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117TH CONGRESS
1ST SESSION

# H. R. 5250

To extend the commitment of the United States to the International Space Station, to develop advanced space suits, and to authorize a stepping stone approach to exploration, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 14, 2021

Ms. GARCIA of Texas introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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# A BILL

To extend the commitment of the United States to the International Space Station, to develop advanced space suits, and to authorize a stepping stone approach to exploration, and for other purposes.

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

**SECTION 1. SHORT TITLE.**

This Act may be cited as the ''Advancing Human Spaceflight Act of 2021''.

**SEC. 2. FINDINGS.**

Congress makes the following findings:

(1) The Apollo 11 landing on July 20, 1969, marked the first steps of a human being on the surface of another world, representing a giant leap for all humanity and a significant demonstration of the spaceflight capabilities of the United States.

(2) Section 202(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(a)) establishes for the National Aeronautics and Space Administration the long-term goals of expanding human presence in space and establishing a thriving space economy in low-Earth orbit and beyond.

(3) The 2017 National Security Strategy designates the human exploration of the solar system as a strategic priority for the United States.

(4) Establishing and ensuring the sustainability of human space exploration of the solar system, as called for in the Space Policy Directive–1 entitled ''Reinvigorating America's Human Space Exploration Program'' (82 Fed. Reg. 239 (December 11, 2017)) and the National Space Exploration Campaign Report of the National Aeronautics and Space Administration issued in September 2018, will require carrying out human exploration and related

extravehicular activities on the surface of other celestial bodies in a safe and cost-effective manner.

(5) The Johnson Space Center has decades of experience working with international partners, other Federal agencies, and partners in industry and academia to study, develop, and carry out the human spaceflight priorities of the United States.

**SEC. 3. DEFINITIONS.**

In this Act:

(1) ADMINISTRATION.—The term ''Administration'' means the National Aeronautics and Space Administration.

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

(3) JOHNSON SPACE CENTER.—The term ''Johnson Space Center'' means the Lyndon B. Johnson Space Center in Houston, Texas.

(4) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

**SEC. 4. SENSE OF CONGRESS.**

It is the sense of Congress that the United States should support efforts to establish a long-term human settlement in space.

**SEC. 5. STATEMENT OF POLICY ON PERMANENT ESTABLISHMENT OF HUMAN PRESENCE CAPABILITY IN LOW-EARTH ORBIT.**

It is the policy of the United States—

(1) to continuously maintain the capability for a continuous human presence in low-Earth orbit through and beyond the useful life of the International Space Station; and

(2) that such capability shall—

(A) maintain the global leadership of the United States and relationships with partners and allies;

(B) contribute to the general welfare of the United States; and

(C) leverage commercial capabilities to promote affordability so as not to preclude a robust portfolio of other human space exploration activities.

**SEC. 6. INTERNATIONAL SPACE STATION.**

(a) CONTINUATION OF INTERNATIONAL SPACE STATION.—Section 501(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18351(a)) is amended by striking ''2024'' and inserting ''2030''.

(b) CONTINUED OPERATIONS AND MAINTENANCE OF UNITED STATES SEGMENT OF INTERNATIONAL SPACE

STATION.—Section 503(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18353(a)) is amended by striking ''2024'' and inserting ''2030''.

(c) RESEARCH CAPACITY ALLOCATION AND INTEGRATION OF RESEARCH PAYLOADS.—Section 504(d) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(d)) is amended—

(1) in paragraph (1), in the first sentence, by striking ''2024'' and inserting ''2030''; and

(2) in paragraph (2), in the third sentence, by striking ''2024'' and inserting ''2030''.

(d) MAINTAINING USE THROUGH AT LEAST 2030.—Section 70907 of title 51, United States Code, is amended—

(1) in the section heading, by striking ''**2024**'' and inserting ''**2030**'';

(2) in subsection (a), by striking ''2024'' and inserting ''2030''; and

(3) in subsection (b)(3), by striking ''2024'' and inserting ''2030''.

(e) TRANSITION STRATEGY.—

(1) IN GENERAL.—Not later than 300 days after the date of the enactment of this Act, the Ad-

ministrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a strategy that—

(A) describes the manner in which the Administration will ensure a stepwise transition to an eventual successor platform consistent with the ISS Transition Principles specified in the International Space Station Transition Report issued pursuant to section 50111(c)(2) of title 51, United States Code, on March 30, 2018;

(B) includes capability-driven milestones and timelines leading to such a transition;

(C) takes into account the importance of maintaining workforce expertise, core capabilities, and continuity at the centers of the Administration, including such centers that are primarily focused on human spaceflight;

(D) considers how any transition described in subparagraph (A) affects international and commercial partnerships;

(E) presents opportunities for future engagement with—

(i) international partners;

(ii) countries with growing spaceflight capabilities, if such engagement is not precluded by other provisions of law;

(iii) the scientific community, including the microgravity research community;

(iv) the private sector; and

(v) other United States Government users; and

(F) promotes the continued economic development of low-Earth orbit.

(2) IMPLEMENTATION PLAN.—The strategy required by paragraph (1) shall include an implementation plan describing the manner in which the Administration plans to carry out such strategy.

(3) REPORT.—Not less frequently than biennially, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on the implementation of the strategy required by paragraph (1).

**SEC. 7. ADVANCED SPACE SUITS.**

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

(1) Space suits and associated extravehicular activity technologies (in this section referred to as ''EVA technologies'') are critical space exploration technologies.

(2) The civil service workforce of the Administration at the Johnson Space Center has unique capabilities to integrate, design, and validate space suits and associated EVA technologies.

(3) Maintaining a strong core competency in the design, development, manufacture, and operation of space suits and related technologies allows the Administration to be an informed purchaser of competitively awarded commercial space suits and associated EVA technologies.

(4) The Administration should fully use the International Space Station by 2025 to test future space suits and associated EVA technologies to reduce risk and improve safety.

(b) SPACE SUITS.—

(1) IN GENERAL.—The Administrator shall establish a program to develop next-generation space suits and associated EVA technologies.

(2) SUPPORT FOR PROGRAM.—The Director of the Johnson Space Center shall support the program established under paragraph (1).

(3) ACCOMMODATION OF DIVERSE ASTRONAUT CORPS.—The Administrator shall ensure that space suits developed and manufactured after the date of the enactment of this Act accommodate a wide range of sizes of astronauts so as to meet the needs of the diverse NASA astronaut corps.

(4) AGREEMENTS WITH PRIVATE ENTITIES.—In carrying out this subsection, the Administrator may—

(A) enter into 1 or more agreements with 1 or more industry-proven space suit design, development, and manufacturing suppliers; and

(B) leverage—

(i) prior and existing investments in advanced space suit technologies; and

(ii) existing capabilities at NASA centers.

**SEC. 8. HUMAN SPACE FACILITIES IN AND BEYOND LOW-EARTH ORBIT.**

(a) HUMAN SPACE FACILITY DEFINED.—In this section, the term ''human space facility'' means a structure for use in or beyond low-Earth orbit that supports, or has the potential to support, human life.

(b) SENSE OF CONGRESS.—It is the sense of Congress that human space facilities play a significant role

in the long-term pursuit by the Administration of the exploration goals under section 202(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(a)).

(c) REPORT ON CREWED AND UNCREWED HUMAN SPACE FACILITIES.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on the potential development of 1 or more human space facilities.

(2) CONTENTS.—With respect to the potential development of each human space facility referred to in paragraph (1), the report required under such paragraph shall include a description of the following:

(A) The capacity of the human space facility to advance, enable, or complement human exploration of the solar system, including human exploration of the atmosphere and the surface of celestial bodies.

(B) The role of the human space facility as a staging, logistics, and operations hub in exploration architecture.

(C) The capacity of the human space facility to support the research, development, testing, validation, operation, and launch of space exploration systems and technologies.

(D) Opportunities and strategies for commercial operation or public-private partnerships with respect to the human space facility that protect taxpayer interests and foster competition.

(E) The role of the human space facility in encouraging further crewed and uncrewed exploration investments.

(F) The manner in which the development and maintenance of the International Space Station would reduce the cost of, and time necessary for, the development of the human space facility.

(d) CISLUNAR SPACE EXPLORATION ACTIVITIES.—The Administrator shall establish an outpost in orbit around the Moon that—

(1) demonstrates technologies, systems, and operational concepts directly applicable to the space

vehicle that will be used to transport humans to Mars;

(2) has the capability for periodic human habitation; and

(3) can function as a point of departure, return, or staging for Administration or nongovernmental or international partner missions to multiple locations on the lunar surface or other destinations.

**SEC. 9. STEPPING STONE APPROACH TO EXPLORATION.**

(a) IN GENERAL.—Section 70504 of title 51, United States Code, is amended to read as follows:

**"§ 70504. Stepping stone approach to exploration**

''(a) IN GENERAL.—The Administrator, in sustainable steps, may conduct missions to intermediate destinations, such as the Moon, in accordance with section 20302(b), and on a timetable determined by the availability of funding, in order to achieve the objective of human exploration of Mars specified in section 202(b)(5) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18312(b)(5)), if the Administrator—

''(1) determines that each such mission demonstrates or advances a technology or operational concept that will enable human missions to Mars; and

''(2) incorporates each such mission into the human exploration roadmap under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 2 115–10; 51 U.S.C. 20302 note).''.

**SEC. 10. REPORT ON RESEARCH AND DEVELOPMENT RELATING TO LIFE-SUSTAINING TECHNICAL SYSTEMS AND PLAN FOR ACHIEVING POWER SUPPLY.**

Not later than 1 year after the date of the enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives—

(1) a report on the research and development of the Administration relating to technical systems for the self-sufficient sustainment of life in and beyond low-Earth orbit; and

(2) a plan for achieving a power supply on the Moon that includes—

(A) a consideration of the resources necessary to accomplish such plan in the subsequent—

(i) 1 to 3 years;

(ii) 3 to 5 years; and

(iii) 5 to 10 years;

(B) collaboration and input from industry and the Department of Energy, specifically the Advanced Research Projects Agency–Energy;

(C) the use of a variety of types of energy, including solar and nuclear; and

(D) a detailed description of the resources necessary for the Administration to build a lunar power facility with human-tended maintenance requirements during the subsequent 10-year period.

**SEC. 11. TECHNICAL AMENDMENTS RELATING TO ARTEMIS MISSIONS.**

(a) Section 421 of the National Aeronautics and Space Administration Authorization Act of 2017 (Public 5 Law 115–10; 51 U.S.C. 20301 note) is amended—

(1) in subsection (c)(3)—

(A) by striking ''EM–1'' and inserting ''Artemis I'';

(B) by striking ''EM–2'' and inserting ''Artemis II''; and

(C) by striking ''EM–3'' and inserting ''Artemis III''; and

(2) in subsection (f)(3), by striking ''EM–3'' and inserting ''Artemis III''.

(b) Section 432(b) of the National Aeronautics and Space Administration Authorization Act of 2017 (Public 17 Law 115–10; 51 U.S.C. 20302 note) is amended—

(1) in paragraph (3)(D)—

(A) by striking ''EM–1'' and inserting ''Artemis I''; and

(B) by striking ''EM–2'' and inserting ''Artemis II''; and

(2) in paragraph (4)(C), by striking ''EM–3'' and inserting ''Artemis III''.

**SEC. 12. MISSIONS OF NATIONAL NEED.**

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

(1) while certain space missions, such as asteroid detection or space debris mitigation or removal missions, may not provide the highest-value science, as determined by the National Academies of Science, Engineering, and Medicine decadal surveys, such missions provide tremendous value to the United States and the world; and

(2) the current organizational and funding structure of NASA has not prioritized the funding of missions of national need.

(b) STUDY.—

(1) IN GENERAL.—The Director of the Office of Science and Technology Policy shall conduct a study on the manner in which NASA funds missions of national need.

(2) MATTERS TO BE INCLUDED.—The study conducted under paragraph (1) shall include the following:

(A) An identification and assessment of the types of missions or technology development programs that constitute missions of national need.

(B) An assessment of the manner in which such missions are currently funded and managed by NASA.

(C) An analysis of the options for funding missions of national need, including—

(i) structural changes required to allow NASA to fund such missions; and

(ii) an assessment of the capacity of other Federal agencies to make funds available for such missions.

(c) REPORT TO CONGRESS.—Not later than 1 year after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall submit to the appropriate committees of Congress a report

on the results of the study conducted under subsection (b), including recommendations for funding missions of national need.

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