I

116TH CONGRESS
1ST SESSION

# H. R. 5470

To ensure American leadership in low-Earth orbit and deep space exploration, and for other purposes.

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IN THE HOUSE OF REPRESENTATIVES

DECEMBER 17, 2019

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

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# A BILL

To ensure American leadership in low-Earth orbit and deep space 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; TABLE OF CONTENTS.**

(a) SHORT TITLE.—This Act may be cited as the ''U.S. Leadership in Space Act of 2019''.

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

**SEC. 2. 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) APPROPRIATE COMMITTEES OF CONGRESS.—Except as otherwise expressly provided, the term ''appropriate committees of Congress'' means—

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

(B) the Committee on Science, Space, and Technology of the House of Representatives.

(4) CISLUNAR SPACE.—The term ''cislunar space'' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.

(5) DEEP SPACE.—The term ''deep space'' means the region of space beyond low-Earth orbit, including cislunar space.

(6) DEVELOPMENT COST.—The term ''development cost'' has the meaning given the term in section 30104 of title 51, United States Code.

(7) ISS.—The term ''ISS'' means the International Space Station.

(8) ISS MANAGEMENT ENTITY.—The term ''ISS management entity'' means the organization with which the Administrator has entered into a cooperative agreement under section 504(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18354(a)).

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

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

(11) ORION.—The term ''Orion'' means the multipurpose crew vehicle described in section 303 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18323).

(12) OSTP.—The term ''OSTP'' means the Office of Science and Technology Policy.

(13) SPACE LAUNCH SYSTEM.—The term ''Space Launch System'' means the Space Launch System authorized under section 302 of the National Aeronautics and Space Administration Act of 2010 (42 U.S.C. 18322).

(14) LUNAR GATEWAY.—The term ''Lunar Gateway'' means the Lunar Orbital Platform referenced in the Consolidated Appropriations Act, 2019 (Public Law 116–6).

# TITLE I—HUMAN SPACEFLIGHT AND EXPLORATION

**SEC. 101. STEPPINGSTONE APPROACH TO EXPLORATION.**

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

**''§ 70504. Steppingstone 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 avail-

ability 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 115–10; 51 U.S.C. 20302 note).

''(b) CISLUNAR SPACE EXPLORATION ACTIVITIES.—In conducting a mission under subsection (a), the Administrator shall—

''(1) use a combination of launches of the Space Launch System and space transportation services from United States commercial providers, as appropriate, for the mission;

''(2) plan for not fewer than one Space Launch System launch annually beginning after the Artemis II mission; and

''(3) establish an outpost in orbit around the Moon that—

''(A) demonstrates technologies, systems, and operational concepts directly applicable to the space vehicle that will be used to transport humans to Mars;

''(B) has the capability for periodic human habitation; and

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

''(c) COST-EFFECTIVENESS.—To maximize the cost-effectiveness of the long-term space exploration and utilization activities of the United States, the Administrator shall take all necessary steps, including engaging non-governmental and international partners, to ensure that activities in the Administration's human space exploration program are balanced in order to help meet the requirements of future exploration and utilization activities leading to human habitation on the surface of Mars.

''(d) COMPLETION.—Within budgetary considerations, once an exploration-related project enters its development phase, the Administrator shall seek, to the max-

imum extent practicable, to complete that project without undue delay.

''(e) INTERNATIONAL PARTICIPATION.—To achieve the goal of successfully conducting a crewed mission to the surface of Mars, the Administrator shall invite the partners in the ISS program and other nations, as appropriate, to participate in an international initiative under the leadership of the United States.''.

(b) DEFINITION OF CISLUNAR SPACE.—Section 10101 of title 51, United States Code, is amended by adding at the end the following:

''(3) CISLUNAR SPACE.—The term 'cislunar space' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.''.

(c) TECHNICAL AND CONFORMING AMENDMENTS.—Section 3 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18302) is amended by striking paragraphs (2) and (3) and inserting the following:

''(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, Space, and Technology of the House of Representatives.

''(3) CISLUNAR SPACE.—The term 'cislunar space' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.''.

**SEC. 102. TECHNICAL AMENDMENTS RELATING TO ARTEMIS MISSIONS.**

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

(A) in subsection (c)(3)—

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

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

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

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

(2) Section 432(b) of the National Aeronautics and Space Administration Authorization Act of 2017

(Public Law 115–10; 51 U.S.C. 20302 note) is amended—

(A) in paragraph (3)(D)—

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

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

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

**SEC. 103. ESTABLISHMENT OF ARTEMIS PROGRAM MANAGEMENT OFFICE.**

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

(1) the Johnson Space Center was established in 1961 to serve as the centralized location to house the organizations that led the Apollo program;

(2) 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;

(3) the Johnson Space Center's architecture and program roles include crewed mission management, program definition and management, systems

analysis and concepts, as well as overall crewed destination system development integration;

(4) NASA has documented its lessons learned for complex program management within the NASA Policy Directive (NPD 7120.4) for Program/Project Management and NASA Space Flight Program and Project Management Requirements (NPR 7120.5). These documents delineate the scope and expectations for successful program implementation in NASA; and

(5) the Artemis program should leverage the expertise unique to Johnson Space Center.

(b) ESTABLISHMENT OF ARTEMIS PROGRAM MANAGEMENT OFFICE.—

(1) IN GENERAL.—The Administrator shall establish the Artemis program management office at Johnson Space Center.

**SEC. 104. ADVANCED CISLUNAR AND LUNAR SURFACE CAPABILITIES.**

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

(1) NASA developed the Artemis program—

(A) to fulfill the goal of landing United States astronauts, including the first woman and the next man, on the Moon by 2024; and

(B) to collaborate with commercial and international partners to establish sustainable lunar exploration by 2028; and

(2) in carrying out the Artemis program, the Administration should ensure that the entire Artemis program is inclusive and representative of all people of the United States, including women and minorities.

(b) LANDER PROGRAM.—

(1) IN GENERAL.—The Administrator shall foster the flight demonstration of not more than 2 human-class lunar lander designs through public-private partnerships.

(2) INITIAL DEVELOPMENT PHASE.—The Administrator may support the formulation of more than 2 concepts in the initial development phase.

(c) LUNAR GATEWAY PROGRAM.—

(1) IN GENERAL.—The Administrator shall establish an outpost in orbit around the Moon that—

(A) demonstrates technologies, systems, and operational concepts directly applicable to the space vehicle that will be used to transport humans to Mars;

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

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

(d) REQUIREMENTS.—In carrying out the programs under subsection (b) and subsection (c), the Administrator shall—

(1) enter into industry-led partnerships using a fixed-price, milestone-based approach;

(2) to the maximum extent practicable, encourage reusability and sustainability of systems developed;

(3) ensure availability of one or more lunar polar science payloads for a demonstration mission; and

(4) to the maximum extent practicable, offer existing capabilities and assets of NASA centers to support these partnerships.

(e) FULL UTILIZATION OF SPACE LAUNCH SYSTEM, EXPLORATION UPPER STAGE, AND EXPLORATION GROUND SYSTEMS.—In carrying out the program under subsection (b), the Administrator shall—

(1) to the maximum extent practicable, make use of the Space Launch System, Exploration Upper

Stage, Exploration Ground Systems, and associated facilities and infrastructure available for the launch of an integrated Human Landing System; and

(2) as space allows, add secondary payload capacity on the Space Launch System to support ongoing Human Landing Systems and Lunar Gateway elements.

**SEC. 105. ADVANCED SPACESUITS.**

(a) SENSE OF CONGRESS.—It is the sense of Congress that next-generation advanced spacesuits are a critical technology for human space exploration and use of low-Earth orbit, cislunar space, the surface of the Moon, and Mars.

(b) DEVELOPMENT PLAN.—The Administrator shall establish a detailed plan for the development and manufacture of advanced spacesuits, consistent with the deep space exploration goals and timetables of NASA.

(c) DIVERSE ASTRONAUT CORPS.—The Administrator shall ensure that spacesuits developed and manufactured after the date of the enactment of this Act are capable of accommodating a wide range of sizes of astronauts so as to meet the needs of the diverse NASA astronaut corps.

(d) ISS USE.—Throughout the operational life of the ISS, the Administrator should fully use the ISS for testing advanced spacesuits.

(e) PRIOR INVESTMENTS.—

(1) IN GENERAL.—In developing an advanced spacesuit, the Administrator shall, to the maximum extent practicable, leverage prior and existing investments in advanced spacesuit technologies to maximize the benefits of such investments and technologies.

(2) AGREEMENTS WITH PRIVATE ENTITIES.—In carrying out this subsection, the Administrator may enter into one or more agreements with one or more private entities for the manufacture of advanced spacesuits, as the Administrator considers appropriate.

(f) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, and semiannually thereafter until NASA procures advanced spacesuits under this section, the Administrator shall brief the appropriate committees of Congress on the development plan in subsection (b).

**SEC. 106. LIFE SCIENCE AND PHYSICAL SCIENCE RESEARCH.**

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

(1) the 2011 decadal survey on biological and physical sciences in space identifies—

(A) many areas in which fundamental scientific research is needed to efficiently advance the range of human activities in space, from the first stages of exploration to eventual economic development; and

(B) many areas of basic and applied scientific research that could use the microgravity, radiation, and other aspects of the spaceflight environment to answer fundamental scientific questions;

(2) given the central role of life science and physical science research in developing the future of space exploration, NASA should continue to invest strategically in such research to maintain United States leadership in space exploration; and

(3) such research remains important to the objectives of NASA with respect to long-duration deep space human exploration to the Moon and Mars, and developing a commercial space economy in low-Earth orbit.

(b) PROGRAM CONTINUATION.—

(1) IN GENERAL.—In support of the goals described in section 20302 of title 51, United States Code, the Administrator shall continue to implement a collaborative, multidisciplinary life science and physical science fundamental research program—

(A) to build a scientific foundation for the exploration and development of space;

(B) to investigate the mechanisms of changes to biological systems and physical systems, and the environments of those systems in space, including the effects of long-duration exposure to deep space-related environmental factors on those systems;

(C) to understand the effects of combined deep space radiation and altered gravity levels on biological systems so as to inform the development and testing of potential countermeasures;

(D) to understand physical phenomena in reduced gravity that affect design and performance of enabling technologies necessary for the space exploration program;

(E) to provide scientific opportunities to educate, train, and develop the next generation of researchers and engineers; and

(F) to provide state-of-the-art data repositories and curation of large multi-data sets to enable comparative research analyses.

(2) ELEMENTS.—The program under paragraph (1) shall—

(A) include fundamental research relating to life science, space bioscience, and physical science; and

(B) maximize intra-agency and interagency partnerships to advance space exploration, scientific knowledge, and benefits to Earth.

(3) USE OF FACILITIES.—In carrying out the program under paragraph (1), the Administrator may use ground-based, air-based, and space-based facilities in low-Earth orbit and beyond low-Earth orbit.

(c) LUNAR DISCOVERY PROGRAMS.—

(1) IN GENERAL.—The Administrator may carry out a program to conduct lunar science research, including missions to the surface of the Moon, that materially contributes to the objective

described in section 20102(d)(1) of title 51, United States Code.

(A) COMMERCIAL LANDERS.—In carrying out a program under subsection (a), the Administrator may procure the services of commercial landers developed primarily by United States industry to land science payloads of all classes on the lunar surface.

(B) LUNAR SCIENCE RESEARCH.—The Administrator shall ensure that lunar science research carried out under subsection (a) is consistent with recommendations made by the National Academies of Sciences, Engineering, and Medicine.

(C) LUNAR POLAR VOLATILES.—In carrying out a program under subsection (a), the Administrator shall, at the earliest opportunity, consider mission proposals to evaluate the potential of lunar polar volatiles to contribute to sustainable lunar exploration.

**SEC. 107. VALUE OF INTERNATIONAL SPACE STATION AND CAPABILITIES IN LOW-EARTH ORBIT.**

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

(1) it is in the national and economic security interests of the United States to maintain a continuous human presence in low-Earth orbit;

(2) low-Earth orbit should be used as a test bed to advance human space exploration and scientific discoveries; and

(3) the ISS is a critical component of economic, commercial, and industrial development in low-Earth orbit.

(b) HUMAN PRESENCE REQUIREMENT.—The United States shall continuously maintain the capability for a continuous human presence in low-Earth orbit through and beyond the useful life of the ISS.

**SEC. 108. EXTENSION AND MODIFICATION RELATING TO INTERNATIONAL SPACE STATION.**

(a) POLICY.—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) MAINTENANCE OF UNITED STATES SEGMENT AND ASSURANCE OF CONTINUED OPERATIONS.—Section 503(a) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18353(a)) is amended by striking ''September 30, 2024'' and inserting ''September 30, 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—

(A) by striking ''As soon as practicable'' and all that follows through ''2011,'' and inserting ''The''; and

(B) by striking ''September 30, 2024'' and inserting ''September 30, 2030''; and

(2) in paragraph (2), in the third sentence, by striking ''September 30, 2024'' and inserting ''September 30, 2030''.

(d) MAINTENANCE OF USE.—

(1) IN GENERAL.—Section 70907 of title 51, United States Code, is amended—

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

(B) in subsection (a), by striking ''September 30, 2024'' and inserting ''September 30, 2030''; and

(C) in subsection (b)(3), by striking ''September 30, 2024'' and inserting ''September 30, 2030''.

(e) TRANSITION PLAN REPORTS.—Section 50111(c)(2) of title 51, United States Code, is amended—

(1) in the matter preceding subparagraph (A), by striking ''2023'' and inserting ''2028''; and

(2) in subparagraph (J), by striking ''2028'' and inserting ''2030''.

(f) ELIMINATION OF INTERNATIONAL SPACE STATION NATIONAL LABORATORY ADVISORY COMMITTEE.—Section 70906 of title 51, United States Code, is repealed.

(g) CONFORMING AMENDMENTS.—Chapter 709 of title 51, United States Code, is amended—

(1) by redesignating section 70907 as section 70906; and

(2) in the table of sections for the chapter, by striking the items relating to sections 70906 and 70907 and inserting the following:

''Sec. 70906. Maintaining use through at least 2030.''.

**SEC. 109. COMMERCIAL DEVELOPMENT IN LOW-EARTH ORBIT.**

(a) STATEMENT OF POLICY.—It is the policy of the United States to encourage the development of a thriving and robust United States commercial sector in low-Earth orbit.

(b) PREFERENCE FOR UNITED STATES COMMERCIAL PRODUCTS AND SERVICES.—The Administrator shall continue to increase the use of assets, products, and services

of private entities in the United States to fulfill the low-Earth orbit requirements of the Administration.

(c) NONCOMPETITION.—

(1) IN GENERAL.—Except as provided in paragraph (2), the Administrator may not offer to a foreign person or a foreign government a spaceflight product or service relating to the ISS, if a comparable spaceflight product or service, as applicable, is offered by a private entity in the United States.

(2) EXCEPTION.—The Administrator may offer a space-flight product or service relating to the ISS to the government of a country that is a signatory to the Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station, signed at Washington January 29, 1998, and entered into force on March 27, 2001 (TIAS 12927). This includes any foreign nationals that are sponsored by the signatories of the Agreement.

(d) SHORT-DURATION COMMERCIAL MISSIONS.—To provide opportunities for additional transport of astronauts to the ISS and help establish a commercial market

in low-Earth orbit, the Administrator may permit short-duration missions to the ISS for commercial passengers.

(e) PROGRAM AUTHORIZATION.—

(1) ESTABLISHMENT.—The Administrator shall establish a low-Earth orbit development program to encourage the fullest commercial use and development of space by private entities in the United States.

(2) ELEMENTS.—The program established under paragraph (1) shall, to the maximum extent practicable, include activities—

(A) to stimulate demand for—

(i) space-based commercial research, development, and manufacturing;

(ii) spaceflight products and services; and

(iii) human spaceflight products and services in low-Earth orbit;

(B) to improve the capability of the ISS to accommodate commercial users; and

(C) subject to paragraph (3), to foster the development of commercial space stations and habitats.

(3) COMMERCIAL SPACE STATIONS AND HABITATS.—

(A) PRIORITY.—With respect to an activity to develop a commercial space station or habitat, the Administrator shall give priority to an activity for which a private entity provides a share of the cost to develop and operate the activity.

(B) LIMITATION.—The Administrator may not provide funding for the development of a commercial space station or habitat until after the date on which the Administrator awards a contract for the use of a docking port on the ISS.

(C) REPORT.—Not later than 30 days after the date that an award or agreement is made to carry out an activity to develop a commercial space station or habitat, the Administrator shall submit to the appropriate committees of Congress a report on the development of the commercial space station or habitat, as applicable, that includes—

(i) a business plan that describes the manner in which the project will—

(I) meet the future requirements of NASA for low-Earth orbit human space-flight services; and

(II) fulfill the cost-share funding prioritization under subparagraph (A); and

(ii) a review of the viability of the operational business case, including—

(I) the level of expected Government participation;

(II) a list of anticipated non-governmental and international customers and associated contributions; and

(III) an assessment of long-term sustainability for the nongovernmental customers, including an independent assessment of the viability of the market for such commercial services or products.

**SEC. 110. MAINTAINING A NATIONAL LABORATORY IN SPACE.**

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

(1) the United States segment of the International Space Station (as defined in section 70905 of title 51, United States Code), which is designated

as a national laboratory under section 70905(b) of title 51, United States Code—

(A) benefits the scientific community and promotes commerce in space;

(B) fosters stronger relationships among NASA and other Federal agencies, the private sector, and research groups and universities;

(C) advances science, technology, engineering, and mathematics education through use of the unique microgravity environment; and

(D) advances human knowledge and international cooperation;

(2) after the ISS is decommissioned, the United States should maintain a national microgravity laboratory in space;

(3) in maintaining a national microgravity laboratory in space, the United States should make appropriate accommodations for different types of ownership and operation arrangements for the ISS and future space stations;

(4) to the maximum extent practicable, a national microgravity laboratory in space should be maintained in cooperation with international space partners; and

(5) NASA should continue to support fundamental science research on future platforms in low-Earth orbit and cislunar space, orbital and suborbital flights, drop towers, and other microgravity testing environments.

(b) REPORT.—The Administrator, in coordination with the National Space Council and other Federal agencies as the Administrator considers appropriate, shall issue a report detailing the feasibility of establishing a microgravity national laboratory federally funded research and development center to carry out activities relating to the study and use of in-space conditions.

# TITLE II—SAFETY AND TRANSPARENCY

**SEC. 201. CREW TRANSPORTATION SAFETY.**

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

(1) ensuring the safety of American astronauts is the top priority of NASA's human spaceflight program;

(2) in efforts to meet deadlines to return humans to the Moon, NASA should take all steps necessary to mitigate any and all risk to crew; and

(3) it is the role of Congress to exercise prudence in the use of taxpayer dollars and ensure

transparency to the taxpayer to the greatest extent possible.

(b) IN GENERAL.—To ensure that NASA's human exploration systems comply with the direction in this Act to have a shared safety standard that is consistent across all elements of the architecture, the Administrator shall—

(1) implement a program to ensure that best practices, lessons learned and other information is shared across all elements of the human exploration program, including public-private partnerships and commercial service procurement;

(2) require that any entity receiving funding for the development or operation of a human spaceflight element or activity make all necessary information available to NASA and the appropriate government oversight entities, including the NASA Advisory Committee and its subcommittees, the Aerospace Safety Advisory Committee and the relevant committees of Congress; and

(3) produce a public report twice a year detailing progress towards meeting or sustaining the shared safety standards and identifying areas, programs, or services where these standards have not been met or maintained, and the associated corrective action to address these issues.

(c) REPORT.—Within 120 days of enactment, the Administrator shall provide a report to the Committees on the implementation of this direction and how it plans to ensure these comparable safety standards are met throughout the development, test and operation of such systems.

(d) CONGRESSIONAL NOTICE.—

(1) Should any element of human exploration system architecture, whether owned and operated by NASA, developed and operated as a public-private partnership or procured as a commercial service, fails to meet the common safety standards established, Congress shall be notified and receive a report on corrective actions and options available to improve safety and resiliency of such system(s) within 30 days.

# TITLE III—U.S. NATIONAL SECURITY

**SEC. 301. CYBERSECURITY.**

(a) IN GENERAL.—Section 20301 of title 51, United States Code, is amended by adding at the end the following:

''(c) CYBERSECURITY.—The Administrator shall update and improve the cybersecurity of NASA space assets and supporting infrastructure.''.

(b) SECURITY OPERATIONS CENTER.—

(1) ESTABLISHMENT.—The Administrator shall maintain a Security Operations Center, to identify and respond to cybersecurity threats to NASA information technology systems, including institutional systems and mission systems.

(2) INSPECTOR GENERAL RECOMMENDATIONS.—The Administrator shall implement, to the maximum extent practicable, each of the recommendations contained in the report of the Inspector General of NASA entitled ''Audit of NASA's Security Operations Center'', issued on May 23, 2018.

(c) CYBER THREAT HUNT.—

(1) IN GENERAL.—The Administrator, in coordination with the Secretary of Homeland Security and the heads of other relevant Federal agencies, may implement a cyber threat hunt capability to proactively search NASA information systems for advanced cyber threats that otherwise evade existing security tools.

(2) THREAT-HUNTING PROCESS.—In carrying out paragraph (1), the Administrator shall develop and document a threat-hunting process, including the roles and responsibilities of individuals conducting a cyber threat hunt.

(d) GAO PRIORITY RECOMMENDATIONS.—The Administrator shall implement, to the maximum extent practicable, the recommendations for NASA contained in the report of the Comptroller General of the United States entitled ''Information Security: Agencies Need to Improve Controls over Selected High-Impact Systems'', issued May 18, 2016, including—

(1) re-evaluating security control assessments; and

(2) specifying metrics for the continuous monitoring strategy of the Administration.

**SEC. 302. EXEMPTION FROM THE IRAN, NORTH KOREA, AND SYRIA NONPROLIFERATION ACT.**

Section 7(1) of the Iran, North Korea, and Syria Nonproliferation Act (Public Law 106–178; 50 U.S.C. 1701 note) is amended, in the undesignated matter following subparagraph (B), by striking ''December 31, 2020'' and inserting ''December 31, 2030''.

**SEC. 303. LIMITATION ON COOPERATION WITH THE PEOPLE'S REPUBLIC OF CHINA.**

(a) IN GENERAL.—Except as provided by subsection (b), the Administrator, the Director of the Office of Science and Technology Policy, and the Chair of the National Space Council, shall not—

(1) develop, design, plan, promulgate, implement, or execute a bilateral policy, program, order, or contract of any kind to participate, collaborate, or coordinate bilaterally in any manner with—

(A) the Government of the People's Republic of China; or

(B) any company—

(i) owned by the Government of the People's Republic of China; or

(ii) incorporated under the laws of the People's Republic of China; and

(2) host official visitors from the People's Republic of China at a facility belonging to or used by NASA.

(b) WAIVER.—

(1) IN GENERAL.—The Administrator, the Director, or the Chair may waive the limitation under subsection (a) with respect to an activity described in that subsection only if the Administrator, the Director, or the Chair, as applicable, makes a determination that the activity—

(A) does not pose a risk of a transfer of technology, data, or other information with national security or economic security implications

to an entity described in paragraph (1) of such subsection; and

(B) does not involve knowing interactions with officials who have been determined by the United States to have direct involvement with violations of human rights.

(2) CERTIFICATION TO CONGRESS.—Not later than 30 days after the date on which a waiver is granted under paragraph (1), the Administrator, the Director, or the Chair, as applicable, shall submit to the Committee on Commerce, Science, and Transportation and the Committee on Appropriations of the Senate and the Committee on Science, Space, and Technology and the Committee on Appropriations of the House of Representatives a written certification that the activity complies with the requirements in subparagraphs (A) and (B) of that paragraph.

**SEC. 304. COUNTERING CHINESE THREATS TO U.S. ACTIVITIES IN SPACE.**

(a) FINDINGS.—

(1) The Government of the People's Republic of China maintains, as a national priority, a global program of theft and other misappropriation of intellectual property, and unacceptable technology transfer

requirements, particularly in fields of high technology.

(2) China is taking steps to establish a commanding position in the commercial launch and satellite sectors relying in part on aggressive state-backed financing that market-driven companies cannot match.

(3) China has engaged in an aggressive campaign to dominate sensitive markets such as germanium wafer production, used for nearly all specialized satellite solar panels, allowing China ownership of over 70 percent of global germanium mining, refining, and production.

(4) China has begun focusing on the lunar surface and cislunar space as priorities in its space program, which is indistinguishable from its armed forces.

(b) REPORT.—Not later than 90 days after the date of enactment, the Executive Secretary of the National Space Council shall submit to the appropriate committees of Congress a report that includes:

(1) How China is harming the U.S. commercial space industry's competitiveness and threatening U.S. national security. Specifically, the Executive Secretary shall investigate—

(A) theft of intellectual property through technology transfer requirements or otherwise;

(B) Chinese efforts to seize control over critical elements of the space industry supply chain;

(C) Chinese efforts to seize control over space industry companies, sister companies with shared leadership, or supply chain; and

(D) U.S. cybersecurity weaknesses.

(2) Current steps the United States is taking to protect its domestic space industry from Chinese influence.

(3) Recommendations to Congress on legislative action necessary to address Chinese threats to the U.S. domestic commercial launch and satellite industries and improve U.S. efforts to counter threats to U.S. activities in space.

(4) Recommendations on how the U.S. Government can best utilize existing Federal entities to investigate and act against potentially harmful Chinese investment into the U.S. commercial space industry, and how the U.S. Government can bolster domestic investment in critical U.S. space industry technologies.

**SEC. 305. CONSIDERATION OF ISSUES RELATED TO CONTRACTING WITH ENTITIES RECEIVING ASSISTANCE FROM OR AFFILIATED WITH THE PEOPLE'S REPUBLIC OF CHINA.**

In considering any response to a request for a proposal, request for information, broad area announcement, or any other form of request or solicitation, and in considering or undertaking any negotiation or conclusion of any contract, agreement, or other transaction with any commercial or non-commercial entity, the Administrator shall, in consultation with appropriate Federal departments and agencies, take into account the implications of any benefit received by such commercial or non-commercial entity (or any other commercial or non-commercial entity related through ownership, control, or other affiliation to such entity) as a result of a significant loan or other financial assistance provided by—

(1) any governmental organization of the People's Republic of China; or

(2) any other entity that is—

(A) majority owned or controlled by, or otherwise affiliated with, any governmental organization of the People's Republic of China; or

(B) organized under, or otherwise subject to, the laws of the People's Republic of China.

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