

Union Calendar No. 446

110TH CONGRESS
2D SESSION

H. R. 6063

[Report No. 110-702]

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

IN THE HOUSE OF REPRESENTATIVES

MAY 15, 2008

Mr. UDALL of Colorado (for himself, Mr. GORDON of Tennessee, Mr. HALL of Texas, and Mr. FEENEY) introduced the following bill; which was referred to the Committee on Science and Technology

JUNE 9, 2008

Additional sponsors: Mr. LAMPSON, Mr. CHANDLER, Mr. WU, Mr. MELANCON, Mr. MCCAUL of Texas, Mr. KLEIN of Florida, Mr. SMITH of Texas, Mr. PERLMUTTER, and Mr. MILLER of North Carolina

JUNE 9, 2008

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in *italic*]

[For text of introduced bill, see copy of bill as introduced on May 15, 2008]

A BILL

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

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

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

2 (a) *SHORT TITLE.*—*This Act may be cited as the “Na-*
 3 *tional Aeronautics and Space Administration Authoriza-*
 4 *tion Act of 2008”.*

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

Sec. 1. Short title; table of contents.

Sec. 2. Findings.

Sec. 3. Definitions.

**TITLE I—AUTHORIZATION OF APPROPRIATIONS FOR FISCAL YEAR
2009**

Sec. 101. Fiscal year 2009.

TITLE II—EARTH SCIENCE

Sec. 201. Goal.

Sec. 202. Governance of United States Earth observations activities.

Sec. 203. Decadal survey missions.

Sec. 204. Transitioning experimental research into operational services.

Sec. 205. Landsat thermal infrared data continuity.

Sec. 206. Reauthorization of Glory Mission.

Sec. 207. Plan for disposition of Deep Space Climate Observatory.

TITLE III—AERONAUTICS

Sec. 301. Environmentally friendly aircraft research and development initiative.

Sec. 302. Research alignment.

Sec. 303. Research program to determine perceived impact of sonic booms.

Sec. 304. External review of NASA’s aviation safety-related research programs.

Sec. 305. Interagency research initiative on the impact of aviation on the climate.

Sec. 306. Research program on design for certification.

Sec. 307. Aviation weather research.

Sec. 308. Joint Aeronautics Research and Development Advisory Committee.

*Sec. 309. Funding for research and development activities in support of other
mission directorates.*

Sec. 310. University-based centers for research on aviation training.

TITLE IV—INTERNATIONAL EXPLORATION INITIATIVE

Sec. 401. Sense of Congress.

Sec. 402. Stepping stone approach to exploration.

Sec. 403. Lunar outpost.

Sec. 404. Exploration technology development.

Sec. 405. Exploration risk mitigation plan.

Sec. 406. Exploration crew rescue.

Sec. 407. Participatory exploration.

Sec. 408. Science and exploration.

TITLE V—SPACE SCIENCE

- Sec. 501. Technology development.*
- Sec. 502. Provision for future servicing of observatory-class scientific spacecraft.*
- Sec. 503. Mars exploration.*
- Sec. 504. Importance of a balanced science program.*
- Sec. 505. Restoration of radioisotope thermoelectric generator material production.*
- Sec. 506. Assessment of impediments to interagency cooperation on space and Earth science missions.*
- Sec. 507. Assessment of cost growth.*
- Sec. 508. Outer planets exploration.*

TITLE VI—SPACE OPERATIONS

Subtitle A—International Space Station

- Sec. 601. Utilization.*
- Sec. 602. Research management plan.*
- Sec. 603. Contingency plan for cargo resupply.*

Subtitle B—Space Shuttle

- Sec. 611. Flight manifest.*
- Sec. 612. Disposition of shuttle-related assets.*
- Sec. 613. Space Shuttle transition liaison office.*

Subtitle C—Launch Services

- Sec. 621. Launch services strategy.*

TITLE VII—EDUCATION

- Sec. 701. Response to review.*
- Sec. 702. External review of Explorer Schools program.*

TITLE VIII—NEAR-EARTH OBJECTS

- Sec. 801. In general.*
- Sec. 802. Findings.*
- Sec. 803. Requests for information.*
- Sec. 804. Establishment of policy.*
- Sec. 805. Planetary radar capability.*
- Sec. 806. Arecibo Observatory.*

TITLE IX—COMMERCIAL INITIATIVES

- Sec. 901. Sense of Congress.*
- Sec. 902. Commercial crew initiative.*

TITLE X—REVITALIZATION OF NASA INSTITUTIONAL CAPABILITIES

- Sec. 1001. Review of information security controls.*
- Sec. 1002. Maintenance and upgrade of Center facilities.*
- Sec. 1003. Assessment of NASA laboratory capabilities.*

TITLE XI—OTHER PROVISIONS

- Sec. 1101. Space weather.*

Sec. 1102. *Space traffic management.*
 Sec. 1103. *Study of export control policies related to civil and commercial space activities.*
 Sec. 1104. *Astronaut health care.*
 Sec. 1105. *National Academies decadal surveys.*
 Sec. 1106. *Innovation prizes.*
 Sec. 1107. *Commercial space launch range study.*
 Sec. 1108. *NASA outreach and technology assistance program.*

1 **SEC. 2. FINDINGS.**

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

5 *(1) NASA is and should remain a multimission*
 6 *agency with a balanced and robust set of core mis-*
 7 *sions in science, aeronautics, and human space flight*
 8 *and exploration.*

9 *(2) Investment in NASA's programs will pro-*
 10 *mote innovation through research and development,*
 11 *and will improve the competitiveness of the United*
 12 *States.*

13 *(3) Investment in NASA's programs, like invest-*
 14 *ments in other Federal science and technology activi-*
 15 *ties, is an investment in our future.*

16 *(4) Properly structured, NASA's activities can*
 17 *contribute to an improved quality of life, economic vi-*
 18 *talidity, United States leadership in peaceful coopera-*
 19 *tion with other nations on challenging undertakings*
 20 *in science and technology, national security, and the*
 21 *advancement of knowledge.*

1 (5) *NASA should assume a leadership role in a*
2 *cooperative international Earth observations and re-*
3 *search effort to address key research issues associated*
4 *with climate change and its impacts on the Earth*
5 *system.*

6 (6) *NASA should undertake a program of aero-*
7 *nautical research, development, and where appro-*
8 *priate demonstration activities with the overarching*
9 *goals of—*

10 (A) *ensuring that the Nation’s future air*
11 *transportation system can handle up to 3 times*
12 *the current travel demand and incorporate new*
13 *vehicle types with no degradation in safety or*
14 *adverse environmental impact on local commu-*
15 *nities;*

16 (B) *protecting the environment;*

17 (C) *promoting the security of the Nation;*

18 *and*

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

21 (7) *Human and robotic exploration of the solar*
22 *system will be a significant long term undertaking of*
23 *humanity in the 21st century and beyond, and it is*
24 *in the national interest that the United States should*

1 *assume a leadership role in a cooperative inter-*
2 *national exploration initiative.*

3 *(8) Developing United States human space flight*
4 *capabilities to allow independent American access to*
5 *the International Space Station, and to explore be-*
6 *yond low Earth orbit, is a strategically important*
7 *national imperative, and all prudent steps should*
8 *thus be taken to bring the Orion Crew Exploration*
9 *Vehicle and Ares I Crew Launch Vehicle to full oper-*
10 *ational capability as soon as practicable.*

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

16 *(10) NASA should make a sustained commit-*
17 *ment to a robust long-term technology development*
18 *activity. Such investments represent the critically im-*
19 *portant "seed corn" on which NASA's ability to carry*
20 *out challenging and productive missions in the future*
21 *will depend.*

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

1 (12) *Commercial activities have substantially*
2 *contributed to the strength of both the United States*
3 *space program and the national economy, and the de-*
4 *velopment of a healthy and robust United States com-*
5 *mercial space sector should continue to be encouraged.*

6 (13) *It is in the national interest for the United*
7 *States to have an export control policy that protects*
8 *the national security while also enabling the United*
9 *States aerospace industry to compete effectively in the*
10 *global market place and the United States to under-*
11 *take cooperative programs in science and human*
12 *space flight in an effective and efficient manner.*

13 **SEC. 3. DEFINITIONS.**

14 *In this Act:*

15 (1) *ADMINISTRATOR.—The term “Adminis-*
16 *trator” means the Administrator of NASA.*

17 (2) *NASA.—The term “NASA” means the Na-*
18 *tional Aeronautics and Space Administration.*

19 (3) *NOAA.—The term “NOAA” means the Na-*
20 *tional Oceanic and Atmospheric Administration.*

21 (4) *OSTP.—The term “OSTP” means the Office*
22 *of Science and Technology Policy.*

1 ***TITLE I—AUTHORIZATION OF AP-***
2 ***PROPRIATIONS FOR FISCAL***
3 ***YEAR 2009***

4 ***SEC. 101. FISCAL YEAR 2009.***

5 *(a) BASELINE AUTHORIZATION.—There are authorized*
6 *to be appropriated to NASA for fiscal year 2009*
7 *\$19,210,000,000, as follows:*

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

9 *(A) \$1,518,000,000 shall be for Earth*
10 *Science, including \$29,200,000 for suborbital ac-*
11 *tivities and \$2,500,000 for carrying out section*
12 *313 of the National Aeronautics and Space Ad-*
13 *ministration Authorization Act of 2005 (Public*
14 *Law 109–155);*

15 *(B) \$1,483,000,000 shall be for Planetary*
16 *Science, including \$486,500,000 for the Mars*
17 *Exploration program, \$2,000,000 to continue*
18 *planetary radar operations at the Arecibo Ob-*
19 *servatory in support of the Near-Earth Object*
20 *program, and \$5,000,000 for radioisotope mate-*
21 *rial production, to remain available until ex-*
22 *pende*d;

23 *(C) \$1,290,400,000 shall be for Astro-*
24 *physics, including \$27,300,000 for suborbital ac-*
25 *tivities;*

1 (D) \$640,800,000 shall be for *Heliophysics*,
2 including \$50,000,000 for *suborbital activities*;
3 and

4 (E) \$75,000,000 shall be for *Cross-Science*
5 *Mission Directorate Technology Development*, to
6 be taken on a *proportional basis from the fund-*
7 *ing subtotals under subparagraphs (A), (B), (C),*
8 and (D).

9 (2) For *Aeronautics*, \$853,400,000, of which
10 \$406,900,000 shall be for *system-level research, devel-*
11 *opment, and demonstration activities related to—*

12 (A) *aviation safety*;

13 (B) *environmental impact mitigation, in-*
14 *cluding noise, energy efficiency, and emissions*;

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

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

19 (3) For *Exploration*, \$3,886,000,000, of which
20 \$100,000,000 shall be for the *activities under sections*
21 *902(b) and 902(d)*; and \$737,800,000 shall be for *Ad-*
22 *vanced Capabilities*, including \$106,300,000 for the
23 *Lunar Precursor Robotic Program*, \$276,500,000 for
24 *International Space Station-related research and de-*
25 *velopment activities*, and \$355,000,000 for *research*

1 *and development activities not related to the Inter-*
 2 *national Space Station.*

3 *(4) For Education, \$128,300,000.*

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

6 *(A) \$150,000,000 shall be for an additional*
 7 *Space Shuttle flight to deliver the Alpha Mag-*
 8 *netic Spectrometer to the International Space*
 9 *Station;*

10 *(B) \$100,000,000 shall be to augment fund-*
 11 *ing for International Space Station Cargo Serv-*
 12 *ices to enhance research utilization of the Inter-*
 13 *national Space Station, to remain available*
 14 *until expended; and*

15 *(C) \$50,000,000 shall be to augment fund-*
 16 *ing for Space Operations Mission Directorate re-*
 17 *serves and Shuttle Transition and Retirement*
 18 *activities.*

19 *(6) For Cross-Agency Support Programs,*
 20 *\$3,299,900,000.*

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

22 *(b) ADDITIONAL AUTHORIZATION TO ADDRESS*
 23 *HUMAN SPACE FLIGHT GAP.—In addition to the sums au-*
 24 *thorized by subsection (a), there are authorized to be appro-*
 25 *priated for the purposes described in subsection (a)(3)*

1 \$1,000,000,000 for fiscal year 2009, to be used to accelerate
2 the initial operational capability of the Orion Crew Explo-
3 ration Vehicle and the Ares I Crew Launch Vehicle and as-
4 sociated ground support systems, to remain available until
5 expended.

6 ***TITLE II—EARTH SCIENCE***

7 ***SEC. 201. GOAL.***

8 *The goal for NASA’s Earth Science program shall be*
9 *to pursue a program of Earth observations, research, and*
10 *applications activities to better understand the Earth, how*
11 *it supports life, and how human activities affect its ability*
12 *to do so in the future. In pursuit of this goal, NASA’s Earth*
13 *Science program shall ensure that securing practical bene-*
14 *fits for society will be an important measure of its success*
15 *in addition to securing new knowledge about the Earth sys-*
16 *tem and climate change. In further pursuit of this goal,*
17 *NASA shall assume a leadership role in developing and car-*
18 *rying out a cooperative international Earth observations-*
19 *based research and applications program.*

20 ***SEC. 202. GOVERNANCE OF UNITED STATES EARTH OBSER-*** 21 ***VATIONS ACTIVITIES.***

22 *(a) STUDY.—The Director of the OSTP shall enter into*
23 *an arrangement with the National Academies for a study*
24 *to determine the most appropriate governance structure for*
25 *United States Earth Observations programs in order to*

1 *meet evolving United States Earth information needs and*
 2 *facilitate United States participation in global Earth Ob-*
 3 *servations initiatives.*

4 (b) *REPORT.*—*The Director shall transmit the study*
 5 *to the Committee on Science and Technology of the House*
 6 *of Representatives and the Committee on Commerce,*
 7 *Science, and Transportation of the Senate not later than*
 8 *18 months after the date of enactment of this Act, and shall*
 9 *provide OSTP’s plan for implementing the study’s rec-*
 10 *ommendations not later than 24 months after the date of*
 11 *enactment of this Act.*

12 **SEC. 203. DECADEAL SURVEY MISSIONS.**

13 (a) *IN GENERAL.*—*The missions recommended in the*
 14 *National Academies’ decadal survey “Earth Science and*
 15 *Applications from Space” provide the basis for a compel-*
 16 *ling and relevant program of research and applications,*
 17 *and the Administrator should work to establish an inter-*
 18 *national cooperative effort to pursue those missions.*

19 (b) *PLAN.*—*The Administrator shall prepare a plan*
 20 *for submission to Congress not later than 270 days after*
 21 *the date of enactment of this Act that shall describe how*
 22 *NASA intends to implement the missions recommended as*
 23 *described in subsection (a), whether by means of dedicated*
 24 *NASA missions, multi-agency missions, international coop-*
 25 *erative missions, data sharing, or commercial data buys,*

1 *or by means of long-term technology development to deter-*
 2 *mine whether specific missions would be executable at a rea-*
 3 *sonable cost and within a reasonable schedule.*

4 **SEC. 204. TRANSITIONING EXPERIMENTAL RESEARCH INTO**
 5 **OPERATIONAL SERVICES.**

6 (a) *SENSE OF CONGRESS.—It is the sense of the Con-*
 7 *gress that experimental NASA sensors and missions that*
 8 *have the potential to benefit society if transitioned into*
 9 *operational monitoring systems be transitioned into oper-*
 10 *ational status whenever possible.*

11 (b) *INTERAGENCY PROCESS.—The Director of OSTP,*
 12 *in consultation with the Administrator, the Administrator*
 13 *of NOAA, and other relevant stakeholders, shall develop a*
 14 *process to transition, when appropriate, NASA Earth*
 15 *science and space weather missions or sensors into oper-*
 16 *ational status. The process shall include coordination of an-*
 17 *ual agency budget requests as required to execute the tran-*
 18 *sitions.*

19 (c) *RESPONSIBLE AGENCY OFFICIAL.—The Adminis-*
 20 *trator and the Administrator of NOAA shall each designate*
 21 *an agency official who shall have the responsibility for and*
 22 *authority to lead NASA’s and NOAA’s transition activities*
 23 *and interagency coordination.*

24 (d) *PLAN.—For each mission or sensor that is deter-*
 25 *mined to be appropriate for transition under subsection (b),*

1 *NASA and NOAA shall transmit to Congress a joint plan*
2 *for conducting the transition. The plan shall include the*
3 *strategy, milestones, and budget required to execute the*
4 *transition. The transition plan shall be transmitted to Con-*
5 *gress not later than 60 days after the successful completion*
6 *of the mission or sensor critical design review.*

7 **SEC. 205. LANDSAT THERMAL INFRARED DATA CON-**
8 **TINUITY.**

9 *(a) PLAN.—In view of the importance of Landsat ther-*
10 *mal infrared data for both scientific research and water*
11 *management applications, the Administrator shall prepare*
12 *a plan for ensuring the continuity of Landsat thermal in-*
13 *frared data or its equivalent, including allocation of costs*
14 *and responsibility for the collection and distribution of the*
15 *data, and a budget plan. As part of the plan, the Adminis-*
16 *trator shall provide an option for developing a thermal in-*
17 *frared sensor at minimum cost to be flown on the Landsat*
18 *Data Continuity Mission with minimum delay to the sched-*
19 *ule of the Landsat Data Continuity Mission.*

20 *(b) DEADLINE.—The plan shall be provided to Con-*
21 *gress not later than 60 days after the date of enactment*
22 *of this Act.*

23 **SEC. 206. REAUTHORIZATION OF GLORY MISSION.**

24 *(a) REAUTHORIZATION.—Congress reauthorizes NASA*
25 *to continue with development of the Glory Mission, which*

1 *will examine how aerosols and solar energy affect the*
 2 *Earth's climate.*

3 (b) *BASELINE REPORT.*—*Pursuant to the National*
 4 *Aeronautics and Space Administration Authorization Act*
 5 *of 2005 (Public Law 109–155), not later than 90 days after*
 6 *the date of enactment of this Act, the Administrator shall*
 7 *transmit a new baseline report consistent with section*
 8 *103(b)(2) of such Act. The report shall include an analysis*
 9 *of the factors contributing to cost growth and the steps taken*
 10 *to address them.*

11 **SEC. 207. PLAN FOR DISPOSITION OF DEEP SPACE CLIMATE**
 12 **OBSERVATORY.**

13 (a) *PLAN.*—*NASA shall develop a plan for the Deep*
 14 *Space Climate Observatory (DSCOVR), including such op-*
 15 *tions as using the parts of the spacecraft in the development*
 16 *and assembly of other science missions, transferring the*
 17 *spacecraft to another agency, reconfiguring the spacecraft*
 18 *for another Earth science mission, establishing a public-pri-*
 19 *vate partnership for the mission, and entering into an*
 20 *international cooperative partnership to use the spacecraft*
 21 *for its primary or other purposes. The plan shall include*
 22 *an estimate of budgetary resources and schedules required*
 23 *to implement each of the options.*

24 (b) *CONSULTATION.*—*NASA shall consult, as nec-*
 25 *essary, with other Federal agencies, industry, academic in-*

stitutions, 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.

TITLE III—AERONAUTICS

SEC. 301. 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.

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

4 **SEC. 302. RESEARCH ALIGNMENT.**

5 *In addition to pursuing the research and development*
 6 *initiative described in section 301, the Administrator shall,*
 7 *to the maximum extent practicable within available fund-*
 8 *ing, align the fundamental aeronautics research program*
 9 *to address high priority technology challenges of the Na-*
 10 *tional Academies' Decadal Survey of Civil Aeronautics, and*
 11 *shall work to increase the degree of involvement of external*
 12 *organizations, and especially of universities, in the funda-*
 13 *mental aeronautics research program.*

14 **SEC. 303. RESEARCH PROGRAM TO DETERMINE PERCEIVED**
 15 **IMPACT OF SONIC BOOMS.**

16 (a) *IN GENERAL.*—*The ability to fly commercial air-*
 17 *craft over land at supersonic speeds without adverse im-*
 18 *pacts on the environment or on local communities would*
 19 *open new markets and enable new transportation capabili-*
 20 *ties. In order to have the basis for establishing an appro-*
 21 *priate sonic boom standard for such flight operations, a re-*
 22 *search program is needed to assess the impact in a relevant*
 23 *environment of commercial supersonic flight operations.*

24 (b) *ESTABLISHMENT.*—*The Administrator shall estab-*
 25 *lish a cooperative research program with industry, includ-*

1 *ing the conduct of flight demonstrations in a relevant envi-*
 2 *ronment, to collect data on the perceived impact of sonic*
 3 *booms that would enable the promulgation of a standard*
 4 *that would have to be met for overland commercial super-*
 5 *sonic flight operations.*

6 **SEC. 304. EXTERNAL REVIEW OF NASA'S AVIATION SAFETY-**
 7 **RELATED RESEARCH PROGRAMS.**

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

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

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

17 *(3) the programs have allocated appropriate re-*
 18 *sources to each of the research objectives; and*

19 *(4) suitable mechanisms exist for transitioning*
 20 *the research results from the programs into oper-*
 21 *ational technologies and procedures and certification*
 22 *activities in a timely manner.*

23 *(b) REPORT.—Not later than 14 months after the date*
 24 *of enactment of this Act, the Administrator shall submit*
 25 *to the Committee on Science and Technology of the House*

1 *of Representatives and the Committee on Commerce,*
2 *Science, and Transportation of the Senate a report on the*
3 *results of the review.*

4 **SEC. 305. INTERAGENCY RESEARCH INITIATIVE ON THE IM-**
5 **PACT OF AVIATION ON THE CLIMATE.**

6 (a) *IN GENERAL.*—*The Administrator, in coordination*
7 *with the United States Climate Change Science Program*
8 *and other appropriate agencies, shall establish a research*
9 *initiative to assess the impact of aviation on the climate*
10 *and, if warranted, to evaluate approaches to mitigate that*
11 *impact.*

12 (b) *RESEARCH PLAN.*—*Not later than 1 year after the*
13 *date of enactment of this Act, the participating Federal en-*
14 *tities shall jointly develop a plan for the research initiative*
15 *that contains objectives, proposed tasks, milestones, and a*
16 *5-year budgetary profile.*

17 (c) *REVIEW.*—*The Administrator shall enter into an*
18 *arrangement with the National Research Council for con-*
19 *ducting an independent review of the interagency research*
20 *program plan, and shall provide the results of that review*
21 *to the Committee on Science and Technology of the House*
22 *of Representatives and the Committee on Commerce,*
23 *Science, and Transportation of the Senate not later than*
24 *2 years after the date of enactment of this Act.*

1 **SEC. 306. RESEARCH PROGRAM ON DESIGN FOR CERTIFI-**
2 **CATION.**

3 (a) *PROGRAM.*—Not later than 6 months after the date
4 of enactment of this Act, NASA, in consultation with other
5 appropriate agencies, shall establish a research program on
6 methods to improve both confidence in and the timeliness
7 of certification of new technologies for their introduction
8 into the national airspace system.

9 (b) *RESEARCH PLAN.*—Not later than 1 year after the
10 date of enactment of this Act, as part of the activity de-
11 scribed in subsection (a), NASA shall develop a plan for
12 the research program that contains objectives, proposed
13 tasks, milestones, and a 5-year budgetary profile.

14 (c) *REVIEW.*—The Administrator shall enter into an
15 arrangement with the National Research Council for con-
16 ducting an independent review of the research program
17 plan, and shall provide the results of that review to the
18 Committee on Science and Technology of the House of Rep-
19 resentatives and the Committee on Commerce, Science, and
20 Transportation of the Senate not later than 2 years after
21 the date of enactment of this Act.

22 **SEC. 307. AVIATION WEATHER RESEARCH.**

23 The Administrator shall establish a program of col-
24 laborative research with NOAA on convective weather
25 events, with the goal of significantly improving the reli-
26 ability of 2-hour to 6-hour aviation weather forecasts.

1 **SEC. 308. JOINT AERONAUTICS RESEARCH AND DEVELOP-**
2 **MENT ADVISORY COMMITTEE.**

3 (a) *ESTABLISHMENT.*—A joint Aeronautics Research
4 and Development Advisory Committee (in this section re-
5 ferred to as the “Advisory Committee”) shall be established.

6 (b) *DUTIES.*—The Advisory Committee shall—

7 (1) make recommendations regarding the coordi-
8 nation of research and development activities of
9 NASA and the Federal Aviation Administration;

10 (2) make recommendations for and monitor de-
11 velopment and implementation of processes for
12 transitioning research and development from NASA
13 and the Federal Aviation Administration to external
14 entities for further development as appropriate;

15 (3) make recommendations regarding the status
16 of the activities of NASA and the Federal Aviation
17 Administration’s research and development programs
18 as they relate to the recommendations contained in
19 the National Research Council’s 2006 report entitled
20 “Decadal Survey of Civil Aeronautics”, and the rec-
21 ommendations contained in subsequent National Re-
22 search Council reports of a similar nature; and

23 (4) not later than March 15 of each year, trans-
24 mit a report to the Administrator, the Administrator
25 of the Federal Aviation Administration, the Com-
26 mittee on Science and Technology of the House of

1 *Representatives, and the Committee on Commerce,*
2 *Science, and Transportation of the Senate on the Ad-*
3 *visory Committee’s findings and recommendations*
4 *under paragraphs (1), (2), and (3).*

5 (c) *MEMBERSHIP.—The Advisory Committee shall*
6 *consist of 10 members, none of whom shall be a Federal*
7 *employee, including—*

8 (1) *5 members selected by the Administrator; and*
9 (2) *5 members selected by the Chair of the Fed-*
10 *eral Aviation Administration’s Research, Engineer-*
11 *ing, and Development Advisory Committee (REDAC).*

12 (d) *SELECTION PROCESS.—Initial selections under*
13 *subsection (c) shall be made within 3 months after the date*
14 *of enactment of this Act. Vacancies shall be filled in the*
15 *same manner as provided in subsection (c).*

16 (e) *CHAIRPERSON.—The Advisory Committee shall se-*
17 *lect a chairperson from among its members.*

18 (f) *COORDINATION.—The Advisory Committee shall co-*
19 *ordinate with the advisory bodies of other Federal agencies,*
20 *which may engage in related research activities.*

21 (g) *COMPENSATION.—The members of the Advisory*
22 *Committee shall serve without compensation, but shall re-*
23 *ceive travel expenses, including per diem in lieu of subsist-*
24 *ence, in accordance with sections 5702 and 5703 of title*
25 *5, United States Code.*

1 (h) *MEETINGS.*—*The Advisory Committee shall con-*
 2 *vene, in person or by electronic means, at least 4 times per*
 3 *year.*

4 (i) *QUORUM.*—*A majority of the members serving on*
 5 *the Advisory Committee shall constitute a quorum for pur-*
 6 *poses of conducting the business of the Advisory Committee.*

7 (j) *DURATION.*—*Section 14 of the Federal Advisory*
 8 *Committee Act shall not apply to the Advisory Committee.*

9 **SEC. 309. FUNDING FOR RESEARCH AND DEVELOPMENT AC-**
 10 **TIVITIES IN SUPPORT OF OTHER MISSION DI-**
 11 **RECTORATES.**

12 *Research and development activities performed by the*
 13 *Aeronautics Research Mission Directorate with the primary*
 14 *objective of assisting in the development of a flight project*
 15 *in another Mission Directorate shall be funded by the Mis-*
 16 *sion Directorate seeking assistance.*

17 **SEC. 310. UNIVERSITY-BASED CENTERS FOR RESEARCH ON**
 18 **AVIATION TRAINING.**

19 *Section 427(a) of the National Aeronautics and Space*
 20 *Administration Authorization Act of 2005 (Public Law*
 21 *109–155) is amended by striking “may” and inserting*
 22 *“shall”.*

1 ***TITLE IV—INTERNATIONAL***
2 ***EXPLORATION INITIATIVE***

3 ***SEC. 401. SENSE OF CONGRESS.***

4 *It is the sense of Congress that the President of the*
5 *United States should invite America’s friends and allies to*
6 *participate in a long-term international initiative under*
7 *the leadership of the United States to expand human and*
8 *robotic presence into the solar system, including the explo-*
9 *ration and utilization of the Moon, near Earth asteroids,*
10 *Lagrangian points, and eventually Mars and its moons,*
11 *among other exploration and utilization goals.*

12 ***SEC. 402. STEPPING STONE APPROACH TO EXPLORATION.***

13 *In order to maximize the cost-effectiveness of the long-*
14 *term exploration and utilization activities of the United*
15 *States, the Administrator shall take all necessary steps to*
16 *ensure that activities in its lunar exploration program shall*
17 *be designed and implemented in a manner that gives strong*
18 *consideration to how those activities might also help meet*
19 *the requirements of future exploration and utilization ac-*
20 *tivities beyond the Moon. The timetable of the lunar phase*
21 *of the long-term international exploration initiative shall*
22 *be determined by the availability of funding and agreement*
23 *on an international cooperative framework for the conduct*
24 *of the international exploration initiative. However, once*
25 *an exploration-related project enters its development phase,*

1 *the Administrator shall seek, to the maximum extent prac-*
2 *ticable, to complete that project without undue delays.*

3 **SEC. 403. LUNAR OUTPOST.**

4 (a) *ESTABLISHMENT.*—As NASA works toward the es-
5 *tablishment of a lunar outpost, NASA shall make no plans*
6 *that would require a lunar outpost to be occupied to main-*
7 *tain its viability. Any such outpost shall be operable as a*
8 *human-tended facility capable of remote or autonomous op-*
9 *eration for extended periods.*

10 (b) *DESIGNATION.*—The United States portion of the
11 *first human-tended outpost established on the surface of the*
12 *Moon shall be designated the “Neil A. Armstrong Lunar*
13 *Outpost”.*

14 (c) *CONGRESSIONAL INTENT.*—It is the intent of Con-
15 *gress that NASA shall make use of commercial services to*
16 *the maximum extent practicable in support of its lunar out-*
17 *post activities.*

18 **SEC. 404. EXPLORATION TECHNOLOGY DEVELOPMENT.**

19 (a) *IN GENERAL.*—A robust program of long-term ex-
20 *ploration-related technology research and development will*
21 *be essential for the success and sustainability of any endur-*
22 *ing initiative of human and robotic exploration of the solar*
23 *system.*

24 (b) *ESTABLISHMENT.*—The Administrator shall estab-
25 *lish and maintain a program of long-term exploration-re-*

1 *lated technology research and development that is not tied*
 2 *to specific flight projects and that has a funding goal of*
 3 *at least 10 percent of the total budget of the Exploration*
 4 *Systems Mission Directorate.*

5 *(c) GOALS.—The long-term technology program shall*
 6 *have the goal of having at least 50 percent of the funding*
 7 *allocated to external grants and contracts with universities,*
 8 *research institutions, and industry.*

9 **SEC. 405. EXPLORATION RISK MITIGATION PLAN.**

10 *(a) PLAN.—The Administrator shall prepare a plan*
 11 *that identifies and prioritizes the human and technical*
 12 *risks that will need to be addressed in carrying out human*
 13 *exploration beyond low Earth orbit and the research and*
 14 *development activities required to address those risks. The*
 15 *plan shall address the role of the International Space Sta-*
 16 *tion in exploration risk mitigation and include a detailed*
 17 *description of the specific steps being taken to utilize the*
 18 *International Space Station for that purpose.*

19 *(b) REPORT.—The Administrator shall transmit to the*
 20 *Committee on Science and Technology of the House of Rep-*
 21 *resentatives and the Committee on Commerce, Science, and*
 22 *Transportation of the Senate the plan described in sub-*
 23 *section (a) not later than one year after the date of enact-*
 24 *ment of this Act.*

1 **SEC. 406. EXPLORATION CREW RESCUE.**

2 *In order to maximize the ability to rescue astronauts*
3 *whose space vehicles have become disabled, the Adminis-*
4 *trator shall enter into discussions with the appropriate rep-*
5 *resentatives of spacefaring nations who have or plan to have*
6 *crew transportation systems capable of orbital flight or*
7 *flight beyond low Earth orbit for the purpose of agreeing*
8 *on a common docking system standard.*

9 **SEC. 407. PARTICIPATORY EXPLORATION.**

10 *(a) IN GENERAL.—The Administrator shall develop a*
11 *technology plan to enable dissemination of information to*
12 *the public to allow the public to experience missions to the*
13 *Moon, Mars, or other bodies within our solar system by*
14 *leveraging advanced exploration technologies. The plan*
15 *shall identify opportunities to leverage technologies in*
16 *NASA’s Constellation systems that deliver a rich, multi-*
17 *media experience to the public, and that facilitate partici-*
18 *pation by the public, the private sector, nongovernmental*
19 *organizations, and international partners. Technologies for*
20 *collecting high-definition video, 3-dimensional images, and*
21 *scientific data, along with the means to rapidly deliver this*
22 *content through extended high bandwidth communications*
23 *networks shall be considered as part of this plan. It shall*
24 *include a review of high bandwidth radio and laser commu-*
25 *nications, high-definition video, stereo imagery, 3-dimen-*
26 *sional scene cameras, and Internet routers in space, from*

1 orbit, and on the lunar surface. The plan shall also consider
 2 secondary cargo capability for technology validation and
 3 science mission opportunities. In addition, the plan shall
 4 identify opportunities to develop and demonstrate these
 5 technologies on the International Space Station and robotic
 6 missions to the Moon, Mars, and other solar system bodies.

7 (b) *REPORT.*—Not later than 270 days after the date
 8 of enactment of this Act, the Administrator shall submit
 9 the plan to the Committee on Science and Technology of
 10 the House of Representatives and the Committee on Com-
 11 merce, Science, and Transportation of the Senate.

12 **SEC. 408. SCIENCE AND EXPLORATION.**

13 *It is the sense of Congress that NASA’s scientific and*
 14 *human exploration activities are synergistic, i.e. science en-*
 15 *ables exploration and human exploration enables science.*
 16 *The Congress encourages the Administrator to coordinate,*
 17 *where practical, NASA’s science and exploration activities*
 18 *with the goal of maximizing the success of human explo-*
 19 *ration initiatives and furthering our understanding of the*
 20 *Universe that we explore.*

21 **TITLE V—SPACE SCIENCE**

22 **SEC. 501. TECHNOLOGY DEVELOPMENT.**

23 *The Administrator shall establish a cross-Directorate*
 24 *long-term technology development program for space and*
 25 *Earth science within the Science Mission Directorate for*

1 *the development of new technology. The program shall be*
 2 *independent of the flight projects under development. NASA*
 3 *shall have a goal of funding the cross-Directorate technology*
 4 *development program at a level of 5 percent of the total*
 5 *Science Mission Directorate annual budget. The program*
 6 *shall be structured to include competitively awarded grants*
 7 *and contracts.*

8 **SEC. 502. PROVISION FOR FUTURE SERVICING OF OBSERV-**
 9 **ATORY-CLASS SCIENTIFIC SPACECRAFT.**

10 *The Administrator shall take all necessary steps to en-*
 11 *sure that provision is made in the design and construction*
 12 *of all future observatory-class scientific spacecraft intended*
 13 *to be deployed in Earth orbit or at a Lagrangian point*
 14 *in space for robotic or human servicing and repair.*

15 **SEC. 503. MARS EXPLORATION.**

16 *Congress reaffirms its support for a systematic, inte-*
 17 *grated program of exploration of the Martian surface to ex-*
 18 *amine the planet whose surface is most like Earth's, to*
 19 *search for evidence of past or present life, and to examine*
 20 *Mars for future habitability and as a long-term goal for*
 21 *future human exploration. To the extent affordable and*
 22 *practical, the program should pursue the goal of launches*
 23 *at every Mars launch opportunity, leading to an eventual*
 24 *robotic sample return.*

1 **SEC. 504. IMPORTANCE OF A BALANCED SCIENCE PRO-**
2 **GRAM.**

3 *It is the sense of Congress that a balanced and ade-*
4 *quately funded set of activities, consisting of NASA's re-*
5 *search and analysis grants programs, technology develop-*
6 *ment, small, medium-sized, and large space science mis-*
7 *sions, and suborbital research activities, contributes to a ro-*
8 *bust and productive science program and serves as a cata-*
9 *lyst for innovation. It is further the sense of Congress that*
10 *suborbital flight activities, including the use of sounding*
11 *rockets, aircraft, and high-altitude balloons, offer valuable*
12 *opportunities to advance science, train the next generation*
13 *of scientists and engineers, and provide opportunities for*
14 *participants in the programs to acquire skills in systems*
15 *engineering and systems integration that are critical to*
16 *maintaining the Nation's leadership in space programs.*
17 *The Congress believes that it is in the national interest to*
18 *expand the size of NASA's suborbital research program.*

19 **SEC. 505. RESTORATION OF RADIOISOTOPE THERMO-**
20 **ELECTRIC GENERATOR MATERIAL PRODUC-**
21 **TION.**

22 *(a) PLAN.—The Director of OSTP shall develop a plan*
23 *for restarting and sustaining the domestic production of ra-*
24 *dioisotope thermoelectric generator material for deep space*
25 *and other space science missions.*

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

4 **SEC. 506. ASSESSMENT OF IMPEDIMENTS TO INTERAGENCY**
 5 **COOPERATION ON SPACE AND EARTH**
 6 **SCIENCE MISSIONS.**

7 *(a) ASSESSMENT.—The Administrator shall enter into*
 8 *an arrangement with the National Academies to assess im-*
 9 *pediments to the successful conduct of interagency coopera-*
 10 *tion on space and Earth science missions, to provide lessons*
 11 *learned and best practices, and to recommend steps to help*
 12 *facilitate successful interagency collaborations on space and*
 13 *Earth science missions.*

14 *(b) REPORT.—The report of the assessment carried out*
 15 *under subsection (a) shall be transmitted to the Committee*
 16 *on Science and Technology of the House of Representatives*
 17 *and the Committee on Commerce, Science, and Transpor-*
 18 *tation of the Senate not later than 15 months after the date*
 19 *of enactment of this Act.*

20 **SEC. 507. ASSESSMENT OF COST GROWTH.**

21 *(a) STUDY.—The Administrator shall enter into an ar-*
 22 *rangement for an independent external assessment to iden-*
 23 *tify the primary causes of cost growth in the large, medium-*
 24 *sized, and small space and Earth science spacecraft mission*
 25 *classes, and make recommendations as to what changes, if*

1 *any, should be made to contain costs and ensure frequent*
 2 *mission opportunities in NASA's science spacecraft mission*
 3 *programs.*

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

7 **SEC. 508. OUTER PLANETS EXPLORATION.**

8 *It is the sense of Congress that the outer solar system*
 9 *planets and their satellites can offer important knowledge*
 10 *about the formation and evolution of the solar system, the*
 11 *nature and diversity of these solar system bodies, and the*
 12 *potential for conditions conducive to life beyond Earth.*
 13 *NASA should move forward with plans for an Outer Plan-*
 14 *ets flagship mission to the Europa-Jupiter system or the*
 15 *Titan-Saturn system as soon as practicable within a bal-*
 16 *anced Planetary Science program.*

17 **TITLE VI—SPACE OPERATIONS**

18 **Subtitle A—International Space**
 19 **Station**

20 **SEC. 601. UTILIZATION.**

21 *The Administrator shall take all necessary steps to en-*
 22 *sure that the International Space Station remains a viable*
 23 *and productive facility capable of potential United States*
 24 *utilization through at least 2020 and shall take no steps*

1 *that would preclude its continued operation and utilization*
2 *by the United States after 2016.*

3 **SEC. 602. RESEARCH MANAGEMENT PLAN.**

4 (a) *RESEARCH MANAGEMENT PLAN.*—*The Adminis-*
5 *trator shall develop a research management plan for the*
6 *International Space Station. The plan shall include a proc-*
7 *ess for selecting and prioritizing research activities (includ-*
8 *ing fundamental, applied, commercial, and other research)*
9 *for flight on the International Space Station. This plan*
10 *shall be used to prioritize resources such as crew time, racks*
11 *and equipment, and United States access to international*
12 *research facilities and equipment. The plan shall also iden-*
13 *tify the organization to be responsible for managing United*
14 *States research on the International Space Station, includ-*
15 *ing a description of the relationship of the management in-*
16 *stitution with NASA (e.g., internal NASA office, contract,*
17 *cooperative agreement, or grant), the estimated length of*
18 *time for the arrangement, and the budget required to sup-*
19 *port the management institution. The plan shall be devel-*
20 *oped in consultation with other Federal agencies, academia,*
21 *industry, and other relevant stakeholders. The plan shall*
22 *be transmitted to Congress not later than 12 months after*
23 *the date of enactment of this Act.*

24 (b) *ACCESS TO NATIONAL LABORATORY.*—*The Admin-*
25 *istrator shall—*

1 (1) *establish a process by which to support Inter-*
2 *national Space Station National Laboratory users in*
3 *identifying their requirements for transportation of*
4 *research supplies to and from the International Space*
5 *Station, and for communicating those requirements to*
6 *NASA and International Space Station transpor-*
7 *tation services providers; and*

8 (2) *develop an estimate of the transportation re-*
9 *quirements needed to support users of the Inter-*
10 *national Space Station National Laboratory and de-*
11 *velop a plan for satisfying those requirements by*
12 *dedicating a portion of volume on NASA supply mis-*
13 *sions to the International Space Station and missions*
14 *returning from the International Space Station to*
15 *Earth.*

16 (c) *ASSESSMENT.—The Administrator shall—*

17 (1) *identify existing research equipment and*
18 *racks and support equipment that are manifested for*
19 *flight;*

20 (2) *provide a detailed description of the status of*
21 *research equipment and facilities that were completed*
22 *or in development prior to being cancelled, and pro-*
23 *vide the budget and milestones for completing and*
24 *preparing the equipment for flight on the Inter-*
25 *national Space Station; and*

1 (3) *provide the results of the assessment to the*
2 *Committee on Science and Technology of the House of*
3 *Representatives and the Committee on Commerce,*
4 *Science, and Transportation of the Senate not later*
5 *than 18 months after the date of enactment of this*
6 *Act.*

7 (d) *ADVISORY COMMITTEE.—Not later than 1 year*
8 *after the date of enactment of this Act, the Administrator*
9 *shall establish an advisory panel under the Federal Advi-*
10 *sory Committee Act to monitor the activities and manage-*
11 *ment of the International Space Station National Labora-*
12 *tory.*

13 **SEC. 603. CONTINGENCY PLAN FOR CARGO RESUPPLY.**

14 (a) *IN GENERAL.—The International Space Station*
15 *represents a significant investment of national resources,*
16 *and it is a facility that embodies a cooperative inter-*
17 *national approach to the exploration and utilization of*
18 *space. As such, it is important that its continued viability*
19 *and productivity be ensured, to the maximum extent pos-*
20 *sible, after the Space Shuttle is retired.*

21 (b) *CONTINGENCY PLAN.—The Administrator shall de-*
22 *velop a contingency plan and arrangements, including use*
23 *of International Space Station international partner cargo*
24 *resupply capabilities, to ensure the continued viability and*
25 *productivity of the International Space Station in the event*

1 *that United States commercial cargo resupply services are*
 2 *not available during any extended period after the date that*
 3 *the Space Shuttle is retired. The plan shall be delivered to*
 4 *the Committee on Science and Technology of the House of*
 5 *Representatives and the Committee on Commerce, Science,*
 6 *and Transportation of the Senate not later than one year*
 7 *after the date of enactment of this Act.*

8 ***Subtitle B—Space Shuttle***

9 ***SEC. 611. FLIGHT MANIFEST.***

10 (a) *BASELINE MANIFEST.—In addition to the Space*
 11 *Shuttle flights listed as part of the baseline flight manifest*
 12 *as of January 1, 2008, the Utilization flights ULF–4 and*
 13 *ULF–5 shall be considered part of the Space Shuttle base-*
 14 *line flight manifest and shall be flown prior to the retire-*
 15 *ment of the Space Shuttle.*

16 (b) *ADDITIONAL FLIGHT TO DELIVER THE ALPHA*
 17 *MAGNETIC SPECTROMETER TO THE INTERNATIONAL SPACE*
 18 *STATION.—In addition to the flying of the baseline manifest*
 19 *as described in subsection (a), the Administrator shall take*
 20 *all necessary steps to fly one additional Space Shuttle flight*
 21 *to deliver the Alpha Magnetic Spectrometer to the Inter-*
 22 *national Space Station prior to the retirement of the Space*
 23 *Shuttle.*

24 (c) *SPACE SHUTTLE RETIREMENT DATE.—The Space*
 25 *Shuttle shall be retired following the completion of the base-*

1 *line flight manifest and the flight of the additional flight*
 2 *specified in subsection (b), events that are anticipated to*
 3 *occur in 2010.*

4 **SEC. 612. DISPOSITION OF SHUTTLE-RELATED ASSETS.**

5 *Not later than 90 days after the date of enactment of*
 6 *this Act, the Administrator shall provide a plan to Congress*
 7 *for the disposition of the remaining Space Shuttle orbiters*
 8 *and other Space Shuttle program-related hardware and fa-*
 9 *cilities after the retirement of the Space Shuttle fleet. The*
 10 *plan shall include a process by which educational institu-*
 11 *tions and science museums and other appropriate organiza-*
 12 *tions may acquire, through loan or disposal by the Federal*
 13 *Government, Space Shuttle program-related hardware. The*
 14 *Administrator shall not dispose of any Space Shuttle-re-*
 15 *lated hardware prior to the completion of the plan.*

16 **SEC. 613. SPACE SHUTTLE TRANSITION LIAISON OFFICE.**

17 *(a) ESTABLISHMENT.—The Administrator shall estab-*
 18 *lish an office within NASA’s Office of Human Capital*
 19 *Management that shall assist local communities affected by*
 20 *the termination of the Space Shuttle program. The office*
 21 *shall offer technical assistance and serve as a clearinghouse*
 22 *to assist communities in identifying services available from*
 23 *other Federal agencies.*

1 (b) *SUNSET.*—*The Office established under subsection*
 2 (a) *shall cease operations 24 months after the last Space*
 3 *Shuttle flight.*

4 ***Subtitle C—Launch Services***

5 ***SEC. 621. LAUNCH SERVICES STRATEGY.***

6 (a) *IN GENERAL.*—*In preparation for the award of*
 7 *contracts to follow up on the current NASA Launch Serv-*
 8 *ices (NLS) contracts, the Administrator shall develop a*
 9 *strategy for providing domestic commercial launch services*
 10 *in support of NASA’s small and medium-sized Science,*
 11 *Space Operations, and Exploration missions, consistent*
 12 *with current law and policy.*

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

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

23 (2) *an analysis of possible alternatives to main-*
 24 *tain small and medium-sized lift capabilities after*
 25 *June 30, 2010, including the use of the Department*

1 of Defense’s Evolved Expendable Launch Vehicle
2 (EELV);

3 (3) the recommended alternatives, and associated
4 5-year budget plans starting in October 2010 that
5 would enable their implementation; and

6 (4) a contingency plan in the event the rec-
7 ommended alternatives described in paragraph (3)
8 are not available when needed.

9 **TITLE VII—EDUCATION**

10 **SEC. 701. RESPONSE TO REVIEW.**

11 (a) *PLAN.*—The Administrator shall prepare a plan
12 identifying actions taken or planned in response to the rec-
13 ommendations of the National Academies report, “NASA’s
14 Elementary and Secondary Education Program: Review
15 and Critique”. For those actions that have not been imple-
16 mented, the plan shall include a schedule and budget re-
17 quired to support the actions.

18 (b) *REPORT.*—The plan prepared under subsection (a)
19 shall be transmitted to the Committee on Science and Tech-
20 nology of the House of Representatives and the Committee
21 on Commerce, Science, and Transportation of the Senate
22 not later than 1 year after the date of enactment of this
23 Act.

1 **SEC. 702. EXTERNAL REVIEW OF EXPLORER SCHOOLS PRO-**
2 **GRAM.**

3 (a) *REVIEW.*—*The Administrator shall make arrange-*
4 *ments for an independent external review of the Explorer*
5 *Schools program to evaluate its goals, status, plans, and*
6 *accomplishments.*

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

13 **TITLE VIII—NEAR-EARTH**
14 **OBJECTS**

15 **SEC. 801. IN GENERAL.**

16 *The Congress reaffirms the policy direction established*
17 *in the National Aeronautics and Space Administration Au-*
18 *thorization Act of 2005 (Public Law 109–155) for NASA*
19 *to detect, track, catalogue, and characterize the physical*
20 *characteristics of near-Earth objects equal to or greater than*
21 *140 meters in diameter. NASA’s Near-Earth Object pro-*
22 *gram activities will also provide benefits to NASA’s sci-*
23 *entific and exploration activities.*

24 **SEC. 802. FINDINGS.**

25 *Congress makes the following findings:*

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

6 (2) *Several such near-Earth objects have only*
7 *been discovered within days of the objects' closest ap-*
8 *proach to Earth and recent discoveries of such large*
9 *objects indicate that many large near-Earth objects*
10 *remain undiscovered.*

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

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

16 (5) *Unlike earthquakes and hurricanes, asteroids*
17 *and comets can provide adequate collision informa-*
18 *tion, enabling the United States to include both aster-*
19 *oid-collision and comet-collision disaster recovery and*
20 *disaster avoidance in its public-safety structure.*

21 (6) *Basic information is needed for technical*
22 *and policy decisionmaking for the United States to*
23 *create a comprehensive program in order to be ready*
24 *to eliminate and mitigate the serious and credible*

1 *threats to humankind posed by potentially hazardous*
2 *near-Earth asteroids and comets.*

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

8 **SEC. 803. REQUESTS FOR INFORMATION.**

9 *The Administrator shall issue requests for information*
10 *on—*

11 *(1) a low-cost space mission with the purpose of*
12 *rendezvousing with, attaching a tracking device, and*
13 *characterizing the Apophis asteroid, which scientists*
14 *estimate will in 2029 pass at a distance from Earth*
15 *that is closer than geostationary satellites; and*

16 *(2) a medium-sized space mission with the pur-*
17 *pose of detecting near-Earth objects equal to or great-*
18 *er than 140 meters in diameter.*

19 **SEC. 804. ESTABLISHMENT OF POLICY.**

20 *Not later than 2 years after the date of enactment of*
21 *this Act, the Director of OSTP shall—*

22 *(1) develop a policy for notifying Federal agen-*
23 *cies and relevant emergency response institutions of*
24 *an impending near-Earth object threat, if near term*
25 *public safety is at stake; and*

1 (2) *recommend a Federal agency or agencies to*
 2 *be responsible for protecting the Nation from a near-*
 3 *Earth object that is anticipated to collide with Earth*
 4 *and implementing a deflection campaign, in consulta-*
 5 *tion with international bodies, should one be required.*

6 **SEC. 805. PLANETARY RADAR CAPABILITY.**

7 *The Administrator shall maintain a planetary radar*
 8 *that is, at minimum, comparable to the capability provided*
 9 *through the NASA Deep Space Network Goldstone facility.*

10 **SEC. 806. ARECIBO OBSERVATORY.**

11 *Congress reiterates its support for the use of the Are-*
 12 *cibo Observatory for NASA-funded near-Earth object-re-*
 13 *lated activities. The Administrator shall ensure the avail-*
 14 *ability of the Arecibo Observatory's planetary radar to sup-*
 15 *port these activities until the National Academies' review*
 16 *of NASA's approach for the survey and deflection of near-*
 17 *Earth objects, including a determination of the role of Are-*
 18 *cibo, that was directed to be undertaken by the Fiscal Year*
 19 *2008 Omnibus Appropriations Act, is completed.*

20 **TITLE IX—COMMERCIAL**
 21 **INITIATIVES**

22 **SEC. 901. SENSE OF CONGRESS.**

23 *It is the sense of Congress that a healthy and robust*
 24 *commercial sector can make significant contributions to the*
 25 *successful conduct of NASA's space exploration program.*

1 *While some activities are inherently governmental in na-*
2 *ture, there are many other activities, such as routine supply*
3 *of water, fuel, and other consumables to low Earth orbit*
4 *or to destinations beyond low Earth orbit, and provision*
5 *of power or communications services to lunar outposts, that*
6 *potentially could be carried out effectively and efficiently*
7 *by the commercial sector at some point in the future. Con-*
8 *gress encourages NASA to look for such service opportuni-*
9 *ties and, to the maximum extent practicable, make use of*
10 *the commercial sector to provide those services.*

11 **SEC. 902. COMMERCIAL CREW INITIATIVE.**

12 *(a) IN GENERAL.—In order to stimulate commercial*
13 *use of space, help maximize the utility and productivity*
14 *of the International Space Station, and enable a commer-*
15 *cial means of providing crew transfer and crew rescue serv-*
16 *ices for the International Space Station, NASA shall—*

17 *(1) make use of United States commercially pro-*
18 *vided International Space Station crew transfer and*
19 *crew rescue services to the maximum extent prac-*
20 *ticable, if those commercial services have dem-*
21 *onstrated the capability to meet NASA-specified as-*
22 *cent, entry, and International Space Station prox-*
23 *imity operations safety requirements;*

24 *(2) limit, to the maximum extent practicable, the*
25 *use of the Crew Exploration Vehicle to missions car-*

1 *rying astronauts beyond low Earth orbit once com-*
 2 *mercial crew transfer and crew rescue services that*
 3 *meet safety requirements become operational;*

4 *(3) facilitate, to the maximum extent practicable,*
 5 *the transfer of NASA-developed technologies to poten-*
 6 *tial United States commercial crew transfer and res-*
 7 *cue service providers, consistent with United States*
 8 *law; and*

9 *(4) issue a notice of intent, not later than 180*
 10 *days after the date of enactment of this Act, to enter*
 11 *into a funded, competitively awarded Space Act*
 12 *Agreement with two or more commercial entities for*
 13 *a Phase 1 Commercial Orbital Transportation Serv-*
 14 *ices (COTS) crewed vehicle demonstration program.*

15 *(b) COTS CREWED VEHICLE DEMONSTRATION PRO-*
 16 *GRAM AUTHORIZATION OF APPROPRIATIONS.—There are*
 17 *authorized to be appropriated to NASA for the program de-*
 18 *scribed in subsection (a)(4) \$50,000,000 for fiscal year*
 19 *2009, to remain available until expended.*

20 *(c) CONGRESSIONAL INTENT.—It is the intent of Con-*
 21 *gress that funding for the program described in subsection*
 22 *(a)(4) shall not come at the expense of full funding of the*
 23 *amounts authorized under section 101(a)(3), and for future*
 24 *fiscal years, for Orion Crew Exploration Vehicle develop-*

1 *ment, Ares I Crew Launch Vehicle development, or Inter-*
2 *national Space Station cargo delivery.*

3 (d) *ADDITIONAL TECHNOLOGIES AUTHORIZATION OF*
4 *APPROPRIATIONS.—There are authorized to be appro-*
5 *priated to NASA for the provision of International Space*
6 *Station-compatible docking adaptors and other relevant*
7 *technologies to be made available to the commercial crew*
8 *providers selected to service the International Space Station*
9 *\$50,000,000, to remain available until expended.*

10 (e) *CREW TRANSFER AND CREW RESCUE SERVICES*
11 *CONTRACT.—If a commercial provider demonstrates the ca-*
12 *pability to provide International Space Station crew trans-*
13 *fer and crew rescue services and to satisfy NASA ascent,*
14 *entry, and International Space Station proximity oper-*
15 *ations safety requirements, NASA shall enter into an Inter-*
16 *national Space Station crew transfer and crew rescue serv-*
17 *ices contract with that commercial provider for a portion*
18 *of NASA’s anticipated International Space Station crew*
19 *transfer and crew rescue requirements from the time the*
20 *commercial provider commences operations under contract*
21 *with NASA through calendar year 2016, with an option*
22 *to extend the period of performance through calendar year*
23 *2020.*

1 **TITLE X—REVITALIZATION OF**
2 **NASA INSTITUTIONAL CAPA-**
3 **BILITIES**

4 **SEC. 1001. REVIEW OF INFORMATION SECURITY CONTROLS.**

5 (a) *REPORT ON CONTROLS.*—Not later than one year
6 after the date of enactment of this Act, the Comptroller Gen-
7 eral shall transmit to the Committee on Science and Tech-
8 nology of the House of Representatives and the Committee
9 on Commerce, Science, and Transportation of the Senate
10 a review of information security controls that protect
11 NASA’s information technology resources and information
12 from inadvertent or deliberate misuse, fraudulent use, dis-
13 closure, modification, or destruction. The review shall focus
14 on networks servicing NASA’s mission directorates. In as-
15 sessing these controls, the review shall evaluate—

16 (1) *the network’s ability to limit, detect, and*
17 *monitor access to resources and information, thereby*
18 *safeguarding and protecting them from unauthorized*
19 *access;*

20 (2) *the physical access to network resources; and*

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

23 (b) *RESTRICTED REPORT ON INTRUSIONS.*—Not later
24 than one year after the date of enactment of this Act, and
25 in conjunction with the report described in subsection (a),

1 *the Comptroller General shall transmit to the Committee*
 2 *on Science and Technology of the House of Representatives*
 3 *and the Committee on Commerce, Science, and Transpor-*
 4 *tation of the Senate a restricted report detailing results of*
 5 *vulnerability assessments conducted by the Government Ac-*
 6 *countability Office on NASA's network resources. Intrusion*
 7 *attempts during such vulnerability assessments shall be di-*
 8 *vulged to NASA senior management prior to their applica-*
 9 *tion. The report shall put vulnerability assessment results*
 10 *in the context of unauthorized accesses or attempts during*
 11 *the prior two years and the corrective actions, recent or on-*
 12 *going, that NASA has implemented in conjunction with*
 13 *other Federal authorities to prevent such intrusions.*

14 **SEC. 1002. MAINTENANCE AND UPGRADE OF CENTER FA-**
 15 **CILITIES.**

16 (a) *IN GENERAL.*—*In order to sustain healthy Centers*
 17 *that are capable of carrying out NASA's missions, the Ad-*
 18 *ministrator shall ensure that adequate maintenance and*
 19 *upgrading of those Center facilities is performed on a reg-*
 20 *ular basis.*

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

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

5 **SEC. 1003. ASSESSMENT OF NASA LABORATORY CAPABILI-**
6 **TIES.**

7 (a) *IN GENERAL.*—*NASA’s laboratories are a critical*
8 *component of NASA’s research capabilities, and the Admin-*
9 *istrator shall ensure that those laboratories remain produc-*
10 *tive.*

11 (b) *REVIEW.*—*The Administrator shall enter into an*
12 *arrangement for an independent external review of NASA’s*
13 *laboratories, including laboratory equipment, facilities, and*
14 *support services, to determine whether they are equipped*
15 *and maintained at a level adequate to support NASA’s re-*
16 *search activities. The assessment shall also include an as-*
17 *essment of the relative quality of NASA’s in-house labora-*
18 *tory equipment and facilities compared to comparable lab-*
19 *oratories elsewhere. The results of the review shall be pro-*
20 *vided to the Committee on Science and Technology of the*
21 *House of Representatives and the Committee on Commerce,*
22 *Science, and Transportation of the Senate not later than*
23 *18 months after the date of enactment of this Act.*

1 **TITLE XI—OTHER PROVISIONS**

2 **SEC. 1101. SPACE WEATHER.**

3 (a) *PLAN FOR REPLACEMENT OF ADVANCED COMPOSI-*
 4 *TION EXPLORER AT L-1 LAGRANGIAN POINT.—*

5 (1) *PLAN.—The Director of OSTP shall develop*
 6 *a plan for sustaining space-based measurements of*
 7 *solar wind from the L-1 Lagrangian point in space*
 8 *and for the dissemination of the data for operational*
 9 *purposes. OSTP shall consult with NASA, NOAA,*
 10 *and other Federal agencies, and with industry, in de-*
 11 *veloping the plan.*

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

15 (b) *RESEARCH PROGRAM ON SPACE WEATHER AND*
 16 *AVIATION.—*

17 (1) *ESTABLISHMENT.—The Administrator shall,*
 18 *in coordination with the National Science Founda-*
 19 *tion, NOAA, and other relevant agencies, initiate a*
 20 *research program to—*

21 (A) *conduct or supervise research projects*
 22 *on impacts of space weather to aviation, includ-*
 23 *ing impacts on communication, navigation,*
 24 *avionic systems, and airline passengers and per-*
 25 *sonnel; and*

1 (B) facilitate the transfer of technology from
2 space weather research programs to Federal
3 agencies with operational responsibilities and to
4 the private sector.

5 (2) *USE OF GRANTS OR COOPERATIVE AGREEMENTS.*—The Administrator may use grants or coop-
6 erative agreements in carrying out this subsection.
7

8 (c) *ASSESSMENT OF THE IMPACT OF SPACE WEATHER*
9 *ON AVIATION.*—

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

17 (A) examine space weather impacts on at
18 least communications, navigation, avionics, and
19 human health in flight;

20 (B) assess the benefits of space weather in-
21 formation and services to reduce aviation costs
22 and maintain safety;

23 (C) provide recommendations on how
24 NASA, NOAA, and the National Science Foun-
25 dation can most effectively carry out research

1 *and monitoring activities related to space weath-*
2 *er and aviation; and*

3 *(D) provide recommendations on how to in-*
4 *tegrate space weather information into the Next*
5 *Generation Air Transportation System.*

6 *(2) REPORT.—A report containing the results of*
7 *the study shall be provided to the Committee on*
8 *Science and Technology of the House of Representa-*
9 *tives and the Committee on Commerce, Science, and*
10 *Transportation of the Senate not later than 1 year*
11 *after the date of enactment of this Act.*

12 **SEC. 1102. SPACE TRAFFIC MANAGEMENT.**

13 *(a) IN GENERAL.—As more nations acquire the capa-*
14 *bilities for launching payloads into outer space, there is an*
15 *increasing need for a framework under which information*
16 *intended to promote safe access into outer space, operations*
17 *in outer space, and return from outer space to Earth free*
18 *from physical or radio-frequency interference can be shared*
19 *among those nations.*

20 *(b) DISCUSSIONS.—The Administrator, in consulta-*
21 *tion with other appropriate agencies of the Federal Govern-*
22 *ment, shall initiate discussions with the appropriate rep-*
23 *resentatives of other spacefaring nations with the goal of*
24 *determining an appropriate framework under which infor-*
25 *mation intended to promote safe access into outer space,*

1 *operations in outer space, and return from outer space to*
 2 *Earth free from physical or radio-frequency interference*
 3 *can be shared among those nations.*

4 **SEC. 1103. STUDY OF EXPORT CONTROL POLICIES RELATED**
 5 **TO CIVIL AND COMMERCIAL SPACE ACTIVI-**
 6 **TIES.**

7 (a) *REVIEW.*—*The Director of OSTP shall carry out*
 8 *a study of the impact of current export control policies and*
 9 *implementation directives on the United States aerospace*
 10 *industry and its competitiveness in global markets, and on*
 11 *the ability of United States Government agencies to carry*
 12 *out cooperative activities in science and technology and*
 13 *human space flight, including the impact on research car-*
 14 *ried out under the sponsorship of those agencies.*

15 (b) *CONSULTATION.*—*In carrying out the study, the*
 16 *Director shall seek input from industry, academia, rep-*
 17 *resentatives of the science community, all affected United*
 18 *States Government agencies, and any other appropriate or-*
 19 *ganizations and individuals.*

20 (c) *REPORT.*—*The Director shall provide a report de-*
 21 *tailing the findings and recommendations of the study to*
 22 *the Committee on Science and Technology of the House of*
 23 *Representatives and the Committee on Commerce, Science,*
 24 *and Transportation of the Senate not later than 9 months*
 25 *after the date of enactment of this Act.*

1 **SEC. 1104. ASTRONAUT HEALTH CARE.**

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

8 (b) *REPORT.*—*The Administrator shall transmit a re-*
 9 *port of the results of the survey to Congress not later than*
 10 *90 days following completion of the survey.*

11 **SEC. 1105. NATIONAL ACADEMIES DECADAL SURVEYS.**

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

19 (b) *INDEPENDENT COST ESTIMATES.*—*The agreements*
 20 *described in subsection(a) shall include independent esti-*
 21 *mates of the life cycle costs and technical readiness of mis-*
 22 *sions assessed in the decadal surveys whenever possible.*

23 (c) *REEXAMINATION.*—*The Administrator shall request*
 24 *that each National Academies decadal survey committee*
 25 *identify any conditions or events, such as significant cost*
 26 *growth or scientific or technological advances, that would*

1 *warrant NASA asking the National Academies to reexam-*
2 *ine the priorities that the decadal survey had established.*

3 **SEC. 1106. INNOVATION PRIZES.**

4 (a) *IN GENERAL.*—Prizes can play a useful role in en-
5 *couraging innovation in the development of technologies*
6 *and products that can assist NASA in its aeronautics and*
7 *space activities, and the use of such prizes by NASA should*
8 *be encouraged.*

9 (b) *AMENDMENTS.*—Section 314 of the National Aero-
10 *nautics and Space Act of 1958 is amended—*

11 (1) *by amending subsection (b) to read as fol-*
12 *lows:*

13 “(b) *TOPICS.*—In selecting topics for prize competi-
14 *tions, the Administrator shall consult widely both within*
15 *and outside the Federal Government, and may empanel ad-*
16 *visory committees. The Administrator shall give consider-*
17 *ation to prize goals such as the demonstration of the ability*
18 *to provide energy to the lunar surface from space-based*
19 *solar power systems, demonstration of innovative near-*
20 *Earth object survey and deflection strategies, and innova-*
21 *tive approaches to improving the safety and efficiency of*
22 *aviation systems.”; and*

23 (2) *in subsection (i)(4) by striking*
24 *“\$10,000,000” and inserting “\$50,000,000”.*

1 **SEC. 1107. COMMERCIAL SPACE LAUNCH RANGE STUDY.**

2 (a) *STUDY BY INTERAGENCY COMMITTEE.*—*The Direc-*
3 *tor of OSTP shall work with other appropriate Federal*
4 *agencies to establish an interagency committee to conduct*
5 *a study to—*

6 (1) *identify the issues and challenges associated*
7 *with establishing a space launch range and facilities*
8 *that are fully dedicated to commercial space missions*
9 *in close proximity to Federal launch ranges or other*
10 *Federal facilities; and*

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

18 (b) *REPORT.*—*The Director shall, not later than May*
19 *31, 2010, submit to the Committee on Science and Tech-*
20 *nology of the House of Representatives and the Committee*
21 *on Commerce, Science, and Transportation of the Senate*
22 *a report on the results of the study conducted under sub-*
23 *section (a).*

1 **SEC. 1108. NASA OUTREACH AND TECHNOLOGY ASSIST-**
2 **ANCE PROGRAM.**

3 (a) *ESTABLISHMENT.*—NASA shall contract with an
4 organization that has demonstrated the ability to partner
5 with NASA centers, aerospace contractors, and academic
6 institutions to carry out a program to transfer the knowl-
7 edge and technology of the space and aeronautics programs
8 to small businesses in communities across the United
9 States. The program shall support the mission of NASA’s
10 Innovative Partnerships Program to provide technical as-
11 sistance through joint partnerships with industry, aca-
12 demia, government agencies, and national laboratories.

13 (b) *PROGRAM STRUCTURE.*—In carrying out the pro-
14 gram described in subsection (a), the organization shall
15 support the mission of NASA’s Innovative Partnerships
16 Program by undertaking the following activities:

17 (1) *Facilitating technology transfer to the pri-*
18 *rate sector to produce viable commercial products.*

19 (2) *Creating a network of academic institutions,*
20 *aerospace contractors, and NASA centers that will*
21 *commit to donating technical assistance to small busi-*
22 *nesses.*

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

1 (c) *REPORT.*—Not later than 1 year after the date of
2 enactment of this Act, and annually thereafter, the Admin-
3 istrator shall submit a report to the Committee on Science
4 and Technology of the House of Representatives and the
5 Committee on Commerce, Science, and Transportation of
6 the Senate describing the efforts and accomplishments of the
7 program established under subsection (a) in support of
8 NASA’s Innovative Partnerships Program. As part of the
9 report, the Administrator shall provide—

10 (1) *data on the number of small businesses re-*
11 *ceiving assistance, jobs created and retained, and vol-*
12 *unteer hours donated by NASA, contractors, and aca-*
13 *demic institutions nationwide;*

14 (2) *an estimate of the total dollar value of the*
15 *economic impact made by small businesses that re-*
16 *ceived technical assistance through the program; and*

17 (3) *an accounting of the use of funds appro-*
18 *priated for the program.*

19 (d) *AUTHORIZATION OF APPROPRIATIONS.*—There are
20 authorized to be appropriated to NASA for the program es-
21 tablished under subsection (a), \$4,000,000 for fiscal year
22 2009 from the funding available for the Innovative Partner-
23 ships Program, to remain available until expended.

Union Calendar No. 446

110TH CONGRESS
2^D Session

H. R. 6063

[Report No. 110-702]

A BILL

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

JUNE 9, 2008

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed