

suspend the rules and pass the bill (H.R. 6014) to designate the facility of the United States Postal Service located at 212 Main Street in Hartman, Arkansas, as the "M.R. 'Bucky' Walters Post Office".

The SPEAKER pro tempore. The motion is withdrawn.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT OF 2010

Mr. GORDON of Tennessee. Mr. Speaker, I move to suspend the rules and pass the bill (S. 3729) to authorize the programs of the National Aeronautics and Space Administration for fiscal years 2011 through 2013, and for other purposes.

The Clerk read the title of the bill.

The text of the bill is as follows:

S. 3729

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

SEC. 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 2010".

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

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

TITLE I—AUTHORIZATION OF APPROPRIATIONS

- Sec. 101. Fiscal year 2011.
- Sec. 102. Fiscal year 2012.
- Sec. 103. Fiscal year 2013.

TITLE II—POLICY, GOALS, AND OBJECTIVES FOR HUMAN SPACE FLIGHT AND EXPLORATION

- Sec. 201. United States human space flight policy.
- Sec. 202. Goals and objectives.
- Sec. 203. Assurance of core capabilities.
- Sec. 204. Independent study on human exploration of space.

TITLE III—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT

- Sec. 301. Human space flight beyond low-Earth orbit.
- Sec. 302. Space Launch System as follow-on launch vehicle to the Space Shuttle.
- Sec. 303. Multi-purpose crew vehicle.
- Sec. 304. Utilization of existing workforce and assets in development of Space Launch System and multi-purpose crew vehicle.
- Sec. 305. NASA launch support and infrastructure modernization program.
- Sec. 306. Report on effects of transition to Space Launch System on the solid and liquid rocket motor industrial bases.
- Sec. 307. Sense of Congress on other technology and robotic elements in human space flight and exploration.
- Sec. 308. Development of technologies and in-space capabilities for beyond near-Earth space missions.
- Sec. 309. Report requirement.

TITLE IV—DEVELOPMENT AND USE OF COMMERCIAL CREW AND CARGO TRANSPORTATION CAPABILITIES

- Sec. 401. Commercial Cargo Development program.
- Sec. 402. Commercial Crew Development program.
- Sec. 403. Requirements applicable to development of commercial crew transportation capabilities and services.
- Sec. 404. Report on International Space Station cargo return capability.

TITLE V—CONTINUATION, SUPPORT, AND EVOLUTION OF THE INTERNATIONAL SPACE STATION

- Sec. 501. Continuation of the International Space Station through 2020.
- Sec. 502. Maximum utilization of the International Space Station.
- Sec. 503. Maintenance of the United States segment and assurance of continued operations of the International Space Station.
- Sec. 504. Management of the ISS national laboratory.

TITLE VI—SPACE SHUTTLE RETIREMENT AND TRANSITION

- Sec. 601. Sense of Congress on the Space Shuttle program.
- Sec. 602. Retirement of Space Shuttle orbiters and transition of Space Shuttle program.
- Sec. 603. Disposition of orbiter vehicles.

TITLE VII—EARTH SCIENCE

- Sec. 701. Sense of Congress.
- Sec. 702. Interagency collaboration implementation approach.
- Sec. 703. Transitioning experimental research to operations.
- Sec. 704. Decadal survey missions implementation for Earth observation.
- Sec. 705. Expansion of Earth science applications.
- Sec. 706. Instrument test-beds and venture class missions.
- Sec. 707. Sense of Congress on NPOESS follow-on program.

TITLE VIII—SPACE SCIENCE

- Sec. 801. Technology development.
- Sec. 802. Suborbital research activities.
- Sec. 803. Overall science portfolio-sense of the Congress.
- Sec. 804. In-space servicing.
- Sec. 805. Decadal results.
- Sec. 806. On-going restoration of radioisotope thermoelectric generator material production.
- Sec. 807. Collaboration with ESMD and SOMD on robotic missions.
- Sec. 808. Near-Earth object survey and policy with respect to threats posed.
- Sec. 809. Space weather.

TITLE IX—AERONAUTICS AND SPACE TECHNOLOGY

- Sec. 901. Sense of Congress.
- Sec. 902. Aeronautics research goals.
- Sec. 903. Research collaboration.
- Sec. 904. Goal for agency space technology.
- Sec. 905. Implementation plan for agency space technology.
- Sec. 906. National space technology policy.
- Sec. 907. Commercial reusable suborbital research program.

TITLE X—EDUCATION

- Sec. 1001. Report on education implementation outcomes.
- Sec. 1002. Sense of Congress on the Experimental Program to Stimulate Competitive Research.

Sec. 1003. Science, technology, engineering, and mathematics commercial orbital platform program.

TITLE XI—RESCOPING AND REVITALIZING INSTITUTIONAL CAPABILITIES

- Sec. 1101. Sense of Congress.
- Sec. 1102. Institutional requirements study.
- Sec. 1103. NASA capabilities study requirement.
- Sec. 1104. Sense of Congress on community transition support.
- Sec. 1105. Workforce stabilization and critical skills preservation.

TITLE XII—OTHER MATTERS

- Sec. 1201. Report on space traffic management.
- Sec. 1202. National and international orbital debris mitigation.
- Sec. 1203. Reports on program and cost assessment and control assessment.
- Sec. 1204. Eligibility for service of individual currently serving as Administrator of NASA.
- Sec. 1205. Sense of Congress on independent verification and validation of NASA software.
- Sec. 1206. Counterfeit parts.
- Sec. 1207. Information security.
- Sec. 1208. National Center for Human Performance.
- Sec. 1209. Enhanced-use Leasing.
- Sec. 1210. Sense of Congress concerning the Stennis Space Center.

TITLE XIII—COMPLIANCE WITH STATUTORY PAY-AS-YOU-GO ACT OF 2010

Sec. 1301. Compliance provision.

SEC. 2. FINDINGS.

Congress makes the following findings:

(1) The United States human space flight program has, since the first Mercury flight on May 5, 1961, been a source of pride and inspiration for the Nation.

(2) The establishment of and commitment to human exploration goals is essential for providing the necessary long term focus and programmatic consistency and robustness of the United States civilian space program.

(3) The National Aeronautics and Space Administration is and should remain a multi-mission agency with a balanced and robust set of core missions in science, aeronautics, and human space flight and exploration.

(4) In the 50 years since the establishment of NASA, the arena of space has evolved substantially. As the uses and users of space continue to expand, the issues and operations in the regions closest to Earth have become increasingly complex, with a growing number of overlaps between civil, commercial and national security activities. These developments present opportunities and challenges to the space activities of NASA and the United States.

(5) The extraordinary challenges of achieving access to space both motivated and accelerated the development of technologies and industrial capabilities that have had widespread applications which have contributed to the technological excellence of the United States. It is essential to tie space activity to human challenges ranging from enhancing the influence, relationships, security, economic development, and commerce of the United States to improving the overall human condition.

(6) It is essential to the economic well-being of the United States that the aerospace industrial capacity, highly skilled workforce, and embedded expertise remain

engaged in demanding, challenging, and exciting efforts that ensure United States leadership in space exploration and related activities.

(7) Crewmembers provide the essential component to ensure the return on investment from and the growth and safe operation of the ISS. The Russian Soyuz vehicle has allowed continued human presence on the ISS for United States crewmembers with its ability to serve as both a routine and backup capability for crew delivery, rescue, and return. With the impending retirement of the Space Shuttle, the United States will find itself with no national crew delivery and return system. Without any other system, the United States and all the ISS partners will have no redundant system for human access to and from the ISS. It is therefore essential that a United States capability be developed as soon as possible.

(8) Existing and emerging United States commercial launch capabilities and emerging launch capabilities offer the potential for providing crew support assets. New capabilities for human crew access to the ISS should be developed in a manner that ensures ISS mission assurance and safety. Commercial services offer the potential to broaden the availability and access to space at lower costs.

(9) While commercial transportation systems have the promise to contribute valuable services, it is in the United States national interest to maintain a government operated space transportation system for crew and cargo delivery to space.

(10) Congress restates its commitment, expressed in the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155) and the National Aeronautics and Space Administration Authorization Act of 2008 (Public Law 110-422), to the development of commercially developed launch and delivery systems to the ISS for crew and cargo missions. Congress reaffirms that NASA shall make use of United States commercially provided ISS crew transfer and crew rescue services to the maximum extent practicable.

(11) It is critical to identify an appropriate combination of NASA and related United States Government programs, while providing a framework that allows partnering, leveraging and stimulation of the existing and emerging commercial and international efforts in both near Earth space and the regions beyond.

(12) The designation of the United States segment of the ISS as a National Laboratory, as provided by the National Aeronautics and Space Administration Authorization Act of 2005 and the National Aeronautics and Space Administration Authorization Act of 2008, provides an opportunity for multiple United States Government agencies, university-based researchers, research organizations, and others to utilize the unique environment of microgravity for fundamental scientific research and potential economic development.

(13) For some potential replacement elements necessary for ISS sustainability, the Space Shuttle may represent the only vehicle, existing or planned, capable of carrying those elements to the ISS in the near term. Additional or alternative transportation capabilities must be identified as contingency delivery options, and accompanied by an independent analysis of projected availability of such capabilities.

(14) The United States must develop, as rapidly as possible, replacement vehicles capable of providing both human and cargo

launch capability to low-Earth orbit and to destinations beyond low-Earth orbit.

(15) There is a need for national space and export control policies that protect the national security of the United States while also enabling the United States and its aerospace industry to undertake cooperative programs in science and human space flight in an effective and efficient manner and to compete effectively in the global market place.

SEC. 3. DEFINITIONS.

In this Act:

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

(2) APPROPRIATE COMMITTEES OF CONGRESS.—The term “appropriate committees of Congress” means—

(A) the Committee on Commerce, Science, and Transportation of the Senate; and

(B) the Committee on Science of the House of Representatives.

(3) CIS-LUNAR SPACE.—The term “cis-lunar space” means the region of space from the Earth out to and including the region around the surface of the Moon.

(4) DEEP SPACE.—The term “deep space” means the region of space beyond cis-lunar space.

(5) ISS.—The term “ISS” means the International Space Station.

(6) NASA.—The term “NASA” means the National Aeronautics and Space Administration.

(7) NEAR-EARTH SPACE.—The term “near-Earth space” means the region of space that includes low-Earth orbit and extends out to and includes geo-synchronous orbit.

(8) NOAA.—The term “NOAA” means the National Oceanic and Atmospheric Administration.

(9) OSTP.—The term “OSTP” means the Office of Science and Technology Policy.

(10) SPACE LAUNCH SYSTEM.—The term “Space Launch System” means the follow-on government-owned civil launch system developed, managed, and operated by NASA to serve as a key component to expand human presence beyond low-Earth orbit.

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. FISCAL YEAR 2011.

There are authorized to be appropriated to NASA for fiscal year 2011, \$19,000,000,000, as follows:

(1) For Exploration, \$3,868,000,000, of which—

(A) \$1,120,000,000 shall be for a multi-purpose crew vehicle, and associated program and other necessary support;

(B) \$1,631,000,000 shall be for Space Launch System and associated program and other necessary support;

(C) \$250,000,000 shall be for Exploration Technology Development;

(D) \$155,000,000 shall be for Human Research;

(E) \$300,000,000 shall be for Commercial Cargo;

(F) \$312,000,000 shall be for Commercial Crew Development activities and studies related to commercial crew services; and

(G) \$100,000,000 shall be for Robotic Precursor Studies and Instruments.

(2) For Space Operations, \$5,508,500,000, of which—

(A) \$2,779,800,000 shall be for the ISS program;

(B) \$1,609,700,000 shall be for Space Shuttle, to support Space Shuttle flight operations and related activities; and

(C) \$1,119,000,000 for Space and Flight Services, of which \$428,600,000 shall be directed toward NASA launch support and infrastructure modernization program.

(3) For Science, \$5,005,600,000, of which—

(A) \$1,801,800,000 shall be for Earth Sciences;

(B) \$1,485,700,000 shall be for Planetary Science;

(C) \$1,076,300,000 shall be for Astrophysics; and

(D) \$641,900,000 shall be for Heliophysics.

(4) For Aeronautics, \$929,600,000, of which—

(A) \$579,600,000 shall be for Aeronautics Research; and

(B) \$350,000,000 shall be for Space Technology.

(5) For Education, \$145,800,000, of which—

(A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and

(B) \$45,600,000 shall be for the Space Grant program.

(6) For Cross-Agency Support Programs, \$3,111,400,000.

(7) For Construction and Environmental Compliance and Restoration, \$394,300,000.

(8) For Inspector General, \$37,000,000.

SEC. 102. FISCAL YEAR 2012.

There are authorized to be appropriated to NASA for fiscal year 2012, \$19,450,000,000, as follows:

(1) For Exploration, \$5,252,300,000, of which—

(A) \$1,400,000,000 shall be for a multi-purpose crew vehicle and associated program and other necessary support;

(B) \$2,650,000,000 shall be for Space Launch System and associated program and other necessary support;

(C) \$437,300,000 shall be for Exploration Technology Development;

(D) \$165,000,000 shall be for Human Research;

(E) \$500,000,000 shall be for commercial crew capabilities; and

(F) \$100,000,000 shall be for Robotic Precursor Instruments and Low-Cost Missions.

(2) For Space Operations, \$4,141,500,000, of which—

(A) \$2,952,250,000 shall be for the ISS operations and crew/cargo support; and

(B) \$1,189,250,000 shall be for Space and Flight Services, of which \$500,000,000 shall be directed toward the NASA launch support and infrastructure modernization program.

(3) For Science, \$5,248,600,000, of which—

(A) \$1,944,500,000 shall be for Earth Sciences;

(B) \$1,547,200,000 shall be for Planetary Science;

(C) \$1,109,300,000 shall be for Astrophysics; and

(D) \$647,600,000 shall be for Heliophysics.

(4) For Aeronautics, \$1,070,600,000, of which—

(A) \$584,700,000 shall be for Aeronautics Research; and

(B) \$486,000,000 shall be for Space Technology.

(5) For Education, \$145,800,000, of which—

(A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and

(B) \$45,600,000 shall be for the Space Grant program.

(6) For Cross-Agency Support Programs, \$3,189,600,000.

(7) For Construction and Environmental Compliance and Restoration, \$363,800,000.

(8) For Inspector General, \$37,800,000.

SEC. 103. FISCAL YEAR 2013.

There are authorized to be appropriated to NASA for fiscal year 2013, \$19,960,000,000, as follows:

(1) For Exploration, \$5,264,000,000, of which—

(A) \$1,400,000,000 shall be for a multi-purpose crew vehicle and associated program and other necessary support;

(B) \$2,640,000,000 shall be for Space Launch System and associated program and other necessary support;

(C) \$449,000,000 shall be for Exploration Technology Development;

(D) \$175,000,000 shall be for Human Research;

(E) \$500,000,000 shall be for commercial crew capabilities; and

(F) \$100,000,000 shall be for Robotic Precursor Instruments and Low-Cost Missions.

(2) For Space Operations, \$4,253,300,000, of which—

(A) \$3,129,400,000 shall be for the ISS operations and crew/cargo support; and

(B) \$1,123,900,000 shall be for Space and Flight Services, of which \$400,000,000 shall be directed toward the NASA launch support and infrastructure modernization program.

(3) For Science, \$5,509,600,000, of which—

(A) \$2,089,500,000 shall be for Earth Sciences;

(B) \$1,591,200,000 shall be for Planetary Science;

(C) \$1,149,100,000 shall be for Astrophysics; and

(D) \$679,800,000 shall be for Heliophysics.

(4) For Aeronautics, \$1,105,000,000, of which—

(A) \$590,000,000 shall be for Aeronautics Research; and

(B) \$515,000,000 shall be for Space Technology.

(5) For Education, \$145,700,000, of which—

(A) \$25,000,000 shall be for the Experimental Program to Stimulate Competitive Research; and

(B) \$45,600,000 shall be for the Space Grant program.

(6) For Cross-Agency Support Programs, \$3,276,800,000.

(7) For Construction and Environmental Compliance and Restoration, \$366,900,000.

(8) For Inspector General, \$38,700,000.

TITLE II—POLICY, GOALS, AND OBJECTIVES FOR HUMAN SPACE FLIGHT AND EXPLORATION**SEC. 201. UNITED STATES HUMAN SPACE FLIGHT POLICY.**

(a) USE OF NON-UNITED STATES HUMAN SPACE FLIGHT TRANSPORTATION CAPABILITIES.—It is the policy of the United States that reliance upon and use of non-United States human space flight capabilities shall be undertaken only as a contingency in circumstances where no United States-owned and operated human space flight capability is available, operational, and certified for flight by appropriate Federal agencies.

(b) UNITED STATES HUMAN SPACE FLIGHT CAPABILITIES.—Congress reaffirms the policy stated in section 501(a) of the National Aeronautics and Space Administration Authorization Act of 2005 (42 U.S.C. 16761(a)), that the United States shall maintain an uninterrupted capability for human space flight and operations in low-Earth orbit, and beyond, as an essential instrument of national security and of the capacity to ensure continued United States participation and leadership in the exploration and utilization of space.

SEC. 202. GOALS AND OBJECTIVES.

(a) LONG TERM GOAL.—The long term goal of the human space flight and exploration efforts of NASA shall be to expand permanent

human presence beyond low-Earth orbit and to do so, where practical, in a manner involving international partners.

(b) KEY OBJECTIVES.—The key objectives of the United States for human expansion into space shall be—

(1) to sustain the capability for long-duration presence in low-Earth orbit, initially through continuation of the ISS and full utilization of the United States segment of the ISS as a National Laboratory, and through assisting and enabling an expanded commercial presence in, and access to, low-Earth orbit, as elements of a low-Earth orbit infrastructure;

(2) to determine if humans can live in an extended manner in space with decreasing reliance on Earth, starting with utilization of low-Earth orbit infrastructure, to identify potential roles that space resources such as energy and materials may play, to meet national and global needs and challenges, such as potential cataclysmic threats, and to explore the viability of and lay the foundation for sustainable economic activities in space;

(3) to maximize the role that human exploration of space can play in advancing overall knowledge of the universe, supporting United States national and economic security and the United States global competitive posture, and inspiring young people in their educational pursuits; and

(4) to build upon the cooperative and mutually beneficial framework established by the ISS partnership agreements and experience in developing and undertaking programs and meeting objectives designed to realize the goal of human space flight set forth in subsection (a).

SEC. 203. ASSURANCE OF CORE CAPABILITIES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the ISS, technology developments, the current Space Shuttle program, and follow-on transportation systems authorized by this Act form the foundation of initial capabilities for missions beyond low-Earth orbit to a variety of lunar and Lagrangian orbital locations; and

(2) these initial missions and related capabilities should be utilized to provide operational experience, technology development, and the placement and assured use of in-space infrastructure and in-space servicing of existing and future assets.

(b) SPACE SHUTTLE CAPABILITY ASSURANCE.—

(1) DEVELOPMENT OF FOLLOW-ON SPACE TRANSPORTATION SYSTEMS.—The Administrator shall proceed with the development of follow-on space transportation systems in a manner that ensures that the national capability to restart and fly Space Shuttle missions can be initiated if required by the Congress, in an Act enacted after the date of enactment of this Act, or by a Presidential determination transmitted to the Congress, before the last Space Shuttle mission authorized by this Act is completed.

(2) REQUIRED ACTIONS.—In carrying out the requirement in paragraph (1), the Administrator shall authorize refurbishment of the manufactured external tank of the Space Shuttle, designated as ET-94, and take all actions necessary to enable its readiness for use in the Space Launch System development as a critical skills and capability retention effort or for test purposes, while preserving the ability to use this tank if needed for an ISS contingency if deemed necessary under paragraph (1).

SEC. 204. INDEPENDENT STUDY ON HUMAN EXPLORATION OF SPACE.

(a) IN GENERAL.—In fiscal year 2012 the Administrator shall contract with the National

Academies for a review of the goals, core capabilities, and direction of human space flight, using the goals set forth in the National Aeronautics and Space Act of 1958, the National Aeronautics and Space Administration Authorization Act of 2005, and the National Aeronautics and Space Administration Authorization Act of 2008, the goals set forth in this Act, and goals set forth in any existing statement of space policy issued by the President.

(b) ELEMENTS.—The review shall include—

(1) a broad spectrum of participation with representatives of a range of disciplines, backgrounds, and generations, including civil, commercial, international, scientific, and national security interests;

(2) input from NASA's international partner discussions and NASA's Human Exploration Framework Team;

(3) an examination of the relationship of national goals to foundational capabilities, robotic activities, technologies, and missions authorized by this Act;

(4) a review and prioritization of scientific, engineering, economic, and social science questions to be addressed by human space exploration to improve the overall human condition; and

(5) findings and recommendations for fiscal years 2014 through 2023.

TITLE III—EXPANSION OF HUMAN SPACE FLIGHT BEYOND THE INTERNATIONAL SPACE STATION AND LOW-EARTH ORBIT
SEC. 301. HUMAN SPACE FLIGHT BEYOND LOW-EARTH ORBIT.

(a) FINDINGS.—Congress makes the following findings:

(1) The extension of the human presence from low-Earth orbit to other regions of space beyond low-Earth orbit will enable missions to the surface of the Moon and missions to deep space destinations such as near-Earth asteroids and Mars.

(2) The regions of cis-lunar space are accessible to other national and commercial launch capabilities, and such access raises a host of national security concerns and economic implications that international human space endeavors can help to address.

(3) The ability to support human missions in regions beyond low-Earth orbit and on the surface of the Moon can also drive developments in emerging areas of space infrastructure and technology.

(4) Developments in space infrastructure and technology can stimulate and enable increased space applications, such as in-space servicing, propellant resupply and transfer, and in situ resource utilization, and open opportunities for additional users of space, whether national, commercial, or international.

(5) A long term objective for human exploration of space should be the eventual international exploration of Mars.

(6) Future international missions beyond low-Earth orbit should be designed to incorporate capability development and availability, affordability, and international contributions.

(7) Human space flight and future exploration beyond low-Earth orbit should be based around a pay-as-you-go approach. Requirements in new launch and crew systems authorized in this Act should be scaled to the minimum necessary to meet the core national mission capability needed to conduct cis-lunar missions. These initial missions, along with the development of new technologies and in-space capabilities can form the foundation for missions to other destinations. These initial missions also should provide operational experience prior to the further human expansion into space.

(b) REPORT ON INTERNATIONAL COLLABORATION.—

(1) REPORT REQUIRED.—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the following assets and capabilities:

(A) Any effort by NASA to expand and ensure effective international collaboration on the ISS.

(B) The efforts of NASA, including its approach and progress, in defining near-term, cis-lunar space human missions.

(2) NASA CONTRIBUTIONS.—In preparing the report required by paragraph (1), the Administrator shall assume that NASA will contribute to the efforts described in that paragraph the following:

(A) A Space Launch System.

(B) A multi-purpose crew vehicle.

(C) Such other technology elements the Administrator may consider appropriate, and which the Administrator shall specifically identify in the report.

SEC. 302. SPACE LAUNCH SYSTEM AS FOLLOW-ON LAUNCH VEHICLE TO THE SPACE SHUTTLE.

(a) UNITED STATES POLICY.—It is the policy of the United States that NASA develop a Space Launch System as a follow-on to the Space Shuttle that can access cis-lunar space and the regions of space beyond low-Earth orbit in order to enable the United States to participate in global efforts to access and develop this increasingly strategic region.

(b) INITIATION OF DEVELOPMENT.—

(1) IN GENERAL.—The Administrator shall, as soon as practicable after the date of the enactment of this Act, initiate development of a Space Launch System meeting the minimum capabilities requirements specified in subsection (c).

(2) MODIFICATION OF CURRENT CONTRACTS.—In order to limit NASA's termination liability costs and support critical capabilities, the Administrator shall, to the extent practicable, extend or modify existing vehicle development and associated contracts necessary to meet the requirements in paragraph (1), including contracts for ground testing of solid rocket motors, if necessary, to ensure their availability for development of the Space Launch System.

(c) MINIMUM CAPABILITY REQUIREMENTS.—

(1) IN GENERAL.—The Space Launch System developed pursuant to subsection (b) shall be designed to have, at a minimum, the following:

(A) The initial capability of the core elements, without an upper stage, of lifting payloads weighing between 70 tons and 100 tons into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit.

(B) The capability to carry an integrated upper Earth departure stage bringing the total lift capability of the Space Launch System to 130 tons or more.

(C) The capability to lift the multipurpose crew vehicle.

(D) The capability to serve as a backup system for supplying and supporting ISS cargo requirements or crew delivery requirements not otherwise met by available commercial or partner-supplied vehicles.

(2) FLEXIBILITY.—The Space Launch System shall be designed from inception as a fully-integrated vehicle capable of carrying a total payload of 130 tons or more into low-Earth orbit in preparation for transit for missions beyond low-Earth orbit. The Space Launch System shall, to the extent practicable, incorporate capabilities for evolutionary growth to carry heavier payloads.

Developmental work and testing of the core elements and the upper stage should proceed in parallel subject to appropriations. Priority should be placed on the core elements with the goal for operational capability for the core elements not later than December 31, 2016.

(3) TRANSITION NEEDS.—The Administrator shall ensure critical skills and capabilities are retained, modified, and developed, as appropriate, in areas related to solid and liquid engines, large diameter fuel tanks, rocket propulsion, and other ground test capabilities for an effective transition to the follow-on Space Launch System.

(4) The capacity for efficient and timely evolution, including the incorporation of new technologies, competition of sub-elements, and commercial operations.

SEC. 303. MULTI-PURPOSE CREW VEHICLE.

(a) INITIATION OF DEVELOPMENT.—

(1) IN GENERAL.—The Administrator shall continue the development of a multi-purpose crew vehicle to be available as soon as practicable, and no later than for use with the Space Launch System. The vehicle shall continue to advance development of the human safety features, designs, and systems in the Orion project.

(2) GOAL FOR OPERATIONAL CAPABILITY.—It shall be the goal to achieve full operational capability for the transportation vehicle developed pursuant to this subsection by not later than December 31, 2016. For purposes of meeting such goal, the Administrator may undertake a test of the transportation vehicle at the ISS before that date.

(b) MINIMUM CAPABILITY REQUIREMENTS.—The multi-purpose crew vehicle developed pursuant to subsection (a) shall be designed to have, at a minimum, the following:

(1) The capability to serve as the primary crew vehicle for missions beyond low-Earth orbit.

(2) The capability to conduct regular in-space operations, such as rendezvous, docking, and extra-vehicular activities, in conjunction with payloads delivered by the Space Launch System developed pursuant to section 302, or other vehicles, in preparation for missions beyond low-Earth orbit or servicing of assets described in section 804, or other assets in cis-lunar space.

(3) The capability to provide an alternative means of delivery of crew and cargo to the ISS, in the event other vehicles, whether commercial vehicles or partner-supplied vehicles, are unable to perform that function.

(4) The capacity for efficient and timely evolution, including the incorporation of new technologies, competition of sub-elements, and commercial operations.

SEC. 304. UTILIZATION OF EXISTING WORKFORCE AND ASSETS IN DEVELOPMENT OF SPACE LAUNCH SYSTEM AND MULTI-PURPOSE CREW VEHICLE.

(a) IN GENERAL.—In developing the Space Launch System pursuant to section 302 and the multi-purpose crew vehicle pursuant to section 303, the Administrator shall, to the extent practicable utilize—

(1) existing contracts, investments, workforce, industrial base, and capabilities from the Space Shuttle and Orion and Ares 1 projects, including—

(A) space-suit development activities for application to, and coordinated development of, a multi-purpose crew vehicle suit and associated life-support requirements with potential development of standard NASA-certified suit and life support systems for use in alternative commercially-developed crew transportation systems; and

(B) Space Shuttle-derived components and Ares 1 components that use existing United

States propulsion systems, including liquid fuel engines, external tank or tank-related capability, and solid rocket motor engines; and

(2) associated testing facilities, either in being or under construction as of the date of enactment of this Act.

(b) DISCHARGE OF REQUIREMENTS.—In meeting the requirements of subsection (a), the Administrator—

(1) shall, to the extent practicable, utilize ground-based manufacturing capability, ground testing activities, launch and operations infrastructure, and workforce expertise;

(2) shall, to the extent practicable, minimize the modification and development of ground infrastructure and maximize the utilization of existing software, vehicle, and mission operations processes;

(3) shall complete construction and activation of the A-3 test stand with a completion goal of September 30, 2013;

(4) may procure, develop, and flight test applicable components; and

(5) shall take appropriate actions to ensure timely and cost-effective development of the Space Launch System and the multi-purpose crew vehicle, including the use of a procurement approach that incorporates adequate and effective oversight, the facilitation of contractor efficiencies, and the streamlining of contract and procurement requirements.

SEC. 305. NASA LAUNCH SUPPORT AND INFRASTRUCTURE MODERNIZATION PROGRAM.

(a) IN GENERAL.—The Administrator shall carry out a program the primary purpose of which is to prepare infrastructure at the Kennedy Space Center that is needed to enable processing and launch of the Space Launch System. Vehicle interfaces and other ground processing and payload integration areas should be simplified to minimize overall costs, enhance safety, and complement the purpose of this section.

(b) ELEMENTS.—The program required by this section shall include—

(1) investments to improve civil and national security operations at the Kennedy Space Center, to enhance the overall capabilities of the Center, and to reduce the long term cost of operations and maintenance;

(2) measures to provide multi-vehicle support, improvements in payload processing, and partnering at the Kennedy Space Center; and

(3) such other measures, including investments to improve launch infrastructure at NASA flight facilities scheduled to launch cargo to the ISS under the commercial orbital transportation services program as the Administrator may consider appropriate.

(c) REPORT ON NASA LAUNCH SUPPORT AND INFRASTRUCTURE MODERNIZATION PROGRAM.—

(1) REPORT REQUIRED.—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the plan for the implementation of the NASA launch support and infrastructure modernization program.

(2) ELEMENTS.—The report required by this subsection shall include—

(A) a description of the ground infrastructure plan tied to the Space Launch System and potential ground investment activities at other NASA centers related to supporting the development of the Space Launch System;

(B) a description of proposed initiatives intended to be conducted jointly or in cooperation with Cape Canaveral Air Force Station,

Florida, or other installations or components of the United States Government; and

(C) a description of plans to use funds authorized to be appropriated by this Act to improve non-NASA facilities, which plans shall include a business plan outlining the nature and scope of investments planned by other parties.

SEC. 306. REPORT ON EFFECTS OF TRANSITION TO SPACE LAUNCH SYSTEM ON THE SOLID AND LIQUID ROCKET MOTOR INDUSTRIAL BASES.

(a) **REPORT REQUIRED.**—Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to Congress a report setting forth an assessment, prepared by the Administrator, in consultation with the Secretary of Defense and the Secretary of Commerce, of the effects of the retirement of the Space Shuttle, and of the transition to the Space Launch System developed pursuant to section 302, on the solid rocket motor industrial base and the liquid rocket motor industrial base in the United States.

(b) **MATTERS TO BE ADDRESSED.**—In preparing the assessment required by subsection (a), the Administrator shall address the following:

(1) The effects of efficiencies and efforts to stream-line the industrial bases referred to in subsection (a) for support of civil, military, and commercial users.

(2) The extent to which the United States is reliant on non-United States systems, including foreign rocket motors and foreign launch vehicles.

(3) Such other matters as the Administrator, in consultation with the Secretary of Defense and the Secretary of Commerce, may consider appropriate.

SEC. 307. SENSE OF CONGRESS ON OTHER TECHNOLOGY AND ROBOTIC ELEMENTS IN HUMAN SPACE FLIGHT AND EXPLORATION.

It is the sense of Congress that a balance is needed in human space flight between using and building upon existing capabilities and investing in and enabling new capabilities. Technology development provides the potential to develop an increased ability to operate and extend human presence in space, while at the same time enhance the nation's economic development and aid in addressing challenges here on Earth. Additionally, the establishment of in-space capabilities, use of space resources, and the ability to repair and reuse systems in space can contribute to the overall goals of extending human presence in space in an international manner, consistent with section 301(a).

SEC. 308. DEVELOPMENT OF TECHNOLOGIES AND IN-SPACE CAPABILITIES FOR BEYOND NEAR-EARTH SPACE MISSIONS.

(a) **DEVELOPMENT AUTHORIZED.**—The Administrator may initiate activities to develop the following:

(1) Technologies identified as necessary elements of missions beyond low-Earth orbit.

(2) In-space capabilities such as refueling and storage technology, orbital transfer stages, innovative in-space propulsion technology, communications, and data management that facilitate a broad range of users (including military and commercial) and applications defining the architecture and design of such missions.

(3) Spacesuit development and associated life support technology.

(4) Flagship missions.

(b) **INVESTMENTS.**—In developing technologies and capabilities under subsection (a), the Administrator may make investments—

(1) in space technologies such as advanced propulsion, propellant depots, in situ resource utilization, and robotic payloads or capabilities that enable human missions beyond low-Earth orbit ultimately leading to Mars;

(2) in a space-based transfer vehicle including these technologies with an ability to conduct space-based operations that provide capabilities—

(A) to integrate with the Space Launch System and other space-based systems;

(B) to provide opportunities for in-space servicing of and delivery to multiple space-based platforms; and

(C) to facilitate international efforts to expand human presence to deep space destinations;

(3) in advanced life support technologies and capabilities;

(4) in technologies and capabilities relating to in-space power, propulsion, and energy systems;

(5) in technologies and capabilities relating to in-space propellant transfer and storage;

(6) in technologies and capabilities relating to in situ resource utilization; and

(7) in expanded research to understand the greatest biological impediments to human deep space missions, especially the radiation challenge.

(c) **UTILIZATION OF ISS AS TESTBED.**—The Administrator may utilize the ISS as a testbed for any technology or capability developed under subsection (a) in a manner consistent with the provisions of this Act.

(d) **COORDINATION.**—The Administrator shall coordinate development of technologies and capabilities under this section through an overall agency technology approach, as authorized by section 905 of this Act.

SEC. 309. REPORT REQUIREMENT.

Within 90 days after the date of enactment of this Act, or upon completion of reference designs for the Space Launch System and Multi-purpose Crew Vehicle authorized by this Act, whichever occurs first, the Administrator shall provide a detailed report to the appropriate committees of Congress that provides an overall description of the reference vehicle design, the assumptions, description, data, and analysis of the systems trades and resolution process, justification of trade decisions, the design factors which implement the essential system and vehicle capability requirements established by this Act, the explanation and justification of any deviations from those requirements, the plan for utilization of existing contracts, civil service and contract workforce, supporting infrastructure utilization and modifications, and procurement strategy to expedite development activities through modification of existing contract vehicles, and the schedule of design and development milestones and related schedules leading to the accomplishment of operational goals established by this Act. The Administrator shall provide an update of this report as part of the President's annual Budget Request.

TITLE IV—DEVELOPMENT AND USE OF COMMERCIAL CREW AND CARGO TRANSPORTATION CAPABILITIES

SEC. 401. COMMERCIAL CARGO DEVELOPMENT PROGRAM.

The Administrator shall continue to support the existing Commercial Orbital Transportation Services program, aimed at enabling the commercial space industry in support of NASA to develop reliable means of launching cargo and supplies to the ISS throughout the duration of the facility's operation. The Administrator may apply funds towards the reduction of risk to the timely start of these services, specifically—

(1) efforts to conduct a flight test;

(2) accelerate development; and

(3) develop the ground infrastructure needed for commercial cargo capability.

SEC. 402. COMMERCIAL CREW DEVELOPMENT PROGRAM.

(a) **CONTINUATION OF PROGRAM DURING FISCAL YEAR 2011.**—The Administrator shall continue, and may expand the number of participants and the activities of, the Commercial Crew Development (CCDEV) program in fiscal year 2011, subject to the provisions of this title.

(b) **CONTINUATION OF ACTIVITIES AND AGREEMENTS OF FISCAL YEAR 2010.**—In carrying out subsection (a), the Administrator may continue or expand activities and agreements initiated in fiscal year 2010 that reduce risk, develop technologies, and lead to other advancements that will help determine the most effective and efficient means of advancing the development of commercial crew services.

SEC. 403. REQUIREMENTS APPLICABLE TO DEVELOPMENT OF COMMERCIAL CREW TRANSPORTATION CAPABILITIES AND SERVICES.

(a) **FY 2011 CONTRACTS AND PROCUREMENT AGREEMENTS.**—

(1) **IN GENERAL.**—Except as provided in paragraph (2), the Administrator may not execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011.

(2) **EXCEPTION.**—Notwithstanding paragraph (1), the Administrator may execute a contract or procurement agreement with respect to follow-on commercial crew services during fiscal year 2011 if—

(A) the requirements of paragraphs (1), (2), and (3) of subsection (b) are met; and

(B) the total amount involved for all such contracts and procurement agreements executed during fiscal year 2011 does not exceed \$50,000,000 for fiscal year 2011.

(b) **SUPPORT.**—The Administrator may, beginning in fiscal year 2012 through the duration of the program, support follow-on commercially-developed crew transportation systems dependent upon the completion of each of the following:

(1) **HUMAN RATING REQUIREMENTS.**—Not later than 60 days after the date of the enactment of this Act, the Administrator shall develop and make available to the public detailed human rating processes and requirements to guide the design of commercially-developed crew transportation capabilities, which requirements shall be at least equivalent to proven requirements for crew transportation in use as of the date of the enactment of this Act.

(2) **COMMERCIAL MARKET ASSESSMENT.**—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress an assessment, conducted, in coordination with the Federal Aviation Administration's Office of Commercial Space Transportation, for purposes of this paragraph, of the potential non-Government market for commercially-developed crew and cargo transportation systems and capabilities, including an assessment of the activities associated with potential private sector utilization of the ISS research and technology development capabilities and other potential activities in low-Earth orbit.

(3) **PROCUREMENT SYSTEM REVIEW.**—The Administrator shall review current Government procurement and acquisition practices and processes, including agreement authorities under the National Aeronautics and Space Act of 1958, to determine the most

cost-effective means of procuring commercial crew transportation capabilities and related services in a manner that ensures appropriate accountability, transparency, and maximum efficiency in the procurement of such capabilities and services, which review shall include an identification of proposed measures to address risk management and means of indemnification of commercial providers of such capabilities and services, and measures for quality control, safety oversight, and the application of Federal oversight processes within the jurisdiction of other Federal agencies. A description of the proposed procurement process and justification of the proposed procurement for its selection shall be included in any proposed initiation of procurement activity for commercially-developed crew transportation capabilities and services and shall be subject to review by the appropriate committees of Congress before the initiation of any competitive process to procure such capabilities or services. In support of the review by such committees, the Comptroller General shall undertake an assessment of the proposed procurement process and provide a report to the appropriate committees of Congress within 90 days after the date on which the Administrator provides the description and justification to such committees.

(4) **USE OF GOVERNMENT-SUPPLIED CAPABILITIES AND INFRASTRUCTURE.**—In evaluating any proposed development activity for commercially-developed crew or cargo launch capabilities, the Administrator shall identify the anticipated contribution of government personnel, expertise, technologies, and infrastructure to be utilized in support of design, development, or operations of such capabilities. This assessment shall include a clear delineation of the full requirements for the commercial crew service (including the contingency for crew rescue). The Administrator shall include details and associated costs of such support as part of any proposed development initiative for the procurement of commercially-developed crew or cargo launch capabilities or services.

(5) **FLIGHT DEMONSTRATION AND READINESS REQUIREMENTS.**—The Administrator shall establish appropriate milestones and minimum performance objectives to be achieved before authority is granted to proceed to the procurement of commercially-developed crew transportation capabilities or systems. The guidelines shall include a procedure to provide independent assurance of flight safety and flight readiness before the authorization of United States government personnel to participate as crew onboard any commercial launch vehicle developed pursuant to this section.

(6) **COMMERCIAL CREW RESCUE CAPABILITIES.**—The provision of a commercial capability to provide ISS crew services shall include crew rescue requirements, and shall be undertaken through the procurement process initiated in conformance with this section. In the event such development is initiated, the Administrator shall make available any relevant government-owned intellectual property deriving from the development of a multi-purpose crew vehicle authorized by this Act to commercial entities involved with such crew rescue capability development which shall be relevant to the design of a crew rescue capability. In addition, the Administrator shall seek to ensure that contracts for development of the multi-purpose crew vehicle contain provisions for the licensing of relevant intellectual property to participating commercial providers of any crew rescue capability development under-

taken pursuant to this section. If one or more contractors involved with development of the multi-purpose crew vehicle seek to compete in development of a commercial crew service with crew rescue capability, separate legislative authority must be enacted to enable the Administrator to provide funding for any modifications of the multi-purpose crew vehicle necessary to fulfill the ISS crew rescue function.

SEC. 404. REPORT ON INTERNATIONAL SPACE STATION CARGO RETURN CAPABILITY.

Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on potential alternative commercially-developed means for the capability for a soft-landing return on land from the ISS of—

- (1) research samples or other derivative materials; and
- (2) small to mid-sized (up to 1,000 kilograms) equipment for return and analysis, or for refurbishment and redelivery, to the ISS.

TITLE V—CONTINUATION, SUPPORT, AND EVOLUTION OF THE INTERNATIONAL SPACE STATION

SEC. 501. CONTINUATION OF THE INTERNATIONAL SPACE STATION THROUGH 2020.

(a) **POLICY OF THE UNITED STATES.**—It shall be the policy of the United States, in consultation with its international partners in the ISS program, to support full and complete utilization of the ISS through at least 2020.

(b) **NASA ACTIONS.**—In furtherance of the policy set forth in subsection (a), NASA shall pursue international, commercial, and intragovernmental means to maximize ISS logistics supply, maintenance, and operational capabilities, reduce risks to ISS systems sustainability, and offset and minimize United States operations costs relating to the ISS.

SEC. 502. MAXIMUM UTILIZATION OF THE INTERNATIONAL SPACE STATION.

(a) **IN GENERAL.**—With assembly of the ISS complete, NASA shall take steps to maximize the productivity and use of the ISS with respect to scientific and technological research and development, advancement of space exploration, and international collaboration.

(b) **NASA ACTIONS.**—In carrying out subsection (a), NASA shall, at a minimum, undertake the following:

(1) **INNOVATIVE USE OF U.S. SEGMENT.**—The United States segment of the ISS, which has been designated as a National Laboratory, shall be developed, managed and utilized in a manner that enables the effective and innovative use of such facility, as provided in section 504.

(2) **INTERNATIONAL COOPERATION.**—The ISS shall continue to be utilized as a key component of international efforts to build missions and capabilities that further the development of a human presence beyond near-Earth space and advance United States security and economic goals. The Administrator shall actively seek ways to encourage and enable the use of ISS capabilities to support these efforts.

(3) **DOMESTIC COLLABORATION.**—The operations, management, and utilization of the ISS shall be conducted in a manner that provides opportunities for collaboration with other research programs and objectives of the United States Government in cooperation with commercial suppliers, users, and developers.

SEC. 503. MAINTENANCE OF THE UNITED STATES SEGMENT AND ASSURANCE OF CONTINUED OPERATIONS OF THE INTERNATIONAL SPACE STATION.

(a) **IN GENERAL.**—The Administrator shall take all actions necessary to ensure the safe and effective operation, maintenance, and maximum utilization of the United States segment of the ISS through at least September 30, 2020.

(b) **VEHICLE AND COMPONENT REVIEW.**—

(1) **IN GENERAL.**—In carrying out subsection (a), the Administrator shall, as soon as is practicable after the date of the enactment of this Act, carry out a comprehensive assessment of the essential modules, operational systems and components, structural elements, and permanent scientific equipment on board or planned for delivery and installation aboard the ISS, including both United States and international partner elements, for purposes of identifying the spare or replacement modules, systems and components, elements, and equipment that are required to ensure complete, effective, and safe functioning and full scientific utilization of the ISS through September 30, 2020.

(2) **DATA.**—In carrying out the assessment, the Administrator shall assemble any existing data, and provide for the development of any data or analysis not currently available, that is necessary for purposes of the assessment.

(c) **REPORTS.**—

(1) **REPORT ON ASSESSMENT.**—

(A) **REPORT REQUIRED.**—Not later than 90 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the assessment required by subsection (b).

(B) **ELEMENTS.**—The report required by this paragraph shall include, at minimum, the following:

(i) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are currently produced, in inventory, or on order, a description of the state of their readiness, and a schedule for their delivery to the ISS (including the planned transportation means for such delivery), including for each such module, system or component, element, or equipment a description of—

(I) its specifications, including size, weight, and necessary configuration for launch and delivery to the ISS;

(II) its function;

(III) its location; and

(IV) its criticality for ISS system integrity.

(ii) A description of the spare or replacement modules, systems and components, elements, and equipment identified pursuant to the assessment that are not currently produced, in inventory, or on order, including for each such module, system or component, element, or equipment a description of—

(I) its specifications, including size, weight, and necessary configuration for launch and delivery to the ISS;

(II) its function;

(III) its location;

(IV) its criticality for ISS system integrity; and

(V) the anticipated cost and schedule for its design, procurement, manufacture, and delivery to the ISS.

(iii) A detailed summary of the delivery schedule and associated delivery vehicle requirements necessary to transport all spare and replacement elements considered essential for the ongoing and sustained functionality of all critical systems of the

ISS, both in and of themselves and as an element of an integrated, mutually dependent essential capability, including an assessment of the current schedule for delivery, the availability of delivery vehicles to meet that schedule, and the likelihood of meeting that schedule through such vehicles.

(2) GAO REPORT.—

(A) REPORT REQUIRED.—Not later than 90 days after the submittal to Congress under paragraph (1) of the assessment required by subsection (b), the Comptroller General of the United States shall submit to the appropriate committees of Congress a report on the assessment. The report shall set forth an evaluation of the assessment by the Comptroller General, including an evaluation of the accuracy and level of confidence in the findings of the assessment.

(B) COOPERATION WITH GAO.—The Administrator shall provide for the monitoring and participation of the Comptroller General in the assessment in a manner that permits the Comptroller General to prepare and submit the report required by subparagraph (A).

(d) UTILIZATION OF RESEARCH FACILITIES AND CAPABILITIES.—Utilization of research facilities and capabilities aboard the ISS (other than exploration-related research and technology development facilities and capabilities, and associated ground support and logistics), shall be planned, managed, and supported as provided in section 504. Exploration-related research and technology development facilities, capabilities, and associated ground support and logistics shall be planned, managed, and supported by the appropriate NASA organizations and officials in a manner that does not interfere with other activities under section 504.

(e) SPACE SHUTTLE MISSION TO ISS.—

(1) SPACE SHUTTLE MISSION.—The Administrator shall fly the Launch-On-Need Shuttle mission currently designated in the Shuttle Flight Manifest dated February 28, 2010, to the ISS in fiscal year 2011, but no earlier than June 1, 2011, unless required earlier by an operations contingency, and pending the results of the assessment required by paragraph (2) and the determination under paragraph (3)(A).

(2) ASSESSMENT OF SAFE MEANS OF RETURN.—The Administrator shall provide for an assessment by the NASA Engineering and Safety Center of the procedures and plans developed to ensure the safety of the Space Shuttle crew, and alternative means of return, in the event the Space Shuttle is damaged or otherwise unable to return safely to Earth.

(3) SCHEDULE AND PAYLOAD.—The determination of the schedule and payload for the mission authorized by paragraph (1) shall take into account the following:

(A) The supply and logistics delivery requirements of the ISS.

(B) The findings of the study required by paragraph (2).

(4) FUNDS.—Amounts authorized to be appropriated by section 101(2)(B) shall be available for the mission authorized by paragraph (1).

(f) SPACE SHUTTLE MANIFEST FLIGHT ASSURANCE.—

(1) IN GENERAL.—The Administrator shall take all actions necessary to preserve Space Shuttle launch capability through fiscal year 2011 in a manner that enables the launch, at a minimum, of missions and primary payloads in the Shuttle flight manifest as of February 28, 2010.

(2) CONTINUATION OF CONTRACTOR SUPPORT.—The Administrator may not terminate any contract that provides the system

transitions necessary for shuttle-derived hardware to be used on either the multi-purpose crew vehicle described in section 303 or the Space Launch System described in section 302.

SEC. 504. MANAGEMENT OF THE ISS NATIONAL LABORATORY.

(a) COOPERATIVE AGREEMENT WITH NOT-FOR-PROFIT ENTITY FOR MANAGEMENT OF NATIONAL LABORATORY.—

(1) IN GENERAL.—The Administrator shall provide initial financial assistance and enter into a cooperative agreement with an appropriate organization that is exempt from taxation under section 501(c)(3) of the Internal Revenue Code of 1986 to manage the activities of the ISS national laboratory in accordance with this section.

(2) QUALIFICATIONS.—The organization with which the Administrator enters into the cooperative agreement shall develop the capabilities to implement research and development projects utilizing the ISS national laboratory and to otherwise manage the activities of the ISS national laboratory.

(3) PROHIBITION ON OTHER ACTIVITIES.—The cooperative agreement shall require the organization entering into the agreement to engage exclusively in activities relating to the management of the ISS national laboratory and activities that promote its long term research and development mission as required by this section, without any other organizational objectives or responsibilities on behalf of the organization or any parent organization or other entity.

(b) NASA LIAISON.—

(1) DESIGNATION.—The Administrator shall designate an official or employee of the Space Operations Mission Directorate of NASA to act as liaison between NASA and the organization with which the Administrator enters into a cooperative agreement under subsection (a) with regard to the management of the ISS national laboratory.

(2) CONSULTATION WITH LIAISON.—The cooperative agreement shall require the organization entering into the agreement to carry out its responsibilities under the agreement in cooperation and consultation with the official or employee designated under paragraph (1).

(c) PLANNING AND COORDINATION OF ISS NATIONAL LABORATORY RESEARCH ACTIVITIES.—The Administrator shall provide initial financial assistance to the organization with which the Administrator enters into a cooperative agreement under subsection (a), in order for the organization to initiate the following:

(1) Planning and coordination of the ISS national laboratory research activities.

(2) Development and implementation of guidelines, selection criteria, and flight support requirements for non-NASA scientific utilization of ISS research capabilities and facilities available in United States-owned modules of the ISS or in partner-owned facilities of the ISS allocated to United States utilization by international agreement.

(3) Interaction with and integration of the International Space Station National Laboratory Advisory Committee established under section 602 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17752) with the governance of the organization, and review recommendations provided by that Committee regarding agreements with non-NASA departments and agencies of the United States Government, academic institutions and consortia, and commercial entities leading to the utilization of the ISS national laboratory facilities.

(4) Coordination of transportation requirements in support of the ISS national laboratory research and development objectives, including provision for delivery of instruments, logistics support, and related experiment materials, and provision for return to Earth of collected samples, materials, and scientific instruments in need of replacement or upgrade.

(5) Cooperation with NASA, other departments and agencies of the United States Government, the States, and commercial entities in ensuring the enhancement and sustained operations of non-exploration-related research payload ground support facilities for the ISS, including the Space Life Sciences Laboratory, the Space Station Processing Facility and Payload Operations Integration Center.

(6) Development and implementation of scientific outreach and education activities designed to ensure effective utilization of ISS research capabilities including the conduct of scientific assemblies, conferences, and other fora for the presentation of research findings, methods, and mechanisms for the dissemination of non-restricted research findings and the development of educational programs, course supplements, interaction with educational programs at all grade levels, including student-focused research opportunities for conduct of research in the ISS national laboratory facilities.

(7) Such other matters relating to the utilization of the ISS national laboratory facilities for research and development as the Administrator may consider appropriate.

(d) RESEARCH CAPACITY ALLOCATION AND INTEGRATION OF RESEARCH PAYLOADS.—

(1) ALLOCATION OF ISS RESEARCH CAPACITY.—As soon as practicable after the date of the enactment of this Act, but not later than October 1, 2011, ISS national laboratory managed experiments shall be guaranteed access to, and utilization of, not less than 50 percent of the United States research capacity allocation, including power, cold storage, and requisite crew time onboard the ISS through September 30, 2020. Access to the ISS research capacity includes provision for the adequate upmass and downmass capabilities to utilize the ISS research capacity, as available. The Administrator may allocate additional capacity to the ISS national laboratory should such capacity be in excess of NASA research requirements.

(2) ADDITIONAL RESEARCH CAPABILITIES.—If any NASA research plan is determined to require research capacity onboard the ISS beyond the percentage allocated under paragraph (1), such research plan shall be prepared in the form of a requested research opportunity to be submitted to the process established under this section for the consideration of proposed research within the capacity allocated to the ISS national laboratory. A proposal for such a research plan may include the establishment of partnerships with non-NASA institutions eligible to propose research to be conducted within the ISS national laboratory capacity. Until September 30, 2020, the official or employee designated under subsection (b) may grant an exception to this requirement in the case of a proposed experiment considered essential for purposes of preparing for exploration beyond low-Earth orbit, as determined by joint agreement between the organization with which the Administrator enters into a cooperative agreement under subsection (a) and the official or employee designated under subsection (b).

(3) RESEARCH PRIORITIES AND ENHANCED CAPACITY.—The organization with which the

Administrator enters into the cooperative agreement shall consider recommendations of the National Academies Decadal Survey on Biological and Physical Sciences in Space in establishing research priorities and in developing proposed enhancements of research capacity and opportunities for the ISS national laboratory.

(4) **RESPONSIBILITY FOR RESEARCH PAYLOAD.**—NASA shall retain its roles and responsibilities in providing research payload physical, analytical, and operations integration during pre-flight, post-flight, transportation, and orbital phases essential to ensure safe and effective flight readiness and vehicle integration of research activities approved and prioritized by the organization with which the Administrator enters into the cooperative agreement and the official or employee designated under subsection (b).

TITLE VI—SPACE SHUTTLE RETIREMENT AND TRANSITION

SEC. 601. SENSE OF CONGRESS ON THE SPACE SHUTTLE PROGRAM.

(a) **FINDINGS.**—Congress makes the following findings:

(1) The Space Shuttle program represents a national asset consisting of critical skills and capabilities, including the ability to lift large payloads into space and return them to Earth.

(2) The Space Shuttle has carried more than 355 people from 16 nations into space.

(3) The Space Shuttle has projected the best of American values around the world, and Space Shuttle crews have sparked the imagination and dreams of the world's youth and young at heart.

(b) **SENSE OF CONGRESS.**—It is the sense of Congress that—

(1) it is essential that the retirement of the Space Shuttle and the transition to new human space flight capabilities be done in a manner that builds upon the legacy of this national asset; and

(2) it is imperative for the United States to retain the skills and the industrial capability to provide a follow-on Space Launch System that is primarily designed for missions beyond near-Earth space, while offering some potential for supplanting shuttle delivery capabilities to low-Earth orbit, particularly in support of ISS requirements, if necessary.

SEC. 602. RETIREMENT OF SPACE SHUTTLE ORBITERS AND TRANSITION OF SPACE SHUTTLE PROGRAM.

(a) **IN GENERAL.**—The Administrator shall retire the Space Shuttle orbiters pursuant to a schedule established by the Administrator and in a manner consistent with provisions of this Act regarding potential requirements for contingency utilization of Space Shuttle orbiters for ISS requirements.

(b) **UTILIZATION OF WORKFORCE AND ASSETS IN FOLLOW-ON SPACE LAUNCH SYSTEM.**—

(1) **UTILIZATION OF VEHICLE ASSETS.**—In carrying out subsection (a), the Administrator shall, to the maximum extent practicable, utilize workforce, assets, and infrastructure of the Space Shuttle program in efforts relating to the initiation of a follow-on Space Launch System developed pursuant to section 302 of this Act.

(2) **OTHER ASSETS.**—With respect to the workforce, assets, and infrastructure not utilized as described in paragraph (1), the Administrator shall work closely with other departments and agencies of the Federal Government, and the private sector, to divest unneeded assets and to assist displaced workers with retraining and other placement efforts. Amounts authorized to be appropriated by section 101(2)(B) shall be available for activities pursuant to this paragraph.

SEC. 603. DISPOSITION OF ORBITER VEHICLES.

(a) **IN GENERAL.**—Upon the termination of the Space Shuttle program as provided in section 602, the Administrator shall decommission any remaining Space Shuttle orbiter vehicles according to established safety and historic preservation procedures prior to their designation as surplus government property. The orbiter vehicles shall be made available and located for display and maintenance through a competitive procedure established pursuant to the disposition plan developed under section 613(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17761(a)), with priority consideration given to eligible applicants meeting all conditions of that plan which would provide for the display and maintenance of orbiters at locations with the best potential value to the public, including where the location of the orbiters can advance educational opportunities in science, technology, engineering, and mathematics disciplines, and with an historical relationship with either the launch, flight operations, or processing of the Space Shuttle orbiters or the retrieval of NASA manned space vehicles, or significant contributions to human space flight. The Smithsonian Institution, which, as of the date of enactment of this Act, houses the Space Shuttle Enterprise, shall determine any new location for the Enterprise.

(b) **DISPLAY AND MAINTENANCE.**—The orbiter vehicles made available under subsection (a) shall be displayed and maintained through agreements and procedures established pursuant to section 613(a) of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17761(a)).

(c) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated to NASA such sums as may be necessary to carry out this section. The amounts authorized to be appropriated by this subsection shall be in addition to any amounts authorized to be appropriated by title I, and may be requested by the President as supplemental requirements, if needed, in the appropriate fiscal years.

TITLE VII—EARTH SCIENCE

SEC. 701. SENSE OF CONGRESS.

It is the sense of Congress that—

(1) Earth observations are critical to scientific understanding and monitoring of the Earth system, to protecting human health and property, to growing the economy of the United States, and to strengthening the national security and international posture of the United States. Additionally, recognizing the number of relevant participants and activities involved with Earth observations within the United States Government and internationally, Congress supports the strengthening of collaboration across these areas;

(2) NASA plays a critical role through its ability to provide data on solar output, sea level rise, atmospheric and ocean temperature, ozone depletion, air pollution, and observation of human and environment relationships;

(3) programs should utilize open standards consistent with international data-sharing principles and obtain and convert data from other government agencies, including data from the United States Geological Survey, and data derived from satellites operated by NOAA as well as from international satellites are important to the study of climate science and such cooperative relationships and programs should be maintained;

(4) Earth-observing satellites and sustained monitoring programs will continue to play a

vital role in climate science, environmental understanding, mitigation of destructive environmental impacts, and contributing to the general national welfare; and

(5) land remote sensing observation plays a critical role in Earth science, and the national space policy supports this role by requiring operational land remote sensing capabilities.

SEC. 702. INTERAGENCY COLLABORATION IMPLEMENTATION APPROACH.

The Director of OSTP shall establish a mechanism to ensure greater coordination of the research, operations, and activities relating to civilian Earth observation of those Agencies, including NASA, that have active programs that either contribute directly or indirectly to these areas. This mechanism should include the development of a strategic implementation plan that is updated at least every 3 years, and includes a process for external independent advisory input. This plan should include a description of the responsibilities of the various Agency roles in Earth observations, recommended cost-sharing and procurement arrangements between Agencies and other entities, including international arrangements, and a plan for ensuring the provision of sustained, long term space-based climate observations. The Director shall provide a report to Congress within 90 days after the date of enactment of this Act on the implementation plan for this mechanism.

SEC. 703. TRANSITIONING EXPERIMENTAL RESEARCH TO OPERATIONS.

The Administrator shall coordinate with the Administrator of NOAA and the Director of the United States Geological Survey to establish a formal mechanism that plans, coordinates, and supports the transitioning of NASA research findings, assets, and capabilities to NOAA operations and United States Geological Survey operations. In defining this mechanism, NASA should consider the establishment of a formal or informal Interagency Transition Office. The Administrator of NASA shall provide an implementation plan for this mechanism to Congress within 90 days after the date of enactment of this Act.

SEC. 704. DECADAL SURVEY MISSIONS IMPLEMENTATION FOR EARTH OBSERVATION.

The Administrator shall undertake to implement, as appropriate, missions identified in the National Research Council's Earth Science Decadal Survey within the scope of the funds authorized for the Earth Science Mission Directorate.

SEC. 705. EXPANSION OF EARTH SCIENCE APPLICATIONS.

It is the sense of the Congress that the role of NASA in Earth Science applications shall be expanded with other departments and agencies of the Federal government, State and local governments, tribal governments, academia, the private sector, nonprofit organizations, and international partners. NASA's Earth science data can increasingly aid efforts to improve the human condition and provide greater security.

SEC. 706. INSTRUMENT TEST-BEDS AND VENTURE CLASS MISSIONS.

The Administrator shall pursue innovative ways to fly instrument-level payloads for early demonstration or as co-manifested payloads. The Congress encourages the use of the ISS as an accessible platform for the conduct of such activities. Additionally, in order to address the cost and schedule challenges associated with large flight systems, NASA should pursue smaller systems where practicable and warranted.

SEC. 707. SENSE OF CONGRESS ON NPOESS FOLLOW-ON PROGRAM.

It is the Sense of the Congress that—

(1) polar orbiting satellites are vital for weather prediction, climate and environmental monitoring, national security, emergency response, and climate research;

(2) the National Polar Orbiting Environmental Satellite System has suffered from years of steadily rising cost estimates and schedule delays and an independent review team recommended that the System be restructured to improve the probability of success and protect the continuity of weather and climate data;

(3) the Congress supports the decision made by OSTP in February, 2010, to restructure the program to minimize schedule slips and cost overruns, clarify the responsibilities and accountability of NASA, NOAA, and the Department of Defense, and retain necessary coordination across civil and defense weather and climate programs;

(4) the Administrator of NOAA and the Secretary of Defense should maximize the use of assets from the NPOESS program as they establish the NOAA Joint Polar Satellite System at NASA's Goddard Space Flight Center, and the Department of Defense's Defense Weather Satellite System;

(5) the Administrator of NOAA and the Secretary of Defense should structure their programs in order to maintain satellite data continuity for the Nation's weather and climate requirements; and

(6) the Administrator of NOAA and the Secretary of Defense should provide immediate notification to the Congress of any impediments that may require Congressional intervention in order for the agencies to meet launch readiness dates, together with any recommended actions.

TITLE VIII—SPACE SCIENCE**SEC. 801. TECHNOLOGY DEVELOPMENT.**

The Administrator shall ensure that the Science Mission Directorate maintains a long term technology development program for space and Earth science. This effort should be coordinated with an overall Agency technology investment approach, as authorized in section 905 of this Act.

SEC. 802. SUBORBITAL RESEARCH ACTIVITIES.

(a) IN GENERAL.—The report of the National Academy of Sciences, Revitalizing NASA's Suborbital Program: Advancing Science, Driving Innovation and Developing Workforce, found that suborbital science missions were absolutely critical to building an aerospace workforce capable of meeting the needs of current and future human and robotic space exploration.

(b) MANAGEMENT.—The Administrator shall designate an officer or employee of the Science Mission Directorate to act as the responsible official for all Suborbital Research in the Science Mission Directorate. The designee shall be responsible for the development of short- and long term strategic plans for maintaining, renewing and extending suborbital facilities and capabilities, monitoring progress towards goals in the plans, and be responsible for integration of suborbital activities and workforce development within the agency, thereby ensuring the long term recognition of their combined value to the directorate, to NASA, and to the Nation.

(c) ESTABLISHMENT OF SUBORBITAL RESEARCH PROGRAM.—The Administrator shall establish a Suborbital Research Program within the Science Mission Directorate that shall include the use of sounding rockets, aircraft, high altitude balloons, suborbital reusable launch vehicles, and commercial launch vehicles to advance science and train

the next generation of scientists and engineers in systems engineering and systems integration which are vital to maintaining critical skills in the aerospace workforce. The program shall integrate existing suborbital research programs with orbital missions at the discretion of the designated officer or employee and shall emphasize the participation of undergraduate and graduate students and post-doctoral researchers when formulating announcements of opportunity.

(d) REPORT.—The Administrator shall report to the appropriate committees of Congress on the number and type of suborbital missions conducted in each fiscal year and the number of undergraduate and graduate students participating in the missions. The report shall be made annually for each fiscal year under this section.

(e) AUTHORIZATION.—There are authorized to be appropriated to the Administrator such sums as may be necessary to carry out this section.

SEC. 803. OVERALL SCIENCE PORTFOLIO-SENSE OF THE CONGRESS.

Congress reaffirms its sense that a balanced and adequately funded set of activities, consisting of research and analysis grants programs, technology development, small, medium, and large space missions, and suborbital research activities, contributes to a robust and productive science program and serves as a catalyst for innovation.

SEC. 804. IN-SPACE SERVICING.

The Administrator shall continue to take all necessary steps to ensure that provisions are made for in-space or human servicing and repair of all future observatory-class scientific spacecraft intended to be deployed in Earth-orbit or at a Lagrangian point to the extent practicable and appropriate. The Administrator should ensure that agency investments and future capabilities for space technology, robotics, and human space flight take the ability to service and repair these spacecraft into account, where appropriate, and incorporate such capabilities into design and operational plans.

SEC. 805. DECADAL RESULTS.

NASA shall take into account the current decadal surveys from the National Academies' Space Studies Board when submitting the President's budget request to the Congress.

SEC. 806. ON-GOING RESTORATION OF RADIOISOTOPE THERMOELECTRIC GENERATOR MATERIAL PRODUCTION.

(a) FINDINGS.—The Congress finds the following:

(1) The United States has led the world in the scientific exploration of space for nearly 50 years.

(2) Missions such as Viking, Voyager, Cassini, and New Horizons have greatly expanded knowledge of our solar system and planetary characteristics and evolution.

(3) Radioisotope power systems are the only available power sources for deep space missions making it possible to travel to such distant destinations as Mars, Jupiter, Saturn, Pluto, and beyond and maintain operational control and systems viability for extended mission durations.

(4) Current radioisotope power systems supplies and production will not fully support NASA missions planned even in the next decade and, without a new domestic production capability, the United States will no longer have the means to explore the majority of the solar system by the end of this decade.

(5) Continuing to rely on Russia or other foreign sources for radioisotope power system fuel production is not a secure option.

(6) Reestablishing domestic production will require a long lead-time. Thus, meeting future space exploration mission needs requires that a restart project begin at the earliest opportunity.

(b) IN GENERAL.—The Administrator shall, in coordination with the Secretary of Energy, pursue a joint approach beginning in fiscal year 2011 towards restarting and sustaining the domestic production of radioisotope thermoelectric generator material for deep space and other science and exploration missions. Funds authorized by this Act for NASA shall be made available under a reimbursable agreement with the Department of Energy for the purpose of reestablishing facilities to produce fuel required for radioisotope thermoelectric generators to enable future missions.

(c) REPORT.—Within 120 days after the date of enactment of this Act, the Administrator and the Secretary of Energy shall submit a joint report to the appropriate committees of Congress on coordinated agreements, planned implementation, and anticipated schedule, production quantities, and mission applications under this section.

SEC. 807. COLLABORATION WITH ESMD AND SOMD ON ROBOTIC MISSIONS.

The Administrator shall ensure that the Exploration Systems Mission Directorate and the Space Operations Mission Directorate coordinate with the Science Mission Directorate on an overall approach and plan for interagency and international collaboration on robotic missions that are NASA or internationally developed, including lunar, Lagrangian, near-Earth orbit, and Mars spacecraft, such as the International Lunar Network. Within 90 days after the date of enactment of this Act, the Administrator shall provide a plan to the appropriate committees of Congress for implementation of the collaborative approach required by this section. The Administrator may not cancel or initiate any Exploration Systems Mission Directorate or Science Mission Directorate robotic project before the plan is submitted to the appropriate committees of Congress.

SEC. 808. NEAR-EARTH OBJECT SURVEY AND POLICY WITH RESPECT TO THREATS POSED.

(a) POLICY REAFFIRMATION.—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) IMPLEMENTATION.—The Director of the OSTP shall implement, before September 30, 2012, 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 assign a Federal agency or agencies to be responsible for protecting the United States and working with the international community on such threats.

SEC. 809. SPACE WEATHER.

(a) FINDINGS.—The Congress finds the following:

(1) Space weather events pose a significant threat to modern technological systems.

(2) The effects of severe space weather events on the electric power grid, telecommunications and entertainment satellites, airline communications during polar routes, and space-based position, navigation and timing systems could have significant societal, economic, national security, and health impacts.

(3) Earth and Space Observing satellites, such as the Advanced Composition Explorer, Geostationary Operational Environmental Satellites, Polar Operational Environmental

Satellites, and Defense Meteorological Satellites, provide crucial data necessary to predict space weather events.

(b) ACTION REQUIRED.—The Director of OSTP shall—

(1) improve the Nation's ability to prepare, avoid, mitigate, respond to, and recover from potentially devastating impacts of space weather events;

(2) coordinate the operational activities of the National Space Weather Program Council members, including the NOAA Space Weather Prediction Center and the U.S. Air Force Weather Agency; and

(3) submit a report to the appropriate committees of Congress within 180 days after the date of enactment of this Act that—

(A) details the current data sources, both space- and ground-based, that are necessary for space weather forecasting; and

(B) details the space- and ground-based systems that will be required to gather data necessary for space weather forecasting for the next 10 years.

TITLE IX—AERONAUTICS AND SPACE TECHNOLOGY

SEC. 901. SENSE OF CONGRESS.

It is the sense of Congress that—

(1) aeronautics research remains vital to NASA's mission and deserves continued support;

(2) NASA aeronautics research should be guided by, and consistent with, the National Aeronautics Research and Development Policy that guides the Nation's aeronautics research and development activities;

(3) the OSTP-led National Science and Technology Council Aeronautics Science and Technology subcommittee remains essential to developing and coordinating national aeronautics research and development plans and their prioritization for funding, and that it is also important that the plans include a focus on research, development, test, and evaluation infrastructure plans, as well as research and development goals and objectives; and

(4) technology research conducted by NASA as part of the larger national aeronautics effort would help to secure, sustain, and advance the leadership role of the United States in global aviation.

SEC. 902. AERONAUTICS RESEARCH GOALS.

The Administrator should ensure that NASA maintains a strong aeronautics research portfolio ranging from fundamental research through systems research with specific research goals, including the following:

(1) AIRSPACE CAPACITY.—NASA's Aeronautics Research Mission Directorate shall address research needs of the Next Generation Air Transportation System, including the ability of the National Airspace System to handle up to 3 times the current travel demand by 2025.

(2) ENVIRONMENTAL SUSTAINABILITY.—The Directorate shall consider and pursue concepts to reduce noise, emissions, and fuel consumption while maintaining high safety standards and shall pursue research related to alternative fuels.

(3) AVIATION SAFETY.—The Directorate shall proactively address safety challenges with new and current air vehicles and with operations in the Nation's current and future air transportation system.

SEC. 903. RESEARCH COLLABORATION.

(a) DEPARTMENT OF DEFENSE.—The Administrator shall continue to coordinate with the Secretary of Defense, through the National Partnership for Aeronautics Testing, to develop and implement joint plans for those elements of the Nation's research, development, testing, and engineering infra-

structure that are of common interest and use.

(b) FEDERAL AVIATION ADMINISTRATION.—The Administrator shall continue to coordinate with, and work closely with, the Administrator of the Federal Aviation Administration, under the framework of the Senior Policy Council, in development of the Next Generation Air Transportation Program. The Administrator shall encourage the Council to explore areas for greater collaboration, including areas where NASA can help to accelerate the development and demonstration of NextGen technologies.

SEC. 904. GOAL FOR AGENCY SPACE TECHNOLOGY.

It is critical that NASA maintain an Agency space technology base that helps align mission directorate investments and supports long term needs to complement mission-directorate funded research and support, where appropriate, multiple users, building upon its Innovative Partnerships Program and other partnering approaches.

SEC. 905. IMPLEMENTATION PLAN FOR AGENCY SPACE TECHNOLOGY.

Within 120 days after the date of enactment of this Act, NASA shall submit a plan to the appropriate committees of Congress that outlines how NASA's space technology program will meet the goal described in section 904, including an explanation of how the plan will link to other mission-directorate technology efforts outlined in sections 608, 801, and 802 of this Act.

SEC. 906. NATIONAL SPACE TECHNOLOGY POLICY.

(a) IN GENERAL.—The President or the President's designee, in consultation with appropriate Federal agencies, shall develop a national policy to guide the space technology development programs of the United States through 2020. The policy shall include national goals for technology development and shall describe the role and responsibilities of each Federal agency that will carry out the policy. In developing the policy, the President or the President's designee shall utilize external studies that have been conducted on the state of United States technology development and have suggested policies to ensure continued competitiveness.

(b) CONTENT.—

(1) At a minimum, the national space technology development policy shall describe for NASA—

(A) the priority areas of research for technology investment;

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

(C) the facilities and personnel needed to carry out the technology development program; and

(D) the budget assumptions on which the policy is based, which for fiscal years 2011, 2012, and 2013 shall be the authorized level for NASA's technology program authorized by this Act.

(2) The policy shall be based on the premise that the Federal Government has an established interest in conducting research and development programs that help preserve the role of the United States as a global leader in space technologies and their application.

(3) CONSIDERATIONS.—In developing the national space technology development policy, the President or the President's designee shall consider, and include a discussion in the report required by subsection (c), of the following issues:

(A) The extent to which NASA should focus on long term, high-risk research or more incremental technology development,

and the expected impact of that decision on the United States economy.

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

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

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

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

(c) REPORT.—

(1) POLICY.—Not later than 1 year after the date of enactment of this Act, the President shall transmit a report setting forth national space technology policy to the appropriate committees of Congress and to the Senate Committee on Appropriations and the House of Representatives Committee on Appropriations.

(2) IMPLEMENTATION.—Not later than 60 days after the President transmits the report required by paragraph (1) to the Congress, the Administrator shall transmit a report to the same committees describing how NASA will carry out the policy.

SEC. 907. COMMERCIAL REUSABLE SUBORBITAL RESEARCH PROGRAM.

(a) IN GENERAL.—The report of the National Academy of Sciences, Revitalizing NASA's Suborbital Program: Advancing Science, Driving Innovation and Developing Workforce, found that suborbital science missions were absolutely critical to building an aerospace workforce capable of meeting the needs of current and future human and robotic space exploration.

(b) MANAGEMENT.—The Administrator shall designate an officer or employee of the Space Technology Program to act as the responsible official for the Commercial Reusable Suborbital Research Program in the Space Technology Program. The designee shall be responsible for the development of short- and long term strategic plans for maintaining, renewing and extending suborbital facilities and capabilities.

(c) ESTABLISHMENT.—The Administrator shall establish a Commercial Reusable Suborbital Research Program within the Space Technology Program that shall fund the development of payloads for scientific research, technology development, and education, and shall provide flight opportunities for those payloads to microgravity environments and suborbital altitudes. The Commercial Reusable Suborbital Research Program may fund engineering and integration demonstrations, proofs of concept, or educational experiments for commercial reusable vehicle flights. The program shall endeavor to work with NASA's Mission Directorates to help achieve NASA's research, technology, and education goals.

(d) REPORT.—The Administrator shall submit a report annually to the appropriate committees of Congress describing progress in carrying out the Commercial Reusable Suborbital Research program, including the number and type of suborbital missions planned in each fiscal year.

(e) AUTHORIZATION.—There are authorized to be appropriated to the Administrator \$15,000,000 for each of fiscal years 2011 through 2013 to carry out this section.

TITLE X—EDUCATION**SEC. 1001. REPORT ON EDUCATION IMPLEMENTATION OUTCOMES.**

Not later than 120 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the metrics, internal and external relationships, and resources committed by NASA to each of the following:

(1) The development of a national STEM workforce.

(2) The retention of students in STEM disciplines as reflected by their education progression over time.

(3) The development of strategic partnerships and linkages between STEM formal and informal education providers.

SEC. 1002. SENSE OF CONGRESS ON THE EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH.

It is the sense of Congress that—

(1) the Experimental Program to Stimulate Competitive Research of NASA strengthens the research capabilities of jurisdictions that historically have not participated equally in competitive aerospace and aerospace-related research activities;

(2) the Experimental Program to Stimulate Competitive Research of NASA has provided the American taxpayer with an excellent return on investment;

(3) the Experimental Program to Stimulate Competitive Research of NASA has been successful in helping to achieve broader geographical distribution of research and development support by improving the research infrastructure in States that historically have received limited Federal research and development funds; and

(4) in order to continue improvement and to increase efficiency the award of grants under the Experimental Program to Stimulate Competitive Research of NASA should be coordinated with the award of grants under the Experimental Program to Stimulate Competitive Research of the National Science Foundation, the Department of Energy, the Department of Agriculture, the Department of Defense, the Environmental Protection Agency, and the National Institutes of Health.

SEC. 1003. SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS COMMERCIAL ORBITAL PLATFORM PROGRAM.

A fundamental and unique capability of NASA is in stimulating science, technology, engineering, and mathematics education in the United States. In ensuring maximum use of that capability, NASA shall—

(1) establish a program to annually sponsor scientific and educational payloads developed with United States student and educator involvement to be flown on commercially available orbital platforms, when available and operational, with the goal of launching at least 50 such payloads (with at least one from each of the 50 States) to orbit on at least one mission per year;

(2) contract with providers of commercial orbital platform services for their use by the STEM-Commercial Orbital Platform program, preceded by the issuance of a request for proposal, not later than 90 days after the date of enactment of this Act, to enter into at least one funded, competitively-awarded contract for commercial orbital platform services and make awards within 180 days after such date; and

(3) engage with United States students and educators and make available NASA's science, engineering, payload development, and payload operations expertise to student

teams selected to participate in the STEM-Commercial Orbital Platform program.

TITLE XI—RE-SCOPING AND REVITALIZING INSTITUTIONAL CAPABILITIES**SEC. 1101. SENSE OF CONGRESS.**

It is the sense of Congress that NASA needs to re-scope, and as appropriate, downsize, to fit current and future missions and expected funding levels. Eighty percent of NASA's facilities are over 40 years old. Additionally, in a number of areas NASA finds itself "holding onto" facilities and capabilities scaled to another era.

SEC. 1102. INSTITUTIONAL REQUIREMENTS STUDY.

Within 1 year after the date of enactment of this Act, the Administrator shall provide to the appropriate committees of Congress a comprehensive study that, taking into account the long term direction provided by this Act, carefully examines NASA's structure, organization, and institutional assets and identifies a strategy to evolve toward the most efficient retention, sizing, and distribution of facilities, laboratories, test capabilities, and other infrastructure consistent with NASA's missions and mandates. The Administrator should pay particular attention to identifying and removing unneeded or duplicative infrastructure. The Administrator should include in the study a suggested reconfiguration and reinvestment strategy that would conform the needed equipment, facilities, test equipment, and related organizational alignment that would best meet the requirements of missions and priorities authorized and directed by this Act. As part of this strategy, the Administrator should include consideration and application of the findings and recommendations of the National Research Council report, *Capabilities for the Future: An Assessment of NASA Laboratories for Basic Research*, prepared in response to section 1003 of the National Aeronautics and Space Administration Authorization Act of 2008 (42 U.S.C. 17812).

SEC. 1103. NASA CAPABILITIES STUDY REQUIREMENT.

Upon completion of the study required by Section 1102, the Administrator shall establish an independent panel to examine alternative management models for NASA's workforce, centers, and related facilities in order to improve efficiency and productivity, while nonetheless maintaining core Federal competencies and keeping appropriately governmental functions internal to NASA. The study shall include a recommended implementation strategy, which shall identify any additional legislative authorities necessary to enable implementation of the recommended strategy, including recommended actions to provide aid and assistance to eligible communities to mitigate adverse impacts resulting from implementation of the proposed strategy. The Administrator shall provide the results of this study to the appropriate committees of Congress within 1 year after the date on which the study is begun.

SEC. 1104. SENSE OF CONGRESS ON COMMUNITY TRANSITION SUPPORT.

The Congress recognizes and supports current executive branch efforts to assist and provide aid to communities that are adversely impacted by NASA program changes, contract or program cancellations, or proposed institutional changes, so as to minimize the social and economic impacts to those communities, workers, and businesses. Communities eligible for such aid would be those in close proximity to NASA mission-related centers and their component facili-

ties located in Alabama, California, Florida, Louisiana, Maryland, Mississippi, New Mexico, Ohio, Texas, and Virginia which may be impacted by program changes authorized or directed by this Act or by the implementation strategy developed pursuant to section 1103.

SEC. 1105. WORKFORCE STABILIZATION AND CRITICAL SKILLS PRESERVATION.

Prior to receipt by the Congress of the study, recommendations, and implementation strategy developed pursuant to section 1103, none of the funds authorized for use under this Act may be used to transfer the functions, missions, or activities, and associated civil service and contractor positions, from any NASA facility without authorization by the Congress to implement the proposed strategy. The Administrator shall preserve the critical skills and competencies in place at NASA centers prior to enactment of this Act in order to facilitate timely implementation of the requirements of this Act and to minimize disruption to the workforce. The Administrator may not implement any reduction-in-force or other involuntary separations of permanent, non-Senior-Executive-Service, civil servant employees before September 30, 2013, except for cause on charges of misconduct, delinquency, or inefficiency.

TITLE XII—OTHER MATTERS**SEC. 1201. REPORT ON SPACE TRAFFIC MANAGEMENT.**

The Administrator shall submit to the appropriate committees of Congress a report on a status on the initiation of discussions with other nations on a framework to address space traffic management concerns, as required by section 1102 of the National Aeronautics and Space Administration Act Authorization Act of 2008 (42 U.S.C. 17821).

SEC. 1202. NATIONAL AND INTERNATIONAL ORBITAL DEBRIS MITIGATION.

(a) FINDINGS.—Congress makes the following findings:

(1) A national and international effort is needed to develop a coordinated approach towards the prevention, negation, and removal of orbital debris.

(2) The guidelines issued by the Inter-Agency Space Debris Coordination Committee provide a consensus understanding of 10 national space agencies (including NASA) plus the European Space Agency on the necessity of mitigating the creation of space debris and measures for doing so. NASA's participation on the Committee should be robust, and NASA should urge other space-relevant Federal agencies (including the Departments of State, Defense, and Commerce) to work to ensure that their counterpart agencies in foreign governments are aware of these national commitments and the importance in which the United States holds them.

(3) Key components of such an approach should include—

(A) a process for debris prevention through agreements regarding spacecraft design, operations, and end-of-life disposition plans to minimize orbiting vehicles or elements which are nonfunctional;

(B) the development of a robust Space Situational Awareness network that can identify potential collisions and provide sufficient trajectory and orbital data to enable avoidance maneuvers;

(C) the interagency development of an overall strategy for review by the President, with recommendations for proposed international collaborative efforts to address this challenge.

(b) INTERNATIONAL DISCUSSION.—

(1) IN GENERAL.—The Administrator shall, in consultation with such other departments

and agencies of the Federal Government as the Administrator considers appropriate, continue and strengthen discussions with the representatives of other space-faring countries, within the Inter-Agency Space Debris Coordination Committee and elsewhere, to deal with this orbital debris mitigation.

(2) **INTERAGENCY EFFORT.**—For purposes of carrying out this subsection, the Director of OSTP, in coordination with the Director of the National Security Council and using the President's Council of Advisors on Science and Technology coordinating mechanism, shall develop an overall strategy for review by the President, with recommendations for proposed international collaborative efforts to address this challenge.

SEC. 1203. REPORTS ON PROGRAM AND COST ASSESSMENT AND CONTROL ASSESSMENT.

(a) **FINDINGS.**—Congress makes the following findings:

(1) The adherence of NASA to program cost and schedule targets and discipline across NASA programs remains a concern.

(2) The James Webb Space Telescope has exceeded its cost estimate.

(3) In 2007 the Government Accountability Office issued a report on NASA's high risk acquisition performance.

(4) In response, NASA prepared a corrective action plan two years ago.

(b) **REPORTS.**—

(1) **REPORTS REQUIRED.**—Not later than 90 days after the date of the enactment of this Act, and not later than April 30 of each year thereafter, the Administrator shall submit to the appropriate committees of Congress a report on the implementation during the preceding year for the corrective action plan referred to in subsection (a)(4).

(2) **ELEMENTS.**—Each report under this subsection shall set forth, for the year covered by such report, the following:

(A) A description of each NASA program that has exceeded its cost baseline by 15 percent or more or is more than 2 years behind its projected development schedule.

(B) For each program specified under subparagraph (A), a plan for such decrease in scope or requirements, or other measures, to be undertaken to control cost and schedule, including any cost monitoring or corrective actions undertaken pursuant to the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109-155), and the amendments made by that Act.

SEC. 1204. ELIGIBILITY FOR SERVICE OF INDIVIDUAL CURRENTLY SERVING AS ADMINISTRATOR OF NASA.

The individual serving in the position of Administrator of the National Aeronautics and Space Administration as of the date of the enactment of this Act comes from civilian life and is therefore eligible to serve in such position, in conformance with section 202 of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2472(a)).

SEC. 1205. SENSE OF CONGRESS ON INDEPENDENT VERIFICATION AND VALIDATION OF NASA SOFTWARE.

It is the sense of Congress that—

(1) safety is at the heart of every NASA mission;

(2) the Office of Safety and Mission Assurance remains vital to assuring the safety of all NASA activities;

(3) among the most important activities of the Office of Safety and Mission Assurance is the performance of independent safety and mission assurance assessments and process verification reviews;

(4) as NASA embarks on a new path, independent verification and validation of soft-

ware must be of the highest priority to ensure safety throughout all NASA programs;

(5) NASA's activities depend on software integrity to achieve their goals and deliver a successful mission to the American people;

(6) independent verification and validation is necessary to ensure that safety-critical software will operate dependably and support mission success;

(7) the creation of the Independent Verification and Validation Facility of NASA was the direct result of recommendations made by the National Research Council and the Report of the Presidential Commission on the Space Shuttle Challenger Accident;

(8) the mission-critical software of NASA must operate dependably and safely;

(9) the Independent Verification and Validation Facility of NASA plays an important role in assuring the safety of all NASA activities by improving methodologies for risk identification and assessment, and providing recommendations for risk mitigation and acceptance; and

(10) the Independent Verification and Validation Facility shall be the sole provider of independent verification and validation services for software created by or for NASA.

SEC. 1206. COUNTERFEIT PARTS.

(a) **IN GENERAL.**—The Administrator shall plan, develop, and implement a program, in coordination with other Federal agencies, to detect, track, catalog, and reduce the number of counterfeit electronic parts in the NASA supply chain.

(b) **REQUIREMENTS.**—In carrying out the program, the Administrator shall establish—

(1) counterfeit part identification training for all employees that procure, process, distribute, and install electronic parts that will—

(A) teach employees how to identify counterfeit parts;

(B) educate employees on procedures to follow if they suspect a part is counterfeit;

(C) regularly update employees on new threats, identification techniques, and reporting requirements; and

(D) integrate industry associations, manufacturers, suppliers, and other Federal agencies, as appropriate;

(2) an internal database to track all suspected and confirmed counterfeit electronic parts that will maintain, at a minimum—

(A) companies and individuals known and suspected of selling counterfeit parts;

(B) parts known and suspected of being counterfeit, including lot and date codes, part numbers, and part images;

(C) countries of origin;

(D) sources of reporting;

(E) United States Customs seizures; and

(F) Government-Industry Data Exchange Program reports and other public or private sector database notifications; and

(3) a mechanism to report all information on suspected and confirmed counterfeit electronic parts to law enforcement agencies, industry associations, and other databases, and to issue bulletins to industry on counterfeit electronic parts and related counterfeit activity.

(c) **REVIEW OF PROCUREMENT AND ACQUISITION POLICY.**—

(1) **IN GENERAL.**—In establishing the program, the Administrator shall amend existing acquisition and procurement policy to purchase electronic parts from trusted or approved manufacturers. To determine trusted or approved manufacturers, the Administrator shall establish a list, assessed and adjusted at least annually, and create criteria for manufacturers to meet in order to be placed onto the list.

(2) **CRITERIA.**—The criteria may include—

(A) authentication or encryption codes;

(B) embedded security markings in parts;

(C) unique, harder to copy labels and markings;

(D) identifying distinct lot and serial codes on external packaging;

(E) radio frequency identification embedded into high-value parts;

(F) physical destruction of all defective, damaged, and sub-standard parts that are by-products of the manufacturing process;

(G) testing certifications;

(H) maintenance of procedures for handling any counterfeit parts that slip through;

(I) maintenance of secure facilities to prevent unauthorized access to proprietary information; and

(J) maintenance of product return, buy back, and inventory control practices that limit counterfeiting.

(d) **REPORT TO CONGRESS.**—Within one year after the date of enactment of this Act, the Administrator shall report on the progress of implementing this section to the appropriate committees of Congress.

SEC. 1207. INFORMATION SECURITY.

(a) **MONITORING RISK.**—

(1) **UPDATE ON SYSTEM IMPLEMENTATION.**—Not later than 120 days after the date of enactment of this Act, and on a biennial basis thereafter, the chief information officer of NASA, in coordination with other national security agencies, shall provide to the appropriate committees of Congress—

(A) an update on efforts to implement a system to provide dynamic, comprehensive, real-time information regarding risk of unauthorized remote, proximity, and insider use or access, for all information infrastructure under the responsibility of the chief information officer, and mission-related networks, including contractor networks;

(B) an assessment of whether the system has demonstrably and quantifiably reduced network risk compared to alternative methods of measuring security; and

(C) an assessment of the progress that each center and facility has made toward implementing the system.

(2) **EXISTING ASSESSMENTS.**—The assessments required of the Inspector General under section 3545 of title 44, United States Code, shall evaluate the effectiveness of the system described in this subsection.

(b) **INFORMATION SECURITY AWARENESS AND EDUCATION.**—

(1) **IN GENERAL.**—In consultation with the Department of Education, other national security agencies, and other agency directorates, the chief information officer shall institute an information security awareness and education program for all operators and users of NASA information infrastructure, with the goal of reducing unauthorized remote, proximity, and insider use or access.

(2) **PROGRAM REQUIREMENTS.**—

(A) The program shall include, at a minimum, ongoing classified and unclassified threat-based briefings, and automated exercises and examinations that simulate common attack techniques.

(B) All agency employees and contractors engaged in the operation or use of agency information infrastructure shall participate in the program.

(C) Access to NASA information infrastructure shall only be granted to operators and users who regularly satisfy the requirements of the program.

(D) The chief human capital officer of NASA, in consultation with the chief information officer, shall create a system to reward operators and users of agency information infrastructure for continuous high achievement in the program.

(c) **INFORMATION INFRASTRUCTURE DEFINED.**—In this section, the term “information infrastructure” means the underlying framework that information systems and assets rely on to process, transmit, receive, or store information electronically, including programmable electronic devices and communications networks and any associated hardware, software, or data.

SEC. 1208. NATIONAL CENTER FOR HUMAN PERFORMANCE.

(a) **IN GENERAL.**—The National Center for Human Performance is located in Houston's Texas Medical Center which is home to 49 non-profit and academic patient care, biomedical research, and health educational institutions serving 6 million patients each year, and works collaboratively with individuals and organizations, including NASA, to advance science and research on human performance in space, health, the military, athletics, and the arts.

(b) **DESIGNATION AS INSTITUTION OF EXCELLENCE.**—The National Center for Human Performance is designated as an Institution of Excellence for Human Performance dedicated to understanding and improving all aspects of human performance.

SEC. 1209. ENHANCED-USE LEASING.

(a) **SENSE OF THE CONGRESS.**—It is the sense of the Congress that the NASA enhanced-use leasing program is a fiscally responsible program to further maintain the exploration-related infrastructure of our Nation's space centers while ensuring continued private utilization of these Federal assets, and every effort should be made to ensure effective utilization of this program.

SEC. 1210. SENSE OF CONGRESS CONCERNING THE STENNIS SPACE CENTER.

It is the sense of the Congress that the Stennis Space Center represents the national capability for development and certification of liquid propulsion technologies vital to our Nation's space flight program, and that the Federal government should fully utilize that resource and continue to make the testing facility available for further development of commercial aerospace capabilities.

TITLE XIII—COMPLIANCE WITH STATUTORY PAY-AS-YOU-GO ACT OF 2010

SEC. 1301. COMPLIANCE PROVISION.

The budgetary effects of this Act, for the purpose of complying with the Statutory Pay-As-You-Go-Act of 2010, shall be determined by reference to the latest statement titled “Budgetary Effects of PAYGO Legislation” for this Act, submitted for printing in the Congressional Record by the Chairman of the Senate Budget Committee, provided that such statement has been submitted prior to the vote on passage.

The SPEAKER pro tempore. Pursuant to the rule, the gentleman from Tennessee (Mr. GORDON) and the gentleman from Texas (Mr. HALL) each will control 20 minutes.

The Chair recognizes the gentleman from Tennessee.

GENERAL LEAVE

Mr. GORDON of Tennessee. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days to revise and extend their remarks and to include extraneous mate-

rial on S. 3729, the bill now under consideration.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from Tennessee?

There was no objection.

Mr. GORDON of Tennessee. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, in his fiscal 2011 budget request, the President proposed a number of initiatives for NASA in the coming years, many of which I and my colleagues support. However, after extensive hearings and oversight, we reluctantly came to the conclusion that both the current Constellation program and the President's proposed human space flight plan are unexecutable under the current and projected budgets.

For too long, the mission hasn't matched the money at NASA, and I am unwilling to let that practice continue. As a result, an alternative approach was needed that would be executable and affordable, and both the House and the Senate authorizing committees have spent the major part of this last year work on a NASA reauthorization bill. The bill before us today represents the results of the Senate's efforts.

The House Science and Technology Committee marked up its version in late July, and we have spent the last several months in discussion with the Senate to come up with compromise language that would incorporate the best of both bills. Last week, I released bipartisan compromise language that reflects those discussions, as well as constructive input from colleagues here in the House.

□ 2100

I have a number of concerns about the Senate bill which I have enumerated. It has now, though, become clear that there is not time remaining to pass the bill incorporating the compromise language through the House and Senate before the start of the election recess.

For the sake of providing a degree of certainty, stability, and clarity to the NASA workforce and the larger space community, I felt it was better to consider a flawed bill than no bill at all as the new fiscal year begins. Thus, despite its flaws, I will vote to suspend the rules and pass the Senate bill.

However, I see today's floor consideration to be only one more step in crafting a substantial, affordable, and productive future path for NASA. To that end, I plan to continue to advocate to the appropriators for the provisions in the compromise language. I believe that the compromise language provides a solid basis for NASA's future activities.

Mr. Speaker, it has been a difficult year for NASA, its workforce and its contractors. We are in tough economic times and sacrifices will have to be

made. However, NASA is an investment in our future and in the future of our children. The United States has been a global leader in space exploration and technology and innovation, and our efforts over the remainder of the Congress should be aimed at preserving that leadership position.

With that, I encourage the House to pass the suspension.

I reserve the balance of my time.

Mr. HALL of Texas. Mr. Speaker, I rise in support of S. 3729, the NASA Authorization Act, and I yield myself such time as I may require.

Let me begin by commending the Science Committee chairman, BART GORDON; Space Subcommittee chairwoman, GABRIELLE GIFFORDS; and subcommittee ranking member, PETE OLSON, for their tireless efforts conducting oversight on NASA's programs and performance. During the 111th Congress, they held 13 hearings before either the subcommittee or full committee that thoroughly examined NASA in all its aspects. During the second session especially, they helped our committee better understand the full impact of the administration's proposal to revamp our Nation's human spaceflight program.

The bill we're about to vote on is a 3-year NASA authorization that was reported by the Senate in early August. In many respects, this bill shares features similar to H.R. 5781, introduced by Chairman GORDON and cosponsored by the committee's leadership. Both bills are fairly similar in their treatment of NASA's aeronautics research and space science programs, and they authorize at the same agency top-line number. They do, however, diverge with regard to the future of NASA's human spaceflight program.

The House bill passed out of the Science and Technology Committee with almost unanimous bipartisan support. This was a good bill that keeps NASA on course to develop a new crew exploration vehicle, with safety a top priority. Unfortunately, this bill never made it to the floor for a vote. So, in the past few weeks, Chairman GORDON sought to reach an agreement with the Senate on a compromise bill that would bridge the differences. It is now clear that time has run out and that we have very few days remaining to advance a NASA authorization bill through this Congress. I see no realistic choice but to take the Senate bill because doing so will be preferable to taking no action at all.

As many of you know, this administration has taken unprecedented steps regarding NASA that has resulted in massive layoffs and created a great deal of uncertainty within the agency and in many of our communities. Without congressional approval or authorization, they have reversed the direction given by the two preceding Congresses and proposed throwing away

over \$10 billion and 5 years of design investment on the successor vehicle to the shuttle. The administration offered instead no substantive plans to provide a U.S.-built launch system that would be capable of taking astronauts to the international space station and put off even planning to go beyond the international space station until the year 2015. In short, the administration's proposal would have added several years of development and unknown cost before the U.S. would be able to fly astronauts on a new NASA launch system. We find this unacceptable.

The bill before us today seeks to remedy many of the problems created by this administration. It authorizes the immediate development on a heavy lift launch vehicle capable of going beyond the ISS. It advances further development of commercial cargo capabilities to service the ISS, a development that Congress has supported since the year 2005, and provides \$1.3 billion to begin the development of commercial crew systems. And through the development of a heavy lift launcher, it provides a backup system to the ISS in case the commercial providers or our international partners do not meet stated goals. One thing the House bill called for was a crew escape launch abort system, and we will need to exercise extensive oversight of NASA next year to ensure that such vitally important safety aspects are not overlooked or neglected by NASA.

It is also important to note that the annual authorizations in this bill are below the amount authorized for FY 2009 in our last NASA bill. Given that our Nation is in a tough economic climate, it is important that we are mindful of our spending.

During hearings this spring before the House Science Committee, three former Apollo astronauts, three giants—Neil Armstrong, Gene Cernan, and Tom Stafford—implored Congress to retain American leadership in space by maintaining continuity and certainty in NASA's role as manager of our space exploration programs. All three opposed the administration's efforts, and they are supportive of passing a bill that advances our Nation forward.

While the bill before us today is far from perfect, it offers clear direction to an agency that is floundering and sets us on the path toward maintaining America's leadership in space.

I urge a "yes" vote on this bill.

I reserve the balance of my time.

Mr. GORDON of Tennessee. I yield 2 minutes to the gentlelady from Houston, Texas (Ms. JACKSON LEE).

Ms. JACKSON LEE of Texas. I thank the chairman very much.

I served 12 years on the Science Committee, and I want to add my appreciation to Chairman GORDON for his service to the Nation and his service and his hard work for providing for Amer-

ica's competitive edge, not only in space but technology. Thank you, Mr. Chairman. Thank you to the ranking member. Thank you to RALPH HALL for his leadership. Thank you to the subcommittee chair for her great leadership and friendship to this agency.

I rise today, as reluctant as my friends on the floor, the chairman and ranking member, to support this particular bill. But I'm glad to be able to be here to say to the NASA family that we are saving jobs, 10,000 potentially in the State of Florida, many others in the other States, and 6,000 in NASA Johnson.

I am delighted to be able to say that this bill, the Senate bill, though I don't like the process, provides for immediate development to begin on a heavy lift launch vehicle, stops the termination of technical workforce and valuable contractor jobs, provides funding to support the development of commercial crew services, and funds additional technology development to lower costs of long-term space exploration.

In addition, NASA Johnson will continue to provide the astronauts for the space station. We will be looking for the robotic research work that will address the question of space exploration. We'll also be doing the work for cargo and crew on the commercial side. And then as it relates to the issue of minorities, I want to ensure that as we hire or as we fire, if we have to, that those who are minorities who are last in are not the first out.

I'm delighted to work with Senators NELSON and JOHN ROCKEFELLER to save the STEM program and the MUREP program. These cuts are unacceptable for the Minority University Research and Education and the STEM program. I'm delighted, however, that we'll be working with Senator NELSON and Senator ROCKEFELLER to ensure that this program is included in the America COMPETES reauthorization and the funding for the STEM program. We have to save jobs in America but we have to stay at the cutting edge of science, and I believe this bill will help us make one step.

Mr. Speaker, I rise today in support of S. 3729, the National Aeronautics and Space Administration Authorization Act of 2010. Although I share the concerns of some of my House colleagues regarding the process with which this legislation came to the House from the Senate, especially those colleagues I served with on the House Science Committee for 12 years, I nevertheless do support this compromise legislation as the best way forward to strengthen NASA for the present and the future. I also believe this legislation will protect American jobs, drive innovation, and ensure that our Nation's youth are encouraged to pursue careers in science, exploration, engineering, technology, and math.

Despite my concerns about the Administration's proposal to eliminate NASA's Constellation Program, I have concluded that we need to have this NASA reauthorization legislation

in place to avoid a complete dismantling of the manned space program. Although I advocated strongly for preserving the Constellation program, it is important to adopt this compromise in order to save more than 6,000 jobs in Texas and 10,000 in Florida, which would be in jeopardy without this legislation. This legislation will speed development of the heavy lift rocket crucial for reaching beyond low-Earth orbit and essential to keeping Houston's Johnson Space Center at the heart of future manned space operations. This compromise would also help bolster small contractors in the greater Houston area who serve as sub-contractors for the major aerospace firms involved in NASA contracts.

I have also had extensive discussions with Administrator Bolden who has communicated NASA's intention to work with the Congress to make the transition of the Constellation program smooth and effective. NASA and the space industry are critical to Houston's economic success in both the short and long term. According to the Bay Area Houston Economic Partnership, NASA accounts for nearly 16,800 direct federal jobs and serves as the engine for another 3,100 civilian jobs that together supply more than \$2.5 billion in payroll into Houston's regional economy. Protecting the Johnson Space Center is of paramount concern to me, and I will continue to advocate on its behalf.

This bill will authorize NASA appropriations for FY 2011–2013 with the same top-line budget values as the President's request to Congress. The bill would grow science, aeronautics, and space technology and define expanding human presence in space as the goal for human space flight beyond low-Earth orbit. Key objectives for human space flight would include full utilization of the International Space Station (ISS), maximizing the role of space exploration and technology in current and future missions, advancing knowledge and inspiring young people into higher education, and building upon international partnerships.

Initially, I was concerned that the Senate version of the NASA Authorization Act could have led to cuts in funding for the Minority University Research and Education (MUREP) and STEM programs. This is because the legislation increased funding for the NASA Space Grant and the Experimental Program to Stimulate Competitive Research (EPSCOR) while keeping the topline authorization for education fixed, which could have led to other education programs such as MUREP and STEM being cut to provide for necessary offsets.

However, I have worked with Senator JOHN ROCKEFELLER, Chairman of the U.S. Senate Committee on Commerce, Science, and Transportation, Senator BILL NELSON, Chairman of the Subcommittee on Science and Space, and NASA Administrator Charles Bolden to ensure that funding for MUREP and STEM will be protected. The Senate is including language in the NASA title of the America COMPETES Reauthorization ensuring that funding for STEM programs are preserved and protected. Furthermore, Chairman NELSON has agreed to work with the Senate Appropriations Committee to ensure funding for MUREP is continued at existing levels. Administrator Bolden has also assured me that they will

continue their active support of not just MUREP and STEM programs, but also continue their existing efforts to increase the participation of minority serving institutions in the NASA Space Grant and College Fellowship Program as well as the Experimental Program to Stimulate Competitive Research. These agreements are crucial to ensuring that minority serving institutions and minority students are an integral part to NASA's future.

The United States space program has existed for over half a century and this legislation reaffirms the ever growing and changing role of NASA, providing resources to carry the agency forward with its ambitious agenda of research, exploration, and discovery. Mr. Speaker, today's legislation will allow NASA to continue to push the boundaries of what is possible, keeping our Nation on the forefront of innovation and exploration. It is the responsibility of this Congress to ensure that the future of NASA is one of continued progress. Space exploration remains a part of our national destiny. It inspires our children to look to the stars and dream of what they too, one day, may achieve. Space exploration allows us to push the bounds of our scientific knowledge, as we carry out research projects not possible within the constraints of the planet Earth.

Today, NASA is the nations' primary civil space and aeronautics research and development agency, and its current activities employ over 18,000 Americans. Today's legislation emphasizes the importance of NASA leadership in a range of endeavors by investing more in NASA; extending the life of the international space station; launches a commercial space transportation industry; fosters the development of path-breaking technologies; helps create thousands of new jobs; and embarks on a fundamentally more ambitious strategy to expand our frontiers in space. Passage of this bill represents an important step forward towards helping NASA achieve key goals that President Obama has laid out, such as placing the U.S. space program on a more sustainable trajectory and inspiring a new generation of Americans to pursue careers in science, technology, engineering, and mathematics. This important change in direction will not only help NASA chart a new path in space, but also reshape itself for the industries and jobs of the future that will be vital for long term economic growth.

As a Nation, we have made tremendous strides forward in the pursuit of space exploration since President John F. Kennedy set the course for our nation when on May 25, 1961, President John F. Kennedy proclaimed: "I believe this Nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish." Over the next 50 years, NASA has been involved in many defining events which have shaped the course of human history and demonstrated to the world the character of the people of the United States.

The success of the United States space exploration program in the 20th Century augurs

well for its continued leadership in the 21st Century. This success is largely attributable to the remarkable and indispensable partnership between the National Aeronautics and Space Administration and its 10 space and research centers. One of these important research centers is located in my home city of Houston. The Johnson Space Center, which manages the development, testing, production, and delivery of all United States human spacecraft and all human spacecraft-related functions, is one of the crown jewels of the Houston area.

Always on the forefront of technological innovation, NASA has been home to countless "firsts" in the field of space exploration. America has, countless times, proven itself to be a leader in innovation, and many technologies that have become part of our everyday lives were developed by NASA scientists. The benefits of NASA's programming and innovation are felt far beyond scientific and academic spheres. Space technologies provide practical, tangible benefits to society, and NASA provides valuable opportunities to businesses in our community.

I urge my colleagues to join me in support of this legislation, and in support of the future of American innovation, exploration, and jobs.

Mr. HALL of Texas. Mr. Speaker, I yield 5 minutes to the gentleman from Texas, Congressman OLSON, who is the ranking member on the Space Subcommittee.

Mr. OLSON. I thank my esteemed colleague from Texas.

Mr. Speaker, as we take on great endeavors, it's important to have a workable plan and to stick to it. Not doing so leads us to uncertainty, like the uncertainty that has gripped NASA for most of this year. Nowhere have I felt and seen the effects of this uncertainty more than when I'm home talking to the men and women of the Johnson Space Center. It's been especially difficult for these men and women and their families because their lives and careers have been centered on uncertainty. They wanted to be part of America's space program, and how do we reward that commitment? By providing insufficient funds, constantly changing goals, and second-guessing the past instead of embracing a clear path to the future.

□ 2110

Meanwhile, thousands of workers have watched, waited, and most of all, safely worked throughout the seemingly difficult ups and downs.

The low point in this debate came in February with the release of the President's budget for NASA. In NASA's history of bold adventures, this was one of the boldest. Unfortunately, not in a manner that the agency is used to. The proposal neglected to build on our past, discarded work of the present, and lacked a vision for our future. The plan was so bad, so misguided that it did something unheard of in Washington, D.C.: It united Congress in opposition.

And along these lines, I would like to thank Chairman GORDON and Ranking

Member HALL for the partnership we have forged through these past several months. It has been an honor to work with each of you.

Our partnership has produced a great piece of legislation, our NASA authorization bill which passed out of the Science and Technology Committee in July. I believed then, and frankly believe now, that our bill was the right approach to sustain a robust exploration program. But we are running out of time. Let's send a message as a unified Congress that the proposal the administration submitted in February is not the direction our country is going to go.

If we fail to pass an authorization bill, we will witness the continued dismantling of America's human spaceflight infrastructure with no guarantee that it will be replaced. We will lose our most precious asset, our people.

This bill contains critical elements for the future: Funding for the Orion crew capsule; the ability to fly the "launch on need" flight of the space shuttle; extending the international space station through at least 2020; and a robust technology development program. We also agree with our Senate colleagues that NASA should focus on the immediate development of a heavy lift launch vehicle. Our future in space is not, not in low Earth orbit. We have to go beyond. A heavy lift vehicle will enable us to achieve the true mission of the agency—to explore.

This bill reaffirms what earlier Congresses have supported, particularly an increased role for commercial providers to fly cargo and eventually crew to the international space station. I will be vigilant in working with my colleagues, the agency, and those in the private sector who will conduct these cargo and crew flights. We need them to succeed, but we need to develop standard practices and an understanding of how a fundamentally different way of doing business will work. It is just another challenge for NASA, and one I know they will meet.

I grew up in Clear Lake, Texas, where the men and women who walked on the Moon, those people, and the people who got them there and back weren't just my heroes. They were my neighbors. I saw a community and a Nation unite around a grand goal and accomplish it. Today we take a step towards restoring the goals worthy of a great Nation. And in doing so, we are saying to the men and women of NASA currently and those to come that this Nation still chooses to explore. I ask my colleagues to support S. 3729.

Mr. GORDON of Tennessee. Mr. Speaker, I yield 1 minute to the gentleman from Florida (Mr. MEEK).

Mr. MEEK of Florida. Thank you, Mr. Chairman.

I strongly urge all of my colleagues here in a bipartisan way to support the

NASA Authorization Act of 2010. As the chairman mentioned, there are issues in this authorization bill that could be better. But I can tell you right now, there are a number of individuals that are involved in the space industry and also those hardworking men and women that are working as subcontractors and are looking for some direction from this Congress.

I want to commend Senator NELSON of Florida for being a leader, taking the very best of the administration's proposal and putting it in to work so that we can pass it in time to promote not only commercial and crew cargo as it relates to space exploration but also save the Kennedy Space Center and other NASA assets throughout the country. I think it's important. This makes our country very strong. And if not now, then when? I stand, Mr. Chairman, in full support of this bill. I ask all of my colleagues on both sides of the aisle to join me in making sure that we pass this very important authorization bill. Americans are counting on our leadership.

Mr. HALL of Texas. Mr. Speaker, I yield 2 minutes to the gentleman from California, the Honorable Mr. ROHRABACHER, a very valuable member of the Science Committee.

Mr. ROHRABACHER. I rise in support of S. 3729. The NASA authorization before us is a step in the right direction. It provides for an initial shift in human spaceflight from being an exclusive endeavor run by and controlled by bureaucrats or other government employees and moves us toward entrepreneurial, cost-effective, and commercial-based alternatives.

This legislation stimulates efforts within the private sector to develop and demonstrate safe, reliable, less costly, and more capable space transportation to and from low-Earth orbit. At the same time, it enables NASA to focus on Discovery and sending humans to explore the far reaches of the space frontier, and this bill increases NASA research and technology development. It should be viewed as enabling legislation because it will enable America in the decades ahead to be the world's leading space faring nation. To achieve this, NASA must not just be a government program but also a catalyst for scientific research, technological development, and the exploration of the solar system and the universe beyond.

Finally, I would like to take this opportunity to express my appreciation and, of course, my admiration for Ranking Member RALPH HALL and, yes, for the great leadership that we have seen in this endeavor by Chairman BART GORDON. This bill is a workable compromise for those of us in the committee who had different views on what direction America's space program should go. This compromise does justice to the various opinions from people who are involved in this policy de-

bate. Of course this is the type of fairness that Chairman GORDON is known for, and thus we have been able to get together and to put forth a piece of legislation that is the best possible legislation that we could have actually enacted. That is due to the leadership of Chairman GORDON, and we thank him for his long career of leadership of this kind.

Mr. GORDON of Tennessee. Mr. Speaker, I thank my friend from California. I yield 2 minutes to the gentleman from Houston, Texas (Mr. GENE GREEN).

Mr. GENE GREEN of Texas. Mr. Speaker, like my colleagues, both Republican and Democrat, I oppose the President's budget for NASA. And I thank Chairman GORDON and Ranking Member HALL and the whole Science Committee for their hard work to provide a way for NASA to do their job in space exploration.

Today the House has a profound choice, and the stakes are high for American-led spaceflight. The House will be voting on the Senate version of the NASA reauthorization act. This bill, while imperfect, is critical to the future of our Nation's spaceflight and exploration program and will greatly benefit our scientific research and development capabilities.

We share the concerns of some of you who are worried about certain provisions in this legislation, but I am pleased that this moves NASA in the correct direction. This is a good bill and could be stronger but is still a success for those of us who support NASA and understand what it means for our country, our economy, our national security, and our ability to maintain our edge in science and technology research and development. Simply said, if this bill fails today, it will profoundly undermine our space program. I urge all Members to pass this bill and commit to working with us and others interested in the future of NASA to improve this bill in significant ways down the road. If we fail to pass the bill, not only do we lose that opportunity, but we may lose the opportunity to keep NASA.

□ 2120

Mr. HALL of Texas. Mr. Speaker, I yield 1 minute to the gentleman from Louisiana (Mr. SCALISE).

Mr. SCALISE. Mr. Speaker, I rise in support of the NASA reauthorization bill. Too often people use the term: You know, this isn't rocket science. Well, in my State of Louisiana, we have got the Michoud assembly facility, and they do rocket science. And right now there is tremendous uncertainty over the future of NASA because of the President's budget, and the fact that it actually cedes responsibility and our superiority in space exploration. We can't sit by and let that happen.

With this legislation tonight, we can actually present a clear future for NASA that involves heavy lift, that involves maintaining the United States of America's superiority in the space exploration program. And I don't think any of us can sit by and allow a country like Russia to take that superiority lead that we currently have today. And if we don't take action, that is exactly what will happen.

We need to make sure that we not only preserve those jobs that are so important, but that we also preserve that technological superiority that America enjoys today and America needs to enjoy in space exploration for the future. And we can do that tonight with this vote.

Mr. GORDON of Tennessee. Mr. Speaker, I yield 2 minutes to the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON), a valued member of the Science and Technology Committee.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Speaker, let me thank our committee chair and ranking member for handling this bill, and thank all the staff who put it together and support it.

I rise to support Senate bill 3729, the National Aeronautics and Space Administration Authorization Act of 2010.

Forty years ago, the United States Apollo program put the first human on the Moon. Children across the United States watched Neil Armstrong, an American, speak the words, "That's one small step for man, one giant leap for mankind." After that moment, there was an outpouring of interest in science. Children dreamed that one day they too could be the next man or woman on the Moon.

I would like to see increased investments in these, particularly in the Minority University Education Research programs, which have been highly successful. But sometimes we can't get all that we want. This is that time. But we can continue without stopping.

And now is not the time for us to cede leadership to our international competitors. The research has been the most successful research in the history of our country for both commercial products and medical treatment.

I believe that NASA has a unique ability to touch the imagination of children like no other Federal agency. When money is short, however, we must adjust, not stop.

A robust NASA budget should contain concerted efforts toward inspiring our Nation's future scientists and engineers. A strong NASA is valuable to the national and Texas economies. Recent census data indicates that Texas ranks first in high-tech manufacturing and certain engineering industries. Space flight, aeronautics, and scientific research and education are top priorities for Texas.

NASA also conducts important educational programs.

The SPEAKER pro tempore. The time of the gentlewoman has expired.

Mr. GORDON of Tennessee. I yield the gentlewoman 30 more seconds.

Ms. EDDIE BERNICE JOHNSON of Texas. NASA should be congratulated for the great research it has supported and the fearless missions carried out by its astronauts, scientists, and engineers. I support the agency and am interested to know how Congress can continue to partner with it for the benefit of the American people.

We cannot let America cede its leadership in human space flight. We need a strong NASA, and NASA needs an authorization bill. I strongly encourage my colleagues to support this legislation.

Mr. HALL of Texas. Mr. Speaker, I yield 3 minutes to the gentleman from Texas (Mr. CULBERSON).

Mr. CULBERSON. Mr. Speaker, I think it is appropriate here in late September that we are discussing the future of America's manned space program, because it was in late September that America's first explorers, Lewis and Clark, returned from their incredible expedition to have seen the Pacific Ocean to find that overland route. And when they returned from that totally unknown country, they lit up the country, and something that America has always been built on, dreams and thinking big. It has always been a part of our spirit, our nature to explore the unknown. And NASA, more than any other function of the Federal Government, has the ability to inspire people, to encourage young people to go become scientists and engineers and astronauts.

In fact, today, Mr. Speaker, it was just reported by scientists at the University of California that they have discovered what appears to be an Earth-like planet with water in the habitable zone of a star only 20 light years away. But if we do not act, if we do not pass this NASA authorization bill tonight, the Obama administration will succeed in shutting down America's manned space program by the end of the year. And let me make it clear: that is what is really going on here, why all of us are working together, arm in arm, to save America's manned space program from being shut down by the Obama administration and the bureaucrats at NASA.

I asked Administrator Bolden in our subcommittee, Isn't what you are proposing, to totally privatize NASA? And we are all for partial privatization to supply fuel, food, et cetera. But to totally privatize NASA, Mr. Bolden, isn't that like privatizing the Navy?

Imagine if we were to allow the contractor that built a nuclear submarine or an aircraft carrier: Excuse me, may we please rent the aircraft carrier so that we can go to the Persian Gulf and defend America's interests?

What the Obama administration has proposed, and why Congress is passing

this bill tonight, is to stop the administration from shutting down America's civilian space program, to ensure that we will always maintain the ability to build rockets in the civilian workforce, which keeps the cost of rockets for the military considerably less; to preserve our leadership role in outer space, to maintain that technological and, frankly, spiritual edge America has always had to make dreams come true, to think about the exploration of the unknown.

NASA is the one entity that can combine the best of Americans, what makes us great as a Nation, inspiring young people, allowing, making dreams come true, exploring the unknown with very tangible technological spinoffs.

If we don't pass this bill tonight, by the end of this year there will be no more manned space program because the Obama administration is systematically and aggressively shutting it down.

We all have some disagreement with this bill; we would like to see a little different bill.

I thank Chairman GORDON and Mr. HALL, for bringing it to the floor. All of us working together to get it passed tonight will ensure that America preserves our manned space flight capability, the ability to build rockets with a tremendous civilian workforce of engineers and scientists who will all be gone. They will just lose their job, and we will lose that tremendous edge we have had as a Nation to build rockets and explore outer space.

Mr. Speaker, I urge all Members to support this vital legislation.

Mr. GORDON of Tennessee. Mr. Speaker, I yield 2 minutes to the gentlewoman from Florida (Ms. KOSMAS).

Ms. KOSMAS. Mr. Speaker, I also would like to thank the chairman and the ranking member for their leadership on this issue.

Mr. Speaker, tonight we consider legislation of great importance to Florida's Space Coast and to our Nation, the NASA Authorization Act.

I want to echo the sentiments of my colleagues who have suggested that the uncertainty surrounding NASA and our manned space exploration has caused a great deal of anguish and difficult times for my constituents, literally thousands of individuals, families and businesses.

This legislation will define NASA's future by building on its past. The legislation mandates one additional shuttle flight next year, which will provide additional job stability for thousands of workers and ensure the long-term viability of the international space station, a national laboratory, 200 miles above our heads, only now complete after 10 years of construction, which has endless research and education possibilities.

The bill also directs the development of new NASA-led heavy lift vehicles

utilizing shuttle and constellation work, which will make our astronauts have the opportunity for even greater exploration to asteroids and eventually to Mars sooner than the current program. This exploration mission will drive technological innovation as we strive to address its challenges, as well as to inspire our students to become engineers and astronauts. And the bill provides funding to update the infrastructure at Kennedy Space Center so it will truly be America's 21st-century gateway to space.

Finally, the authorization bill seeds the commercial spaceflight industry, which includes new entrepreneurial small businesses, along with the giants of aerospace and decades of experience sending our astronauts and cargo into space.

□ 2130

This will provide new job opportunities for our skilled workforce and options for researchers and tourists to experience spaceflight.

On Friday in my district, about 900 workers will lose their jobs as the shuttle program begins to wind down. We must do everything that we can possibly do to preserve this unique workforce, as was referred to by my colleague earlier.

We cannot afford to lose our technological supremacy because we have failed to act. Failure is not an option. Please vote "yes" on the bill.

Mr. HALL of Texas. Mr. Speaker, I reserve the balance of my time.

Mr. GORDON of Tennessee. Mr. Speaker, I yield 7 minutes to the chair of the Space and Aviation Subcommittee, the gentlelady from Arizona (Ms. GIFFORDS), who has had, very conscientiously, 17 or 18 subcommittee meetings on this subject.

Ms. GIFFORDS. Mr. Speaker, first of all, I would like to recognize Chairman GORDON for his outstanding leadership chairing our full committee. We are going to miss you, Mr. Chairman. It has been an outstanding experience for me the last couple of terms. And as well, to Ranking Member HALL and Ranking Member OLSON for their leadership.

Mr. Speaker, I rise today in strong opposition to S. 3729, the Senate's NASA authorization bill.

As chair of the House Space and Aeronautics Subcommittee, and along with the other members of the subcommittee and full committee, we care deeply about the future of NASA and the future of our Nation's civil space program. NASA defines us as a Nation, who we are—our defense, our innovation, our inspiration, our ability to explore. We care deeply about the role that Congress needs to play to ensure that NASA will embark on an executable and a sustainable path for the future.

In contrast to supporters of the Senate bill who will say that today they

reluctantly support the Senate bill because it is better than doing nothing, I have no reluctance in telling you that this is a bad bill. It will do damage to NASA if enacted, and it should be voted down tonight.

Now, I know that Members have a lot of different issues on their minds today. Certainly most Members didn't even know that a NASA authorization bill was coming up for a vote today. So for Members who are making up their minds on whether to support this bill today, I would like to offer a couple of reasons why you should oppose it.

If you are a member of the Blue Dog Coalition or a member of the Republican Study Committee, you should oppose this bill because it lacks serious budgetary discipline. To be specific, the bill contains an unfunded mandate to keep the shuttle program going through all of fiscal year 2011, even after the shuttle is retired, which, by NASA estimates, will cost NASA more than one-half billion dollars for 2011, and it doesn't have that money. It will bust the budget for the shuttle and jeopardize NASA's other important science, aeronautics, and technology programs.

It also contains a rocket designed not by our best engineers but by our colleagues over on the Senate side. By NASA's own internal analysis, they estimate this rocket will cost billions more than the Senate provides.

And, finally, if you are a Blue Dog or a member of the Republican Study Committee, or any Member of Congress, you should strenuously oppose a \$58 billion funding bill that is being brought up on the last day before adjourning with no House input on its creation and no opportunity for amendment by Members of the House. This is not the functioning bicameral legislature that our Founding Fathers fought to create.

Next, if you are a Member who cares deeply about STEM education or minority education programs, you need to know that this bill is written in a certain way that NASA's STEM education programs and Minority University Research and Education programs will be cut in excess of 30 percent.

What does this mean? Well, it means if you represent a Historically Black College or University or Hispanic-serving institution, a tribal college, this sort of institution, you will be affected by these cuts.

In addition, if you care about the future of NASA's human spaceflight program, you should oppose this bill. As I mentioned earlier, this bill contains provisions that will force NASA to build a rocket designed by Senators and not by engineers. Contrary to assertions that this bill's supporters talk about, this rocket will be too large to economically serve as a backup commercial crew transport to the space station. It may also prove to be too

small to effectively undertake human missions beyond low-Earth orbit. Not only do NASA's own internal studies indicate that it will cost significantly more than the Senate is budgeting, but they also estimate that it will become operational years later than the Senate plan assumes.

So we are looking at this gap and, in short, the Senate bill forces NASA to build a rocket that doesn't meet its needs, with a budget that is not adequate to do the job, and on a schedule that NASA's own analyses says is unrealistic. That is not my idea of the executable and sustainable human spaceflight program that we all desire.

And, finally, if you care about corporate responsibility, if you care about safety, and if you want to prevent us from being in the position a few years down the road of having to choose between sending more money to Russia or bailing out the would-be commercial crew and cargo providers who fail to perform in budget and on schedule, you should oppose this Senate NASA bill. The Senate bill gives an additional \$1.6 billion to would-be commercial cargo and crew transport companies who have yet to demonstrate that they can do either. There is no obligation that these commercial companies put any "skin in the game" of their own, and the safety requirements on their rockets are vague at best.

Since the Senate bill provides no credible government backup capability to the would-be commercial providers, approving the Senate bill today would inevitably put NASA in the position of relying on these companies that will become too big to fail. The American taxpayers will then have to bear the responsibility and the burden of bad public policy if we vote on this bill tonight. I think that the public deserves better.

Now, I know that in the Senate there is a lot of debate, and some Members will fall back on the argument that they have to approve this tonight before the end of the fiscal year because the contractors are facing layoffs. And no one has more sympathy than members of our subcommittee about the workforce, but the reality is different. It is different than the rhetoric.

Aerospace jobs are tied to funding, and funding for NASA for the balance of this calendar year will be set by the continuing resolution that we will be voting on tonight, not this authorization bill. Funding for the remainder of fiscal year 2011 will be determined by the appropriations bill that we enact after we return for a lame duck session, not by this authorization.

The bill before us today cannot change the fact that the funding level for NASA's workforce, and any layoff that will result from that funding level, will be the result of the continuing resolution and subsequent appropriation bills and not this author-

ization. So Members should not be fooled by this red herring argument. The truth is that you will not be doing anything to stop layoffs tonight by voting for the Senate bill today.

Does the aerospace industry need certainty? Absolutely. But they need certainty in an executable and affordable program that the Senate bill does not provide.

Could the problems with the Senate bill be fixed? Of course they could. But that is what the legislative process is about, not under suspension of the rules with no amendments allowed.

The fact of the matter is that there was a compromise NASA Authorization Act of 2010 that Science and Technology Chairman BART GORDON proposed and is the direct result of lengthy discussions with the Senate and the House Members. Of course, that isn't perfect, and no bill is, but flaws can be fixed by discussion between the Chambers. But if you vote tonight positively on this Senate bill, the democratic process that has been the cornerstone of our democracy will be undermined and that will not occur.

So let's take the time to get this job done, and done the right way. Let's vote down the Senate bill tonight so we can work with Chairman GORDON, Ranking Member HALL, and the Senate on a compromise bill so that we can have a responsible NASA bill that can be acted upon when we return for the lame duck session.

In closing, if you care about budgetary discipline, protecting STEM education, minority education programs, if you care about NASA's human spaceflight program, you should vote "no" on the Senate authorization bill.

Mr. HALL of Texas. Mr. Speaker, I yield 1 minute to the gentleman from Texas (Mr. CULBERSON).

Mr. CULBERSON. Mr. Speaker, if I could just very briefly point out to remind the Members and the people here that if we don't pass this bill tonight, there is no more manned space program.

The administration is pursuing a policy of aggressively and rapidly shutting down America's manned space program by bureaucratic order, by Executive order. It is all being done right now as we speak. If we don't pass this bill, there will not be another one by the end of the year, and by the end of the year there will be no more manned space program.

So any differences or concerns we have with this bill—and we all have concerns with it—can be fixed next year in the process. But it is essential to supersede by Federal statute, which we will pass tonight, and we will stop the Obama administration cold. We will stop them from shutting down America's manned space program so we have a program for our kids in the future.

Ms. JACKSON LEE of Texas. Will the gentleman yield?

Mr. CULBERSON. I yield to the gentlewoman from Texas.

Ms. JACKSON LEE of Texas. Minor-ity institutions and the STEM program are also to be protected, as we come back and we are able to work with the appropriations process and work with the Senate on protecting these programs that are very important to Historically Black Colleges.

Mr. CULBERSON. Absolutely. All the concerns that have been raised can all be solved through the legislative process and appropriations. We will take care of them.

□ 2140

Mr. GORDON of Tennessee. Mr. Speaker, I yield the balance of my time to the gentleman from California (Mr. SCHIFF).

The SPEAKER pro tempore. The gentleman is recognized for 1 minute.

Mr. SCHIFF. Mr. Speaker, I rise in support of the NASA Authorization Act to provide direction and stability for our Nation's space program. Tens of thousands of aerospace workers in communities across the country are looking to Congress to set a sustainable path for human spaceflight that will minimize the spaceflight gap and ensure that NASA is able to accomplish its mission of human exploration into the solar system.

This bill fully funds NASA's science mission to continue Earth-observing satellites, Mars rovers, space telescopes and other missions that provide valuable insight into our planet, our solar system and our universe.

It also revitalizes NASA's dormant Technology Development Program, which will provide the tools needed to push human and robotic exploration to new heights and destinations. It authorizes an evolvable NASA launch vehicle. It also provides for an additional shuttle flight in bringing vital tools and supplies to the space station.

I want to express my sincere appreciation to our chairman for his extraordinary leadership for many years and his unwavering support of NASA, and urge my colleagues to support the bill.

Mr. HALL of Texas. I yield 1 minute to the gentleman from Houston, Texas (Mr. AL GREEN).

Mr. AL GREEN of Texas. Mr. Speaker, I thank Mr. HALL, the ranking member on the Science Committee, for allowing me this 1 minute. I also would like to thank the chairperson, Mr. GORDON, for his outstanding years of service and commitment.

This bill is about science, it is about technology, it is about education, but it is also about jobs, and it is about jobs at a time of high unemployment. It is about jobs and families that will benefit from having stability within the family unit.

I concede that there is more that I would like to see in the bill, but I am

in a position where I must now stand for what is obtainable, and we need to go after the jobs in this bill.

I am begging my colleagues to please understand that in this time of high unemployment, let's keep Americans working. Let's make sure that every family has an opportunity to have a breadwinner. Let's vote for this bill, and let's improve upon it with other legislation that may follow.

Mr. HALL of Texas. Mr. Speaker, I yield 1 minute to the gentleman from Florida (Mr. POSEY).

Mr. POSEY. Mr. Speaker, certainly no one in this Chamber wants to yield the military high ground to countries that are not friendly to us, and without the passage of this legislation, unfortunately, we will do that.

The legislation before us asks NASA to do too much with too little. There is something in here for everybody to hate, sure enough, but there is no other alternative. If we at least pass this legislation, we will keep the dream alive through the first of the year, and hopefully through the appropriations process we can move this country back on the right path to maintaining the economic and national militaristic security that is necessary for this generation and for future generations to prosper.

Mr. HALL of Texas. Mr. Speaker, I yield myself such time as I have.

Mr. Speaker, with my appreciation to Ms. GIFFORDS and the chairman and everybody here that has spoken, I just want to sum it up real quickly.

The Senate bill being considered today is an attempt to provide congressional direction to a floundering agency. We simply can't let anybody continue to shut down our human spaceflight program.

Failure to reauthorize NASA provides further uncertainty to an agency in limbo, stalling efforts to develop a successor vehicle once the shuttle is retired next year, and could result in the loss of thousands of high-tech jobs nationwide.

I could vote for either of these bills. I am not in love with either of these bills. I feel like the coach's wife who was crying. He came home. He said, "What's wrong, honey?" She said, "You like football better than you do me." And he said, "Yeah, but I like you better than I do basketball."

I am that way with these two programs. I like both of them, either one of them. But we have to have one go, and I urge the acceptance of this bill today and passage of S. 3729.

Mr. KUCINICH. Mr. Speaker, I rise in opposition to the National Aeronautics and Space Administration (NASA) Authorization Act of 2010. As a stalwart supporter of NASA and with the privilege of representing the world-class workers at the NASA Glenn Research Center (NASA Glenn), I strongly support the vital workforce protections included in the Senate bill. My opposition to this legislation stems

from my concern for the NASA's long-term health. I am concerned that the language in the underlying bill sends the agency on a path toward privatization, and privatization undermines the agency and its workers.

I unequivocally support language in the underlying bill that provides NASA's unparalleled civil-servants with three years of protection from layoffs under a Reductions-In-Force (RIF) moratorium. For years, NASA employees have been caught in the cross-hairs of repeated program reorganizations and major cuts in in-house R&D funding—and they have paid for it with job loss and insecurity. The compromise language proposed by Chairman GORDON does not have the RIF moratorium I wanted. But it does include a RIF moratorium for a year and a half. Chairman GORDON was making progress toward a viable alternative and I believe that provisions in this bill under consideration today leave NASA employees vulnerable in the long-term and could force the agency to continue down the unsustainable path it currently finds itself on.

NASA research centers such as NASA Glenn—and the agency as a whole—will benefit more from increased investments in Solar-Electric Propulsion, High Efficiency Space Power Systems, Green Aviation and Cryogenic Propellant Storage and Transfer within the Aeronautics, Space Technology and Exploration programs. These programs are critical in the development of next generation technologies to support future key NASA missions over the next decade. These programs need to be funded. And they are often the first to be cut. In fact, this legislation includes a \$500 million unfunded mandate to extend Shuttle operations through Fiscal Year 2011, which means that Shuttle funding will have to come from somewhere else within NASA.

The NASA Authorization Act of 2010 privatizes two key functions for NASA; transporting crew and cargo to the International Space Station (ISS). Commercial providers have been given the opportunity to provide cargo to the space station and, according to Government Accountability Office (GAO), they have failed to meet the required safety benchmarks. The GAO also raises serious concerns about the lack of expertise at the Federal Aviation Administration to oversee the commercial space launch industry. This bill not only furthers the outsourcing of cargo transportation, but expands it to include transporting crew.

The results of privatizing government services frequently follow a pattern in which a company assumes control of a service from the government by promising lower costs. After winning the contract, the company requests more funding to do the job, and then attempts to save its own money by cutting corners through cuts in pay, benefits and safety. Our astronauts deserve better than to have their lives put at risk.

Further, if the services are privatized, those competencies among the expert staff at NASA would be effectively irreversible because it would take so much time to rebuild them. We must preserve and leverage ongoing technical work on Service Module for human spaceflight beyond Low Earth Orbit. This work will be critical to maintaining jobs and core-intellectual competencies embodied within the agency.

This legislation also fails to provide the agency with the option of a government-vehicle back-up should the commercial sector be unable to satisfactorily provide the services for which they were hired. The Augustine Commission—the Commission President Obama tasked with reviewing future human space flight plans—believed it would be too risky to rely solely on the commercial sector and suggested including a government back-up option.

Providing more money to the commercial sector without the necessary safety and regulatory safeguards could come at the expense of other in-house, long-lead research and development programs.

I cannot support legislation that provides the government with no other option than to rely exclusively on the commercial sector. I will continue to work with appropriators to preserve and protect civil servant jobs at NASA and I urge my colleagues to oppose this bill.

Mr. DEFAZIO. Mr. Speaker, today, I voted against S. 3729, the NASA Reauthorization Act because it will ultimately add \$230 billion to our deficit to under the ruse that we must land a man on Mars.

In 2004, President Bush announced his Mission to Mars initiative, with a goal of manned space flight to the moon and then to Mars. What President Bush didn't reveal was the future costs of Mission to Mars that would swell to astronomical levels and create further havoc with the federal budget.

With our economy still in a ditch and our national debt having doubled in the last 8 years, the United States cannot afford to begin a new space cowboy adventure. It is only reasonable that we reassess our budget priorities, just as millions of struggling Americans are reassessing theirs. Tough choices must be made, and manned space expeditions are not worth expanded deficit spending.

A 2008 report from the Government Accountability Office reported that NASA has estimated the total cost of the planned Mission to Mars, will have a final cost of over \$230 billion. That is not affordable in even the best of economic times.

In response to this breathtaking cost estimate, I attached an amendment to the 2008 NASA Reauthorization directing the Congressional Budget Office to update its budgetary analysis on NASA's near term exploration plans for the moon.

CBO reported that the average NASA program experiences a 50% cost growth over initial budget estimates, with some programs experiencing a final cost of almost 250% over initial estimates. It goes on to state that in order for NASA to meet its current schedule to get to the moon, it would have to spend \$110 billion through 2020.

Americans need to know that in these uncertain times we are doing everything we can to restore fiscal discipline and put our economy back on track. We've been to the moon, and we do not need to spend \$110 billion to go there again. We certainly can't afford the \$230 billion to go to Mars.

S. 3729, continues the costly Constellation program and specifically insists on the development of heavy-lift rockets. This bill keeps alive a program that should be eliminated.

Ms. CORRINE BROWN of Florida. Mr. Speaker, I rise today to support our national

space industry. This industry is now facing a crisis point.

S. 3729, the NASA Authorization Act, gives NASA direction so the agency, contractors, and employees can plan for the future.

This bill will give NASA direction for foreseeable future. I am pleased that the ability to excite students and inspire our nation's youth to enter careers in STEM will continue. Being an astronaut or a rocket scientist are some of the most exciting job descriptions one can have. This bill allows children to dream of becoming one of them again.

The bill contains an extra \$50 million for the Space Technology Program led by NASA's new Chief Technology Officer, Bobby Braun, to include hundreds of scholarships allowing students to study math, science, and engineering. Minority education funding has been stable and this bill calls for the continuation of these programs. NASA and Administrator Bolden continue to actively support these programs and the Administration will work to ensure future funding is consistent with the President's request.

In addition this bill keeps shuttle employees and contractors in place for a while longer, sustains exploration funding. The country gains from launches and this bill continues those. This bill provides funding to upgrade critical infrastructure at Kennedy Space Center for the future of the space industry. Also, the bill extends the life of the International Space Station. The science we have received from the International Space Station is invaluable and this bill continues that project.

We need to pass this bill now. Science and space exploration wait for no one, not even politicians. We cannot let the perfect be the enemy of the good.

NASA serves a vital role in our economy and education system. Therefore, please join me in voting Yes on S. 3729.

Mr. WU. Mr. Speaker, it is with regret that I must rise in opposition to the NASA reauthorization bill we have before us today. The space program plays a critical role in driving innovation as well as inspiring our nation's young people to strive for careers in science, technology, engineering, and mathematics. Unfortunately, the bill before us today places these vital missions in jeopardy.

I strongly oppose the cancellation of the human spaceflight program. The Senate's bill, which was drafted without any House input, places too much faith in the private sector to deliver astronauts and cargo to space. By contrast, the bill approved by the House Science and Technology Committee ensured that there would continue to be a publicly owned human spaceflight capability developed following the retirement of the space shuttle. There are untold advancements in health care, energy, and environmental preservation to be gained from ongoing human research in space.

I am also concerned that the Senate's bill does not include language ensuring that retired space shuttles will be allocated fairly to museums and educational institutions across the country. The space program is a national treasure, supported with the tax dollars of each and every American. As such, I believe geographic diversity should be a consideration in the allocation of retired shuttles, so I offered an amendment that was adopted in committee

to ensure it would be. Unfortunately, the bill before us today includes no such protections, giving unfair preference to some regions while leaving much of the rest of the country effectively out of the running.

I urge my colleagues to join me in opposing S. 3729.

Mr. HALL of Texas. I yield back the balance of my time.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from Tennessee (Mr. GORDON) that the House suspend the rules and pass the bill, S. 3729.

The question was taken.

The SPEAKER pro tempore. In the opinion of the Chair, two-thirds being in the affirmative, the ayes have it.

Ms. GIFFORDS. Mr. Speaker, on that I demand the yeas and nays.

The yeas and nays were ordered.

The SPEAKER pro tempore. Pursuant to clause 8 of rule XX and the Chair's prior announcement, further proceedings on this motion will be postponed.

REPORT ON RESOLUTION PROVIDING FOR CONSIDERATION OF SENATE AMENDMENTS TO H.R. 3081, CONTINUING APPROPRIATIONS ACT, 2011

Mr. PERLMUTTER, from the Committee on Rules, submitted a privileged report (Rept. No. 111-655) on the resolution (H.Res. 1682) providing for consideration of the Senate amendments to the bill (H.R. 3081) making appropriations for the Department of State, foreign operations, and related programs for the fiscal year ending September 30, 2010, and for other purposes, which was referred to the House Calendar and ordered to be printed.

DELAYING MINIMUM WAGE INCREASE IN AMERICAN SAMOA AND NORTHERN MARIANA ISLANDS

Mr. GEORGE MILLER of California. Mr. Speaker, I move to suspend the rules and concur in the Senate amendments to the bill (H.R. 3940) to authorize the Secretary of the Interior to extend grants and other assistance to facilitate a political status public education program for the people of Guam.

The Clerk read the title of the bill.

The text of the Senate amendments is as follows:

Senate amendments:

Strike all after the enacting clause and insert the following:

SECTION 1. SENSE OF CONGRESS REGARDING POLITICAL STATUS EDUCATION IN GUAM.

It is the sense of Congress that the Secretary of the Interior may provide technical assistance to the Government of Guam under section 601(a) of the Act entitled "An Act to authorize appropriations for certain insular areas of the United States, and for other purposes", approved December 24, 1980 (48 U.S.C. 1469d(a)), for public education regarding political status options only