Mr. EHLERS. Yes.

Ms. TESSIERI. Mr. Ehlers votes yes.

Mr. Gutknecht.

Mr. GUTKNECHT. Aye.

Ms. TESSIERI. Mr. Gutknecht votes yes.

Mr. Lucas.

Mr. LUCAS. Yes.

Ms. TESSIERI. Mr. Lucas votes yes.

Mrs. Biggert.

Mrs. BIGGERT. Yes.
Ms. TESSIERI. Mrs. Biggert votes yes.
Mr. Gilchrest.
Mr. GILCHREST. Yes.
Ms. TESSIERI. Mr. Gilchrest votes yes.
Mr. Akin.
[No response.]
Ms. TESSIERI. Mr. Johnson.
Mr. JOHNSON. Yes.
Ms. TESSIERI. Mr. Johnson votes yes.
Mr. Forbes.
[No response.]
Ms. TESSIERI. Mr. Bonner.
Mr. BONNER. Aye.
Ms. TESSIERI. Mr. Bonner votes yes.
Mr. Feeney.
Mr. FEENEY. Yes.
Ms. TESSIERI. Mr. Feeney votes yes.
Mr. Inglis.
Mr. INGLIS. Aye.
Ms. TESSIERI. Mr. Inglis votes yes.
Mr. Reichert.
Mr. REICHERT. Yes.
Ms. TESSIERI. Mr. Reichert votes yes.
Mr. Sodrel.
Mr. SODREL. Aye.
Ms. TESSIERI. Mr. Sodrel votes yes.
Mr. Schwarz.
Mr. SCHWARZ. Yes.
Ms. TESSIERI. Mr. Schwarz votes yes.
Mr. McCaul.
Mr. MCCAUL. Yes.
Ms. TESSIERI. Mr. McCaul votes yes.
Mr. Gordon.
Mr. GORDON. Yes.
Ms. TESSIERI. Mr. Gordon votes yes.
Mr. Costello.
Mr. COSTELLO. Yes.
Ms. TESSIERI. Mr. Costello votes yes.
Ms. Johnson.
[No response.]
Ms. TESSIERI. Ms. Woolsey.
Ms. WOOLSEY. Yes.
Ms. TESSIERI. Ms. Woolsey votes yes.
Ms. Hooley.
Ms. HOOLEY. Yes.
Ms. TESSIERI. Ms. Hooley votes yes.
Mr. Udall.
[No response.]
Ms. TESSIERI. Mr. Wu.
Mr. WU. Yes.
Ms. TESSIERI. Mr. Wu votes yes.
Mr. Honda.
Mr. HONDA. Yes.

Ms. TESSIERI. Mr. Honda votes yes.
Mr. Miller.
Mr. MILLER. Aye.
Ms. TESSIERI. Mr. Miller votes yes.
Mr. Davis.
[No response.]
Ms. TESSIERI. Mr. Carnahan.
Mr. CARNAHAN. Yes.
Ms. TESSIERI. Mr. Carnahan votes yes.
Mr. Lipinski.
Mr. LIPINSKI. Aye.
Ms. TESSIERI. Mr. Lipinski votes yes.
Ms. Jackson Lee.
Ms. JACKSON LEE. Aye.
Ms. TESSIERI. Ms. Jackson Lee votes yes.
Mr. Sherman.
Mr. SHERMAN. Yes.
Ms. TESSIERI. Mr. Sherman votes yes.
Mr. Baird.
Mr. BAIRD. Aye.
Ms. TESSIERI. Mr. Baird votes yes.
Mr. Matheson.
Mr. MATHESON. Aye.
Ms. TESSIERI. Mr. Matheson votes yes.
Mr. Costa.
Mr. COSTA. Yes.
Ms. TESSIERI. Mr. Costa votes yes.
Mr. Green.
Mr. GREEN. Yes.
Ms. TESSIERI. Mr. Green votes yes.
Mr. Melancon.
Mr. MELANCON. Yes.
Ms. TESSIERI. Mr. Melancon votes yes.
Mr. Moore.
Mr. MOORE. Yes.
Ms. TESSIERI. Mr. Moore votes yes.
Mr. UDALL. Mr. Chairman, could I ask how I am recorded.
Chairman BOEHLERT. Who is making the inquiry? Mr. Udall.
Ms. TESSIERI. Mr. Udall is not recorded.
Chairman BOEHLERT. Well Mr. Udall wants to be recorded.
Mr. UDALL. Mr. Udall votes aye.
Ms. TESSIERI. Mr. Udall votes yes.
Chairman BOEHLERT. The Clerk will report.
Ms. TESSIERI. Mr. Chairman, yes, 36.

Chairman BOEHLERT. Thank you very much. The amendment in the nature of a substitute, as amended, is passed.

I recognize Mr. Gordon to offer a motion.

Mr. GORDON. Thank you, Mr. Chairman.

I have a motion to report, but first let me just very quickly concur with your earlier congratulations for the staff. They worked so hard to put this together. I particularly want to commend Dick Obermann and Chuck Atkins that worked many late hours, very late hours, as well as the staffs—the individual staffs of the Democratic members who came to just about every type of caucus that

we had and every briefing that we had. They helped make this much better.

And so I move that because of all of that, the Committee favorably report H.R. 3070, as amended, to the House with the recommendation that the bill, as amended, do pass. Furthermore, I move that the staff be instructed to prepare the legislative report and make necessary technical and conforming changes, that the Chairman take all necessary steps to bring the bill before the House for consideration.

Chairman BOEHLERT. The question is on the motion to, report the bill, as amended, favorably. Those in favor of the motion will signify by saying aye. Opposed, no. The ayes have it, and the bill is favorably reported.

Ms. JACKSON LEE. Mr. Chairman, I would just ask unanimous consent for 1 minute to speak out of order.

Chairman BOEHLERT. No, not until I finish my statement.

Ms. JACKSON LEE. Thank you, Mr. Chairman.

Chairman BOEHLERT. The ayes have it, and the bill is favorably reported.

Without objection, the motion to reconsider is laid upon the table.

I move that members have 2 subsequent calendar days in which to submit supplemental, Minority, or additional views on the amendment—on the measure. I further move, pursuant to Clause 1 of Rule 22 of the House of Representatives that the Committee authorizes the Chairman to offer such motions as may be necessary in the House to adopt and pass H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005, as amended. And without objection, so ordered.

Before we adjourn, I will recognize Ms. Jackson Lee, but let me say, once again, that I am very proud, as Mr. Gordon is, of this Committee. We raise the bar very high, and I would commend our work to other Committees' attention. We understand civility. We understand tolerance of other points of view. And when you see a final package come out of this bill, as I have said many—out of this Committee, as I have said many times previously, the fingerprints of both sides and all members are all over it. We work together, and we produce fine products. And I am very proud of that. So I thank all of you and the staff for the dedication.

And now, for the last word, Ms. Jackson Lee.

Ms. JACKSON LEE. Well, Mr. Chairman, we weren't there a week ago, and I just want to thank you, the Chairman, and the Ranking Member, because it is a testament to your desire to work together on behalf of the members of this Committee. And I wanted to just, on the record, thank Chairman Boehlert and Ranking Member Gordon for their hard work and commitment to the work of this Committee.

Thank you.

I yield back.

Chairman BOEHLERT. That concludes the Committee business.

I want to thank all of you.

I move that we adjourn. Without objection, so ordered.

Thank you.

[Whereupon, at 1:05 p.m., the Committee was adjourned.]

# APPENDIX

1. Memo to the Full Committee Chairman on the markup of H.R. 3070, as amended by the Subcommittee on Space and Aeronautics.
2. Amendment Roster of the Full Committee Markup of H.R. 3070.
3. Section-by-Section Analysis of the Amendment in the Nature of a Substitute to the National Aeronautics and Space Administration Authorization Act of 2005.
4. Summary of Amendment in the Nature of a Substitute.
5. Description of major changes included in the Amendment in the Nature of a Substitute Compared with H.R. 3070 as Reported by the Subcommittee.

**COMMITTEE ON SCIENCE**
**U.S. HOUSE OF REPRESENTATIVES**
**WASHINGTON, DC 20515**

June 30, 2003

MEMORANDUM

TO: Chairman Boehlert

FROM: Ken Calvert, Chairman
Subcommittee on Space and Aeronautics

SUBJECT: Subcommittee Markup of H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005

I am pleased to report that on June 29, 2005, the Subcommittee on Space and Aeronautics reported H.R. 3070, the National Aeronautics and Space Administration Authorization Act of 2005 as amended by a roll call vote of 10 "yeas" and 6 votes of "present."

Attached is a copy of the measure as reported by the subcommittee, as well as the section-by-section analysis.

I look forward to working with you to bring these pieces of legislation before the committee for consideration.

Attachments
-Bill
-Section-by-Section Analysis

## Section-by-Section Analysis of the National Aeronautics and Space Administration Authorization Act of 2005 as reported by the Subcommittee on Space and Aeronautics on June 29, 2005

**Sec. 1. Short Title.**

The "National Aeronautics and Space Administration Authorization Act of 2005".

**Sec. 2. Findings.**

Urges NASA to maintain robust programs in space science, earth science, and aeronautics while it moves forward with plans to send Americans to the Moon, Mars, and beyond.

**Sec. 3. Definitions.**

**Sec. 4. Responsibilities, Policies, and Plans.**

Charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space and earth science. Encourages NASA to work with entrepreneurs, use commercial services to the extent practicable, and to involve other nations to the extent appropriate.

Directs NASA to carry out the Vision for Space Exploration by returning Americans to the Moon no later than 2020, launching a Crew Exploration Vehicle as close to 2010 as possible, and conducting research on the impacts of space on the human body to enable long-duration space exploration. Retires the Shuttle at the end of 2010 to enable agency resources to be devoted to the Vision.

Requires the President, through the Administrator, to develop a national aeronautics policy to guide NASA's aeronautics programs through 2020. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a policy to guide agency space and earth science programs through 2020. Requires the policy to prioritize the agency's scientific missions and address NASA's plans on servicing the Hubble Space Telescope. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. Directs the plan be delivered to Congress with the 2008 budget request.

Requires NASA to develop a human capital strategy to retain needed employees and ensure that it has a workforce of the appropriate size and with the appropriate skills to carry out programs and policies of this Act. Limits NASA's flexibility in offering buyouts or subjecting employees to Reductions in Force until 60 days after the plan is submitted with the President's budget for fiscal year 2007.

Requires NASA to conduct a study evaluating whether any of it centers should be operated by or with the private sector. Directs the study be delivered to Congress by May 31, 2006.

Directs the President's budget for NASA to include documents showing the requests for human space flight, aeronautics, space science, earth science, safety, and agency administrative expenses, and comparable figures for each activity for each of the two previous fiscal years.

**Sec. 5. Authorization of Appropriations.**

Authorizes to be appropriated to NASA $16,471,050,000 for fiscal year 2006, the same amount provided in the House Science, State, Justice and Commerce Appropriations Bill for FY 2005. This amount is approximately $15 million above the President's FY 2006 request.

**Sec. 6. Reports.**

Requires NASA to report certain details regarding the Vision for Space Exploration and for other NASA programs by the end of this fiscal year.

Requires NASA to report estimated costs of the Crew Exploration Vehicle and the impact of those on other agency programs through 2020.

Requires NASA to report its plans for updating the system of space communications and navigation architecture to carry out lunar and deep space missions.

Requires NASA to submit a report to Congress describing its plans to carry out the "awareness campaign" required by the report accompanying the FY 2006 House Science, State, Justice, and Commerce Appropriations Bill.

Requires NASA to develop a transition plan for government and contractor personnel engaged in the Space Shuttle program.

Requires NASA and the Department of Energy jointly to describe their plans to develop a proposed astronomy research mission to study dark energy.

Requires the Director of the Office of Science and Technology Policy (OSTP) to conduct a study to evaluate and list whether any research NASA conducts is unnecessarily duplicating aspects of programs of other Federal agencies or whether it is neglecting areas of research in the national interest related to NASA's mission.

**Sec. 7. Baselines and Cost Controls.**

Adapts language that currently applies to the Department of Defense to require NASA to report annually on the status (including cost, schedule and performance) of "major" programs. Requires notification to Congress and an internal evaluation of any major program that exceeds its originally estimated development cost by more than 15 percent or exceeds its originally planned schedule by more than six months. Requires Congress to evaluate whether to continue the major program in the event that it exceeds its originally estimated development cost by more

than 30 percent or $1 billion. Defines major programs as those with life-cycle costs of over $100,000,000.

**Sec. 8. Prize Authority.**

Gives NASA authority to conduct competitions for cash prizes, modeled after the X-Prize won last year by famed airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovative technology development. Allows NASA to enter into an agreement with a private, non-profit entity to administer prize competitions. Gives NASA the authority to accept private funds and funds from other agencies for cash prizes. Does not limit the amount of a prize, but requires NASA first to report to the Congress before offering any prize worth more than $10,000,000.

**Sec. 9. Miscellaneous.**

Grants NASA authority it is seeking to give State and local law enforcement officers jurisdiction over NASA-owned research centers to allow them to enforce speeding, drunk driving, and other laws.

Makes technical amendments to the NASA Scholarship program.

Grants NASA an extension it is seeking on an expiring provision in the Space Act of 1958, which allows NASA to indemnify developers of experimental aerospace vehicles with which NASA is involved in a cooperative partnership.

Repeals the limitation on expenditures (cost cap) for the International Space Station.

**Sec. 10. Foreign Launch Vehicles.**

Requires NASA to launch missions on foreign launch vehicles only in accordance with the President's Space Transportation Policy, announced December 21, 2004.

**Sec. 11. Coordination with the National Oceanic and Atmospheric Administration.**

Requires NASA and the National Oceanic and Atmospheric Administration (NOAA) to coordinate their respective earth science activities to ensure that any technologies developed in NASA's earth science programs can be efficiently transferred to NOAA.

**Sec. 12. Charles "Pete" Conrad Astronomy Awards.**

Includes the text of H.R. 1023, a bill to authorize the NASA Administrator to establish an awards program in honor of Charles "Pete" Conrad, astronaut and space scientist, for recognizing the discoveries made by amateur astronomers of asteroids with near-Earth orbit trajectories.

**Sec. 13. George E. Brown, Jr. Near-Earth Object Survey**

Includes the text of H.R. 1022, a bill authorizing NASA to conduct a Near-Earth Object Survey program to detect, track, catalogue, and characterize certain near-earth asteroids and comets.

## H.R. 3070, AS AMENDED BY THE SUBCOMMITTEE ON SPACE AND AERONAUTICS ON JUNE 29, 2005

Strike all after the enacting clause and insert the following:

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the "National Aeronautics
3 and Space Administration Authorization Act of 2005".

4 **SEC. 2. FINDINGS.**

5 The Congress finds that—

6 (1) on January 14, 2004, the President un-
7 veiled the Vision for Space Exploration to guide
8 United States policy on human space exploration;

9 (2) as we enter the Second Space Age, the Na-
10 tional Aeronautics and Space Administration should
11 continue to support robust programs in space
12 science, aeronautics, and earth science as it moves
13 forward with plans to send Americans to the Moon,
14 Mars, and worlds beyond; and

15 (3) the National Aeronautics and Space Admin-
16 istration's programs can advance the frontiers of
17 science, expanding understanding of our planet and
18 of the universe, and contribute to American pros-
19 perity.

**SEC. 3. DEFINITIONS.**

For the purposes of this Act—

(1) the term "Administration" means the National Aeronautics and Space Administration; and

(2) the term "Administrator" means the Administrator of the National Aeronautics and Space Administration.

**SEC. 4. RESPONSIBILITIES, POLICIES, AND PLANS.**

(a) GENERAL RESPONSIBILITIES.—

(1) PROGRAMS.—The Administrator shall ensure that the Administration carries out a balanced set of programs that shall include, at a minimum, programs in—

(A) human space flight, in accordance with subsection (b);

(B) aeronautics research and development; and

(C) scientific research, which shall include, at a minimum—

(i) robotic missions to study planets, and to deepen understanding of astronomy, astrophysics, and other areas of science that can be productively studied from space;

(ii) earth science research and research on the Sun-Earth connection

through the development and operation of research satellites and other means; and

(iii) support of university research in space science and earth science.

(2) CONSULTATION AND COORDINATION.—In carrying out the programs of the Administration, the Administrator shall—

(A) consult and coordinate to the extent appropriate with other relevant Federal agencies, including through the National Science and Technology Council;

(B) work closely with the private sector, including by—

(i) encouraging the work of entrepreneurs who are seeking to develop new means to launch satellites, crew, or cargo;

(ii) contracting with the private sector for crew and cargo services to the extent practicable; and

(iii) using commercially available products (including software) and services to the extent practicable to support all Administration activities; and

(C) involve other nations to the extent appropriate.

1 (b) VISION FOR SPACE EXPLORATION.—

2 (1) GOALS.—The Administrator shall manage
3 human space flight programs so as to achieve the
4 following goals:

5 (A) Returning Americans to the Moon no
6 later than 2020.

7 (B) Launching the Crew Exploration Vehi-
8 cle as close to 2010 as possible.

9 (C) Increasing knowledge of the impacts of
10 long duration stays in space on the human body
11 using the most appropriate facilities available.

12 (D) Enabling humans to land on and re-
13 turn from Mars and other destinations on a
14 timetable that is technically and fiscally pos-
15 sible.

16 (2) SPACE SHUTTLE.—The Space Shuttle shall
17 not be launched after December 31, 2010.

18 (c) AERONAUTICS.—

19 (1) IN GENERAL.—The President of the United
20 States, through the Administrator, and in consulta-
21 tion with other Federal agencies, shall develop a na-
22 tional aeronautics policy to guide the aeronautics
23 programs of the Administration through 2020.

1 (2) CONTENT.—At a minimum, the national
2 aeronautics policy shall describe for the
3 Administration—
4 (A) the priority areas of research for aero-
5 nautics through fiscal year 2011;
6 (B) the basis on which and the process by
7 which priorities for ensuing fiscal years will be
8 selected;
9 (C) the facilities and personnel needed to
10 carry out the aeronautics program through fis-
11 cal year 2011; and
12 (D) the budget assumptions on which the
13 national aeronautics policy is based.
14 (3) CONSIDERATIONS.—In developing the na-
15 tional aeronautics policy, the President shall con-
16 sider the following issues, which shall be discussed
17 in the transmittal under paragraph (5):
18 (A) The extent to which the Administra-
19 tion should focus on long-term, high-risk re-
20 search or more incremental research, and the
21 expected impact on the United States aircraft
22 and airline industries of that decision.
23 (B) The extent to which the Administra-
24 tion should address military and commercial
25 needs.

1 (C) How the Administration will coordi-
2 nate its aeronautics program with other Federal
3 agencies.
4 (D) The extent to which the Administra-
5 tion will fund university research, and the ex-
6 pected impact of that funding on the supply of
7 United States workers for the aeronautics in-
8 dustry.
9 (4) CONSULTATION.—In the development of the
10 national aeronautics policy, the Administrator shall
11 consult widely with academic and industry experts
12 and with other Federal agencies. The Administrator
13 may enter into an arrangement with the National
14 Academy of Sciences to help develop the national
15 aeronautics policy.
16 (5) SCHEDULE.—The Administrator shall
17 transmit the national aeronautics policy to the Com-
18 mittee on Appropriations and the Committee on
19 Science of the House of Representatives, and to the
20 Committee on Appropriations and the Committee on
21 Commerce, Science, and Transportation of the Sen-
22 ate, not later than the date on which the President
23 submits the proposed budget for the Federal Gov-
24 ernment for fiscal year 2007 to the Congress. The
25 Administrator shall make available to those commit-

1 tees any study done by a nongovernmental entity
2 that was used in the development of the national
3 aeronautics policy.
4 (d) SCIENCE.—
5 (1) IN GENERAL.—The Administrator shall de-
6 velop a policy to guide the science programs of the
7 Administration through 2020.
8 (2) CONTENT.—At a minimum, the policy shall
9 describe—
10 (A) the missions the Administration will
11 initiate, design, develop, launch, or operate in
12 space science and earth science through fiscal
13 year 2011, including launch dates;
14 (B) a priority ranking of all of the mis-
15 sions listed under subparagraph (A), and the
16 rationale for the ranking;
17 (C) the budget assumptions on which the
18 policy is based; and
19 (D) the facilities and personnel needed to
20 carry out the policy through fiscal year 2011.
21 (3) CONSIDERATIONS.—In developing the
22 science policy under this subsection, the Adminis-
23 trator shall consider the following issues, which shall
24 be discussed in the transmittal under paragraph (6):

1 (A) What the most important scientific
2 questions in space science and earth science
3 are.
4 (B) The relationship between the Adminis-
5 tration's space and earth science activities and
6 those of other Federal agencies.
7 (4) CONSULTATION.—In developing the policy
8 under this subsection, the Administrator shall draw
9 on decadal surveys and other reports in planetary
10 science, astronomy, solar and space physics, earth
11 science, and any other relevant fields developed by
12 the National Academy of Sciences. The Adminis-
13 trator shall also consult widely with academic and
14 industry experts and with other Federal agencies.
15 (5) HUBBLE SPACE TELESCOPE.—The policy
16 developed under this subsection shall address plans
17 for a human mission to repair the Hubble Space
18 Telescope.
19 (6) SCHEDULE.—The Administrator shall
20 transmit the policy developed under this subsection
21 to the Committee on Science of the House of Rep-
22 resentatives and the Committee on Commerce,
23 Science, and Transportation of the Senate not later
24 than the date on which the President submits the
25 proposed budget for the Federal Government for fis-

1 cal year 2007 to the Congress. The Administrator
2 shall make available to those committees any study
3 done by a nongovernmental entity that was used in
4 the development of the policy.
5 (e) FACILITIES.—
6 (1) IN GENERAL.—The Administrator shall de-
7 velop a plan for managing the Administration's fa-
8 cilities through fiscal year 2015. The plan shall be
9 consistent with the policies and plans developed pur-
10 suant to this section.
11 (2) CONTENT.—At a minimum, the plan shall
12 describe—
13 (A) any new facilities the Administration
14 intends to acquire, whether through construc-
15 tion, purchase, or lease, and the expected dates
16 for doing so;
17 (B) any facilities the Administration in-
18 tends to significantly modify, and the expected
19 dates for doing so;
20 (C) any facilities the Administration in-
21 tends to close, and the expected dates for doing
22 so;
23 (D) any transaction the Administration in-
24 tends to conduct to sell, lease, or otherwise

1 transfer the ownership of a facility, and the ex-
2 pected dates for doing so;
3 (E) how each of the actions described in
4 subparagraphs (A), (B), (C), and (D) will en-
5 hance the ability of the Administration to carry
6 out its programs;
7 (F) the expected costs or savings expected
8 from each of the actions described in subpara-
9 graphs (A), (B), (C), and (D);
10 (G) the priority order of the actions de-
11 scribed in subparagraphs (A), (B), (C), and
12 (D);
13 (H) the budget assumptions of the plan;
14 and
15 (I) how facilities were evaluated in devel-
16 oping the plan.
17 (3) SCHEDULE.—The Administrator shall
18 transmit the plan developed under this subsection to
19 the Committee on Science of the House of Rep-
20 resentatives and the Committee on Commerce,
21 Science, and Transportation of the Senate not later
22 than the date on which the President submits the
23 proposed budget for the Federal Government for fis-
24 cal year 2008 to the Congress.
25 (f) WORKFORCE.—

1 (1) IN GENERAL.—The Administrator shall de-
2 velop a human capital strategy to ensure that the
3 Administration has a workforce of the appropriate
4 size and with the appropriate skills to carry out the
5 programs of the Administration, consistent with the
6 policies and plans developed pursuant to this section.
7 The strategy shall cover the period through fiscal
8 year 2011.
9 (2) CONTENT.—The strategy shall describe, at
10 a minimum—
11 (A) any categories of employees the Ad-
12 ministration intends to reduce, the expected size
13 and timing of those reductions, the methods the
14 Administration intends to use to make the re-
15 ductions, and the reasons the Administration no
16 longer needs those employees;
17 (B) any categories of employees the Ad-
18 ministration intends to increase, the expected
19 size and timing of those increases, the methods
20 the Administration intends to use to recruit the
21 additional employees, and the reasons the Ad-
22 ministration needs those employees;
23 (C) the steps the Administration will use
24 to retain needed employees; and

1 (D) the budget assumptions of the strat-
2 egy, and any expected additional costs or sav-
3 ings from the strategy by fiscal year.
4 (3) SCHEDULE.—The Administrator shall
5 transmit the strategy developed under this sub-
6 section to the Committee on Science of the House of
7 Representatives and the Committee on Commerce,
8 Science, and Transportation of the Senate not later
9 than the date on which the President submits the
10 proposed budget for the Federal Government for fis-
11 cal year 2007 to the Congress.
12 (4) LIMITATION.—The Administration may not
13 initiate any buyout offer or Reduction in Force until
14 60 days after the strategy required by this sub-
15 section has been transmitted to the Congress in ac-
16 cordance with paragraph (3).
17 (g) CENTER MANAGEMENT.—
18 (1) IN GENERAL.—The Administrator shall con-
19 duct a study to determine whether any of the Ad-
20 ministration's centers should be operated by or with
21 the private sector by converting a center to a Feder-
22 ally Funded Research and Development Center or
23 through any other mechanism.
24 (2) CONTENT.—The study shall, at a
25 minimum—

1 (A) make a recommendation for the oper-
2 ation of each center and provide reasons for
3 that recommendation; and
4 (B) describe the advantages and disadvan-
5 tages of each mode of operation considered in
6 the study.
7 (3) CONSIDERATIONS.—In conducting the
8 study, the Administrator shall take into consider-
9 ation the experiences of other relevant Federal agen-
10 cies in operating laboratories and centers and any
11 reports that have reviewed the mode of operation of
12 those laboratories and centers, as well as any reports
13 that have reviewed the Administration's centers.
14 (4) SCHEDULE.—The Administrator shall
15 transmit the study conducted under this subsection
16 to the Committee on Science of the House of Rep-
17 resentatives and the Committee on Commerce,
18 Science, and Transportation of the Senate not later
19 than May 31, 2006.
20 (h) BUDGETS.—The proposed budget for the Admin-
21 istration submitted by the President for each fiscal year
22 shall be accompanied by documents showing—
23 (1) the budget for each element of the human
24 space flight program;
25 (2) the budget for aeronautics;

1 (3) the budget for space science;
2 (4) the budget for earth science;
3 (5) the budget for the Integrated Financial
4 Management Program, by individual element;
5 (6) the budget for the Independent Technical
6 Authority, both total and by center;
7 (7) the budget for public relations, by program;
8 (8) the comparable figures for at least the 2
9 previous fiscal years for each item in the proposed
10 budget;
11 (9) the amount of unobligated funds and unex-
12 pended funds, by appropriations account—
13 (A) that remained at the end of the fiscal
14 year prior to the fiscal year in which the budget
15 is being presented that were carried over into
16 the fiscal year in which the budget is being pre-
17 sented;
18 (B) that are estimated will remain at the
19 end of the fiscal year in which the budget is
20 being presented that are proposed to be carried
21 over into the fiscal year for which the budget is
22 being presented; and
23 (C) that are estimated will remain at the
24 end of the fiscal year for which the budget is
25 being presented; and

1 (10) the budget for safety, by program.

2 (i) GENERAL AND ADMINISTRATIVE EXPENSES.—
3 The Administration shall make available, upon request
4 from the Committee on Science of the House of Represent-
5 atives or the Committee on Commerce, Science, and
6 Transportation of the Senate, information on Corporate
7 and Center General and Administrative Costs and Service
8 Pool costs, including—

9 (1) the total amount of funds being allocated
10 for those purposes for any fiscal year for which the
11 President has submitted an annual budget request
12 to Congress;

13 (2) the amount of funds being allocated for
14 those purposes for each center, for headquarters,
15 and for each directorate; and

16 (3) the major activities included in each cost
17 category.

18 **SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

19 There are authorized to be appropriated to the Ad-
20 ministration for fiscal year 2006 $16,471,050,000.

21 **SEC. 6. REPORTS.**

22 (a) IMMEDIATE ISSUES.—Not later than September
23 30, 2005, the Administrator shall transmit to the Com-
24 mittee on Science of the House of Representatives and the

1 Committee on Commerce, Science, and Transportation of
2 the Senate a report on each of the following items:
3 (1) The research agenda for the International
4 Space Station and its proposed final configuration.
5 (2) The number of flights the Space Shuttle
6 will make before its retirement, the purpose of those
7 flights, and the expected date of the final flight.
8 (3) A description of the means, other than the
9 Space Shuttle, that may be used to ferry crew and
10 cargo to and from the International Space Station.
11 (4) A plan for the operation of the Inter-
12 national Space Station in the event that the Iran
13 Nonproliferation Act of 2000 is not amended.
14 (5) A description of the launch vehicle for the
15 Crew Exploration Vehicle.
16 (6) A description of any heavy lift vehicle the
17 Administration intends to develop, the intended uses
18 of that vehicle, and whether the decision to develop
19 that vehicle has undergone an interagency review.
20 (7) A description of the intended purpose of
21 lunar missions and the architecture for those mis-
22 sions.
23 (8) The program goals for Project Prometheus.
24 (9) A plan for managing the cost increase for
25 the James Webb Space Telescope.

1 (b) CREW EXPLORATION VEHICLE.—The Adminis-
2 trator shall not enter into a development contract for the
3 Crew Exploration Vehicle until at least 30 days after the
4 Administrator has transmitted to the Committee on
5 Science of the House of Representatives and the Com-
6 mittee on Commerce, Science, and Transportation of the
7 Senate a report describing—
8 (1) the expected cost of the Crew Exploration
9 Vehicle through fiscal year 2020, based on the speci-
10 fications for that development contract;
11 (2) the expected budgets for each fiscal year
12 through fiscal year 2020 for human space flight,
13 aeronautics, space science, and earth science—
14 (A) first assuming inflationary growth for
15 the budget of the Administration as a whole
16 and including costs for the Crew Exploration
17 Vehicle as projected under paragraph (1); and
18 (B) then assuming inflationary growth for
19 the budget of the Administration as a whole
20 and including at least two cost estimates for the
21 Crew Exploration Vehicle that are higher than
22 those projected under paragraph (1), based on
23 the Administration's past experience with cost
24 increases for similar programs, along with a de-
25 scription of the reasons for selecting the cost

1 estimates used for the calculations under this
2 subparagraph and the probability that the cost
3 of the Crew Exploration Vehicle will reach those
4 estimated amounts; and
5 (3) the extent to which the Crew Exploration
6 Vehicle will allow for the escape of the crew in the
7 event of an emergency.
8 (c) SPACE COMMUNICATIONS.—Not later than Feb-
9 ruary 15, 2007, the Administrator shall transmit to the
10 Committee on Science of the House of Representatives
11 and the Committee on Commerce, Science, and Transpor-
12 tation of the Senate a plan for updating the space commu-
13 nications and navigation architecture for both low Earth
14 orbit and deep space exploration so that it is capable of
15 handling the activities described pursuant to section 4(b)
16 and (d). The plan shall include life-cycle cost estimates,
17 milestones, estimated performance capabilities, and 5-year
18 funding profiles. The Administrator shall consult with
19 other relevant Federal agencies in developing the plan
20 under this subsection and shall include in the plan an esti-
21 mate of the amount of any reimbursements the Adminis-
22 tration is likely to receive from other Federal agencies dur-
23 ing the expected life of the upgrades described in the plan.
24 (d) PUBLIC RELATIONS.—Not later than December
25 31, 2005, the Administrator shall transmit a plan to the

1 Committee on Appropriations and the Committee on
2 Science of the House of Representatives, and to the Com-
3 mittee on Appropriations and the Committee on Com-
4 merce, Science, and Transportation of the Senate, describ-
5 ing the activities that will be undertaken as part of the
6 national awareness campaign required by the report of the
7 Committee on Appropriations of the House of Representa-
8 tives accompanying the Science, State, Justice, Commerce,
9 and Related Agencies Appropriations Act, 2006, and the
10 expected cost of those activities. The Administration may
11 undertake activities as part of the national awareness
12 campaign prior to the transmittal of the plan required by
13 this subsection, but not until 15 days after notifying the
14 Committee on Science of the House of Representatives
15 and the Committee on Commerce, Science, and Transpor-
16 tation of the Senate of any activity. The plan required by
17 this subsection shall include the estimated costs of any ac-
18 tivities undertaken pursuant to notice under the preceding
19 sentence.

20 (e) JOINT DARK ENERGY MISSION.—The Adminis-
21 trator and the Director of the Department of Energy Of-
22 fice of Science shall jointly transmit to the Committee on
23 Science of the House of Representatives and the Com-
24 mittee on Commerce, Science, and Transportation of the
25 Senate, not later than the date on which the President

1 submits the proposed budget for the Federal Government
2 for fiscal year 2007, a report on plans for a Joint Dark
3 Energy Mission. The report shall include the amount of
4 funds each agency intends to expend on the Joint Dark
5 Energy Mission for each of the fiscal years 2007 through
6 2011, and any specific milestones for the development and
7 launch of the Mission.

8 (f) SHUTTLE EMPLOYEE TRANSITION.—The Admin-
9 istrator shall consult with other appropriate Federal agen-
10 cies and with Administration contractors and employees
11 to develop a transition plan for Federal and contractor
12 personnel engaged in the Space Shuttle program. The plan
13 shall include actions to assist Federal and contractor per-
14 sonnel to take advantage of training, retraining, job place-
15 ment, and relocation programs, and any other actions that
16 the Administration will take to assist the employees. The
17 Administrator shall transmit the plan to the Committee
18 on Science of the House of Representatives and the Com-
19 mittee on Commerce, Science, and Transportation of the
20 Senate not later than 90 days after the date of enactment
21 of this Act.

22 (g) OFFICE OF SCIENCE AND TECHNOLOGY POL-
23 ICY.—

1 (1) STUDY.—The Director of the Office of
2 Science and Technology Policy shall conduct a study
3 to determine—
4 (A) if any research and development pro-
5 grams of the Administration are unnecessarily
6 duplicating aspects of programs of other Fed-
7 eral agencies; and
8 (B) if any research and development pro-
9 grams of the Administration are neglecting any
10 topics of national interest that are related to
11 the mission of the Administration.
12 (2) REPORT.—Not later than March 1, 2006,
13 the Director of the Office of Science and Technology
14 Policy shall transmit to the Committee on Science of
15 the House of Representatives and the Committee on
16 Commerce, Science, and Transportation of the Sen-
17 ate a report that—
18 (A) describes the results of the study
19 under paragraph (1);
20 (B) lists the research and development pro-
21 grams of Federal agencies other than the Ad-
22 ministration that were reviewed as part of the
23 study, which shall include any program sup-
24 porting research and development in an area re-
25 lated to the programs of the Administration,

1 and the most recent budget figures for those
2 programs of other agencies;
3 (C) recommends any changes to the re-
4 search and development programs of the Ad-
5 ministration that should be made to eliminate
6 unnecessary duplication or address topics of na-
7 tional interest; and
8 (D) describes mechanisms the Office of
9 Science and Technology Policy will use to en-
10 sure adequate coordination between the Admin-
11 istration and Federal agencies that operate re-
12 lated programs.

13 **SEC. 7. BASELINES AND COST CONTROLS.**

14 (a) CONDITIONS FOR DEVELOPMENT.—
15 (1) IN GENERAL.—The Administration shall
16 not enter into a contract for the development phase
17 of a major program unless the Administrator deter-
18 mines that—
19 (A) the technical, cost, and schedule risks
20 of the program are clearly identified and the
21 program has developed a plan to manage those
22 risks; and
23 (B) the program complies with all relevant
24 policies, regulations, and directives of the Ad-
25 ministration.

1 (2) REPORT.—The Administrator shall trans-
2 mit a report describing the basis for the determina-
3 tion required under paragraph (1) to the Committee
4 on Science of the House of Representatives and the
5 Committee on Commerce, Science, and Transpor-
6 tation of the Senate at least 30 days before entering
7 into a contract for development under a major pro-
8 gram.
9 (3) NONDELEGATION.—The Administrator may
10 not delegate the determination requirement under
11 this subsection.
12 (b) MAJOR PROGRAM ANNUAL REPORTS.—
13 (1) REQUIREMENT.—Not later than February
14 15 of each year following the date of enactment of
15 this Act, the Administrator shall transmit to the
16 Committee on Science of the House of Representa-
17 tives and the Committee on Commerce, Science, and
18 Transportation of the Senate a report on each major
19 program for which the Administration proposes to
20 expend funds in the subsequent fiscal year. Reports
21 under this section shall be known as Major Program
22 Annual Reports.
23 (2) BASELINE REPORT.—The first Major Pro-
24 gram Annual Report for each major program shall

1 include a Baseline Report that shall, at a minimum,
2 include—
3 (A) the purposes of the program and key
4 technical characteristics necessary to fulfill
5 those purposes;
6 (B) an estimate of the life-cycle cost for
7 the program, with a detailed breakout of the
8 development cost and an estimate of the annual
9 costs until the development is completed;
10 (C) the schedule for the development, in-
11 cluding key program milestones; and
12 (D) the name of the person responsible for
13 making notifications under subsection (c), who
14 shall be an individual whose primary responsi-
15 bility is overseeing the program.
16 (3) INFORMATION UPDATES.—For major pro-
17 grams with respect to which a Baseline Report has
18 been previously submitted, each subsequent Major
19 Program Annual Report shall describe any changes
20 to the information that had been provided in the
21 Baseline Report, and the reasons for those changes.
22 (c) NOTIFICATION.—
23 (1) REQUIREMENT.—The individual identified
24 under subsection (b)(2)(D) shall immediately notify
25 the Administrator any time that individual has rea-

1 sonable cause to believe that, for the major program
2 for which he or she is responsible—
3 (A) the development cost of the program is
4 likely to exceed the estimate provided in the
5 Baseline Report of the program by 15 percent
6 or more; or
7 (B) a milestone of the program is likely to
8 be delayed by 6 months or more from the date
9 provided for it in the Baseline Report of the
10 program.
11 (2) REASONS.—Not later than 7 days after the
12 notification required under paragraph (1), the indi-
13 vidual identified under subsection (b)(2)(D) shall
14 transmit to the Administrator a written notification
15 explaining the reasons for the change in the cost or
16 milestone of the program for which notification was
17 provided under paragraph (1).
18 (3) NOTIFICATION OF CONGRESS.—Not later
19 than 5 days after the Administrator receives a writ-
20 ten notification under paragraph (2), the Adminis-
21 trator shall transmit the notification to the Com-
22 mittee on Science of the House of Representatives
23 and the Committee on Commerce, Science, and
24 Transportation of the Senate.

1 (d) FIFTEEN PERCENT THRESHOLD.—Not later
2 than 30 days after receiving a written notification under
3 subsection (c)(2), the Administrator shall determine
4 whether the development cost of the program is likely to
5 exceed the estimate provided in the Baseline Report of the
6 program by 15 percent or more, or whether a milestone
7 is likely to be delayed by 6 months or more. If the deter-
8 mination is affirmative, the Administrator shall—
9 (1) transmit to the Committee on Science of the
10 House of Representatives and the Committee on
11 Commerce, Science, and Transportation of the Sen-
12 ate, not later than 14 days after making the deter-
13 mination, a report that includes—
14 (A) a description of the increase in cost or
15 delay in schedule and a detailed explanation for
16 the increase or delay;
17 (B) a description of actions taken or pro-
18 posed to be taken in response to the cost in-
19 crease or delay; and
20 (C) a description of any impacts the cost
21 increase or schedule delay will have on any
22 other program within the Administration; and
23 (2) if the Administrator intends to continue
24 with the program, promptly initiate an analysis of
25 the program, which shall include, at a minimum—

1 (A) the projected cost and schedule for
2 completing the program if current requirements
3 of the program are not modified;
4 (B) the projected cost and the schedule for
5 completing the program after instituting the ac-
6 tions described under paragraph (1)(B); and
7 (C) a description of, and the projected cost
8 and schedule for, a broad range of alternatives
9 to the program.
10 The Administration shall complete an analysis initiated
11 under paragraph (2) not later than 6 months after the
12 Administrator makes a determination under this sub-
13 section. The Administrator shall transmit the analysis to
14 the Committee on Science of the House of Representatives
15 and Committee on Commerce, Science, and Transpor-
16 tation of the Senate not later than 30 days after its com-
17 pletion.
18 (e) THIRTY PERCENT THRESHOLD.—If the Adminis-
19 trator determines under subsection (d) that the develop-
20 ment cost of a program will exceed the estimate provided
21 in the Baseline Report of the program by more than the
22 lower of 30 percent or $1,000,000,000, then, beginning
23 1 year after the date the Administrator transmits a report
24 under subsection (d)(1), the Administrator shall not ex-
25 pend any additional funds on the program, other than ter-

1 mination costs, unless the Congress has subsequently au-
2 thorized continuation of the program by law. If the pro-
3 gram is continued, the Administrator shall submit a new
4 Baseline Report for the program no later than 90 days
5 after the date of enactment of the Act under which Con-
6 gress has authorized continuation of the program.

7 (f) DEFINITIONS.—For the purposes of this section—

8 (1) the term "development" means the phase of
9 a program following the formulation phase and be-
10 ginning with the approval to proceed to implementa-
11 tion, as defined in the Administration's Procedural
12 Requirements 7120.5c, dated March 22, 2005;

13 (2) the term "development cost" means the
14 total of all costs, including construction of facilities
15 and civil servant costs, from the period beginning
16 with the approval to proceed to implementation
17 through the achievement of operational readiness,
18 without regard to funding source or management
19 control, for the life of the program;

20 (3) the term "life-cycle cost" means the total of
21 the direct, indirect, recurring, and nonrecurring
22 costs, including the construction of facilities and civil
23 servant costs, and other related expenses incurred or
24 estimated to be incurred in the design, development,
25 verification, production, operation, maintenance,

1 support, and retirement of a program over its
2 planned lifespan, without regard to funding source
3 or management control; and
4 (4) the term "major program" means an activ-
5 ity approved to proceed to implementation that has
6 an estimated life-cycle cost of more than
7 $100,000,000.

8 **SEC. 8. PRIZE AUTHORITY.**

9 The National Aeronautics and Space Act of 1958 (42
10 U.S.C. 2451, et seq.) is amended by inserting after section
11 313 the following new section:

12 "PRIZE AUTHORITY

13 "SEC. 314. (a) IN GENERAL.—The Administration
14 may carry out a program to competitively award cash
15 prizes to stimulate innovation in basic and applied re-
16 search, technology development, and prototype demonstra-
17 tion that have the potential for application to the perform-
18 ance of the space and aeronautical activities of the Admin-
19 istration. The Administration may carry out a program
20 to award prizes only in conformity with this section.

21 "(b) TOPICS.—In selecting topics for prize competi-
22 tions, the Administrator shall consult widely both within
23 and outside the Federal Government, and may empanel
24 advisory committees.

25 "(c) ADVERTISING.—The Administrator shall widely
26 advertise prize competitions to encourage participation.

1 "(d) REQUIREMENTS AND REGISTRATION.—For each
2 prize competition, the Administrator shall publish a notice
3 in the Federal Register announcing the subject of the com-
4 petition, the rules for being eligible to participate in the
5 competition, the amount of the prize, and the basis on
6 which a winner will be selected.

7 "(e) ELIGIBILITY.—To be eligible to win a prize
8 under this section, an individual or entity—

9 "(1) shall have registered to participate in the
10 competition pursuant to any rules promulgated by
11 the Administrator under subsection (d);

12 "(2) shall have complied with all the require-
13 ments under this section;

14 "(3) in the case of a private entity, shall be in-
15 corporated in and maintain a primary place of busi-
16 ness in the United States, and in the case of an in-
17 dividual, whether participating singly or in a group,
18 shall be a citizen or permanent resident of the
19 United States; and

20 "(4) shall not be a Federal entity or Federal
21 employee acting within the scope of their employ-
22 ment.

23 "(f) LIABILITY.—(1) Registered participants must
24 agree to assume any and all risks and waive claims against
25 the United States Government and its related entities, ex-

1 cept in the case of willful misconduct, for any injury,
2 death, damage, or loss of property, revenue, or profits,
3 whether direct, indirect, or consequential, arising from
4 their participation in a competition, whether such injury,
5 death, damage, or loss arises through negligence or other-
6 wise. For the purposes of this subparagraph, the term 're-
7 lated entity' means a contractor or subcontractor at any
8 tier, and a supplier, user, customer, cooperating party,
9 grantee, investigator, or detailee.

10 "(2) Participants must obtain liability insurance or
11 demonstrate financial responsibility in amounts to com-
12 pensate for the maximum probable loss, as determined by
13 the Administrator, from claims by—

14 "(A) a third party for death, bodily injury, or
15 property damage, or loss resulting from an activity
16 carried out in connection with participation in a
17 competition, with the Federal Government named as
18 an additional insured under the registered partici-
19 pant's insurance policy and registered participants
20 agreeing to indemnify the Federal Government
21 against third party claims for damages arising from
22 or related to competition activities; and

23 "(B) the United States Government for damage
24 or loss to Government property resulting from such
25 an activity.

1 "(g) INTELLECTUAL PROPERTY.—The Federal Gov-
2 ernment shall not, by virtue of offering or providing a
3 prize under this section, be entitled to any intellectual
4 property rights derived as a consequence of, or direct rela-
5 tion to, the participation by a registered participant in a
6 competition authorized by this section. This subsection
7 shall not be construed to prevent the Administration from
8 negotiating a license for the use of intellectual property
9 developed for a prize competition under this section.
10 "(h) JUDGES.—For each competition, the Adminis-
11 tration, either directly or through a contract under sub-
12 section (i), shall assemble a panel of qualified judges from
13 both within and outside the Administration to select the
14 winner or winners of the prize competition on the basis
15 described pursuant to subsection (d). Judges for each
16 competition shall include individuals from the private sec-
17 tor. A judge may not—
18 "(1) have personal or financial interests in, or
19 be employees, officers, directors, or agents of, any
20 entity that is a registered participant in a competi-
21 tion; or
22 "(2) have a familial or financial relationship
23 with an individual who is a registered participant.
24 "(i) ADMINISTERING THE COMPETITION.—The Ad-
25 ministrator may enter into an agreement with a private,

1 nonprofit entity to administer the prize competition, sub-
2 ject to the provisions of this section.
3 "(j) FUNDING.—(1) The Administrator may accept
4 funds from other Federal agencies and from the private
5 sector for cash prizes under this section. Such funds shall
6 not increase the amount of a prize after the amount has
7 been announced pursuant to subsection (d). The Adminis-
8 trator may not give any special consideration to any pri-
9 vate sector entity in return for a donation.
10 "(2) Funds appropriated for the program under this
11 section shall remain available until expended, and may be
12 transferred, reprogrammed, or expended for other pur-
13 poses only after the expiration of 10 fiscal years after the
14 fiscal year for which the funds were originally appro-
15 priated. No provision in this section permits obligation or
16 payment of funds in violation of the Anti-Deficiency Act
17 (31 U.S.C. 1341).
18 "(3) No prize may be announced under subsection
19 (d) until all the funds for that prize have been appro-
20 priated or obligated for such purpose by a private sector
21 source.
22 "(4) No prize competition under this section may
23 offer a prize in an amount greater than $10,000,000 un-
24 less 30 days have elapsed after written notice has been
25 provided to the Committee on Science of the House of

1 Representatives and the Committee on Commerce,
2 Science, and Transportation of the Senate.
3 "(k) USE OF NASA NAME AND INSIGNIA.—A reg-
4 istered participant in a competition under this section may
5 use the Administration's name, initials, or insignia only
6 after prior review and written approval by the Administra-
7 tion.
8 "(l) COMPLIANCE WITH EXISTING LAW.—The Fed-
9 eral Government shall not, by virtue of offering or pro-
10 viding a prize under this section, be responsible for compli-
11 ance by registered participants in a prize competition with
12 Federal law, including licensing, export control, and non-
13 proliferation laws, and related regulations.".
14 **SEC. 9. MISCELLANEOUS AMENDMENTS.**
15 (a) RETROCESSION OF JURISDICTION.—The Na-
16 tional Aeronautics and Space Act of 1958 (42 U.S.C.
17 2451 et seq.) is amended by adding at the end of title
18 III the following new section:
19 "RETROCESSION OF JURISDICTION
20 "SEC. 316. (a) Notwithstanding any other provision
21 of law, the Administrator may relinquish to a State all
22 or part of the legislative jurisdiction of the United States
23 over lands or interests under the control of the Adminis-
24 trator in that State.
25 "(b) For purposes of this section, the term 'State'
26 means any of the several States, the District of Columbia,

1 the Commonwealth of Puerto Rico, the United States Vir-
2 gin Islands, Guam, American Samoa, the Northern Mar-
3 iana Islands, and any other commonwealth, territory, or
4 possession of the United States.".
5 (b) NASA SCHOLARSHIPS.—
6 (1) AMENDMENTS.—Section 9809 of title 5,
7 United States Code, is amended—
8 (A) in subsection (a)(2) by striking "Act."
9 and inserting "Act (42 U.S.C. 1885a or
10 1885b).";
11 (B) in subsection (c) by striking "require."
12 and inserting "require to carry out this sec-
13 tion.";
14 (C) in subsection (f)(1) by striking the last
15 sentence; and
16 (D) in subsection (g)(2) by striking
17 "Treasurer of the" and all that follows through
18 "by 3" and inserting "Treasurer of the United
19 States".
20 (2) REPEAL.—The Vision 100—Century of
21 Aviation Reauthorization Act is amended by striking
22 section 703 (42 U.S.C. 2473e).
23 (c) VEHICLE INDEMNIFICATION.—Section 309 of the
24 National Aeronautics and Space Act of 1958 (42 U.S.C.
25 458c) is amended in subsection (f)(1) by striking "Decem-

1 ber 31, 2002" through "September 30, 2005" and insert-
2 ing, "December 31, 2010, except that the Administrator
3 may extend the termination date to a date not later than
4 September 30, 2015, if the Administrator has entered into
5 an arrangement with the National Academy of Public Ad-
6 ministration to determine the impact on private parties
7 and the Federal Government of eliminating this section".
8 (d) ISS COST CAP.—Section 202 of the National
9 Aeronautics and Space Administration Authorization Act
10 of 2002 is repealed.

11 **SEC. 10. FOREIGN LAUNCH VEHICLES.**

12 (a) ACCORD WITH SPACE TRANSPORTATION POL-
13 ICY.—The Administration shall not launch a mission on
14 a foreign launch vehicle except in accordance with the
15 Space Transportation Policy announced by the President
16 on December 21, 2004.
17 (b) INTERAGENCY COORDINATION.—The Adminis-
18 tration shall not launch a mission on a foreign launch vehi-
19 cle unless the Administration commenced the interagency
20 coordination required by the Space Transportation Policy
21 announced by the President on December 21, 2004, at
22 least 90 days before entering into a development contract
23 for the mission.

1 **SEC. 11. COORDINATION WITH THE NATIONAL OCEANIC**
2 **AND ATMOSPHERIC ADMINISTRATION.**

3 (a) COORDINATING INDIVIDUALS.—For each earth
4 science mission undertaken by the Administration, the Ad-
5 ministrator and the Administrator of the National Oceanic
6 and Atmospheric Administration shall each appoint one
7 individual to coordinate activities related to the mission
8 and to make any appropriate plans for the mission making
9 the transition from an Administration mission to a Na-
10 tional Oceanic and Atmospheric Administration mission.

11 (b) COORDINATION REPORT.—Not later than Feb-
12 ruary 15 of each year, the Under Secretary of Commerce
13 for Oceans and Atmosphere and the Administrator shall
14 jointly transmit a report to the Committee on Science of
15 the House of Representatives and the Committee on Com-
16 merce, Science, and Transportation of the Senate on how
17 the earth science programs of the National Oceanic and
18 Atmospheric Administration and the Administration will
19 be coordinated during the fiscal year following the fiscal
20 year in which the report is transmitted.

21 **SEC. 12. CHARLES "PETE" CONRAD ASTRONOMY AWARDS.**

22 (a) SHORT TITLE.—This section may be cited as the
23 "Charles 'Pete' Conrad Astronomy Awards Act".

24 (b) DEFINITIONS.—For the purposes of this
25 section—

1 (1) the term "amateur astronomer" means an
2 individual whose employer does not provide any
3 funding, payment, or compensation to the individual
4 for the observation of asteroids and other celestial
5 bodies, and does not include any individual employed
6 as a professional astronomer;
7 (2) the term "Minor Planet Center" means the
8 Minor Planet Center of the Smithsonian Astro-
9 physical Observatory;
10 (3) the term "near-Earth asteroid" means an
11 asteroid with a perihelion distance of less than 1.3
12 Astronomical Units from the Sun; and
13 (4) the term "Program" means the Charles
14 "Pete" Conrad Astronomy Awards Program estab-
15 lished under subsection (c).
16 (c) PETE CONRAD ASTRONOMY AWARD PROGRAM.—
17 (1) IN GENERAL.—The Administrator shall es-
18 tablish the Charles "Pete" Conrad Astronomy
19 Awards Program.
20 (2) AWARDS.—The Administrator shall make
21 awards under the Program based on the rec-
22 ommendations of the Minor Planet Center.
23 (3) AWARD CATEGORIES.—The Administrator
24 shall make one annual award, unless there are no el-

1 igible discoveries or contributions, for each of the
2 following categories:
3 (A) The amateur astronomer or group of
4 amateur astronomers who in the preceding cal-
5 endar year discovered the intrinsically brightest
6 near-Earth asteroid among the near-Earth as-
7 teroids that were discovered during that year by
8 amateur astronomers or groups of amateur as-
9 tronomers.
10 (B) The amateur astronomer or group of
11 amateur astronomers who made the greatest
12 contribution to the Minor Planet Center's mis-
13 sion of cataloguing near-Earth asteroids during
14 the preceding year.
15 (4) AWARD AMOUNT.—An award under the
16 Program shall be in the amount of $3,000.
17 (5) GUIDELINES.—(A) No individual who is not
18 a citizen or permanent resident of the United States
19 at the time of his discovery or contribution may re-
20 ceive an award under this section.
21 (B) The decisions of the Administrator in mak-
22 ing awards under this section are final.

**SEC. 13. GEORGE E. BROWN, JR. NEAR-EARTH OBJECT SURVEY.**

(a) SHORT TITLE.—This section may be cited as the "George E. Brown, Jr. Near-Earth Object Survey Act".

(b) FINDINGS.—The Congress makes the following findings:

(1) Near-Earth objects pose a serious and credible threat to humankind, as many scientists believe that a major asteroid or comet was responsible for the mass extinction of the majority of the Earth's species, including the dinosaurs, nearly 65,000,000 years ago.

(2) Similar objects have struck the Earth or passed through the Earth's atmosphere several times in the Earth's history and pose a similar threat in the future.

(3) Several such near-Earth objects have only been discovered within days of the objects' closest approach to Earth, and recent discoveries of such large objects indicate that many large near-Earth objects remain undiscovered.

(4) The efforts taken to date by the Administration for detecting and characterizing the hazards of near-Earth objects are not sufficient to fully determine the threat posed by such objects to cause widespread destruction and loss of life.

1 (c) DEFINITIONS.—For purposes of this section the
2 term "near-Earth object" means an asteroid or comet with
3 a perihelion distance of less that 1.3 Astronomical Units
4 from the Sun.
5 (d) NEAR-EARTH OBJECT SURVEY.—
6 (1) SURVEY PROGRAM.—The Administrator
7 shall plan, develop, and implement a Near-Earth
8 Object Survey program to detect, track, catalogue,
9 and characterize the physical characteristics of near-
10 Earth objects equal to or greater than 100 meters
11 in diameter in order to assess the threat of such
12 near-Earth objects to the Earth. It shall be the goal
13 of the Survey program to achieve 90 percent comple-
14 tion of its near-Earth object catalogue (based on sta-
15 tistically predicted populations of near-Earth ob-
16 jects) within 15 years after the date of enactment of
17 this Act.
18 (2) AMENDMENTS.—Section 102 of the Na-
19 tional Aeronautics and Space Act of 1958 (42
20 U.S.C. 2451) is amended—
21 (A) by redesignating subsection (g) as sub-
22 section (h);
23 (B) by inserting after subsection (f) the
24 following new subsection:

1 "(g) The Congress declares that the general welfare
2 and security of the United States require that the unique
3 competence of the National Aeronautics and Space Ad-
4 ministration be directed to detecting, tracking, cata-
5 loguing, and characterizing near-Earth asteroids and com-
6 ets in order to provide warning and mitigation of the po-
7 tential hazard of such near-Earth objects to the Earth.";
8 and

9 (C) in subsection (h), as so redesignated
10 by subparagraph (A) of this paragraph, by
11 striking "and (f)" and inserting "(f), and (g)".

12 (3) ANNUAL REPORT.—The Administrator shall
13 transmit to the Congress, not later than February
14 28 of each of the next 5 years beginning after the
15 date of enactment of this Act, a report that provides
16 the following:

17 (A) A summary of all activities taken pur-
18 suant to paragraph (1) for the previous fiscal
19 year.

20 (B) A summary of expenditures for all ac-
21 tivities pursuant to paragraph (1) for the pre-
22 vious fiscal year.

23 (4) INITIAL REPORT.—The Administrator shall
24 transmit to Congress not later than 1 year after the

1 date of enactment of this Act an initial report that
2 provides the following:
3 (A) An analysis of possible alternatives
4 that the the Administration may employ to
5 carry out the Survey program, including
6 ground-based and space-based alternatives with
7 technical descriptions.
8 (B) A recommended option and proposed
9 budget to carry out the Survey program pursu-
10 ant to the recommended option.
11 (C) An analysis of possible alternatives
12 that the Administration could employ to divert
13 an object on a likely collision course with Earth.

**COMMITTEE ON SCIENCE - FULL COMMITTEE MARKUP**
**July 14, 2005**
**AMENDMENT ROSTER**

**H.R. 3070, National Aeronautics and Space Administration Authorization Act of 2005**.
--Motion to adopt the bill, as amended: agreed to by a roll call vote: Y-36; N-0.
--Motion to report the bill, as amended: agreed to by a voice vote.

| No. | Sponsor | Description | Results |
|---|---|---|---|
| 1. | Mr. Boehlert<br>Mr. Gordon<br>Mr. Calvert<br>Mr. Udall | Amendment in the Nature of A Substitute to H.R. 3070. | --Adopted by a voice vote. |
| 2. | Mr. Rohrabacher | Amendment amends the Iran Nonproliferation Act of 2000. | --Withdrawn by unanimous consent. |
| 3. | Mr. Melancon | Amendment to provide enhanced use leasing authority at NASA facilities. | --Withdrawn by unanimous consent. |
| 4. | Ms. Jackson Lee | Amendment provides funding for Historically Black Colleges and Universities education programs. | --Amendments #4, #5, and #7 were withdrawn by unanimous consent. |
| 5. | Ms. Jackson Lee | Amendment establishes the Dr. Mae C. Jemison Grant Program. | --Amendments #4, #5, and #7 were withdrawn by unanimous consent. |
| 6. | Mr. Costello | Amendment would strike language in the Substitute on "Consistency With International Agreements." | --Defeated by a roll call vote: Y-18; N-18. |
| 7. | Ms. Jackson Lee | Amendment provides clarifying language to the Amendment in the Nature of a Substitute. | --Amendments #4, #5, and #7 were withdrawn by unanimous consent. |
| 8. | Mr. Costello | Amendment would require NASA to provide a report on contracts performed overseas and the amount of purchases by NASA from foreign entities in that fiscal year. | --Adopted by a voice vote. |

COMMITTEE ON SCIENCE - ROLL CALL – 109th CONGRESS

DATE: 7/14/05 SUBJECT: Roll Call vote on the motion to adopt the bill, as amended.

| Rm. | Phone | Member | Yes | No | Not Voting | Present | Absent |
|---|---|---|---|---|---|---|---|
| 2246 | 53665 | Mr. Boehlert, R-NY | ✓ | | | | |
| 2405 | 56673 | Mr. Hall, R-TX | ✓ | | | | |
| 2184 | 54236 | Mr. Smith, R-TX | ✓ | | | | |
| 2466 | 52011 | Mr. Weldon, R-PA | | | | | |
| 2338 | 52415 | Mr. Rohrabacher, R-CA | ✓ | | | | |
| 2201 | 51986 | Mr. Calvert, R-CA | ✓ | | | | |
| 2412 | 52721 | Mr. Bartlett, R-MD | ✓ | | | | |
| 1714 | 53831 | Mr. Ehlers, R-MI | ✓ | | | | |
| 425 | 52472 | Mr. Gutknecht, R-MN | ✓ | | | | |
| 2342 | 55565 | Mr. Lucas, R-OK | ✓ | | | | |
| 1317 | 53515 | Mrs. Biggert, R-IL | ✓ | | | | |
| 2245 | 55311 | Mr. Gilchrest, R-MD | ✓ | | | | |
| 117 | 52561 | Mr. Akin, R-MO | ✓ | | | | |
| 1229 | 52371 | Mr. Johnson, R-IL | ✓ | | | | |
| 307 | 56365 | Mr. Forbes, R-VA | | | | | |
| 315 | 54931 | Mr. Bonner, R-AL | ✓ | | | | |
| 323 | 52706 | Mr. Feeney, R-FL | ✓ | | | | |
| 330 | 56030 | Mr. Inglis, R-SC | ✓ | | | | |
| 1223 | 57761 | Mr. Reichert, R-WA | ✓ | | | | |
| 1508 | 55315 | Mr. Sodrel, R-IN | ✓ | | | | |
| 128 | 56276 | Mr. Schwarz, R-MI | ✓ | | | | |
| 415 | 52401 | Mr. McCaul, R-TX | ✓ | | | | |
| | | | | | | | |
| ***2304*** | ***54231*** | ***Mr. Gordon, D-TN*** | ✓ | | | | |
| ***2269*** | ***55661*** | ***Mr. Costello, D-IL*** | ✓ | | | | |
| ***1511*** | ***58885*** | ***Ms. Johnson, D-TX*** | | | | | |
| ***2263*** | ***55161*** | ***Ms. Woolsey, D-CA*** | ✓ | | | | |
| ***2430*** | ***55711*** | ***Ms. Hooley, D-OR*** | ✓ | | | | |
| ***240*** | ***52161*** | ***Mr. Udall, D-CO*** | ✓ | | | | |
| ***1023*** | ***50855*** | ***Mr. Wu, D-OR*** | ✓ | | | | |
| ***1713*** | ***52631*** | ***Mr. Honda, D-CA*** | ✓ | | | | |
| ***1722*** | ***53032*** | ***Mr. Miller, D-NC*** | ✓ | | | | |
| ***410*** | ***56831*** | ***Mr. Davis, D-TN*** | | | | | |
| ***1232*** | ***52671*** | ***Mr. Carnahan, D-MO*** | ✓ | | | | |
| ***1217*** | ***55701*** | ***Mr. Lipinski, D-IL*** | ✓ | | | | |
| ***2435*** | ***53816*** | ***Ms. Jackson Lee, D-TX*** | ✓ | | | | |
| ***1030*** | ***55911*** | ***Mr. Sherman, D-CA*** | ✓ | | | | |
| ***1421*** | ***53536*** | ***Mr. Baird, D-WA*** | ✓ | | | | |
| ***1222*** | ***53011*** | ***Mr. Matheson, D-UT*** | ✓ | | | | |
| ***1004*** | ***53341*** | ***Mr. Costa, D-CA*** | ✓ | | | | |
| ***1529*** | ***57508*** | ***Mr. Green, D-TX*** | ✓ | | | | |
| ***404*** | ***54031*** | ***Mr. Melancon, D-LA*** | ✓ | | | | |
| ***1727*** | ***52865*** | ***Mr. Moore, D-KS*** | ✓ | | | | |
| | | **TOTAL** | 36 | | | | |

Attest: Vivian A. Testerie (Clerk)

## AMENDMENT IN THE NATURE OF A SUBSTITUTE TO H.R. 3070 OFFERED BY MR. BOEHLERT OF NEW YORK (FOR HIMSELF, MR. GORDON OF TENNESSEE, MR. CALVERT OF CALIFORNIA, AND MR. UDALL OF COLORADO)

Strike all after the enacting clause and insert the following:

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) SHORT TITLE.—This Act may be cited as the
3 "National Aeronautics and Space Administration Author-
4 ization Act of 2005".

5 (b) TABLE OF CONTENTS.—The table of contents for
6 this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Findings.
Sec. 3. Definitions.

TITLE I—GENERAL PRINCIPLES AND REPORTS

Sec. 101. Responsibilities, policies, and plans.
Sec. 102. Reports.
Sec. 103. Baselines and cost controls.
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1 **SEC. 2. FINDINGS.**

2 The Congress finds the following:

3 (1) On January 14, 2004, the President un-
4 veiled the Vision for Space Exploration to guide
5 United States policy on human space exploration.

6 (2) The President's vision of returning humans
7 to the Moon and working toward a sustainable
8 human presence there and then venturing further
9 into the solar system provides a sustainable rationale
10 for the United States human space flight program.

11 (3) As we enter the Second Space Age, the Na-
12 tional Aeronautics and Space Administration should
13 continue to support robust programs in space
14 science, aeronautics, and earth science as it moves
15 forward with plans to send Americans to the Moon,
16 Mars, and worlds beyond.

17 (4) The National Aeronautics and Space Ad-
18 ministration's programs can advance the frontiers of
19 science, expanding understanding of our planet and
20 of the universe, and contribute to American pros-
21 perity.

22 (5) The United States should honor its inter-
23 national commitments to the International Space
24 Station program.

25 (6) The United States must remain the leader
26 in aeronautics and aviation. Any erosion of this pre-

1 eminence is not in the Nation's economic or security
2 interests. Past Federal investments in aeronautics
3 research and development have benefited the econ-
4 omy and national security of the United States and
5 improved the quality of life of its citizens.
6 (7) Long-term progress in aeronautics and
7 space requires continued Federal investment in fun-
8 damental research, test facilities, and maintenance
9 of a skilled civil service workforce at NASA's Cen-
10 ters.
11 (8) An important part of NASA's mission is
12 education and outreach.

13 **SEC. 3. DEFINITIONS.**

14 In this Act:
15 (1) ADMINISTRATOR.—The term "Adminis-
16 trator" means the Administrator of the National
17 Aeronautics and Space Administration.
18 (2) ISS.—The term "ISS" means the Inter-
19 national Space Station.
20 (3) NASA.—The term "NASA" means the Na-
21 tional Aeronautics and Space Administration.

22 **TITLE I—GENERAL PRINCIPLES**
23 **AND REPORTS**

24 **SEC. 101. RESPONSIBILITIES, POLICIES, AND PLANS.**

25 (a) GENERAL RESPONSIBILITIES.—

1 (1) PROGRAMS.—The Administrator shall en-
2 sure that NASA carries out a balanced set of pro-
3 grams that shall include, at a minimum, programs
4 in—
5 (A) human space flight, in accordance with
6 subsection (b);
7 (B) aeronautics research and development;
8 and
9 (C) scientific research, which shall include,
10 at a minimum—
11 (i) robotic missions to study planets,
12 and to deepen understanding of astronomy,
13 astrophysics, and other areas of science
14 that can be productively studied from
15 space;
16 (ii) earth science research and re-
17 search on the Sun-Earth connection
18 through the development and operation of
19 research satellites and other means;
20 (iii) support of university research in
21 space science and earth science; and
22 (iv) research on microgravity, includ-
23 ing research that is not directly related to
24 human exploration.

1 (2) CONSULTATION AND COORDINATION.—In
2 carrying out the programs of NASA, the Adminis-
3 trator shall—
4 (A) consult and coordinate to the extent
5 appropriate with other relevant Federal agen-
6 cies, including through the National Science
7 and Technology Council;
8 (B) work closely with the private sector,
9 including by—
10 (i) encouraging the work of entre-
11 preneurs who are seeking to develop new
12 means to launch satellites, crew, or cargo;
13 (ii) contracting with the private sector
14 for crew and cargo services to the extent
15 practicable; and
16 (iii) using commercially available
17 products (including software) and services
18 to the extent practicable to support all
19 NASA activities; and
20 (C) involve other nations to the extent ap-
21 propriate.
22 (b) VISION FOR SPACE EXPLORATION.—The Admin-
23 istrator shall manage human space flight programs to
24 strive to achieve the following goals:

1 (1) Returning Americans to the Moon no later
2 than 2020.
3 (2) Launching the Crew Exploration Vehicle as
4 close to 2010 as possible.
5 (3) Increasing knowledge of the impacts of long
6 duration stays in space on the human body using the
7 most appropriate facilities available.
8 (4) Enabling humans to land on and return
9 from Mars and other destinations on a timetable
10 that is technically and fiscally possible.
11 (c) AERONAUTICS.—
12 (1) IN GENERAL.—The President of the United
13 States, through the Administrator, and in consulta-
14 tion with other Federal agencies, shall develop a na-
15 tional aeronautics policy to guide the aeronautics
16 programs of NASA through 2020.
17 (2) CONTENT.—At a minimum, the national
18 aeronautics policy shall describe for NASA—
19 (A) the priority areas of research for aero-
20 nautics through fiscal year 2011;
21 (B) the basis on which and the process by
22 which priorities for ensuing fiscal years will be
23 selected;

1 (C) the facilities and personnel needed to
2 carry out the aeronautics program through fis-
3 cal year 2011; and
4 (D) the budget assumptions on which the
5 national aeronautics policy is based, which for
6 fiscal years 2006 and 2007 shall be the author-
7 ized level for aeronautics provided in title II of
8 this Act.
9 (3) CONSIDERATIONS.—In developing the na-
10 tional aeronautics policy, the President shall con-
11 sider the following issues, which shall be discussed
12 in the transmittal under paragraph (5):
13 (A) The extent to which NASA should
14 focus on long-term, high-risk research or more
15 incremental research, and the expected impact
16 on the United States aircraft and airline indus-
17 tries of that decision.
18 (B) The extent to which NASA should ad-
19 dress military and commercial needs.
20 (C) How NASA will coordinate its aero-
21 nautics program with other Federal agencies.
22 (D) The extent to which NASA will fund
23 university research, and the expected impact of
24 that funding on the supply of United States
25 workers for the aeronautics industry.

1 (E) The extent to which the priority areas
2 of research listed pursuant to paragraph (2)(A)
3 should include the activities authorized by title
4 IV of this Act, the discussion of which shall in-
5 clude a priority ranking of all of the activities
6 authorized in title IV and an explanation for
7 that ranking.
8 (4) CONSULTATION.—In the development of the
9 national aeronautics policy, the Administrator shall
10 consult widely with academic and industry experts
11 and with other Federal agencies. The Administrator
12 may enter into an arrangement with the National
13 Academy of Sciences to help develop the national
14 aeronautics policy.
15 (5) SCHEDULE.—The Administrator shall
16 transmit the national aeronautics policy to the Com-
17 mittee on Appropriations and the Committee on
18 Science of the House of Representatives, and to the
19 Committee on Appropriations and the Committee on
20 Commerce, Science, and Transportation of the Sen-
21 ate, not later than the date on which the President
22 submits the proposed budget for the Federal Gov-
23 ernment for fiscal year 2007 to the Congress. The
24 Administrator shall make available to those commit-
25 tees any study done by a nongovernmental entity

1 that was used in the development of the national
2 aeronautics policy.
3 (d) SCIENCE.—
4 (1) IN GENERAL.—The Administrator shall de-
5 velop a policy to guide the science programs of
6 NASA through 2016.
7 (2) CONTENT.—At a minimum, the policy shall
8 describe—
9 (A) the missions NASA will initiate, de-
10 sign, develop, launch, or operate in space
11 science and earth science through fiscal year
12 2016, including launch dates;
13 (B) a priority ranking of all of the mis-
14 sions listed under subparagraph (A), and the
15 rationale for the ranking;
16 (C) the budget assumptions on which the
17 policy is based, which for fiscal years 2006 and
18 2007 shall be consistent with the authorizations
19 provided in title II of this Act; and
20 (D) the facilities and personnel needed to
21 carry out the policy through fiscal year 2016.
22 (3) CONSIDERATIONS.—In developing the
23 science policy under this subsection, the Adminis-
24 trator shall consider the following issues, which shall
25 be discussed in the transmittal under paragraph (6):

1 (A) What the most important scientific
2 questions in space science and earth science
3 are.
4 (B) The relationship between NASA's
5 space and earth science activities and those of
6 other Federal agencies.
7 (4) CONSULTATION.—In developing the policy
8 under this subsection, the Administrator shall draw
9 on decadal surveys and other reports in planetary
10 science, astronomy, solar and space physics, earth
11 science, and any other relevant fields developed by
12 the National Academy of Sciences. The Adminis-
13 trator shall also consult widely with academic and
14 industry experts and with other Federal agencies.
15 (5) HUBBLE SPACE TELESCOPE.—The policy
16 developed under this subsection shall address plans
17 for a human mission to repair the Hubble Space
18 Telescope consistent with section 302 of this Act.
19 (6) SCHEDULE.—The Administrator shall
20 transmit the policy developed under this subsection
21 to the Committee on Science of the House of Rep-
22 resentatives and the Committee on Commerce,
23 Science, and Transportation of the Senate not later
24 than the date on which the President submits the
25 proposed budget for the Federal Government for fis-

1 cal year 2007 to the Congress. The Administrator
2 shall make available to those committees any study
3 done by a nongovernmental entity that was used in
4 the development of the policy.
5 (e) FACILITIES.—
6 (1) IN GENERAL.—The Administrator shall de-
7 velop a plan for managing NASA's facilities through
8 fiscal year 2015. The plan shall be consistent with
9 the policies and plans developed pursuant to this
10 section.
11 (2) CONTENT.—At a minimum, the plan shall
12 describe—
13 (A) any new facilities NASA intends to ac-
14 quire, whether through construction, purchase,
15 or lease, and the expected dates for doing so;
16 (B) any facilities NASA intends to signifi-
17 cantly modify, and the expected dates for doing
18 so;
19 (C) any facilities NASA intends to close,
20 and the expected dates for doing so;
21 (D) any transaction NASA intends to con-
22 duct to sell, lease, or otherwise transfer the
23 ownership of a facility, and the expected dates
24 for doing so;

1 (E) how each of the actions described in
2 subparagraphs (A), (B), (C), and (D) will en-
3 hance the ability of NASA to carry out its pro-
4 grams;
5 (F) the expected costs or savings expected
6 from each of the actions described in subpara-
7 graphs (A), (B), (C), and (D);
8 (G) the priority order of the actions de-
9 scribed in subparagraphs (A), (B), (C), and
10 (D);
11 (H) the budget assumptions of the plan,
12 which for fiscal years 2006 and 2007 shall be
13 consistent with the authorizations provided in
14 title II of this Act; and
15 (I) how facilities were evaluated in devel-
16 oping the plan.
17 (3) SCHEDULE.—The Administrator shall
18 transmit the plan developed under this subsection to
19 the Committee on Science of the House of Rep-
20 resentatives and the Committee on Commerce,
21 Science, and Transportation of the Senate not later
22 than the date on which the President submits the
23 proposed budget for the Federal Government for fis-
24 cal year 2008 to the Congress.
25 (f) WORKFORCE.—

1 (1) IN GENERAL.—The Administrator shall de-
2 velop a human capital strategy to ensure that NASA
3 has a workforce of the appropriate size and with the
4 appropriate skills to carry out the programs of
5 NASA, consistent with the policies and plans devel-
6 oped pursuant to this section. The strategy shall
7 cover the period through fiscal year 2011.
8 (2) CONTENT.—The strategy shall describe, at
9 a minimum—
10 (A) any categories of employees NASA in-
11 tends to reduce, the expected size and timing of
12 those reductions, the methods NASA intends to
13 use to make the reductions, and the reasons
14 NASA no longer needs those employees;
15 (B) any categories of employees NASA in-
16 tends to increase, the expected size and timing
17 of those increases, the methods NASA intends
18 to use to recruit the additional employees, and
19 the reasons NASA needs those employees;
20 (C) the steps NASA will use to retain
21 needed employees; and
22 (D) the budget assumptions of the strat-
23 egy, which for fiscal years 2006 and 2007 shall
24 be consistent with the authorizations provided
25 in title II of this Act, and any expected addi-

1 tional costs or savings from the strategy by fis-
2 cal year.
3 (3) SCHEDULE.—The Administrator shall
4 transmit the strategy developed under this sub-
5 section to the Committee on Science of the House of
6 Representatives and the Committee on Commerce,
7 Science, and Transportation of the Senate not later
8 than the date on which the President submits the
9 proposed budget for the Federal Government for fis-
10 cal year 2007 to the Congress. At least 60 days be-
11 fore transmitting the strategy, NASA shall provide
12 a draft of the strategy to its Federal Employee
13 Unions for a 30-day consultation period after which
14 NASA shall respond in writing to any written con-
15 cerns provided by the Unions.
16 (4) LIMITATION.—NASA may not initiate any
17 buyout offer or Reduction in Force until 60 days
18 after the strategy required by this subsection has
19 been transmitted to the Congress in accordance with
20 paragraph (3). NASA may not implement any Re-
21 duction in Force or other involuntary separations
22 prior to October 1, 2006.
23 (g) CENTER MANAGEMENT.—
24 (1) IN GENERAL.—The Administrator shall con-
25 duct a study to determine whether any of NASA's

1 centers should be operated by or with the private
2 sector by converting a center to a Federally Funded
3 Research and Development Center or through any
4 other mechanism.

5 (2) CONTENT.—The study shall, at a
6 minimum—

7 (A) make a recommendation for the oper-
8 ation of each center and provide reasons for
9 that recommendation; and

10 (B) describe the advantages and disadvan-
11 tages of each mode of operation considered in
12 the study.

13 (3) CONSIDERATIONS.—In conducting the
14 study, the Administrator shall take into consider-
15 ation the experiences of other relevant Federal agen-
16 cies in operating laboratories and centers and any
17 reports that have reviewed the mode of operation of
18 those laboratories and centers, as well as any reports
19 that have reviewed NASA's centers.

20 (4) SCHEDULE.—The Administrator shall
21 transmit the study conducted under this subsection
22 to the Committee on Science of the House of Rep-
23 resentatives and the Committee on Commerce,
24 Science, and Transportation of the Senate not later
25 than May 31, 2006.

1 (h) BUDGETS.—The proposed budget for NASA sub-
2 mitted by the President for each fiscal year shall be ac-
3 companied by documents showing—
4 (1) the budget for each element of the human
5 space flight program;
6 (2) the budget for aeronautics;
7 (3) the budget for space science;
8 (4) the budget for earth science;
9 (5) the budget for microgravity science;
10 (6) the budget for education;
11 (7) the budget for technology transfer pro-
12 grams;
13 (8) the budget for the Integrated Financial
14 Management Program, by individual element;
15 (9) the budget for the Independent Technical
16 Authority, both total and by center;
17 (10) the budget for public relations, by pro-
18 gram;
19 (11) the comparable figures for at least the 2
20 previous fiscal years for each item in the proposed
21 budget;
22 (12) the amount of unobligated funds and un-
23 expended funds, by appropriations account—
24 (A) that remained at the end of the fiscal
25 year prior to the fiscal year in which the budget

1 is being presented that were carried over into
2 the fiscal year in which the budget is being pre-
3 sented;
4 (B) that are estimated will remain at the
5 end of the fiscal year in which the budget is
6 being presented that are proposed to be carried
7 over into the fiscal year for which the budget is
8 being presented; and
9 (C) that are estimated will remain at the
10 end of the fiscal year for which the budget is
11 being presented; and
12 (13) the budget for safety, by program.
13 (i) GENERAL AND ADMINISTRATIVE EXPENSES.—
14 NASA shall make available, upon request from the Com-
15 mittee on Science of the House of Representatives or the
16 Committee on Commerce, Science, and Transportation of
17 the Senate, information on Corporate and Center General
18 and Administrative Costs and Service Pool costs,
19 including—
20 (1) the total amount of funds being allocated
21 for those purposes for any fiscal year for which the
22 President has submitted an annual budget request
23 to Congress;

1 (2) the amount of funds being allocated for
2 those purposes for each center, for headquarters,
3 and for each directorate; and
4 (3) the major activities included in each cost
5 category.
6 (j) NASA TEST FACILITIES.—
7 (1) REVIEW.—The Director of the Office of
8 Science and Technology Policy shall commission an
9 independent review of the Nation's long-term stra-
10 tegic needs for test facilities and shall submit the re-
11 view to the Committee on Science of the House of
12 Representatives and the Committee on Commerce,
13 Science, and Transportation of the Senate. The re-
14 view shall include an evaluation of the facility needs
15 described pursuant to subsection (c)(2)(C).
16 (2) LIMITATION.—The Administrator shall not
17 close or mothball any aeronautical test facilities
18 identified in the 2003 independent assessment by
19 the RAND Corporation, entitled "Wind Tunnel and
20 Propulsion Test Facilities: An Assessment of
21 NASA's Capabilities to Serve National Needs" as
22 being part of the minimum set of those facilities nec-
23 essary to retain and manage to serve national needs,
24 as well as any other NASA test facilities that were
25 in use as of January 1, 2004, until the review con-

1 ducted under paragraph (1) has been transmitted to
2 the Congress.

3 **SEC. 102. REPORTS.**

4 (a) IMMEDIATE ISSUES.—Not later than September
5 30, 2005, the Administrator shall transmit to the Com-
6 mittee on Science of the House of Representatives and the
7 Committee on Commerce, Science, and Transportation of
8 the Senate a report on each of the following items:

9 (1) The research agenda for the ISS and its
10 proposed final configuration.

11 (2) The number of flights the Space Shuttle
12 will make before its retirement, the purpose of those
13 flights, and the expected date of the final flight.

14 (3) A description of the means, other than the
15 Space Shuttle, that may be used to ferry crew and
16 cargo to and from the ISS.

17 (4) A plan for the operation of the ISS in the
18 event that the Iran Nonproliferation Act of 2000 is
19 not amended.

20 (5) A description of the launch vehicle for the
21 Crew Exploration Vehicle.

22 (6) A description of any heavy lift vehicle
23 NASA intends to develop, the intended uses of that
24 vehicle, and whether the decision to develop that ve-
25 hicle has undergone an interagency review.

1 (7) A description of the intended purpose of
2 lunar missions and the architecture for those mis-
3 sions.
4 (8) The program goals for Project Prometheus.
5 (9) A plan for managing the cost increase for
6 the James Webb Space Telescope.
7 (b) CREW EXPLORATION VEHICLE.—The Adminis-
8 trator shall not enter into a development contract for the
9 Crew Exploration Vehicle until at least 30 days after the
10 Administrator has transmitted to the Committee on
11 Science of the House of Representatives and the Com-
12 mittee on Commerce, Science, and Transportation of the
13 Senate a report describing—
14 (1) the expected cost of the Crew Exploration
15 Vehicle through fiscal year 2020, based on the speci-
16 fications for that development contract;
17 (2) the expected budgets for each fiscal year
18 through fiscal year 2020 for human space flight,
19 aeronautics, space science, and earth science—
20 (A) first assuming inflationary growth for
21 the budget of NASA as a whole and including
22 costs for the Crew Exploration Vehicle as pro-
23 jected under paragraph (1); and
24 (B) then assuming inflationary growth for
25 the budget of NASA as a whole and including

1 at least two cost estimates for the Crew Explo-
2 ration Vehicle that are higher than those pro-
3 jected under paragraph (1), based on NASA's
4 past experience with cost increases for similar
5 programs, along with a description of the rea-
6 sons for selecting the cost estimates used for
7 the calculations under this subparagraph and
8 the probability that the cost of the Crew Explo-
9 ration Vehicle will reach those estimated
10 amounts; and
11 (3) the extent to which the Crew Exploration
12 Vehicle will allow for the escape of the crew in the
13 event of an emergency.
14 (c) SPACE COMMUNICATIONS STUDY.—
15 (1) STUDY.—The Administrator shall develop a
16 plan for updating NASA's space communications ar-
17 chitecture for both low-Earth orbital operations and
18 deep space exploration so that it is capable of meet-
19 ing NASA's needs over the next 20 years. The plan
20 shall also include life-cycle cost estimates, mile-
21 stones, estimated performance capabilities, and 5-
22 year funding profiles. The plan shall also include an
23 estimate of the amounts of any reimbursements
24 NASA is likely to receive from other Federal agen-
25 cies during the expected life of the upgrades de-

1 scribed in the plan. The plan shall include a descrip-
2 tion of the following:
3 (A) Projected Deep Space Network re-
4 quirements for the next decade, including those
5 in support of human space exploration missions.
6 (B) Upgrades needed to support Deep
7 Space Network requirements.
8 (C) Cost estimates for the maintenance of
9 existing Deep Space Network capabilities.
10 (D) Cost estimates and schedules for the
11 upgrades described in subparagraph (B).
12 (2) CONSULTATIONS.—The Administrator shall
13 consult with other relevant Federal agencies in de-
14 veloping the plan under this subsection.
15 (3) REPORT.—The Administrator shall trans-
16 mit the plan under this subsection to the Committee
17 on Science of the House of Representatives and the
18 Committee on Commerce, Science, and Transpor-
19 tation of the Senate not later than February 17,
20 2007.
21 (d) PUBLIC RELATIONS.—Not later than December
22 31, 2005, the Administrator shall transmit a plan to the
23 Committee on Appropriations and the Committee on
24 Science of the House of Representatives, and to the Com-
25 mittee on Appropriations and the Committee on Com-

1 merce, Science, and Transportation of the Senate, describ-
2 ing the activities that will be undertaken as part of the
3 national awareness campaign required by the report of the
4 Committee on Appropriations of the House of Representa-
5 tives accompanying the Science, State, Justice, Commerce,
6 and Related Agencies Appropriations Act, 2006, and the
7 expected cost of those activities. NASA may undertake ac-
8 tivities as part of the national awareness campaign prior
9 to the transmittal of the plan required by this subsection,
10 but not until 15 days after notifying the Committee on
11 Science of the House of Representatives and the Com-
12 mittee on Commerce, Science, and Transportation of the
13 Senate of any activity. The plan required by this sub-
14 section shall include the estimated costs of any activities
15 undertaken pursuant to notice under the preceding sen-
16 tence.

17 (e) JOINT DARK ENERGY MISSION.—The Adminis-
18 trator and the Director of the Department of Energy Of-
19 fice of Science shall jointly transmit to the Committee on
20 Science of the House of Representatives and the Com-
21 mittee on Commerce, Science, and Transportation of the
22 Senate, not later than the date on which the President
23 submits the proposed budget for the Federal Government
24 for fiscal year 2007, a report on plans for a Joint Dark
25 Energy Mission. The report shall include the amount of

1 funds each agency intends to expend on the Joint Dark
2 Energy Mission for each of the fiscal years 2007 through
3 2011, and any specific milestones for the development and
4 launch of the Mission.

5 (f) SHUTTLE EMPLOYEE TRANSITION.—The Admin-
6 istrator shall consult with other appropriate Federal agen-
7 cies and with NASA contractors and employees to develop
8 a transition plan for Federal and contractor personnel en-
9 gaged in the Space Shuttle program. The plan shall in-
10 clude actions to assist Federal and contractor personnel
11 to take advantage of training, retraining, job placement,
12 and relocation programs, and any other actions that
13 NASA will take to assist the employees. The plan shall
14 also describe how the Administrator will ensure that
15 NASA and its contractors will have an appropriate com-
16 plement of employees to allow for the safest possible use
17 of the Space Shuttle through its final flight. The Admini-
18 strator shall transmit the plan to the Committee on Science
19 of the House of Representatives and the Committee on
20 Commerce, Science, and Transportation of the Senate not
21 later than 90 days after the date of enactment of this Act.

22 (g) OFFICE OF SCIENCE AND TECHNOLOGY POL-
23 ICY.—

1 (1) STUDY.—The Director of the Office of
2 Science and Technology Policy shall conduct a study
3 to determine—
4 (A) if any research and development pro-
5 grams of NASA are unnecessarily duplicating
6 aspects of programs of other Federal agencies;
7 and
8 (B) if any research and development pro-
9 grams of NASA are neglecting any topics of na-
10 tional interest that are related to the mission of
11 NASA.
12 (2) REPORT.—Not later than March 1, 2006,
13 the Director of the Office of Science and Technology
14 Policy shall transmit to the Committee on Science of
15 the House of Representatives and the Committee on
16 Commerce, Science, and Transportation of the Sen-
17 ate a report that—
18 (A) describes the results of the study
19 under paragraph (1);
20 (B) lists the research and development pro-
21 grams of Federal agencies other than NASA
22 that were reviewed as part of the study, which
23 shall include any program supporting research
24 and development in an area related to the pro-

1 grams of NASA, and the most recent budget
2 figures for those programs of other agencies;
3 (C) recommends any changes to the re-
4 search and development programs of NASA
5 that should be made to eliminate unnecessary
6 duplication or address topics of national inter-
7 est; and
8 (D) describes mechanisms the Office of
9 Science and Technology Policy will use to en-
10 sure adequate coordination between NASA and
11 Federal agencies that operate related programs.
12 **SEC. 103. BASELINES AND COST CONTROLS.**
13 (a) CONDITIONS FOR DEVELOPMENT.—
14 (1) IN GENERAL.—NASA shall not enter into a
15 contract for the development phase of a major pro-
16 gram unless the Administrator determines that—
17 (A) the technical, cost, and schedule risks
18 of the program are clearly identified and the
19 program has developed a plan to manage those
20 risks; and
21 (B) the program complies with all relevant
22 policies, regulations, and directives of NASA.
23 (2) REPORT.—The Administrator shall trans-
24 mit a report describing the basis for the determina-
25 tion required under paragraph (1) to the Committee

1 on Science of the House of Representatives and the
2 Committee on Commerce, Science, and Transpor-
3 tation of the Senate at least 30 days before entering
4 into a contract for development under a major pro-
5 gram.
6 (3) NONDELEGATION.—The Administrator may
7 not delegate the determination requirement under
8 this subsection.
9 (b) MAJOR PROGRAM ANNUAL REPORTS.—
10 (1) REQUIREMENT.—Not later than February
11 15 of each year following the date of enactment of
12 this Act, the Administrator shall transmit to the
13 Committee on Science of the House of Representa-
14 tives and the Committee on Commerce, Science, and
15 Transportation of the Senate a report on each major
16 program for which NASA proposes to expend funds
17 in the subsequent fiscal year. Reports under this
18 section shall be known as Major Program Annual
19 Reports.
20 (2) BASELINE REPORT.—The first Major Pro-
21 gram Annual Report for each major program shall
22 include a Baseline Report that shall, at a minimum,
23 include—

1 (A) the purposes of the program and key
2 technical characteristics necessary to fulfill
3 those purposes;
4 (B) an estimate of the life-cycle cost for
5 the program, with a detailed breakout of the
6 development cost and an estimate of the annual
7 costs until the development is completed;
8 (C) the schedule for the development, in-
9 cluding key program milestones; and
10 (D) the name of the person responsible for
11 making notifications under subsection (c), who
12 shall be an individual whose primary responsi-
13 bility is overseeing the program.
14 (3) INFORMATION UPDATES.—For major pro-
15 grams with respect to which a Baseline Report has
16 been previously submitted, each subsequent Major
17 Program Annual Report shall describe any changes
18 to the information that had been provided in the
19 Baseline Report, and the reasons for those changes.
20 (c) NOTIFICATION.—
21 (1) REQUIREMENT.—The individual identified
22 under subsection (b)(2)(D) shall immediately notify
23 the Administrator any time that individual has rea-
24 sonable cause to believe that, for the major program
25 for which he or she is responsible—

1 (A) the development cost of the program is
2 likely to exceed the estimate provided in the
3 Baseline Report of the program by 15 percent
4 or more; or
5 (B) a milestone of the program is likely to
6 be delayed by 6 months or more from the date
7 provided for it in the Baseline Report of the
8 program.
9 (2) REASONS.—Not later than 7 days after the
10 notification required under paragraph (1), the indi-
11 vidual identified under subsection (b)(2)(D) shall
12 transmit to the Administrator a written notification
13 explaining the reasons for the change in the cost or
14 milestone of the program for which notification was
15 provided under paragraph (1).
16 (3) NOTIFICATION OF CONGRESS.—Not later
17 than 5 days after the Administrator receives a writ-
18 ten notification under paragraph (2), the Adminis-
19 trator shall transmit the notification to the Com-
20 mittee on Science of the House of Representatives
21 and the Committee on Commerce, Science, and
22 Transportation of the Senate.
23 (d) FIFTEEN PERCENT THRESHOLD.—Not later
24 than 30 days after receiving a written notification under
25 subsection (c)(2), the Administrator shall determine

1 whether the development cost of the program is likely to
2 exceed the estimate provided in the Baseline Report of the
3 program by 15 percent or more, or whether a milestone
4 is likely to be delayed by 6 months or more. If the deter-
5 mination is affirmative, the Administrator shall—
6 (1) transmit to the Committee on Science of the
7 House of Representatives and the Committee on
8 Commerce, Science, and Transportation of the Sen-
9 ate, not later than 14 days after making the deter-
10 mination, a report that includes—
11 (A) a description of the increase in cost or
12 delay in schedule and a detailed explanation for
13 the increase or delay;
14 (B) a description of actions taken or pro-
15 posed to be taken in response to the cost in-
16 crease or delay; and
17 (C) a description of any impacts the cost
18 increase or schedule delay will have on any
19 other program within NASA; and
20 (2) if the Administrator intends to continue
21 with the program, promptly initiate an analysis of
22 the program, which shall include, at a minimum—
23 (A) the projected cost and schedule for
24 completing the program if current requirements
25 of the program are not modified;

1 (B) the projected cost and the schedule for
2 completing the program after instituting the ac-
3 tions described under paragraph (1)(B); and
4 (C) a description of, and the projected cost
5 and schedule for, a broad range of alternatives
6 to the program.
7 NASA shall complete an analysis initiated under para-
8 graph (2) not later than 6 months after the Administrator
9 makes a determination under this subsection. The Admin-
10 istrator shall transmit the analysis to the Committee on
11 Science of the House of Representatives and Committee
12 on Commerce, Science, and Transportation of the Senate
13 not later than 30 days after its completion.
14 (e) THIRTY PERCENT THRESHOLD.—If the Adminis-
15 trator determines under subsection (d) that the develop-
16 ment cost of a program will exceed the estimate provided
17 in the Baseline Report of the program by more than the
18 lower of 30 percent or $1,000,000,000, then, beginning
19 1 year after the date the Administrator transmits a report
20 under subsection (d)(1), the Administrator shall not ex-
21 pend any additional funds on the program, other than ter-
22 mination costs, unless the Congress has subsequently au-
23 thorized continuation of the program by law. If the pro-
24 gram is continued, the Administrator shall submit a new
25 Baseline Report for the program no later than 90 days

1 after the date of enactment of the Act under which Con-
2 gress has authorized continuation of the program.
3 (f) DEFINITIONS.—For the purposes of this section—
4 (1) the term "development" means the phase of
5 a program following the formulation phase and be-
6 ginning with the approval to proceed to implementa-
7 tion, as defined in NASA's Procedural Requirements
8 7120.5c, dated March 22, 2005;
9 (2) the term "development cost" means the
10 total of all costs, including construction of facilities
11 and civil servant costs, from the period beginning
12 with the approval to proceed to implementation
13 through the achievement of operational readiness,
14 without regard to funding source or management
15 control, for the life of the program;
16 (3) the term "life-cycle cost" means the total of
17 the direct, indirect, recurring, and nonrecurring
18 costs, including the construction of facilities and civil
19 servant costs, and other related expenses incurred or
20 estimated to be incurred in the design, development,
21 verification, production, operation, maintenance,
22 support, and retirement of a program over its
23 planned lifespan, without regard to funding source
24 or management control; and

1 (4) the term "major program" means an activ-
2 ity approved to proceed to implementation that has
3 an estimated life-cycle cost of more than
4 $100,000,000.

5 **SEC. 104. PRIZE AUTHORITY.**

6 The National Aeronautics and Space Act of 1958 (42
7 U.S.C. 2451, et seq.) is amended by inserting after section
8 313 the following new section:

9 "PRIZE AUTHORITY

10 "SEC. 314. (a) IN GENERAL.—The Administration
11 may carry out a program to competitively award cash
12 prizes to stimulate innovation in basic and applied re-
13 search, technology development, and prototype demonstra-
14 tion that have the potential for application to the perform-
15 ance of the space and aeronautical activities of the Admin-
16 istration. The Administration may carry out a program
17 to award prizes only in conformity with this section.

18 "(b) TOPICS.—In selecting topics for prize competi-
19 tions, the Administrator shall consult widely both within
20 and outside the Federal Government, and may empanel
21 advisory committees.

22 "(c) ADVERTISING.—The Administrator shall widely
23 advertise prize competitions to encourage participation.

24 "(d) REQUIREMENTS AND REGISTRATION.—For each
25 prize competition, the Administrator shall publish a notice
26 in the Federal Register announcing the subject of the com-

1 petition, the rules for being eligible to participate in the
2 competition, the amount of the prize, and the basis on
3 which a winner will be selected.

4 "(e) ELIGIBILITY.—To be eligible to win a prize
5 under this section, an individual or entity—

6 "(1) shall have registered to participate in the
7 competition pursuant to any rules promulgated by
8 the Administrator under subsection (d);

9 "(2) shall have complied with all the require-
10 ments under this section;

11 "(3) in the case of a private entity, shall be in-
12 corporated in and maintain a primary place of busi-
13 ness in the United States, and in the case of an in-
14 dividual, whether participating singly or in a group,
15 shall be a citizen or permanent resident of the
16 United States; and

17 "(4) shall not be a Federal entity or Federal
18 employee acting within the scope of their employ-
19 ment.

20 "(f) LIABILITY.—(1) Registered participants must
21 agree to assume any and all risks and waive claims against
22 the United States Government and its related entities, ex-
23 cept in the case of willful misconduct, for any injury,
24 death, damage, or loss of property, revenue, or profits,
25 whether direct, indirect, or consequential, arising from

1 their participation in a competition, whether such injury,
2 death, damage, or loss arises through negligence or other-
3 wise. For the purposes of this subparagraph, the term 're-
4 lated entity' means a contractor or subcontractor at any
5 tier, and a supplier, user, customer, cooperating party,
6 grantee, investigator, or detailee.

7 "(2) Participants must obtain liability insurance or
8 demonstrate financial responsibility in amounts to com-
9 pensate for the maximum probable loss, as determined by
10 the Administrator, from claims by—

11 "(A) a third party for death, bodily injury, or
12 property damage, or loss resulting from an activity
13 carried out in connection with participation in a
14 competition, with the Federal Government named as
15 an additional insured under the registered partici-
16 pant's insurance policy and registered participants
17 agreeing to indemnify the Federal Government
18 against third party claims for damages arising from
19 or related to competition activities; and

20 "(B) the United States Government for damage
21 or loss to Government property resulting from such
22 an activity.

23 "(g) JUDGES.—For each competition, the Adminis-
24 tration, either directly or through a contract under sub-
25 section (h), shall assemble a panel of qualified judges from

1 both within and outside the Administration to select the
2 winner or winners of the prize competition on the basis
3 described pursuant to subsection (d). Judges for each
4 competition shall include individuals from the private sec-
5 tor. A judge may not—

6 "(1) have personal or financial interests in, or
7 be employees, officers, directors, or agents of, any
8 entity that is a registered participant in a competi-
9 tion; or

10 "(2) have a familial or financial relationship
11 with an individual who is a registered participant.

12 "(h) ADMINISTERING THE COMPETITION.—The Ad-
13 ministrator may enter into an agreement with a private,
14 nonprofit entity to administer the prize competition, sub-
15 ject to the provisions of this section.

16 "(i) FUNDING.—(1) The Administrator may accept
17 funds from other Federal agencies and from the private
18 sector for cash prizes under this section. Such funds shall
19 not increase the amount of a prize after the amount has
20 been announced pursuant to subsection (d). The Adminis-
21 trator may not give any special consideration to any pri-
22 vate sector entity in return for a donation.

23 "(2) Funds appropriated for the program under this
24 section shall remain available until expended, and may be
25 transferred, reprogrammed, or expended for other pur-

1 poses only after the expiration of 10 fiscal years after the
2 fiscal year for which the funds were originally appro-
3 priated. No provision in this section permits obligation or
4 payment of funds in violation of the Anti-Deficiency Act
5 (31 U.S.C. 1341).

6 "(3) No prize may be announced under subsection
7 (d) until all the funds for that prize have been appro-
8 priated or obligated for such purpose by a private sector
9 source.

10 "(4) No prize competition under this section may
11 offer a prize in an amount greater than $10,000,000 un-
12 less 30 days have elapsed after written notice has been
13 provided to the Committee on Science of the House of
14 Representatives and the Committee on Commerce,
15 Science, and Transportation of the Senate.

16 "(j) USE OF NASA NAME AND INSIGNIA.—A reg-
17 istered participant in a competition under this section may
18 use the Administration's name, initials, or insignia only
19 after prior review and written approval by the Administra-
20 tion.

21 "(k) COMPLIANCE WITH EXISTING LAW.—The Fed-
22 eral Government shall not, by virtue of offering or pro-
23 viding a prize under this section, be responsible for compli-
24 ance by registered participants in a prize competition with

1 Federal law, including licensing, export control, and non-
2 proliferation laws, and related regulations.".

3 **SEC. 105. FOREIGN LAUNCH VEHICLES.**

4 (a) ACCORD WITH SPACE TRANSPORTATION POL-
5 ICY.—NASA shall not launch a mission on a foreign
6 launch vehicle except in accordance with the Space Trans-
7 portation Policy announced by the President on December
8 21, 2004.

9 (b) INTERAGENCY COORDINATION.—NASA shall not
10 launch a mission on a foreign launch vehicle unless NASA
11 commenced the interagency coordination required by the
12 Space Transportation Policy announced by the President
13 on December 21, 2004, at least 90 days before entering
14 into a development contract for the mission.

15 (c) APPLICATION.—This section shall not apply to
16 any mission for which development has begun prior to the
17 date of enactment of this Act, including the James Webb
18 Space Telescope.

19 **SEC. 106. SAFETY MANAGEMENT.**

20 Section 6 of the National Aeronautics and Space Ad-
21 ministration Authorization Act, 1968 (42 U.S.C. 2477) is
22 amended—

23 (1) by inserting "(a) IN GENERAL.—" before
24 "There is hereby";

1 (2) by striking "plans referred to it" and in-
2 serting "plans referred to it, including evaluating the
3 National Aeronautics and Space Administration's
4 compliance with the return-to-flight and continue-to-
5 fly recommendations of the Columbia Accident In-
6 vestigation Board,";
7 (3) by inserting "and the Congress" after "ad-
8 vise the Administrator";
9 (4) by striking "and with respect to the ade-
10 quacy of proposed or existing safety standards and
11 shall" and inserting ", with respect to the adequacy
12 of proposed or existing safety standards, and with
13 respect to management and culture. The Panel shall
14 also"; and
15 (5) by adding at the end the following:
16 "(b) ANNUAL REPORT.—The Panel shall submit an
17 annual report to the Administrator and to the Congress.
18 In the first annual report submitted after the date of en-
19 actment of the National Aeronautics and Space Adminis-
20 tration Authorization Act of 2005, the Panel shall include
21 an evaluation of the Administration's safety management
22 culture. Each annual report shall include an evaluation of
23 the Administration's compliance with the recommenda-
24 tions of the Columbia Accident Investigation Board.".

1 **SEC. 107. LESSONS LEARNED AND BEST PRACTICES.**

2 (a) IN GENERAL.—The Administrator shall provide
3 an implementation plan describing NASA's approach for
4 obtaining, implementing, and sharing lessons learned and
5 best practices for its major programs and projects not
6 later than 180 days after the date of enactment of this
7 Act. The implementation plan shall be updated and main-
8 tained to ensure that it is current and consistent with the
9 burgeoning culture of learning and safety that is emerging
10 at NASA.

11 (b) REQUIRED CONTENT.—The implementation plan
12 shall contain at a minimum the lessons learned and best
13 practices requirements for NASA, the organizations or po-
14 sitions responsible for enforcement of the requirements,
15 the reporting structure, and the objective performance
16 measures indicating the effectiveness of the activity.

17 (c) INCENTIVES.—The Administrator shall provide
18 incentives to encourage sharing and implementation of les-
19 sons learned and best practices by employees, projects,
20 and programs, as well as penalties for programs and
21 projects that are determined not to have demonstrated use
22 of those resources.

23 **SEC. 108. COMMERCIALIZATION PLAN.**

24 (a) IN GENERAL.—The Administrator, in consulta-
25 tion with other relevant agencies, shall develop a commer-
26 cialization plan to support the human missions to the

1 Moon and Mars, to support Low-Earth Orbit activities
2 and Earth science missions and applications, and to trans-
3 fer science research and technology to society. The plan
4 shall identify opportunities for the private sector to par-
5 ticipate in the future missions and activities, including op-
6 portunities for partnership between NASA and the private
7 sector in conducting research and the development of tech-
8 nologies and services. The plan shall include provisions for
9 developing and funding sustained university and industry
10 partnerships to conduct commercial research and tech-
11 nology development, to proactively translate results of
12 space research to Earth benefits, to advance United States
13 economic interests, and to support the vision for explo-
14 ration.

15 (b) REPORT.—Not later than 180 days after the date
16 of enactment of this Act, the Administrator shall submit
17 a copy of the plan to the Committee on Science of the
18 House of Representatives and the Committee on Com-
19 merce, Science, and Transportation of the Senate.

20 **SEC. 109. STUDY ON THE FEASIBILITY OF USE OF GROUND**
21 **SOURCE HEAT PUMPS.**

22 (a) IN GENERAL.—The Administrator shall conduct
23 a feasibility study on the use of ground source heat pumps
24 in future NASA facilities or substantial renovation of ex-

1 isting NASA facilities involving the installation of heating,
2 ventilating, and air conditioning systems.
3 (b) CONTENTS.—The study shall examine—
4 (1) the life-cycle costs, including maintenance
5 costs, of the operation of such heat pumps compared
6 to generally available heating, cooling, and water
7 heating equipment;
8 (2) barriers to installation, such as availability
9 and suitability of terrain; and
10 (3) such other issues as the Administrator con-
11 siders appropriate.
12 (c) DEFINITION.—In this section, the term "ground
13 source heat pump" means an electric-powered system that
14 uses the Earth's relatively constant temperature to pro-
15 vide heating, cooling, or hot water.

# 16 TITLE II—AUTHORIZATION OF 17 APPROPRIATIONS

18 **SEC. 201. STRUCTURE OF BUDGETARY ACCOUNTS.**

19 Section 313 of the National Aeronautics and Space
20 Act of 1958 (42 U.S.C. 2459f) is amended to read as fol-
21 lows:

22 **"SEC. 313. BUDGETARY ACCOUNTS.**

23 "Appropriations for the Administration for fiscal year
24 2007 and thereafter shall be made in four accounts,
25 'Science, Aeronautics, and Education', 'Exploration Sys-

1 tems', 'Space Operations', and an account for amounts ap-
2 propriated for the necessary expenses of the Office of the
3 Inspector General. Appropriations shall remain available
4 for two fiscal years, unless otherwise specified in law.
5 Each account shall include the planned full costs of Ad-
6 ministration activities.".

7 **SEC. 202. FISCAL YEAR 2006.**

8 There are authorized to be appropriated to NASA for
9 fiscal year 2006 $16,471,050,000, as follows:

10 (1) For Science, Aeronautics and Education
11 (including amounts for construction of facilities),
12 $6,870,250,000 of which—

13 (A) $962,000,000 shall be for Aeronautics;

14 (B) $150,000,000 shall be for a Hubble
15 Space Telescope servicing mission; and

16 (C) $24,000,000 shall be for the National
17 Space Grant College and Fellowship Program.

18 (2) For Exploration Systems (including
19 amounts for construction of facilities),
20 $3,181,100,000.

21 (3) For Space Operations (including amounts
22 for construction of facilities), $6,387,300,000.

23 (4) For the Office of Inspector General,
24 $32,400,000.

1 **SEC. 203. FISCAL YEAR 2007.**

2 There are authorized to be appropriated to NASA for
3 fiscal year 2007 $16,962,000,000, as follows:

4 (1) For Science, Aeronautics and Education
5 (including amounts for construction of facilities),
6 $7,331,600,000 of which—

7 (A) $990,000,000 shall be for Aeronautics;
8 and

9 (B) $24,000,000 shall be for the National
10 Space Grant College and Fellowship Program.

11 (2) For Exploration Systems (including
12 amounts for construction of facilities),
13 $3,589,200,000.

14 (3) For Space Operations (including amounts
15 for construction of facilities), $6,007,700,000.

16 (4) For the Office of Inspector General,
17 $33,500,000.

18 **SEC. 204. ISS RESEARCH.**

19 The Administrator shall allocate at least 15 percent
20 of the funds budgeted for ISS research to research that
21 is not directly related to supporting the human exploration
22 program.

23 **SEC. 205. TEST FACILITIES.**

24 (a) CHARGES.—The Administrator shall establish a
25 policy of charging users of NASA's test facilities for the
26 costs associated with their tests at a level that is competi-

1 tive with alternative test facilities. As a general principle,
2 NASA shall not seek to recover the full costs of the oper-
3 ation of those facilities from the users. The Administrator
4 shall not implement a policy of seeking full cost recovery
5 for a facility until at least 30 days after transmitting a
6 notice to the Committee on Science of the House of Rep-
7 resentatives and the Committee on Commerce, Science,
8 and Transportation of the Senate.

9 (b) FUNDING ACCOUNT.—The Administrator shall
10 establish a funding account that shall be used for all test
11 facilities. The account shall be sufficient to maintain the
12 viability of test facilities during periods of low utilization.

13 **SEC. 206. PROPORTIONALITY.**

14 If the total amount appropriated for NASA pursuant
15 to section 202 or 203 is less than the amount authorized
16 under such section, the amounts authorized under each
17 of the accounts specified in such section shall be reduced
18 proportionately.

19 **SEC. 207. LIMITATIONS ON AUTHORITY.**

20 Notwithstanding any other provision of this Act, no
21 amount appropriated pursuant to this Act may be used
22 for any program in excess of the amount actually author-
23 ized for the particular program by section 202 or 203,
24 unless a period of 30 days has passed after the receipt,
25 by each such Committee, of notice given by the Adminis-

1 trator containing a full and complete statement of the ac-
2 tion proposed to be taken and the facts and circumstances
3 relied upon in support of such a proposed action. NASA
4 shall keep the Committee on Science of the House of Rep-
5 resentatives and the Committee on Commerce, Science,
6 and Transportation of the Senate fully and currently in-
7 formed with respect to all activities and responsibilities
8 within the jurisdiction of those Committees.

9 **SEC. 208. NOTICE OF REPROGRAMMING.**

10 If any funds authorized by this Act are subject to
11 a reprogramming action that requires notice to be pro-
12 vided to the Appropriations Committees of the House of
13 Representatives and the Senate, notice of such action shall
14 concurrently be provided to the Committee on Science of
15 the House of Representatives and the Committee on Com-
16 merce, Science, and Transportation of the Senate.

17 **SEC. 209. COST OVERRUNS.**

18 When reprogramming funds to cover unexpected cost
19 growth within a program, the Administrator shall, to the
20 maximum extent practicable, protect funds intended for
21 fundamental and applied Research and Analysis.

22 **SEC. 210. OFFICIAL REPRESENTATIONAL FUND.**

23 Amounts appropriated pursuant to this Act may be
24 used, but not to exceed a total of $35,000 in any fiscal
25 year, for official reception and representation expenses.

1 **SEC. 211. INTERNATIONAL SPACE STATION COST CAP.**

2 Section 202 of the National Aeronautics and Space
3 Administration Authorization Act of 2000 (42 U.S.C.
4 2451 note) is repealed.

# 5 TITLE III—SCIENCE

## 6 Subtitle A—General Provisions

7 **SEC. 301. PERFORMANCE ASSESSMENTS.**

8 (a) IN GENERAL.—Performance of each discipline in
9 the Science account of NASA shall be reviewed and as-
10 sessed by the National Academy of Sciences at 5-year in-
11 tervals.

12 (b) TIMING.—Beginning with the first fiscal year fol-
13 lowing the date of enactment of this Act, the Adminis-
14 trator shall select at least one discipline for review under
15 this section. The Administrator shall select disciplines so
16 that all disciplines will have received their first review
17 within six fiscal years of the date of enactment of this
18 Act.

19 (c) REPORTS.—Each year, beginning with the first
20 fiscal year after the date of enactment of this Act, the
21 Administrator shall transmit a report to the Committee
22 on Science of the House of Representatives and the Com-
23 mittee on Commerce, Science, and Transportation of the
24 Senate—

25 (1) setting forth in detail the results of any ex-
26 ternal review under subsection (a);

1 (2) setting forth in detail actions taken by
2 NASA in response to any external review; and
3 (3) including a summary of findings and rec-
4 ommendations from any other relevant external re-
5 views of NASA's science mission priorities and pro-
6 grams.

7 **SEC. 302. STATUS REPORT ON HUBBLE SPACE TELESCOPE**
8 **SERVICING MISSION.**

9 It is the sense of the Congress that the Hubble Space
10 Telescope is an extraordinary instrument that has pro-
11 vided, and should continue to provide, answers to profound
12 scientific questions. In accordance with the recommenda-
13 tions of the National Academy of Sciences, all appropriate
14 efforts should be expended to complete the Space Shuttle
15 servicing mission. Upon successful completion of the
16 planned return-to-flight schedule of the Space Shuttle, the
17 schedule for a Space Shuttle servicing mission to the
18 Hubble Space Telescope shall be determined, unless such
19 a mission would compromise astronaut safety. Not later
20 than 60 days after the landing of the second Space Shuttle
21 mission for return-to-flight certification, the Adminis-
22 trator shall transmit to the Committee on Science of the
23 House of Representatives and the Committee on Com-
24 merce, Science, and Transportation of the Senate a status

1 report on plans for a Hubble Space Telescope servicing
2 mission.

3 **SEC. 303. INDEPENDENT ASSESSMENT OF LANDSAT-**
4 **NPOESS INTEGRATED MISSION.**

5 (a) ASSESSMENT.—In view of the importance of en-
6 suring continuity of Landsat data and in view of the chal-
7 lenges facing the National Polar-Orbiting Environmental
8 Satellite System program, the Administrator shall seek an
9 independent assessment of the costs as well as the tech-
10 nical, cost, and schedule risks associated with incor-
11 porating the Landsat instrument on the first National
12 Polar-Orbiting Environmental Satellite System spacecraft
13 versus undertaking a dedicated Landsat data "gap-filler"
14 mission followed by the incorporation of the Landsat in-
15 strument on the second National Polar-Orbiting Environ-
16 mental Satellite System spacecraft. The assessment shall
17 also include an evaluation of the budgetary requirements
18 of each of the options under consideration.

19 (b) REPORT.—The Administrator shall transmit the
20 independent assessment to the Committee on Science of
21 the House of Representatives and the Committee on Com-
22 merce, Science, and Transportation of the Senate not later
23 than 180 days after the date of enactment of this Act.

1 **SEC. 304. ASSESSMENT OF SCIENCE MISSION EXTENSIONS.**

2 (a) ASSESSMENT.—The Administrator shall carry out
3 annual termination reviews within each of the Science dis-
4 ciplines to assess the cost and benefits of extending the
5 date of the termination of data collection for those mis-
6 sions which are beyond their primary goals. In addition:

7 (1) Not later than 60 days after the date of en-
8 actment of this Act, the Administrator shall carry
9 out such an assessment for the following missions:
10 FAST, TIMED, Cluster, Wind, Geotail, Polar,
11 TRACE, Ulysses, and Voyager.

12 (2) For those missions that have an operational
13 component, the National Oceanic and Atmospheric
14 Administration shall be consulted and the potential
15 benefits of instruments on missions which are be-
16 yond their primary goals taken into account.

17 (b) REPORT.—Not later than 30 days after com-
18 pleting the assessments required by subsection (a)(1), the
19 Administrator shall transmit a report on the assessment
20 to the Committee on Science of the House of Representa-
21 tives and the Committee on Commerce, Science, and
22 Transportation of the Senate.

23 **SEC. 305. MICROGRAVITY RESEARCH.**

24 (a) IN GENERAL.—The Administrator shall—

25 (1) not later than 60 days after the date of en-
26 actment of this Act, provide to the Committee on

1 Science of the House of Representatives and the
2 Committee on Commerce, Science, and Transpor-
3 tation of the Senate an assessment of microgravity
4 research planned for implementation aboard the ISS
5 that includes the identification of research which can
6 be performed in ground-based facilities and then
7 validated in space;
8 (2) ensure the capacity to support ground-based
9 research leading to space-based basic and applied
10 scientific research in a variety of disciplines with po-
11 tential direct national benefits and applications that
12 can advance significantly from the uniqueness of
13 microgravity and the space environment; and
14 (3) carry out, to the maximum extent prac-
15 ticable basic, applied, and commercial ISS research
16 activities such as molecular crystal growth, animal
17 research, basic fluid physics, combustion research,
18 cellular biotechnology, low temperature physics, and
19 cellular research at a level which will sustain the ex-
20 isting scientific expertise and research capabilities.
21 (b) ON-ORBIT CAPABILITIES.—The Administrator
22 shall ensure that the on-orbit analytical capabilities of the
23 ISS are sufficient to support any diagnostic human re-
24 search and on-orbit characterization of molecular crystal
25 growth, cellular research, and other research that NASA

1 believes is necessary to conduct, but for which NASA lacks
2 the capacity to return the materials that need to be ana-
3 lyzed to Earth.

4 (c) ASSESSMENT OF POTENTIAL SCIENTIFIC
5 USES.—The Administrator shall assess further potential
6 scientific uses of the ISS for other applications, such as
7 technology development, development of manufacturing
8 processes, Earth observation and characterization, and as-
9 tronomical observations.

10 **SEC. 306. COORDINATION WITH THE NATIONAL OCEANIC**
11 **AND ATMOSPHERIC ADMINISTRATION.**

12 (a) JOINT WORKING GROUP.—The Administrator
13 and the Administrator of the National Oceanic and At-
14 mospheric Administration shall appoint a Joint Working
15 Group, which shall review and monitor missions of the two
16 agencies to ensure maximum coordination in the design,
17 operation, and transition of missions. The Joint Working
18 Group shall also prepare the transition plans required by
19 subsection (c).

20 (b) COORDINATION REPORT.—Not later than Feb-
21 ruary 15 of each year, the Under Secretary of Commerce
22 for Oceans and Atmosphere and the Administrator shall
23 jointly transmit a report to the Committee on Science of
24 the House of Representatives and the Committee on Com-
25 merce, Science, and Transportation of the Senate on how

1 the earth science programs of the National Oceanic and
2 Atmospheric Administration and NASA will be coordi-
3 nated during the fiscal year following the fiscal year in
4 which the report is transmitted.

5 (c) COORDINATION OF TRANSITION PLANNING AND
6 REPORTING.—The Administrator, in conjunction with the
7 Administrator of the National Oceanic and Atmospheric
8 Administration, shall evaluate all NASA missions for their
9 potential operational capabilities and shall prepare transi-
10 tion plans for all existing and future Earth observing sys-
11 tems found to have potential operational capabilities and
12 all National Oceanic and Atmospheric Administration
13 operational space-based systems.

14 (d) LIMITATION.—The Administrator shall not trans-
15 fer any NASA earth science mission or Earth observing
16 system to the National Oceanic and Atmospheric Adminis-
17 tration until the transition plan required under subsection
18 (c) has been approved by the Administrator and the Ad-
19 ministrator of the National Oceanic and Atmospheric Ad-
20 ministration and until financial resources have been iden-
21 tified to support the transition or transfer in the Presi-
22 dent's budget request for the National Oceanic and At-
23 mospheric Administration.

1 **Subtitle B—Remote Sensing**

2 **SEC. 311. DEFINITIONS.**

3 In this subtitle—

4 (1) the term "geospatial information" means
5 knowledge of the nature and distribution of physical
6 and cultural features on the landscape based on
7 analysis of data from airborne or spaceborne plat-
8 forms or other types and sources of data;

9 (2) the term "high resolution" means resolution
10 better than five meters; and

11 (3) the term "institution of higher education"
12 has the meaning given that term in section 101(a)
13 of the Higher Education Act of 1965 (20 U.S.C.
14 1001(a)).

15 **SEC. 312. PILOT PROJECTS TO ENCOURAGE PUBLIC SEC-**
16 **TOR APPLICATIONS.**

17 (a) IN GENERAL.—The Administrator shall establish
18 a program of grants for competitively awarded pilot
19 projects to explore the integrated use of sources of remote
20 sensing and other geospatial information to address State,
21 local, regional, and tribal agency needs.

22 (b) PREFERRED PROJECTS.—In awarding grants
23 under this section, the Administrator shall give preference
24 to projects that—

1 (1) make use of commercial data sets, including
2 high resolution commercial satellite imagery and de-
3 rived satellite data products, existing public data
4 sets where commercial data sets are not available or
5 applicable, or the fusion of such data sets;
6 (2) integrate multiple sources of geospatial in-
7 formation, such as geographic information system
8 data, satellite-provided positioning data, and re-
9 motely sensed data, in innovative ways;
10 (3) include funds or in-kind contributions from
11 non-Federal sources;
12 (4) involve the participation of commercial enti-
13 ties that process raw or lightly processed data, often
14 merging that data with other geospatial information,
15 to create data products that have significant value
16 added to the original data; and
17 (5) taken together demonstrate as diverse a set
18 of public sector applications as possible.
19 (c) OPPORTUNITIES.—In carrying out this section,
20 the Administrator shall seek opportunities to assist—
21 (1) in the development of commercial applica-
22 tions potentially available from the remote sensing
23 industry; and

1 (2) State, local, regional, and tribal agencies in
2 applying remote sensing and other geospatial infor-
3 mation technologies for growth management.
4 (d) DURATION.—Assistance for a pilot project under
5 subsection (a) shall be provided for a period not to exceed
6 3 years.
7 (e) REPORT.—Each recipient of a grant under sub-
8 section (a) shall transmit a report to the Administrator
9 on the results of the pilot project within 180 days of the
10 completion of that project.
11 (f) WORKSHOP.—Each recipient of a grant under
12 subsection (a) shall, not later than 180 days after the com-
13 pletion of the pilot project, conduct at least one workshop
14 for potential users to disseminate the lessons learned from
15 the pilot project as widely as feasible.
16 (g) REGULATIONS.—The Administrator shall issue
17 regulations establishing application, selection, and imple-
18 mentation procedures for pilot projects, and guidelines for
19 reports and workshops required by this section.
20 **SEC. 313. PROGRAM EVALUATION.**
21 (a) ADVISORY COMMITTEE.—The Administrator
22 shall establish an advisory committee, consisting of indi-
23 viduals with appropriate expertise in State, local, regional,
24 and tribal agencies, the university research community,
25 and the remote sensing and other geospatial information

1 industry, to monitor the program established under sec-
2 tion 312. The advisory committee shall consult with the
3 Federal Geographic Data Committee and other appro-
4 priate industry representatives and organizations. Not-
5 withstanding section 14 of the Federal Advisory Com-
6 mittee Act, the advisory committee established under this
7 subsection shall remain in effect until the termination of
8 the program under section 312.

9 (b) EFFECTIVENESS EVALUATION.—Not later than
10 December 31, 2009, the Administrator shall transmit to
11 the Congress an evaluation of the effectiveness of the pro-
12 gram established under section 312 in exploring and pro-
13 moting the integrated use of sources of remote sensing
14 and other geospatial information to address State, local,
15 regional, and tribal agency needs. Such evaluation shall
16 have been conducted by an independent entity.

17 **SEC. 314. DATA AVAILABILITY.**

18 The Administrator shall ensure that the results of
19 each of the pilot projects completed under section 312
20 shall be retrievable through an electronic, Internet-acces-
21 sible database.

22 **SEC. 315. EDUCATION.**

23 The Administrator shall establish an educational out-
24 reach program to increase awareness at institutions of
25 higher education and State, local, regional, and tribal

1 agencies of the potential applications of remote sensing
2 and other geospatial information.

## 3 Subtitle C—George E. Brown, Jr.
## 4 Near-Earth Object Survey

### 5 SEC. 321. GEORGE E. BROWN, JR. NEAR-EARTH OBJECT
### 6 SURVEY.

7 (a) SHORT TITLE.—This section may be cited as the
8 "George E. Brown, Jr. Near-Earth Object Survey Act".
9 (b) FINDINGS.—The Congress makes the following
10 findings:
11 (1) Near-Earth objects pose a serious and cred-
12 ible threat to humankind, as many scientists believe
13 that a major asteroid or comet was responsible for
14 the mass extinction of the majority of the Earth's
15 species, including the dinosaurs, nearly 65,000,000
16 years ago.
17 (2) Similar objects have struck the Earth or
18 passed through the Earth's atmosphere several times
19 in the Earth's history and pose a similar threat in
20 the future.
21 (3) Several such near-Earth objects have only
22 been discovered within days of the objects' closest
23 approach to Earth, and recent discoveries of such
24 large objects indicate that many large near-Earth
25 objects remain undiscovered.

1 (4) The efforts taken to date by NASA for de-
2 tecting and characterizing the hazards of near-Earth
3 objects are not sufficient to fully determine the
4 threat posed by such objects to cause widespread de-
5 struction and loss of life.
6 (c) DEFINITIONS.—For purposes of this section the
7 term "near-Earth object" means an asteroid or comet with
8 a perihelion distance of less that 1.3 Astronomical Units
9 from the Sun.
10 (d) NEAR-EARTH OBJECT SURVEY.—
11 (1) SURVEY PROGRAM.—The Administrator
12 shall plan, develop, and implement a Near-Earth
13 Object Survey program to detect, track, catalogue,
14 and characterize the physical characteristics of near-
15 Earth objects equal to or greater than 100 meters
16 in diameter in order to assess the threat of such
17 near-Earth objects to the Earth. It shall be the goal
18 of the Survey program to achieve 90 percent comple-
19 tion of its near-Earth object catalogue (based on sta-
20 tistically predicted populations of near-Earth ob-
21 jects) within 15 years after the date of enactment of
22 this Act.
23 (2) AMENDMENTS.—Section 102 of the Na-
24 tional Aeronautics and Space Act of 1958 (42
25 U.S.C. 2451) is amended—

1 (A) by redesignating subsection (g) as sub-
2 section (h);
3 (B) by inserting after subsection (f) the
4 following new subsection:
5 "(g) The Congress declares that the general welfare
6 and security of the United States require that the unique
7 competence of the National Aeronautics and Space Ad-
8 ministration be directed to detecting, tracking, cata-
9 loguing, and characterizing near-Earth asteroids and com-
10 ets in order to provide warning and mitigation of the po-
11 tential hazard of such near-Earth objects to the Earth.";
12 and
13 (C) in subsection (h), as so redesignated
14 by subparagraph (A) of this paragraph, by
15 striking "and (f)" and inserting "(f), and (g)".
16 (3) ANNUAL REPORT.—The Administrator shall
17 transmit to the Congress, not later than February
18 28 of each of the next 5 years beginning after the
19 date of enactment of this Act, a report that provides
20 the following:
21 (A) A summary of all activities taken pur-
22 suant to paragraph (1) for the previous fiscal
23 year.

1 (B) A summary of expenditures for all ac-
2 tivities pursuant to paragraph (1) for the pre-
3 vious fiscal year.
4 (4) INITIAL REPORT.—The Administrator shall
5 transmit to Congress not later than 1 year after the
6 date of enactment of this Act an initial report that
7 provides the following:
8 (A) An analysis of possible alternatives
9 that NASA may employ to carry out the Survey
10 program, including ground-based and space-
11 based alternatives with technical descriptions.
12 (B) A recommended option and proposed
13 budget to carry out the Survey program pursu-
14 ant to the recommended option.
15 (C) An analysis of possible alternatives
16 that NASA could employ to divert an object on
17 a likely collision course with Earth.

18 # TITLE IV—AERONAUTICS

19 **SEC. 401. DEFINITION.**

20 For purposes of this title, the term "institution of
21 higher education" has the meaning given that term by sec-
22 tion 101 of the Higher Education Act of 1965 (20 U.S.C.
23 1001).

1 **Subtitle A—National Policy for**
2 **Aeronautics Research and De-**
3 **velopment**

4 **SEC. 411. POLICY.**

5 It shall be the policy of the United States to reaffirm
6 the National Aeronautics and Space Act of 1958 and its
7 identification of aeronautical research and development as
8 a core mission of NASA. Further, it shall be the policy
9 of the United States to promote aeronautical research and
10 development that will expand the capacity, ensure the
11 safety, and increase the efficiency of the Nation's air
12 transportation system, promote the security of the Nation,
13 protect the environment, and retain the leadership of the
14 United States in global aviation.

15 **Subtitle B—NASA Aeronautics**
16 **Breakthrough Research Initiatives**

17 **SEC. 421. ENVIRONMENTAL AIRCRAFT RESEARCH AND DE-**
18 **VELOPMENT INITIATIVE.**

19 (a) OBJECTIVE.—The Administrator may establish
20 an initiative with the objective of developing, and dem-
21 onstrating in a relevant environment, within 10 years after
22 the date of enactment of this Act, technologies to enable
23 the following commercial aircraft performance characteris-
24 tics:

1 (1) NOISE.—Noise levels on takeoff and on air-
2 port approach and landing that do not exceed ambi-
3 ent noise levels in the absence of flight operations in
4 the vicinity of airports from which such commercial
5 aircraft would normally operate.
6 (2) ENERGY CONSUMPTION.—Twenty-five per-
7 cent reduction in the energy required for medium to
8 long range flights, compared to aircraft in commer-
9 cial service as of the date of enactment of this Act.
10 This reduction may be achieved by a combination of
11 improvements to—
12 (A) specific fuel consumption;
13 (B) lift-to-drag ratio; and
14 (C) structural weight fraction.
15 (3) EMISSIONS.—Nitrogen oxides on take-off
16 and landing that are reduced by 50 percent relative
17 to aircraft in commercial service as of the date of
18 enactment of this Act.
19 (b) STUDY.—
20 (1) REQUIREMENT.—The Administrator shall
21 enter into an arrangement for the National Research
22 Council to conduct a study to identify and quantify
23 new markets that would be created, as well as exist-
24 ing markets that would be expanded, by the incorpo-
25 ration of the technologies developed pursuant to this

1 section into future commercial aircraft. The study
2 shall identify whether any of the performance char-
3 acteristics specified in subsection (a) would need to
4 be made more stringent in order to create new mar-
5 kets or expand existing markets. The National Re-
6 search Council shall seek input from at least the air-
7 craft manufacturing industry, academia, and the air-
8 lines in carrying out the study.
9 (2) REPORT.—A report containing the results
10 of the study conducted under paragraph (1) shall be
11 provided to Congress not later than 18 months after
12 the date of enactment of this Act.

13 **SEC. 422. CIVIL SUPERSONIC TRANSPORT RESEARCH AND**
14 **DEVELOPMENT INITIATIVE.**

15 The Administrator may establish an initiative with
16 the objective of developing, and demonstrating in a rel-
17 evant environment, within 20 years after the date of enact-
18 ment of this Act, technologies to enable overland flight of
19 supersonic civil transport aircraft with at least the fol-
20 lowing performance characteristics:
21 (1) Mach number of at least 1.4.
22 (2) Range of at least 4,000 nautical miles.
23 (3) Payload of at least 24 passengers.
24 (4) Noise levels on takeoff and on airport ap-
25 proach and landing that meet community noise

1 standards in place at airports from which such com-
2 mercial supersonic aircraft would normally operate
3 at the time the aircraft would enter commercial serv-
4 ice.
5 (5) Shaped sonic boom signatures sufficiently
6 low to permit overland flight over populated areas.
7 (6) Nitrogen oxide, carbon dioxide, and water
8 vapor emissions consistent with regulations likely to
9 be in effect at the time of this aircraft's introduc-
10 tion.

11 **SEC. 423. ROTORCRAFT AND OTHER RUNWAY-INDE-**
12 **PENDENT AIR VEHICLES RESEARCH AND DE-**
13 **VELOPMENT INITIATIVE.**

14 The Administrator may establish a rotorcraft and
15 other runway-independent air vehicles initiative with the
16 objective of developing and demonstrating in a relevant en-
17 vironment, within 10 years after the date of enactment
18 of this Act, technologies to enable significantly safer,
19 quieter, and more environmentally compatible operation
20 from a wider range of airports under a wider range of
21 weather conditions than is the case for rotorcraft and
22 other runway-independent air vehicles in service as of the
23 date of enactment of this Act.

## Subtitle C—Other NASA Aeronautics Research and Development Activities

**SEC. 431. FUNDAMENTAL RESEARCH AND TECHNOLOGY BASE PROGRAM.**

(a) OBJECTIVE.—In order to ensure that the Nation maintains needed capabilities in fundamental areas of aeronautical research, the Administrator shall establish a program of long-term fundamental research in aeronautical sciences and technologies that is not tied to specific development projects.

(b) ASSESSMENT.—The Administrator shall enter into an arrangement with the National Research Council for an assessment of the Nation's future requirements for fundamental aeronautics research and whether the Nation will have a skilled research workforce and research facilities commensurate with those requirements. The assessment shall include an identification of any projected gaps, and recommendations for what steps should be taken by the Federal Government to eliminate those gaps.

(c) REPORT.—The Administrator shall transmit the assessment, along with NASA's response to the assessment, to Congress not later than 2 years after the date of enactment of this Act.

1 **SEC. 432. AIRSPACE SYSTEMS RESEARCH.**

2 (a) OBJECTIVE.—The Airspace Systems Research
3 program shall pursue research and development to enable
4 revolutionary improvements to and modernization of the
5 National Airspace System, as well as to enable the intro-
6 duction of new systems for vehicles that can take advan-
7 tage of an improved, modern air transportation system.

8 (b) ALIGNMENT.—Not later than 2 years after the
9 date of enactment of this Act, the Administrator shall
10 align the projects of the Airspace Systems Research pro-
11 gram so that they directly support the objectives of the
12 Joint Planning and Development Office's Next Generation
13 Air Transportation System Integrated Plan.

14 **SEC. 433. AVIATION SAFETY AND SECURITY RESEARCH.**

15 (a) OBJECTIVE.—The Aviation Safety and Security
16 Research program shall pursue research and development
17 activities that directly address the safety and security
18 needs of the National Airspace System and the aircraft
19 that fly in it. The program shall develop prevention, inter-
20 vention, and mitigation technologies aimed at causal, con-
21 tributory, or circumstantial factors of aviation accidents.

22 (b) PLAN.—Not later than 1 year after the date of
23 enactment of this Act, the Administrator shall transmit
24 to Congress a 5-year prioritized plan for the research to
25 be conducted within the Aviation Safety and Security Re-
26 search program. The plan shall be aligned with the objec-

1 tives of the Joint Planning and Development Office's Next
2 Generation Air Transportation System Integrated Plan.

3 **SEC. 434. ZERO-EMISSIONS AIRCRAFT RESEARCH.**

4 (a) OBJECTIVE.—The Administrator may establish a
5 zero-emissions aircraft research program whose objective
6 shall be to develop and test concepts to enable a hydrogen
7 fuel cell-powered aircraft that would have no hydrocarbon
8 or nitrogen oxide emissions into the environment.

9 (b) APPROACH.—The Administrator may establish a
10 program of competitively awarded grants available to
11 teams of researchers that may include the participation
12 of individuals from universities, industry, and government
13 for the conduct of this research.

14 **SEC. 435. MARS AIRCRAFT RESEARCH.**

15 (a) OBJECTIVE.—The Administrator may establish a
16 Mars Aircraft project whose objective shall be to develop
17 and test concepts for an uncrewed aircraft that could oper-
18 ate for sustained periods in the atmosphere of Mars.

19 (b) APPROACH.—The Administrator may establish a
20 program of competitively awarded grants available to
21 teams of researchers that may include the participation
22 of individuals from universities, industry, and government
23 for the conduct of this research.

1 **SEC. 436. HYPERSONICS RESEARCH.**

2 The Administrator may establish a hypersonics re-
3 search program whose objective shall be to explore the
4 science and technology of hypersonic flight using air-
5 breathing propulsion concepts, through a mix of theo-
6 retical work, basic and applied research, and development
7 of flight research demonstration vehicles.

8 **SEC. 437. NASA AERONAUTICS SCHOLARSHIPS.**

9 (a) ESTABLISHMENT.—The Administrator shall es-
10 tablish a program of scholarships for full-time graduate
11 students who are United States citizens and are enrolled
12 in, or have been accepted by and have indicated their in-
13 tention to enroll in, accredited Masters degree programs
14 in aeronautical engineering at institutions of higher edu-
15 cation. Each such scholarship shall cover the costs of
16 room, board, tuition, and fees, and may be provided for
17 a maximum of 2 years.

18 (b) IMPLEMENTATION.—Not later than 180 days
19 after the date of enactment of this Act, the Administrator
20 shall publish regulations governing the scholarship pro-
21 gram under this section.

22 (c) COOPERATIVE TRAINING OPPORTUNITIES.—Stu-
23 dents who have been awarded a scholarship under this sec-
24 tion shall have the opportunity for paid employment at
25 one of the NASA Centers engaged in aeronautics research
26 and development during the summer prior to the first year

1 of the student's Masters program, and between the first
2 and second year, if applicable.

3 **SEC. 438. AVIATION WEATHER RESEARCH.**

4 The Administrator may carry out a program of col-
5 laborative research with the National Oceanic and Atmos-
6 pheric Administration on convective weather events, with
7 the goal of significantly improving the reliability of 2-hour
8 to 6-hour aviation weather forecasts.

9 **SEC. 439. ASSESSMENT OF WAKE TURBULENCE RESEARCH**
10 **AND DEVELOPMENT PROGRAM.**

11 (a) ASSESSMENT.—The Administrator shall enter
12 into an arrangement with the National Research Council
13 for an assessment of Federal wake turbulence research
14 and development programs. The assessment shall address
15 at least the following questions:

16 (1) Are the Federal research and development
17 goals and objectives well defined?

18 (2) Are there any deficiencies in the Federal re-
19 search and development goals and objectives?

20 (3) What roles should be played by each of the
21 relevant Federal agencies, such as NASA, the Fed-
22 eral Aviation Administration, and the National Oce-
23 anic and Atmospheric Administration, in wake tur-
24 bulence research and development?

1 (b) REPORT.—A report containing the results of the
2 assessment conducted pursuant to subsection (a) shall be
3 provided to Congress not later than 1 year after the date
4 of enactment of this Act.

5 **SEC. 440. UNIVERSITY-BASED CENTERS FOR RESEARCH ON**
6 **AVIATION TRAINING.**

7 (a) IN GENERAL.—The Administrator may award
8 grants to institutions of higher education (or consortia
9 thereof) to establish one or more Centers for Research on
10 Aviation Training under cooperative agreements with ap-
11 propriate NASA Centers.

12 (b) PURPOSE.—The purpose of the Centers shall be
13 to investigate the impact of new technologies and proce-
14 dures, particularly those related to the aircraft flight deck
15 and to the air traffic management functions, on training
16 requirements for pilots and air traffic controllers.

17 (c) APPLICATION.—An institution of higher edu-
18 cation (or a consortium of such institutions) seeking fund-
19 ing under this section shall submit an application to the
20 Administrator at such time, in such manner, and con-
21 taining such information as the Administrator may re-
22 quire, including, at a minimum, a 5-year research plan.

23 (d) AWARD DURATION.—An award made by the Ad-
24 ministrator under this section shall be for a period of 5
25 years and may be renewed on the basis of—

1 (1) satisfactory performance in meeting the
2 goals of the research plan proposed by the Center in
3 its application under subsection (c); and
4 (2) other requirements as specified by the Ad-
5 ministrator.

# 6 TITLE V—HUMAN SPACE FLIGHT

7 **SEC. 501. INTERNATIONAL SPACE STATION COMPLETION.**

8 (a) ELEMENTS, CAPABILITIES, AND CONFIGURATION
9 CRITERIA.—The Administrator shall ensure that the ISS
10 will be able to—
11 (1) be used for a diverse range of microgravity
12 research, including fundamental, applied, and com-
13 mercial research;
14 (2) have an ability to support crew size of at
15 least 6 persons;
16 (3) support Crew Exploration Vehicle docking
17 and automated docking of cargo vehicles or modules
18 launched by either heavy-lift or commercially-devel-
19 oped launch vehicles; and
20 (4) be operated at an appropriate risk level.
21 (b) CONTINGENCY PLAN.—The transportation plan
22 to support ISS shall include contingency options to ensure
23 sufficient logistics and on-orbit capabilities to support any
24 potential period during which the Space Shuttle or its fol-
25 low-on crew and cargo systems is unavailable, and provide

1 sufficient prepositioning of spares and other supplies need-
2 ed to accommodate any such hiatus.
3 (c) CERTIFICATION.—Not later than 60 days after
4 the date of enactment of this Act, and before making any
5 change in the ISS assembly sequence in effect on the date
6 of enactment of this Act, the Administrator shall certify
7 in writing to the Committee on Science of the House of
8 Representatives and the Committee on Commerce,
9 Science, and Transportation of the Senate NASA's plan
10 to meet the requirements of subsections (a) and (b).
11 **SEC. 502. HUMAN EXPLORATION PRIORITIES.**
12 (a) IN GENERAL.—The Administrator shall—
13 (1) construct an architecture and implementa-
14 tion plan for NASA's human exploration program
15 that is not critically dependent on the achievement
16 of milestones by fixed dates; and
17 (2) determine the relative priority of each of the
18 potential elements of NASA's implementation plan
19 for its human exploration program in case funding
20 shortfalls or cost growth necessitate the adjustment
21 of NASA's implementation plan.
22 (b) PRIORITIES.—Development of a Crew Explo-
23 ration Vehicle with a robust crew escape system, develop-
24 ment of a launch system for the Crew Exploration Vehicle,
25 and definition of an overall architecture and prioritized

1 implementation plan shall be the highest priorities of the
2 human exploration program over the period governed by
3 this Act.

4 **SEC. 503. GAO ASSESSMENT.**

5 Not later than 9 months after the date of enactment
6 of this Act, the Comptroller General shall transmit to the
7 Committee on Science of the House of Representatives
8 and the Committee on Commerce, Science, and Transpor-
9 tation of the Senate an assessment of the milestones and
10 estimated costs of the plans submitted under section
11 102(a)(7).

# 12 TITLE VI—OTHER PROGRAM 13 AREAS

## 14 Subtitle A—Space and Flight 15 Support

16 **SEC. 601. ORBITAL DEBRIS.**

17 The Administrator, in conjunction with the heads of
18 other Federal agencies, shall take steps to develop or ac-
19 quire technologies that will enable NASA to decrease the
20 risks associated with orbital debris.

21 **SEC. 602. SECONDARY PAYLOAD CAPABILITY.**

22 The Administrator is encouraged to provide the capa-
23 bilities to support secondary payloads on United States
24 launch vehicles, including freeflyers, for satellites or sci-
25 entific payloads.

1 **Subtitle B—Education**

2 **SEC. 611. INSTITUTIONS IN NASA'S MINORITY INSTITU-**
3 **TIONS PROGRAM.**

4 The matter appearing under the heading "**NA-**
5 **TIONAL AERONAUTICS AND SPACE ADMINISTRA-**
6 **TION**—SMALL AND DISADVANTAGED BUSINESS" in title
7 III of the Departments of Veterans Affairs and Housing
8 and Urban Development, and Independent Agencies Ap-
9 propriations Act, 1990 (42 U.S.C. 2473b; 103 Stat. 863)
10 is amended by striking "Historically Black Colleges and
11 Universities and" and inserting "Historically Black Col-
12 leges and Universities that are part B institutions (as de-
13 fined in section 322(2) of the Higher Education Act of
14 1965 (20 U.S.C. 1061(2))), Hispanic-serving institutions
15 (as defined in section 502(a)(5) of that Act (20 U.S.C.
16 1101a(a)(5))), Tribal Colleges or Universities (as defined
17 in section 316(b)(3) of that Act (20 U.S.C. 1059c(b)(3))),
18 Alaskan Native-serving institutions (as defined in section
19 317(b)(2) of that Act (20 U.S.C. 1059d)(b)(2))), Native
20 Hawaiian-serving institutions (as defined in section
21 317(b)(4) of that Act (20 U.S.C. 1059d(b)(4))), and".

22 **SEC. 612. PROGRAM TO EXPAND DISTANCE LEARNING IN**
23 **RURAL UNDERSERVED AREAS.**

24 (a) IN GENERAL.—The Administrator shall develop
25 or expand programs to extend science and space edu-

1 cational outreach to rural communities and schools
2 through video conferencing, interpretive exhibits, teacher
3 education, classroom presentations, and student field
4 trips.

5 (b) PRIORITIES.—In carrying out subsection (a), the
6 Administrator shall give priority to existing programs—

7 (1) that utilize community-based partnerships
8 in the field;

9 (2) that build and maintain video conference
10 and exhibit capacity;

11 (3) that travel directly to rural communities
12 and serve low-income populations; and

13 (4) with a special emphasis on increasing the
14 number of women and minorities in the science and
15 engineering professions.

16 **SEC. 613. CHARLES "PETE" CONRAD ASTRONOMY AWARDS.**

17 (a) SHORT TITLE.—This section may be cited as the
18 "Charles 'Pete' Conrad Astronomy Awards Act".

19 (b) DEFINITIONS.—For the purposes of this
20 section—

21 (1) the term "amateur astronomer" means an
22 individual whose employer does not provide any
23 funding, payment, or compensation to the individual
24 for the observation of asteroids and other celestial

1 bodies, and does not include any individual employed
2 as a professional astronomer;
3 (2) the term "Minor Planet Center" means the
4 Minor Planet Center of the Smithsonian Astro-
5 physical Observatory;
6 (3) the term "near-Earth asteroid" means an
7 asteroid with a perihelion distance of less than 1.3
8 Astronomical Units from the Sun; and
9 (4) the term "Program" means the Charles
10 "Pete" Conrad Astronomy Awards Program estab-
11 lished under subsection (c).
12 (c) PETE CONRAD ASTRONOMY AWARD PROGRAM.—
13 (1) IN GENERAL.—The Administrator shall es-
14 tablish the Charles "Pete" Conrad Astronomy
15 Awards Program.
16 (2) AWARDS.—The Administrator shall make
17 awards under the Program based on the rec-
18 ommendations of the Minor Planet Center.
19 (3) AWARD CATEGORIES.—The Administrator
20 shall make one annual award, unless there are no el-
21 igible discoveries or contributions, for each of the
22 following categories:
23 (A) The amateur astronomer or group of
24 amateur astronomers who in the preceding cal-
25 endar year discovered the intrinsically brightest

1 near-Earth asteroid among the near-Earth as-
2 teroids that were discovered during that year by
3 amateur astronomers or groups of amateur as-
4 tronomers.
5 (B) The amateur astronomer or group of
6 amateur astronomers who made the greatest
7 contribution to the Minor Planet Center's mis-
8 sion of cataloguing near-Earth asteroids during
9 the preceding year.
10 (4) AWARD AMOUNT.—An award under the
11 Program shall be in the amount of $3,000.
12 (5) GUIDELINES.—(A) No individual who is not
13 a citizen or permanent resident of the United States
14 at the time of his discovery or contribution may re-
15 ceive an award under this section.
16 (B) The decisions of the Administrator in mak-
17 ing awards under this section are final.
18 **SEC. 614. REVIEW OF EDUCATION PROGRAMS.**
19 (a) IN GENERAL.—The Administrator shall enter
20 into an arrangement with the National Research Council
21 of the National Academy of Sciences to conduct a review
22 and evaluation of NASA's science, technology, engineer-
23 ing, and mathematics education program. The review and
24 evaluation shall be documented in a report to the Admini-
25 trator and shall include such recommendations as the Na-

1 tional Research Council determines will improve the effec-
2 tiveness of the program.
3 (b) REVIEW.—The review and evaluation under sub-
4 section (a) shall include—
5 (1) an evaluation of the effectiveness of the
6 overall program in meeting its defined goals and ob-
7 jectives;
8 (2) an assessment of the quality and edu-
9 cational effectiveness of the major components of the
10 program, including an evaluation of the adequacy of
11 assessment metrics and data collection requirements
12 available for determining the effectiveness of indi-
13 vidual projects;
14 (3) an evaluation of the funding priorities in
15 the program, including a review of the funding level
16 and funding trend for each major component of the
17 program and an assessment of whether the resources
18 made available are consistent with meeting identified
19 goals and priorities; and
20 (4) a determination of the extent and the effec-
21 tiveness of coordination and collaboration between
22 NASA and other Federal agencies that sponsor
23 science, technology, engineering, and mathematics
24 education activities.

1 (c) REPORT TO CONGRESS.—Not later than 18
2 months after the date of enactment of this Act, the Ad-
3 ministrator shall transmit to the Committee on Science
4 of the House of Representatives and the Committee on
5 Commerce, Science, and Transportation of the Senate the
6 report required under subsection (a).

7 **SEC. 615. EQUAL ACCESS TO NASA'S EDUCATION PRO-**
8 **GRAMS.**

9 The Administrator shall strive to ensure equal access
10 for minority and economically disadvantaged students to
11 NASA's Education programs. Not later than 1 year after
12 the date of enactment of this Act, and every 2 years there-
13 after, the Administrator shall submit a report to the Com-
14 mittee on Science of the House of Representatives and the
15 Committee on Commerce, Science, and Transportation of
16 the Senate describing the efforts by the Administrator to
17 ensure equal access for minority and economically dis-
18 advantaged students under this section, and the results
19 of such efforts.

20 **TITLE VII—MISCELLANEOUS**
21 **AMENDMENTS**

22 **SEC. 701. RETROCESSION OF JURISDICTION.**

23 The National Aeronautics and Space Act of 1958 (42
24 U.S.C. 2451 et seq.) is amended by adding at the end
25 of title III the following new section:

1 "RETROCESSION OF JURISDICTION

2 "SEC. 316. (a) Notwithstanding any other provision
3 of law, the Administrator may relinquish to a State all
4 or part of the legislative jurisdiction of the United States
5 over lands or interests under the control of the Adminis-
6 trator in that State.

7 "(b) For purposes of this section, the term 'State'
8 means any of the several States, the District of Columbia,
9 the Commonwealth of Puerto Rico, the United States Vir-
10 gin Islands, Guam, American Samoa, the Northern Mar-
11 iana Islands, and any other commonwealth, territory, or
12 possession of the United States.".

13 **SEC. 702. EXTENSION OF INDEMNIFICATION.**

14 Section 309 of the National Aeronautics and Space
15 Act of 1958 (42 U.S.C. 458c) is amended in subsection
16 (f)(1) by striking "December 31, 2002" through "Sep-
17 tember 30, 2005" and inserting, "December 31, 2010, ex-
18 cept that the Administrator may extend the termination
19 date to a date not later than September 30, 2015, if the
20 Administrator has entered into an arrangement with the
21 National Academy of Public Administration to determine
22 the impact on private parties and the Federal Government
23 of eliminating this section".

1 **SEC. 703. NASA SCHOLARSHIPS.**

2 (a) AMENDMENTS.—Section 9809 of title 5, United
3 States Code, is amended—

4 (1) in subsection (a)(2) by striking "Act." and
5 inserting "Act (42 U.S.C. 1885a or 1885b).";

6 (2) in subsection (c) by striking "require." and
7 inserting "require to carry out this section.";

8 (3) in subsection (f)(1) by striking the last sen-
9 tence; and

10 (4) in subsection (g)(2) by striking "Treasurer
11 of the" and all that follows through "by 3" and in-
12 serting "Treasurer of the United States".

13 (b) REPEAL.—The Vision 100—Century of Aviation
14 Reauthorization Act is amended by striking section 703
15 (42 U.S.C. 2473e).

16 **SEC. 704. INDEPENDENT COST ANALYSIS.**

17 Section 301 of the National Aeronautics and Space
18 Administration Authorization Act of 2000 (42 U.S.C.
19 2459g) is amended—

20 (1) by striking "Phase B" in subsection (a) and
21 inserting "implementation";

22 (2) by striking "$150,000,000" in subsection
23 (a) and inserting "$250,000,000";

24 (3) by striking "Chief Financial Officer" each
25 place it appears in subsection (a) and inserting "Ad-
26 ministrator";

1 (4) by inserting "and consider" in subsection
2 (a) after "shall conduct"; and
3 (5) by striking subsection (b) and inserting the
4 following:
5 "(b) IMPLEMENTATION DEFINED.—In this section,
6 the term 'implementation' means all activity in the life
7 cycle of a project after preliminary design, independent as-
8 sessment of the preliminary design, and approval to pro-
9 ceed into implementation, including critical design, devel-
10 opment, certification, launch, operations, disposal of as-
11 sets, and, for technology programs, development, testing,
12 analysis and communication of the results.".

13 **SEC. 705. LIMITATIONS ON OFF-SHORE PERFORMANCE OF**
14 **CONTRACTS FOR THE PROCUREMENT OF**
15 **GOODS AND SERVICES.**

16 (a) CONVERSIONS TO CONTRACTOR PERFORMANCE
17 OF ADMINISTRATION ACTIVITIES.—Except as provided in
18 subsection (c), an activity or function of the Administra-
19 tion that is converted to contractor performance under Of-
20 fice of Management and Budget Circular A–76 may not
21 be performed by the contractor or any subcontractor at
22 a location outside the United States.
23 (b) CONTRACTS FOR THE PROCUREMENT OF SERV-
24 ICES.—(1) Except as provided in subsection (c), a contract
25 for the procurement of goods or services that is entered

1 into by the Administrator may not be performed outside
2 the United States unless it is to meet a requirement of
3 the Administration for goods or services specifically at a
4 location outside the United States.

5 (2) The President may waive the prohibition in para-
6 graph (1) in the case of any contract for which the Presi-
7 dent determines in writing that it is necessary in the na-
8 tional security interests of the United States for goods or
9 services under the contract to be performed outside the
10 United States.

11 (3) The Administrator may waive the prohibition in
12 paragraph (1) in the case of any contract for which the
13 Administrator determines in writing that essential goods
14 or services under the contract are only available from a
15 source outside the United States.

16 (c) EXCEPTION.—Subsections (a) and (b)(1) shall
17 not apply to the extent that the activity or function under
18 the contract was previously performed by Federal Govern-
19 ment employees outside the United States.

20 (d) CONSISTENCY WITH INTERNATIONAL AGREE-
21 MENTS.—The provisions of this section shall not apply to
22 the extent that they are inconsistent with obligations of
23 the United States under international agreements.

# TITLE VIII—INDEPENDENT COMMISSIONS

**SEC. 801. DEFINITIONS.**

For purposes of this title—

(1) the term "Commission" means a Commission established under this title; and

(2) the term "incident" means either an accident or a deliberate act.

## Subtitle A—International Space Station Independent Safety Commission

**SEC. 811. ESTABLISHMENT OF COMMISSION.**

(a) ESTABLISHMENT.—The President shall establish an independent, nonpartisan Commission within the executive branch to discover and assess any vulnerabilities of the International Space Station that could lead to its destruction, compromise the health of its crew, or necessitate its premature abandonment.

(b) DEADLINE FOR ESTABLISHMENT.—The President shall issue an executive order establishing a Commission within 30 days after the date of enactment of this Act.

**SEC. 812. TASKS OF THE COMMISSION.**

The Commission established under section 811 shall, to the extent possible, undertake the following tasks:

1 (1) Catalog threats to and vulnerabilities of the
2 ISS, including design flaws, natural phenomena,
3 computer software or hardware flaws, sabotage or
4 terrorist attack, number of crewmembers, and inabil-
5 ity to adequately deliver replacement parts and sup-
6 plies, and management or procedural deficiencies.
7 (2) Make recommendations for corrective ac-
8 tions.
9 (3) Provide any additional findings or rec-
10 ommendations related to ISS safety.
11 (4) Prepare a report to Congress, the Presi-
12 dent, and the public.

13 **SEC. 813. SUNSET.**

14 The Commission established under this subtitle shall
15 expire not later than one year after the date on which the
16 full Commission membership is appointed.

## 17 Subtitle B—Human Space Flight
## 18 Independent Investigation Com-
## 19 mission

20 **SEC. 821. ESTABLISHMENT OF COMMISSION.**

21 (a) ESTABLISHMENT.—The President shall establish
22 an independent, nonpartisan Commission within the exec-
23 utive branch to investigate any incident that results in the
24 loss of—
25 (1) a Space Shuttle;

1 (2) the International Space Station or its oper-
2 ational viability;
3 (3) any other United States space vehicle car-
4 rying humans that is being used pursuant to a con-
5 tract with the Federal Government; or
6 (4) a crew member or passenger of any space
7 vehicle described in this subsection.
8 (b) DEADLINE FOR ESTABLISHMENT.—The Presi-
9 dent shall issue an executive order establishing a Commis-
10 sion within 7 days after an incident specified in subsection
11 (a).
12 **SEC. 822. TASKS OF THE COMMISSION.**
13 A Commission established pursuant to this subtitle
14 shall, to the extent possible, undertake the following tasks:
15 (1) Investigate the incident.
16 (2) Determine the cause of the incident.
17 (3) Identify all contributing factors to the cause
18 of the incident.
19 (4) Make recommendations for corrective ac-
20 tions.
21 (5) Provide any additional findings or rec-
22 ommendations deemed by the Commission to be im-
23 portant, whether or not they are related to the spe-
24 cific incident under investigation.

1 (6) Prepare a report to Congress, the Presi-
2 dent, and the public.

## 3 Subtitle C—Organization and
## 4 Operation of Commissions

5 **SEC. 831. COMPOSITION OF COMMISSIONS.**

6 (a) NUMBER OF COMMISSIONERS.—A Commission
7 established pursuant to this title shall consist of 15 mem-
8 bers.

9 (b) SELECTION.—The members of a Commission
10 shall be chosen in the following manner:

11 (1) The President shall appoint the members,
12 and shall designate the Chairman and Vice Chair-
13 man of the Commission from among its members.

14 (2) Four of the 15 members appointed by the
15 President shall be selected by the President in the
16 following manner:

17 (A) The majority leader of the Senate, the
18 minority leader of the Senate, the Speaker of
19 the House of Representatives, and the minority
20 leader of the House of Representatives shall
21 each provide to the President a list of can-
22 didates for membership on the Commission.

23 (B) The President shall select one of the
24 candidates from each of the 4 lists for member-
25 ship on the Commission.

1 (3) In the case of a Commission established
2 under subtitle A, the President shall select one can-
3 didate from a list of candidates for membership on
4 the Commission provided by the President of the col-
5 lective-bargaining organization including the largest
6 member of NASA engineers.
7 (4) No officer or employee of the Federal Gov-
8 ernment shall serve as a member of the Commission.
9 (5) No member of the Commission shall have,
10 or have pending, a contractual relationship with
11 NASA.
12 (6) The President shall not appoint any indi-
13 vidual as a member of a Commission under this sec-
14 tion who has a current or former relationship with
15 the Administrator that the President determines
16 would constitute a conflict of interest.
17 (7) To the extent practicable, the President
18 shall ensure that the members of the Commission in-
19 clude some individuals with experience relative to
20 human carrying spacecraft, as well as some individ-
21 uals with investigative experience and some individ-
22 uals with legal experience.
23 (8) To the extent practicable, the President
24 shall seek diversity in the membership of the Com-
25 mission.

1 (9) The President may waive the prohibitions in
2 paragraphs (5) and (6) with respect to the selection
3 of not more than 2 members of a Commission estab-
4 lished under subtitle A.
5 (c) DEADLINE FOR APPOINTMENT.—All members of
6 a Commission established under subtitle A shall be ap-
7 pointed no later than 60 days after issuance of the execu-
8 tive order establishing the Commission. All members of a
9 Commission established under subtitle B shall be ap-
10 pointed no later than 30 days after the incident.
11 (d) INITIAL MEETING.—A Commission shall meet
12 and begin operations as soon as practicable.
13 (e) QUORUM; VACANCIES.—After its initial meeting,
14 a Commission shall meet upon the call of the Chairman
15 or a majority of its members. Eight members of a Com-
16 mission shall constitute a quorum. Any vacancy in a Com-
17 mission shall not affect its powers, but shall be filled in
18 the same manner in which the original appointment was
19 made.
20 **SEC. 832. POWERS OF COMMISSION.**
21 (a) HEARINGS AND EVIDENCE.—A Commission or,
22 on the authority of the Commission, any subcommittee or
23 member thereof, may, for the purpose of carrying out this
24 title—

1 (1) hold such hearings and sit and act at such
2 times and places, take such testimony, receive such
3 evidence, administer such oaths; and
4 (2) require, by subpoena or otherwise, the at-
5 tendance and testimony of such witnesses and the
6 production of such books, records, correspondence,
7 memoranda, papers, and documents,
8 as the Commission or such designated subcommittee or
9 designated member may determine advisable.
10 (b) CONTRACTING.—A Commission may, to such ex-
11 tent and in such amounts as are provided in appropriation
12 Acts, enter into contracts to enable the Commission to dis-
13 charge its duties under this title.
14 (c) INFORMATION FROM FEDERAL AGENCIES.—
15 (1) IN GENERAL.—A Commission may secure
16 directly from any executive department, bureau,
17 agency, board, commission, office, independent es-
18 tablishment, or instrumentality of the Government,
19 information, suggestions, estimates, and statistics
20 for the purposes of this title. Each department, bu-
21 reau, agency, board, commission, office, independent
22 establishment, or instrumentality shall, to the extent
23 authorized by law, furnish such information, sugges-
24 tions, estimates, and statistics directly to the Com-
25 mission, upon request made by the Chairman, the

1 chairman of any subcommittee created by a majority
2 of the Commission, or any member designated by a
3 majority of the Commission.
4 (2) RECEIPT, HANDLING, STORAGE, AND DIS-
5 SEMINATION.—Information shall only be received,
6 handled, stored, and disseminated by members of
7 the Commission and its staff consistent with all ap-
8 plicable statutes, regulations, and Executive orders.
9 (d) ASSISTANCE FROM FEDERAL AGENCIES.—
10 (1) GENERAL SERVICES ADMINISTRATION.—
11 The Administrator of General Services shall provide
12 to a Commission on a reimbursable basis adminis-
13 trative support and other services for the perform-
14 ance of the Commission's tasks.
15 (2) OTHER DEPARTMENTS AND AGENCIES.—In
16 addition to the assistance prescribed in paragraph
17 (1), departments and agencies of the United States
18 may provide to the Commission such services, funds,
19 facilities, staff, and other support services as they
20 may determine advisable and as may be authorized
21 by law.
22 (3) NASA ENGINEERING AND SAFETY CEN-
23 TER.—The NASA Engineering and Safety Center
24 shall provide data and technical support as re-
25 quested by a Commission.

1 **SEC. 833. PUBLIC MEETINGS, INFORMATION, AND HEAR-**
2 **INGS.**

3 (a) PUBLIC MEETINGS AND RELEASE OF PUBLIC
4 VERSIONS OF REPORTS.—A Commission shall—

5 (1) hold public hearings and meetings to the ex-
6 tent appropriate; and

7 (2) release public versions of the reports re-
8 quired under this Act.

9 (b) PUBLIC HEARINGS.—Any public hearings of a
10 Commission shall be conducted in a manner consistent
11 with the protection of information provided to or developed
12 for or by the Commission as required by any applicable
13 statute, regulation, or Executive order.

14 **SEC. 834. STAFF OF COMMISSION.**

15 (a) APPOINTMENT AND COMPENSATION.—The
16 Chairman, in consultation with Vice Chairman, in accord-
17 ance with rules agreed upon by a Commission, may ap-
18 point and fix the compensation of a staff director and such
19 other personnel as may be necessary to enable the Com-
20 mission to carry out its functions.

21 (b) DETAILEES.—Any Federal Government em-
22 ployee, except for an employee of NASA, may be detailed
23 to a Commission without reimbursement from the Com-
24 mission, and such detailee shall retain the rights, status,
25 and privileges of his or her regular employment without
26 interruption.

1 (c) CONSULTANT SERVICES.—A Commission may
2 procure the services of experts and consultants in accord-
3 ance with section 3109 of title 5, United States Code, but
4 at rates not to exceed the daily rate paid a person occu-
5 pying a position at level IV of the Executive Schedule
6 under section 5315 of title 5, United States Code. Any
7 consultant or expert whose services are procured under
8 this subsection shall disclose any contract or association
9 it has with NASA or any NASA contractor.

10 **SEC. 835. COMPENSATION AND TRAVEL EXPENSES.**

11 (a) COMPENSATION.—Each member of a Commission
12 may be compensated at not to exceed the daily equivalent
13 of the annual rate of basic pay in effect for a position
14 at level IV of the Executive Schedule under section 5315
15 of title 5, United States Code, for each day during which
16 that member is engaged in the actual performance of the
17 duties of the Commission.

18 (b) TRAVEL EXPENSES.—While away from their
19 homes or regular places of business in the performance
20 of services for the Commission, members of a Commission
21 shall be allowed travel expenses, including per diem in lieu
22 of subsistence, in the same manner as persons employed
23 intermittently in the Government service are allowed ex-
24 penses under section 5703(b) of title 5, United States
25 Code.

1 **SEC. 836. SECURITY CLEARANCES FOR COMMISSION MEM-**
2 **BERS AND STAFF.**

3 The appropriate Federal agencies or departments
4 shall cooperate with a Commission in expeditiously pro-
5 viding to the Commission members and staff appropriate
6 security clearances to the extent possible pursuant to ex-
7 isting procedures and requirements. No person shall be
8 provided with access to classified information under this
9 title without the appropriate security clearances.

10 **SEC. 837. REPORTING REQUIREMENTS AND TERMINATION.**

11 (a) INTERIM REPORTS.—A Commission may submit
12 to the President and Congress interim reports containing
13 such findings, conclusions, and recommendations for cor-
14 rective actions as have been agreed to by a majority of
15 Commission members.

16 (b) FINAL REPORT.—A Commission shall submit to
17 the President and Congress, and make concurrently avail-
18 able to the public, a final report containing such findings,
19 conclusions, and recommendations for corrective actions
20 as have been agreed to by a majority of Commission mem-
21 bers. Such report shall include any minority views or opin-
22 ions not reflected in the majority report.

23 (c) TERMINATION.—

24 (1) IN GENERAL.—A Commission, and all the
25 authorities of this title with respect to that Commis-

1 sion, shall terminate 60 days after the date on which
2 the final report is submitted under subsection (b).
3 (2) ADMINISTRATIVE ACTIVITIES BEFORE TER-
4 MINATION.—A Commission may use the 60-day pe-
5 riod referred to in paragraph (1) for the purpose of
6 concluding its activities, including providing testi-
7 mony to committees of Congress concerning its re-
8 ports and disseminating the final report.

2

## AMENDMENT TO H.R. 3070

## OFFERED BY MR. ROHRABACHER OF CALIFORNIA

At the end of the bill, add the following new section:

1 **SEC. 14. AMENDMENT TO IRAN NONPROLIFERATION ACT**
2 **OF 2000.**

3 Section 7(1) of the Iran Nonproliferation Act of 2000
4 (50 U.S.C. 1701 note) is amended—

5 (1) by striking "United States Government"
6 and all that follows through "(A)" and inserting
7 "United States Government"; and

8 (2) by striking "; or" and all that follows
9 through "effect on such date".

3

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. MELANCON OF LOUISIANA**

In title VII, add at the end the following new section:

1 **SEC. 706. FACILITIES MANAGEMENT.**

2 (a) IN GENERAL.—Notwithstanding any other provi-
3 sion of law, the Administrator may convey, by lease, real
4 and related personal property under the custody and con-
5 trol of NASA, or interests therein, and retain the net pro-
6 ceeds of such dispositions in an account within NASA's
7 working capital fund to be used for NASA's real property
8 capital needs at the NASA facility at which the leasing
9 arrangement occurs. All net proceeds realized under this
10 section shall be obligated or expended only as authorized
11 by appropriations Acts. To aid in the use of this authority,
12 NASA shall develop a facilities investment plan that takes
13 into account uniqueness, mission dependency, and other
14 studies required by this Act.

15 (b) DEFINITIONS.—In this section:

16 (1) NET PROCEEDS.—The term "net proceeds"
17 means the rental and other sums received less the
18 costs of the disposition.

1 (2) REAL PROPERTY CAPITAL NEEDS.—The
2 term "real property capital needs" means any ex-
3 penses necessary and incident to the agency's real
4 property capital acquisitions, improvements, and dis-
5 positions.

4

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MS. JACKSON-LEE OF TEXAS**

Page 45, line 15, strike "and".

Page 45, line 17, strike the period and insert "; and".

Page 45, after line 17, insert the following new subparagraph:

1 (D) $69,200,000 shall be for Historically
2 Black Colleges and Universities education pro-
3 grams.

Page 46, line 8, strike "and".

Page 46, line 10, strike the period and insert "; and".

Page 46, after line 10, insert the following new subparagraph:

4 (C) $71,200,000 shall be for Historically
5 Black Colleges and Universities education pro-
6 grams.

5

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MS. JACKSON-LEE OF TEXAS**

At the end of title VII, add the following new section:

1 **SEC. 706. DR. MAE C. JEMISON GRANT PROGRAM.**

2 The Administrator shall establish the Dr. Mae C.
3 Jemison Grant Program to work with minority serving in-
4 stitutions to bring more women of color into the fields of
5 space and aeronautics. Of the amount authorized under
6 each of sections 202 and 203, $500,000 shall be available
7 for such program.

6

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. COSTELLO OF ILLINOIS**

In section 705, strike subsection (d).

COMMITTEE ON SCIENCE - ROLL CALL – 109th CONGRESS

DATE: 7/14/05 SUBJECT: Roll Call Vote on Amendment #6 offered by Mr. Costello.

| Rm. | Phone | Member | Yes | No | Not Voting | Present | Absent |
|---|---|---|---|---|---|---|---|
| 2246 | 53665 | Mr. Boehlert, R-NY | | ✓ | | | |
| 2405 | 56673 | Mr. Hall, R-TX | | ✓ | | | |
| 2184 | 54236 | Mr. Smith, R-TX | | ✓ | | | |
| 2466 | 52011 | Mr. Weldon, R-PA | | | | | |
| 2338 | 52415 | Mr. Rohrabacher, R-CA | | | | | |
| 2201 | 51986 | Mr. Calvert, R-CA | | ✓ | | | |
| 2412 | 52721 | Mr. Bartlett, R-MD | | ✓ | | | |
| 1714 | 53831 | Mr. Ehlers, R-MI | | ✓ | | | |
| 425 | 52472 | Mr. Gutknecht, R-MN | | ✓ | | | |
| 2342 | 55565 | Mr. Lucas, R-OK | | ✓ | | | |
| 1317 | 53515 | Mrs. Biggert, R-IL | | ✓ | | | |
| 2245 | 55311 | Mr. Gilchrest, R-MD | | ✓ | | | |
| 117 | 52561 | Mr. Akin, R-MO | | ✓ | | | |
| 1229 | 52371 | Mr. Johnson, R-IL | | ✓ | | | |
| 307 | 56365 | Mr. Forbes, R-VA | | ✓ | | | |
| 315 | 54931 | Mr. Bonner, R-AL | | ✓ | | | |
| 323 | 52706 | Mr. Feeney, R-FL | | ✓ | | | |
| 330 | 56030 | Mr. Inglis, R-SC | | ✓ | | | |
| 1223 | 57761 | Mr. Reichert, R-WA | | ✓ | | | |
| 1508 | 55315 | Mr. Sodrel, R-IN | | ✓ | | | |
| 128 | 56276 | Mr. Schwarz, R-MI | | ✓ | | | |
| 415 | 52401 | Mr. McCaul, R-TX | | ✓ | | | |
| | | | | | | | |
| ***2304*** | ***54231*** | ***Mr. Gordon, D-TN*** | ✓ | | | | |
| ***2269*** | ***55661*** | ***Mr. Costello, D-IL*** | ✓ | | | | |
| ***1511*** | ***58885*** | ***Ms. Johnson, D-TX*** | | | | | |
| ***2263*** | ***55161*** | ***Ms. Woolsey, D-CA*** | ✓ | | | | |
| ***2430*** | ***55711*** | ***Ms. Hooley, D-OR*** | ✓ | | | | |
| ***240*** | ***52161*** | ***Mr. Udall, D-CO*** | ✓ | | | | |
| ***1023*** | ***50855*** | ***Mr. Wu, D-OR*** | ✓ | | | | |
| ***1713*** | ***52631*** | ***Mr. Honda, D-CA*** | ✓ | | | | |
| ***1722*** | ***53032*** | ***Mr. Miller, D-NC*** | ✓ | | | | |
| ***410*** | ***56831*** | ***Mr. Davis, D-TN*** | | | | | |
| ***1232*** | ***52671*** | ***Mr. Carnahan, D-MO*** | ✓ | | | | |
| ***1217*** | ***55701*** | ***Mr. Lipinski, D-IL*** | ✓ | | | | |
| ***2435*** | ***53816*** | ***Ms. Jackson Lee, D-TX*** | ✓ | | | | |
| ***1030*** | ***55911*** | ***Mr. Sherman, D-CA*** | ✓ | | | | |
| ***1421*** | ***53536*** | ***Mr. Baird, D-WA*** | ✓ | | | | |
| ***1222*** | ***53011*** | ***Mr. Matheson, D-UT*** | ✓ | | | | |
| ***1004*** | ***53341*** | ***Mr. Costa, D-CA*** | ✓ | | | | |
| ***1529*** | ***57508*** | ***Mr. Green, D-TX*** | ✓ | | | | |
| ***404*** | ***54031*** | ***Mr. Melancon, D-LA*** | ✓ | | | | |
| ***1727*** | ***52865*** | ***Mr. Moore, D-KS*** | ✓ | | | | |
| | | **TOTAL** | 18 | 18 | | | |

Attest: Vivian A. Testerman (Clerk)

7

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MS. JACKSON-LEE OF TEXAS**

Page 45, line 15, strike ''and''.
Page 45, line 17, strike the period and insert ''; and''.
Page 45, after line 17, insert the following new subparagraph:
(D) $46,400,000 shall be for Hispanic Serving Institutions education programs.
Page 46, line 8, strike ''and''.
Page 46, line 10, strike the period and insert ''; and''.
Page 46, after line 10, insert the following new subparagraph:
(C) $47,400,000 shall be for Hispanic Serving Institutions education programs.

8

**AMENDMENT TO THE AMENDMENT IN THE NATURE OF A SUBSTITUTE OFFERED BY MR. COSTELLO OF ILLINOIS**

In section 705, add at the end the following new subsection:

1 (e) ANNUAL REPORT.—The Administrator shall sub-
2 mit to Congress, not later than 120 days after the end
3 of each fiscal year, a report on the contracts performed
4 overseas and amount of purchases by NASA from foreign
5 entities in that fiscal year. Such report shall separately
6 indicate the dollar value of contracts for which the provi-
7 sions of this section were waived and the dollar value of
8 items for which the Buy American Act was waived pursu-
9 ant to obligations of the United States under international
10 agreements.

## Section-by-Section Analysis

## Amendment in the Nature of a Substitute to The National Aeronautics and Space Administration Authorization Act of 2005

**Sec. 1. Short Title.**

The "National Aeronautics and Space Administration Authorization Act of 2005".

**Sec. 2. Findings.**

Urges NASA to maintain robust programs in space science, earth science, and aeronautics while it moves forward with plans to send Americans to the Moon, Mars, and beyond.

**Sec. 3. Definitions.**

### TITLE I. – GENERAL PRINCIPLES AND REPORTS

**Sec. 101. Responsibilities, Policies, and Plans.**

Charges NASA with carrying out a balanced set of programs including programs in human space flight, aeronautics research and development, and scientific research including space and earth science. Encourages NASA to work with entrepreneurs, use commercial services to the extent practicable, and to involve other nations to the extent appropriate.

Directs NASA to carry out the Vision for Space Exploration by striving to return Americans to the Moon no later than 2020, launching a Crew Exploration Vehicle as close to 2010 as possible, and conducting research on the impacts of space on the human body to enable long-duration space exploration.

Requires the President, through the Administrator, to develop a national aeronautics policy to guide NASA's aeronautics programs through 2020, taking into account several priority areas. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a policy to guide agency space and earth science programs through 2016. Requires the policy to prioritize the agency's scientific missions and address NASA's plans on servicing the Hubble Space Telescope. Directs the policy be delivered to Congress with the 2007 budget request.

Requires NASA to develop a plan for managing its facilities, including a description of any facilities NASA intends to build or no longer to use. Directs the plan be delivered to Congress with the 2008 budget request.

Requires NASA to develop a human capital strategy to retain needed employees and ensure that it has a workforce of the appropriate size and with the appropriate skills to carry out programs

and policies of this Act. Limits NASA's flexibility in initiating buyouts or subjecting employees to Reductions in Force until 60 days after the plan is submitted with the President's budget for fiscal year 2007, and prohibits any final action on Reduction in Force or other involuntary separations prior to October 1, 2006.

Requires NASA to conduct a study evaluating whether any of it centers should be operated by or with the private sector. Directs the study be delivered to Congress by May 31, 2006.

Directs the President's budget for NASA to include documents showing the requests for human space flight, aeronautics, space science, earth science, safety, microgravity science, education, technology transfer programs, and agency administrative expenses, and comparable figures for each activity for each of the two previous fiscal years.

Requires OSTP to commission an independent review of the Nation's long-term strategic needs for test facilities, and prohibits the closure or mothballing of any facility identified in the 2003 RAND Corporation study entitled "Wind Tunnels and Propulsion Test Facilities: An Assessment of NASA's Capabilities to Serve National Needs," as well as any test facilities in use as of January 1, 2004 until the report is delivered to Congress.

**Sec. 102. Reports.**

Requires NASA to report certain details regarding the Vision for Space Exploration and for other NASA programs by the end of this fiscal year.

Requires NASA to report estimated costs of the Crew Exploration Vehicle and the impact of those on other agency programs through 2020.

Requires NASA to report its plans for updating the system of space communications and navigation architecture to carry out lunar and deep space missions.

Requires NASA to submit a report to Congress describing its plans to carry out the "awareness campaign" required by the report accompanying the FY 2006 House Science, State, Justice, and Commerce Appropriations Bill.

Requires NASA to develop a transition plan for government and contractor personnel engaged in the Space Shuttle program.

Requires NASA and the Department of Energy jointly to describe their plans to develop a proposed astronomy research mission to study dark energy.

Requires the Director of the Office of Science and Technology Policy (OSTP) to conduct a study to evaluate and list whether any research NASA conducts is unnecessarily duplicating aspects of programs of other Federal agencies or whether it is neglecting areas of research in the national interest related to NASA's mission.

**Sec. 103. Baselines and Cost Controls.**

Adapts language that currently applies to the Department of Defense to require NASA to report annually on the status (including cost, schedule and performance) of "major" programs. Requires notification to Congress and an internal evaluation of any major program that exceeds its originally estimated development cost by more than 15 percent or exceeds its originally planned schedule by more than six months. Requires Congress to evaluate whether to continue the major program in the event that it exceeds its originally estimated development cost by more than 30 percent or $1 billion. Defines major programs as those with life-cycle costs of over $100,000,000.

**Sec. 104. Prize Authority.**

Gives NASA authority to conduct competitions for cash prizes, modeled after the X-Prize won last year by famed airplane designer Burt Rutan and his SpaceShipOne, to stimulate innovative technology development. Allows NASA to enter into an agreement with a private, non-profit entity to administer prize competitions. Gives NASA the authority to accept private funds and funds from other agencies for cash prizes. Does not limit the amount of a prize, but requires NASA first to report to the Congress before offering any prize worth more than $10,000,000.

**Sec. 105. Foreign Launch Vehicles.**

Requires NASA to launch missions on foreign launch vehicles only in accordance with the President's Space Transportation Policy, announced December 21, 2004. Grandfathers in any mission for which any development has begun prior to the date of enactment, including the James Webb Space Telescope.

**Sec. 106. Safety Management.**

Amends Sec. 6 of the National Aeronautics and Space Administration Act of 1968 to encourage continued compliance with the CAIB recommendations and to require an annual report, including an evaluation of NASA's safety management culture.

**Sec. 107. Lessons Learned and Best Practices.**

Requires NASA to provide an implementation plan within 180 days describing NASA's approach for sharing lessons learned and best practices among its major programs and projects. Additionally, NASA shall provide incentives for sharing and implementing lessons learned and best practices.

**Sec. 108. Commercialization Plan.**

Directs NASA, in consultation with other appropriate agencies, to develop a commercialization plan within 180 days to support human missions to the Moon and Mars, low earth orbit activities,

Earth Science missions and applications, and transfer of science research and technology to society.

**Sec. 109. Study on the Feasibility of Use of Ground Source Heat Pumps**

Directs NASA to conduct a feasibility study on the use of ground-source heat pumps for energy conservation in future NASA facilities or major renovations of existing facilities.

## TITLE II. AUTHORIZATION OF APPROPRIATIONS

**Sec. 201. Structure of Budgetary Accounts**

Amends Sec. 313 of the National Aeronautics and Space Act of 1958 such that, starting in FY07, appropriations shall be made in four accounts: 'Science, Aeronautics, and Education', 'Exploration Systems', 'Space Operations', and 'Inspector General'.

**Sec. 202. Fiscal Year 2006**

Authorizes NASA at $16,471,050,000 for FY06, the same amount provided in the House Science, State, Justice and Commerce Appropriations Bill for FY 2005. This amount is approximately $15 million above the President's FY 2006 request.

The Authorization includes the following breakdown:

Science, Aeronautics and Education: $6,870,250,000, of which
- $962,000,000 for Aeronautics;
- $150,000,000 for a Hubble Space Telescope Servicing Mission; and
- $18,000,000 for Space Grant.

Exploration Systems: $3,181,000,000, of which
Space Operations: $6,387,300,000
Inspector General: $32,400,000

**Sec. 203. Fiscal Year 2007**

Authorizes NASA at $16,962,000,000 for FY07, the same as the President's Projected Budget Request for FY07.

The Authorization includes the following breakdown:

Science, Aeronautics and Education: $7,331,600,000, of which
- $990,000,000 for Aeronautics;
- $18,000,000 for Space Grant.

Exploration Systems: $3,589,200,000, of which
Space Operations: $6,007,700,000

Inspector General: $33,500,000

**Sec. 204. ISS Research**

Requires NASA to allocate at least 15 percent of the funds obligated for ISS Research to research that is not related to human exploration.

**Sec. 205. Test Facilities**

Requires NASA to establish a policy of charging users of NASA test facilities a competitive price for the costs associated with the use, but as a general rule will not seek to recover the full cost of the facilities operation. Requires a report if the Administrator decides to seek full cost for the use of a facility. Directs NASA to establish a funding account to maintain the viability of test facilities during periods of low utilization.

**Sec. 206. Proportionality**

Specifies that if the total amounts appropriated in Sec. 202 and 203 is less than the amount authorized in those sections, the amounts authorized under each of the accounts specified will be reduced proportionally.

**Sec. 207. Limitations on Authority.**

Requires the Administrator to give 30 days notice to Congress before any program can exceed the amount actually authorized for that account in Sec. 202 and 203.

**Sec. 208. Notice of Reprogramming**

Requires that any reprogramming action that requires notice to the Appropriations Committees, should also require notice to the House Science Committee and the Senate Commerce, Science and Transportation Committee.

**Sec. 209. Cost Overruns**

Requires NASA to protect funds intended for fundamental and applied research and analysis when reprogramming funds to cover unexpected cost growth within a program.

**Sec. 210. Official Representational Fund**

Limits the amount of funds to be used for receptions and representational expenses to $35,000 in any fiscal year.

**Sec. 211. International Space Station Cap**

Repeals the cost cap on the ISS enacted in the NASA Authorization Act of 2000.

**TITLE III. SCIENCE**

**SUBTITLE A – General Provisions**

**Sec. 301. Performance Assessments**

Requires the National Academy of Sciences to evaluate the performance of each discipline within NASA at staggered intervals, but all within six fiscal years.

**Sec. 302 Status Report on Hubble Space Telescope Mission**

Requires the Administrator to determine, upon completion of the planned return to flight schedule, the schedule for a Hubble servicing mission, unless such mission would compromise astronaut safety. Also requires a report on the status of the Hubble Servicing mission to be submitted not later than 60 days after the landing of the second return to flight mission.

**Sec. 303. Independent Assessment of Landsat-NPOESS Integrated Mission.**

Requires the Administrator to seek an independent assessment of the costs and risks associated with incorporating the Landsat instrument on the first National Polar Orbiting Environmental Satellite System. Also requires that the Administrator transmit the assessment to Congress within 180 days of enactment.

**Sec. 304. Assessment of Science Mission Extensions**

Directs the Administrator to carry out termination reviews for extended mission in each of the science disciplines. Specifically requires that a termination review be held within 60 days of enactment for the following missions: FAST, TIMED, Cluster, Wind, Geotail, Polar, TRACE, Ulysses, and Voyager. Also requires that for missions with an operational component, NOAA be consulted and the operational benefits be taken into account in termination reviews. Requires that reports on the assessments must be submitted to Congress within 30 days of completion of the review.

**Sec. 305. Microgravity Research**

Requires NASA to carry out, to the maximum extent practicable, basic, applied, and commercial research aboard the ISS and that the Administrator submit to Congress, not later than 60 days after enactment, an assessment of microgravity research planned for the ISS.

**Sec. 306. Coordination with the National Oceanic and Atmospheric Administration**

Requires NASA and the National Oceanic and Atmospheric Administration (NOAA) to coordinate their respective earth science activities to ensure that any technologies developed in NASA's earth science programs can be efficiently transferred to NOAA.

**SUBTITLE B – Remote Sensing**

Includes the text of H.R. 426, a bill authorizing NASA to establish a pilot program of competitively awarded grants for the use of remote sensing to address state, local, regional, and tribal agency needs.

**SUBTITLE C – George E. Brown, Jr. Near –Earth Object Survey**

Includes the text of H.R. 1022, a bill authorizing NASA to conduct a Near-Earth Object Survey program to detect, track, catalogue, and characterize certain near-earth asteroids and comets.

**TITLE IV – AERONAUTICS**

**Sec. 411. Policy**

Reaffirms that Aeronautics is a core mission of NASA.

**SUBTITLE B – NASA Aeronautics Breakthrough Research Initiatives.**

**Sec. 421 - 440**

Lists a number of areas of aeronautics research and development that NASA may undertake, including—

- Environmental aircraft research to reduce noise and emissions.
- Civil supersonic transport research.
- Rotorcraft research.
- Zero emissions aircraft research.
- Uncrewed aircraft that could operate in the atmosphere of Mars.
- Hypersonics

Lists a number of areas of aeronautics research and development that NASA shall continue to undertake, including—

- Long-term fundamental research in aeronautical sciences and technologies.
- Airspace systems to enable revolutionary improvements in the National Airspace System.
- Aviation safety and security.

**SUBTITLE C – Other NASA Aeronautics Research and Development Activities.**

**Sec. 431 – 440**

Lists a number of other research areas that NASA should take into consideration when prioritizing Aeronautics Research, including the Fundamental Research and Technology Base Program, Airspace Systems, Aviation Safety and Security, Zero-Emissions Aircraft, Mars Aircraft, Hypersonics, and Aviation Weather Research.

**TITLE V – HUMAN SPACE FLIGHT**

**Sec. 501. International Space Station Completion.**

Requires NASA to ensure that the ISS is capable of diverse microgravity research, supporting a crew of 6 persons, and supporting the docking of the crew exploration vehicle as well as other needed vehicles. Requires NASA to report to Congress on contingency plans for the ISS during periods for which the Shuttle or other systems are not available.

**Sec. 502. Human Exploration Priorities.**

Requires NASA to construct an exploration architecture and implementation plan and that contains relative priorities that must include development of the CEV, robust crew escape system, and development of a launch system for the CEV.

**Sec. 503. GAO Assessment.**

Requires the Comptroller General to report to Congress within six months of enactment on NASA's plans for the exploration of the Moon and Mars.

**TITLE VI – Other Program Areas**

**Sec. 601. Orbital Debris.**

Requires NASA to take steps to develop or acquire technologies to enable NASA to reduce the risks associated with orbital debris.

**Sec. 602. Secondary Payload Capability.**

Requires NASA to provide the capability to support secondary payloads on US launch vehicles for satellites or scientific payloads.

**SUBTITLE B – Education**

**Sec. 611. Institutions in NASA's Minority Institutions Program.**

Amends Title III of the VA-HUD Appropriations Act of 1990 to include Historically Black Colleges and Universities that are part B institutions, Hispanic-serving institutions, Tribal Colleges or Universities, Alaskan Native-serving institutions, and Native Hawaiian-serving institutions.

**Sec. 612. Program To Expand Distance Learning in Rural Underserved Areas.**

Encourages NASA to expand educational outreach programs to rural communities and schools, and gives priority to schools with certain programs.

**Sec. 613. Charles "Pete" Conrad Astronomy Awards.**

Includes the text of H.R. 1023, a bill to authorize the NASA Administrator to establish an awards program in honor of Charles "Pete" Conrad, astronaut and space scientist, for recognizing the discoveries made by amateur astronomers of asteroids with near-Earth orbit trajectories.

**Sec. 614. Review of Education Program.**

Requires NASA to arrange with the National Academy of Sciences to conduct a review of NASA's educations programs including funding priorities as well as the quality and effectiveness of the program.

**TITLE VII – MISCELLANEOUS AMENDMENTS**

**Sec. 701. Retrocession of Jurisdiction.**

Grants NASA authority it is seeking to give State and local law enforcement officers jurisdiction over NASA-owned research centers to allow them to enforce speeding, drunk driving, and other laws.

**Sec. 702. Extension of Indemnification.**

Grants NASA an extension it is seeking on an expiring provision in the Space Act of 1958, which allows NASA to indemnify developers of experimental aerospace vehicles with which NASA is involved in a cooperative partnership.

**Sec. 703. NASA Scholarships.**

Makes technical amendments to the NASA Scholarship program.

**Sec. 704. Independent Cost Analysis.**

Amends Sec. 301 of the NASA Authorization Act of 2000 by increasing the project cost level which would trigger an independent cost analysis from $150,000,000 to $250,000,000 and by requiring the Administrator, rather than the CFO, to conduct the independent cost analysis.

**Sec. 705. Limitations on Off-Shore Performance of Contracts for Procurement of Goods and Services.**

Limits contractor performance or contracts for procurement of goods and services to domestic entities, consistent with U.S. international agreements.

**TITLE VIII - INDEPENDENT COMMISSIONS**

**Sec. 801. Definitions.**

**SUBTITLE A – International Space Station Independent Safety Commission.**

**Sec. 811. Establishment of Commission.**

Requires the President to establish a Commission to assess ISS vulnerabilities within 30 days.

**Sec. 812 – Tasks of the Commission.**

Requires the Commission to catalog threats and vulnerabilities of the ISS and make recommendations and corrective actions and prepare a report of the public, the Congress and the President within one year of establishment.

**Sec. 813. Sunset.**

Sunsets the Commission within one year after its establishment.

**SUBTITLE B – Human Space Flight Independent Investigation Commission.**

**Sec. 821. Establishment of Commission.**

Requires the President to establish a Commission within seven days of the accident to investigate any accident that results in the loss of a space shuttle, the ISS, and any other US space vehicle carrying humans pursuant to a contact with the federal Government.

**Sec. 822. Tasks of the Commission.**

Requires the Commission to investigate the incident and determine the cause and all contributing factors, to make recommendations for corrective action, and report to the public, Congress, and the President.

**SUBTITLE C – Organization and Operation of Commissions**

**Sec. 831. Composition of Commissions.**

Requires the Commission to consist of 15 members chosen by the President, with four members being nominated by the majority and minority of the House and the Senate Leadership.

**Sec. 832. Powers of Commission.**

Establishes that the Commission may hold hearings and take testimony as necessary to carry out their charge.

**Sec. 833. Public Meetings, Information, and Hearings.**

Requires the Commission to hold public hearings to the extent appropriate and release public versions of their report.

**Sec. 834. Staff of Commission.**

Allows the Commission Chairman to appoint and fix the compensation of staff. The Designates personnel Federal Employees, and allows for non-NASA detailees or consultants to provide services to the Commission.

**Sec. 835. Compensation and Travel Expenses.**

Sets limits for compensation and travel expenses for members of the Commission.

**Sec. 836. Security Clearances for Commission Members and Staff.**

Compels the appropriate Federal Agencies or departments to cooperate with the Commission in expeditiously providing appropriate security clearances to the extent possible.

**Sec. 837. Reporting Requirements and Termination.**

Requires that the Commission produce a final report with all findings, conclusions, and recommendations agreed to by the Commission and any minority views and opinions. The Commission is to be terminated 60 days after the final report is submitted.

# Summary of Amendment in the Nature of a Substitute

National Aeronautics and Space Administration Authorization Act of 2005

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- Reauthorizes the National Aeronautics and Space Administration for FY06 and FY07.
- Endorses the President's Vision for Space Exploration.
- Directs NASA to carry out a balanced set of programs in human space flight, space science, earth science, and aeronautics.
- Directs NASA to develop a national aeronautics policy, a list of prioritized science missions, and a plan for facilities and agency workforce needed to meet these goals.
- Authorizes a Hubble servicing mission.
- Authorizes NASA to establish a prize program to stimulate innovation in basic and applied research, technology development, and prototype demonstrations that have the potential for application in space and aeronautics.
- Directs NASA to ensure the International Space Station will be able to conduct a broad range of research activities, be able to accommodate a crew of six, and be accessible by the Crew Exploration Vehicle.
- Urges NASA to use commercial services providers to support human missions to the Moon and Mars, to support missions to the International Space Station, and to transfer science research and technology to society.
- Directs NASA and the National Oceanic and Atmospheric Administration to appoint a Joint Working Group to ensure maximum coordination in the design, operation, and transition of missions.
- Includes three measures previously passed by the Committee addressing remote sensing applications and the detection and cataloging of near-Earth asteroids.

NASA Authorization Levels ($=millions)

| | FY06 | FY07 |
|---|---|---|
| Science, Aeronautics & Education | $6,870.25 | $7,331.60 |
| Aeronautics | ($962.00) | ($990.00) |
| Exploration Systems | $3,181.10 | $3,589.20 |
| Space Operations | $6,387.30 | $6,007.70 |
| Inspector General | $32.40 | $33.50 |
| **TOTAL** | **$16,471.05** | **$16,962.00** |

**Description of major changes included in the Amendment in the Nature of a Substitute**
**Compared with**
**H.R. 3070 as Reported by the Subcommittee**

| Issue | H.R. 3070 as Reported by the Subcommittee | Amendment in the Nature of a Substitute |
|---|---|---|
| Authorization | FY06 – House Appropriations recommended level ($16,471.05 Million).<br><br>Top line number. No account breakouts. | FY06 – same.<br>FY07 – President's Budget Request ($16,962.0 Million).<br><br>Creates four budget accounts; specifies funding for each, plus calls out authorization levels for Aeronautics and Space Grant College and Fellowship Program ($24 million). For FY06, also calls out additional funding for a Hubble servicing mission ($150 million). |
| Space Exploration Vision | Endorses the President's Space Exploration Vision. | Same. |
| Aeronautics | NASA to develop a national aeronautics policy and a list of prioritized areas of research, budget assumptions, facilities and personnel required to meet the plan. Due with the President's 2007 budget. | Same, but lists research topics from H.R. 2358 (Udall) as possible options for research. |
| Space Shuttle | NASA shall not fly the Shuttle after 2010. | No provision. By remaining silent, the bill implicitly endorses the Administration's current policy – retirement by 2010. The Senate bill, and the House Democratic substitute, sought to extend Shuttle's life until the Crew Exploration Vehicle was operational. |
| International Space Station | Directs NASA to provide Congress with a research agenda, plus a proposed final configuration. | Directs NASA to ensure that ISS will be able to conduct a broad range of research activities, be able to accommodate a crew of six, and be accessible by the Crew Exploration Vehicle. |

| Issue | H.R. 3070 as Reported by the Subcommittee | Amendment in the Nature of a Substitute |
|---|---|---|
| NASA Test Facilities | Administrator directed to provide a report on what wind tunnels are still needed. | Directs OSTP to commission an independent review of – and report on – our nation's test facilities and how well they serve current and anticipated strategic needs. Bars NASA from closing or mothballing any test facilities until receipt of the report.<br><br>Directs NASA to charge competitive prices for access to its test facilities (e.g., wind tunnels). |
| Remote Sensing | No provision. | Incorporates H.R. 426, the Remote Sensing Applications Act, sponsored by Rep. Udall. Reported by the Science Committee on June 27. |
| Education Programs | No provision. | Directs NASA to contract with the National Research Council to assess the effectiveness of the agency's education programs. Report, with recommendations, within 18 months. |