H. R. 6063

One Hundred Tenth Congress of the United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Thursday, the third day of January, two thousand and eight

An Act

To authorize the programs of the National Aeronautics and Space Administration, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 2008".

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

SEC. 2. FINDINGS.

The Congress finds, on this, the 50th anniversary of the establishment of the National Aeronautics and Space Administration, the following:

(1) NASA is and should remain a multimission agency with a balanced and robust set of core missions in science, aeronautics, and human space flight and exploration.

(2) Investment in NASA's programs will promote innovation through research and development, and will improve the competitiveness of the United States.

(3) Investment in NASA's programs, like investments in other Federal science and technology activities, is an investment in our future.

(4) Properly structured, NASA's activities can contribute to an improved quality of life, economic vitality, United States leadership in peaceful cooperation with other nations on challenging undertakings in science and technology, national security, and the advancement of knowledge.

(5) NASA should assume a leadership role in a cooperative international Earth observations and research effort to address key research issues associated with climate change and its impacts on the Earth system.

(6) NASA should undertake a program of aeronautical research, development, and where appropriate demonstration activities with the overarching goals of—

(A) ensuring that the Nation's future air transportation system can handle up to 3 times the current travel demand and incorporate new vehicle types with no degradation in safety or adverse environmental impact on local communities;

(B) protecting the environment;

(C) promoting the security of the Nation; and

(D) retaining the leadership of the United States in global aviation.

(7) Human and robotic exploration of the solar system will be a significant long-term undertaking of humanity in the 21st century and beyond, and it is in the national interest that the United States should assume a leadership role in a cooperative international exploration initiative.

(8) Developing United States human space flight capabilities to allow independent American access to the International Space Station, and to explore beyond low Earth orbit, is a strategically important national imperative, and all prudent steps should thus be taken to bring the Orion Crew Exploration

Vehicle and Ares I Crew Launch Vehicle to full operational capability as soon as possible and to ensure the effective development of a United States heavy lift launch capability for missions beyond low Earth orbit.

(9) NASA's scientific research activities have contributed much to the advancement of knowledge, provided societal benefits, and helped train the next generation of scientists and engineers, and those activities should continue to be an important priority.

(10) NASA should make a sustained commitment to a robust long-term technology development activity. Such investments represent the critically important "seed corn" on which NASA's ability to carry out challenging and productive missions in the future will depend.

(11) NASA, through its pursuit of challenging and relevant activities, can provide an important stimulus to the next generation to pursue careers in science, technology, engineering, and mathematics.

(12) Commercial activities have substantially contributed to the strength of both the United States space program and the national economy, and the development of a healthy and robust United States commercial space sector should continue to be encouraged.

(13) It is in the national interest for the United States to have an export control policy that protects the national security while also enabling the United States aerospace industry to compete effectively in the global market place and the United States to undertake cooperative programs in science and human space flight in an effective and efficient manner.

SEC. 3. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of NASA.

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

(3) NOAA.—The term "NOAA" means the National Oceanic and Atmospheric Administration.

(4) OSTP.—The term "OSTP" means the Office of Science and Technology Policy.

TITLE I—AUTHORIZATION OF APPROPRIATIONS FOR FISCAL YEAR 2009

SEC. 101. FISCAL YEAR 2009.

There are authorized to be appropriated to NASA for fiscal year 2009 $20,210,000,000, as follows:

(1) For Science, $4,932,200,000, of which—

(A) $1,518,000,000 shall be for Earth Science, including $29,200,000 for suborbital activities and $2,500,000 for carrying out section 313 of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155);

(B) $1,483,000,000 shall be for Planetary Science, including $486,500,000 for the Mars Exploration program, $2,000,000 to continue planetary radar operations at the

Arecibo Observatory in support of the Near-Earth Object program, and $5,000,000 for radioisotope material production, to remain available until expended;

(C) $1,290,400,000 shall be for Astrophysics, including $27,300,000 for suborbital activities;

(D) $640,800,000 shall be for Heliophysics, including $50,000,000 for suborbital activities; and

(E) $75,000,000 shall be for Intra-Science Mission Directorate Technology Development, to be taken on a proportional basis from the funding subtotals under subparagraphs (A), (B), (C), and (D).

(2) For Aeronautics, $853,400,000, of which $406,900,000 shall be for system-level research, development, and demonstration activities related to—

(A) aviation safety;

(B) environmental impact mitigation, including noise, energy efficiency, and emissions;

(C) support of the Next Generation Air Transportation System initiative; and

(D) investigation of new vehicle concepts and flight regimes.

(3) For Exploration, $4,886,000,000, of which—

(A) $3,886,000,000 shall be for baseline exploration activities, of which $100,000,000 shall be for the activities under sections 902(a)(4) and 902(d), such funds to remain available until expended; no less than $1,101,400,000 shall be for the Orion Crew Exploration Vehicle; no less than $1,018,500,000 shall be for Ares I Crew Launch Vehicle; and $737,800,000 shall be for Advanced Capabilities, including $106,300,000 for the Lunar Precursor Robotic Program (of which $30,000,000 shall be for the lunar lander mission), $276,500,000 shall be for International Space Station-related research and development activities, and $355,000,000 shall be for research and development activities not related to the International Space Station; and

(B) $1,000,000,000 shall be available to be used to accelerate the initial operating capability of the Orion Crew Exploration Vehicle and the Ares I Crew Launch Vehicle, to remain available until expended.

(4) For Education, $128,300,000, of which $14,200,000 shall be for the Experimental Program to Stimulate Competitive Research and $32,000,000 shall be for the Space Grant program.

(5) For Space Operations, $6,074,700,000, of which—

(A) $150,000,000 shall be for an additional Space Shuttle flight to deliver the Alpha Magnetic Spectrometer to the International Space Station;

(B) $100,000,000 shall be to augment funding for research utilization of the International Space Station National Laboratory, to remain available until expended; and

(C) $50,000,000 shall be to augment funding for Space Operations Mission Directorate reserves and Shuttle Transition and Retirement activities.

(6) For Cross-Agency Support Programs, $3,299,900,000, of which $4,000,000 shall be for the program established under section 1107(a), to remain available until expended.

(7) For Inspector General, $35,500,000.

TITLE II—EARTH SCIENCE

SEC. 201. GOAL.

The goal for NASA's Earth Science program shall be to pursue a program of Earth observations, research, and applications activities to better understand the Earth, how it supports life, and how human activities affect its ability to do so in the future. In pursuit of this goal, NASA's Earth Science program shall ensure that securing practical benefits for society will be an important measure of its success in addition to securing new knowledge about the Earth system and climate change. In further pursuit of this goal, NASA shall, together with NOAA and other relevant agencies, provide United States leadership in developing and carrying out a cooperative international Earth observations-based research program.

SEC. 202. GOVERNANCE OF UNITED STATES EARTH OBSERVATIONS ACTIVITIES.

(a) STUDY.—The Director of OSTP shall consult with NASA, NOAA, and other relevant agencies with an interest in Earth observations and enter into an arrangement with the National Academies for a study to determine the most appropriate governance structure for United States Earth Observations programs in order to meet evolving United States Earth information needs and facilitate United States participation in global Earth Observations initiatives.

(b) REPORT.—The Director shall transmit the study to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of this Act, and shall provide OSTP's plan for implementing the study's recommendations not later than 24 months after the date of enactment of this Act.

SEC. 203. DECADAL SURVEY MISSIONS.

(a) IN GENERAL.—The missions recommended in the National Academies' decadal survey "Earth Science and Applications from Space" provide the basis for a compelling and relevant program of research and applications, and the Administrator should work to establish an international cooperative effort to pursue those missions.

(b) PLAN.—The Administrator shall consult with all agencies referenced in the survey as responsible for spacecraft missions and prepare a plan for submission to Congress not later than 270 days after the date of enactment of this Act that shall describe how NASA intends to implement the missions recommended for NASA to conduct as described in subsection (a), whether by means of dedicated NASA missions, multi-agency missions, international cooperative missions, data sharing, or commercial data buys, or by means of long-term technology development to determine whether specific missions would be executable at a reasonable cost and within a reasonable schedule.

SEC. 204. TRANSITIONING EXPERIMENTAL RESEARCH INTO OPERATIONAL SERVICES.

(a) SENSE OF CONGRESS.—It is the sense of the Congress that experimental NASA sensors and missions that have the potential to benefit society if transitioned into operational monitoring systems be transitioned into operational status whenever possible.

(b) INTERAGENCY PROCESS.—The Director of OSTP, in consultation with the Administrator, the Administrator of NOAA, and other relevant stakeholders, shall develop a process to transition, when appropriate, NASA Earth science and space weather missions or sensors into operational status. The process shall include coordination of annual agency budget requests as required to execute the transitions.

(c) RESPONSIBLE AGENCY OFFICIAL.—The Administrator and the Administrator of NOAA shall each designate an agency official who shall have the responsibility for and authority to lead NASA's and NOAA's transition activities and interagency coordination.

(d) PLAN.—For each mission or sensor that is determined to be appropriate for transition under subsection (b), NASA and NOAA shall transmit to Congress a joint plan for conducting the transition. The plan shall include the strategy, milestones, and budget required to execute the transition. The transition plan shall be transmitted to Congress not later than 60 days after the successful completion of the mission or sensor critical design review.

SEC. 205. LANDSAT THERMAL INFRARED DATA CONTINUITY.

(a) PLAN.—In view of the importance of Landsat thermal infrared data for both scientific research and water management applications, the Administrator shall prepare a plan for ensuring the continuity of Landsat thermal infrared data or its equivalent, including allocation of costs and responsibility for the collection and distribution of the data, and a budget plan. As part of the plan, the Administrator shall provide an option for developing a thermal infrared sensor at minimum cost to be flown on the Landsat Data Continuity Mission with minimum delay to the schedule of the Landsat Data Continuity Mission.

(b) DEADLINE.—The plan shall be provided to Congress not later than 60 days after the date of enactment of this Act.

SEC. 206. REAUTHORIZATION OF GLORY MISSION.

(a) REAUTHORIZATION.—Congress reauthorizes NASA to continue with development of the Glory Mission, which will examine how aerosols and solar energy affect the Earth's climate.

(b) BASELINE REPORT.—Pursuant to the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155), not later than 90 days after the date of enactment of this Act, the Administrator shall transmit a new baseline report consistent with section 103(b)(2) of such Act. The report shall include an analysis of the factors contributing to cost growth and the steps taken to address them.

SEC. 207. PLAN FOR DISPOSITION OF DEEP SPACE CLIMATE OBSERVATORY.

(a) PLAN.—NASA shall develop a plan for the Deep Space Climate Observatory (DSCOVR), including such options as using the parts of the spacecraft in the development and assembly of other science missions, transferring the spacecraft to another

agency, reconfiguring the spacecraft for another Earth science mission, establishing a public-private partnership for the mission, and entering into an international cooperative partnership to use the spacecraft for its primary or other purposes. The plan shall include an estimate of budgetary resources and schedules required to implement each of the options.

(b) CONSULTATION.—NASA shall consult, as necessary, with NOAA and other Federal agencies, industry, academic institutions, and international space agencies in developing the plan.

(c) REPORT.—The Administrator shall transmit the plan required under subsection (a) to the Committee on Science and Technology 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. 208. TORNADOES AND OTHER SEVERE STORMS.

The Administrator shall ensure that NASA gives high priority to those parts of its existing cooperative activities with NOAA that are related to the study of tornadoes and other severe storms, tornado-force winds, and other factors determined to influence the development of tornadoes and other severe storms, with the goal of improving the Nation's ability to predict tornados and other severe storms. Further, the Administrator shall examine whether there are additional cooperative activities with NOAA that should be undertaken in the area of tornado and severe storm research.

TITLE III—AERONAUTICS

SEC. 301. SENSE OF CONGRESS.

It is the sense of Congress that—

(1) aeronautics research continues to be an important core element of NASA's mission and should be supported;

(2) NASA aeronautics research should be guided by and consistent with the national policy to guide aeronautics research and development programs of the United States developed in accordance with section 101(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16611); and

(3) technologies developed by NASA as described in paragraph (2) would help to secure the leadership role of the United States in global aviation and greatly enhance competitiveness of the United States in aeronautics in the future.

SEC. 302. ENVIRONMENTALLY FRIENDLY AIRCRAFT RESEARCH AND DEVELOPMENT INITIATIVE.

The Administrator shall establish an initiative involving NASA, universities, industry, and other research organizations as appropriate, of research, development, and demonstration, in a relevant environment, of technologies to enable the following commercial aircraft performance characteristics:

(1) 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, without increasing energy consumption or nitrogen oxide emissions compared to aircraft in commercial service as of the date of enactment of this Act.

(2) Significant reductions in greenhouse gas emissions compared to aircraft in commercial services as of the date of enactment of this Act.

SEC. 303. RESEARCH ALIGNMENT.

In addition to pursuing the research and development initiative described in section 302, the Administrator shall, to the maximum extent practicable within available funding, align the fundamental aeronautics research program to address high priority technology challenges of the National Academies' Decadal Survey of Civil Aeronautics, and shall work to increase the degree of involvement of external organizations, and especially of universities, in the fundamental aeronautics research program.

SEC. 304. RESEARCH PROGRAM TO DETERMINE PERCEIVED IMPACT OF SONIC BOOMS.

(a) IN GENERAL.—The ability to fly commercial aircraft over land at supersonic speeds without adverse impacts on the environment or on local communities would open new markets and enable new transportation capabilities. In order to have the basis for establishing appropriate sonic boom standards for such flight operations, a research program is needed to assess the impact in a relevant environment of commercial supersonic flight operations.

(b) ESTABLISHMENT.—The Administrator shall establish a cooperative research program with industry, including the conduct of flight demonstrations in a relevant environment, to collect data on the perceived impact of sonic booms. The data could enable the promulgation of appropriate standards for overland commercial supersonic flight operations.

(c) COORDINATION.—The Administrator shall ensure that sonic boom research is coordinated as appropriate with the Administrator of the Federal Aviation Administration, and as appropriate make use of the expertise of the Partnership for Air Transportation Noise and Emissions Reduction Center of Excellence sponsored by NASA and the Federal Aviation Administration.

SEC. 305. EXTERNAL REVIEW OF NASA'S AVIATION SAFETY-RELATED RESEARCH PROGRAMS.

(a) REVIEW.—The Administrator shall enter into an arrangement with the National Research Council for an independent review of NASA's aviation safety-related research programs. The review shall assess whether—

(1) the programs have well-defined, prioritized, and appropriate research objectives;

(2) the programs are properly coordinated with the safety research programs of the Federal Aviation Administration and other relevant Federal agencies;

(3) the programs have allocated appropriate resources to each of the research objectives; and

(4) suitable mechanisms exist for transitioning the research results from the programs into operational technologies and procedures and certification activities in a timely manner.

(b) REPORT.—Not later than 18 months after the date of enactment of this Act, the Administrator shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the review required in subsection (a).

SEC. 306. AVIATION WEATHER RESEARCH PLAN.

The Administrator and the Administrator of NOAA shall develop a collaborative research plan on convective weather events. The goal of the research is to significantly improve the reliability of 2-hour to 6-hour aviation weather forecasts. Within 270 days after the date of enactment of this Act, the Administrator and the Administrator of NOAA shall submit this plan to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives.

SEC. 307. FUNDING FOR RESEARCH AND DEVELOPMENT ACTIVITIES IN SUPPORT OF OTHER MISSION DIRECTORATES.

Research and development activities performed by the Aeronautics Research Mission Directorate with the primary objective of assisting in the development of a flight project in another Mission Directorate shall be funded by the Mission Directorate seeking assistance.

SEC. 308. ENHANCEMENT OF GRANT PROGRAM ON ESTABLISHMENT OF UNIVERSITY-BASED CENTERS FOR RESEARCH ON AVIATION TRAINING.

Section 427(a) of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155) is amended by striking "may" and inserting "shall".

TITLE IV—EXPLORATION INITIATIVE

SEC. 401. SENSE OF CONGRESS.

It is the sense of Congress that the President of the United States should invite America's friends and allies to participate in a long-term international initiative under the leadership of the United States to expand human and robotic presence into the solar system, including the exploration and utilization of the Moon, near Earth asteroids, Lagrangian points, and eventually Mars and its moons, among other exploration and utilization goals. When appropriate, the United States should lead confidence building measures that advance the long-term initiative for international cooperation.

SEC. 402. REAFFIRMATION OF EXPLORATION POLICY.

Congress hereby affirms its support for—

(1) the broad goals of the space exploration policy of the United States, including the eventual return to and exploration of the Moon and other destinations in the solar system and the important national imperative of independent access to space;

(2) the development of technologies and operational approaches that will enable a sustainable long-term program of human and robotic exploration of the solar system;

(3) activity related to Mars exploration, particularly for the development and testing of technologies and mission concepts needed for eventual consideration of optional mission architectures, pursuant to future authority to proceed with the consideration and implementation of such architectures; and

(4) international participation and cooperation, as well as commercial involvement in space exploration activities.

SEC. 403. STEPPING STONE APPROACH TO EXPLORATION.

In order to maximize the cost-effectiveness of the long-term exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging international partners, to ensure that activities in its lunar exploration program shall be designed and implemented in a manner that gives strong consideration to how those activities might also help meet the requirements of future exploration and utilization activities beyond the Moon. The timetable of the lunar phase of the long-term international exploration initiative shall be determined by the availability of funding. However, once an exploration-related project enters its development phase, the Administrator shall seek, to the maximum extent practicable, to complete that project without undue delays.

SEC. 404. LUNAR OUTPOST.

(a) ESTABLISHMENT.—As NASA works toward the establishment of a lunar outpost, NASA shall make no plans that would require a lunar outpost to be occupied to maintain its viability. Any such outpost shall be operable as a human-tended facility capable of remote or autonomous operation for extended periods.

(b) DESIGNATION.—The United States portion of the first human-tended outpost established on the surface of the Moon shall be designated the "Neil A. Armstrong Lunar Outpost".

(c) SENSE OF CONGRESS.—It is the sense of Congress that NASA should make use of commercial services to the maximum extent practicable in support of its lunar outpost activities.

SEC. 405. EXPLORATION TECHNOLOGY DEVELOPMENT.

(a) IN GENERAL.—A robust program of long-term exploration-related technology research and development will be essential for the success and sustainability of any enduring initiative of human and robotic exploration of the solar system.

(b) ESTABLISHMENT.—The Administrator shall carry out a program of long-term exploration-related technology research and development, including such things as in-space propulsion, power systems, life support, and advanced avionics, that is not tied to specific flight projects. The program shall have the funding goal of ensuring that the technology research and development can be completed in a timely manner in order to support the safe, successful, and sustainable exploration of the solar system. In addition, in order to ensure that the broadest range of innovative concepts and technologies are captured, the long-term technology program shall have the goal of having a significant portion of its funding available for external grants and contracts with universities, research institutions, and industry.

SEC. 406. EXPLORATION RISK MITIGATION PLAN.

(a) PLAN.—The Administrator shall prepare a plan that identifies and prioritizes the human and technical risks that will need to be addressed in carrying out human exploration beyond low Earth orbit and the research and development activities required to address those risks. The plan shall address the role of the International Space Station in exploration risk mitigation and

include a detailed description of the specific steps being taken to utilize the International Space Station for that purpose.

(b) REPORT.—The Administrator shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate the plan described in subsection (a) not later than one year after the date of enactment of this Act.

SEC. 407. EXPLORATION CREW RESCUE.

In order to maximize the ability to rescue astronauts whose space vehicles have become disabled, the Administrator shall enter into discussions with the appropriate representatives of spacefaring nations who have or plan to have crew transportation systems capable of orbital flight or flight beyond low Earth orbit for the purpose of agreeing on a common docking system standard.

SEC. 408. PARTICIPATORY EXPLORATION.

(a) IN GENERAL.—The Administrator shall develop a technology plan to enable dissemination of information to the public to allow the public to experience missions to the Moon, Mars, or other bodies within our solar system by leveraging advanced exploration technologies. The plan shall identify opportunities to leverage technologies in NASA's Constellation systems that deliver a rich, multimedia experience to the public, and that facilitate participation by the public, the private sector, nongovernmental organizations, and international partners. Technologies for collecting high-definition video, 3-dimensional images, and scientific data, along with the means to rapidly deliver this content through extended high bandwidth communications networks, shall be considered as part of this plan. It shall include a review of high bandwidth radio and laser communications, high-definition video, stereo imagery, 3-dimensional scene cameras, and Internet routers in space, from orbit, and on the lunar surface. The plan shall also consider secondary cargo capability for technology validation and science mission opportunities. In addition, the plan shall identify opportunities to develop and demonstrate these technologies on the International Space Station and robotic missions to the Moon, Mars, and other solar system bodies. As part of the technology plan, the Administrator shall examine the feasibility of having NASA enter into contracts and other agreements with appropriate public, private sector, and international partners to broadcast electronically, including via the Internet, images and multimedia records delivered from its missions in space to the public, and shall identify issues associated with such contracts and other agreements. In any such contracts and other agreements, NASA shall adhere to a transparent bidding process to award such contracts and other agreements, pursuant to United States law. As part of this plan, the Administrator shall include estimates of associated costs.

(b) REPORT.—Not later than 270 days after the date of enactment of this Act, the Administrator shall submit the plan to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

SEC. 409. SCIENCE AND EXPLORATION.

It is the sense of Congress that NASA's scientific and human exploration activities are synergistic; science enables exploration and human exploration enables science. The Congress encourages

the Administrator to coordinate, where practical, NASA's science and exploration activities with the goal of maximizing the success of human exploration initiatives and furthering our understanding of the Universe that we explore.

SEC. 410. CONGRESSIONAL BUDGET OFFICE REPORT UPDATE.

Not later than 6 months after the date of enactment of this Act, the Congressional Budget Office shall update its report from 2004 on the budgetary analysis of NASA's Vision for the Nation's Space Exploration Program, including new estimates for Project Constellation, NASA's new generation of spacecraft designed for human space flight that will replace the Space Shuttle program.

TITLE V—SPACE SCIENCE

SEC. 501. TECHNOLOGY DEVELOPMENT.

The Administrator shall establish an intra-Directorate long-term technology development program for space and Earth science within the Science Mission Directorate for the development of new technology. The program shall be independent of the flight projects under development. NASA shall have a goal of funding the intra-Directorate technology development program at a level of 5 percent of the total Science Mission Directorate annual budget. The program shall be structured to include competitively awarded grants and contracts.

SEC. 502. PROVISION FOR FUTURE SERVICING OF OBSERVATORY-CLASS SCIENTIFIC SPACECRAFT.

The Administrator shall take all necessary steps to ensure that provision is made in the design and construction of all future observatory-class scientific spacecraft intended to be deployed in Earth orbit or at a Lagrangian point in space for robotic or human servicing and repair to the extent practicable and appropriate.

SEC. 503. MARS EXPLORATION.

Congress reaffirms its support for a systematic, integrated program of exploration of the Martian surface to examine the planet whose surface is most like Earth's, to search for evidence of past or present life, and to examine Mars for future habitability and as a long-term goal for future human exploration. To the extent affordable and practical, the program should pursue the goal of launches at every Mars launch opportunity, leading to an eventual robotic sample return.

SEC. 504. IMPORTANCE OF A BALANCED SCIENCE PROGRAM.

It is the sense of Congress that a balanced and adequately funded set of activities, consisting of NASA's research and analysis grants programs, technology development, small-, medium-, and large-sized space science missions, and suborbital research activities, contributes to a robust and productive science program and serves as a catalyst for innovation.

SEC. 505. SUBORBITAL RESEARCH ACTIVITIES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that suborbital flight activities, including the use of sounding rockets, aircraft, and high-altitude balloons, and suborbital reusable launch vehicles, offer valuable opportunities to advance science, train the

next generation of scientists and engineers, and provide opportunities for participants in the programs to acquire skills in systems engineering and systems integration that are critical to maintaining the Nation's leadership in space programs. The Congress believes that it is in the national interest to expand the size of NASA's suborbital research program. It is further the sense of Congress that funding for suborbital research activities should be considered part of the contribution of NASA to United States competitive and educational enhancement and should represent increased funding as contemplated in section 2001 of the America COMPETES Act (42 U.S.C. 16611(a)).

(b) REVIEW OF SUBORBITAL MISSION CAPABILITIES.—

(1) IN GENERAL.—Not later than 120 days after the date of enactment of this Act, the Administrator shall enter into an arrangement with the National Academies to conduct a review of the suborbital mission capabilities of NASA.

(2) MATTERS REVIEWED.—The review required by paragraph (1) shall include a review of the following:

(A) Existing programs that make use of suborbital flights.

(B) The status, capability, and availability of suborbital platforms, and the infrastructure and workforce necessary to support them.

(C) Existing or planned launch facilities for suborbital missions.

(D) Opportunities for scientific research, training, and educational collaboration in the conduct of suborbital missions by NASA, especially as they relate to the findings and recommendations of the National Academies decadal surveys and report on "Building a Better NASA Workforce: Meeting the Workforce Needs for the National Vision for Space Exploration".

(3) REPORT.—

(A) IN GENERAL.—Not later than 15 months after the date of enactment of this Act, the Administrator shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the review required by this subsection.

(B) CONTENTS.—The report required by this paragraph shall include a summary of the review; the findings of the Administrator with respect to such review; recommendations regarding the growth of suborbital launch programs conducted by NASA; and the steps necessary to ensure such programs are conducted using domestic launch facilities to the maximum extent practicable, including any rationale and justification for using non-domestic facilities for such missions.

SEC. 506. RESTORATION OF RADIOISOTOPE THERMOELECTRIC GENERATOR MATERIAL PRODUCTION.

(a) PLAN.—The Director of OSTP shall develop a plan for restarting and sustaining the domestic production of radioisotope thermoelectric generator material for deep space and other space science missions.

(b) REPORT.—The plan developed under subsection (a) shall be transmitted to Congress not later than 270 days after the date of enactment of this Act.

SEC. 507. ASSESSMENT OF IMPEDIMENTS TO INTERAGENCY COOPERATION ON SPACE AND EARTH SCIENCE MISSIONS.

(a) ASSESSMENTS.—The Administrator, in consultation with other agencies with space science programs, shall enter into an arrangement with the National Academies to assess impediments, including cost growth, to the successful conduct of interagency cooperation on space science missions, to provide lessons learned and best practices, and to recommend steps to help facilitate successful interagency collaborations on space science missions. As part of the same arrangement with the National Academies, the Administrator, in consultation with NOAA and other agencies with civil Earth observation systems, shall have the National Academies assess impediments, including cost growth, to the successful conduct of interagency cooperation on Earth science missions, to provide lessons learned and best practices, and to recommend steps to help facilitate successful interagency collaborations on Earth science missions.

(b) REPORT.—The report of the assessments carried out under subsection (a) shall be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 15 months after the date of enactment of this Act.

SEC. 508. ASSESSMENT OF COST GROWTH.

(a) STUDY.—The Administrator shall enter into an arrangement for an independent external assessment to identify the primary causes of cost growth in the large-, medium-, and small-sized space and Earth science spacecraft mission classes, and make recommendations as to what changes, if any, should be made to contain costs and ensure frequent mission opportunities in NASA's science spacecraft mission programs.

(b) REPORT.—The report of the assessment conducted under subsection (a) shall be submitted to Congress not later than 15 months after the date of enactment of this Act.

SEC. 509. OUTER PLANETS EXPLORATION.

It is the sense of Congress that the outer solar system planets and their satellites can offer important knowledge about the formation and evolution of the solar system, the nature and diversity of these solar system bodies, and the potential for conditions conducive to life beyond Earth. NASA should move forward with plans for an Outer Planets flagship mission to the Europa-Jupiter system or the Titan-Saturn system as soon as practicable within a balanced Planetary Science program.

TITLE VI—SPACE OPERATIONS

Subtitle A—International Space Station

SEC. 601. PLAN TO SUPPORT OPERATION AND UTILIZATION OF THE ISS BEYOND FISCAL YEAR 2015.

(a) IN GENERAL.—The Administrator shall take all necessary steps to ensure that the International Space Station remains a

viable and productive facility capable of potential United States utilization through at least 2020 and shall take no steps that would preclude its continued operation and utilization by the United States after 2015.

(b) PLAN TO SUPPORT OPERATIONS AND UTILIZATION OF THE INTERNATIONAL SPACE STATION BEYOND FISCAL YEAR 2015.—

(1) IN GENERAL.—Not later than 9 months after the date of enactment of this Act, the Administrator shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a plan to support the operations and utilization of the International Space Station beyond fiscal year 2015 for a period of not less than 5 years. The plan shall be an update and expansion of the operation plan of the International Space Station National Laboratory submitted to Congress in May 2007 under section 507 of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16767).

(2) CONTENT.—

(A) REQUIREMENTS TO SUPPORT OPERATION AND UTILIZATION OF THE ISS BEYOND FISCAL YEAR 2015.—As part of the plan required in paragraph (1), the Administrator shall provide each of the following:

(i) A list of critical hardware necessary to support International Space Station operations through the year 2020.

(ii) Specific known or anticipated maintenance actions that would need to be performed to support International Space Station operations and research through the year 2020.

(iii) Annual upmass and downmass requirements, including potential vehicles that will deliver such upmass and downmass, to support the International Space Station after the retirement of the Space Shuttle and through the year 2020.

(B) ISS NATIONAL LABORATORY RESEARCH MANAGEMENT PLAN.—As part of the plan required in paragraph (1), the Administrator shall develop a Research Management Plan for the International Space Station. Such Plan shall include a process for selecting and prioritizing research activities (including fundamental, applied, commercial, and other research) for flight on the International Space Station. Such Plan shall be used to prioritize resources such as crew time, racks and equipment, and United States access to international research facilities and equipment. Such Plan shall also identify the organization to be responsible for managing United States research on the International Space Station, including a description of the relationship of the management institution with NASA (e.g., internal NASA office, contract, cooperative agreement, or grant), the estimated length of time for the arrangement, and the budget required to support the management institution. Such Plan shall be developed in consultation with other Federal agencies, academia, industry, and other relevant stakeholders. The Administrator may request the support of the National Academy of Sciences or other appropriate

independent entity, including an external consultant, in developing the Plan.

(C) ESTABLISHMENT OF PROCESS FOR ACCESS TO NATIONAL LABORATORY.—As part of the plan required in paragraph (1), the Administrator shall—

(i) establish a process by which to support International Space Station National Laboratory users in identifying their requirements for transportation of research supplies to and from the International Space Station, and for communicating those requirements to NASA and International Space Station transportation services providers; and

(ii) develop an estimate of the transportation requirements needed to support users of the International Space Station National Laboratory and develop a plan for satisfying those requirements by dedicating a portion of volume on NASA supply missions to the International Space Station.

(D) ASSESSMENT OF EQUIPMENT TO SUPPORT RESEARCH.—As part of the plan required in paragraph (1), the Administrator shall—

(i) provide a list of critical hardware that is anticipated to be necessary to support nonexploration-related and exploration-related research through the year 2020;

(ii) identify existing research equipment and racks and support equipment that are manifested for flight; and

(iii) provide a detailed description of the status of research equipment and facilities that were completed or in development prior to being cancelled, and provide the budget and milestones for completing and preparing the equipment for flight on the International Space Station.

(E) BUDGET PLAN.—As part of the plan required in paragraph (1), the Administrator shall provide a budget plan that reflects the anticipated use of such activities and the projected amounts to be required for fiscal years 2010 through 2020 to accomplish the objectives of the activities described in subparagraphs (A) through (D).

SEC. 602. INTERNATIONAL SPACE STATION NATIONAL LABORATORY ADVISORY COMMITTEE.

(a) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this Act, the Administrator shall establish under the Federal Advisory Committee Act a committee to be known as the "International Space Station National Laboratory Advisory Committee" (hereafter in this section referred to as the "Committee").

(b) MEMBERSHIP.—

(1) COMPOSITION.—The Committee shall be composed of individuals representing organizations who have formal agreements with NASA to utilize the United States portion of the International Space Station, including allocations within partner elements.

(2) CHAIR.—The Administrator shall appoint a chair from among the members of the Committee, who shall serve for a 2-year term.

(c) DUTIES OF THE COMMITTEE.—

(1) IN GENERAL.—The Committee shall monitor, assess, and make recommendations regarding effective utilization of the International Space Station as a national laboratory and platform for research.

(2) ANNUAL REPORT.—The Committee shall submit to the Administrator, on an annual basis or more frequently as considered necessary by a majority of the members of the Committee, a report containing the assessments and recommendations required by paragraph (1).

(d) DURATION.—The Committee shall exist for the life of the International Space Station.

SEC. 603. CONTINGENCY PLAN FOR CARGO RESUPPLY.

(a) IN GENERAL.—The International Space Station represents a significant investment of national resources, and it is a facility that embodies a cooperative international approach to the exploration and utilization of space. As such, it is important that its continued viability and productivity be ensured, to the maximum extent possible, after the Space Shuttle is retired.

(b) CONTINGENCY PLAN.—The Administrator shall develop a contingency plan and arrangements, including use of International Space Station international partner cargo resupply capabilities, to ensure the continued viability and productivity of the International Space Station in the event that United States commercial cargo resupply services are not available during any extended period after the date that the Space Shuttle is retired. The plan shall be delivered to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than one year after the date of enactment of this Act.

SEC. 604. SENSE OF CONGRESS ON USE OF SPACE LIFE SCIENCES LABORATORY AT KENNEDY SPACE CENTER.

It is the sense of Congress that the Space Life Sciences Laboratory at Kennedy Space Center represents a key investment and asset in the International Space Station National Laboratory capability. The laboratory is specifically designed to provide pre-flight, in-flight, and post-flight support services for International Space Station end-users, and should be utilized in this manner when appropriate.

Subtitle B—Space Shuttle

SEC. 611. SPACE SHUTTLE FLIGHT REQUIREMENTS.

(a) REPORT ON U.S. HUMAN SPACEFLIGHT CAPABILITIES.—Section 501(c) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16761(c)) is amended by striking the matter before paragraph (1) and inserting the following: "Not later than 90 days after the date of enactment of the National Aeronautics and Space Administration Authorization Act of 2008, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives a report

on the lack of a United States human space flight system to replace the Space Shuttle upon its planned retirement, currently scheduled for 2010, and the ability of the United States to uphold the policy described in subsection (a), including a description of—".

(b) BASELINE MANIFEST.—In addition to the Space Shuttle flights listed as part of the baseline flight manifest as of January 1, 2008, the Utilization flights ULF–4 and ULF–5 shall be considered part of the Space Shuttle baseline flight manifest and shall be flown prior to the retirement of the Space Shuttle, currently scheduled for 2010.

(c) ADDITIONAL FLIGHT TO DELIVER THE ALPHA MAGNETIC SPECTROMETER AND OTHER SCIENTIFIC EQUIPMENT AND PAYLOADS TO THE INTERNATIONAL SPACE STATION.—

(1) IN GENERAL.—In addition to the flying of the baseline manifest as described in subsection (b), the Administrator shall take all necessary steps to fly one additional Space Shuttle flight to deliver the Alpha Magnetic Spectrometer and other scientific equipment and payloads to the International Space Station prior to the retirement of the Space Shuttle. The purpose of the mission required to be planned under this subsection shall be to ensure the active use of the United States portion of the International Space Station as a National Laboratory by the delivery of the Alpha Magnetic Spectrometer, and to the extent practicable, the delivery of flight-ready research experiments prepared under the Memoranda of Understanding between NASA and other entities to facilitate the utilization of the International Space Station National Laboratory, as well as other fundamental and applied life sciences and other microgravity research experiments to the International Space Station as soon as the assembly of the International Space Station is completed.

(2) FLIGHT SCHEDULE.—If the Administrator, within 12 months before the scheduled date of the additional Space Shuttle flight authorized by paragraph (1), determines that—

(A) NASA will be unable to meet that launch date before the end of calendar year 2010, unless the President decides to extend Shuttle operations beyond 2010, or

(B) implementation of the additional flight requirement would, in and of itself, result in—

(i) significant increased costs to NASA over the cost estimate of the additional flight as determined by the Independent Program Assessment Office, or

(ii) unacceptable safety risks associated with making the flight before termination of the Space Shuttle program,

the Administrator shall notify the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology of the determination, and provide a detailed explanation of the basis for that determination. After the notification is provided to the Committees, the Administrator shall remove the flight from the Space Shuttle schedule unless the Congress by law reauthorizes the flight or the President certifies that it is in the national interest to fly the mission.

(d) TERMINATION OR SUSPENSION OF ACTIVITIES THAT WOULD PRECLUDE CONTINUED FLIGHT OF SPACE SHUTTLE PRIOR TO REVIEW BY THE INCOMING 2009 PRESIDENTIAL ADMINISTRATION.—

(1) IN GENERAL.—The Administrator shall terminate or suspend any activity of the Agency that, if continued between the date of enactment of this Act and April 30, 2009, would preclude the continued safe and effective flight of the Space Shuttle after fiscal year 2010 if the President inaugurated on January 20, 2009, were to make a determination to delay the Space Shuttle's scheduled retirement.

(2) REPORT ON IMPACT OF COMPLIANCE.—Within 90 days after the date of enactment of this Act, the Administrator shall provide a report to the Congress describing the expected budgetary and programmatic impacts from compliance with paragraph (1). The report shall include—

(A) a summary of the actions taken to ensure the option to continue space shuttle flights beyond the end of fiscal year 2010 is not precluded before April 30, 2009;

(B) an estimate of additional costs incurred by each specific action identified in the summary provided under subparagraph (A);

(C) a description of the proposed plan for allocating those costs among anticipated fiscal year 2009 appropriations or existing budget authority;

(D) a description of any programmatic impacts within the Space Operations Mission Directorate that would result from reallocations of funds to meet the requirements of paragraph (1);

(E) a description of any additional authority needed to enable compliance with the requirements of paragraph (1); and

(F) a description of any potential disruption to the timely progress of development milestones in the preparation of infrastructure or work-force requirements for shuttle follow-on launch systems.

(e) REPORT ON IMPACTS OF SPACE SHUTTLE EXTENSION.—Within 120 days after the date of enactment of this Act, the Administrator shall provide a report to the Congress outlining options, impacts, and associated costs of ensuring the safe and effective operation of the Space Shuttle at the minimum rate necessary to support International Space Station operations and resupply, including for both a near-term, 1-to-2 year extension of Space Shuttle operations and for a longer term, 3-to-6 year extension. The report shall include an assessment of—

(1) annual fixed and marginal costs, including identification and cost impacts of options for cost-sharing with the Constellation program and including the impact of those cost-sharing options on the Constellation program;

(2) the safety of continuing the use of the Space Shuttle beyond 2010, including a probability risk assessment of a catastrophic accident before completion of the extended Space Shuttle flight program, the underlying assumptions used in calculating that probability, and comparing the associated safety risks with those of other existing and planned human-rated launch systems, including the Soyuz and Constellation vehicles;

(3) a description of the activities and an estimate of the associated costs that would be needed to maintain or improve Space Shuttle safety throughout the periods described in the first sentence of this subsection were the President inaugurated

on January 20, 2009, to extend Space Shuttle operations beyond 2010, the currently anticipated date of Space Shuttle retirement;

(4) the impacts on facilities, workforce, and resources for the Constellation program and on the cost and schedule of that program;

(5) assumptions regarding workforce, skill mix, launch and processing infrastructure, training, ground support, orbiter maintenance and vehicle utilization, and other relevant factors, as appropriate, used in deriving the cost and schedule estimates for the options studied;

(6) the extent to which program management, processes, and workforce and contractor assignments can be integrated and streamlined for maximum efficiency to support continued shuttle flights while transitioning to the Constellation program, including identification of associated cost impacts on both the Space Shuttle and the Constellation program;

(7) the impact of a Space Shuttle flight program extension on the United States' dependence on Russia for International Space Station crew rescue services; and

(8) the potential for enhancements of International Space Station research, logistics, and maintenance capabilities resulting from extended Shuttle flight operations and the costs associated with implementing any such enhancements.

SEC. 612. UNITED STATES COMMERCIAL CARGO CAPABILITY STATUS.

The Administrator shall determine the degree to which an increase in the amounts authorized to be appropriated under section 101(3) for the Commercial Orbital Transportation Services project to be used by Phase One team members of such project in fiscal year 2009 would reasonably be expected to accelerate development of Capabilities A, B, and C of such project to an effective operational capability as close to 2010 as possible.

SEC. 613. SPACE SHUTTLE TRANSITION.

(a) DISPOSITION OF SHUTTLE-RELATED ASSETS.—

(1) IN GENERAL.—Not later than 90 days after the date of enactment of this Act, the Administrator shall submit to Congress a plan describing the process for the disposition of the remaining Space Shuttle Orbiters and other Space Shuttle program-related hardware after the retirement of the Space Shuttle fleet.

(2) PLAN REQUIREMENTS.—The plan submitted under paragraph (1) shall include a description of a process by which educational institutions, science museums, and other appropriate organizations may acquire, through loan or disposal by the Federal Government, Space Shuttle program hardware.

(3) PROHIBITION ON DISPOSITION BEFORE COMPLETION OF PLAN.—The Administrator shall not dispose of any Space Shuttle program hardware before the plan required by paragraph (1) is submitted to Congress.

(b) SPACE SHUTTLE TRANSITION LIAISON OFFICE.—

(1) ESTABLISHMENT.—The Administrator shall develop a plan and establish a Space Shuttle Transition Liaison Office within the Office of Human Capital Management of NASA to assist local communities affected by the termination of the Space Shuttle program in mitigating the negative impacts on such communities caused by such termination. The plan shall

define the size of the affected local community that would receive assistance described in paragraph (2).

(2) MANNER OF ASSISTANCE.—In providing assistance under paragraph (1), the office established under such paragraph shall—

(A) offer nonfinancial, technical assistance to communities described in such paragraph to assist in the mitigation described in such paragraph; and

(B) serve as a clearinghouse to assist such communities in identifying services available from other Federal, State, and local agencies to assist in such mitigation.

(3) TERMINATION OF OFFICE.—The office established under paragraph (1) shall terminate 2 years after the completion of the last Space Shuttle flight.

(4) SUBMISSION.—Not later than 180 days after the date of enactment of this Act, NASA shall provide a copy of the plan required by paragraph (1) to the Congress.

SEC. 614. AEROSPACE SKILLS RETENTION AND INVESTMENT REUTILIZATION REPORT.

(a) IN GENERAL.—The Administrator shall, in consultation with other Federal agencies, as appropriate—

(1) carry out an analysis of the facilities and human capital resources that will become available as a result of the retirement of the Space Shuttle program; and

(2) identify on-going or future Federal programs and projects that could use such facilities and resources.

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

(1) on the analysis required by paragraph (1) of subsection (a), including the findings of the Administrator with respect to such analysis; and

(2) describing the programs and projects identified under paragraph (2) of such subsection.

SEC. 615. TEMPORARY CONTINUATION OF COVERAGE OF HEALTH BENEFITS.

(a) IN GENERAL.—Section 8905a(d) of title 5, United States Code, is amended by adding at the end the following new paragraph:

"(6)(A) If the basis for continued coverage under this section is, as a result of the termination of the Space Shuttle Program, an involuntary separation from a position due to a reduction-in-force or declination of a directed reassignment or transfer of function, or a voluntary separation from a surplus position in the National Aeronautics and Space Administration—

"(i) the individual shall be liable for not more than the employee contributions referred to in paragraph (1)(A)(i); and

"(ii) the National Aeronautics and Space Administration shall pay the remaining portion of the amount required under paragraph (1)(A).

"(B) This paragraph shall only apply with respect to individuals whose continued coverage is based on a separation occurring on or after the date of enactment of this paragraph and before December 31, 2010.

"(C) For purposes of this paragraph, 'surplus position' means a position which is—

"(i) identified in pre-reduction-in-force planning as no longer required, and which is expected to be eliminated under formal reduction-in-force procedures as a result of the termination of the Space Shuttle Program; or

"(ii) encumbered by an employee who has received official certification from the National Aeronautics and Space Administration consistent with the Administration's career transition assistance program regulations that the position is being abolished as a result of the termination of the Space Shuttle Program.".

(b) CONFORMING AMENDMENT.—Paragraph (1)(A) of such subsection (d) is amended by striking "(4) and (5)" and inserting "(4), (5), and (6)".

SEC. 616. ACCOUNTING REPORT.

Within 180 days after the date of enactment of this Act, the Administrator shall provide to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report that will summarize any actions taken or planned to be taken during fiscal years 2008 and 2009 to begin reductions in expenditures and activities related to the Space Shuttle program. The report shall include a summary of any actual or anticipated cost savings to the Space Shuttle program relative to the FY 2008 and FY 2009 Space Shuttle program budgets and runout projections as a result of such actions, as well as a summary of any actual or anticipated liens or budgetary challenges to the Space Shuttle program during fiscal years 2008 and 2009.

Subtitle C—Launch Services

SEC. 621. LAUNCH SERVICES STRATEGY.

(a) IN GENERAL.—In preparation for the award of contracts to follow up on the current NASA Launch Services (NLS) contracts, the Administrator shall develop a strategy for providing domestic commercial launch services in support of NASA's small and medium-sized Science, Space Operations, and Exploration missions, consistent with current law and policy.

(b) REPORT.—The Administrator shall transmit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the strategy developed under subsection (a) not later than 90 days after the date of enactment of this Act. The report shall provide, at a minimum—

(1) the results of the Request for Information on small to medium-sized launch services released on April 22, 2008;

(2) an analysis of possible alternatives to maintain small and medium-sized lift capabilities after June 30, 2010, including the use of the Department of Defense's Evolved Expendable Launch Vehicle (EELV);

(3) the recommended alternatives, and associated 5-year budget plans starting in October 2010 that would enable their implementation; and

(4) a contingency plan in the event the recommended alternatives described in paragraph (3) are not available when needed.

TITLE VII—EDUCATION

SEC. 701. RESPONSE TO REVIEW.

(a) PLAN.—The Administrator shall prepare a plan identifying actions taken or planned in response to the recommendations of the National Academies report, "NASA's Elementary and Secondary Education Program: Review and Critique". For those actions that have not been implemented, the plan shall include a schedule and budget required to support the actions.

(b) REPORT.—The plan prepared under subsection (a) shall be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 1 year after the date of enactment of this Act.

SEC. 702. EXTERNAL REVIEW OF EXPLORER SCHOOLS PROGRAM.

(a) REVIEW.—The Administrator shall make arrangements for an independent external review of the Explorer Schools program to evaluate its goals, status, plans, and accomplishments.

(b) REPORT.—The report of the independent external review shall be transmitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 1 year after the date of enactment of this Act.

SEC. 703. SENSE OF CONGRESS ON EARTHKAM AND ROBOTICS COMPETITIONS.

It is the sense of Congress that NASA's educational programs are important sources of inspiration and hands-on learning for the next generation of engineers and scientists and should be supported. In that regard, programs such as EarthKAM, which brings NASA directly into American classrooms by enabling students to talk directly with astronauts aboard the International Space Station and to take photographs of Earth from space, and NASA involvement in robotics competitions for students of all levels, are particularly worthy undertakings and NASA should support them and look for additional opportunities to engage students through NASA's space and aeronautics activities.

SEC. 704. ENHANCEMENT OF EDUCATIONAL ROLE OF NASA.

(a) SENSE OF CONGRESS.—It is the sense of Congress that the International Space Station offers a unique opportunity for Federal agencies to engage students in science, technology, engineering, and mathematics education. Congress encourages NASA to include other Federal agencies in its planning efforts to use the International Space Station National Laboratory for science, technology, engineering, and mathematics educational activities.

(b) EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH.—In order to ensure that research expertise and talent throughout the Nation is developed and engaged in NASA research and education activities, NASA shall, as part of its annual budget submission, detail additional steps that can be taken to further

integrate the participating EPSCoR States in both existing and new or emerging NASA research programs and center activities.

(c) NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM.—NASA shall continue its emphasis on the importance of education to expand opportunities for Americans to understand and participate in NASA's aeronautics and space projects by supporting and enhancing science and engineering education, research, and public outreach efforts.

TITLE VIII—NEAR-EARTH OBJECTS

SEC. 801. REAFFIRMATION OF POLICY.

(a) REAFFIRMATION OF POLICY ON SURVEYING NEAR-EARTH ASTEROIDS AND COMETS.—Congress reaffirms the policy set forth in section 102(g) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451(g)) (relating to surveying near-Earth asteroids and comets).

(b) SENSE OF CONGRESS ON BENEFITS OF NEAR-EARTH OBJECT PROGRAM ACTIVITIES.—It is the sense of Congress that the near-Earth object program activities of NASA will provide benefits to the scientific and exploration activities of NASA.

SEC. 802. FINDINGS.

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) 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.

(3) Asteroid and comet collisions rank as one of the most costly natural disasters that can occur.

(4) The time needed to eliminate or mitigate the threat of a collision of a potentially hazardous near-Earth object with Earth is measured in decades.

(5) Unlike earthquakes and hurricanes, asteroids and comets can provide adequate collision information, enabling the United States to include both asteroid-collision and comet-collision disaster recovery and disaster avoidance in its public-safety structure.

(6) Basic information is needed for technical and policy decisionmaking for the United States to create a comprehensive program in order to be ready to eliminate and mitigate the serious and credible threats to humankind posed by potentially hazardous near-Earth asteroids and comets.

(7) As a first step to eliminate and to mitigate the risk of such collisions, situation and decision analysis processes, as well as procedures and system resources, must be in place well before a collision threat becomes known.

SEC. 803. REQUESTS FOR INFORMATION.

The Administrator shall issue requests for information on—

(1) a low-cost space mission with the purpose of rendezvousing with, attaching a tracking device, and characterizing the Apophis asteroid; and

(2) a medium-sized space mission with the purpose of detecting near-Earth objects equal to or greater than 140 meters in diameter.

SEC. 804. ESTABLISHMENT OF POLICY WITH RESPECT TO THREATS POSED BY NEAR-EARTH OBJECTS.

Within 2 years after the date of enactment of this Act, the Director of the OSTP shall—

(1) develop a policy for notifying Federal agencies and relevant emergency response institutions of an impending near-Earth object threat, if near-term public safety is at risk; and

(2) recommend a Federal agency or agencies to be responsible for—

(A) protecting the United States from a near-Earth object that is expected to collide with Earth; and

(B) implementing a deflection campaign, in consultation with international bodies, should one be necessary.

SEC. 805. PLANETARY RADAR CAPABILITY.

The Administrator shall maintain a planetary radar that is comparable to the capability provided through the Deep Space Network Goldstone facility of NASA.

SEC. 806. ARECIBO OBSERVATORY.

Congress reiterates its support for the use of the Arecibo Observatory for NASA-funded near-Earth object-related activities. The Administrator, using funds authorized in section 101(a)(1)(B), shall ensure the availability of the Arecibo Observatory's planetary radar to support these activities until the National Academies' review of NASA's approach for the survey and deflection of near-Earth objects, including a determination of the role of Arecibo, that was directed to be undertaken by the Fiscal Year 2008 Omnibus Appropriations Act, is completed.

SEC. 807. INTERNATIONAL RESOURCES.

It is the sense of Congress that, since an estimated 25,000 asteroids of concern have yet to be discovered and monitored, the United States should seek to obtain commitments for cooperation from other nations with significant resources for contributing to a thorough and timely search for such objects and an identification of their characteristics.

TITLE IX—COMMERCIAL INITIATIVES

SEC. 901. SENSE OF CONGRESS.

It is the sense of Congress that a healthy and robust commercial sector can make significant contributions to the successful conduct of NASA's space exploration program. While some activities are inherently governmental in nature, there are many other activities, such as routine supply of water, fuel, and other consumables to low Earth orbit or to destinations beyond low Earth orbit, and provision of power or communications services to lunar outposts, that potentially could be carried out effectively and efficiently by

the commercial sector at some point in the future. Congress encourages NASA to look for such service opportunities and, to the maximum extent practicable, make use of the commercial sector to provide those services. It is further the sense of Congress that United States entrepreneurial space companies have the potential to develop and deliver innovative technology solutions at affordable costs. NASA is encouraged to use United States entrepreneurial space companies to conduct appropriate research and development activities. NASA is further encouraged to seek ways to ensure that firms that rely on fixed-price proposals are not disadvantaged when NASA seeks to procure technology development.

SEC. 902. COMMERCIAL CREW INITIATIVE.

(a) IN GENERAL.—In order to stimulate commercial use of space, help maximize the utility and productivity of the International Space Station, and enable a commercial means of providing crew transfer and crew rescue services for the International Space Station, NASA shall—

(1) make use of United States commercially provided International Space Station crew transfer and crew rescue services to the maximum extent practicable, if those commercial services have demonstrated the capability to meet NASA-specified ascent, entry, and International Space Station proximity operations safety requirements;

(2) limit, to the maximum extent practicable, the use of the Crew Exploration Vehicle to missions carrying astronauts beyond low Earth orbit once commercial crew transfer and crew rescue services that meet safety requirements become operational;

(3) facilitate, to the maximum extent practicable, the transfer of NASA-developed technologies to potential United States commercial crew transfer and rescue service providers, consistent with United States law; and

(4) issue a notice of intent, not later than 180 days after the date of enactment of this Act, to enter into a funded, competitively awarded Space Act Agreement with 2 or more commercial entities for a Phase 1 Commercial Orbital Transportation Services crewed vehicle demonstration program.

(b) CONGRESSIONAL INTENT.—It is the intent of Congress that funding for the program described in subsection (a)(4) shall not come at the expense of full funding of the amounts authorized under section 101(3)(A), and for future fiscal years, for Orion Crew Exploration Vehicle development, Ares I Crew Launch Vehicle development, or International Space Station cargo delivery.

(c) ADDITIONAL TECHNOLOGIES.—NASA shall make International Space Station-compatible docking adaptors and other relevant technologies available to the commercial crew providers selected to service the International Space Station.

(d) CREW TRANSFER AND CREW RESCUE SERVICES CONTRACT.—If a commercial provider demonstrates the capability to provide International Space Station crew transfer and crew rescue services and to satisfy NASA ascent, entry, and International Space Station proximity operations safety requirements, NASA shall enter into an International Space Station crew transfer and crew rescue services contract with that commercial provider for a portion of NASA's anticipated International Space Station crew transfer and crew

rescue requirements from the time the commercial provider commences operations under contract with NASA through calendar year 2016, with an option to extend the period of performance through calendar year 2020.

TITLE X—REVITALIZATION OF NASA INSTITUTIONAL CAPABILITIES

SEC. 1001. REVIEW OF INFORMATION SECURITY CONTROLS.

(a) REPORT ON CONTROLS.—Not later than one year after the date of enactment of this Act, the Comptroller General shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a review of information security controls that protect NASA's information technology resources and information from inadvertent or deliberate misuse, fraudulent use, disclosure, modification, or destruction. The review shall focus on networks servicing NASA's mission directorates. In assessing these controls, the review shall evaluate—

(1) the network's ability to limit, detect, and monitor access to resources and information, thereby safeguarding and protecting them from unauthorized access;

(2) the physical access to network resources; and

(3) the extent to which sensitive research and mission data is encrypted.

(b) RESTRICTED REPORT ON INTRUSIONS.—Not later than one year after the date of enactment of this Act, and in conjunction with the report described in subsection (a), the Comptroller General shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a restricted report detailing results of vulnerability assessments conducted by the Government Accountability Office on NASA's network resources. Intrusion attempts during such vulnerability assessments shall be divulged to NASA senior management prior to their application. The report shall put vulnerability assessment results in the context of unauthorized accesses or attempts during the prior two years and the corrective actions, recent or ongoing, that NASA has implemented in conjunction with other Federal authorities to prevent such intrusions.

SEC. 1002. MAINTENANCE AND UPGRADE OF CENTER FACILITIES.

(a) IN GENERAL.—In order to sustain healthy Centers that are capable of carrying out NASA's missions, the Administrator shall ensure that adequate maintenance and upgrading of those Center facilities is performed on a regular basis.

(b) REVIEW.—The Administrator shall determine and prioritize the maintenance and upgrade backlog at each of NASA's Centers and associated facilities, and shall develop a strategy and budget plan to reduce that maintenance and upgrade backlog by 50 percent over the next five years.

(c) REPORT.—The Administrator shall deliver a report to Congress on the results of the activities undertaken in subsection (b) concurrently with the delivery of the fiscal year 2011 budget request.

SEC. 1003. ASSESSMENT OF NASA LABORATORY CAPABILITIES.

(a) IN GENERAL.—NASA's laboratories are a critical component of NASA's research capabilities, and the Administrator shall ensure that those laboratories remain productive.

(b) REVIEW.—The Administrator shall enter into an arrangement for an independent external review of NASA's laboratories, including laboratory equipment, facilities, and support services, to determine whether they are equipped and maintained at a level adequate to support NASA's research activities. The assessment shall also include an assessment of the relative quality of NASA's in-house laboratory equipment and facilities compared to comparable laboratories elsewhere. The results of the review shall be provided to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 18 months after the date of enactment of this Act.

SEC. 1004. STUDY AND REPORT ON PROJECT ASSIGNMENT AND WORK ALLOCATION OF FIELD CENTERS.

(a) STUDY.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator shall complete a study of all field centers of NASA, including the Michoud Assembly Facility.

(2) MATTERS STUDIED.—The study required by paragraph (1) shall include the mission and future roles and responsibilities of the field centers, including the Michoud Assembly Facility, described in paragraph (1).

(b) REPORT.—

(1) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator shall submit to the appropriate congressional committees a report on the study required by subsection (a)(1).

(2) CONTENT.—The report required by paragraph (1) shall include the following:

(A) A comprehensive analysis of the work allocation of all field centers of NASA, including the Michoud Assembly Facility.

(B) A description of the program and project roles, functions, and activities assigned to each field center, including the Michoud Assembly Facility.

(C) Details on how field centers, including the Michoud Assembly Facility, are selected and designated for lead and support role work assignments (including program and contract management assignments).

TITLE XI—OTHER PROVISIONS

SEC. 1101. SPACE WEATHER.

(a) PLAN FOR REPLACEMENT OF ADVANCED COMPOSITION EXPLORER AT L–1 LAGRANGIAN POINT.—

(1) PLAN.—The Director of OSTP shall develop a plan for sustaining space-based measurements of solar wind from the L–1 Lagrangian point in space and for the dissemination of the data for operational purposes. OSTP shall consult with

NASA, NOAA, and other Federal agencies, and with industry, in developing the plan.

(2) REPORT.—The Director shall transmit the plan to Congress not later than 1 year after the date of enactment of this Act.

(b) ASSESSMENT OF THE IMPACT OF SPACE WEATHER ON AVIATION.—

(1) STUDY.—The Director of OSTP shall enter into an arrangement with the National Research Council for a study of the impacts of space weather on the current and future United States aviation industry, and in particular to examine the risks for Over-The-Pole (OTP) and Ultra-Long-Range (ULR) operations. The study shall—

(A) examine space weather impacts on, at a minimum, communications, navigation, avionics, and human health in flight;

(B) assess the benefits of space weather information and services to reduce aviation costs and maintain safety; and

(C) provide recommendations on how NOAA, the National Science Foundation, and other relevant agencies, can most effectively carry out research and monitoring activities related to space weather and aviation.

(2) REPORT.—A report containing the results of the study shall be provided to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate not later than 1 year after the date of enactment of this Act.

SEC. 1102. INITIATION OF DISCUSSIONS ON DEVELOPMENT OF FRAMEWORK FOR SPACE TRAFFIC MANAGEMENT.

(a) FINDING.—Congress finds that as more countries acquire the capability for launching payloads into outer space, there is an increasing need for a framework under which information intended to promote safe access into outer space, operations in outer space, and return from outer space to Earth free from physical or radio-frequency interference can be shared among those countries.

(b) DISCUSSIONS.—The Administrator shall, in consultation with such other agencies of the Federal Government as the Administrator considers appropriate, initiate discussions with the appropriate representatives of other space-faring countries to determine an appropriate frame-work under which information intended to promote safe access into outer space, operations in outer space, and return from outer space to Earth free from physical or radio-frequency interference can be shared among those nations.

SEC. 1103. ASTRONAUT HEALTH CARE.

(a) SURVEY.—The Administrator shall administer an anonymous survey of astronauts and flight surgeons to evaluate communication, relationships, and the effectiveness of policies. The survey questions and the analysis of results shall be evaluated by experts independent of NASA. The survey shall be administered on at least a biennial basis.

(b) REPORT.—The Administrator shall transmit a report of the results of the survey to Congress not later than 90 days following completion of the survey.

SEC. 1104. NATIONAL ACADEMIES DECADAL SURVEYS.

(a) IN GENERAL.—The Administrator shall enter into agreements on a periodic basis with the National Academies for independent assessments, also known as decadal surveys, to take stock of the status and opportunities for Earth and space science discipline fields and Aeronautics research and to recommend priorities for research and programmatic areas over the next decade.

(b) INDEPENDENT COST ESTIMATES.—The agreements described in subsection(a) shall include independent estimates of the life cycle costs and technical readiness of missions assessed in the decadal surveys whenever possible.

(c) REEXAMINATION.—The Administrator shall request that each National Academies decadal survey committee identify any conditions or events, such as significant cost growth or scientific or technological advances, that would warrant NASA asking the National Academies to reexamine the priorities that the decadal survey had established.

SEC. 1105. INNOVATION PRIZES.

(a) IN GENERAL.—Prizes can play a useful role in encouraging innovation in the development of technologies and products that can assist NASA in its aeronautics and space activities, and the use of such prizes by NASA should be encouraged.

(b) AMENDMENTS.—Section 314 of the National Aeronautics and Space Act of 1958 is amended—

(1) by amending subsection (b) to read as follows:

"(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. The Administrator shall give consideration to prize goals such as the demonstration of the ability to provide energy to the lunar surface from space-based solar power systems, demonstration of innovative near-Earth object survey and deflection strategies, and innovative approaches to improving the safety and efficiency of aviation systems."; and

(2) in subsection (i)(4) by striking "$10,000,000" and inserting "$50,000,000".

SEC. 1106. COMMERCIAL SPACE LAUNCH RANGE STUDY.

(a) STUDY BY INTERAGENCY COMMITTEE.—The Director of OSTP shall work with other appropriate Federal agencies to establish an interagency committee to conduct a study to—

(1) identify the issues and challenges associated with establishing space launch ranges and facilities that are fully dedicated to commercial space missions in close proximity to Federal launch ranges or other Federal facilities; and

(2) develop a coordinating mechanism such that States seeking to establish such commercial space launch ranges will be able to effectively and efficiently interface with the Federal Government concerning issues related to the establishment of such commercial launch ranges in close proximity to Federal launch ranges or other Federal facilities.

(b) REPORT.—The Director shall, not later than May 31, 2010, submit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the study conducted under subsection (a).

SEC. 1107. NASA OUTREACH PROGRAM.

(a) ESTABLISHMENT.—NASA shall competitively select an organization to partner with NASA centers, aerospace contractors, and academic institutions to carry out a program to help promote the competitiveness of small, minority-owned, and women-owned businesses in communities across the United States through enhanced insight into the technologies of NASA's space and aeronautics programs. The program shall support the mission of NASA's Innovative Partnerships Program with its emphasis on joint partnerships with industry, academia, government agencies, and national laboratories.

(b) PROGRAM STRUCTURE.—In carrying out the program described in subsection (a), the organization shall support the mission of NASA's Innovative Partnerships Program by undertaking the following activities:

(1) Facilitating the enhanced insight of the private sector into NASA's technologies in order to increase the competitiveness of the private sector in producing viable commercial products.

(2) Creating a network of academic institutions, aerospace contractors, and NASA centers that will commit to donating appropriate technical assistance to small businesses, giving preference to socially and economically disadvantaged small business concerns, small business concerns owned and controlled by service-disabled veterans, and HUBZone small business concerns. This paragraph shall not apply to any contracting actions entered into or taken by NASA.

(3) Creating a network of economic development organizations to increase the awareness and enhance the effectiveness of the program nationwide.

(c) REPORT.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Administrator shall submit a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate describing the efforts and accomplishments of the program established under subsection (a) in support of NASA's Innovative Partnerships Program. As part of the report, the Administrator shall provide—

(1) data on the number of small businesses receiving assistance, jobs created and retained, and volunteer hours donated by NASA, contractors, and academic institutions nationwide;

(2) an estimate of the total dollar value of the economic impact made by small businesses that received technical assistance through the program; and

(3) an accounting of the use of funds appropriated for the program.

SEC. 1108. REDUCTION-IN-FORCE MORATORIUM.

NASA shall not initiate or implement a reduction-in-force, or conduct any other involuntary separations of permanent, non-Senior Executive Service, civil servant employees before December 31, 2010, except for cause on charges of misconduct, delinquency, or inefficiency.

SEC. 1109. PROTECTION OF SCIENTIFIC CREDIBILITY, INTEGRITY, AND COMMUNICATION WITHIN NASA.

(a) SENSE OF THE CONGRESS.—It is the sense of Congress that NASA should not dilute, distort, suppress, or impede scientific research or the dissemination thereof.

(b) STUDY.—Within 60 days after the date of enactment of this Act, the Comptroller General shall—

(1) initiate a study to be completed within 270 days to determine whether the regulations set forth in part 1213 of title 14, Code of Federal Regulations, are being implemented in a clear and consistent manner by NASA to ensure the dissemination of research; and

(2) transmit a report to the Congress setting forth the Comptroller General's findings, conclusions, and recommendations.

(c) RESEARCH.—The Administrator shall work to ensure that NASA's policies on the sharing of climate related data respond to the recommendations of the Government Accountability Office's report on climate change research and data-sharing policies and to the recommendations on the processing, distribution, and archiving of data by the National Academies Earth Science Decadal Survey, "Earth Science and Applications from Space", and other relevant National Academies reports, to enhance and facilitate their availability and widest possible use to ensure public access to accurate and current data on global warming.

SEC. 1110. SENSE OF CONGRESS REGARDING THE NEED FOR A ROBUST WORKFORCE.

It is the sense of Congress that—

(1) a robust and highly skilled workforce is critical to the success of NASA's programs;

(2) voluntary attrition, the retirement of many senior workers, and difficulties in recruiting could leave NASA without access to the intellectual capital necessary to compete with its global competitors; and

(3) NASA should work cooperatively with other agencies of the United States Government responsible for programs related to space and the aerospace industry to develop and implement policies, including those with an emphasis on improving science, technology, engineering, and mathematics education at all levels, to sustain and expand the diverse workforce available to NASA.

SEC. 1111. METHANE INVENTORY.

Within 12 months after the date of enactment of this Act, the Director of OSTP, in conjunction with the Administrator, the Administrator of NOAA, and other appropriate Federal agencies and academic institutions, shall develop a plan, including a cost estimate and timetable, and initiate an inventory of natural methane stocks and fluxes in the polar region of the United States.

SEC. 1112. EXCEPTION TO ALTERNATIVE FUEL PROCUREMENT REQUIREMENT.

Section 526(a) of the Energy Independence and Security Act of 2007 (42 U.S.C. 17142(a)) does not prohibit NASA from entering into a contract to purchase a generally available fuel that is not an alternative or synthetic fuel or predominantly produced from a nonconventional petroleum source, if—

(1) the contract does not specifically require the contractor to provide an alternative or synthetic fuel or fuel from a nonconventional petroleum source;

(2) the purpose of the contract is not to obtain an alternative or synthetic fuel or fuel from a nonconventional petroleum source; and

(3) the contract does not provide incentives for a refinery upgrade or expansion to allow a refinery to use or increase its use of fuel from a nonconventional petroleum source.

SEC. 1113. SENSE OF CONGRESS ON THE IMPORTANCE OF THE NASA OFFICE OF PROGRAM ANALYSIS AND EVALUATION.

(a) OFFICE OF PROGRAM ANALYSIS AND EVALUATION.—It is the sense of Congress that it is important for NASA to maintain an Office of Program Analysis and Evaluation that has as its mission:

(1) To develop strategic plans for NASA in accordance with section 306 of title 5, United States Code.

(2) To develop annual performance plans for NASA in accordance with section 1115 of title 31, United States Code.

(3) To provide analysis and recommendations to the Administrator on matters relating to the planning and programming phases of the Planning, Programming, Budgeting, and Execution system of NASA.

(4) To provide analysis and recommendations to the Administrator on matters relating to acquisition management and program oversight, including cost-estimating processes, contractor cost reporting processes, and contract performance assessments.

(b) OBJECTIVES.—It is further the sense of Congress that in performing those functions, the objectives of the Office should be the following:

(1) To align NASA's mission, strategic plan, budget, and performance plan with strategic goals and institutional requirements of NASA.

(2) To provide objective analysis of programs and institutions of NASA—

(A) to generate investment options for NASA; and

(B) to inform strategic decision making in NASA.

(3) To enable cost-effective, strategically aligned execution of programs and projects by NASA.

(4) To perform independent cost estimation in support of NASA decision making and establishment of standards for agency cost analysis.

(5) To ensure that budget formulation and execution are consistent with strategic investment decisions of NASA.

(6) To provide independent program and project reviews that address the credibility of technical, cost, schedule, risk, and management approaches with respect to available resources.

(7) To facilitate progress by NASA toward meeting the commitments of NASA.

SEC. 1114. SENSE OF CONGRESS ON ELEVATING THE IMPORTANCE OF SPACE AND AERONAUTICS WITHIN THE EXECUTIVE OFFICE OF THE PRESIDENT.

It is the sense of Congress that the President should elevate the importance of space and aeronautics within the Executive Office of the President by organizing the interagency focus on space and

aeronautics matters in as effective a manner as possible, such as by means of the National Space Council authorized by section 501 of the National Aeronautics and Space Administration Authorization Act, Fiscal Year 1989 (42 U.S.C. 2471) or other appropriate mechanisms.

SEC. 1115. STUDY ON LEASING PRACTICES OF FIELD CENTERS.

(a) STUDY.—Not later than 180 days after the date of enactment of this Act, the Administrator shall complete a study on the leasing practices of all field centers of NASA, including the Michoud Assembly Facility. Such study shall include the following:

(1) The method by which overhead maintenance expenses are distributed among tenants of such field centers.

(2) Identification of the impacts of such method on attracting businesses and partnerships to such field centers.

(3) Identification of the steps that can be taken to mitigate any adverse impacts identified under paragraph (2).

(b) REPORT.—Not later than 180 days after the date of enactment of this Act, the Administrator shall submit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the study required by subsection (a), including the following:

(1) The findings of the Administrator with respect to such study.

(2) A description of the impacts identified under subsection (a)(2).

(3) The steps identified under subsection (a)(3).

SEC. 1116. COOPERATIVE UNMANNED AERIAL VEHICLE ACTIVITIES.

The Administrator, in cooperation with the Administrator of NOAA and in coordination with other agencies that have existing civil capabilities, shall continue to utilize the capabilities of unmanned aerial vehicles as appropriate in support of NASA and interagency cooperative missions. The Administrator may enter into cooperative agreements with universities with unmanned aerial vehicle programs and related assets to conduct collaborative research and development activities, including development of appropriate applications of small unmanned aerial vehicle technologies and systems in remote areas.

SEC. 1117. DEVELOPMENT OF ENHANCED-USE LEASE POLICY.

(a) IN GENERAL.—The Administrator shall develop an agency-wide enhanced-use lease policy that—

(1) is based upon sound business practices and lessons learned from the demonstration centers; and

(2) establishes controls and procedures to ensure accountability and protect the interests of the Government.

(b) CONTENTS.—The policy required by subsection (a) shall include the following:

(1) Criteria for determining whether enhanced-use lease provides better economic value to the Government than other options, such as—

(A) Federal financing through appropriations; or

(B) sale of the property.

(2) Requirement for the identification of proposed physical and procedural changes needed to ensure security and restrict access to specified areas, coordination of proposed changes with

existing site tenants, and development of estimated costs of such changes.

(3) Measures of effectiveness for the enhanced-use lease program.

(4) Accounting controls and procedures to ensure accountability, such as an audit trail and documentation to readily support financial transactions.

(c) ANNUAL REPORT.—Section 315(f) of the National Aeronautics and Space Administration Act of 1958 (42 U.S.C. 2459j(f)) is amended to read as follows:

"(f) REPORTING REQUIREMENTS.—The Administrator shall submit an annual report by January 31st of each year. Such report shall include the following:

"(1) Information that identifies and quantifies the value of the arrangements and expenditures of revenues received under this section.

"(2) The availability and use of funds received under this section for the Agency's operating plan.".

(d) DISTRIBUTION OF CASH CONSIDERATION RECEIVED.—

(1) IN GENERAL.—Section 315(b)(3)(B) of such Act (42 U.S.C. 2459j(b)(3)(B)) is amended to read as follows:

"(B) Of any amounts of cash consideration received under this subsection that are not utilized in accordance with subparagraph (A)—

"(i) 35 percent shall be deposited in a capital asset account to be established by the Administrator, shall be available for maintenance, capital revitalization, and improvements of the real property assets and related personal property under the jurisdiction of the Administrator, and shall remain available until expended; and

"(ii) the remaining 65 percent shall be available to the respective center or facility of the Administration engaged in the lease of nonexcess real property, and shall remain available until expended for maintenance, capital revitalization, and improvements of the real property assets and related personal property at the respective center or facility subject to the concurrence of the Administrator.".

(2) CONFORMING AMENDMENTS.—Section 533 of the Consolidated Appropriations Act, 2008 (Pub1ic Law 110–161; 121 Stat. 1931) is amended—

(A) by amending subsection (b)(4) to read as follows:

"(4) in paragraph (2), as redesignated by paragraph (3) of this subsection, by adding at the end the following new subparagraph:

"'(C) Amounts utilized under subparagraph (B) may not be utilized for daily operating costs.'."; and

(B) in subsection (d)—

(i) by striking "the following new subsection (f)" and inserting "the following new subsection"; and

(ii) in the quoted matter, by redesignating subsection (f) as subsection (g).

SEC. 1118. SENSE OF CONGRESS WITH RESPECT TO THE MICHOUD ASSEMBLY FACILITY AND NASA'S OTHER CENTERS AND FACILITIES.

It is the sense of Congress that the Michoud Assembly Facility represents a unique resource in the facilitation of the Nation's exploration programs and that every effort should be made to ensure the effective utilization of that resource, as well as NASA's other centers and facilities.

SEC. 1119. REPORT ON U.S. INDUSTRIAL BASE FOR LAUNCH VEHICLE ENGINES.

Not later than 180 days after the date of Enactment of this Act, the Director of the Office of Science and Technology Policy shall submit to Congress a report setting forth the assessment of the Director as to the capacity of the United States industrial base for development and production of engines to meet United States Government and commercial requirements for space launch vehicles. The report required by this section shall include information regarding existing, pending, and planned engine developments across a broad spectrum of thrust capabilities, including propulsion for sub-orbital, small, medium, and heavy-lift space launch vehicles.

SEC. 1120. SENSE OF CONGRESS ON PRECURSOR INTERNATIONAL SPACE STATION RESEARCH.

It is the Sense of Congress that NASA is taking positive steps to utilize the Space Shuttle as a platform for precursor International Space Station research by maximizing to the extent practicable the use of middeck accommodations, including soft stowage, for near-term scientific and commercial applications on remaining Space Shuttle flights, and the Administrator is strongly encouraged to continue to promote the effective utilization of the Space Shuttle for precursor research within the constraints of the International Space Station assembly requirements.

SEC. 1121. LIMITATION ON FUNDING FOR CONFERENCES.

(a) IN GENERAL.—There are authorized to be appropriated not more than $5,000,000 for any expenses related to conferences, including conference programs, travel costs, and related expenses. No funds authorized under this Act may be used to support a Space Flight Awareness Launch Honoree Event conference. The total amount of the funds available under this Act for other Space Flight Awareness Honoree-related activities in fiscal year 2009 may not exceed ½ of the total amount of funds from all sources obligated or expended on such activities in fiscal year 2008.

(b) QUARTERLY REPORTS.—The Administrator shall submit quarterly reports to the Inspector General of NASA regarding the costs and contracting procedures relating to each conference held by NASA during fiscal year 2009 for which the cost to the Government is more than $20,000. Each report shall include, for each conference described in that subsection held during the applicable quarter—

(1) a description of the subject of and number of participants attending, the conference, including the number of NASA employees attending and the number of contractors attending at agency expense;

(2) a detailed statement of the costs to the Government relating to the conference, including—

(A) the cost of any food or beverages;

(B) the cost of any audio-visual services; and

(C) a discussion of the methodology used to determine which costs relate to the conference; and

D) cost of any room, board, travel, and per diem expenses; and

(3) a description of the contracting procedures relating to the conference, including—

(A) whether contracts were awarded on a competitive basis for that conference; and

(B) a discussion of any cost comparison conducted by NASA in evaluating potential contractors for that conference.

SEC. 1122. REPORT ON NASA EFFICIENCY AND PERFORMANCE.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Comptroller General of the United States shall submit to Congress a report that contains a review of NASA programs and associated activities with an annual funding level of more than $50,000,000 that appear to be similar in scope and purpose to other activities within the Federal government, that includes—

(1) a brief description of each NASA program reviewed and its subordinate activities;

(2) the annual and cumulative appropriation amounts expended for each program reviewed and its subordinate activities since fiscal year 2005;

(3) a brief description of each Federal program and its subordinate activities that appears to have a similar scope and purpose to a NASA program; and

(4) a review of the formal and informal processes by which NASA coordinates with other Federal agencies to ensure that its programs and activities are not duplicative of similar efforts within the Federal government and that the programs and activities meet the core mission of NASA, and the degree of transparency and accountability afforded by those processes.

(b) DUPLICATIVE PROGRAMS.—If the Comptroller General determines, under subsection (a)(4), that any deficiency exists in the NASA procedures intended to avoid or eliminate conflict or duplication with other Federal agency activities, the Comptroller General shall include a recommendation as to how such procedures should be modified to ensure similar programs and associated activities

can be consolidated, eliminated, or streamlined within NASA or within other Federal agencies to improve efficiency.

Speaker of the House of Representatives.

Vice President of the United States and
President of the Senate.