In the House of Representatives, U. S.,

November 18, 2005.

Resolved, That the bill from the Senate (S. 1281) entitled ''An Act to authorize appropriations for the National Aeronautics and Space Administration for science, aeronautics, exploration, exploration capabilities, and the Inspector General, and for other purposes, for fiscal years 2006, 2007, 2008, 2009, and 2010'', do pass with the following

AMENDMENT:

Strike out all after the enacting clause and insert:

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.
Sec. 110. Space shuttle return to flight.
Sec. 111. Whistleblower protection.

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.

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.
Sec. 616. Museums.
Sec. 617. Review of MUST program.

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.
Sec. 706. Long duration flight.

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, earth science and microgravity science.

(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 pro-

posed 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 Trans-

portation 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 own-

ership 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 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 (except for cause) prior to February 16, 2007.

(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 non-aeronautical 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 ex-

perience 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 ac-

tivities. 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 en-

gaged 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 February 1, 2006.

(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.

(h) OFFICE OF SMALL AND DISADVANTAGED BUSINESS UTILIZATION.—The Administrator shall transmit to the

Committee on Science and the Committee on Small Business of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Small Business and Entrepreneurship of the Senate a quarterly report on the NASA Office of Small and Disadvantaged Business Utilization, which shall include a description of the outreach activities of the Office and the impact of such activities on the participation of small businesses, including small businesses owned by women and minorities, in NASA contracts.

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 Com-

mittee 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, except in cases in which the Administrator has a conflict of interest.

(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, program reserves, and an estimate of the annual costs until the development is completed;

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

(D) the plan for mitigating technical, schedule, and cost risks prepared in accordance with subsection (a)(1)(A); and

(E) 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 rea-

sonable 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 18 months 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 subsequently authorized con-

tinuation of the program by law. An appropriation for the program enacted subsequent to a report being transmitted shall be considered an authorization for purposes of this subsection. 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 esti-

mated 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 $150,000,000.

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 paragraph, 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 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 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 outside the Administration, including from the private sector. A judge may not—

"(1) have personal or financial interests in, or be an employee, officer, director, or agent 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. The Administrator may not give any special consideration to any private sector entity in return for a donation.

"(2) Notwithstanding any other provision of law, funds appropriated for prize awards 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 needed to pay out the announced amount of the prize have been appropriated or committed in writing by a private source. The Administrator may increase the amount of a prize after an initial announcement is made under subsection (d) if—

(A) notice of the increase is provided in the same manner as the initial notice of the prize; and

(B) the funds needed to pay out the announced amount of the increase have been appropriated or committed in writing by a private 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 transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate 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. Not later than 1 year after the date of enactment of this Act, the Administrator shall transmit the study to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(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.

SEC. 110. SPACE SHUTTLE RETURN TO FLIGHT.

It is the sense of Congress that, in keeping with the President's Vision for Space Exploration, the Space Shuttle should return to flight as soon as the Administrator determines that a flight can be accomplished with an acceptable level of safety.

SEC. 111. WHISTLEBLOWER PROTECTION.

Not later than 1 year 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 a plan describing steps to be taken by NASA to protect the employment status of NASA employees who raise or have raised concerns about a potentially catastrophic risk to health or safety.

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 $16,965,650,000, 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;

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

(D) $8,900,000 for the Science and Technology Scholarship Program.

(2) For Exploration Systems (including amounts for construction of facilities), $3,844,100,000.

(3) For Space Operations (including amounts for construction of facilities), $6,218,900,000.

(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 $17,726,800,000, 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), $4,514,000,000.

(3) For Space Operations (including amounts for construction of facilities), $5,847,700,000.

(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 the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of

the Senate, 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.—Not later than March 1 of 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 study titled "Assessment of Options for Extending the Life of the Hubble Space Telescope", 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 Administrator shall determine the schedule for a Space Shuttle servicing mission to the Hubble Space Telescope, 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 Com-

mittee 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 be-

lieves 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 Administrator and the Administrator of the National Oceanic and Atmospheric Administration 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 At-

mospheric 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 may enter into an arrangement with the National Research Council for an assessment of Federal wake turbulence research and develop-

ment 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.

(a) IN GENERAL.—The Administrator may award grants to institutions of higher education (or consortia thereof) to establish one or more centers for the purpose described in subsection (b).

(b) PURPOSE.—The purpose of the centers is to conduct basic and applied research on the impact of new technologies and procedures, particularly those related to aeronautical navigation and control.

(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, unless the Administrator transmits a report to the Committee on Science of the House of

Representatives and the Committee on Commerce, Science, and Transportation of the Senate prior to awarding a development contract for the Crew Exploration Vehicle, explaining why such a requirement should not be met and the impact of not meeting the requirement on the ISS research agenda and operations;

(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 require sufficient surge delivery capability or 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 Transpor-

tation of the Senate NASA's plan to meet the requirements of subsections (a) and (b).

(d) CENTRIFUGE.—Nothing in this Act shall be construed to prohibit the installation of the centrifuge on the ISS.

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. As part of the report, the Administrator shall provide data on minority participation in NASA's education programs, at a minimum in the following categories: elementary and secondary education, undergraduate education, and graduate education.

SEC. 616. MUSEUMS.

The Administrator may provide grants to, and enter into cooperative agreements with museums and planetariums to enable them to enhance programs related to space exploration, aeronautics, space science, earth science, or microgravity.

SEC. 617. REVIEW OF MUST PROGRAM.

Not later than 60 days after the date of enactment of this Act, the Administrator shall transmit a report to Con-

gress on the legal status of the Motivating Undergraduates in Science and Technology program. If the report concludes that the program is in compliance with the laws of the United States, NASA shall implement the program, as planned in the July 5, 2005 National Research Announcement.

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. 2458c) 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 "Chief Financial Officer" each place it appears in subsection (a) and inserting "Administrator";

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

(4) 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 sub-

section (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.

SEC. 706. LONG DURATION FLIGHT.

No provision of this or any other Act shall be construed to prohibit NASA from accommodating the exercise of religion by astronauts engaged in long duration space flight missions.

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) 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 transmit its final report not later than 1 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 owned by the Federal Govern-

ment or 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 number 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 two 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 produc-

tion 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 Commission 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 posi-

tion 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 con-

cluding its activities, including providing testimony to committees of Congress concerning its reports and disseminating the final report.

Attest:

Clerk.

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1ST SESSION

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AMENDMENT