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(Original Signature of Member)

119TH CONGRESS
2D SESSION

H. R. _____

To reauthorize the National Aeronautics and Space Administration, and for
other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. BABIN introduced the following bill; which was referred to the Committee
on _____

A BILL

To reauthorize the National Aeronautics and Space
Administration, 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 Reauthorization Act of 2026”.

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. Fiscal year 2026.

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

Subtitle A—Policy

- Sec. 301. Report on continued United States presence in low-Earth orbit.
- Sec. 302. United States strategy for low-Earth orbit.
- Sec. 303. Risk of losing access to low-Earth orbit.

Subtitle B—International Space Station

- Sec. 311. International Space Station.
- Sec. 312. Maintenance of service for International Space Station.
- Sec. 313. Nongovernmental human missions on the International Space Station.
- Sec. 314. United States deorbit capabilities.

Subtitle C—Future Activities and Other Provisions

- Sec. 321. Commercial low-Earth orbit development.
- Sec. 322. Report on suborbital crew missions.
- Sec. 323. Orbital debris research and development.
- Sec. 324. Lunar communications and navigation.
- Sec. 325. Celestial time standardization.

TITLE IV—SPACE TECHNOLOGY

- Sec. 401. SBIR phase II flexibility.
- Sec. 402. Lunar power purchase agreement feasibility study.
- Sec. 403. Cryogenic fluid valve technology review.

TITLE V—AERONAUTICS

- Sec. 501. Definitions.
- Sec. 502. Experimental aircraft demonstrations.
- Sec. 503. Hypersonics research.
- Sec. 504. Advanced materials and manufacturing technology.
- Sec. 505. Unmanned aircraft systems and advanced air mobility.
- Sec. 506. Advanced capabilities for emergency response operations.
- Sec. 507. Hydrogen aviation.
- Sec. 508. High-performance chase aircraft.
- Sec. 509. Collaboration with academia.
- Sec. 510. Decadal survey for national aeronautics research.
- Sec. 511. Making advancements in commercial hypersonics.

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. Private earth observation data.
- Sec. 606. Commercial satellite data.
- Sec. 607. NASA data for agricultural applications.
- Sec. 608. Planetary science portfolio.
- Sec. 609. Planetary defense.
- Sec. 610. Lunar discovery and exploration.
- Sec. 611. Commercial lunar payload services.
- Sec. 612. Planetary and lunar operations.
- Sec. 613. Mars sample return.
- Sec. 614. Hubble space telescope servicing.
- Sec. 615. Great observatories mission and technology maturation.
- Sec. 616. Nancy Grace Roman space telescope.
- Sec. 617. Heliophysics research.
- Sec. 618. Study on commercial space weather data.
- Sec. 619. Geospace dynamics constellation.
- Sec. 620. Technology development for wildland fire science, management, and mitigation.
- Sec. 621. Implementation of recommendations by the National Wildland Fire Management and Mitigation Commission.

TITLE VII—STEM EDUCATION

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

TITLE VIII—POLICY OF NASA

- Sec. 801. Major programs.
- Sec. 802. NASA advisory council.
- Sec. 803. NASA assessment of early cost estimates.
- Sec. 804. Independent cost estimate.
- Sec. 805. Authorization for the transfer to NASA of funds from other agencies for scientific or engineering research or education.
- Sec. 806. Report on merits and options for establishing an institute relating to space resources.
- Sec. 807. Reports to Congress.
- Sec. 808. Contract flexibility.
- Sec. 809. GAO report.
- Sec. 810. NASA public-private talent program.
- Sec. 811. Report on Space Act agreements.
- Sec. 812. Mentoring.
- Sec. 813. Restriction on Federal funds relating to certain space and scientific activities of the People's Republic of China.
- Sec. 814. 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.

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

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

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

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

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

18 (5) DEEP SPACE.—The term “deep space”
19 means the region of space beyond low-Earth orbit,
20 which includes cislunar space.

21 (6) ISS.—The term “ISS” means the Inter-
22 national Space Station.

23 (7) NASA.—The term “NASA” means the Na-
24 tional Aeronautics and Space Administration.

1 (8) ORION.—The term “Orion” means the mul-
2 tipurpose crew vehicle described under section 303
3 of the National Aeronautics and Space Administra-
4 tion Authorization Act of 2010 (42 U.S.C. 18323).

5 (9) SPACE LAUNCH SYSTEM.—The term “Space
6 Launch System” means the Space Launch System
7 authorized under section 302 of the National Aero-
8 nautics and Space Administration Authorization Act
9 of 2010 (42 U.S.C. 18322).

10 **TITLE I—AUTHORIZATION OF** 11 **APPROPRIATIONS**

12 **SEC. 101. FISCAL YEAR 2026.**

13 For fiscal year 2026, there are authorized to be ap-
14 propriated to NASA \$24,438,336,000, as follows:

15 (1) For Exploration, \$7,783,000,000.

16 (2) For Space Operations, \$4,175,000,000.

17 (3) For Science, \$7,250,000,000.

18 (4) For Aeronautics, \$935,000,000.

19 (5) For Space Technology, \$920,500,000.

20 (6) For Education, \$143,000,000.

21 (7) For Safety, Security, and Mission Services,
22 \$3,000,000,000.

23 (8) For Construction and Environmental Com-
24 pliance and Restoration, \$185,336,000.

25 (9) For Inspector General, \$46,500,000.

TITLE II—EXPLORATION

SEC. 201. CONTINUITY OF PURPOSE FOR SPACE EXPLORATION.

(a) FINDINGS.—Congress finds the following:

(1) NASA continues to make progress in developing and testing the Space Launch System, Orion, and associated ground systems, including through the successful completion of the Artemis I mission in November 2022 and through continued preparations for the Artemis II crewed flight demonstration mission.

(2) The number of spacefaring countries is increasing, and foreign countries have expanded activities for space exploration efforts, including efforts to explore and utilize the Moon through human and robotic missions.

(3) A strong and ambitious space exploration program conducted with international and commercial partners is important to maintaining United States leadership in space and enhancing United States international competitiveness.

(4) Clear mission objectives that tie to concrete, long-term programmatic goals provide a measure to ensure accountability, enhance public support for exploration missions, and provide a clear signal of

1 commitment to both international and domestic
2 partners.

3 (b) CONTINUITY OF EXISTING CAPABILITIES AND
4 PROGRAMS.—

5 (1) As part of the human exploration activities
6 of the Administration, including progress on Artemis
7 missions and activities, the Administrator shall con-
8 tinue development of space exploration elements pur-
9 suant to section 10811 of the National Aeronautics
10 and Space Administration Authorization Act of 2022
11 (Public Law 117–167; 51 U.S.C. 20302).

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

17 (3) Congress reaffirms the sense of Congress to
18 maintain continuity of purpose as described in sec-
19 tion 201 of the 2017 NASA Transition Authoriza-
20 tion Act (Public Law 115–10; 131 Stat. 21).

21 **SEC. 202. ARTEMIS PROGRAM.**

22 (a) SENSE OF CONGRESS.—The following is the sense
23 of Congress:

24 (1) Exploration of outer space, including explo-
25 ration of the lunar surface and cislunar space, pro-

1 vides benefits and economic opportunity, including
2 by inspiring future generations and expanding the
3 science, technology, engineering, and mathematics
4 workforce needed to sustain United States leader-
5 ship in science, space, and technology.

6 (2) The lunar south pole is home to shadowed
7 craters that may contain water ice and other
8 volatiles. Understanding the nature of lunar polar
9 volatiles, such as water ice, would advance science
10 related to the origin and evolution of volatiles in the
11 inner solar system and could facilitate the long-term
12 future of space exploration. Water ice lunar re-
13 sources have the potential to become an enabling
14 component of future space exploration missions
15 throughout the solar system, including crewed mis-
16 sions to Mars.

17 (3) Other countries have demonstrated techno-
18 logical advances and successful robotic missions for
19 lunar exploration and have announced credible plans
20 for long-term human exploration of the Moon that
21 include the intent to establish lunar bases.

22 (4) United States leadership of and measurable
23 progress on the exploration of deep space is essential
24 for guiding development of norms related to oper-

1 ations on and around the Moon and for other space
2 destinations.

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

7 (b) IN GENERAL.—In carrying out activities to en-
8 able Artemis missions under the Moon to Mars Program
9 set forth in section 10811 of the National Aeronautics and
10 Space Administration Authorization Act of 2022 (Public
11 Law 117–167), the Administrator shall—

12 (1) use relevant elements set forth in section
13 10811(b)(2)(B) of the National Aeronautics and
14 Space Administration Authorization Act of 2022
15 (Public Law 117–167);

16 (2) continue to ensure that the elements under
17 paragraph (1) enable the human exploration of
18 Mars, consistent with section 10811(b)(2)(C)(i) of
19 the National Aeronautics and Space Administration
20 Authorization Act of 2022 (Public Law 117–167);

21 (3) engage with international partners, as ap-
22 propriate, in a manner that is consistent with sec-
23 tion 10811(b)(2)(C) the National Aeronautics and
24 Space Administration Authorization Act of 2022

1 (Public Law 117–167), and that increases redun-
2 dancy, efficiency, and cost savings; and

3 (4) leverage capabilities provided by United
4 States commercial providers, as appropriate and
5 practicable.

6 (c) UNITED STATES COMMERCIAL PROVIDER CAPA-
7 BILITIES IN SUPPORT OF LUNAR EXPLORATION EF-
8 FORTS.—The Administrator may enter into agreements
9 with United States commercial providers or engage in pub-
10 lic-private partnerships to procure capabilities and services
11 to support the human exploration of the Moon or cislunar
12 space.

13 **SEC. 203. REAFFIRMATION OF THE SPACE LAUNCH SYS-**
14 **TEM.**

15 (a) SPACE LAUNCH SYSTEM.—

16 (1) DEVELOPMENT AND CADENCE OBJEC-
17 TIVES.—Congress reaffirms—

18 (A) support for the full development of ca-
19 pabilities of the Space Launch System as set
20 forth in section 302(c) of the National Aero-
21 nautics and Space Administration Authorization
22 Act of 2010 (42 U.S.C. 18322(c)); and

23 (B) its commitment to the flight rate of
24 the integrated Space Launch System and Orion
25 crew vehicle missions set forth in section

1 10812(b) of the National Aeronautics and
2 Space Administration Authorization Act of
3 2022 (Public Law 117–167; 51 U.S.C. 20301
4 note).

5 (2) OTHER USES.—The Administrator shall as-
6 sess the demand for the Space Launch System by
7 entities other than NASA and shall break out such
8 demand according to the relevant Federal agency or
9 nongovernment sector. This assessment may—

10 (A) estimate cost and schedule savings
11 from reduced transit times and the potential for
12 increased returns enabled by the unique capa-
13 bilities of the Space Launch System;

14 (B) describe any barriers or challenges
15 that could impede use of the Space Launch
16 System by entities other than NASA; and

17 (C) identify potential actions and costs as-
18 sociated with overcoming barriers and chal-
19 lenges described in subparagraph (B).

20 (b) REPORT.—Not later than 180 days after the date
21 of the enactment of this Act, the Administrator shall sub-
22 mit to the appropriate committees of Congress a report
23 describing the following:

24 (1) NASA’s progress towards achieving the
25 flight rate referred to in subsection (a)(1)(B) and

1 the expected launch of the integrated Space Launch
2 System and Orion crew vehicle missions after which
3 such cadence shall be achieved.

4 (2) The results of the assessment conducted
5 pursuant to subsection (a)(2).

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

7 (a) REAFFIRMATION.—Congress reaffirms that the
8 Moon to Mars program set forth in section 10811 of the
9 National Aeronautics and Space Administration Author-
10 ization Act of 2022 (Public Law 117–167; 51 U.S.C.
11 20302 note.; 136 Stat. 1732) shall include human-rated
12 lunar landing systems.

13 (b) HUMAN-RATED LUNAR LANDING CAPABILI-
14 TIES.—

15 (1) IN GENERAL.—The Administrator shall
16 carry out the following:

17 (A) Support the development and dem-
18 onstration of, and shall obtain, human-rated
19 lunar landing capabilities, including lunar as-
20 cent capabilities, to further the goals of the
21 human exploration roadmap under section 432
22 of the National Aeronautics and Space Admin-
23 istration Transition Authorization Act of 2017
24 (Public Law 115–10; 51 U.S.C. 20302 note)
25 and the Moon to Mars Program set forth in

1 section 10811 of the National Aeronautics and
2 Space Administration Authorization Act of
3 2022 (Public Law 117–167).

4 (B) Ensure that such human-rated lunar
5 landing capabilities meet all relevant require-
6 ments, including requirements of the Moon to
7 Mars program, and for human-rating and cer-
8 tification.

9 (C) Ensure any commercial provider from
10 which the Administrator obtains human-rated
11 lunar landing capabilities is a United States
12 commercial provider.

13 (2) IMPLEMENTATION.—In carrying out para-
14 graph (1)(A)—

15 (A) the Administrator may include
16 uncrewed lunar landing services; and

17 (B) the Administrator shall, subject to the
18 availability of appropriations for such purpose,
19 seek to obtain such capabilities from not fewer
20 than two commercial providers.

21 (c) REPORT.—The Administrator shall submit to the
22 appropriate committees of Congress the following:

23 (1) Not later than 60 days after the date of the
24 enactment of this Act, a report—

1 (A) identifying the contribution over the
2 past five years, and the planned contribution
3 for 2026 through 2030, of government per-
4 sonnel, expertise, technologies and infrastruc-
5 ture utilized and to be utilized in support of de-
6 sign, development, or operation of human lunar
7 landing capabilities under this section; and

8 (B) setting forth details and the associated
9 costs of such government support, broken out
10 according to the areas of contribution specified
11 in subparagraph (A), as part of any develop-
12 ment initiative for obtaining human lunar land-
13 ing capabilities.

14 (2) Not later than 60 days after the date of the
15 enactment of this Act, a report that sets forth, for
16 any agreement with a United States commercial pro-
17 vider for human lunar landing capabilities, the fol-
18 lowing:

19 (A) The total value of the agreement when
20 awarded.

21 (B) If different from the amount in sub-
22 paragraph (A), the total value of the agreement
23 as of the date of the enactment of this Act, and
24 an explanation for any change in value, as well
25 as an identification of whether NASA or the

1 commercial partner is responsible for meeting
2 the change in value.

3 (C) The dollar amount invested and to be
4 invested by the Administration, and the dollar
5 amount invested and to be invested by the com-
6 mercial partner.

7 (D) The full requirements, including
8 human-rating and safety requirements, for
9 human lunar landing capabilities under the
10 agreement when awarded.

11 (E) If different from the amount specified
12 in subparagraph (C), the full requirements, in-
13 cluding human-rating and certification require-
14 ments, for the human lunar landing capabilities
15 under the agreement as of the date of the en-
16 actment of this Act and an explanation for any
17 changes in requirements.

18 (F) A description of milestone and associ-
19 ated payments provided for in the agreement,
20 including the following:

21 (i) An identification of all milestones
22 under the agreement.

23 (ii) The value of the associated pay-
24 ment for each milestone identified under
25 clause (i).

1 (iii) An identification of completed
2 milestones and the date of completion.

3 (iv) An identification of milestones
4 which have not yet been completed and an
5 estimated schedule for completion.

6 (v) The value of all NASA payments
7 under the agreement, outlays as of the
8 date of the enactment of this Act, and the
9 amount which as of the date of the enact-
10 ment of this Act has not yet been paid.

11 (vi) A description of any changes in
12 milestones and associated payments be-
13 tween the date of contract award and the
14 date of the enactment of this Act.

15 (G) Any cost, schedule, and performance
16 challenges as of the date of the enactment of
17 this Act in provider performance of the agree-
18 ment.

19 (H) A detailed justification of compliance
20 with section 30301 of title 51, United States
21 Code.

22 (I) A detailed certification and justification
23 of compliance with section 50503 of title 51,
24 United States Code.

1 (3) Not later than 90 days after the date of the
2 enactment of this Act, in consultation with any
3 United States commercial provider that is party to
4 an agreement with NASA for human lunar landing
5 capabilities under this section, a report on any steps
6 the Administrator and such providers are taking to
7 carry out the following:

8 (A) Address cost, schedule, and perform-
9 ance challenges faced by each commercial pro-
10 vider in development and performance of
11 human lunar landing capabilities described in
12 paragraph (2)(G).

13 (B) Facilitate the timely availability of
14 human lunar landing capabilities of each pro-
15 vider to support the schedule of Artemis mis-
16 sions in effect as of the date of the enactment
17 of this Act, as applicable to each provider.

18 (4) Not later than 90 days after the date of the
19 enactment of this Act, a report on any alternative
20 approaches, and implementation plans for any
21 Artemis mission, including an estimate of needed
22 budgetary resources, for a human lunar landing ca-
23 pability that meets NASA human-rating and certifi-
24 cation requirements in the event challenges referred
25 to in paragraph (3)(A) cannot be overcome or the

1 timeline specified in paragraph (3)(B) cannot be
2 met.

3 **SEC. 205. ADVANCED SPACESUIT CAPABILITIES.**

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

5 (1) Space suits and associated extravehicular
6 activity (EVA) technologies are critical exploration
7 technologies that are necessary for crewed missions
8 to low-Earth orbit and future human deep space ex-
9 ploration efforts, including to the lunar vicinity and
10 surface of the Moon.

11 (2) The NASA civil service workforce at the
12 Johnson Space Center provides unique capabilities
13 to design, integrate, and validate Space Suits and
14 associated EVA technologies.

15 (3) Maintaining a strong NASA core com-
16 petency in the design, development, manufacture,
17 and operation of space suits and related technologies
18 allows NASA to be an informed purchaser of com-
19 petitively awarded commercial space suits and sub-
20 components.

21 (4) According to a 2018 NASA Office of In-
22 spector General (OIG) report, current EVAs space
23 suits, the Extravehicular Mobility Units (EMUs),
24 were developed in the late 1970s, are reaching the
25 end of their useful life, have experienced multiple

1 maintenance issues that threaten astronaut lives,
2 and no longer accommodate the varying sizes of a
3 diverse astronaut corps.

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

11 (6) The private sector currently is developing
12 space suit capabilities.

13 (7) Testing space suits and related technologies
14 on the ISS could reduce risk and improve safety of
15 such suits and technologies.

16 (b) IN GENERAL.—The Administrator shall obtain
17 advanced spacesuit capabilities necessary to achieve the
18 goals of NASA’s human spaceflight exploration programs.

19 (c) ELIGIBILITY.—Any commercial provider from
20 which the Administrator obtains advanced spaceflight ca-
21 pabilities must be a United States commercial provider,
22 as set forth in section 203(c) of this Act.

23 (d) PRESERVING SPACESUIT EXPERTISE.—

24 (1) In carrying out subsection (b), NASA shall
25 maintain the internal expertise necessary to develop

1 space suits for both extravehicular activity and sur-
2 face operations, including through partnerships with
3 the private sector.

4 (2) The Johnson Space Center shall continue to
5 manage NASA's spacesuit and extravehicular activ-
6 ity programs.

7 (e) REPORT.—Not later than 180 days from the date
8 of the enactment of this Act, the Administrator shall sub-
9 mit to the appropriate committees of Congress a report—

10 (1) describing NASA's plans for—

11 (A) in-space testing of advanced spacesuit
12 capabilities, including—

13 (i) space suit tests which must be con-
14 ducted in microgravity in low-Earth orbit;
15 and

16 (ii) space suit tests that must be con-
17 ducted on the ISS before decommissioning
18 of the ISS;

19 (B) transitioning from existing spacesuits
20 in use on the ISS to use of advanced spacesuit
21 capabilities;

22 (C) future use of advanced spacesuit capa-
23 bilities by government astronauts with any non-
24 governmental platform in low-Earth orbit that
25 is certified for use by the Administration for

1 government astronauts (as such term is defined
2 in section 50902(4) of title 51, United States
3 Code); and

4 (D) disposition of retired spacesuits used
5 on the Space Shuttle or the ISS; and

6 (2) including—

7 (A) a detailed justification of compliance
8 with section 30301 of title 51, United States
9 Code; and

10 (B) a detailed certification and justifica-
11 tion of compliance with section 50503 of title
12 51, United States Code.

13 (f) ASSESSMENT OF EXTRAVEHICULAR MOBILITY
14 UNITS USED ON THE ISS.—

15 (1) No later than 45 days after the date of en-
16 actment of this Act, the Administrator shall enter
17 into an arrangement with an independent science
18 and technical engineering organization to review the
19 technical status and performance of the Administra-
20 tion's existing extravehicular mobility units
21 ("EMUs"), to analyze the data associated with all
22 mishaps, anomalies, and off-nominal events related
23 to the EMUs used by government astronauts on the
24 ISS over the last 10 years, and to make rec-

1 ommendations to the Administrator, based on the
2 results of such assessment.

3 (2) The Administrator shall ensure that the en-
4 tity carrying out the assessment in paragraph (1)
5 consults with relevant industry contractors regarding
6 the Administration's EMUs and EMU capabilities,
7 and coordinates with the NASA Astronaut Office in
8 carrying out such assessment.

9 (3) The Administrator shall transmit the re-
10 sults of the assessment in paragraph (1) to the ap-
11 propriate committees of Congress as soon as prac-
12 ticable and no later than 270 days after the date of
13 enactment of this Act.

14 **TITLE III—SPACE OPERATIONS**

15 **Subtitle A—Policy**

16 **SEC. 301. REPORT ON CONTINUED UNITED STATES PRES-** 17 **ENCE IN LOW-EARTH ORBIT.**

18 Not later than 180 days after the date of the enact-
19 ment of this Act, the Comptroller General of the United
20 States shall submit to the appropriate committees of Con-
21 gress a report containing an accounting of the following:

22 (1) The five, ten, and twenty-year United
23 States objectives for low-Earth orbit activities.

1 (2) The type and extent of capabilities using
2 low-Earth orbit platforms the Federal Government
3 requires to support such United States objectives.

4 (3) A description of the Federal Government's
5 current and planned future compliance with the fol-
6 lowing:

7 (A) The policy on maintaining an uninter-
8 rupted capability for human space flight and
9 operations in low-Earth orbit, in accordance
10 with section 70501(a)(1) of title 51, United
11 States Code.

12 (B) Section 201(b) of the National Aero-
13 nautics and Space Administration Authorization
14 Act of 2010 (42 U.S.C. 18311(b)) regarding
15 United States human space flight capabilities.

16 (4) The preparedness of the United States to
17 continue to satisfy the statutory direction referred to
18 in paragraph (3) under the planned approach to
19 deorbit the ISS by not later than the end of calendar
20 year 2031.

21 **SEC. 302. UNITED STATES STRATEGY FOR LOW-EARTH**
22 **ORBIT.**

23 (a) STRATEGY.—Not later than 210 days after the
24 date of the enactment of this Act, the Administrator, in
25 consultation with the National Space Council, Office of

1 Science and Technology Policy, or other appropriate inter-
2 agency coordinating body, shall submit to the appropriate
3 committees of Congress a strategy for a robust and resil-
4 ient architecture to advance NASA and other relevant
5 Federal Government research, development, and oper-
6 ational requirements in low-Earth orbit. Such architecture
7 should—

8 (1) include a mix of crewed and uncrewed plat-
9 forms;

10 (2) consider an incremental approach to achiev-
11 ing the full suite of capabilities necessary to satisfy
12 research, development, and operational requirements
13 for NASA activities in low-Earth orbit;

14 (3) consider the requirements described in sub-
15 section (b); and

16 (4) sustain and promote United States leader-
17 ship and international partnerships in carrying out
18 low-Earth orbit activities.

19 (b) REQUIREMENTS.—Not later than 90 days after
20 the date of the enactment of this Act, the Administrator
21 shall submit to the appropriate committees of Congress
22 and make available to relevant United States commercial
23 industry entities, an accounting of the research, develop-
24 ment, and operational requirements for NASA activities
25 in low-Earth orbit, including any requirements that could

1 affect the design, development, instrumentation, or long-
2 term operations of future United States commercial low-
3 Earth orbit platforms and supporting capabilities. In pre-
4 paring such accounting, the Administrator may consider
5 the requirements of other relevant Federal agencies.

6 **SEC. 303. RISK OF LOSING ACCESS TO LOW-EARTH ORBIT.**

7 Not later than 270 days after the date of the enact-
8 ment of this Act, the Administrator shall submit to the
9 appropriate committees of Congress a report that evalu-
10 ates the risk posed by a potential gap in access to a low-
11 Earth orbit platform on science and technology research
12 and development conducted by NASA and private entities.
13 The report shall describe the following:

14 (1) The NASA science and exploration pro-
15 grams that may be adversely affected by the lack of
16 a United States presence in low-Earth orbit.

17 (2) The effects that such a gap would have on
18 the following:

19 (A) The United States' competitiveness in
20 science and technology.

21 (B) The development of the United States-
22 based commercial space industry.

23 (3) Potential options and associated costs for
24 preventing such a gap, including the following:

1 (A) Implementing the strategy described in
2 section 306.

3 (B) Supporting the operation of the ISS
4 beyond 2030.

5 (C) Increasing investment in and accel-
6 erating development of commercial space sta-
7 tions.

8 (D) Working with international partners to
9 establish alternative means for conducting re-
10 search in low-Earth orbit.

11 **Subtitle B—International Space**
12 **Station**

13 **SEC. 311. INTERNATIONAL SPACE STATION.**

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

16 (1) the ISS is a unique facility that provides
17 the United States with capabilities in space that are
18 currently unmatched; NASA continues to make pro-
19 ductive use of the ISS;

20 (2) the ISS serves several functions, including
21 establishing the United States as a leader in space
22 activities, acting as a beacon of international co-
23 operation, and conducting cutting-edge microgravity
24 and observational research in low-Earth orbit;

1 (3) NASA must complete certain objectives on
2 the ISS to facilitate deep space exploration efforts,
3 including carrying out human research and dem-
4 onstrating exploration-related technologies; and

5 (4) reducing crew size or cargo deliveries, or re-
6 ducing sustaining engineering capabilities, would re-
7 duce the scientific output of the ISS and potentially
8 increase the risk to the ISS and its crew.

9 (b) FULL UTILIZATION.—

10 (1) SENSE OF CONGRESS.—It is the sense of
11 Congress that, to ensure the greatest return on in-
12 vestments made by the United States and the ISS
13 partners in the development, assembly, and oper-
14 ations of the ISS, the Administrator should maxi-
15 mize the utilization and productivity of the ISS with
16 respect to the priorities set forth in section 10816
17 of the National Aeronautics and Space Administra-
18 tion Authorization Act of 2022 (Public Law 117–
19 167; 51 U.S.C. 70901 note), which include research
20 of the human research program, risk reduction ac-
21 tivities relevant to exploration technologies, the ad-
22 vancement of United States leadership of basic and
23 applied space life and physical sciences, and other
24 research and development essential to Moon to Mars
25 program activities.

1 (2) AMENDMENT.—Section 502(a) of the Na-
2 tional Aeronautics and Space Administration Au-
3 thorization Act of 2010 (Public Law 111–267; 42
4 U.S.C. 18352(a)), is amended by striking “take
5 steps to”.

6 **SEC. 312. MAINTENANCE OF SERVICE FOR INTERNATIONAL**
7 **SPACE STATION.**

8 (a) IN GENERAL.—Subject to appropriations for such
9 purpose, the Administrator shall maintain a flight cadence
10 necessary to support the health and safety of the ISS crew
11 and the full and productive utilization of the ISS through
12 its operational lifetime, consistent with the certification
13 date of the ISS. In maintaining such flight cadence, the
14 Administrator shall seek to carry out not less than the
15 average annual cadence for the immediately preceding
16 three fiscal years of crew and cargo flights on United
17 States vehicles certified under NASA’s Commercial Crew
18 and Cargo Program as of the date of the enactment of
19 this Act.

20 (b) WAIVER.—The Administrator may waive the re-
21 quirement under subsection (a) upon submission of a writ-
22 ten determination to Congress that—

23 (1) the health and safety of the ISS requires a
24 reduction in flights; or

1 (2) the ISS has concluded its operational life-
2 time.

3 **SEC. 313. NONGOVERNMENTAL HUMAN MISSIONS ON THE**
4 **INTERNATIONAL SPACE STATION.**

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

7 (1) nongovernmental human missions on the
8 ISS carried out, as appropriate, pursuant to NASA
9 policies and procedures, and other Federal Govern-
10 ment laws and regulations, can provide lessons and
11 learning experiences for both government and non-
12 government entities to inform the development of fu-
13 ture commercial low-Earth orbit platforms and a
14 low-Earth orbit economy; and

15 (2) the Administrator should share lessons
16 learned from nongovernmental human missions on
17 the ISS to advance the commercial human
18 spaceflight industry, to promote the safety of future
19 commercial low-Earth orbit platforms, and to inform
20 the evolution of policies guiding such activities in
21 low-Earth orbit.

22 (b) NONGOVERNMENTAL HUMAN MISSIONS ON THE
23 ISS.—The Administrator may enter into one or more
24 agreements to enable one or more United States commer-
25 cial providers to conduct nongovernmental human mis-

1 sions on the ISS pursuant to NASA policies and proce-
2 dures, and Federal government laws and regulations.

3 (c) REPORT.—Not later than 18 months after the
4 date of the enactment of this Act, the Comptroller General
5 of the United States shall submit to the appropriate com-
6 mittees of Congress a report containing information relat-
7 ing to the following:

8 (1) The number of nongovernmental human
9 missions on the ISS planned.

10 (2) The number of nongovernmental human
11 missions on the ISS completed.

12 (3) The extent to which commercial entities car-
13 rying out nongovernmental human missions on the
14 ISS fully reimburse costs incurred by NASA in asso-
15 ciation with any nongovernmental missions carried
16 out on the ISS.

17 (4) The extent to which nongovernmental
18 human missions on the ISS impact the priorities
19 specified in section 10816 of the National Aero-
20 nautics and Space Administration Authorization Act
21 of 2022 (Public Law 117–167; 51 U.S.C. 70901
22 note).

23 (5) The impact, if any, to operations of or ac-
24 tivities on the ISS that are not related to nongovern-
25 mental human missions on the ISS.

1 (6) The extent to which any nongovernmental
2 human mission on the ISS—

3 (A) conforms with section 20102 of title
4 51, United States Code;

5 (B) adheres to the requirements of section
6 50131 of title 51, United States Code; and

7 (C) is consistent with the national security
8 or foreign policy interests of the United States.

9 (7) Any other issues related to nongovern-
10 mental human missions on the ISS that the Comp-
11 troller General determines are appropriate for review
12 as part of undertaking the report in subsection (c).

13 **SEC. 314. UNITED STATES DEORBIT CAPABILITIES.**

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

16 (1) the ISS is aging and eventually will need to
17 be deorbited safely and disposed of in a controlled
18 manner; and

19 (2) to protect the safety of the public, and to
20 avoid interfering with other space operators or ob-
21 jects, NASA plans to deorbit and disposition the ISS
22 through a controlled atmospheric reentry over an
23 uninhabited region.

24 (b) ACQUISITION OF ISS DEORBIT CAPABILITIES.—

1 (1) IN GENERAL.—The Administrator shall ac-
2 quire ISS deorbit capabilities from one or more
3 United States commercial providers.

4 (2) IMPLEMENTATION.—In carrying out para-
5 graph (1), the Administrator shall, to the greatest
6 extent practicable, not reduce or deprioritize NASA
7 activities conducted on and in support of the ISS to
8 support the acquisition of United States deorbit ca-
9 pabilities.

10 (c) COSTS.—

11 (1) INDEPENDENT COST ESTIMATE.—For the
12 deorbit capabilities described in subsection (b), the
13 Administrator shall obtain, not later than 30 days
14 after the date of the enactment of the Act, an inde-
15 pendent life-cycle cost estimate for such deorbit ca-
16 pabilities and shall report the results of such esti-
17 mate and a five-year budget profile to the appro-
18 priate committees of Congress.

19 (2) REPORT.—

20 (A) IN GENERAL.—Not later than one year
21 after the date of the enactment of this Act, the
22 Administrator shall submit to the appropriate
23 committees of Congress a report detailing the
24 Administration's plan for the financial,

1 logistical, and operational responsibilities asso-
2 ciated with the deorbit capability.

3 (B) FURTHER REPORTS.—The Adminis-
4 trator shall annually submit to the appropriate
5 committees of Congress a report, to accompany
6 the President’s budget request, containing a de-
7 scription of the annual and cumulative lifecycle
8 expenditures for the preceding year on activities
9 related to the deorbit of the ISS and how such
10 costs are shared among the ISS partners.

11 **Subtitle C—Future Activities and** 12 **Other Provisions**

13 **SEC. 321. COMMERCIAL LOW-EARTH ORBIT DEVELOPMENT.**

14 (a) IN GENERAL.—The Administrator is authorized
15 to enter into agreements with one or more United States
16 commercial providers to enable the development and cer-
17 tification of, and procure capabilities related to, a United
18 States private, low-Earth orbit platform or platforms, and
19 to use such platform or platforms and related capabilities
20 to—

- 21 (1) further the strategy under section 302(a);
- 22 (2) sustain the priorities described in section
23 10816 of the National Aeronautics and Space Ad-
24 ministration Authorization Act of 2022 (Public Law
25 117–167; 51 U.S.C. 70901 note) and the activities

1 under the Human Exploration Roadmap pursuant to
2 section 432(b)(2)(J) of the National Aeronautics
3 and Space Administration Transition Authorization
4 Act of 2017 (Public Law 115–10); and
5 (3) satisfy the requirements described in section
6 302(b).

7 (b) ANCHOR TENANCY.—Not later than November
8 15, 2026, the Administrator shall provide to the appro-
9 priate committees of Congress the following:

10 (1) The results of a survey and assessment of
11 the market for capabilities and services that may be
12 provided through future United States commercial
13 low-Earth orbit platforms that shall be prepared by
14 an independent entity with appropriate expertise;

15 (2) A detailed justification of compliance with
16 section 30301 of title 51, United States Code.

17 (3) A detailed certification and justification of
18 compliance with section 50503 of title 51, United
19 States Code.

20 (c) USE OF UNITED STATES LAUNCH AND REENTRY
21 SERVICES.—As a term of an agreement entered into under
22 to subsection (a), the Administrator shall include a re-
23 quirement for the use of United States commercially-pro-
24 vided launch and reentry services to support all Adminis-
25 tration activities under the agreement, in accordance with

1 section 50131 of title 51, United States Code, as applica-
2 ble.

3 (d) SAFETY.—Not later than 60 days after the date
4 of the enactment of this Act, the Administrator shall sub-
5 mit to the appropriate Committees of Congress a deter-
6 mination on the applicability of Administration human
7 rating processes, certification, and requirements for plat-
8 forms used for services under this section and the cir-
9 cumstances and arrangements under which such proc-
10 esses, certification, and requirements would apply.

11 **SEC. 322. REPORT ON SUBORBITAL CREW MISSIONS.**

12 Not later than 180 days after the date of the enact-
13 ment of this Act, the Administrator shall submit to the
14 appropriate committees of Congress a report on the costs,
15 benefits, risks, training requirements, and policy or legal
16 implications, including liability matters, of launching
17 United States Government personnel on commercial sub-
18 orbital vehicles.

19 **SEC. 323. ORBITAL DEBRIS RESEARCH AND DEVELOPMENT.**

20 (a) SENSE OF CONGRESS.—It is the sense of Con-
21 gress that NASA’s research and development activities re-
22 lated to understanding and mitigating the hazards posed
23 by orbital debris are critical to ensuring the continued safe
24 operation of NASA missions, including the safety of hu-
25 mans living and working in space, and such activities fur-

1 ther enable scientific and technological advances that can
2 be leveraged by the broader space operations community
3 to foster a sustainable space environment.

4 (b) RESEARCH AND DEVELOPMENT.—The Adminis-
5 trator shall, to the extent practicable, conduct research
6 and development to advance scientific understanding and
7 technological capabilities related to orbital debris charac-
8 terization and mitigation.

9 (c) CONSIDERATIONS.—In conducting the research
10 and development described in subsection (b), the Adminis-
11 trator may consider activities that—

12 (1) improve the characterization and modeling
13 of the space environment, including the characteriza-
14 tion and modeling of objects of both natural and an-
15 thropogenic origins that cannot be directly charac-
16 terized by ground-based measurements;

17 (2) leverage space weather research and devel-
18 opment elements within NASA's Heliophysics pro-
19 gram, to the extent appropriate and in accordance
20 with the priorities established in the most recent
21 solar and space physics decadal survey;

22 (3) support the application of relevant research,
23 tools, and technologies to advance orbital debris
24 characterization and mitigation and the transfer of

1 such research, tools, and technologies to stake-
2 holders, as appropriate and practicable; and

3 (4) involve coordination with other relevant
4 Federal entities that have a shared interest in tech-
5 nologies and research advanced under this section.

6 **SEC. 324. LUNAR COMMUNICATIONS AND NAVIGATION.**

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

8 (1) Reliable communication and navigation ca-
9 pabilities are essential for sustainable human and
10 robotic exploration of the Moon, Mars, and other
11 deep space destinations.

12 (2) Fostering the development of commercial
13 capabilities can accelerate the deployment of lunar
14 communication and navigation services that could
15 support the Artemis program, and the Moon to Mars
16 program.

17 (b) AUTHORIZATION.—The Administrator is author-
18 ized to ensure the availability of a robust and resilient
19 lunar communications and navigation architecture that
20 will support NASA’s human and robotic lunar exploration
21 activities and requirements.

22 (c) STUDY AND PLAN.—To inform the development
23 in subsection (a), the Administrator shall develop a study
24 and prepare a plan to—

1 (1) ensure the availability of interoperable com-
2 munication and navigation services for NASA mis-
3 sions on the lunar surface and in cislunar space;

4 (2) coordinate with the private sector, other
5 Federal agencies, and, as appropriate, international
6 partners, to establish technical standards in accord-
7 ance with section 12(d) of the National Technology
8 Transfer and Advancement Act of 1995 (Public Law
9 104–113), protocols, and interface requirements for
10 lunar communications and navigation services and
11 systems, including relevant information technology
12 and cybersecurity standards and practices;

13 (3) support NASA lunar activities;

14 (4) leverage NASA’s space technology research,
15 development, and demonstration activities related to
16 space communications and navigation; and

17 (5) evaluate the opportunities, benefits, feasi-
18 bility, challenges, and possible risks of using com-
19 mercial cislunar communication and navigation serv-
20 ices, as appropriate, by United States commercial
21 providers.

22 **SEC. 325. CELESTIAL TIME STANDARDIZATION.**

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

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

5 (2) the Artemis and Moon to Mars programs of
6 the National Aeronautics and Space Administration
7 (NASA) will involve governmental, commercial, aca-
8 demic, and international partners where there is a
9 need for interoperability between systems;

10 (3) the use of Coordinated Universal Time has
11 challenges when used beyond Earth at other celestial
12 bodies, due to relativistic effects;

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

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

21 (b) DEVELOPMENT OF CELESTIAL TIME STANDARD-
22 IZATION.—The Administrator of NASA, in consultation
23 with the Director of the Office of Science and Technology
24 Policy, shall carry out the following:

1 (1) Enable the development of celestial time
2 standardization, including by leading the study and
3 definition of a coordinated lunar time.

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

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

8 (A) coordinate with relevant Federal enti-
9 ties, including the Department of Commerce,
10 the Department of Defense, the Department of
11 State, and the Department of Transportation;
12 and

13 (B) consult with—

14 (i) relevant private sector entities;

15 (ii) relevant academic entities; and

16 (iii) relevant international standards
17 setting bodies and international partners.

18 (4) Incorporate the following features of a co-
19 ordinated lunar time, to the extent practicable, in
20 the development of the strategy developed pursuant
21 to paragraph (2):

22 (A) Traceability to Coordinated Universal
23 Time.

24 (B) Accuracy sufficient to support preci-
25 sion navigation and science.

1 (C) Resilience to loss of contact with
2 Earth.

3 (D) Scalability to space environments be-
4 yond the Earth-Moon system.

5 (c) REPORT.—Not later than two years after the date
6 of the enactment of this Act, the Administrator of NASA
7 shall submit to the appropriate committees of Congress
8 a report describing the strategy developed pursuant to
9 subsection (b)(2), including relevant plans, timelines, and
10 resources required for the implementation of a coordinated
11 lunar time pursuant to such strategy.

12 **TITLE IV—SPACE TECHNOLOGY**

13 **SEC. 401. SBIR PHASE II FLEXIBILITY.**

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

19 **SEC. 402. LUNAR POWER PURCHASE AGREEMENT FEASI-** 20 **BILITY STUDY.**

21 (a) STUDY.—The Administrator may enter into an
22 arrangement with an independent entity with appropriate
23 expertise to conduct a study evaluating the feasibility of
24 using power purchase agreements to facilitate the private

1 sector development and deployment of lunar surface power
2 capabilities.

3 (b) CONTENTS.—The study conducted under sub-
4 section (a) may include the following:

5 (1) An identification of facilities and technical
6 capabilities needed to support lunar surface power
7 production.

8 (2) A description and assessment of the types
9 and technical readiness of technologies that could be
10 used to provide the United States with access to
11 lunar surface power, and an estimated timeline of
12 availability of such technologies.

13 (3) A demand forecast for lunar surface power
14 capabilities, including the following:

15 (A) Forecasted demand of both govern-
16 mental and nongovernmental users.

17 (B) To support the following:

18 (i) Near-term exploration activities.

19 (ii) Long-duration activities.

20 (iii) Capabilities allowing activities
21 throughout the lunar night.

22 (4) An identification of lessons learned from
23 Federal Government experience with power purchase
24 agreements, including a description of any relevant
25 Federal Government use of power purchase agree-

1 ments, and a description of how such lessons learned
2 could inform or be applied to future United States
3 lunar power purchase agreements.

4 (5) Potential policy and legal issues associated
5 with lunar power purchase agreements between pro-
6 viders and the United States Government, inter-
7 national partners, and other private sector entities.

8 (c) COORDINATION.—In conducting the study under
9 this section, the Administrator may consult with the fol-
10 lowing:

11 (1) The Lunar Surface Innovation Consortium.

12 (2) The Department of Energy, the Depart-
13 ment of Commerce, and other Federal agencies, as
14 determined appropriate by the Administrator.

15 (3) International partners.

16 (4) Relevant private sector entities.

17 (d) REPORT.—Not later than 24 months after the
18 date of the enactment of this Act, the Administrator shall
19 submit to the appropriate committees of Congress a report
20 that describes the results of the study conducted pursuant
21 to subsection (a).

22 **SEC. 403. CRYOGENIC FLUID VALVE TECHNOLOGY REVIEW.**

23 (a) SENSE OF CONGRESS.—It is the sense of Con-
24 gress that advancing cryogenic fluid valve technology
25 would support the Administration's efforts to improve

1 cryogenic fluid management and improve space vehicle re-
2 liability and efficiency.

3 (b) TECHNOLOGY AND RESEARCH REVIEW.—Not
4 later than 90 days after the date of the enactment of this
5 Act, subject to the availability of appropriations, the Ad-
6 ministrator shall enter into an agreement with an inde-
7 pendent research and development center or other inde-
8 pendent nonprofit organization, as determined appropriate
9 by the Administrator, to conduct a review of cryogenic
10 fluid valve technology in accordance with this section. The
11 organization shall review recent advances in technologies
12 related to cryogenic fluid valve use in space applications
13 and assess opportunities to improve cryogenic fluid valve
14 technologies, including support for research and develop-
15 ment activities to advance materials engineering for cryo-
16 genic fluid valves.

17 (c) REPORT.—Not later than 18 months after the
18 date of the enactment of this Act, the organization con-
19 ducting the review shall submit to the Administrator and
20 the appropriate committees of Congress a report detailing
21 the results of the review conducted under this section.

22 **TITLE V—AERONAUTICS**

23 **SEC. 501. DEFINITIONS.**

24 In this title:

1 (1) ADVANCED AIR MOBILITY; AAM.—The terms
2 “advanced air mobility” and “AAM” mean a trans-
3 portation system that is comprised of urban air mo-
4 bility and regional air mobility using manned or un-
5 manned aircraft.

6 (2) REGIONAL AIR MOBILITY.—The term “re-
7 gional air mobility” means the movement of pas-
8 sengers or property by air between 2 points using an
9 airworthy 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;

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

16 (C) is not urban air mobility.

17 (3) UNMANNED AIRCRAFT.—The term “un-
18 manned aircraft” means an aircraft that is operated
19 without the possibility of direct human intervention
20 from within or on the aircraft.

21 (4) UNMANNED AIRCRAFT SYSTEM.—The term
22 “unmanned aircraft system” means an unmanned
23 aircraft and associated elements (including commu-
24 nication links and the components that control the
25 unmanned aircraft) that are required for the oper-

1 ator to operate safely and efficiently in the national
2 airspace system.

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

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

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

14 (6) UTM.—The term “UTM” means an un-
15 manned aircraft system traffic management system
16 or service.

17 **SEC. 502. EXPERIMENTAL AIRCRAFT DEMONSTRATIONS.**

18 (a) STUDY.—Not later than one year after the date
19 of the enactment of this Act, the Administrator, in con-
20 sultation with industry and academia, shall conduct a
21 study of NASA’s administration of past and ongoing
22 NASA experimental aircraft demonstrator projects.

23 (b) FUTURE DEMONSTRATIONS.—The study under
24 subsection (a) shall include an identification of flight re-
25 search activities, systems, capabilities, and technologies

1 that could be viable candidates for experimental aircraft
2 demonstrator projects. Such activities, systems, capabili-
3 ties, and technologies may include technological advance-
4 ments related to structures, aerodynamics, propulsion,
5 controls, and autonomous capabilities. The study shall in-
6 clude a description of criteria and performance metrics
7 used to determine the readiness of an activity, system, ca-
8 pability, or technology for incorporation into an experi-
9 mental aircraft demonstrator project.

10 (c) LESSONS LEARNED.—The study under subsection
11 (a) also shall include an assessment of lessons learned
12 from NASA’s administration of past and ongoing experi-
13 mental aircraft demonstration projects over the last dec-
14 ade, including the projects set forth under section 10831
15 of the National Aeronautics and Space Administration Au-
16 thorization Act of 2022 (Public Law 117–167). Such as-
17 sessment shall include—

18 (1) a quantitative assessment of each experi-
19 mental aircraft demonstration project’s ability to
20 meet cost, schedule and performance goals, as de-
21 fined at the time of project confirmation;

22 (2) the extent to which each project’s objectives
23 or performance goals were changed or descoped, and
24 the rationale for such change or descoping;

1 (3) the extent to which the system, capability,
2 or technology that was the subject of each project
3 was matured as a result of its demonstration on an
4 experimental aircraft demonstrator; and

5 (4) the extent to which each project has con-
6 tributed, or is likely to contribute in the future, to
7 advancing the capabilities of and innovation in the
8 United States aircraft and aviation industries.

9 **SEC. 503. HYPERSONICS RESEARCH.**

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

12 (1) basic and applied hypersonics research—

13 (A) is critical for enabling the development
14 of advanced high-speed aeronautical and space
15 systems; and

16 (B) can improve understanding of tech-
17 nical challenges related to high-speed and reus-
18 able vehicle technologies, including those related
19 to propulsion, noise, advanced materials, and
20 entry, descent, and landing operations;

21 (2) investments in hypersonics research are
22 critical to sustaining United States global leadership
23 in space and aeronautics; and

24 (3) NASA efforts to study hypersonics research
25 should complement research supported by the De-

1 partment of Defense and, when appropriate, be con-
2 ducted in partnership with universities and industry.

3 (b) **HYPERSONICS RESEARCH.**—The Administrator,
4 in coordination with the Administrator of the Federal
5 Aviation Administration and the Secretary of the Depart-
6 ment of Defense, and in consultation with industry and
7 academia, shall continue to carry out basic and applied
8 hypersonics research.

9 (c) **HYPERSONICS RESEARCH ROADMAP.**—Not later
10 than 180 days after the date of the enactment of this Act,
11 the Administrator, in consultation with the Administrator
12 of the Federal Aviation Administration and the Secretary
13 of the Department of Defense, and with industry and aca-
14 demic institutions, shall update the hypersonics research
15 roadmap required under section 603 of the National Aero-
16 nautics and Space Administration Transition Authoriza-
17 tion Act of 2017 (Public Law 115–10; 51 U.S.C. 20302
18 note). In updating the research roadmap, the Adminis-
19 trator may consider advancements in—

20 (1) system level design, analysis, and validation
21 of hypersonics aircraft technologies;

22 (2) propulsion capabilities and technologies;

23 (3) vehicle technologies, including vehicle flow
24 physics and vehicle thermal management associated
25 with aerodynamic heating;

1 (4) advanced materials, including materials ca-
2 pable of withstanding high temperatures and dem-
3 onstrating durable materials, and efforts to create
4 models and simulate use of such materials; and

5 (5) other areas of hypersonics research as de-
6 termined appropriate by the Administrator.

7 (d) REPORT AND BRIEFING.—Not later than one
8 year after the date of the enactment of this Act, the Ad-
9 ministrator shall—

10 (1) transmit the updated research roadmap
11 under subsection (c) to the appropriate committees
12 of Congress; and

13 (2) provide a briefing on the research conducted
14 under subsection (b), including how such research
15 aligns with the updated research roadmap under
16 subsection (c).

17 **SEC. 504. ADVANCED MATERIALS AND MANUFACTURING**
18 **TECHNOLOGY.**

19 Not later than 180 days after the date of the enact-
20 ment of this Act and annually thereafter, the Adminis-
21 trator shall submit to the appropriate committees of Con-
22 gress a report on the status of NASA activities pursuant
23 to subsections (e) and (f) of section 10831 of the National
24 Aeronautics and Space Administration Authorization Act
25 of 2022 (Public Law 117–167; 51 U.S.C. 40102 note; re-

1 lating to the advanced materials and manufacturing tech-
2 nology program and research partnerships, respectively),
3 as well as other NASA activities.

4 **SEC. 505. UNMANNED AIRCRAFT SYSTEMS AND ADVANCED**
5 **AIR MOBILITY.**

6 (a) FINDING.—Congress finds that research and de-
7 velopment related to autonomous aviation is vital to en-
8 sure United States competitiveness as the National Air-
9 space System evolves from trajectory-based operations to
10 collaborative and highly automated operations.

11 (b) COLLABORATION.—The Administrator shall, in
12 collaboration with the Administrator of Federal Aviation
13 Administration, the heads of other relevant Federal agen-
14 cies, and appropriate representatives of academia and in-
15 dustry, continue its research on unmanned aircraft sys-
16 tems and advanced air mobility, including research related
17 to UTM and autonomous capabilities, as practicable.

18 (c) BRIEF.—Not later than 18 months after the date
19 of the enactment of this Act, the Administrator shall brief
20 the appropriate committees of Congress on the progress
21 of the research under subsection (b).

22 **SEC. 506. ADVANCED CAPABILITIES FOR EMERGENCY RE-**
23 **SPONSE OPERATIONS.**

24 (a) IN GENERAL.—The Administrator shall leverage
25 NASA-developed tools and technologies to conduct re-

1 search and development activities under the Advanced Ca-
2 pabilities for Emergency Response Operations (ACERO)
3 project, or appropriate successor project or projects, to im-
4 prove aerial responses to wildfires.

5 (b) GOALS.—The research and development activities
6 conducted under subsection (a) may include the following:

7 (1) Advanced aircraft technologies and airspace
8 management efforts to assist in the management,
9 deconfliction, and coordination of aerial assets dur-
10 ing wildfire response efforts.

11 (2) Information sharing and real-time data ex-
12 change for wildfire response teams.

13 (3) Development of an interoperable platform to
14 provide situational awareness of aerial assets during
15 wildfire response.

16 (4) Establishment of a multi-agency concept of
17 operations, which may involve Federal, State, and
18 local government agencies, to enable coordination of
19 aerial activities for wildfire response.

20 (c) COLLABORATION.—In carrying out this section,
21 the Administrator—

22 (1) may coordinate and collaborate with other
23 Federal, State, and local government agencies, re-
24 gional organizations, and commercial partners and

1 academic institutions involved in wildfire manage-
2 ment; and

3 (2) shall, to the maximum extent practicable,
4 consult with the heads of other Federal departments
5 and agencies to avoid duplication of activities.

6 (d) PROHIBITION.—

7 (1) IN GENERAL.—Except as provided in this
8 subsection, the Administrator may not procure an
9 unmanned aircraft system to conduct activities de-
10 scribed in this section if such unmanned aircraft sys-
11 tem is manufactured or assembled by a covered for-
12 eign entity.

13 (2) EXEMPTION.—The Administrator may
14 waive the prohibition under paragraph (1) on a case-
15 by-case basis if the Administrator—

16 (A) determines that the procurement of an
17 unmanned aircraft system is—

18 (i) in the national interest of the
19 United States; and

20 (ii) necessary for the sole purpose of
21 improving aerial responses to wildfires; and

22 (B) notifies the appropriate committees of
23 Congress not later than 30 days after a deter-
24 mination in the affirmative under subparagraph
25 (A).

1 (e) ANNUAL REPORTS.—Not later than one year
2 after the date of the enactment of this Act and annually
3 thereafter until December 31, 2031, the Administrator
4 shall submit to the appropriate committees of Congress
5 a report describing the activities, including results, carried
6 out pursuant to this section. Each such report, at min-
7 imum, shall contain the following:

8 (1) A description of any research and develop-
9 ment activities.

10 (2) A description of the Administrator’s activi-
11 ties pursuant to subsection (c).

12 (3) An identification of any topics related to
13 improvement of aerial responses to wildfires that
14 could benefit from further research.

15 (4) A description of any continuing efforts
16 under this section.

17 (5) Any other information determined appro-
18 priate by the Administrator.

19 (f) DEFINITION.—In this section, the term “covered
20 foreign entity” has the meaning given such term in section
21 1832 of the National Defense Authorization Act for Fiscal
22 Year 2024 (Public Law 118–31).

23 **SEC. 507. HYDROGEN AVIATION.**

24 (a) IN GENERAL.—Subject to the availability of ap-
25 propriations for such purpose, and taking into consider-

1 ation the strategy developed under and research conducted
2 pursuant to section 1019 of the FAA Reauthorization Act
3 of 2024 (Public Law 118–63), the Administrator may
4 carry out research on emerging technologies related to hy-
5 drogen aviation.

6 (b) REPORT.—Not later than two years after the date
7 of the enactment of this Act, the Administrator shall sub-
8 mit to the appropriate committees of Congress a report
9 on NASA research activities under subsection (a) and any
10 associated findings.

11 **SEC. 508. HIGH-PERFORMANCE CHASE AIRCRAFT.**

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

14 (1) NASA programs benefit from and rely upon
15 high-performance chase aircraft for providing re-
16 search and mission support; and

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

20 (b) BRIEFING.—Not later than 60 days after the date
21 of the enactment of this Act and biannually thereafter,
22 the Administrator shall provide to the appropriate com-
23 mittees of Congress a briefing on the strategy of NASA
24 relating to the following:

1 (1) Collaboration with the Department of De-
2 fense on efforts for research and flight asset sharing
3 to support NASA's research mission support and
4 pilot training requirements.

5 (2) Efforts to seek aircraft parts and engines to
6 keep NASA's current fleet of chase aircraft oper-
7 ational, including potential use of 3D additive manu-
8 factured parts.

9 (3) Strategies for acquiring or using through
10 loan, sharing, or other agreements, as appropriate,
11 Department of Defense aircraft to support NASA's
12 research and mission support activities, as required.

13 **SEC. 509. COLLABORATION WITH ACADEMIA.**

14 It is the sense of Congress that—

15 (1) colleges and universities are hubs of re-
16 search and innovation, with expertise in various
17 fields of science and aeronautics;

18 (2) collaborating with academia allows NASA to
19 access cutting-edge research and expertise that can
20 further enable advancements in aeronautics research
21 and technology and address complex aeronautical
22 challenges;

23 (3) a cutting-edge civil aeronautics research and
24 development program can inspire the next genera-
25 tion to pursue education and careers in science,

1 technology, engineering, and mathematics, including
2 aeronautics; and

3 (4) opportunities for students to participate in
4 NASA-supported academic research and develop-
5 ment projects, such as the University Leadership
6 Initiative, the University Students Research Chal-
7 lenge, and related aeronautic projects and competi-
8 tions, contributes to training the next generation
9 and developing the aeronautics workforce to support
10 continued United States leadership and economic
11 growth in civil aeronautics and aviation.

12 **SEC. 510. DECADAL SURVEY FOR NATIONAL AERONAUTICS**
13 **RESEARCH.**

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

16 (1) engaging the science and engineering com-
17 munities, along with industry, through the develop-
18 ment of a National Academies of Science, Engineer-
19 ing, and Medicine decadal survey in aeronautics re-
20 search and development can provide a science and
21 engineering community consensus on key research
22 and development priorities in national civil aero-
23 nautics programs;

24 (2) a decadal survey—

1 (A) entails a comprehensive review of and
2 strategy and priorities for civil national aero-
3 nautics research and development; and

4 (B) prioritizes such research and develop-
5 ment for the next decade; and

6 (3) a decadal survey for civil aeronautics re-
7 search and development can serve as a guiding
8 framework for NASA's and other relevant Federal
9 agencies' strategic planning and resource allocation
10 in the field of civil aeronautics research and develop-
11 ment for the coming decade.

12 (b) FINDINGS.—Congress finds that—

13 (1) in title 51, United States Code, sections ad-
14 dressing NASA's decadal surveys for aeronautics re-
15 search include sections 20305 and 40703; and

16 (2) the most recent National Academies'
17 Decadal Survey of Civil Aeronautics was published
18 in 2006.

19 (c) STUDY.—In accordance with section 20305 of
20 title 51, United States Code, the Administrator, in con-
21 sultation with the heads of other relevant Federal Govern-
22 ment agencies, as appropriate, shall enter into an arrange-
23 ment with the National Academies of Sciences, Engineer-
24 ing, and Medicine to conduct a decadal survey of civil aer-
25 onautics research for the 2026 through 2036 decade. The

1 survey shall recommend research and programmatic prior-
2 ities to sustain United States leadership in civil aero-
3 nautics research and development and support a safe and
4 sustainable future for aviation. The survey may also in-
5 clude recommendations for the following:

6 (1) Enabling innovation.

7 (2) Ensuring a world-class workforce for aero-
8 nautics research and development and related
9 United States commercial industries and activities.

10 (3) The dissemination and transition of such
11 research and development to the United States com-
12 mercial aviation and aircraft industries.

13 (d) TRANSMITTAL.—Not later than two years after
14 the date of the enactment of this Act, the Administrator
15 shall submit to the appropriate committees of Congress
16 the results of such survey, including any recommenda-
17 tions.

18 **SEC. 511. MAKING ADVANCEMENTS IN COMMERCIAL**
19 **HYPERSONICS.**

20 (a) IN GENERAL.—In conducting the hypersonics re-
21 search in accordance with section 40112(d) of title 51,
22 United States Code, the Administrator may establish the
23 Making Advancements in Commercial Hypersonics Pro-
24 gram (in this section referred to as the “Program”), which
25 shall facilitate opportunities for testing of high-speed air-

1 craft and other technologies that advance scientific re-
2 search and technology development related to hypersonic
3 aircraft.

4 (b) LIMITATION.—The Program under subsection (a)
5 shall not fund the development of technologies that are
6 supported by such testing opportunities.

7 (c) PLAN.—Not later than 60 days after the date of
8 the enactment of this Act, the Administrator, acting
9 through the Aeronautics Research Mission Directorate,
10 shall develop a strategic plan for activities under sub-
11 section (a) that aligns with the research roadmap under
12 section 503 of this Act.

13 (d) COORDINATION, CONSULTATION AND COLLABO-
14 RATION.—

15 (1) The Administrator shall ensure coordination
16 between the Aeronautics Research Mission Direc-
17 torate and other Mission Directorates, as appro-
18 priate, to identify technologies eligible for testing op-
19 portunities under the Program.

20 (2) The Administrator shall consult and seek to
21 collaborate with, as appropriate, with the Secretary
22 of Defense and the Administrator of the Federal
23 Aviation Administration on activities related to the
24 Program, including development, testing, and eval-

1 uation of high-speed aircraft and related tech-
2 nologies.

3 (e) REPORT.—The Administrator shall submit to the
4 appropriate committees of Congress, and the Committee
5 on Armed Services of the House of Representatives and
6 the Committee on Armed Services of the Senate—

7 (1) not later than 80 days after the date of the
8 enactment of this section, a report that—

9 (A) describes activities of the program es-
10 tablished under subsection (a); and

11 (B) includes the strategic plan produced
12 under subsection (c); and

13 (2) not later than one year after the date of the
14 enactment of this Act and annually thereafter, a re-
15 port describing progress in carrying out the pro-
16 gram, including the number and type of testing op-
17 portunities executed in the previous fiscal year and
18 planned for the upcoming fiscal year.

19 (f) RESEARCH SECURITY.—Nothing under this sec-
20 tion authorizes the Administrator to develop, implement,
21 or execute an agreement related to technologies under this
22 section with any entity of concern, a foreign business enti-
23 ty, or a foreign country of concern.

24 (g) DEFINITIONS.—In this section—

1 (1) ENTITY OF CONCERN.—the term “entity of
2 concern” has the meaning given such term in section
3 10114 of the Research and Development, Competi-
4 tion, and Innovation Act (Public Law 117–167; 42
5 U.S.C. 18912).

6 (2) FOREIGN BUSINESS ENTITY.—The term
7 “foreign business entity” means an entity that is
8 majority-owned or majority-controlled (as such term
9 is defined in section 800.208 of title 31, Code of
10 Federal Regulations, or a successor regulation), or
11 minority owned greater than 25 percent by—

12 (A) any governmental organization of a
13 foreign country of concern; or

14 (B) any other entity that is—

15 (i) known to be owned or controlled
16 by any governmental organization of a for-
17 eign country of concern; or

18 (ii) organized under, or otherwise sub-
19 ject to, the laws of a foreign country of
20 concern.

21 (3) FOREIGN COUNTRY OF CONCERN.—The
22 term “foreign country of concern” has the meaning
23 given such term in section 9901 of title XCIX of di-
24 vision H of the William M. (Mac) Thornberry Na-

1 tional Defense Authorization Act for Fiscal Year
2 2021 (15 U.S.C. 4651).

3 (4) HIGH-SPEED AIRCRAFT.—The term “high-
4 speed aircraft” means an aircraft operating at
5 speeds in excess of Mach 1, including supersonic and
6 hypersonic aircraft.

7 (5) HYPERSONIC.—The term “hypersonic”
8 means flights operating at speeds that exceed Mach
9 5.

10 (6) SUPERSONIC.—The term “supersonic”
11 means flights operating at speeds in excess of Mach
12 1 but less than Mach 5.

13 **TITLE VI—SCIENCE**

14 **SEC. 601. MAINTAINING A BALANCED SCIENCE PORTFOLIO.**

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

17 (1) a balanced and adequately funded set of ac-
18 tivities consisting of research and analysis grant pro-
19 grams, technology development, suborbital research
20 activities, and small, medium, and large space mis-
21 sions, contributes to a robust and productive science
22 program and serves as a catalyst for innovation and
23 discovery; and

24 (2) the Administrator should set science prior-
25 ities by following the recommendations and guidance

1 provided by the scientific community through the
2 National Academies of Sciences, Engineering, and
3 Medicine decadal surveys.

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

12 **SEC. 602. IMPLEMENTATION OF SCIENCE MISSION COST-**
13 **CAPS.**

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

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

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

1 (3) audits by the NASA Inspector General and
2 the Government Accountability Office have reported
3 that early cost estimates for missions in the prelimi-
4 nary phases of conception and development are im-
5 mature and unreliable, and the cost of a mission
6 typically is not well-understood until the project is
7 further along in the development process;

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

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

18 (b) REPORT.—Not later than 12 months after the
19 date of the enactment of this Act, the Comptroller General
20 shall transmit to the appropriate committees of Congress
21 a review of NASA practices related to establishment of
22 and compliance with cost caps of competitively-selected,
23 principal investigator-led science missions. The review
24 shall—

1 (1) assess current cost cap values and deter-
2 mine whether existing cost-cap amounts are appro-
3 prium for different classes of missions;

4 (2) consider the effectiveness of cost caps in
5 maintaining a varied and balanced portfolio of mis-
6 sion types within the Science Mission Directorate;

7 (3) describe the information NASA requires as
8 part of a proposal submission related to project cost
9 estimates and proposal compliance with cost caps,
10 and assess whether such required information pro-
11 vides sufficient insight or confidence in the esti-
12 mates;

13 (4) consider NASA processes for assessing pro-
14 posed cost estimates and the accuracy of such as-
15 sessments for past competitively-selected, principal
16 investigator-led science missions; and

17 (5) for the period starting on January 1, 2000
18 and ending on the date of the enactment of this
19 Act—

20 (A) a list of—

21 (i) competitively-selected, principal in-
22 vestigator-led science missions for which
23 costs have exceeded the associated cost
24 cap; and

1 (ii) reason the mission costs exceeded
2 the cost-cap;

3 (B) an assessment of NASA's role in pre-
4 dicting, preventing, or managing competitively-
5 selected, principal investigator-led science mis-
6 sion cost increases; and

7 (C) a description of the impact of in-
8 creased competitively-selected, principal investi-
9 gator-led science mission costs beyond the cost
10 caps on—

11 (i) the missions for which the cost cap
12 has been breached; and

13 (ii) other missions within the applica-
14 ble division and within the Science Mission
15 Directorate.

16 **SEC. 603. REEXAMINATION OF DECADEAL SURVEYS.**

17 Title 51, United States Code, is amended in section
18 20305(c) by inserting “, significant changes to the NASA
19 budget” after “growth”.

20 **SEC. 604. LANDSAT.**

21 Not later than 180 days after the date of enactment
22 of this Act, the Administrator shall transmit a report to
23 the appropriate committees of Congress describing—

24 (1) the Administrator's efforts to comply with
25 section 60134 of title 51, United States Code;

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

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

5 (B) could—

6 (i) meet associated science require-
7 ments while maintaining or exceeding the
8 quality, integrity, and continuity of the
9 Landsat observational capabilities and per-
10 formance, including requirements nec-
11 essary to ensure high-quality calibrated
12 data continuity and traceability with the
13 50-year Landsat data record; and

14 (ii) comply with nondiscriminatory
15 availability of unenhanced data and public
16 archiving of data pursuant to section
17 60141 and 60142 of title 51, United
18 States Code, and all other relevant federal
19 laws, regulations, and policies related to
20 open science and data accessibility;

21 (3) any potential tradeoffs or other impacts of
22 subparagraphs (A) or (B) that could reduce the ben-
23 efit of Landsat data for scientific and applied uses
24 or reduce the Federal Government's ability to make
25 such data available for the widest possible use; and

1 (4) recommendations and opportunities for the
2 Federal Government to mitigate potential tradeoffs
3 or impacts identified under paragraph (3) or to oth-
4 erwise facilitate private sector data-buys or service
5 procurements.

6 **SEC. 605. PRIVATE EARTH OBSERVATION DATA.**

7 (a) AMENDMENTS.—Section 702 of the National Aer-
8 onautics and Space Administration Authorization Act of
9 2010 (42 U.S.C. 18371) is amended—

10 (1) by striking “The Director of OSTP” and
11 inserting the following:

12 “(a) IN GENERAL.—The Director of OSTP”; and

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

14 “(b) CONSIDERATIONS.—In updating the civil Earth
15 observation strategic implementation plan pursuant to
16 subsection (a), the Director of OSTP shall consider com-
17 mercial Earth observation data, as appropriate, that can
18 be purchased or accessed by the Federal Government to
19 meet Earth observation requirements.”.

20 (b) GOVERNMENT ACCOUNTABILITY OFFICE RE-
21 PORT.—Not later than 12 months after the release of the
22 next civil Earth observation strategic implementation plan
23 update under section 702(a) of the National Aeronautics
24 and Space Administration Authorization Act of 2010 (42
25 U.S.C. 18371(a)), the Comptroller General shall report to

1 the appropriate committees of Congress an assessment of
2 the Director of the Office of Science and Technology Pol-
3 icy's implementation of section 702(b) of the National
4 Aeronautics and Space Administration Authorization Act
5 of 2010 (42 U.S.C. 18371(b)), as amended.

6 **SEC. 606. COMMERCIAL SATELLITE DATA.**

7 (a) FINDINGS.—Congress makes the following find-
8 ings:

9 (1) Section 60501 of title 51, United States
10 Code, states that the goal for the Earth Science pro-
11 gram of NASA shall be to pursue a program of
12 Earth observations, research, and applications activi-
13 ties to better understand the Earth, how it supports
14 life, and how human activities affect its ability to do
15 so in the future.

16 (2) Section 50115 of title 51, United States
17 Code, states that the Administrator of NASA shall,
18 to the extent possible and while satisfying the sci-
19 entific or educational requirements of NASA, and
20 where appropriate, of other Federal agencies and
21 scientific researchers, acquire, where cost effective,
22 space-based and airborne commercial Earth remote
23 sensing data, services, distribution, and applications
24 from a commercial provider.

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

6 (4) The Administrator of NASA has—

7 (A) determined that the pilot program de-
8 scribed in paragraph (3) has been a success, as
9 described in the final evaluation entitled “Com-
10 mercial SmallSat Data Acquisition Program
11 Pilot Evaluation Report” issued in 2020;

12 (B) established a formal process for evalu-
13 ating and onboarding new commercial vendors
14 in such pilot program;

15 (C) increased the number of commercial
16 vendors and commercial data products available
17 through such pilot program; and

18 (D) expanded procurement arrangements
19 with commercial vendors to broaden user access
20 to provide commercial Earth remote sensing
21 data and imagery to federally funded research-
22 ers.

23 (b) COMMERCIAL SATELLITE DATA ACQUISITION
24 PROGRAM.—

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

4 **“§ 60307. Commercial satellite data acquisition pro-**
5 **gram**

6 “(a) IN GENERAL.—The Administrator shall estab-
7 lish within the Earth Science Division of the Science Mis-
8 sion Directorate a program to acquire and disseminate
9 cost-effective and appropriate commercial Earth remote
10 sensing data and imagery in order to satisfy the scientific,
11 operational, and educational requirements of the Adminis-
12 tration, and where appropriate, of other Federal agencies
13 and scientific researchers to augment or complement the
14 suite of Earth observations acquired by the Administra-
15 tion, other United States Government agencies, and inter-
16 national partners.

17 “(b) DATA PUBLICATION AND TRANSPARENCY.—The
18 terms and conditions of commercial Earth remote sensing
19 data and imagery acquisitions under the program de-
20 scribed in subsection (a) shall not prevent—

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

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

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

3 “(1) procure the commercial Earth remote
4 sensing data and imagery from commercial vendors
5 to advance scientific research and applications in ac-
6 cordance with subsection (a); and

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

12 “(d) UNITED STATES VENDORS.—Commercial Earth
13 remote sensing data and imagery referred to in sub-
14 sections (a) and (c) shall, to the maximum extent prac-
15 ticable, be procured from United States vendors.

16 “(e) REPORT.—Not later than 180 days after the
17 date of the enactment of this section and annually there-
18 after, the Administrator shall submit to the Committee on
19 Commerce, Science, and Transportation of the Senate and
20 the Committee on Science, Space, and Technology of the
21 House of Representatives a report that includes the fol-
22 lowing information regarding the agreements, vendors, li-
23 cense terms, and uses of commercial Earth remote sensing
24 data and imagery under this section:

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

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

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

11 “(3) A description of how each such agreement
12 advances scientific research and applications, includ-
13 ing priorities recommended by the National Acad-
14 emies of Sciences, Engineering, and Medicine
15 decadal surveys.

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

21 (2) CLERICAL AMENDMENT.—The table of con-
22 tents for chapter 603 of title 51, United States
23 Code, is amended by adding at the end the following
24 new item:

“60307. Commercial Satellite Data Acquisition Program.”.

1 **SEC. 607. NASA DATA FOR AGRICULTURAL APPLICATIONS.**

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

3 (1) NASA has decades of experience in space-
4 based scientific Earth observations and measure-
5 ments, including data, trends and modeling.

6 (2) NASA Earth science data, which includes
7 data on precipitation, temperature,
8 evapotranspiration, soil moisture, and vegetation
9 health, has been used to inform the decisionmaking
10 of agricultural producers.

11 (3) NASA applies its scientific data and models
12 to inform and support the agricultural community
13 and engages in innovative collaborations such as the
14 NASA Acres and NASA Harvest agricultural con-
15 sortia.

16 (4) NASA uses space-based Earth observations
17 and science and applications to support farmers in
18 efforts to conserve water and other resources, im-
19 prove farm management and crop yield, and facili-
20 tate the stability of the national food supply.

21 (5) NASA's upcoming Earth System Observ-
22 atory will benefit the agricultural community by im-
23 proving observations critical for measuring and un-
24 derstanding cropland conditions, water availability,
25 early onset crop disease, soil moisture, and other
26 crop and rangeland management indicators.

1 (6) Increased engagement between NASA and
2 the agricultural community can support agricultural
3 producers, bolster the national food supply, and im-
4 prove agricultural research, science, and technology.

5 (b) DATA DISSEMINATION.—NASA shall continue to
6 partner with other relevant Federal agencies, as prac-
7 ticable, to disseminate water, soil, vegetation, land-use,
8 and other relevant NASA Earth observation and science
9 data, information and tools to support American agricul-
10 tural producers. Such partnerships may include activities
11 such as—

12 (1) continuing to leverage NASA Earth science
13 water data and information to enable efficient use of
14 resources, inform irrigation decisions, and support
15 local innovation and control of water management;

16 (2) supporting agriculture decisionmaking by
17 increasing the accessibility and useability of NASA
18 Earth science data, information, and tools relevant
19 to the impact of disease, weather, precipitation, and
20 other environmental factors on agricultural produc-
21 tion; or

22 (3) making available, to the greatest extent
23 practicable, NASA earth science measurements and
24 data to advance precision agricultural capabilities

1 relevant to the needs and requirements of agricul-
2 tural producers.

3 (c) APPLICATION OF SPACE-BASED DATA.—The Ad-
4 ministrator shall, in furtherance of the goal for the
5 NASA’s Earth science and applications program of secur-
6 ing practical benefits for society, as set forth in section
7 60501 of title 51, United States Code, continue to collabo-
8 rate with relevant Federal agencies to develop mechanisms
9 to transition, as appropriate, relevant NASA Earth
10 science research findings, data, information, models, and
11 capabilities to operational governmental and private sector
12 entities focused on addressing the needs of the agricultural
13 user community.

14 (d) PARTNERING.—In carrying out subsections (b)
15 and (d), NASA shall, to the extent practicable and in col-
16 laboration with other relevant Federal agencies, where ap-
17 propriate, continue to engage State and local government
18 agencies, institutions of higher education, agriculture pro-
19 ducer organizations, and other relevant stakeholder and
20 user communities from the public and private sectors to
21 improve dissemination of NASA Earth science data, infor-
22 mation, and tools relevant to the needs of agricultural pro-
23 ducers and the agriculture industry, in accordance with
24 the goal for the Administration’s Earth science and appli-
25 cations program set forth in section 60501 of title 51,

1 United States Code, and relevant recommendations of the
2 most recent decadal survey on Earth science and applica-
3 tions from space.

4 **SEC. 608. PLANETARY SCIENCE PORTFOLIO.**

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

7 (1) planetary science missions advance the sci-
8 entific understanding of the solar system and the
9 place of humans in it while also advancing the de-
10 sign and operations of spacecraft and robotic engi-
11 neering; and

12 (2) Discovery, New Frontiers, and Flagship
13 programs allow NASA to fund a range of missions
14 that vary in size, cost, and complexity; maintaining
15 balance across these mission classes allows for a
16 broad scope of discoveries and scientific advances.

17 (b) MISSION PRIORITIES REAFFIRMATION.—Con-
18 gress reaffirms the direction in section 502(b)(1) of the
19 National Aeronautics and Space Administration Transi-
20 tion Authorization Act of 2017 (Public Law 115–10; 51
21 U.S.C. 20302 note) that—

22 (1) in accordance with the priorities established
23 in the most recent Planetary Science Decadal Sur-
24 vey, the Administrator shall ensure, to the greatest
25 extent practicable, the completion of a balanced set

1 of Discovery, New Frontiers, and Flagship missions
2 at the cadence recommended by the most recent
3 Planetary Science Decadal Survey; and

4 (2) consistent with the set of missions described
5 in paragraph (1), and while maintaining the con-
6 tinuity of scientific data and steady development of
7 capabilities and technologies, the Administrator may
8 seek, if necessary, adjustments to mission priorities,
9 schedule, and scope in light of changing budget pro-
10 jections.

11 **SEC. 609. PLANETARY DEFENSE.**

12 (a) Section 808 of the National Aeronautics and
13 Space Administration Authorization Act of 2010 (42
14 U.S.C. 18387), is amended in subsection (b) by striking
15 “implement, before September 30, 2012,” and inserting
16 “, in coordination with the NASA Administrator, maintain
17 and regularly update”.

18 (b) Title 51, United States Code, is amended—

19 (1) in section 71103—

20 (A) in the section heading, by striking
21 **“Developing policy and recom-**
22 **mending”** and inserting **“Policy on near-**
23 **Earth objects and”**

24 (B) by striking “Within 2 years after Oc-
25 tober 15, 2008, the” and inserting “The”;

1 (C) after “Policy shall”, by inserting “, in
2 coordination with the Administrator, maintain
3 and regularly update”;

4 (D) by striking “(1) develop”; and

5 (E) in paragraph (2), by striking “(2) rec-
6 ommend” and inserting “recommendations
7 for”; and

8 (2) in chapter 711—

9 (A) by adding at the end the following:

10 **“§ 71105. Planetary defense coordination office**

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

17 “(b) RESPONSIBILITIES.—Consistent with the direc-
18 tion in section 10825 of the National Aeronautics and
19 Space Administration Authorization Act of 2022 (Public
20 Law 117–167) the Planetary Defense Coordination Office
21 under subsection (a) shall—

22 “(1) plan, develop, and implement a program to
23 survey threats posed by near-Earth objects equal to
24 or greater than 140 meters in diameter, as required
25 by section 321(d)(1) of the National Aeronautics

1 and Space Administration Authorization Act of 2005
2 (Public Law 109–155; 119 Stat. 2922; 51 U.S.C.
3 71101 note prec.);

4 “(2) identify, track, and characterize potentially
5 hazardous near-Earth objects, issue warnings of the
6 effects of potential impacts of such objects, and in-
7 vestigate strategies and technologies for mitigating
8 the potential impacts of such objects; and

9 “(3) assist in coordinating government planning
10 for a response to a potential impact of a near-Earth
11 objects.”; and

12 (B) in the table of contents—

13 (i) by adding at the end the following
14 new item:

“71105. Planetary Defense Coordination Office.”; and

15 (ii) by amending the item relating to
16 section 71103 to read as follows:

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

17 **SEC. 610. LUNAR DISCOVERY AND EXPLORATION.**

18 (a) IN GENERAL.—The Administrator may carry out,
19 within the Science Mission Directorate, a program to ac-
20 complish science objectives for the Moon, with an organi-
21 zational structure that aligns responsibility, authority, and
22 accountability, as recommended by the most recent
23 decadal survey for planetary science and astrobiology.

1 (b) OBJECTIVES AND REQUIREMENTS.—In carrying
2 out the program in subsection (a), the Administrator shall
3 direct the Science Mission Directorate, in consultation
4 with the Exploration Systems Development Mission Direc-
5 torate and the Space Technology Mission Directorate, to
6 define high-priority lunar science objectives informed by
7 decadal surveys and other scientific consensus rec-
8 ommendations, and related requirements of an integrated
9 Artemis science strategy for human and robotic missions
10 to the Moon.

11 (c) INSTRUMENTATION.—The program in subsection
12 (a) should assess the need for and facilitate the develop-
13 ment of instrumentation to support the scientific explo-
14 ration of the Moon.

15 **SEC. 611. COMMERCIAL LUNAR PAYLOAD SERVICES.**

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

18 (1) Administration encouragement and support
19 for commercial services for lunar surface delivery ca-
20 pabilities and other related services serves the na-
21 tional interest; and

22 (2) commercial providers benefit from an ap-
23 proach that places low-cost, noncritical instruments
24 on initial deliveries using small- and medium-size

1 landers before proceeding to larger landers for more
2 complex payloads.

3 (b) COMMERCIAL LUNAR PAYLOAD SERVICES.—The
4 Administrator is authorized to establish a Commercial
5 Lunar Payload Services program for the purposes of pro-
6 curing, from one or more United States commercial pro-
7 viders, services for delivery of NASA science payloads, and
8 the payloads of other NASA mission directorates, as ap-
9 propriate and practicable, to the lunar surface.

10 (c) RELATIONSHIP TO OTHER MISSION DIREC-
11 TORATES.—A Mission Directorate that seeks to obtain
12 commercial lunar payload services under the program es-
13 tablished in subsection (b) shall provide funding for—

14 (1) any payload, instrument or other item spon-
15 sored by the Mission Directorate for delivery
16 through the program; and

17 (2) the cost of the commercial lunar payload
18 services obtained on behalf of the Mission Direc-
19 torate.

20 (d) IMPLEMENTATION.—In implementing any such
21 activities pursuant to subsection (b), the Administrator
22 shall—

23 (1) conduct updated market research on the
24 commercial lunar economy and identify any changes
25 since the last market analysis;

1 (2) assess NASA's needs from and role in and
2 contribution to the commercial lunar delivery mar-
3 ket;

4 (3) based on such needs identified in paragraph
5 (2), assess the effectiveness of the task order ap-
6 proach in advancing commercial development of
7 lunar delivery services, including an assessment of
8 the appropriate number of providers necessary to
9 support NASA commercial lunar delivery needs, and
10 identify any challenges and recommendations for im-
11 provement; and

12 (4) strengthen procedures related to the selec-
13 tion, manifesting, interfaces, and requirements of
14 payloads and other relevant factors that could con-
15 tribute to minimizing future NASA-directed changes
16 to projects following commercial lunar payload serv-
17 ice contract awards.

18 (e) MANAGEMENT PLAN.—Not later than 90 days
19 from the date of the enactment of this Act, the Adminis-
20 trator shall, informed by the activities conducted under
21 subsection (c), prepare and implement a management plan
22 with clear leadership authority and responsibility for the
23 program authorized in subsection (b).

24 (f) BRIEFINGS.—Not later than 180 days from the
25 date of the enactment of this Act, the Administrator shall

1 brief the appropriate committees of Congress on the imple-
2 mentation of the management plan in subsection (d).

3 (g) COORDINATION.—The Administrator shall ensure
4 coordination between Mission Directorates and the Moon
5 to Mars Program on the administration of the program
6 in subsection (b) to ensure alignment of goals for lunar
7 delivery services.

8 **SEC. 612. PLANETARY AND LUNAR OPERATIONS.**

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

11 (1) existing NASA lunar and Martian orbital
12 missions are operating well beyond their planned
13 mission lifespans;

14 (2) NASA relies on this aging infrastructure for
15 observations, communications relay, and other oper-
16 ations to support critical NASA missions; and

17 (3) the United States plans to increase its ac-
18 tivities on and around both the Moon and Mars in
19 coming years.

20 (b) PLAN.—The Administrator shall develop a plan
21 to ensure continuity of operations and sufficient observa-
22 tional and operational capabilities on and around the
23 Moon and Mars necessary to continue to enable a robust
24 science program and human exploration program for the
25 Moon and Mars well into the future. Such plan shall con-

1 sider opportunities to engage both private and inter-
2 national partners in future operations.

3 **SEC. 613. MARS SAMPLE RETURN.**

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

11 (b) APPROACH.—The Administrator shall pursue the
12 program in subsection (a) on a timeline and in a manner
13 necessary to—

14 (1) Sustain United States leadership in the sci-
15 entific exploration of Mars;

16 (2) maintain NASA capabilities to land and op-
17 erate robotic spacecraft on the surface of Mars;

18 (3) preserve the relevant unique and long-term
19 institutional expertise; and

20 (4) maintain a balanced and robust planetary
21 science division portfolio without requiring signifi-
22 cant increases to the NASA budget.

23 (c) IMPLEMENTATION PLAN.—The Administrator
24 shall, as soon as practicable and no later than 180 days
25 after the date of enactment of this Act, transmit to the

1 appropriate committees of Congress a plan and timeline
2 for the implementation of a Mars Sample Return program
3 pursuant to this section with the goal of enabling the high-
4 est scientific return for the resources invested. Such plan
5 shall include a design and mission architecture and estab-
6 lish realistic cost and schedule estimates to enable such
7 goal.

8 **SEC. 614. HUBBLE SPACE TELESCOPE SERVICING.**

9 Not later than 90 days from the date of the enact-
10 ment of this Act, the Administrator shall submit to the
11 appropriate committees of Congress full copies of any
12 study conducted in the last five years regarding the tech-
13 nical feasibility of safely reboosting the Hubble Space Tel-
14 escope, including any such studies regarding the technical
15 feasibility of using private sector capabilities.

16 **SEC. 615. GREAT OBSERVATORIES MISSION AND TECH-**
17 **NOLOGY MATURATION.**

18 (a) ESTABLISHMENT.—The Administrator may es-
19 tablish a Great Observatories Mission and Technology
20 Maturation program (referred to in this section as the
21 “Program”) to mature the large-scale space-based mission
22 concepts and technologies needed for future large strategic
23 astrophysics missions, including for a large-aperture infra-
24 red, optical, and ultraviolet space telescope, as informed

1 by the recommendations of the most recent decadal survey
2 in astronomy and astrophysics.

3 (b) ACTIVITIES.—The Program shall inform the de-
4 sign and development of future large-scale space-based As-
5 trophysics missions by conducting activities which may in-
6 clude—

7 (1) assessing the appropriate scope for any fu-
8 ture mission;

9 (2) determining the range of capabilities and
10 technology readiness of such capabilities needed for
11 a mission; and

12 (3) informing the development and maturation
13 of science and technologies needed for such mission.

14 (c) COSTS.—The independent life-cycle cost estimate
15 conducted under section 30307 of title 51, United States
16 Code, as amended by this Act, for any large-scale space-
17 based mission derived from concepts and technologies ma-
18 tured through the Program shall include an accounting
19 of all costs spent on maturation of the mission through
20 the Program.

21 (d) REPORT.—Not later than one year after the date
22 of the enactment of this Act and annually thereafter, the
23 Administrator shall submit to the appropriate committees
24 of Congress a report on the progress and impacts of any

1 Projects established under subsection (b) within Astro-
2 physics programs.

3 **SEC. 616. NANCY GRACE ROMAN SPACE TELESCOPE.**

4 The Administrator shall continue development of the
5 Nancy Grace Roman Space Telescope as directed in sub-
6 section 10823(b) of the National Aeronautics and Space
7 Administration Authorization Act of 2022 (Public Law
8 117–167).

9 **SEC. 617. HELIOPHYSICS RESEARCH.**

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

12 (1) NASA heliophysics research advances the
13 scientific understanding of the Sun, its impact on
14 the Earth and near-Earth environment, and the
15 Sun’s interactions with other bodies in the solar sys-
16 tem, the interplanetary medium, and the interstellar
17 medium;

18 (2) fundamental science supported by the
19 Heliophysics division is critical to improving space
20 weather observations and forecasting capabilities,
21 which contribute to—

22 (A) fortifying national security and other
23 critically important space-based and ground-
24 based assets;

1 (B) improving the resilience of the Na-
2 tion's energy infrastructure; and

3 (C) protecting human health in space; and

4 (3) the Heliophysics Division should continue to
5 maximize the scientific return on investment of its
6 portfolio through maintaining a balanced portfolio
7 that includes research and analysis, including multi-
8 disciplinary research initiatives, technology develop-
9 ment, space-based missions and suborbital flight
10 projects that include both directed and strategic mis-
11 sions and principal investigator-led, competitively so-
12 licited missions, informed by the science priorities
13 and guidance of the most recent decadal survey in
14 solar and space physics.

15 (b) PROGRAM MANAGEMENT.—The Administrator
16 shall seek to—

17 (1) maintain a regular Explorer Announcement
18 of Opportunity cadence and alternate between small
19 and mid-sized missions; and

20 (2) enable a regular selection of Missions of Op-
21 portunity.

22 **SEC. 618. STUDY ON COMMERCIAL SPACE WEATHER DATA.**

23 (a) STUDY.—The Administrator, in consultation with
24 the Administrator of the National Oceanic and Atmos-
25 pheric Administration, shall conduct a study of the extent

1 to which commercially-available data could advance space
2 weather research, including the relevant space weather re-
3 search priorities of the most recent decadal survey on solar
4 and space physics.

5 (b) CONTENTS.—The study shall include—

6 (1) an assessment of commercial capabilities
7 and commercial data that meets or exceeds the
8 science and technical standards and requirements of
9 the Administration, which may include—

10 (A) data that is or could be generated by
11 commercial providers;

12 (B) commercially-available small space-
13 craft;

14 (C) opportunities for hosted NASA pay-
15 loads on commercial spacecraft; and

16 (D) commercial solutions for data proc-
17 essing applicable to space weather science;

18 (2) recommendations and opportunities for the
19 Federal Government to facilitate the use of commer-
20 cially available options for space weather data rel-
21 evant to advancing the Administration's space
22 weather research and development activities con-
23 sistent with the most recent National Academies
24 decadal survey, without reducing quality of data;
25 and

1 (3) options, where appropriate, for potential
2 partnerships or use of NASA prize authority and
3 competitions, as appropriate and practicable, to ob-
4 tain access to such data identified in paragraph (1)
5 that—

6 (A) meets or exceeds the science and tech-
7 nical standards and requirements of the Admin-
8 istration; and

9 (B) are not duplicative of activities con-
10 ducted pursuant to chapter 606 of title 51,
11 United States Code.

12 (c) REPORT.—Not later than 270 days after the date
13 of enactment of this Act, the Administrator shall submit
14 a report to the appropriate committees of Congress con-
15 taining the results of the study provided under subsection
16 (a).

17 **SEC. 619. GEOSPACE DYNAMICS CONSTELLATION.**

18 (a) SENSE OF CONGRESS.—It is the sense of Con-
19 gress that the Geospace Dynamics Constellation mission
20 could enable scientific discoveries that will transform un-
21 derstanding of the processes that govern the dynamics of
22 the Earth's upper atmospheric envelope that surrounds
23 and protects the planet.

24 (b) ASSESSMENT.—Not later than 30 days after the
25 date of the enactment of this Act, the Administrator shall

1 submit to the appropriate committees of Congress a report
2 regarding the updated mission approach, schedule, and
3 budget profile to launch the Geospace Dynamics Con-
4 stellation mission by the end of the decade to fulfill the
5 recommendations of the heliophysics decadal survey.

6 **SEC. 620. TECHNOLOGY DEVELOPMENT FOR WILDLAND**
7 **FIRE SCIENCE, MANAGEMENT, AND MITIGA-**
8 **TION.**

9 (a) IN GENERAL.—The Administrator, acting
10 through the Associate Director of the Earth Science Divi-
11 sion for Earth Action, shall establish a project for science
12 and technology development for wildland fire management
13 and mitigation (referred to in this section as
14 “FireSense”).

15 (b) PURPOSE.—The purpose of FireSense is to co-
16 develop, deploy, and support NASA’s application of ad-
17 vanced science, data, and technology capabilities to enable
18 measurable improvement in United States wildland fire
19 management and mitigation across the fire cycle, includ-
20 ing pre-fire, active fire, and post-fire phases.

21 (c) OBJECTIVES.—In establishing FireSense, the Ad-
22 ministrator shall seek input from relevant stakeholders
23 and shall align FireSense with the goal for NASA’s Earth
24 science and applications program set forth in section
25 60501 of title 51, United States Code, consider relevant

1 recommendations of the most recent decadal survey on
2 Earth science and applications from space, and shall, to
3 the extent practicable, focus on the following objectives:

4 (1) Enhanced predictive modeling and early
5 warning systems for wildland fire detection and pre-
6 vention.

7 (2) Developing remote sensing technologies and
8 data analysis tools to monitor fire-prone areas.

9 (3) Transitioning wildland fire management
10 technologies to operational users, including agencies,
11 private sector entities, and academic institutions.

12 (4) Conducting studies on the long-term impact
13 of temperature change, weather variability, environ-
14 mental stressors, and atmospheric, hydrologic, eco-
15 logical, and other changes to Earth systems on
16 wildland fire behavior, frequency, and intensity.

17 (5) Supporting post-fire recovery and ecosystem
18 restoration through advanced technologies and data.

19 (6) Providing necessary technical assistance to
20 operational users to receive, process, and make use
21 of wildland fire science, data, and technology re-
22 sources.

23 (7) Any additional objectives as determined nec-
24 essary by the Administrator to satisfy the purpose
25 described in subsection (b).

1 (d) INTERAGENCY COORDINATION.—In implementing
2 FireSense, the Administrator shall, as practicable and ap-
3 propriate, coordinate with relevant Federal, State, and
4 local agencies to support wildland fire science, data, and
5 technology development activities across all phases of the
6 fire cycle, including prevention, detection, response, and
7 recovery.

8 (e) OPERATIONAL SUPPORT.—The Administrator
9 shall, to the extent practicable and in collaboration with
10 other relevant Federal agencies, continue to provide nec-
11 essary scientific and technical support to enhance wildland
12 fire mitigation efforts to operational users, including the
13 following:

14 (1) Relevant Federal agencies, as determined
15 appropriate by the Administrator.

16 (2) State, local, and Tribal governments and or-
17 ganizations.

18 (3) Private sector entities.

19 (4) Academic institutions, including colleges,
20 universities, and wildland fire research institutions.

21 (f) DATA SHARING AND COLLABORATION.—The Ad-
22 ministrator shall facilitate the sharing of data, tools, and
23 research findings with operational users and other rel-
24 evant stakeholders to ensure effective use of NASA's capa-
25 bilities in wildland fire management.

1 (g) FIRESENSE PROJECT EVALUATION.—The Ad-
2 ministrator shall periodically evaluate the effectiveness of
3 FireSense and make necessary adjustments to improve its
4 impact on wildland fire management.

5 (h) REPORT.—Not later than one year after the date
6 of the enactment of this Act and annually thereafter for
7 five years, the Administrator shall submit to the appro-
8 priate committees of Congress a report on the activities
9 and accomplishments of FireSense, including the fol-
10 lowing:

11 (1) An assessment of interagency coordination
12 efforts.

13 (2) FireSense’s impact on wildland fire man-
14 agement efforts.

15 (3) A list of emerging wildland fire manage-
16 ment technologies and opportunities that may be
17 considered for further research, development, dem-
18 onstration, and deployment.

19 (4) An assessment of existing challenges to ef-
20 fective coordination with operational users, including
21 State, local, and Tribal governments.

22 **SEC. 621. IMPLEMENTATION OF RECOMMENDATIONS BY**
23 **THE NATIONAL WILDLAND FIRE MANAGE-**
24 **MENT AND MITIGATION COMMISSION.**

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

1 (1) Wildland fires pose a significant threat to
2 public safety, property, and natural resources.

3 (2) The National Wildland Fire Management
4 and Mitigation Commission (in this section referred
5 to as the “Commission”) has provided critical rec-
6 ommendations for enhancing wildland fire science,
7 data, and technology resources.

8 (3) The Administration, through the Science
9 Mission Directorate, has the capability to support
10 and enhance wildland fire management through its
11 advanced research and technological expertise.

12 (b) INCORPORATION OF RECOMMENDATIONS.—The
13 Administrator, in accordance with the goal for NASA’s
14 Earth science and applications program set forth in sec-
15 tion 60501 of title 51, United States Code, and relevant
16 recommendations of the most recent decadal survey on
17 Earth science and applications from space, shall incor-
18 porate the recommendations of the Commission, to the ex-
19 tent practicable, which may include continuing to carry
20 out the following:

21 (1) Enhancing the collection, analysis, and dis-
22 semination of data related to wildland fires, includ-
23 ing satellite and remote sensing data.

1 (2) Supporting research and development
2 projects aimed at improving wildland fire prediction,
3 prevention, response, and recovery.

4 (3) Developing and deploying technologies that
5 can assist in monitoring, detecting, and mitigating
6 wildland fires.

7 (4) Conducting studies on the long-term impact
8 of temperature change, weather variability, environ-
9 mental stressors, and atmospheric, hydrologic, eco-
10 logical, and other changes to Earth systems on
11 wildland fire behavior, frequency, and intensity.

12 (c) INTERAGENCY COORDINATION.—The Adminis-
13 trator shall continue to coordinate, as practicable, with
14 other Federal, State, local, and Tribal entities to integrate
15 the Commission's recommendations into broader wildland
16 fire management efforts. Such coordination may include
17 the following:

18 (1) Facilitating the sharing of wildland fire-re-
19 lated data and research findings with relevant agen-
20 cies and stakeholders.

21 (2) Participating in joint initiatives and projects
22 aimed at enhancing wildland fire management capa-
23 bilities.

24 (d) EVALUATION.—The Administrator shall conduct
25 periodic evaluations of NASA's efforts to incorporate the

1 Commission's recommendations and make adjustments as
2 necessary to maximize the effectiveness of such rec-
3 ommendations to support wildland fire mitigation and
4 management efforts.

5 (e) REPORTING.—Not later than one year after the
6 date of the enactment of this Act, the Administrator shall
7 submit to the appropriate committees of Congress a report
8 detailing the activities undertaken by NASA to implement
9 the Commission's recommendations, including the fol-
10 lowing:

11 (1) A summary of research and development
12 projects initiated or supported.

13 (2) An assessment of the impact of such activi-
14 ties on wildland fire management and mitigation ef-
15 forts.

16 (3) Any challenges or obstacles encountered in
17 implementing such recommendations.

18 **TITLE VII—STEM EDUCATION**

19 **SEC. 701. NATIONAL SPACE GRANT COLLEGE AND FELLOW-** 20 **SHIP PROGRAM.**

21 (a) AMENDMENTS.—Title 51, United States Code, is
22 amended—

23 (1) in section 40303, by striking subsections (d)
24 and (e);

25 (2) in section 40304—

1 (A) by striking subsection (c) and inserting
2 the following:

3 “(c) SOLICITATIONS.—

4 “(1) IN GENERAL.—Prior to the conclusion of
5 each preceding award cycle, the Administrator shall
6 issue a solicitation to space grant consortia for the
7 award of grants or contracts under this section. The
8 Administrator shall implement the allocation guid-
9 ance under subsection (e) during each fiscal year
10 covered by an award cycle.

11 “(2) PROPOSALS.—A lead institution of a space
12 grant consortium that seeks a grant or contract
13 under this section shall submit, on behalf of such
14 space grant consortium, an application to the Ad-
15 ministrator at such time and in such manner and
16 accompanied by such information as the Adminis-
17 trator may require.

18 “(3) AWARDS.—The Administrator shall award
19 one or more multi-year grants or contracts, dis-
20 bursed in annual installments, to the lead institution
21 of an eligible space grant consortium of—

22 “(A) each of the 50 States of the United
23 States;

24 “(B) the District of Columbia; and

1 “(C) the Commonwealth of Puerto Rico.”;

2 and

3 (B) by inserting after subsection (d) the
4 following:

5 “(e) ALLOCATION OF FUNDING.—

6 “(1) PROGRAM IMPLEMENTATION.—To carry
7 out the purposes set forth in section 40301 of this
8 title, each fiscal year, of the funds appropriated for
9 this program of that fiscal year, the Administrator
10 shall allocate not less than 85 percent among eligible
11 space grant consortia as follows:

12 “(A) The space grant consortia identified
13 in paragraph 40304(c)(3) shall each receive an
14 equal share.

15 “(B) The territories of Guam and the U.S.
16 Virgin Islands shall each receive funds equal to
17 one-fifth of the share for each space grant con-
18 sortium.

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.

1 “(B) COSTS COVERED.—The funds allo-
2 cated under paragraph (1)(A) of this section
3 shall cover all costs of the Administration asso-
4 ciated with the administration of the National
5 Space Grant College and Fellowship Program,
6 including—

7 “(i) direct costs to the program, in-
8 cluding costs relating to support services
9 and civil service salaries and benefits;

10 “(ii) indirect general and administra-
11 tive costs of centers and facilities of the
12 Administration; and

13 “(iii) indirect general and administra-
14 tive costs of the Administration head-
15 quarters.

16 “(3) SPECIAL OPPORTUNITIES.—Each fiscal
17 year, of the funds made available for the National
18 Space Grant College and Fellowship program, the
19 Administrator shall allocate not more than 5 percent
20 to lead institutions of Space Grant Consortia for
21 grants to carry out innovative approaches and pro-
22 grams to further science and education relating to
23 the missions of the Administration pursuant to sub-
24 section (b).”.

1 (b) REVIEW.—The Administrator shall make ar-
2 rangements for an independent external review of the Na-
3 tional Space Grant College and Fellowship Program to—

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

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

12 (3) propose any statutory updates that may be
13 needed to implement recommendations of the review.

14 (c) REPORT.—Not later than nine months after the
15 date of enactment of this Act, the Administrator shall sub-
16 mit to the appropriate committees of Congress a report
17 on the independent external review of the National Space
18 Grant College and Fellowship Program described in sub-
19 section (a).

20 **SEC. 702. SKILLED TECHNICAL WORKFORCE EDUCATION**
21 **OUTREACH.**

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

1 (b) LEVERAGING EXISTING PROGRAMS.—The Ad-
2 ministrator, in conducting activities pursuant to sub-
3 section (a), shall consider leveraging, as appropriate, exist-
4 ing programs of NASA or other Federal programs and
5 interagency initiatives, such as the Manufacturing USA
6 program under section 34 of the National Institute of
7 Standards and Technology Act (15 U.S.C. 278s).

8 (c) INCLUSION.—Activities under subsection (a) may
9 include outreach activities that engage secondary and
10 post-secondary students, including students at institutions
11 of higher education, two-year colleges, and high schools,
12 and students in vocational or career and technical edu-
13 cation programs, and that—

14 (1) expose students to careers that require ca-
15 reer and technical education;

16 (2) encourage students to pursue careers that
17 require career and technical education; and

18 (3) provide students hands-on learning opportu-
19 nities to view the manufacturing, assembly, and test-
20 ing of NASA-funded space and aeronautical systems,
21 as the Administrator considers appropriate and with
22 consideration of relevant factors such as workplace
23 safety, mission needs, and the protection of sensitive
24 and proprietary technologies.

1 (d) BRIEFING.—Not later than one year after the
2 date of the enactment of this Act, the Administrator shall
3 brief the appropriate committees of Congress on NASA’s
4 current and planned activities under this section.

5 (e) DEFINITIONS.—In this section:

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

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

15 **TITLE VIII—POLICY OF NASA**

16 **SEC. 801. MAJOR PROGRAMS.**

17 Section 30104 of title 51, United States Code, is
18 amended in subsection (a)(1) by striking “7120.5E, dated
19 August 14, 2012” and inserting “7120.5F, dated August
20 3, 2021”.

21 **SEC. 802. NASA ADVISORY COUNCIL.**

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

1 (b) SUNSET.—Effective September 30, 2028, section
2 20113(g) of title 51, United States Code, is amended by
3 striking “and Congress”.

4 **SEC. 803. NASA ASSESSMENT OF EARLY COST ESTIMATES.**

5 Not later than 12 months after the date of the enact-
6 ment of this Act, the Comptroller General of the United
7 States shall submit to the appropriate committees of Con-
8 gress a review of the development, application, and assess-
9 ment of early cost estimates made prior to preliminary de-
10 sign review for NASA missions. The review may include—

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

14 (2) an evaluation of NASA’s monitoring and
15 management of cost estimates throughout mission
16 development, in accordance with section 10861(b)(4)
17 of the National Aeronautics and Space Administra-
18 tion Authorization Act of 2022 (Public Law 117–
19 167); and

20 (3) any such recommendations as the Comp-
21 troller General determines appropriate.

22 **SEC. 804. INDEPENDENT COST ESTIMATE.**

23 Section 30307 of title 51, United States Code, is
24 amended—

1 (1) in the section heading, by striking “**anal-**
2 **ysis**” and inserting “**estimate**”; and

3 (2) in subsection (b)—

4 (A) by striking “Before any funds may be
5 obligated for implementation” and inserting
6 “After the Administrator completes the prelimi-
7 nary design review”;

8 (B) by striking “analysis” and inserting
9 “estimate”; and

10 (C) by inserting after the first sentence,
11 “No funds may be obligated for implementation
12 of the project before the Administrator reports
13 the results of the life-cycle cost estimate to
14 Congress.”.

15 **SEC. 805. AUTHORIZATION FOR THE TRANSFER TO NASA OF**
16 **FUNDS FROM OTHER AGENCIES FOR SCI-**
17 **ENTIFIC OR ENGINEERING RESEARCH OR**
18 **EDUCATION.**

19 (a) IN GENERAL.—Subsection (f) of section 20113
20 of title 51, United States Code, is amended—

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

23 “(1) COOPERATION.—In the performance of its
24 functions”; and

1 (2) by adding at the end the following new
2 paragraph:

3 “(2) FUNDS.—Funds available to any depart-
4 ment or agency of the Federal Government for sci-
5 entific or engineering research or education, or the
6 provision of facilities therefor, shall, subject to the
7 approval of the head of such department or agency
8 or as delegated pursuant to such department’s or
9 agency’s regulation, be available for transfer, in
10 whole or in part, to the Administration for such use
11 as is consistent with the purposes for which such
12 funds were appropriated. Funds so transferred shall
13 be merged with the appropriation to which trans-
14 ferred, except that such transferred funds shall be
15 limited to the awarding of grants or cooperative
16 agreements for scientific or engineering research or
17 education.”.

18 (b) ANNUAL INFORMATION ON FUNDS TRANS-
19 FERRED.—

20 (1) IN GENERAL.—Not later than two years
21 after the date of the enactment of this section, the
22 Administrator shall include in the annual budget
23 justification materials of the Administration, as sub-
24 mitted to Congress with the President’s budget re-
25 quest under section 1105 of title 31, United States

1 Code, information describing the activities conducted
2 under subsection (f) of section 20113 of title 51,
3 United States Code (as amended by subsection (a)),
4 during the immediately preceding fiscal year.

5 (2) CONTENTS.—The information referred to in
6 paragraph (1) shall contain a description of each
7 transfer of funds under the authority provided for in
8 paragraph (2) of subsection (f) of section 20113 of
9 title 51, United States Code (as added and amend-
10 ed, respectively, by this section), during the imme-
11 diately preceding fiscal year, including the following:

12 (A) An identification of the department or
13 agency of the Federal Government from which
14 such funds were transferred.

15 (B) The total amount of funds so trans-
16 ferred, disaggregated by each such department
17 or agency.

18 (C) The purposes for which such funds
19 were appropriated to each agency or depart-
20 ment.

21 (D) The program or activity of the Admin-
22 istration to which such funds were made avail-
23 able by each such transfer.

24 (E) The purposes of each such administra-
25 tion program or activity, and the amount of

1 funding appropriated to the Administration for
2 such purposes.

3 (c) REPORT.—Not later than three years after the
4 date of the enactment of the section, the Administrator
5 shall submit to the appropriate committees of Congress
6 a report that includes the following:

7 (1) A summary of the value of the authority
8 provided for in paragraph (2) of subsection (f) of
9 section 209113 of title 51, United States Code (as
10 added and amended, respectively, by this section),
11 including the extent to which such authority has
12 benefited the Administration and its ability to meet
13 its needs, achieve its mission, or more effectively
14 conduct interagency collaborations.

15 (2) An identification of any barriers or chal-
16 lenges to implementing such authority, or otherwise
17 to managing funding required to conduct joint pro-
18 grams and award jointly funded grants and coopera-
19 tive agreements by the administration with other
20 Federal departments and agencies to advance the
21 missions of each such department and agency.

1 **SEC. 806. REPORT ON MERITS AND OPTIONS FOR ESTAB-**
2 **LISHING AN INSTITUTE RELATING TO SPACE**
3 **RESOURCES.**

4 (a) REPORT.—Not later than 180 days after the date
5 of the enactment of this Act, the Administrator and Sec-
6 retary shall jointly submit to the appropriate committees
7 of Congress a report on the merits of, and options for,
8 establishing an institute relating to space resources to ad-
9 vance the objectives of NASA and the Department in
10 maintaining United States preeminence in space. Such ob-
11 jectives shall include the following:

12 (1) Identifying, developing, and distributing
13 space resources, including by encouraging the devel-
14 opment of foundational science, industrial capability,
15 and technology.

16 (2) Reducing the technological and business
17 risks associated with identifying, developing, and dis-
18 tributing space resources.

19 (3) Research to maximize the responsible use of
20 space resources.

21 (4) Developing options for using space re-
22 sources to carry out the following.

23 (A) Support current and future space ar-
24 chitectures, programs, business, and missions.

1 (B) Enable such architectures, programs,
2 business, and missions that would not otherwise
3 be possible.

4 (C) Supplement the supply of such re-
5 sources available on Earth.

6 (b) ADDITIONAL MATTERS.—The report required
7 under subsection (a) shall also include the following as-
8 sessments of the Administrator and the Secretary:

9 (1) Whether a virtual or physical institute relat-
10 ing to space resources is most cost effective and ap-
11 propriate.

12 (2) Whether partnering with institutions of
13 higher education and the aerospace industry, and
14 the extractive industry as appropriate, would be ef-
15 fective in increasing information available to the in-
16 stitute with respect to advancing the objectives de-
17 scribed in such subsection.

18 (c) DEFINITIONS.—In this section:

19 (1) DEPARTMENT.—The term “Department”
20 means the Department of Commerce.

21 (2) EXTRACTIVE INDUSTRY.—The term “ex-
22 tractive industry” means companies and individuals
23 involved in the processes of extracting, including
24 mining, quarrying, drilling, and dredging, raw, nat-
25 ural materials or energy sources.

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

5 (4) SECRETARY.—The term “Secretary” means
6 the Secretary of Commerce.

7 (5) SPACE RESOURCE.—

8 (A) IN GENERAL.—The term “space re-
9 source” means an abiotic resource in situ in
10 outer space.

11 (B) INCLUSIONS.—The term “space re-
12 source” includes a raw, natural material or en-
13 ergy source.

14 **SEC. 807. REPORTS TO CONGRESS.**

15 (a) CONGRESSIONAL REPORTS AND NOTICES.—Any
16 report or notice provided to Congress by NASA shall be
17 provided to the appropriate committees of Congress, con-
18 currently with its delivery to any other Committee or of-
19 fice.

20 (b) REPORTS ON INTERNATIONAL AGREEMENTS.—If
21 the United States becomes a signatory to an international
22 agreement or nonbinding instrument concerning NASA
23 activities, the Administrator shall submit to the appro-
24 priate committees of Congress a report containing a copy
25 of such agreement or instrument, as the case may be.

1 **SEC. 808. 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. 809. GAO REPORT.**

10 Not later than one year after the date of the enact-
11 ment of this Act, the Comptroller General of the United
12 States shall submit to the appropriate committees of Con-
13 gress a review of fire and emergency services at NASA
14 launch and reentry facilities that assesses the following:

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

17 (2) How demand for NASA-provided fire and
18 emergency services have been impacted by the fol-
19 lowing:

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 commercially-
9 provided fire and emergency services are able to
10 meet current and projected demands and support all
11 fire response areas on NASA property.

12 **SEC. 810. 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 section may, at any time and for any reason, be ter-
23 minated by the Administration or the private-sector
24 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 three months and not more than two
4 years, renewable up to a total of three years.
5 An employee of the Administration may not be
6 assigned under this subsection for more than a
7 total of three 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 two years, but not more than three years, if the
12 Administrator determines that such assignment
13 is 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) How the Administration will
5 oversee such assignments, in particular
6 with respect to paragraphs (2)(A)(iii),
7 (7)(C), and (7)(D).

8 “(iv) Criteria for issuing waivers.

9 “(v) How expenses under paragraph
10 (2)(A)(ii) would be determined.

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

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

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

22 “(C) INHERENTLY GOVERNMENTAL AC-
23 TIVITIES.—Assignments made under this sub-
24 section shall not have responsibilities or per-
25 form duties or decision making regarding Ad-

1 ministration activities that are inherently gov-
2 ernmental, pursuant to subpart 7.500 of title
3 48, Code of Federal Regulations, and Office of
4 Management and Budget review.

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

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

17 “(B) CERTIFICATION.—In establishing a
18 temporary assignment of an employee of the
19 Administration to a private sector entity, the
20 Administrator or Administrator’s designee shall
21 certify that such temporary assignment shall
22 not have an adverse or negative impact on the
23 mission of the Administration or organizational
24 capabilities associated 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) the Federal Tort Claims Act and
23 any other Federal tort liability statute;

24 “(v) the Ethics in Government Act of
25 1978; and

1 “(vi) chapter 21 of title 41;

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

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

9 “(E) may not be used to circumvent—

10 “(i) section 1710 of title 41, United
11 States Code; or

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

15 “(8) ADDITIONAL REQUIREMENTS.—The Ad-
16 ministrator shall ensure that—

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

24 “(B) normal duties and functions of such
25 other employees of the Administration are not,

1 as a result of and during the course of such
2 temporary assignment, performed or augmented
3 by contractor personnel in violation of section
4 1710 of title 41; and

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

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

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

23 “(11) CONSIDERATIONS.—In carrying out this
24 subsection, the Administrator shall take into consid-
25 eration—

1 “(A) the question of how assignments
2 under this subsection might best be used to
3 help meet the needs of the Administration with
4 respect to the training of employees; and

5 “(B) where applicable, areas of particular
6 private sector expertise, such as cybersecurity.

7 “(12) NASA REPORTING.—

8 “(A) IN GENERAL.—Not later than April
9 30 of each year, the Administrator shall submit
10 to the Committee on Science, Space, and Tech-
11 nology of the House of Representatives and the
12 Committee on Commerce, Science, and Trans-
13 portation of the Senate a report summarizing
14 the implementation of this subsection.

15 “(B) CONTENTS.—Each report under sub-
16 paragraph (A) shall include, with respect to the
17 annual period to which such report relates, the
18 following:

19 “(i) Information relating to the total
20 number of employees of private sector enti-
21 ties assigned to the Administration, and
22 the total number of employees of the Ad-
23 ministration assigned to private sector en-
24 tities.

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

7 “(I) An identification of the
8 names of the private sector entities to
9 and from which employees were as-
10 signed.

11 “(II) A complete listing of posi-
12 tions such employees were assigned to
13 and from.

14 “(III) An identification of as-
15 signed roles and objectives of such as-
16 signments.

17 “(IV) Information relating to the
18 durations of such assignments.

19 “(V) Information relating to as-
20 sociated pay grades and levels.

21 “(iii) An assessment of impacts of
22 such assignments on the Administration
23 workforce and workforce culture.

24 “(iv) An identification of the number
25 of Administration staff and budgetary re-

1 sources required to implement this sub-
2 section.

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

6 “(14) GAO REPORTING.—

7 “(A) IN GENERAL.—Not later than three
8 years after the date of the enactment of this
9 subsection, the Comptroller General of the
10 United States shall submit to the Committee on
11 Science, Space, and Technology of the House of
12 Representatives and the Committee on Com-
13 merce, Science, and Transportation of the Sen-
14 ate a report summarizing the implementation of
15 this subsection.

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

18 “(i) A review of the implementation of
19 this subsection, according to law and the
20 Administration policies and procedures es-
21 tablished for assignments under this sub-
22 section.

23 “(ii) Information relating to the ex-
24 tent to which such assignments adhere to

1 best practices relating to public-private tal-
2 ent exchange programs.

3 “(iii) A determination as to whether
4 there should be limitations on the number
5 of individuals participating in such assign-
6 ments.

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

14 “(v) Information relating to the extent
15 to which such assignments effectively con-
16 tribute to one or more of the Administra-
17 tion’s missions.

18 “(vi) Information relating to Adminis-
19 tration resources, including employee time,
20 dedicated to administering such assign-
21 ments, and whether such resources are suf-
22 ficient for such administration.”.

23 **SEC. 811. REPORT ON SPACE ACT AGREEMENTS.**

24 (a) IN GENERAL.—Not later than 180 days after the
25 date of the enactment of this Act, the Comptroller General

1 of the United States shall submit to the appropriate com-
2 mittees of Congress a report describing the following:

3 (1) Intellectual property considerations in Space
4 Act agreements.

5 (2) Feedback shared by industry groups regard-
6 ing intellectual property considerations in Space Act
7 agreements.

8 (3) Differences between NASA policies regard-
9 ing intellectual property in Space Act agreements
10 and policies utilized in similar situations by other
11 Federal agencies.

12 (b) DEFINITION.—In this section, the term “Space
13 Act agreements” means agreements entered into by NASA
14 pursuant to its authorities under the National Aeronautics
15 and Space Act of 1958 (Public Law 85–568).

16 **SEC. 812. MENTORING.**

17 (a) IN GENERAL.—The Administrator shall establish
18 a comprehensive NASA-wide mentoring program for early-
19 career, mid-level, and senior-level employees at all NASA
20 Centers and NASA Headquarters to ensure a robust pipe-
21 line for NASA’s civil servant workforce and support the
22 preparation of employees, including those from popu-
23 lations that are historically underrepresented in STEM,
24 for promotion and leadership roles.

1 (b) BRIEFING.—Not later than 180 days after the
2 date of the enactment of this Act, the Administrator shall
3 brief the appropriate committees of Congress on the imple-
4 mentation of subsection (a).

5 **SEC. 813. RESTRICTION ON FEDERAL FUNDS RELATING TO**
6 **CERTAIN SPACE AND SCIENTIFIC ACTIVITIES**
7 **OF THE PEOPLE'S REPUBLIC OF CHINA.**

8 (a) IN GENERAL.—No Federal funds authorized in
9 this Act may be obligated or expended for the following:

10 (1) For the National Aeronautics and Space
11 Administration (NASA), the Office of Science and
12 Technology Policy (OSTP), or the National Space
13 Council (NSC) to develop, design, plan, promulgate,
14 implement, or execute a bilateral policy, program,
15 order, or contract of any kind to participate, collabo-
16 rate, or coordinate bilaterally in any way with the
17 People's Republic of China or any company owned
18 by the People's Republic of China, or incorporated
19 under the laws of the People's Republic of China,
20 unless such activities are specifically authorized by a
21 law enacted after the date of the enactment of this
22 Act.

23 (2) To effectuate the hosting of official visitors
24 from the People's Republic of China at facilities be-
25 longing to or utilized by NASA.

1 (b) EXCEPTION.—The restrictions described in sub-
2 section (a) shall not apply to activities with respect to
3 which NASA, OSTP, or NSC, after consultation with the
4 Federal Bureau of Investigation, have certified—

5 (1) pose no risk of resulting in the transfer of
6 technology, data, or other information with national
7 security or economic security implications to the
8 People's Republic of China or a company owned by
9 the People's Republic of China or incorporated
10 under the laws of the People's Republic of China;
11 and

12 (2) will not involve knowing interactions with
13 officials who have been determined by the United
14 States to have direct involvement with violations of
15 human rights.

16 (c) SUBMISSION.—Any certification made under sub-
17 section (b) shall be submitted to the Committee on
18 Science, Space, and Technology and the Committee on Ap-
19 propriations of the House of Representatives, the Com-
20 mittee on Commerce, Science, and Transportation and the
21 Committee on Appropriations of the Senate, and the Fed-
22 eral Bureau of Investigation, not later than 30 days prior
23 to the activity in question. Any such certification shall in-
24 clude a description of the purpose of such activity, its

1 agenda, its major participants, and its location and tim-
2 ing.

3 **SEC. 814. RULE OF CONSTRUCTION.**

4 Nothing in this Act may be construed to limit the
5 ability of a NASA employee to discuss scientific research
6 performed by such employee in accordance with NASA's
7 scientific integrity policies.