

116TH CONGRESS
1ST SESSION

H. R. 5470

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

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

A BILL

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

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

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

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

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

Sec. 1. Short title; table of contents.
Sec. 2. Definitions.

TITLE I—HUMAN SPACEFLIGHT AND EXPLORATION

Sec. 101. Steppingstone approach to exploration.
Sec. 102. Technical amendments relating to Artemis missions.

- Sec. 103. Establishment of Artemis program management office.
- Sec. 104. Advanced cislunar and lunar surface capabilities.
- Sec. 105. Advanced spacesuits.
- Sec. 106. Life science and physical science research.
- Sec. 107. Value of International Space Station and capabilities in low-Earth orbit.
- Sec. 108. Extension and modification relating to International Space Station.
- Sec. 109. Commercial development in low-Earth orbit.
- Sec. 110. Maintaining a national laboratory in space.

TITLE II—SAFETY AND TRANSPARENCY

- Sec. 201. Crew transportation safety.

TITLE III—U.S. NATIONAL SECURITY

- Sec. 301. Cybersecurity.
- Sec. 302. Exemption from the Iran, North Korea, and Syria Nonproliferation Act.
- Sec. 303. Limitation on cooperation with the People’s Republic of China.
- Sec. 304. Countering Chinese threats to U.S. activities in space.
- Sec. 305. Consideration of issues related to contracting with entities receiving assistance from or affiliated with the People’s Republic of China.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) ADMINISTRATION.—The term “Administra-
4 tion” means the National Aeronautics and Space
5 Administration.

6 (2) ADMINISTRATOR.—The term “Adminis-
7 trator” means the Administrator of the National
8 Aeronautics and Space Administration.

9 (3) APPROPRIATE COMMITTEES OF CON-
10 GRESS.—Except as otherwise expressly provided, the
11 term “appropriate committees of Congress”
12 means—

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

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

3 (4) CISELUNAR SPACE.—The term “cislunar
4 space” means the region of space beyond low-Earth
5 orbit out to and including the region around the sur-
6 face of the Moon.

7 (5) DEEP SPACE.—The term “deep space”
8 means the region of space beyond low-Earth orbit,
9 including cislunar space.

10 (6) DEVELOPMENT COST.—The term “develop-
11 ment cost” has the meaning given the term in sec-
12 tion 30104 of title 51, United States Code.

13 (7) ISS.—The term “ISS” means the Inter-
14 national Space Station.

15 (8) ISS MANAGEMENT ENTITY.—The term
16 “ISS management entity” means the organization
17 with which the Administrator has entered into a co-
18 operative agreement under section 504(a) of the Na-
19 tional Aeronautics and Space Administration Au-
20 thorization Act of 2010 (42 U.S.C. 18354(a)).

21 (9) NASA.—The term “NASA” means the Na-
22 tional Aeronautics and Space Administration.

23 (10) JOHNSON SPACE CENTER.—The term
24 “Johnson Space Center” means the Lyndon B.
25 Johnson Space Center in Houston, Texas.

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

5 (12) OSTP.—The term “OSTP” means the Of-
 6 fice of Science and Technology Policy.

7 (13) SPACE LAUNCH SYSTEM.—The term
 8 “Space Launch System” means the Space Launch
 9 System authorized under section 302 of the National
 10 Aeronautics and Space Administration Act of 2010
 11 (42 U.S.C. 18322).

12 (14) LUNAR GATEWAY.—The term “Lunar
 13 Gateway” means the Lunar Orbital Platform ref-
 14 erenced in the Consolidated Appropriations Act,
 15 2019 (Public Law 116–6).

16 **TITLE I—HUMAN SPACEFLIGHT** 17 **AND EXPLORATION**

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

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

21 **“§ 70504. Steppingstone approach to exploration**

22 “(a) IN GENERAL.—The Administrator, in sustain-
 23 able steps, may conduct missions to intermediate destina-
 24 tions, such as the Moon, in accordance with section
 25 20302(b), and on a timetable determined by the avail-

1 ability of funding, in order to achieve the objective of
2 human exploration of Mars specified in section 202(b)(5)
3 of the National Aeronautics and Space Administration Au-
4 thorization Act of 2010 (42 U.S.C. 18312(b)(5)), if the
5 Administrator—

6 “(1) determines that each such mission dem-
7 onstrates or advances a technology or operational
8 concept that will enable human missions to Mars;
9 and

10 “(2) incorporates each such mission into the
11 human exploration roadmap under section 432 of
12 the National Aeronautics and Space Administration
13 Transition Authorization Act of 2017 (Public Law
14 115–10; 51 U.S.C. 20302 note).

15 “(b) CISLUNAR SPACE EXPLORATION ACTIVITIES.—
16 In conducting a mission under subsection (a), the Admin-
17 istrator shall—

18 “(1) use a combination of launches of the Space
19 Launch System and space transportation services
20 from United States commercial providers, as appro-
21 priate, for the mission;

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

1 “(3) establish an outpost in orbit around the
2 Moon that—

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

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

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

14 “(c) COST-EFFECTIVENESS.—To maximize the cost-
15 effectiveness of the long-term space exploration and utili-
16 zation activities of the United States, the Administrator
17 shall take all necessary steps, including engaging non-
18 governmental and international partners, to ensure that
19 activities in the Administration’s human space exploration
20 program are balanced in order to help meet the require-
21 ments of future exploration and utilization activities lead-
22 ing to human habitation on the surface of Mars.

23 “(d) COMPLETION.—Within budgetary consider-
24 ations, once an exploration-related project enters its devel-
25 opment phase, the Administrator shall seek, to the max-

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

3 “(e) INTERNATIONAL PARTICIPATION.—To achieve
4 the goal of successfully conducting a crewed mission to
5 the surface of Mars, the Administrator shall invite the
6 partners in the ISS program and other nations, as appro-
7 priate, to participate in an international initiative under
8 the leadership of the United States.”.

9 (b) DEFINITION OF CISLUNAR SPACE.—Section
10 10101 of title 51, United States Code, is amended by add-
11 ing at the end the following:

12 “(3) CISLUNAR SPACE.—The term ‘cislunar
13 space’ means the region of space beyond low-Earth
14 orbit out to and including the region around the sur-
15 face of the Moon.”.

16 (c) TECHNICAL AND CONFORMING AMENDMENTS.—
17 Section 3 of the National Aeronautics and Space Adminis-
18 tration Authorization Act of 2010 (42 U.S.C. 18302) is
19 amended by striking paragraphs (2) and (3) and inserting
20 the following:

21 “(2) APPROPRIATE COMMITTEES OF CON-
22 GRESS.—The term ‘appropriate committees of Con-
23 gress’ means—

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

1 “(B) the Committee on Science, Space,
2 and Technology of the House of Representa-
3 tives.

4 “(3) CISLUNAR SPACE.—The term ‘cislunar
5 space’ means the region of space beyond low-Earth
6 orbit out to and including the region around the sur-
7 face of the Moon.”.

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

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

14 (A) in subsection (c)(3)—

15 (i) by striking “EM–1” and inserting
16 “Artemis I”;

17 (ii) by striking “EM–2” and inserting
18 “Artemis II”; and

19 (iii) by striking “EM–3” and inserting
20 “Artemis III”; and

21 (B) in subsection (f)(3), by striking “EM–
22 3” and inserting “Artemis III”.

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

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

3 (A) in paragraph (3)(D)—

4 (i) by striking “EM–1” and inserting
5 “Artemis I”; and

6 (ii) by striking “EM–2” and inserting
7 “Artemis II”; and

8 (B) in paragraph (4)(C), by striking “EM–
9 3” and inserting “Artemis III”.

10 **SEC. 103. ESTABLISHMENT OF ARTEMIS PROGRAM MAN-**
11 **AGEMENT OFFICE.**

12 (a) SENSE OF CONGRESS.—It is the sense of Con-
13 gress that—

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

17 (2) the Johnson Space Center has decades of
18 experience working with international partners,
19 other Federal agencies, and partners in industry and
20 academia to study, develop, and carry out the
21 human spaceflight priorities of the United States;

22 (3) the Johnson Space Center’s architecture
23 and program roles include crewed mission manage-
24 ment, program definition and management, systems

1 analysis and concepts, as well as overall crewed des-
2 tination system development integration;

3 (4) NASA has documented its lessons learned
4 for complex program management within the NASA
5 Policy Directive (NPD 7120.4) for Program/Project
6 Management and NASA Space Flight Program and
7 Project Management Requirements (NPR 7120.5).
8 These documents delineate the scope and expecta-
9 tions for successful program implementation in
10 NASA; and

11 (5) the Artemis program should leverage the ex-
12 pertise unique to Johnson Space Center.

13 (b) ESTABLISHMENT OF ARTEMIS PROGRAM MAN-
14 AGEMENT OFFICE.—

15 (1) IN GENERAL.—The Administrator shall es-
16 tablish the Artemis program management office at
17 Johnson Space Center.

18 **SEC. 104. ADVANCED CISLUNAR AND LUNAR SURFACE CA-**
19 **PABILITIES.**

20 (a) SENSE OF CONGRESS.—It is the sense of Con-
21 gress that—

22 (1) NASA developed the Artemis program—

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

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

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

9 (b) LANDER PROGRAM.—

10 (1) IN GENERAL.—The Administrator shall fos-
11 ter the flight demonstration of not more than 2
12 human-class lunar lander designs through public-pri-
13 vate partnerships.

14 (2) INITIAL DEVELOPMENT PHASE.—The Ad-
15 ministrator may support the formulation of more
16 than 2 concepts in the initial development phase.

17 (c) LUNAR GATEWAY PROGRAM.—

18 (1) IN GENERAL.—The Administrator shall es-
19 tablish an outpost in orbit around the Moon that—

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

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

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

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

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

11 (2) to the maximum extent practicable, encour-
12 age reusability and sustainability of systems devel-
13 oped;

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

17 (4) to the maximum extent practicable, offer ex-
18 isting capabilities and assets of NASA centers to
19 support these partnerships.

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

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

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

4 (2) as space allows, add secondary payload ca-
5 pacity on the Space Launch System to support on-
6 going Human Landing Systems and Lunar Gateway
7 elements.

8 **SEC. 105. ADVANCED SPACESUITS.**

9 (a) SENSE OF CONGRESS.—It is the sense of Con-
10 gress that next-generation advanced spacesuits are a crit-
11 ical technology for human space exploration and use of
12 low-Earth orbit, cislunar space, the surface of the Moon,
13 and Mars.

14 (b) DEVELOPMENT PLAN.—The Administrator shall
15 establish a detailed plan for the development and manu-
16 facture of advanced spacesuits, consistent with the deep
17 space exploration goals and timetables of NASA.

18 (c) DIVERSE ASTRONAUT CORPS.—The Adminis-
19 trator shall ensure that spacesuits developed and manufac-
20 tured after the date of the enactment of this Act are capa-
21 ble of accommodating a wide range of sizes of astronauts
22 so as to meet the needs of the diverse NASA astronaut
23 corps.

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

4 (e) PRIOR INVESTMENTS.—

5 (1) IN GENERAL.—In developing an advanced
6 spacesuit, the Administrator shall, to the maximum
7 extent practicable, leverage prior and existing invest-
8 ments in advanced spacesuit technologies to maxi-
9 mize the benefits of such investments and tech-
10 nologies.

11 (2) AGREEMENTS WITH PRIVATE ENTITIES.—In
12 carrying out this subsection, the Administrator may
13 enter into one or more agreements with one or more
14 private entities for the manufacture of advanced
15 spacesuits, as the Administrator considers appro-
16 priate.

17 (f) BRIEFING.—Not later than 180 days after the
18 date of the enactment of this Act, and semiannually there-
19 after until NASA procures advanced spacesuits under this
20 section, the Administrator shall brief the appropriate com-
21 mittees of Congress on the development plan in subsection
22 (b).

1 **SEC. 106. LIFE SCIENCE AND PHYSICAL SCIENCE RE-**
2 **SEARCH.**

3 (a) SENSE OF CONGRESS.—It is the sense of Con-
4 gress that—

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

7 (A) many areas in which fundamental sci-
8 entific research is needed to efficiently advance
9 the range of human activities in space, from the
10 first stages of exploration to eventual economic
11 development; and

12 (B) many areas of basic and applied sci-
13 entific research that could use the microgravity,
14 radiation, and other aspects of the spaceflight
15 environment to answer fundamental scientific
16 questions;

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

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

1 (b) PROGRAM CONTINUATION.—

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

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

9 (B) to investigate the mechanisms of
10 changes to biological systems and physical sys-
11 tems, and the environments of those systems in
12 space, including the effects of long-duration ex-
13 posure to deep space-related environmental fac-
14 tors on those systems;

15 (C) to understand the effects of combined
16 deep space radiation and altered gravity levels
17 on biological systems so as to inform the devel-
18 opment and testing of potential counter-
19 measures;

20 (D) to understand physical phenomena in
21 reduced gravity that affect design and perform-
22 ance of enabling technologies necessary for the
23 space exploration program;

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

4 (F) to provide state-of-the-art data reposi-
5 tories and curation of large multi-data sets to
6 enable comparative research analyses.

7 (2) ELEMENTS.—The program under para-
8 graph (1) shall—

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

12 (B) maximize intra-agency and interagency
13 partnerships to advance space exploration, sci-
14 entific knowledge, and benefits to Earth.

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

20 (c) LUNAR DISCOVERY PROGRAMS.—

21 (1) IN GENERAL.—The Administrator may
22 carry out a program to conduct lunar science re-
23 search, including missions to the surface of the
24 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 (1) it is in the national and economic security
2 interests of the United States to maintain a contin-
3 uous human presence in low-Earth orbit;

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

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

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

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

16 (a) POLICY.—Section 501(a) of the National Aero-
17 nautics and Space Administration Authorization Act of
18 2010 (42 U.S.C. 18351(a)) is amended by striking
19 “2024” and inserting “2030”.

20 (b) MAINTENANCE OF UNITED STATES SEGMENT
21 AND ASSURANCE OF CONTINUED OPERATIONS.—Section
22 503(a) of the National Aeronautics and Space Administra-
23 tion Authorization Act of 2010 (42 U.S.C. 18353(a)) is
24 amended by striking “September 30, 2024” and inserting
25 “September 30, 2030”.

1 (c) RESEARCH CAPACITY ALLOCATION AND INTE-
2 GRATION OF RESEARCH PAYLOADS.—Section 504(d) of
3 the National Aeronautics and Space Administration Au-
4 thorization Act of 2010 (42 U.S.C. 18354(d)) is amend-
5 ed—

6 (1) in paragraph (1), in the first sentence—

7 (A) by striking “As soon as practicable”
8 and all that follows through “2011,” and in-
9 serting “The”; and

10 (B) by striking “September 30, 2024” and
11 inserting “September 30, 2030”; and

12 (2) in paragraph (2), in the third sentence, by
13 striking “September 30, 2024” and inserting “Sep-
14 tember 30, 2030”.

15 (d) MAINTENANCE OF USE.—

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

18 (A) in the section heading, by striking
19 “2024” and inserting “2030”;

20 (B) in subsection (a), by striking “Sep-
21 tember 30, 2024” and inserting “September 30,
22 2030”; and

23 (C) in subsection (b)(3), by striking “Sep-
24 tember 30, 2024” and inserting “September 30,
25 2030”.

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

3 (1) in the matter preceding subparagraph (A),
4 by striking “2023” and inserting “2028”; and

5 (2) in subparagraph (J), by striking “2028”
6 and inserting “2030”.

7 (f) ELIMINATION OF INTERNATIONAL SPACE STA-
8 TION NATIONAL LABORATORY ADVISORY COMMITTEE.—
9 Section 70906 of title 51, United States Code, is repealed.

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

12 (1) by redesignating section 70907 as section
13 70906; and

14 (2) in the table of sections for the chapter, by
15 striking the items relating to sections 70906 and
16 70907 and inserting the following:

“Sec. 70906. Maintaining use through at least 2030.”.

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

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

23 (b) PREFERENCE FOR UNITED STATES COMMERCIAL
24 PRODUCTS AND SERVICES.—The Administrator shall con-
25 tinue to increase the use of assets, products, and services

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

3 (c) NONCOMPETITION.—

4 (1) IN GENERAL.—Except as provided in para-
5 graph (2), the Administrator may not offer to a for-
6 eign person or a foreign government a spaceflight
7 product or service relating to the ISS, if a com-
8 parable spaceflight product or service, as applicable,
9 is offered by a private entity in the United States.

10 (2) EXCEPTION.—The Administrator may offer
11 a space-flight product or service relating to the ISS
12 to the government of a country that is a signatory
13 to the Agreement Among the Government of Can-
14 ada, Governments of Member States of the Euro-
15 pean Space Agency, the Government of Japan, the
16 Government of the Russian Federation, and the
17 Government of the United States of America Con-
18 cerning Cooperation on the Civil International Space
19 Station, signed at Washington January 29, 1998,
20 and entered into force on March 27, 2001 (TIAS
21 12927). This includes any foreign nationals that are
22 sponsored by the signatories of the Agreement.

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

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

3 (e) PROGRAM AUTHORIZATION.—

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

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

12 (A) to stimulate demand for—

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

15 (ii) spaceflight products and services;

16 and

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

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

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

24 (3) COMMERCIAL SPACE STATIONS AND HABI-
25 TATS.—

1 (A) PRIORITY.—With respect to an activity
2 to develop a commercial space station or habi-
3 tat, the Administrator shall give priority to an
4 activity for which a private entity provides a
5 share of the cost to develop and operate the ac-
6 tivity.

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

13 (C) REPORT.—Not later than 30 days
14 after the date that an award or agreement is
15 made to carry out an activity to develop a com-
16 mercial space station or habitat, the Adminis-
17 trator shall submit to the appropriate commit-
18 tees of Congress a report on the development of
19 the commercial space station or habitat, as ap-
20 plicable, that includes—

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

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

- 1 (II) fulfill the cost-share funding
2 prioritization under subparagraph (A);
3 and
4 (ii) a review of the viability of the
5 operational business case, including—
6 (I) the level of expected Govern-
7 ment participation;
8 (II) a list of anticipated non-
9 governmental and international cus-
10 tomers and associated contributions;
11 and
12 (III) an assessment of long-term
13 sustainability for the nongovernmental
14 customers, including an independent
15 assessment of the viability of the mar-
16 ket for such commercial services or
17 products.

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

20 (a) SENSE OF CONGRESS.—It is the sense of Con-
21 gress that—

- 22 (1) the United States segment of the Inter-
23 national Space Station (as defined in section 70905
24 of title 51, United States Code), which is designated

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

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

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

8 (C) advances science, technology, engineer-
9 ing, and mathematics education through use of
10 the unique microgravity environment; and

11 (D) advances human knowledge and inter-
12 national cooperation;

13 (2) after the ISS is decommissioned, the United
14 States should maintain a national microgravity lab-
15 oratory in space;

16 (3) in maintaining a national microgravity lab-
17 oratory in space, the United States should make ap-
18 propriate accommodations for different types of own-
19 ership and operation arrangements for the ISS and
20 future space stations;

21 (4) to the maximum extent practicable, a na-
22 tional microgravity laboratory in space should be
23 maintained in cooperation with international space
24 partners; and

1 (5) NASA should continue to support funda-
2 mental science research on future platforms in low-
3 Earth orbit and cislunar space, orbital and sub-
4 orbital flights, drop towers, and other microgravity
5 testing environments.

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

13 **TITLE II—SAFETY AND** 14 **TRANSPARENCY**

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

16 (a) SENSE OF CONGRESS.—It is the sense of Con-
17 gress that—

18 (1) ensuring the safety of American astronauts
19 is the top priority of NASA’s human spaceflight pro-
20 gram;

21 (2) in efforts to meet deadlines to return hu-
22 mans to the Moon, NASA should take all steps nec-
23 essary to mitigate any and all risk to crew; and

24 (3) it is the role of Congress to exercise pru-
25 dence in the use of taxpayer dollars and ensure

1 transparency to the taxpayer to the greatest extent
2 possible.

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

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

12 (2) require that any entity receiving funding for
13 the development or operation of a human spaceflight
14 element or activity make all necessary information
15 available to NASA and the appropriate government
16 oversight entities, including the NASA Advisory
17 Committee and its subcommittees, the Aerospace
18 Safety Advisory Committee and the relevant commit-
19 tees of Congress; and

20 (3) produce a public report twice a year detail-
21 ing progress towards meeting or sustaining the
22 shared safety standards and identifying areas, pro-
23 grams, or services where these standards have not
24 been met or maintained, and the associated correc-
25 tive action to address these issues.

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

7 (d) CONGRESSIONAL NOTICE.—

8 (1) Should any element of human exploration
 9 system architecture, whether owned and operated by
 10 NASA, developed and operated as a public-private
 11 partnership or procured as a commercial service,
 12 fails to meet the common safety standards estab-
 13 lished, Congress shall be notified and receive a re-
 14 port on corrective actions and options available to
 15 improve safety and resiliency of such system(s) with-
 16 in 30 days.

17 **TITLE III—U.S. NATIONAL** 18 **SECURITY**

19 **SEC. 301. CYBERSECURITY.**

20 (a) IN GENERAL.—Section 20301 of title 51, United
 21 States Code, is amended by adding at the end the fol-
 22 lowing:

23 “(c) CYBERSECURITY.—The Administrator shall up-
 24 date and improve the cybersecurity of NASA space assets
 25 and supporting infrastructure.”.

1 (b) SECURITY OPERATIONS CENTER.—

2 (1) ESTABLISHMENT.—The Administrator shall
3 maintain a Security Operations Center, to identify
4 and respond to cybersecurity threats to NASA infor-
5 mation technology systems, including institutional
6 systems and mission systems.

7 (2) INSPECTOR GENERAL RECOMMENDA-
8 TIONS.—The Administrator shall implement, to the
9 maximum extent practicable, each of the rec-
10 ommendations contained in the report of the Inspec-
11 tor General of NASA entitled “Audit of NASA’s Se-
12 curity Operations Center”, issued on May 23, 2018.

13 (c) CYBER THREAT HUNT.—

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

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

1 (d) GAO PRIORITY RECOMMENDATIONS.—The Ad-
 2 ministrator shall implement, to the maximum extent prac-
 3 ticable, the recommendations for NASA contained in the
 4 report of the Comptroller General of the United States
 5 entitled “Information Security: Agencies Need to Improve
 6 Controls over Selected High-Impact Systems”, issued May
 7 18, 2016, including—

8 (1) re-evaluating security control assessments;
 9 and

10 (2) specifying metrics for the continuous moni-
 11 toring strategy of the Administration.

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

14 Section 7(1) of the Iran, North Korea, and Syria
 15 Nonproliferation Act (Public Law 106–178; 50 U.S.C.
 16 1701 note) is amended, in the undesignated matter fol-
 17 lowing subparagraph (B), by striking “December 31,
 18 2020” and inserting “December 31, 2030”.

19 **SEC. 303. LIMITATION ON COOPERATION WITH THE PEO-**
 20 **PLE’S REPUBLIC OF CHINA.**

21 (a) IN GENERAL.—Except as provided by subsection
 22 (b), the Administrator, the Director of the Office of
 23 Science and Technology Policy, and the Chair of the Na-
 24 tional Space Council, shall not—

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

5 (A) the Government of the People’s Repub-
6 lic of China; or

7 (B) any company—

8 (i) owned by the Government of the
9 People’s Republic of China; or

10 (ii) incorporated under the laws of the
11 People’s Republic of China; and

12 (2) host official visitors from the People’s Re-
13 public of China at a facility belonging to or used by
14 NASA.

15 (b) WAIVER.—

16 (1) IN GENERAL.—The Administrator, the Di-
17 rector, or the Chair may waive the limitation under
18 subsection (a) with respect to an activity described
19 in that subsection only if the Administrator, the Di-
20 rector, or the Chair, as applicable, makes a deter-
21 mination that the activity—

22 (A) does not pose a risk of a transfer of
23 technology, data, or other information with na-
24 tional security or economic security implications

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

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

7 (2) CERTIFICATION TO CONGRESS.—Not later
8 than 30 days after the date on which a waiver is
9 granted under paragraph (1), the Administrator, the
10 Director, or the Chair, as applicable, shall submit to
11 the Committee on Commerce, Science, and Trans-
12 portation and the Committee on Appropriations of
13 the Senate and the Committee on Science, Space,
14 and Technology and the Committee on Appropria-
15 tions of the House of Representatives a written cer-
16 tification that the activity complies with the require-
17 ments in subparagraphs (A) and (B) of that para-
18 graph.

19 **SEC. 304. COUNTERING CHINESE THREATS TO U.S. ACTIVI-**
20 **TIES IN SPACE.**

21 (a) FINDINGS.—

22 (1) The Government of the People's Republic of
23 China maintains, as a national priority, a global pro-
24 gram of theft and other misappropriation of intellec-
25 tual property, and unacceptable technology transfer

1 requirements, particularly in fields of high tech-
2 nology.

3 (2) China is taking steps to establish a com-
4 manding position in the commercial launch and sat-
5 ellite sectors relying in part on aggressive state-
6 backed financing that market-driven companies can-
7 not match.

8 (3) China has engaged in an aggressive cam-
9 paign to dominate sensitive markets such as germa-
10 nium wafer production, used for nearly all special-
11 ized satellite solar panels, allowing China ownership
12 of over 70 percent of global germanium mining, re-
13 fining, and production.

14 (4) China has begun focusing on the lunar sur-
15 face and cislunar space as priorities in its space pro-
16 gram, which is indistinguishable from its armed
17 forces.

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

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

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

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

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

9 (D) U.S. cybersecurity weaknesses.

10 (2) Current steps the United States is taking to
11 protect its domestic space industry from Chinese in-
12 fluence.

13 (3) Recommendations to Congress on legislative
14 action necessary to address Chinese threats to the
15 U.S. domestic commercial launch and satellite indus-
16 tries and improve U.S. efforts to counter threats to
17 U.S. activities in space.

18 (4) Recommendations on how the U.S. Govern-
19 ment can best utilize existing Federal entities to in-
20 vestigate and act against potentially harmful Chi-
21 nese investment into the U.S. commercial space in-
22 dustry, and how the U.S. Government can bolster
23 domestic investment in critical U.S. space industry
24 technologies.

1 **SEC. 305. CONSIDERATION OF ISSUES RELATED TO CON-**
2 **TRACTING WITH ENTITIES RECEIVING AS-**
3 **SISTANCE FROM OR AFFILIATED WITH THE**
4 **PEOPLE’S REPUBLIC OF CHINA.**

5 In considering any response to a request for a pro-
6 posal, request for information, broad area announcement,
7 or any other form of request or solicitation, and in consid-
8 ering or undertaking any negotiation or conclusion of any
9 contract, agreement, or other transaction with any com-
10 mercial or non-commercial entity, the Administrator shall,
11 in consultation with appropriate Federal departments and
12 agencies, take into account the implications of any benefit
13 received by such commercial or non-commercial entity (or
14 any other commercial or non-commercial entity related
15 through ownership, control, or other affiliation to such en-
16 tity) as a result of a significant loan or other financial
17 assistance provided by—

18 (1) any governmental organization of the Peo-
19 ple’s Republic of China; or

20 (2) any other entity that is—

21 (A) majority owned or controlled by, or
22 otherwise affiliated with, any governmental or-
23 ganization of the People’s Republic of China; or

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

