

118TH CONGRESS
2D SESSION

S. 5600

To authorize programs for the National Aeronautics and Space Administration for fiscal year 2025, and for other purposes.

IN THE SENATE OF THE UNITED STATES

DECEMBER 18 (legislative day, DECEMBER 16), 2024

Ms. CANTWELL (for herself, Mr. CRUZ, Ms. SINEMA, Mr. SCHMITT, Mr. LUJÁN, and Mr. WICKER) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To authorize programs for the National Aeronautics and Space Administration for fiscal year 2025, 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 “NASA Transition Authorization Act of 2024”.

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

Sec. 1. Short title; table of contents.

Sec. 2. Definitions.

TITLE I—AUTHORIZATION OF APPROPRIATIONS

Sec. 101. Authorization of NASA for fiscal year 2025.

TITLE II—EXPLORATION

Sec. 201. Continuity of purpose for space exploration.
 Sec. 202. Artemis program.
 Sec. 203. Reaffirmation of the Space Launch System.
 Sec. 204. Human-rated lunar landing capabilities.
 Sec. 205. Advanced spacesuit capabilities.

TITLE III—SPACE OPERATIONS

Sec. 301. Maximizing United States presence in low-Earth orbit.
 Sec. 302. Commercial Low-Earth Orbit Development Program.
 Sec. 303. Transition to a commercially led low-Earth orbit economy.
 Sec. 304. Nongovernmental missions on the International Space Station.
 Sec. 305. Brief on suborbital crew missions.
 Sec. 306. Lunar communications.
 Sec. 307. Celestial time standardization.

TITLE IV—SPACE TECHNOLOGY

Sec. 401. Space Technology Mission Directorate.
 Sec. 402. SBIR phase II flexibility.
 Sec. 403. Sense of Congress on cryogenic fluid valve technology review.

TITLE V—AERONAUTICS

Sec. 501. Definitions.
 Sec. 502. Hypersonic research.
 Sec. 503. Advanced materials and manufacturing technology.
 Sec. 504. Unmanned aircraft system and advanced air mobility.
 Sec. 505. Advanced capabilities for emergency response operations.
 Sec. 506. Hydrogen aviation.
 Sec. 507. High-performance chase aircraft.
 Sec. 508. Collaboration with academia.

TITLE VI—SCIENCE

Sec. 601. Maintaining a balanced science portfolio.
 Sec. 602. Implementation of science mission cost caps.
 Sec. 603. Reexamination of decadal surveys.
 Sec. 604. Landsat.
 Sec. 605. Commercial satellite data.
 Sec. 606. Planetary science portfolio.
 Sec. 607. Planetary defense.
 Sec. 608. Lunar discovery and exploration.
 Sec. 609. Commercial lunar payload services.
 Sec. 610. Planetary and lunar operations.
 Sec. 611. Mars sample return.
 Sec. 612. Heliophysics research.
 Sec. 613. Geospace dynamics constellation.
 Sec. 614. Nancy Grace Roman Telescope.
 Sec. 615. Chandra X-ray Observatory.

TITLE VII—STEM EDUCATION

- Sec. 701. National space grant college and fellowship program.
 Sec. 702. Skilled technical workforce education outreach.

TITLE VIII—NASA POLICY

- Sec. 801. NASA advisory council.
 Sec. 802. NASA assessment of early cost estimates.
 Sec. 803. Authority for production contracts following other transaction prototype projects.
 Sec. 804. Role of the National Aeronautics and Space Administration in commercial space activities.
 Sec. 805. Restriction on Federal funds relating to certain Chinese space and scientific activities.
 Sec. 806. Reports to Congress.
 Sec. 807. Findings relating to contract flexibility.
 Sec. 808. GAO report.
 Sec. 809. NASA public-private talent program.
 Sec. 810. Mentoring.
 Sec. 811. Drinking water well replacement for Chincoteague, Virginia.
 Sec. 812. Passenger carrier use for astronaut transportation.
 Sec. 813. Rule of construction.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) ADMINISTRATOR.—The term “Adminis-
 4 trator” means the Administrator of the National
 5 Aeronautics and Space Administration.

6 (2) APPROPRIATE COMMITTEES OF CON-
 7 GRESS.—The term “appropriate committees of Con-
 8 gress” means—

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

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

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

1 (4) COMMERCIAL PROVIDER.—The term “com-
2 mercial provider” means any person providing space
3 services or space-related capabilities, primary control
4 of which is held by persons other than the Federal
5 Government, a State or local government, or a for-
6 eign government.

7 (5) CONTINUOUS HUMAN PRESENCE; CONTIN-
8 UOUS PRESENCE.—The terms “continuous human
9 presence” and “continuous presence” mean the
10 maintenance by the United States of the presence,
11 in low-Earth orbit on 1 or more space stations on
12 a permanent, on-going basis, of not fewer than—

13 (A) 1 government astronaut; or

14 (B) 1 astronaut sponsored by the United
15 States Government.

16 (6) DEEP SPACE.—The term “deep space”
17 means the region of space beyond low-Earth orbit
18 that includes cislunar space.

19 (7) GOVERNMENT ASTRONAUT.—The term
20 “government astronaut” has the meaning given such
21 term in section 50902 of title 51, United States
22 Code.

23 (8) ISS.—The term “ISS” means the Inter-
24 national Space Station.

1 (9) LOW-EARTH ORBIT.—The term “low-Earth
2 orbit” means the area encompassing Earth-centered
3 orbits at an altitude not more than 1,200 miles
4 (2,000 kilometers).

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

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

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

16 **TITLE I—AUTHORIZATION OF** 17 **APPROPRIATIONS**

18 **SEC. 101. AUTHORIZATION OF NASA FOR FISCAL YEAR 2025.**

19 For fiscal year 2025, there is authorized to be appro-
20 priated to NASA \$25,477,540,000 as follows:

21 (1) For the Exploration Systems Development
22 Mission Directorate, \$7,648,200,000.

23 (2) For the Space Operations Mission Direc-
24 torate, \$4,473,500,000.

1 (3) For the Space Technology Mission Direc-
2 torate, \$1,181,800,000.

3 (4) For the Science Mission Directorate,
4 \$7,575,700,000.

5 (5) For the Aeronautics Research Mission Di-
6 rectorate, \$965,800,000.

7 (6) For the Office of STEM Engagement,
8 \$143,500,000.

9 (7) For Safety, Security, and Mission Services,
10 \$3,044,440,000.

11 (8) For Construction and Environmental Com-
12 pliance and Restoration, \$424,100,000.

13 (9) For Inspector General, \$50,500,000.

14 **TITLE II—EXPLORATION**

15 **SEC. 201. CONTINUITY OF PURPOSE FOR SPACE EXPLORATION.**
16 **RATION.**

17 (a) FINDINGS.—Congress makes the following find-
18 ings:

19 (1) NASA continues to make progress in devel-
20 oping and testing the Space Launch System, Orion,
21 and associated ground systems, including through
22 the successful completion of the Artemis I mission in
23 November 2022 and through continued preparations
24 for the Artemis II crewed flight demonstration mis-
25 sion.

1 (2) The number of spacefaring countries is in-
2 creasing, and foreign countries have expanded activi-
3 ties for space exploration efforts, including efforts to
4 explore and use the Moon through human and
5 robotic missions.

6 (3) A strong and ambitious space exploration
7 program conducted with international and commer-
8 cial partners is important to maintaining United
9 States leadership in space and enhancing United
10 States international competitiveness.

11 (4) Clear mission objectives that tie to concrete,
12 long-term programmatic goals provide a measure to
13 ensure accountability, enhance public support for ex-
14 ploration missions, and provide a clear signal of
15 commitment to both international and domestic
16 partners.

17 (b) CONTINUITY OF EXISTING CAPABILITIES AND
18 PROGRAMS.—

19 (1) As part of the human exploration activities
20 of the Administration, including progress on Artemis
21 missions and activities, the Administrator shall con-
22 tinue development of space exploration elements pur-
23 suant to section 10811 of the National Aeronautics
24 and Space Administration Authorization Act of 2022
25 (Public Law 117–167; 51 U.S.C. 20302).

1 (2) The Administrator shall leverage the private
2 sector for logistical services to the extent practical,
3 consistent with the Moon to Mars architecture re-
4 quirements and in accordance with section 50131 of
5 title 51, United States Code.

6 (3) Congress reaffirms the sense of Congress to
7 maintain continuity of purpose as described in sec-
8 tion 201 of the National Aeronautics and Space Ad-
9 ministration Transition Authorization Act of 2017
10 (Public Law 115–10 (Public Law 115–10; 131 Stat.
11 21)).

12 **SEC. 202. ARTEMIS PROGRAM.**

13 (a) FINDINGS.—Congress makes the following find-
14 ings:

15 (1) Exploration of outer space, including explo-
16 ration of the lunar surface and cislunar space, pro-
17 vides benefits and economic opportunity, including
18 by inspiring future generations and expanding the
19 science, technology, engineering, and mathematics
20 workforce needed to sustain United States leader-
21 ship in science, space, and technology.

22 (2) The lunar south pole is home to shadowed
23 craters that may contain water ice and other
24 volatiles. Understanding the nature of lunar polar
25 volatiles, such as water ice, would advance science

1 related to the origin and evolution of volatiles in the
2 inner solar system and could facilitate the long-term
3 future of space exploration. Water ice lunar re-
4 sources have the potential to become an enabling
5 component of future space exploration missions
6 throughout the solar system, including crewed mis-
7 sions to Mars.

8 (3) Other countries have demonstrated techno-
9 logical advances and successful robotic missions for
10 lunar exploration and have announced credible plans
11 for long-term human exploration of the Moon that
12 include the intent to establish lunar bases.

13 (4) United States leadership of and measurable
14 progress on the exploration of deep space is essential
15 for guiding development of norms related to oper-
16 ations on and around the Moon and for other space
17 destinations.

18 (5) It is in the national interest of the United
19 States to hold a leadership role in discussions of fu-
20 ture norms governing activities in space, including
21 those on the lunar surface and in cislunar space.

22 (b) REQUIREMENTS.—In carrying out activities to
23 enable Artemis missions under the Moon to Mars Program
24 set forth in section 10811 of the National Aeronautics and
25 Space Administration Authorization Act of 2022 (Public

1 Law 117–167; 51 U.S.C. 20302 note), the Administrator
2 shall—

3 (1) use relevant elements set forth in section
4 10811(b)(2)(B) of the National Aeronautics and
5 Space Administration Authorization Act of 2022
6 (Public Law 117–167; 51 U.S.C. 20302 note);

7 (2) continue to ensure that the elements under
8 paragraph (1) enable the human exploration of
9 Mars, consistent with section 10811(b)(2)(C)(i) of
10 the National Aeronautics and Space Administration
11 Authorization Act of 2022 (Public Law 117–167; 51
12 U.S.C. 20302 note);

13 (3) engage with international partners, as ap-
14 propriate, in a manner that is consistent with sec-
15 tion 10811(b)(2)(C) the National Aeronautics and
16 Space Administration Authorization Act of 2022
17 (Public Law 117–167; 51 U.S.C. 20302 note), and
18 that increases redundancy, efficiency, and cost sav-
19 ings; and

20 (4) leverage capabilities provided by United
21 States commercial providers, as appropriate and
22 practicable.

23 (c) UNITED STATES COMMERCIAL PROVIDER CAPA-
24 BILITIES IN SUPPORT OF LUNAR EXPLORATION EF-
25 FORTS.—The Administrator may enter into agreements

1 with United States commercial providers or engage in pub-
2 lic-private partnerships to procure capabilities and services
3 to support the human exploration of the Moon or cislunar
4 space.

5 **SEC. 203. REAFFIRMATION OF THE SPACE LAUNCH SYS-**
6 **TEM.**

7 (a) IN GENERAL.—Congress reaffirms—

8 (1) support for the full development of capabili-
9 ties of the Space Launch System as set forth in sec-
10 tion 302(c) of the National Aeronautics and Space
11 Administration Authorization Act of 2010 (42
12 U.S.C. 18322(c)); and

13 (2) its commitment to the flight rate of the in-
14 tegrated Space Launch System and Orion crew vehi-
15 cle missions set forth in section 10812(b) of the Na-
16 tional Aeronautics and Space Administration Au-
17 thorization Act of 2022 (Public Law 117–167; 51
18 U.S.C. 20301 note).

19 (b) BRIEFING.—Not later than 180 days after the
20 date of the enactment of this Act, the Administrator shall
21 provide the appropriate committees of Congress with a
22 briefing on NASA’s progress towards achieving the flight
23 rate referred to in subsection (a)(2) and the expected
24 launch of the integrated Space Launch System and Orion

1 crew vehicle missions after which such cadence shall be
2 achieved.

3 **SEC. 204. HUMAN-RATED LUNAR LANDING CAPABILITIES.**

4 (a) REAFFIRMATION.—Congress reaffirms that the
5 Moon to Mars program set forth in section 10811 of the
6 National Aeronautics and Space Administration Author-
7 ization Act of 2022 (Public Law 117–167; 51 U.S.C.
8 20302 note) shall include human-rated lunar landing sys-
9 tems.

10 (b) HUMAN-RATED LUNAR LANDING CAPABILI-
11 TIES.—

12 (1) IN GENERAL.—The Administrator shall
13 support the development and demonstration of, and
14 shall obtain, human-rated lunar landing capabilities
15 to further the goals of the human exploration road-
16 map under section 432 of the National Aeronautics
17 and Space Administration Transition Authorization
18 Act of 2017 (Public Law 115–10; 51 U.S.C. 20302
19 note) and the Moon to Mars Program set forth in
20 section 10811 of the National Aeronautics and
21 Space Administration Authorization Act of 2022
22 (Public Law 117–167; 51 U.S.C. 20302 note).

23 (2) RELEVANT REQUIREMENTS.—The Adminis-
24 trator shall ensure that such human-rated lunar
25 landing capabilities meet all relevant requirements,

1 including requirements of the Moon to Mars pro-
2 gram, and for human-rating and certification.

3 (3) UNITED STATES COMMERCIAL PROVIDER.—

4 Any commercial provider from which the Adminis-
5 trator obtains human-rated lunar landing capabili-
6 ties must be a United States commercial provider.

7 (4) DUTIES OF ADMINISTRATOR.—In carrying
8 out paragraph (1)—

9 (A) the Administrator may include
10 uncrewed lunar landing services; and

11 (B) the Administrator shall, subject to the
12 availability of appropriations for such purpose,
13 seek to obtain capabilities from not fewer than
14 2 commercial providers.

15 **SEC. 205. ADVANCED SPACESUIT CAPABILITIES.**

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

17 (1) Space suits and associated extravehicular
18 activity (EVA) technologies are critical exploration
19 technologies that are necessary for future human
20 deep space exploration efforts, including crewed mis-
21 sions to the Moon.

22 (2) The NASA civil service workforce at the
23 Johnson Space Center provides unique capabilities
24 to design, integrate, and validate Space Suits and
25 associated EVA technologies.

1 (3) Maintaining a strong NASA core com-
2 petency in the design, development, manufacture,
3 and operation of space suits and related technologies
4 allows NASA to be an informed purchaser of com-
5 petitively awarded commercial space suits and sub-
6 components.

7 (4) According to a 2018 NASA Office of In-
8 spector General (OIG) report, current EVAs space
9 suits, the Extravehicular Mobility Units (EMUs),
10 were developed in the late 1970s, are reaching the
11 end of their useful life, have experienced multiple
12 maintenance issues that threaten astronaut lives,
13 and no longer accommodate the varying sizes of a
14 diverse astronaut corps.

15 (5) The same NASA OIG report found that
16 “manufacturers of several critical suit components,
17 including the very fibers of the suits, have now gone
18 out of business”, which further reinforces the impor-
19 tance of NASA’s role in maintaining a space suit
20 core competency and limiting the risk posed by out-
21 sourcing key national capabilities.

22 (6) The private sector currently is developing
23 space suit capabilities.

1 (7) Testing space suits and related technologies
2 on the International Space Station could reduce risk
3 and improve safety of such suits and technologies.

4 (b) REQUIREMENT.—The Administrator shall obtain
5 advanced spacesuit capabilities necessary to achieve the
6 goals of NASA’s human spaceflight exploration programs.

7 (c) ELIGIBILITY.—Any commercial provider from
8 which the Administrator obtains advanced spaceflight ca-
9 pabilities shall be a United States commercial provider.

10 (d) PRESERVING SPACESUIT EXPERTISE.—

11 (1) In carrying out subsection (b), NASA shall
12 maintain the internal expertise necessary to develop
13 space suits for both extravehicular activity and sur-
14 face operations, including through partnerships with
15 the private sector.

16 (2) The Johnson Space Center shall continue to
17 manage NASA’s spacesuit and extravehicular activ-
18 ity programs.

19 (e) BRIEFING.—

20 (1) IN GENERAL.—Not later than 180 days
21 after the date of the enactment of this Act, the Ad-
22 ministrator shall provide the appropriate committees
23 of Congress with a briefing on NASA’s plans for—

24 (A) in-space testing of advanced spacesuit
25 capabilities, including—

1 (i) space suit tests that shall be con-
2 ducted in microgravity in low-Earth orbit;
3 and

4 (ii) space suit tests that shall be con-
5 ducted on the International Space Station
6 before decommissioning of the Inter-
7 national Space Station;

8 (B) transitioning from existing spacesuits
9 in use on the International Space Station to use
10 of advanced spacesuit capabilities;

11 (C) future use of advanced spacesuit capa-
12 bilities by government astronauts with any non-
13 governmental platform in low-Earth orbit that
14 is certified for use by the Administration for
15 government astronauts; and

16 (D) disposition of retired spacesuits used
17 on the Space Shuttle or the International Space
18 Station.

19 (2) ELEMENTS.—The briefing required by
20 paragraph (1) shall include—

21 (A) a detailed justification of compliance
22 with section 30301 of title 51, United States
23 Code; and

1 (B) a detailed certification and justifica-
2 tion of compliance with section 50503 of title
3 51, United States Code.

4 **TITLE III—SPACE OPERATIONS**

5 **SEC. 301. MAXIMIZING UNITED STATES PRESENCE IN LOW-** 6 **EARTH ORBIT.**

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

9 (1) it is in the national and economic security,
10 foreign policy, and scientific interests of the United
11 States to maintain a continuous presence in low-
12 Earth orbit;

13 (2) low-Earth orbit include a mix of crewed and
14 uncrewed capabilities;

15 (3) low-Earth orbit should be used to advance
16 human space exploration, scientific discoveries, and
17 United States economic competitiveness and com-
18 mercial participation; and

19 (4) until the date on which a commercial low-
20 Earth orbit destination capability achieves an initial
21 operating capability, it is in the national and eco-
22 nomic security, foreign policy, and scientific interests
23 of the United States to maintain and support the
24 International Space Station in the same effective

1 manner that has made the International Space Sta-
2 tion successful for many years.

3 (b) CONTINUOUS HUMAN PRESENCE REQUIRE-
4 MENT.—The Administrator shall maintain the capability
5 for a continuous human presence to advance human space
6 exploration, scientific discoveries, international coopera-
7 tion and United States economic competitiveness and com-
8 mercial participation in low-Earth orbit through and be-
9 yond the useful life of the International Space Station.

10 (c) COMMERCIAL LOW-EARTH ORBIT DEVELOPMENT
11 PROGRAM.—

12 (1) IN GENERAL.—The Administrator may es-
13 tablish, within the Space Operations Mission Direc-
14 torate, a Commercial Low-Earth Orbit Development
15 Program for the purpose of procuring, from 1 or
16 more United States commercial providers, services to
17 support activities described in subsection (b) in low-
18 Earth orbit, as appropriate and practicable.

19 (2) CONSOLIDATION.—In establishing a pro-
20 gram under paragraph (1), the Administrator may,
21 as appropriate and practicable, consolidate programs
22 of other National Aeronautics and Space Adminis-
23 tration centers that support such activities.

24 (d) PROPER SUPPORT.—

1 (1) IN GENERAL.—To adequately maintain the
2 effective use of the International Space Station, the
3 Administrator shall, subject to the availability of ap-
4 propriations, seek to maintain the same average
5 number and frequency of commercial crew and cargo
6 flights, tempo of operations and crew size, and re-
7 search throughput until such time as 1 or more com-
8 mercial space stations is capable of providing serv-
9 ices to the National Aeronautics and Space Adminis-
10 tration.

11 (2) MANAGED TRANSITION.—

12 (A) IN GENERAL.—When 1 or more com-
13 mercial space stations is capable of providing
14 services to the National Aeronautics and Space
15 Administration, the Administrator shall begin
16 the process of an orderly, managed transition of
17 operations from the International Space Station
18 to commercial providers in such a way as to
19 maintain a continuous human presence.

20 (B) MIXED PORTFOLIO.—In transitioning
21 operations under subparagraph (A), the Admin-
22 istrator shall seek to maintain the same average
23 number and frequency of commercial crew and
24 cargo flights to, and tempo of operations and
25 crew size and research throughput in, low-

1 Earth orbit, managed across a portfolio that in-
2 cludes the International Space Station and 1 or
3 more commercial space stations.

4 (3) DE-ORBIT VEHICLE.—

5 (A) IN GENERAL.—The Administrator
6 shall develop a de-orbit vehicle for the eventual
7 decommissioning of the International Space
8 Station.

9 (B) ANNUAL REPORT.—Not less frequently
10 than annually until the date on which the ISS
11 is decommissioned, the Administrator shall in-
12 clude, in the budget justification materials sub-
13 mitted to Congress in support of the budget of
14 the President for a fiscal year pursuant to sec-
15 tion 1105 of title 31, United States Code, a re-
16 port that—

17 (i) contains a description of the an-
18 nual and lifecycle costs for activities re-
19 lated to the de-orbit of the International
20 Space Station; and

21 (ii) describes the manner in which
22 such costs are shared among ISS partners.

23 (e) WAIVER.—

24 (1) IN GENERAL.—The Administrator may
25 waive the application of subsections (b) and (d) if

1 the Administrator determines that technical issues
2 exist that prohibit the continued safe and effective
3 operation of the International Space Station, includ-
4 ing issues with crew and cargo flights.

5 (2) NOTIFICATION.—The Administrator shall
6 notify the Committee on Commerce, Science, and
7 Transportation of the Senate and the Committee on
8 Science, Space, and Technology of the House of
9 Representatives of the exercise of a waiver authority
10 under paragraph (1).

11 **SEC. 302. COMMERCIAL LOW-EARTH ORBIT DEVELOPMENT**
12 **PROGRAM.**

13 (a) CONTINUOUS CREW PRESENCE AND ACTIVITY.—
14 The Administrator shall use commercial low-Earth orbit
15 destinations to ensure the continuous presence of United
16 States Government crew to advance human space explo-
17 ration, scientific discoveries, and United States economic
18 competitiveness and commercial participation in low-Earth
19 orbit.

20 (b) SUPPORT AND FUNDING.—The Administrator,
21 subject to the availability of appropriations, shall support
22 and fund the Commercial Low-Earth Orbit Development
23 Program to provide a commercially supported follow-on
24 capability to the International Space Station.

1 (c) DEVELOPMENT OF COMMERCIAL LOW-EARTH
2 ORBIT DESTINATIONS.—

3 (1) SOLICITATION.—

4 (A) IN GENERAL.—The Administrator
5 shall issue a solicitation using full and open
6 competition to identify commercial entities ca-
7 pable of providing services to the National Aer-
8 onautics and Space Administration on commer-
9 cial destinations in low-Earth orbit.

10 (B) REQUIREMENTS.—Not later than
11 March 31, 2025, the Administrator shall release
12 a document outlining the requirements for a
13 commercial destination in low-Earth orbit to fa-
14 cilitate the development of a request for pro-
15 posal for services to be provided to National
16 Aeronautics and Space Administration.

17 (C) FINAL REQUEST FOR PROPOSAL.—Not
18 later than September 30, 2025, the Adminis-
19 trator shall make available the final request for
20 proposal to solicit industry proposals for such
21 services.

22 (2) SELECTION.—

23 (A) IN GENERAL.—Not later than March
24 31, 2026, the Administrator shall select from
25 among commercial entities that submit a pro-

posals in response to the solicitation under paragraph (1), subject to the availability of meritorious proposals and appropriations, 2 or more commercial low-Earth orbit destinations to be developed, with the goal of establishing, not later than December 31, 2030, not fewer than 1 such destination capable of—

(i) providing safe, efficient, and reliable operations for continuous human presence in low-Earth orbit; and

(ii) offering such services to the National Aeronautics and Space Administration.

(B) USE OF FUNDS.—Funds provided by the Administrator to the Commercial Low-Earth Orbit Development Program shall be used to support the selection described in subparagraph (A).

(d) TRANSITION PERIOD.—The Administrator may not de-orbit the International Space Station until the date on which a commercial low-Earth orbit destination space station has reached initial operational capability in low-Earth orbit, in accordance with the managed transition process described in section 301(d)(2).

1 (e) WAIVER.—The Administrator may waive the ap-
 2 plication of subsection (d) if—

3 (1) the Administrator determines that technical
 4 issues exist that prohibit the safe and effective oper-
 5 ation of the International Space Station; or

6 (2) a commercial system is capable of providing
 7 safe, efficient, and reliable operations for National
 8 Aeronautics and Space Administration missions, in-
 9 cluding not fewer than 2 mission-related flights.

10 **SEC. 303. TRANSITION TO A COMMERCIALLED LOW-**
 11 **EARTH ORBIT ECONOMY.**

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

14 (1) the transition from the International Space
 15 Station to commercial destinations to support a con-
 16 tinuous human presence in low-Earth orbit is in the
 17 national and economic security interests of the
 18 United States; and

19 (2) the United States should—

20 (A) facilitate partnerships between the
 21 Federal Government, international partners,
 22 and the commercial space sector, including
 23 through the purchase of commercial low-Earth
 24 orbit services, to ensure the evolution of an eco-
 25 system with private sector development of new

1 technologies, hardware, processes, capabilities,
2 and other commercial low-Earth orbit service
3 offerings; and

4 (B) continue to consider private sector pro-
5 posals that further the development of the low-
6 Earth orbit economy in which the National Aer-
7 onautics and Space Administration is one of
8 many customers.

9 (b) AUTHORIZATION.—The Administrator shall au-
10 thorize activities on the International Space Station and
11 within the National Aeronautics and Space Administration
12 that develop infrastructure, hardware, processes, capabili-
13 ties, technologies, and personnel to enable the development
14 of commercial low-Earth orbit destinations and a United
15 States-led low-Earth orbit economy.

16 (c) COMMERCIAL ACTIVITIES.—The Administrator
17 may permit the use of the International Space Station,
18 in a manner consistent with the policy and purposes of
19 the Administration under section 20102 of title 51, United
20 States Code—

21 (1) to carry out the activities described in sub-
22 section (b); and

23 (2) to conduct—

24 (A) science and technology research with
25 commercial applications; and

1 (B) marketing and sponsorship of services
2 and products on a cost-reimbursable basis.

3 (d) REPORTS.—Section 50111 of title 51, United
4 States Code, is amended by striking subsection (c) and
5 inserting the following:

6 “(c) LOW-EARTH ORBIT TRANSITION PLAN.—

7 “(1) IN GENERAL.—The Administrator, in co-
8 ordination with the ISS management entity (as de-
9 fined in section 2 of the National Aeronautics and
10 Space Administration Transition Authorization Act
11 of 2017 (Public Law 115–10)), the commercial low-
12 Earth orbit management entity, the commercial crew
13 management entity, International Space Station
14 partners, and the scientific user community shall de-
15 velop a plan to transition from the current regime
16 that relies heavily on Administration sponsorship to
17 a regime where the United States Government is one
18 of many customers of a low-Earth orbit nongovern-
19 mental human space flight enterprise.

20 “(2) BRIEFING.—Not later than April 1, 2025,
21 and annually thereafter until the date on which the
22 International Space Station has de-orbited and not
23 fewer than 1 commercial destination supports a con-
24 tinuous presence in low-Earth orbit, the Adminis-
25 trator shall provide the Committee on Commerce,

1 Science, and Transportation of the Senate and the
2 Committee on Science, Space, and Technology of the
3 House of Representatives with a briefing that in-
4 cludes—

5 “(A) an evaluation of the service life of the
6 International Space Station through 2030, as a
7 unique scientific, commercial, and space explo-
8 ration-related facility, including—

9 “(i) the cost associated with extending
10 the service life of the International Space
11 Station through 2030;

12 “(ii) an assessment of the technical
13 limiting factors of the service life of the
14 International Space Station; and

15 “(iii) such other information as may
16 be necessary to fully describe the justifica-
17 tion for and feasibility of extending the
18 service life of the International Space Sta-
19 tion, including the potential scientific or
20 technological benefits to the Federal Gov-
21 ernment, the public, or academic or com-
22 mercial entities;

23 “(B) an identification of barriers to the de-
24 velopment and commercialization of the low-
25 Earth orbit economy, including potential policy,

1 regulatory frameworks, research security proto-
2 cols, and intellectual property and data protec-
3 tion laws, that could prohibit—

4 “(i) commercial research and develop-
5 ment on the International Space Station;
6 or

7 “(ii) expansion of a userbase, other
8 than the Administration, for commercial
9 destinations in low-Earth orbit;

10 “(C) the steps the Administration is taking
11 to eliminate barriers described in subparagraph
12 (B);

13 “(D) an identification of the necessary ac-
14 tions and an estimate of the costs to de-orbit
15 the International Space Station at the end of
16 its service life;

17 “(E) the status of the actions identified
18 under subparagraph (D);

19 “(F) the impact on the Commercial Low-
20 Earth Orbit Development Program, the Moon
21 to Mars program, and any other human explo-
22 ration program of extending the service life of
23 International Space Station beyond 2030;

24 “(G) a summary of the status of the tran-
25 sition from the International Space Station to

1 commercial destinations in low-Earth orbit, in-
2 cluding—

3 “(i) the status of the prospects for ac-
4 complishing future mission requirements,
5 space exploration objectives, recommenda-
6 tions and schedules under the current Na-
7 tional Academies of Sciences, Engineering,
8 and Medicine Decadal Survey on Biological
9 and Physical Sciences in Space, and other
10 research objectives to maintain United
11 States leadership in scientific and commer-
12 cial discovery on future commercially led
13 low-Earth orbit platforms or migration of
14 such objectives to cis-lunar space (as de-
15 fined in section 2 of the National Aero-
16 nautics and Space Administration Transi-
17 tion Authorization Act of 2017 (Public
18 Law 115–10);

19 “(ii) a description of the commercial
20 low-Earth orbit destination services pro-
21 curement strategy, including status of the
22 commercial low-Earth orbit destination
23 procurement timeline and the schedule for
24 attaining operational capacity of such des-

1 tinations after contract awards are made;
2 and

3 “(iii) a description and schedule of
4 major milestones and the manner in which
5 such milestones relate to de-orbiting the
6 International Space Station; and

7 “(H) an evaluation of the functions, roles,
8 and responsibilities for management and oper-
9 ation of the Commercial Low-Earth Orbit De-
10 velopment Program, including an identification
11 of—

12 “(i) such functions, roles, and respon-
13 sibilities the Federal Government could re-
14 tain during and at the end of the transi-
15 tion from the International Space Station
16 to commercial destinations;

17 “(ii) such functions, roles, and respon-
18 sibilities that would be transferred to the
19 commercial space sector;

20 “(iii) the metrics that would indicate
21 the readiness and ability of the commercial
22 space sector to assume the functions, roles,
23 and responsibilities identified under clause
24 (ii); and

“(iv) any legislative changes, and any changes to any agreement or other document, necessary to enable the mission requirements, objectives, steps identified under subparagraph (C), and recommendations and schedules described in subparagraph (G)(i).

“(3) LOW-EARTH ORBIT DEFINED.—In this subsection, the term ‘low-Earth orbit’ means the area encompassing Earth-centered orbits at an altitude not more than 1,200 miles (2,000 kilometers).”.

SEC. 304. NONGOVERNMENTAL MISSIONS ON THE INTERNATIONAL SPACE STATION.

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

(1) nongovernmental missions involving crew or spaceflight participants on the International Space Station carried out, as appropriate, pursuant to NASA policies and procedures, and Federal Government laws and regulations, can provide lessons and learning experiences for both government and nongovernment entities to inform the development of future commercial low-Earth orbit platforms and a low-Earth orbit economy; and

1 (2) the Administrator should share lessons
2 learned from nongovernmental missions on the
3 International Space Station to advance the commer-
4 cial human spaceflight industry, to promote the safe-
5 ty of future commercial low-Earth orbit platforms,
6 and to inform the evolution of policies guiding such
7 activities in low-Earth orbit.

8 (b) NONGOVERNMENTAL MISSIONS ON THE ISS.—
9 The Administrator may enter into 1 or more agreements
10 to enable 1 or more United States commercial providers
11 to conduct nongovernmental missions on the International
12 Space Station pursuant to NASA policies and procedures,
13 and Federal government laws and regulations.

14 (c) DEFINITIONS.—In this section, the terms “crew”
15 and “spaceflight participant” have the meanings given
16 such terms in section 50902 of title 51, United States
17 Code.

18 **SEC. 305. BRIEF ON SUBORBITAL CREW MISSIONS.**

19 Not later than 180 days after the date of the enact-
20 ment of this Act, the Administrator shall provide the ap-
21 propriate committees of Congress with a briefing on the
22 costs, benefits, risks, training requirements, and policy or
23 legal implications, including liability matters, of launching
24 United States Government personnel on commercial sub-
25 orbital vehicles.

1 **SEC. 306. LUNAR COMMUNICATIONS.**

2 (a) FINDINGS.—Congress makes the following find-
3 ings:

4 (1) Reliable communication and navigation ca-
5 pabilities are essential for sustainable human and
6 robotic exploration of the Moon.

7 (2) Fostering the development of commercial
8 capabilities can accelerate the deployment of lunar
9 communication and navigation services.

10 (b) AUTHORIZATION.—The Administrator is author-
11 ized to develop a robust and resilient architecture for lunar
12 communications and navigation to support the Adminis-
13 tration’s human and robotic lunar exploration activities.

14 (c) STUDY AND PLAN.—To inform the development
15 described in subsection (b), the Administrator shall con-
16 duct a study and develop a plan—

17 (1) to enable interoperable communications and
18 navigation services for cislunar missions;

19 (2) to work with the private sector, other Fed-
20 eral agencies, and, as appropriate, international
21 partners to establish technical standards, consistent
22 with section 12(d) of the National Technology
23 Transfer and Advancement Act of 1995 (Public Law
24 104–113), protocols, and interface requirements for
25 cislunar communications and navigation services and
26 systems;

1 (3) to support NASA lunar activities;

2 (4) to leverage NASA's space technology re-
3 search, development, and demonstration activities re-
4 lated to space communications and navigation; and

5 (5) to evaluate the opportunities, benefits, feasi-
6 bility, and challenges of the potential use of commer-
7 cial cislunar communication and navigation services,
8 as appropriate, by United States commercial pro-
9 viders.

10 **SEC. 307. CELESTIAL TIME STANDARDIZATION.**

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

13 (1) United States leadership of a sustained
14 presence on the Moon and in deep space exploration
15 is important for advancing science, exploration, com-
16 mercial growth, and international partnership;

17 (2) the Artemis and Moon to Mars program of
18 the National Aeronautics and Space Administration
19 will involve governmental, commercial, academic, and
20 international partners where there is a need for
21 interoperability between systems;

22 (3) the use of Coordinated Universal Time has
23 challenges when used beyond Earth at other celestial
24 bodies due to relativistic effects;

1 (4) the United States should lead in developing
2 time standardization for the Moon and other celes-
3 tial bodies other than Earth to support interoper-
4 ability and safe and sustainable operations; and

5 (5) development of such standardization will ad-
6 vance United States leadership in standards setting
7 for global competitiveness, and will benefit other
8 spacefaring countries and entities.

9 (b) DEVELOPMENT OF CELESTIAL TIME STANDARD-
10 IZATION.—The Administrator, in consultation with the Di-
11 rector of the Office of Science and Technology Policy, shall
12 conduct the following activities:

13 (1) Enable the development of celestial time
14 standardization, including by leading the study of,
15 and development of a definition for, a coordinated
16 lunar time.

17 (2) Develop a strategy to implement a coordi-
18 nated lunar time that would support future oper-
19 ations and infrastructure on and around the Moon.

20 (3) In carrying out paragraphs (1) and (2)—

21 (A) coordinate with relevant Federal enti-
22 ties, including the Department of Commerce,
23 the Department of Defense, the Department of
24 State, and the Department of Transportation;
25 and

1 (B) consult with relevant—

2 (i) private sector entities;

3 (ii) academic entities; and

4 (iii) international standards-setting
5 bodies.

6 (4) Incorporate the following features of a co-
7 ordinated lunar time, to the extent practicable, in
8 the development of the strategy developed under
9 paragraph (2):

10 (A) Traceability to Coordinated Universal
11 Time.

12 (B) Accuracy sufficient to support preci-
13 sion navigation and science.

14 (C) Resilience to loss of contact with
15 Earth.

16 (D) Scalability to space environments be-
17 yond the Earth-Moon system.

18 (c) BRIEFING.—Not later than 2 years after the date
19 of the enactment of this Act, the Administrator shall pro-
20 vide the Committee on Commerce, Science, and Transpor-
21 tation of the Senate and the Committee on Science, Space,
22 and Technology of the House of Representatives with a
23 briefing on the strategy developed pursuant to subsection
24 (b)(2), including relevant plans, timelines, and resources

1 required for the implementation of a coordinated lunar
2 time pursuant to such strategy.

3 **TITLE IV—SPACE TECHNOLOGY**

4 **SEC. 401. SPACE TECHNOLOGY MISSION DIRECTORATE.**

5 (a) SENSE OF CONGRESS.—It is the sense of Con-
6 gress that an independent Space Technology Mission Di-
7 rectorate is critical to ensuring continued investments in
8 the development of technologies for missions across the
9 portfolio of NASA, including science, aeronautics, and
10 human exploration.

11 (b) SPACE TECHNOLOGY MISSION DIRECTORATE.—
12 The Administrator shall maintain a Space Technology
13 Mission Directorate consistent with section 702 of the Na-
14 tional Aeronautics and Space Administration Transition
15 Authorization Act of 2017 (Public Law 115–10; 51 U.S.C.
16 20301 note).

17 **SEC. 402. SBIR PHASE II FLEXIBILITY.**

18 Section 9 of the Small Business Act (15 U.S.C. 638)
19 is amended in subsection (cc) by striking “and the Depart-
20 ment of Education” and inserting “the Department of
21 Education, and the National Aeronautics and Space Ad-
22 ministration”.

1 **SEC. 403. SENSE OF CONGRESS ON CRYOGENIC FLUID**
 2 **VALVE TECHNOLOGY REVIEW.**

3 It is the sense of Congress that advancing cryogenic
 4 fluid valve technology would support the Administration's
 5 efforts to improve cryogenic fluid management and im-
 6 prove space vehicle reliability and efficiency.

7 **TITLE V—AERONAUTICS**

8 **SEC. 501. DEFINITIONS.**

9 In this title:

10 (1) **ADVANCED AIR MOBILITY; AAM.**—The terms
 11 “advanced air mobility” and “AAM” mean a trans-
 12 portation system that is comprised of urban air mo-
 13 bility and regional air mobility using manned or un-
 14 manned aircraft.

15 (2) **REGIONAL AIR MOBILITY.**—The term “re-
 16 gional air mobility” means the movement of pas-
 17 sengers or property by air between 2 points using an
 18 airworthy aircraft that—

19 (A) has advanced technologies, such as dis-
 20 tributed propulsion, vertical takeoff and land-
 21 ing, powered lift, nontraditional power systems,
 22 or autonomous technologies;

23 (B) has a maximum takeoff weight of
 24 greater than 1,320 pounds; and

25 (C) is not urban air mobility.

1 (3) UNMANNED AIRCRAFT SYSTEM.—The term
 2 “unmanned aircraft system” has the meanings given
 3 such term in section 44801 of title 49, United
 4 States Code.

5 (4) URBAN AIR MOBILITY.—The term “urban
 6 air mobility” means the movement of passengers or
 7 property by air between 2 points in different cities
 8 or 2 points within the same city using an airworthy
 9 aircraft that—

10 (A) has advanced technologies, such as dis-
 11 tributed propulsion, vertical takeoff and land-
 12 ing, powered lift, nontraditional power systems,
 13 or autonomous technologies; and

14 (B) has a maximum takeoff weight of
 15 greater than 1,320 pounds.

16 **SEC. 502. HYPERSONIC RESEARCH.**

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

19 (1) basic and applied hypersonic research—

20 (A) is critical for enabling the development
 21 of advanced high-speed aeronautical and space
 22 systems; and

23 (B) can improve understanding of tech-
 24 nical challenges related to high-speed and reus-
 25 able vehicle technologies, including those related

1 to propulsion, noise, advanced materials, and
2 entry, descent, and landing operations;

3 (2) investments in hypersonic research are crit-
4 ical to sustaining United States global leadership in
5 space and aeronautics; and

6 (3) NASA efforts to study hypersonic re-
7 search—

8 (A) should not duplicate, and may com-
9 plement, research supported by the Department
10 of Defense; and

11 (B) should be conducted in partnership
12 with universities and industry, as appropriate.

13 (b) HYPERSONIC RESEARCH.—The Administrator, in
14 coordination with the Administrator of the Federal Avia-
15 tion Administration and the Secretary of Defense, as ap-
16 propriate, and in consultation with industry and academia,
17 shall continue to carry out basic and applied hypersonic
18 research.

19 (c) HYPERSONIC RESEARCH ROADMAP.—

20 (1) IN GENERAL.—Not later than 180 days
21 after the date of the enactment of this Act, the Ad-
22 ministrator, in consultation with the Administrator
23 of the Federal Aviation Administration, the Sec-
24 retary of Defense, industry, and academic institu-
25 tions, shall update the hypersonic research roadmap

1 required under section 603 of the National Aero-
2 nautics and Space Administration Transition Au-
3 thorization Act of 2017 (Public Law 115–10; 131
4 Stat. 55).

5 (2) CONSIDERATIONS.—In updating the re-
6 search roadmap, the Administrator may consider—

7 (A) advancements in—

8 (i) system level design, analysis, and
9 validation of hypersonic aircraft tech-
10 nologies;

11 (ii) propulsion capabilities and tech-
12 nologies;

13 (iii) vehicle technologies, including ve-
14 hicle flow physics and vehicle thermal man-
15 agement associated with aerodynamic heat-
16 ing;

17 (iv)(I) advanced materials, including
18 materials capable of withstanding high
19 temperatures;

20 (II) demonstrating durable materials;
21 and

22 (III) efforts to apply such materials;
23 and

1 (v) other areas of hypersonic research
2 as determined appropriate by the Adminis-
3 trator; and

4 (B) data trends regarding sonic boom over-
5 pressures associated with hypersonic aircraft.

6 (d) REPORT AND BRIEFING.—Not later than 1 year
7 after the date of the enactment of this Act, the Adminis-
8 trator shall—

9 (1) submit to the appropriate committees of
10 Congress the updated research roadmap under sub-
11 section (c); and

12 (2) provide the appropriate committees of Con-
13 gress with a briefing on the research conducted
14 under subsection (b), including with respect to the
15 manner in which such research aligns with such up-
16 dated research roadmap.

17 **SEC. 503. ADVANCED MATERIALS AND MANUFACTURING**
18 **TECHNOLOGY.**

19 (a) REPORT.—Not later than 180 days after the date
20 of the enactment of this Act, the Administrator shall sub-
21 mit to the appropriate committees of Congress a report
22 on the status of NASA activities relating to subsections
23 (e) and (f) of section 10831 of the National Aeronautics
24 and Space Administration Authorization Act of 2022
25 (Public Law 117–167; 51 U.S.C. 40102 note).

1 (b) UPDATE AND BRIEFING.—Not later than 2 years
2 after the date on which the report required by subsection
3 (a) is submitted, the Administrator shall—

4 (1) submit to the appropriate committees of
5 Congress an update to the findings contained in
6 such report; and

7 (2) provide the appropriate committees of Con-
8 gress with a briefing on such update.

9 **SEC. 504. UNMANNED AIRCRAFT SYSTEM AND ADVANCED**
10 **AIR MOBILITY.**

11 The Administrator shall continue research, as appro-
12 priate and necessary, in collaboration with the Adminis-
13 trator of Federal Aviation Administration, the heads of
14 other relevant Federal agencies, and appropriate rep-
15 resentatives of academia and industry, on unmanned air-
16 craft systems and advanced air mobility.

17 **SEC. 505. ADVANCED CAPABILITIES FOR EMERGENCY RE-**
18 **SPONSE OPERATIONS.**

19 (a) IN GENERAL.—The Administrator may continue
20 to conduct research and development activities under the
21 Advanced Capabilities for Emergency Response Oper-
22 ations (ACERO) project, or appropriate successor project
23 or projects, to improve aerial responses to wildfires.

24 (b) BRIEFING.—

1 (1) IN GENERAL.—Not later than 180 days
2 after the date of the enactment of this Act, the Ad-
3 ministrator shall provide the appropriate committees
4 of Congress with a briefing on ongoing research and
5 development activities related to improving aerial re-
6 sponses to wildfires.

7 (2) ELEMENTS.—The briefing required by
8 paragraph (1) shall include the following:

9 (A) An identification of any topic related
10 to improvement of aerial responses to wildfires
11 that could benefit from further research.

12 (B) A description of collaboration with
13 other relevant Federal agencies.

14 (C) A description of any continuing efforts
15 under this section.

16 (D) Any other information the Adminis-
17 trator considers appropriate.

18 **SEC. 506. HYDROGEN AVIATION.**

19 (a) IN GENERAL.—Subject to the availability of ap-
20 propriations for such purpose, the Administrator may
21 carry out research on emerging technologies related to hy-
22 drogen aviation.

23 (b) REPORT.—Not later than 180 days after the date
24 of the enactment of this Act, the Administrator shall pro-
25 vide the appropriate committees of Congress with a brief-

1 ing on the ongoing research under subsection (a) that in-
2 cludes—

3 (1) an identification of any agency with which
4 NASA has partnered on such research; and

5 (2) a description of anticipated further actions
6 and activities related to the topic of hydrogen avia-
7 tion.

8 **SEC. 507. HIGH-PERFORMANCE CHASE AIRCRAFT.**

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

11 (1) NASA programs benefit from and rely upon
12 high-performance chase aircraft for providing re-
13 search and mission support; and

14 (2) NASA currently faces maintenance chal-
15 lenges related to its aging high-performance aircraft
16 fleet, which is resulting in increased program costs.

17 (b) BRIEFING.—Not later than 60 days after the date
18 of the enactment of this Act, and biannually thereafter,
19 the Administrator shall provide the appropriate commit-
20 tees of Congress with a briefing on the strategy of NASA
21 relating to the following:

22 (1) Collaboration with the Department of De-
23 fense on efforts for research and flight asset sharing
24 to support NASA’s research mission support and
25 pilot training requirements.

1 (2) Efforts to seek aircraft parts and engines to
 2 keep NASA’s current fleet of chase aircraft oper-
 3 ational, including potential use of 3D additive manu-
 4 factured parts.

5 (3) Strategies for acquiring or using through
 6 loan, sharing, or other agreements, as appropriate,
 7 Department of Defense aircraft to support NASA’s
 8 research and mission support activities, as required.

9 **SEC. 508. COLLABORATION WITH ACADEMIA.**

10 It is the sense of Congress that—

11 (1) colleges and universities are hubs of re-
 12 search and innovation, with expertise in various
 13 fields of science and aeronautics;

14 (2) collaborating with academia allows NASA to
 15 access cutting-edge research and expertise that can
 16 further enable advancements in aeronautics research
 17 and technology and address complex aeronautical
 18 challenges;

19 (3) a cutting-edge civil aeronautics research and
 20 development program can inspire the next genera-
 21 tion to pursue education and careers in science,
 22 technology, engineering, and mathematics, including
 23 aeronautics; and

24 (4) opportunities for students to participate in
 25 NASA-supported academic research and develop-

ment projects, such as the University Leadership Initiative, the University Students Research Challenge, the National Space Grant College and Fellowship Project, and related aeronautic projects and competitions, contributes to training the next generation and developing the aeronautics workforce to support continued United States leadership and economic growth in civil aeronautics and aviation.

TITLE VI—SCIENCE

SEC. 601. MAINTAINING A BALANCED SCIENCE PORTFOLIO.

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

(1) a balanced and adequately funded set of activities consisting of research and analysis grant programs, technology development, suborbital research activities, and small, medium, and large space missions, contributes to a robust and productive science program and serves as a catalyst for innovation and discovery; and

(2) the Administrator should set science priorities by following the recommendations and guidance provided by the scientific community through the National Academies of Sciences, Engineering, and Medicine decadal surveys.

1 (b) POLICY REAFFIRMATION.—Congress reaffirms
 2 the policy of the United States set forth in section 501(c)
 3 of the National Aeronautics and Space Administration
 4 Transition Authorization Act of 2017 (Public Law 115–
 5 10; 51 U.S.C. 20302 note), which states, “It is the policy
 6 of the United States to ensure, to the extent practicable,
 7 a steady cadence of large, medium, and small science mis-
 8 sions”.

9 **SEC. 602. IMPLEMENTATION OF SCIENCE MISSION COST**
 10 **CAPS.**

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

13 (1) NASA science missions address compelling
 14 scientific questions prioritized by the National Acad-
 15 emies decadal surveys, and often such missions ex-
 16 ceed expectations in terms of performance, longevity,
 17 and scientific impact;

18 (2) the Administrator should continue to pursue
 19 an ambitious science program while also seeking to
 20 avoid excessive cost growth that has the potential to
 21 affect the balance across the Science portfolio and
 22 within the Science Divisions;

23 (3) audits by the NASA Inspector General and
 24 the Government Accountability Office have reported
 25 that early cost estimates for missions in the prelimi-

1 nary phases of conception and development are im-
2 mature and unreliable, and the cost of a mission
3 typically is not well-understood until the project is
4 further along in the development process;

5 (4) cost growth of a mission beyond its early
6 cost estimates is a challenge for budget planning
7 and has the potential to affect other missions in the
8 Science Mission Directorate portfolio, including
9 through delays to future mission solicitations; and

10 (5) relying on early cost estimates made prior
11 to preliminary design review for science missions
12 which then experience such cost growth may
13 disincentivize program and cost discipline moving
14 forward.

15 (b) REQUIREMENT.—To the maximum extent prac-
16 ticable, the Administrator shall ensure that, unless over-
17 whelmingly necessary to do otherwise, NASA—

18 (1) minimizes changes to requirements, capa-
19 bilities, and mission objectives under to fixed-price
20 contracts with commercial providers; and

21 (2) otherwise adheres to the requirements, ca-
22 pabilities, and mission objectives of such contracts.

23 (c) REPORT.—

24 (1) IN GENERAL.—Not later than 1 year after
25 the date of the enactment of this Act, the Comp-

1 troller General of the United States shall submit to
2 the appropriate committees of Congress a report of
3 NASA practices related to the establishment of and
4 compliance with cost caps of competitively selected,
5 principal investigator-led science missions.

6 (2) ELEMENTS.—The report required by para-
7 graph (1) shall—

8 (A) assess current cost cap values and de-
9 termine whether existing cost cap amounts are
10 appropriate for different classes of missions;

11 (B) consider the effectiveness of cost caps
12 in maintaining a varied and balanced portfolio
13 of mission types within the Science Mission Di-
14 rectorate;

15 (C) describe the information NASA re-
16 quires as part of a proposal submission related
17 to project cost estimates and proposal compli-
18 ance with cost caps, and assess whether such
19 required information provides sufficient insight
20 or confidence in the estimates;

21 (D) consider NASA processes for assessing
22 proposed cost estimates and the accuracy of
23 such assessments for past competitively se-
24 lected, principal investigator-led science mis-
25 sions; and

1 (E) for the period starting on January 1,
2 2000 and ending on the date of the enactment
3 of this Act—

4 (i) a list of—

5 (I) competitively selected, prin-
6 cipal investigator-led science missions
7 for which costs have exceeded the as-
8 sociated cost cap; and

9 (II) reason the mission costs ex-
10 ceeded the cost cap;

11 (ii) an assessment of NASA's role in
12 predicting, preventing, or managing com-
13 petitively-selected, principal investigator-led
14 science mission cost increases; and

15 (iii) a description of the impact of in-
16 creased competitively-selected, principal in-
17 vestigator-led science mission costs beyond
18 the cost caps on—

19 (I) the missions for which the
20 cost cap has been breached; and

21 (II) other missions within the ap-
22 plicable division and within the
23 Science Mission Directorate.

1 **SEC. 603. REEXAMINATION OF DECADAL SURVEYS.**

2 Section 20305(c) of title 51, United States Code, is
 3 amended by inserting “, significant changes to the NASA
 4 budget,” after “growth”.

5 **SEC. 604. LANDSAT.**

6 Not later than 180 days after the date of the enact-
 7 ment of this Act, the Administrator shall submit to the
 8 appropriate committees of Congress a report describing—

9 (1) the Administrator’s efforts to comply with
 10 section 60134 of title 51, United States Code;

11 (2) aspects of Landsat NEXT or any other
 12 Landsat observations that—

13 (A) could be provided by private sector
 14 data-buys or service procurements; and

15 (B) could—

16 (i) meet associated science require-
 17 ments while maintaining or exceeding the
 18 quality, integrity, and continuity of the
 19 Landsat observational capabilities and per-
 20 formance, including requirements nec-
 21 essary to ensure high-quality calibrated
 22 data continuity and traceability with the
 23 50-year Landsat data record; and

24 (ii) comply with nondiscriminatory
 25 availability of unenhanced data and public
 26 archiving of data pursuant to section

1 60141 and 60142 of title 51, United
2 States Code, and all other relevant Federal
3 laws, regulations, and policies related to
4 open science and data accessibility;

5 (3) any potential tradeoffs or other impacts of
6 the requirements described in clauses (i) and (ii) of
7 paragraph (2)(B) that could reduce the benefit of
8 Landsat data for scientific and applied uses or re-
9 duce the Federal Government's ability to make such
10 data available for the widest possible use; and

11 (4) recommendations and opportunities for the
12 Federal Government to mitigate potential tradeoffs
13 or impacts identified under paragraph (3) or to oth-
14 erwise facilitate private sector data-buys or service
15 procurements.

16 **SEC. 605. COMMERCIAL SATELLITE DATA.**

17 (a) FINDINGS.—Congress makes the following find-
18 ings:

19 (1) Section 60501 of title 51, United States
20 Code, states that the goal for the Earth Science pro-
21 gram of NASA shall be to pursue a program of
22 Earth observations, research, and applications activi-
23 ties to better understand the Earth, how it supports
24 life, and how human activities affect its ability to do
25 so in the future.

1 (2) Section 50115 of title 51, United States
2 Code, states that the Administrator of NASA shall,
3 to the extent possible and while satisfying the sci-
4 entific requirements of NASA, and where appro-
5 priate, of other Federal agencies and scientific re-
6 searchers, acquire, where cost effective, space-based
7 commercial Earth remote sensing data, services, dis-
8 tribution, and applications from a commercial pro-
9 vider.

10 (3) The Administrator of NASA established the
11 Commercial SmallSat Data Acquisition Pilot Pro-
12 gram in 2017 to identify, validate, and acquire from
13 commercial sources data that support the Earth
14 science research and application goals.

15 (4) The Administrator of NASA has—

16 (A) determined that the pilot program de-
17 scribed in paragraph (3) has been a success, as
18 described in the final evaluation entitled “Com-
19 mercial SmallSat Data Acquisition Program
20 Pilot Evaluation Report” issued in 2020;

21 (B) established a formal process for evalu-
22 ating and onboarding new commercial vendors
23 in such pilot program;

1 (C) increased the number of commercial
2 vendors and commercial data products available
3 through such pilot program; and

4 (D) expanded procurement arrangements
5 with commercial vendors to broaden user access
6 to provide commercial Earth remote sensing
7 data and imagery to federally funded research-
8 ers.

9 (b) COMMERCIAL SATELLITE DATA ACQUISITION
10 PROGRAM.—

11 (1) IN GENERAL.—Chapter 603 of title 51,
12 United States Code, is amended by adding at the
13 end the following:

14 “§ 60307. Commercial satellite data acquisition pro-
15 gram

16 “(a) IN GENERAL.—The Administrator, acting
17 through the Earth Science Division of the Science Mission
18 Directorate, shall continue to acquire and disseminate cost
19 effective and appropriate commercial Earth remote sens-
20 ing data and imagery in order to satisfy the operational
21 and scientific requirements of the Administration, and as
22 appropriate, the scientific requirements of other Federal
23 agencies and scientific researchers to augment or com-
24 plement the suite of Earth observations acquired by the

1 Administration, other United States Government agencies,
2 and international partners.

3 “(b) DATA PUBLICATION AND TRANSPARENCY.—The
4 terms and conditions of commercial Earth remote sensing
5 data and imagery acquisitions under the program de-
6 scribed in subsection (a) shall take into consideration—

7 “(1) the publication of commercial data or im-
8 agery for scientific purposes; or

9 “(2) the publication of information that is de-
10 rived from, incorporates, or enhances the original
11 commercial data or imagery of a vendor.

12 “(c) AUTHORIZATION.—In carrying out the program
13 under this section, the Administrator may—

14 “(1) procure the commercial Earth remote
15 sensing data and imagery from commercial vendors
16 to advance scientific research and applications in ac-
17 cordance with subsection (a); and

18 “(2) establish or modify end-use license terms
19 and conditions to allow for the widest-possible use of
20 procured commercial Earth remote sensing data and
21 imagery by individuals other than NASA-funded
22 users, consistent with the goals of the program.

23 “(d) UNITED STATES VENDORS.—Commercial Earth
24 remote sensing data and imagery referred to in sub-

1 sections (a) and (c) shall, to the maximum extent prac-
2 ticable, be procured from United States vendors.

3 “(e) REPORT.—Not later than 180 days after the
4 date of the enactment of this section, and annually there-
5 after, the Administrator shall submit to the Committee on
6 Commerce, Science, and Transportation of the Senate and
7 the Committee on Science, Space, and Technology of the
8 House of Representatives a report that includes the fol-
9 lowing information regarding the agreements, vendors, li-
10 cense terms, and uses of commercial Earth remote sensing
11 data and imagery under this section:

12 “(1)(A) In the case of the initial report, a list
13 of all agreements that are providing commercial
14 Earth remote sensing data and imagery to NASA as
15 of the date of the report.

16 “(B) For each subsequent report, a list of all
17 agreements that have provided commercial Earth re-
18 mote sensing data and imagery to NASA during the
19 reporting period.

20 “(2) A description of the end-use license terms
21 and conditions for each such vendor.

22 “(3) A description of the manner in which each
23 such agreement is advancing scientific research and
24 applications, including priorities recommended by

1 the National Academies of Sciences, Engineering,
2 and Medicine decadal surveys.

3 “(4) Information specifying whether the Admin-
4 istrator has entered into an agreement with a com-
5 mercial vendor or a Federal agency that permits the
6 use of data and imagery by Federal Government em-
7 ployees, contractors, or non-Federal users.”.

8 (2) CLERICAL AMENDMENT.—The table of con-
9 tents for chapter 603 of title 51, United States
10 Code, is amended by adding at the end the fol-
11 lowing:

“60307. Commercial Satellite Data Acquisition Program.”.

12 **SEC. 606. PLANETARY SCIENCE PORTFOLIO.**

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

15 (1) planetary science missions advance the sci-
16 entific understanding of the solar system and the
17 place of humans in it while also advancing the de-
18 sign and operations of spacecraft and robotic engi-
19 neering; and

20 (2) the Discovery, New Frontiers, and Flagship
21 programs allow NASA to fund a range of missions
22 that vary in size, cost, and complexity, and main-
23 taining balance across these mission classes allows
24 for a broad scope of discoveries and scientific ad-
25 vances.

1 (b) MISSION PRIORITIES REAFFIRMATION.—Con-
 2 gress reaffirms the direction in section 502(b)(1) of the
 3 National Aeronautics and Space Administration Transi-
 4 tion Authorization Act of 2017 (Public Law 115–10; 51
 5 U.S.C. 20301 note) that—

6 (1) in accordance with the priorities established
 7 in the most recent Planetary Science Decadal Sur-
 8 vey, the Administrator shall ensure, to the greatest
 9 extent practicable, the completion of a balanced set
 10 of Discovery, New Frontiers, and Flagship missions
 11 at the cadence recommended by the most recent
 12 Planetary Science Decadal Survey; and

13 (2) consistent with the missions described in
 14 paragraph (1), and while maintaining the continuity
 15 of scientific data and steady development of capabili-
 16 ties and technologies, the Administrator may seek, if
 17 necessary, adjustments to mission priorities, sched-
 18 ule, and scope in light of changing budget projec-
 19 tions.

20 **SEC. 607. PLANETARY DEFENSE.**

21 (a) NEAR-EARTH OBJECT SURVEY AND POLICY.—
 22 Section 808 of the National Aeronautics and Space Ad-
 23 ministration Authorization Act of 2010 (42 U.S.C.
 24 18387), is amended in subsection (b) by striking “imple-
 25 ment, before September 30, 2012,” and inserting “, in co-

1 ordination with the NASA Administrator, maintain and
2 regularly update”.

3 (b) POLICY ON NEAR-EARTH OBJECTS AND RESPON-
4 SIBLE FEDERAL AGENCY.—Section 71103 of title 51,
5 United States Code, is amended to read as follows:

6 “§ 71103. Policy on near-Earth objects and respon-
7 sible Federal agency

8 “The Director of the Office of Science and Tech-
9 nology Policy, in coordination with the Administrator,
10 shall maintain and regularly update policy for notifying
11 Federal agencies and relevant emergency response institu-
12 tions of an impending near-Earth object threat, if near-
13 term public safety is at risk, and provide recommendations
14 for a Federal agency or agencies to be responsible for—

15 “(1) protecting the United States from a near-
16 Earth object that is expected to collide with Earth;
17 and

18 “(2) implementing a deflection campaign, in
19 consultation with international bodies, should one be
20 necessary.”.

21 (c) PLANETARY DEFENSE COORDINATION OFFICE.—
22 Chapter 711 of title 51, United States Code, is amended
23 by adding at the end the following:

1 **“§ 71105. Planetary Defense Coordination Office**

2 “(a) OFFICE.—As directed in section 10825 of the
3 National Aeronautics and Space Administration Author-
4 ization Act of 2022 (Public Law 117–167), the Adminis-
5 trator shall maintain an office within the Planetary
6 Science Division of the Science Mission Directorate to be
7 known as the ‘Planetary Defense Coordination Office’.

8 “(b) RESPONSIBILITIES.—Consistent with the direc-
9 tion in section 10825 of the National Aeronautics and
10 Space Administration Authorization Act of 2022 (Public
11 Law 117–167) the Planetary Defense Coordination Office
12 under subsection (a) shall—

13 “(1) plan, develop, and implement a program to
14 survey threats posed by near-Earth objects equal to
15 or greater than 140 meters in diameter, as required
16 by section 321(d)(1) of the National Aeronautics
17 and Space Administration Authorization Act of 2005
18 (Public Law 109–155; 119 Stat. 2922);

19 “(2) identify, track, and characterize potentially
20 hazardous near-Earth objects, issue warnings of the
21 effects of potential impacts of such objects, and in-
22 vestigate strategies and technologies for mitigating
23 the potential impacts of such objects; and

24 “(3) assist in coordinating government planning
25 for a response to a potential impact of a near-Earth
26 objects.”.

1 (d) CONFORMING AMENDMENT.—The table of con-
 2 tents for chapter 711 of title 51, United States Code, is
 3 amended—

4 (1) by striking the item relating to section
 5 71103 and inserting the following:

“71103. Policy on near-Earth objects and responsible Federal agency.”; and

6 (2) by adding at the end the following:

“71105. Planetary Defense Coordination Office.”.

7 **SEC. 608. LUNAR DISCOVERY AND EXPLORATION.**

8 (a) IN GENERAL.—The Administrator may carry out,
 9 within the Science Mission Directorate, a program to ac-
 10 complish science objectives for the Moon, with an organi-
 11 zational structure that aligns responsibility, authority, and
 12 accountability, as recommended by the most recent
 13 decadal survey for planetary science and astrobiology.

14 (b) OBJECTIVES AND REQUIREMENTS.—In carrying
 15 out the program under subsection (a), the Administrator
 16 shall direct the Science Mission Directorate, in consulta-
 17 tion with the Exploration Systems Development Mission
 18 Directorate and the Space Technology Mission Direc-
 19 torate, to define high-priority lunar science objectives, in-
 20 formed by decadal and other scientific consensus rec-
 21 ommendations, and related requirements of an integrated
 22 Artemis science strategy for human and robotic missions
 23 to the Moon.

1 (c) INSTRUMENTATION.—The program under sub-
2 section (a) shall assess the need for and facilitate the de-
3 velopment of instrumentation to support the scientific ex-
4 ploration of the Moon.

5 **SEC. 609. COMMERCIAL LUNAR PAYLOAD SERVICES.**

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

8 (1) the Administrator’s encouragement and
9 support for commercial services for lunar surface de-
10 livery capabilities and other related services serves
11 the national interest; and

12 (2) commercial providers benefit from an ap-
13 proach that places low-cost, noncritical instruments
14 on initial deliveries using small- and medium-size
15 landers before proceeding to larger landers for more
16 complex payloads.

17 (b) COMMERCIAL LUNAR PAYLOAD SERVICES.—The
18 Administrator is authorized to continue the Commercial
19 Lunar Payload Services program for the purpose of pro-
20 curing, from 1 or more United States commercial pro-
21 viders, services for delivery of NASA science payloads, and
22 the payloads of other NASA mission directorates, as ap-
23 propriate and practicable, to the lunar surface.

24 (c) RELATIONSHIP TO OTHER MISSION DIREC-
25 TORATES.—A Mission Directorate that seeks to obtain

1 commercial lunar payload services under the program re-
2 ferred to in subsection (b) shall provide funding for—

3 (1) any payload, instrument, or other item
4 sponsored by the Mission Directorate for delivery
5 through the program; and

6 (2) the cost of the commercial lunar payload
7 services obtained on behalf of the Mission Direc-
8 torate.

9 (d) IMPLEMENTATION.—In implementing any such
10 activities under subsection (b), the Administrator shall—

11 (1) conduct updated market research on the
12 commercial lunar economy and identify any changes
13 since the last market analysis;

14 (2) assess NASA’s needs from and role in and
15 contribution to the commercial lunar delivery mar-
16 ket;

17 (3) based on the needs identified under para-
18 graph (2), assess the effectiveness of the task order
19 approach in advancing commercial development of
20 lunar delivery services, including an assessment of
21 the appropriate number of providers necessary to
22 support NASA commercial lunar delivery needs, and
23 identify any challenges and recommendations for im-
24 provement; and

1 (4) strengthen procedures related to the selec-
2 tion, manifesting, interfaces, and requirements of
3 payloads and other relevant factors that could con-
4 tribute to minimizing future NASA-directed changes
5 to projects following commercial lunar payload serv-
6 ice contract awards.

7 (e) COORDINATION.—The Administrator shall ensure
8 coordination between Mission Directorates and the Moon
9 to Mars Program on the administration of the program
10 referred to in subsection (b) so as to ensure the alignment
11 of goals for lunar delivery services.

12 **SEC. 610. PLANETARY AND LUNAR OPERATIONS.**

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

15 (1) existing NASA lunar and Martian orbital
16 missions are operating well beyond their planned
17 mission lifespans;

18 (2) NASA relies on such aging infrastructure
19 for observations, communications relay, and other
20 operations to support critical NASA missions; and

21 (3) the United States plans to increase its ac-
22 tivities on and around both the Moon and Mars in
23 coming years.

24 (b) PLAN.—The Administrator shall develop a plan
25 to ensure continuity of operations and sufficient observa-

1 tional and operational capabilities on and around the
2 Moon and Mars necessary to continue to enable a robust
3 science program and human exploration program for the
4 Moon and Mars well into the future. Such plan shall con-
5 sider opportunities to engage both private and inter-
6 national partners in future operations.

7 **SEC. 611. MARS SAMPLE RETURN.**

8 (a) IN GENERAL.—The Administrator shall, subject
9 to the availability of appropriations, lead a Mars Sample
10 Return program to enable the return to Earth of scientif-
11 ically selected samples from the surface of Mars for study
12 in terrestrial laboratories, consistent with the rec-
13 ommendations of the National Academies decadal surveys
14 for planetary science.

15 (b) APPROACH.—The Administrator shall pursue the
16 program described in subsection (a) on a timeline and in
17 a manner necessary to—

18 (1) sustain United States leadership in the sci-
19 entific exploration of Mars;

20 (2) capitalize on United States industry and
21 NASA capabilities to land and operate robotic space-
22 craft on the surface of Mars; and

23 (3) maintain a balanced and robust planetary
24 science division portfolio without requiring signifi-
25 cant increases to the NASA budget.

1 (c) IMPLEMENTATION PLAN.—As soon as practicable
2 and not later than 90 days after the date of the enactment
3 of this Act, the Administrator shall do the following:

4 (1) Transmit to the appropriate committees of
5 Congress an acquisition plan and timeline for the
6 implementation of a Mars Sample Return program
7 pursuant to this section, with the goal of enabling
8 the highest scientific return for the resources in-
9 vested, which plan shall—

10 (A) include a design and mission architec-
11 ture; and

12 (B) establish realistic cost and schedule es-
13 timates to enable such goal.

14 (2) Determine a path forward for the Mars
15 Sample Return that—

16 (A) is aligned with NASA’s Mars Sample
17 Return Strategy Review Team’s findings;

18 (B) considers alternative mission concepts
19 and lower cost sample return methods; and

20 (C) enables an earlier return of samples to
21 Earth.

22 (3) Not later than 1 year after the date of the
23 enactment of this Act, the Administrator shall enter
24 into firm fixed-price agreements with 1 or more

1 United States industry partners to carry out this
2 section.

3 **SEC. 612. HELIOPHYSICS RESEARCH.**

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

6 (1) NASA heliophysics research advances the
7 scientific understanding of the Sun, its impact on
8 the Earth and near-Earth environment, and the
9 Sun’s interactions with other bodies in the solar sys-
10 tem, the interplanetary medium, and the interstellar
11 medium;

12 (2) fundamental science supported by the
13 Heliophysics division is critical to improving space
14 weather observations forecasting capabilities, which
15 contribute to—

16 (A) fortifying national security and other
17 critically important space-based and ground-
18 based assets;

19 (B) improving the resilience of the energy
20 infrastructure of the United States; and

21 (C) protecting human health in space; and

22 (3) the Heliophysics Division should continue to
23 maximize the scientific return on investment of its
24 portfolio through maintaining a balanced portfolio
25 that includes research and analysis, including multi-

1 disciplinary research initiatives, technology develop-
2 ment, space-based missions, and suborbital flight
3 projects that include both directed and strategic mis-
4 sions and principal investigator-led, competitively so-
5 licited missions, informed by the science priorities
6 and guidance of the most recent decadal survey in
7 solar and space physics.

8 (b) PROGRAM MANAGEMENT.—The Administrator
9 shall seek—

10 (1) to maintain a regular Explorer Announce-
11 ment of Opportunity cadence and alternate between
12 small and mid-sized missions; and

13 (2) to enable a regular selection of Missions of
14 Opportunity.

15 **SEC. 613. GEOSPACE DYNAMICS CONSTELLATION.**

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

18 (1) the Geospace Dynamics Constellation mis-
19 sion could enable scientific discoveries that will
20 transform understanding of the processes that gov-
21 ern the dynamics of the Earth’s upper atmospheric
22 envelope that surrounds and protects the planet; and

23 (2) seeking commercial partnerships to provide
24 the technology to understand the phenomena and to
25 use the scientific knowledge gained by such mission

1 could assist in identifying solutions that could ben-
2 efit United States industry and citizens.

3 (b) ASSESSMENT.—Not later than 180 days after the
4 date of the enactment of this Act, the Administrator shall
5 submit to the appropriate committees of Congress a report
6 regarding the schedule and budget profile to launch the
7 Geospace Dynamics Constellation mission by the end of
8 the decade to fulfill the recommendations of the
9 heliophysics decadal survey.

10 **SEC. 614. NANCY GRACE ROMAN TELESCOPE.**

11 The Administrator shall continue development of the
12 Nancy Grace Roman Space Telescope as directed in sub-
13 section 10823(b) of the National Aeronautics and Space
14 Administration Authorization Act of 2022 (Public Law
15 117–167; 136 Stat. 1741).

16 **SEC. 615. CHANDRA X-RAY OBSERVATORY.**

17 The Administrator shall, to the greatest extent prac-
18 ticable, take no action to reduce or otherwise preclude con-
19 tinuation of the science operations of the Chandra X-ray
20 Telescope before the completion and consideration of the
21 next triennial review of mission extensions for the astro-
22 physics division conducted pursuant to section 30504 of
23 title 51, United States Code, and NASA’s ongoing oper-
24 ations paradigm change review.

1 **TITLE VII—STEM EDUCATION**

2 **SEC. 701. NATIONAL SPACE GRANT COLLEGE AND FELLOW-**
3 **SHIP PROGRAM.**

4 (a) AMENDMENTS.—Title 51, United States Code, is
5 amended—

6 (1) in section 40303, by striking subsections (d)
7 and (e);

8 (2) in section 40304—

9 (A) by striking subsection (c) and inserting
10 the following:

11 “(c) SOLICITATIONS.—

12 “(1) IN GENERAL.—The Administrator shall
13 issue a solicitation to space grant consortia for the
14 award of grants or contracts under this section at
15 the conclusion of the award cycle for fiscal Year
16 2020 to 2024. The Administrator shall implement
17 the allocation guidance under subsection (e) during
18 each fiscal year covered by the award cycle.

19 “(2) PROPOSALS.—A lead institution of a space
20 grant consortium that seeks a grant or contract
21 under this section shall submit, on behalf of such
22 space grant consortium, an application to the Ad-
23 ministrator at such time and in such manner and
24 accompanied by such information as the Adminis-
25 trator may require.

1 “(3) AWARDS.—The Administrator shall award
 2 1 or more multi-year grants or contracts, disbursed
 3 in annual installments, to the lead institution of an
 4 eligible space grant consortium of—

5 “(A) each of the 50 States of the United
 6 States;

7 “(B) the District of Columbia; and

8 “(C) the Commonwealth of Puerto Rico.”;
 9 and

10 (B) by adding at the end the following:

11 “(e) ALLOCATION OF FUNDING.—

12 “(1) PROGRAM IMPLEMENTATION.—To carry
 13 out the purposes set forth in section 40301, each fis-
 14 cal year, the Administrator shall allocate the funds
 15 appropriated for the program under this section for
 16 the fiscal year to each space grant consortium
 17 awarded a grant or contract under subsection (c)(3)
 18 in an equal amount.

19 “(2) PROGRAM ADMINISTRATION.—

20 “(A) IN GENERAL.—Each fiscal year, of
 21 the funds made available for the National Space
 22 Grant College and Fellowship Program, the Ad-
 23 ministrator shall allocate not more than 10 per-
 24 cent for the administration of the program.

“(B) COSTS COVERED.—The funds allocated under paragraph (1) shall cover all costs of the Administration associated with the administration of the National Space Grant College and Fellowship Program, including—

“(i) direct costs to the program, including costs relating to support services and civil service salaries and benefits;

“(ii) indirect general and administrative costs of centers and facilities of the Administration; and

“(iii) indirect general and administrative costs of the Administration headquarters.

“(3) SPECIAL OPPORTUNITIES.—Each fiscal year, of the funds made available for the National Space Grant College and Fellowship program, the Administrator shall allocate not more than 5 percent to lead institutions of Space Grant Consortia for grants to carry out innovative approaches and programs to further science and education relating to the missions of the Administration pursuant to subsection (b).”.

(b) REVIEW.—The Administrator shall make arrangements for the conduct of a multi-year analysis of the

1 independent external reviews currently under development
2 in the National Space Grant College and Fellowship Pro-
3 gram—

4 (1) to evaluate its management, accomplish-
5 ments, approach to funding allocation as described
6 in section 40303(e) of title 51, United States Code,
7 and responsiveness to the purposes and goals de-
8 fined in chapter 403 of title 51, United States Code;

9 (2) to consider the benefits partnerships with
10 local education agencies, including those in under-
11 served and rural areas, may provide; and

12 (3) to propose any statutory updates that may
13 be needed to implement recommendations of the re-
14 view.

15 (c) REPORT.—Not later than 270 days after the date
16 of the enactment of this Act, the Administrator shall sub-
17 mit to the Committee on Commerce, Science, and Trans-
18 portation of the Senate and the Committee on Science,
19 Space, and Technology of the House of Representatives
20 a report on the independent external review of the Na-
21 tional Space Grant College and Fellowship Program de-
22 scribed in subsection (a).

1 **SEC. 702. SKILLED TECHNICAL WORKFORCE EDUCATION**
2 **OUTREACH.**

3 (a) IN GENERAL.—The Administrator may conduct
4 or support STEM engagement activities that focus on ex-
5 panding opportunities for students to pursue skilled tech-
6 nical workforce occupations in space and aeronautics.

7 (b) LEVERAGING EXISTING PROGRAMS.—The Ad-
8 ministrator, in conducting activities pursuant to sub-
9 section (a), shall leverage, as appropriate, existing pro-
10 grams of NASA and may consider leveraging other Fed-
11 eral programs and interagency initiatives, such as the
12 Manufacturing USA program under section 34 of the Na-
13 tional Institute of Standards and Technology Act (15
14 U.S.C. 278s).

15 (c) INCLUSION.—Activities under subsection (a) may
16 include outreach activities that—

17 (1) engage secondary and post-secondary stu-
18 dents, including students at institutions of higher
19 education, 2-year colleges, and high schools and stu-
20 dents in vocational or career and technical education
21 programs;

22 (2) expose students to careers that require ca-
23 reer and technical education;

24 (3) encourage students to pursue careers that
25 require career and technical education; and

1 (4) provide students hands-on learning opportu-
2 nities to view the manufacturing, assembly, and test-
3 ing of NASA-funded space and aeronautical systems,
4 as the Administrator considers appropriate and with
5 consideration of relevant factors such as workplace
6 safety, mission needs, and the protection of sensitive
7 and proprietary technologies.

8 (d) BRIEFING.—Not later than 1 year after the date
9 of the enactment of this Act, the Administrator shall pro-
10 vide the appropriate committees of Congress with a brief-
11 ing on NASA’s activities, and any planned activities, con-
12 ducted under this section.

13 (e) DEFINITIONS.—In this section:

14 (1) INSTITUTION OF HIGHER EDUCATION.—The
15 term “institution of higher education” has the
16 meaning given the term in section 101(a) of the
17 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

18 (2) SKILLED TECHNICAL WORKFORCE.—The
19 term “skilled technical workforce” has the meaning
20 given the term in section 4(b)(3) of the Innovations
21 in Mentoring, Training, and Apprenticeships Act
22 (Public Law 115–402; 42 U.S.C. 1862p note).

TITLE VIII—NASA POLICY

SEC. 801. NASA ADVISORY COUNCIL.

(a) CONSULTATION AND ADVICE.—Section 20113(g) of title 51, United States Code, is amended by adding “and Congress” after “advice to the Administration”.

(b) SUNSET.—Effective September 30, 2028, section 20113(g) of title 51, United States Code, is amended by striking “and Congress”.

SEC. 802. NASA ASSESSMENT OF EARLY COST ESTIMATES.

Not later than 1 year after the date of the enactment of this Act, the Comptroller General of the United States shall transmit to the appropriate committees of Congress a review of the development, application, and assessment of early cost estimates made prior to preliminary design review for NASA missions. The review shall include—

(1) an assessment of NASA processes related to the formation and evaluation of proposed and early-stage cost estimates;

(2) an evaluation of NASA’s monitoring and management of cost estimates throughout mission development, in accordance with section 10861(b)(4) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20113 note); and

1 (3) any such recommendations as the Comp-
2 troller General determines appropriate.

3 **SEC. 803. AUTHORITY FOR PRODUCTION CONTRACTS FOL-**
4 **LOWING OTHER TRANSACTION PROTOTYPE**
5 **PROJECTS.**

6 Subsection (e) of section 20113 of title 51, United
7 States Code, is amended—

8 (1) by striking “In the performance of its func-
9 tions” and inserting the following:

10 “(1) IN GENERAL.—In the performance of its
11 functions”; and

12 (2) by adding at the end the following:

13 “(2) OTHER TRANSACTIONS.—In the case of
14 other transactions to carry out prototype projects, a
15 follow-on production or service contract may be
16 awarded to participants in the prototype transaction
17 without the use of competitive procedures, notwith-
18 standing the requirements of section 2304 of title
19 10, if—

20 “(A) competitive procedures were used for
21 the selection of parties for participation in the
22 prototype transaction; and

23 “(B) the participants in the transaction
24 performed successfully during the prototype
25 project.

1 “(3) TREATMENT.—Transactions under this
2 authority shall be treated as an agency procurement
3 for purposes of chapter 21 of title 41, with regard
4 to procurement ethics.”.

5 **SEC. 804. ROLE OF THE NATIONAL AERONAUTICS AND**
6 **SPACE ADMINISTRATION IN COMMERCIAL**
7 **SPACE ACTIVITIES.**

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

10 (1) the National Aeronautics and Space Admin-
11 istration and the commercial space sector com-
12 plement each other in maintaining the leadership
13 role of the United States in outer space activities;

14 (2) as more outer space activities are conducted
15 by private industry, it is vital to define the appro-
16 priate role of the National Aeronautics and Space
17 Administration; and

18 (3) the expertise and experience of the National
19 Aeronautics and Space Administration in human
20 space flight is especially important as commercial
21 human space flight activities extend into Earth’s
22 orbit, to the lunar surface, and beyond.

23 (b) BRIEFING.—Not later than 180 days after the
24 date of the enactment of this Act, the Administrator shall

1 provide the appropriate committees of Congress with a
2 brief on—

3 (1) the current activities of NASA, including
4 the detail of any NASA personnel, to assist the Sec-
5 retary of Commerce, the Secretary of Transpor-
6 tation, the Federal Communications Commission, or
7 any other relevant Federal agency with the regula-
8 tion of the United States commercial space enter-
9 prise;

10 (2) a general breakdown of which NASA exper-
11 tise, including scientific, technical, and engineering
12 expertise, is being most used in support of other
13 Federal agencies; and

14 (3) expected future growth in the workload of
15 NASA as it relates to the support described in para-
16 graph (1).

17 **SEC. 805. RESTRICTION ON FEDERAL FUNDS RELATING TO**
18 **CERTAIN CHINESE SPACE AND SCIENTIFIC**
19 **ACTIVITIES.**

20 (a) IN GENERAL.—Except as provided in subsection
21 (b), no Federal funds authorized in this Act may be obli-
22 gated or expended—

23 (1) for the National Aeronautics and Space Ad-
24 ministration (NASA), the Office of Science and
25 Technology Policy (OSTP), or the National Space

1 Council (NSpC) to develop, design, plan, promul-
2 gate, implement, or execute a bilateral policy, pro-
3 gram, order, or contract of any kind to participate,
4 collaborate, or coordinate bilaterally in any way with
5 China or any Chinese-owned company unless such
6 activities are specifically authorized by a law enacted
7 after the date of the enactment of this Act; or

8 (2) to effectuate the hosting of official Chinese
9 visitors at facilities belonging to or utilized by
10 NASA.

11 (b) EXCEPTION.—The restrictions described in sub-
12 section (a) shall not apply to activities with respect to
13 which NASA, OSTP, or NSpC, after consultation with the
14 Federal Bureau of Investigation, have certified—

15 (1) pose no risk of resulting in the transfer of
16 technology, data, or other information with national
17 security or economic security implications to China
18 or a Chinese-owned company; and

19 (2) will not involve knowing interactions with
20 officials who have been determined by the United
21 States to have direct involvement with violations of
22 human rights.

23 (c) SUBMISSION.—Any certification made under sub-
24 section (b) shall be submitted to the Committee on Com-
25 merce, Science, and Transportation and the Committee on

1 Appropriations of the Senate, the Committee on Science,
2 Space, and Technology and the Committee on Appropria-
3 tions of the House of Representatives, and the Federal
4 Bureau of Investigation, not later than 30 days prior to
5 the activity in question. Any such certification shall in-
6 clude a description of the purpose of such activity, its
7 agenda, its major participants, and its location and tim-
8 ing.

9 **SEC. 806. REPORTS TO CONGRESS.**

10 (a) CONGRESSIONAL REPORTS AND NOTICES.—Any
11 report or notice provided to Congress by NASA, shall be
12 provided to the Committee on Science, Space, and Tech-
13 nology of the House of Representatives and the Committee
14 on Commerce, Science, and Transportation of the Senate,
15 concurrently with its delivery to any other Committee or
16 office.

17 (b) REPORTS ON INTERNATIONAL AGREEMENTS.—If
18 NASA becomes a signatory to an international agreement
19 concerning outer space activities, the Administrator shall
20 provide to the Committee on Commerce, Science, and
21 Transportation of the Senate and Committee on Science,
22 Space, and Technology of the House of Representatives
23 a report containing a copy of such agreement.

1 **SEC. 807. FINDINGS RELATING TO CONTRACT FLEXIBILITY.**

2 Congress finds that NASA FAR Supplement (NFS)
3 1852.242-72, Denied Access to NASA Facilities instructs
4 that, for the period that NASA facilities were not acces-
5 sible to contractor employees, the contracting officer may
6 adjust the contract performance or delivery schedule, fore-
7 go the work, reschedule the work, or consider requests for
8 equitable adjustment to the contract.

9 **SEC. 808. GAO REPORT.**

10 Not later than 1 year after the date of the enactment
11 of this Act, the Comptroller General of the United States
12 shall submit to the appropriate committees of Congress
13 a report on fire and emergency services at NASA launch
14 and reentry facilities that assesses the following:

15 (1) Current capabilities and projected demands
16 for NASA-provided fire and emergency services.

17 (2) The manner in which demand for NASA-
18 provided fire and emergency services have been im-
19 pacted by the following:

20 (A) An increased rate of launch and re-
21 entry operations.

22 (B) An increased number of leases with
23 commercial launch and reentry service providers
24 for use of NASA property.

1 (3) Current fire and emergency services pro-
 2 vided by commercial providers to support launch and
 3 reentry operations that are conducted—

4 (A) to fulfill a contractual obligation with
 5 NASA; or

6 (B) for non-NASA purposes using NASA-
 7 leased property.

8 (4) Whether NASA-provided and
 9 commerciallyprovided fire and emergency services
 10 are able to meet current and projected demands and
 11 support all fire response areas on NASA property.

12 **SEC. 809. NASA PUBLIC-PRIVATE TALENT PROGRAM.**

13 Section 20113 of title 51, United States Code, is
 14 amended by adding at the end the following new sub-
 15 section:

16 “(o) PUBLIC-PRIVATE TALENT PROGRAM.—

17 “(1) ASSIGNMENT AUTHORITY.—Under policies
 18 and procedures prescribed by the Administration,
 19 the Administrator may, with the agreement of a pri-
 20 vate sector entity and the consent of an employee of
 21 the Administration or of such entity, arrange for the
 22 temporary assignment of such employee of the Ad-
 23 ministration to such private sector entity, or of such
 24 employee of such entity to the Administration, as
 25 the case may be.

1 “(2) AGREEMENTS.—

2 “(A) IN GENERAL.—The Administrator
3 shall provide for a written agreement among
4 the Administration, the private sector entity,
5 and the employee concerned regarding the
6 terms and conditions of the employee’s assign-
7 ment under this subsection. The agreement
8 shall—

9 “(i) require that the employee of the
10 Administration, upon completion of the as-
11 signment, will serve in the Administration,
12 or elsewhere in the civil service if approved
13 by the Administrator, for a period equal to
14 twice the length of the assignment;

15 “(ii) provide that if the employee of
16 the Administration or of the private sector
17 entity (as the case may be) fails to carry
18 out the agreement, such employee shall be
19 liable to the United States for payment of
20 all expenses of the assignment, unless such
21 failure was for good and sufficient reason,
22 as determined by the Administrator; and

23 “(iii) contain language ensuring that
24 such employee of the Administration or of
25 the private sector entity (as the case may

1 be) does not improperly use predecisional
2 or draft deliberative information that such
3 employee may be privy to or aware of re-
4 lated to Administration programing, budg-
5 eting, resourcing, acquisition, or procure-
6 ment for the benefit or advantage of the
7 private sector entity.

8 “(B) TREATMENT.—An amount for which
9 an employee is liable under subparagraph (A)
10 shall be treated as a debt due the United
11 States.

12 “(C) WAIVER.—The Administrator may
13 waive, in whole or in part, collection of a debt
14 described in subparagraph (B) based on a de-
15 termination that the collection would be against
16 equity and good conscience and not in the best
17 interests of the United States, after taking into
18 account any indication of fraud, misrepresenta-
19 tion, fault, or lack of good faith on the part of
20 the employee concerned.

21 “(3) TERMINATION.—An assignment under this
22 subsection may, at any time and for any reason, be
23 terminated by the Administration or the private-sec-
24 tor entity concerned, as the case may be.

25 “(4) DURATION.—

1 “(A) IN GENERAL.—An assignment under
2 this subsection shall be for a period of not less
3 than 90 days and not more than 2 years, re-
4 newable up to a total of three years. An em-
5 ployee of the Administration may not be as-
6 signed under this subsection for more than a
7 total of 3 years inclusive of all such assign-
8 ments.

9 “(B) EXTENSION.—An assignment under
10 this subsection may be for a period in excess of
11 2 years, but not more than 3 years, if the Ad-
12 ministrator determines that such assignment is
13 necessary to meet critical mission or program
14 requirements.

15 “(5) POLICIES AND PROCEDURES.—

16 “(A) IN GENERAL.—The Administrator
17 shall establish policies and procedures relating
18 to assignments under this subsection.

19 “(B) ELEMENTS.—Policies and procedures
20 established pursuant to subparagraph (A) shall
21 address the following:

22 “(i) The nature and elements of writ-
23 ten agreements with participants in assign-
24 ments under this subsection.

1 “(ii) Criteria for making such assign-
2 ments, including the needs of the Adminis-
3 tration relating thereto.

4 “(iii) The manner in which the Ad-
5 ministration will oversee such assignments,
6 in particular with respect to paragraphs
7 (2)(A)(iii), (7)(C), and (7)(D).

8 “(iv) Criteria for issuing waivers.

9 “(v) The manner in which expenses
10 under paragraph (2)(A)(ii) would be deter-
11 mined.

12 “(vi) Guidance for participants in
13 such assignments.

14 “(vii) Mission Directorate, Office, and
15 organizational structure to implement and
16 manage such assignments.

17 “(viii) Any other necessary policies,
18 procedures, or guidelines to ensure such
19 assignments comply with all relevant statu-
20 tory authorities and ethics rules, and effec-
21 tively contribute to one or more of the Ad-
22 ministration’s missions.

23 “(C) INHERENTLY GOVERNMENTAL AC-
24 TIVITIES.—Assignments made under this sub-
25 section shall not have responsibilities or per-

1 form duties or decision making regarding Ad-
 2 ministration activities that are inherently gov-
 3 ernmental, pursuant to section 7.500 of title
 4 48, Code of Federal Regulations, and Office of
 5 Management and Budget review.

6 “(6) STATUS OF FEDERAL EMPLOYEES AS-
 7 SIGNED TO PRIVATE SECTOR ENTITIES.—

8 “(A) IN GENERAL.—An employee of the
 9 Administration who is assigned to a private sec-
 10 tor entity under this subsection shall be consid-
 11 ered, during the period of such assignment, to
 12 be on detail to a regular work assignment in
 13 the Administration for all purposes. The written
 14 agreement established under paragraph (2)(A)
 15 shall address the specific terms and conditions
 16 related to such employee’s continued status as
 17 a Federal employee.

18 “(B) CERTIFICATION.—In establishing a
 19 temporary assignment of an employee of the
 20 Administration to a private sector entity, the
 21 Administrator shall certify that such temporary
 22 assignment shall not have an adverse or nega-
 23 tive impact on the mission of the Administra-
 24 tion or organizational capabilities associated
 25 with such assignment.

1 “(7) TERMS AND CONDITIONS FOR PRIVATE
2 SECTOR EMPLOYEES.—An employee of a private sec-
3 tor entity who is assigned to the Administration
4 under this subsection—

5 “(A) shall continue to receive pay and ben-
6 efits from the private sector entity from which
7 such employee is assigned and shall not receive
8 pay or benefits from the Administration, except
9 as provided in subparagraph (B);

10 “(B) is deemed to be an employee of the
11 Administration for the purposes of—

12 “(i) chapters 73 and 81 of title 5;

13 “(ii) sections 201, 203, 205, 207,
14 208, 209, 603, 606, 607, 643, 654, 1905,
15 and 1913 of title 18, except that such sec-
16 tion 209 does not apply to any salary, or
17 contribution or supplementation of salary
18 made pursuant to subparagraph (A) of this
19 paragraph;

20 “(iii) sections 1343, 1344, and
21 1349(b) of title 31;

22 “(iv) chapter 171 of title 28 (com-
23 monly known as the ‘Federal Tort Claims
24 Act’) and any other Federal tort liability
25 statute;

1 “(v) the Ethics in Government Act of
2 1978; and

3 “(vi) chapter 21 of title 41;

4 “(C) shall not have access to any trade se-
5 crets or any other nonpublic information which
6 is of commercial value to the private sector en-
7 tity from which such employee is assigned;

8 “(D) may not perform work that is consid-
9 ered inherently governmental in nature, in ac-
10 cordance with paragraph (5)(C); and

11 “(E) may not be used to circumvent—

12 “(i) section 1710 of title 41, United
13 States Code; or

14 “(ii) any limitation or restriction on
15 the size of the Administration’s civil serv-
16 ant workforce.

17 “(8) ADDITIONAL REQUIREMENTS.—The Ad-
18 ministrator shall ensure that—

19 “(A) the normal duties and functions of an
20 employee of the Administration who is assigned
21 to a private sector entity under this subsection
22 can be reasonably performed by other employ-
23 ees of the Administration without the perma-
24 nent transfer or reassignment of other per-
25 sonnel of the Administration;

1 “(B) normal duties and functions of such
2 other employees of the Administration are not,
3 as a result of and during the course of such
4 temporary assignment, performed or augmented
5 by contractor personnel in violation of section
6 1710 of title 41; and

7 “(C) not more than 2 percent of the Ad-
8 ministration’s civil servant workforce may par-
9 ticipate in an assignment under this subsection
10 at the same time.

11 “(9) CONFLICTS OF INTEREST.—The Adminis-
12 trator shall implement a system to identify, mitigate,
13 and manage any conflicts of interests that may arise
14 as a result of an employee’s assignment under this
15 subsection.

16 “(10) PROHIBITION AGAINST CHARGING CER-
17 TAIN COSTS TO THE FEDERAL GOVERNMENT.—A
18 private-sector entity may not charge the Administra-
19 tion or any other agency of the Federal Government,
20 as direct or indirect costs under a Federal contract,
21 the costs of pay or benefits paid by the entity to an
22 employee assigned to the Administration under this
23 subsection for the period of the assignment con-
24 cerned.

1 “(11) CONSIDERATIONS.—In carrying out this
2 subsection, the Administrator shall take into consid-
3 eration—

4 “(A) the question of the manner in which
5 assignments under this subsection might best
6 be used to help meet the needs of the Adminis-
7 tration with respect to the training of employ-
8 ees; and

9 “(B) as applicable, areas of particular pri-
10 vate sector expertise, such as cybersecurity.

11 “(12) NASA REPORTING.—

12 “(A) IN GENERAL.—Not later than April
13 30 of each year, the Administrator shall submit
14 to the Committee on Science, Space, and Tech-
15 nology of the House of Representatives and the
16 Committee on Commerce, Science, and Trans-
17 portation of the Senate a report summarizing
18 the implementation of this subsection.

19 “(B) CONTENTS.—Each report under sub-
20 paragraph (A) shall include, with respect to the
21 annual period to which such report relates, the
22 following:

23 “(i) Information relating to the total
24 number of employees of private sector enti-
25 ties assigned to the Administration, and

1 the total number of employees of the Ad-
2 ministration assigned to private sector en-
3 tities.

4 “(ii) A brief description and assess-
5 ment of the talent management benefits
6 evidenced from such assignments, as well
7 as any identified strategic human capital
8 and operational challenges, including the
9 following:

10 “(I) An identification of the
11 names of the private sector entities to
12 and from which employees were as-
13 signed.

14 “(II) A complete listing of posi-
15 tions such employees were assigned to
16 and from.

17 “(III) An identification of as-
18 signed roles and objectives of such as-
19 signments.

20 “(IV) Information relating to the
21 durations of such assignments.

22 “(V) Information relating to as-
23 sociated pay grades and levels.

1 “(iii) An assessment of impacts of
2 such assignments on the Administration
3 workforce and workforce culture.

4 “(iv) An identification of the number
5 of Administration staff and budgetary re-
6 sources required to implement this sub-
7 section.

8 “(13) FEDERAL ETHICS.—Nothing in this sub-
9 section shall affect existing Federal ethics rules ap-
10 plicable to Federal personnel.

11 “(14) GAO REPORTING.—

12 “(A) IN GENERAL.—Not later than 3 years
13 after the date of the enactment of this sub-
14 section, the Comptroller General of the United
15 States shall submit to the Committee on
16 Science, Space, and Technology of the House of
17 Representatives and the Committee on Com-
18 merce, Science, and Transportation of the Sen-
19 ate a report summarizing the implementation of
20 this subsection.

21 “(B) CONTENTS.—The report under sub-
22 paragraph (A) shall include the following:

23 “(i) A review of the implementation of
24 this subsection, according to law and the
25 Administration policies and procedures es-

1 tablished for assignments under this sub-
2 section.

3 “(ii) Information relating to the ex-
4 tent to which such assignments adhere to
5 best practices relating to public-private tal-
6 ent exchange programs.

7 “(iii) A determination as to whether
8 there should be limitations on the number
9 of individuals participating in such assign-
10 ments.

11 “(iv) Information relating to the ex-
12 tent to which the Administration complies
13 with statutory requirements and ethics
14 rules, and appropriately handles potential
15 conflicts of interest and access to non-
16 public information with respect to such as-
17 signments.

18 “(v) Information relating to the extent
19 to which such assignments effectively con-
20 tribute to 1 or more of the Administra-
21 tion’s missions.

22 “(vi) Information relating to Adminis-
23 tration resources, including employee time,
24 dedicated to administering such assign-

1 ments, and whether such resources are suf-
2 ficient for such administration.”.

3 **SEC. 810. MENTORING.**

4 (a) BRIEFING.—Not later than 180 days after the
5 date of the enactment of this Act, the Administrator shall
6 provide the appropriate committees of Congress with a
7 briefing on existing NASA-wide mentoring programs that
8 are focused in whole or in part on ensuring a robust pipe-
9 line for NASA’s civil servant workforce, for early-career,
10 mid-level, and senior-level employees at all NASA Centers
11 and NASA Headquarters.

12 (b) CONSIDERATIONS.—As part of the briefing re-
13 quired by subsection (a), the Administrator may consider
14 the merits of consolidating existing, disparate programs
15 into a single, unified employee development program.

16 **SEC. 811. DRINKING WATER WELL REPLACEMENT FOR**
17 **CHINCOTEAGUE, VIRGINIA.**

18 (a) IN GENERAL.—Notwithstanding any other provi-
19 sion of law, the Administrator may enter into an agree-
20 ment, as appropriate, with the Town of Chincoteague, Vir-
21 ginia, for a period of up to 5 years, for reimbursement
22 of the Town of Chincoteague’s costs directly associated
23 with the development of a plan for removal of drinking
24 water wells currently situated on NASA-administered
25 property and the establishment of alternative drinking

1 water wells which are located on property under the ad-
 2 ministrative control, either through lease, ownership, or
 3 easement, of the Town of Chincoteague. Such agreement
 4 shall, to the extent practicable, include the three remain-
 5 ing wells to be removed and relocated, the location of the
 6 site to which such wells would be relocated or are planned
 7 to be relocated, and a current estimated cost of the reloca-
 8 tion, including for the purchase, lease, or use of additional
 9 property, engineering, design, permitting, and construc-
 10 tion.

11 (b) SUBMISSION TO CONGRESS.—Not later than 18
 12 months after the date of the enactment of this Act, the
 13 Administrator, in coordination with the heads or other ap-
 14 propriate representatives of relevant entities, shall submit
 15 to the appropriate committees of Congress the agreement
 16 under subsection (a).

17 **SEC. 812. PASSENGER CARRIER USE FOR ASTRONAUT**
 18 **TRANSPORTATION.**

19 (a) IN GENERAL.—Subchapter III of chapter 201 of
 20 title 51, United States Code, is amended by adding at the
 21 end the following:

22 **“§ 20150. Passenger carrier use for astronaut trans-**
 23 **portation**

24 “(a) DEFINITIONS.—In this section:

1 “(1) GOVERNMENT ASTRONAUT; INTER-
 2 NATIONAL PARTNER ASTRONAUT; SPACE FLIGHT
 3 PARTICIPANT; SPACE SUPPORT VEHICLE.—The
 4 terms ‘government astronaut’, ‘international partner
 5 astronaut’, ‘space flight participant’, and ‘space sup-
 6 port vehicle’ have the meanings given such terms in
 7 section 50902.

8 “(2) MISSION.—The term ‘mission’ means an
 9 assignment to a space support vehicle of 1 or
 10 more—

11 “(A) government astronauts in the course
 12 of their employment; or

13 “(B) space flight participants.

14 “(3) OFFICIAL PURPOSE.—With respect to
 15 transportation, the term ‘official purpose’ means
 16 transportation necessary for post-mission activities,
 17 including medical research, monitoring, diagnosis,
 18 and treatment of a government astronaut or space
 19 flight participant before receiving post-mission med-
 20 ical clearance to operate a motor vehicle.

21 “(4) PASSENGER CARRIER.—The term ‘pas-
 22 senger carrier’ means a passenger motor vehicle, air-
 23 craft, boat, vessel, or other similar means of trans-
 24 portation that is owned or leased by the United
 25 States Government.

1 “(b) AUTHORITY.—

2 “(1) IN GENERAL.—The Administrator may au-
3 thorize the use of a passenger carrier to transport
4 a government astronaut or space flight participant
5 between the residence of the individual and various
6 locations if—

7 “(A) such transportation is provided for an
8 official purpose; and

9 “(B) the Chief of the Astronaut Office has
10 approved, in writing, post-mission transpor-
11 tation of government astronauts and space
12 flight participants under this section.

13 “(2) MAINTENANCE, OPERATION, AND RE-
14 PAIR.—The Administrator may maintain, operate,
15 and repair 1 or more passenger carriers for the pur-
16 pose of providing transportation pursuant to the au-
17 thority provided in paragraph (1).

18 “(c) REIMBURSEMENT.—Transportation under sub-
19 section (b)(1) of an international partner astronaut or a
20 space flight participant who is not an employee of the
21 United States Government shall be subject to reimburse-
22 ment to the Treasury.

23 “(d) REGULATIONS.—The Administrator shall pro-
24 mulgate such regulations as are necessary to carry out this
25 section.

1 “(e) APPLICABILITY OF SECTION 1344 OF TITLE
2 31.—In carrying out subsection (b), the Administrator
3 may expend funds available to the Administration, by ap-
4 propriation or otherwise, notwithstanding section 1344(a)
5 of title 31.”.

6 (b) CLERICAL AMENDMENT.—The table of contents
7 for chapter 201 of title 51, United States Code, is amend-
8 ed by inserting after the item relating to section 20149
9 the following:

“20150. Passenger carrier use for astronaut transportation.”.

10 **SEC. 813. RULE OF CONSTRUCTION.**

11 Nothing in this Act may be construed to alter or limit
12 NASA’s scientific integrity policies.

○