

Public Law 100-147  
100th Congress

An Act

Oct. 30, 1987  
[H.R. 2782]

National  
Aeronautics and  
Space  
Administration  
Authorization  
Act of 1988.

To authorize appropriations to the National Aeronautics and Space Administration for research and development; space flight, control and data communications; construction of facilities; and research and program management; and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That this Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 1988".

**TITLE I—AUTHORIZATION OF APPROPRIATIONS FOR THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

**SEC. 101.** (a) There is authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1987, for "Research and development", for the following programs:

- (1) Permanently manned space station, \$767,000,000.
- (2) Space transportation capability development, \$553,600,000.
- (3) Physics and astronomy, \$581,800,000.
- (4) Life sciences, \$74,600,000.
- (5) Planetary exploration, \$320,300,000, of which \$42,300,000 is authorized only for the purpose of preparing the Mars Observer Spacecraft for launch in 1992 and for procuring spare parts for a Planetary Observer program.
- (6) Space applications, \$651,400,000, of which \$84,000,000 is authorized only for the Advanced Communications Technology Satellite.
- (7) Technology utilization, \$18,300,000.
- (8) Commercial use of space, \$30,700,000.
- (9) Aeronautical research and technology, \$387,000,000.
- (10) Transatmospheric research and technology, \$66,000,000.
- (11) Space research and technology, \$234,000,000.
- (12) Safety, reliability, and quality assurance, \$16,200,000.
- (13) Tracking and data advanced systems, \$18,100,000.

(b) There is authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1987, for "Space flight, control and data communications", for the following programs:

- (1) Space shuttle production and operational capability, \$1,174,600,000, of which \$76,000,000 is authorized only for initial lay-in spare parts for the space shuttle orbiter.
- (2) Space transportation operations, \$1,885,800,000, of which \$106,700,000 is authorized only for flight spare parts for the space shuttle orbiter.
- (3) Space and ground network, communications, and data systems, \$924,900,000.
- (4) Expendable launch vehicle operations, \$60,000,000.

(c) There is authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1987, for "Construction of facilities", including land acquisition, as follows:

(1) Construction of LC 39 Operations Support Building, Kennedy Space Center, \$22,800,000.

(2) Construction of Spacecraft Systems Development and Integration Facility, Goddard Space Flight Center, \$8,600,000.

(3) Modifications for utility reliability, Goddard Space Flight Center, \$2,900,000.

(4) Construction of Integrated Test Facility, Dryden Flight Research Facility, \$10,500,000.

(5) Modifications to Hypersonic Propulsion Facility for Vacuum Systems, Langley Research Center, \$3,100,000.

(6) Construction of addition to the Research Analysis Center, Lewis Research Center, \$9,800,000.

(7) Modifications for Fan/Compressor Research, Engine Research Building, Lewis Research Center, \$6,500,000.

(8) Construction of Communications Development Antenna, Goldstone, California, Jet Propulsion Laboratories, \$6,400,000.

(9) Repair of facilities at various locations, not in excess of \$750,000 per project, \$25,000,000.

(10) Rehabilitation and modification of facilities at various locations, not in excess of \$750,000 per project, \$32,000,000.

(11) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$500,000 per project, \$8,000,000.

(12) Environmental compliance and restoration, \$23,900,000.

(13) Repair and modernization of the 12-foot pressure wind tunnel at the Ames Research Center, \$41,000,000.

(14) Facility planning and design not otherwise provided for, \$16,000,000.

(d) There is authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1987, for "Research and program management", \$1,583,000,000.

(e) The Administrator is authorized (to the extent provided in an appropriation Act) to transfer \$22,000,000 from any funds which were made available for prior years, and which remain unobligated as of the date of the enactment of this Act, except for funds made available for Aeronautical and Space Research and Technology, Transatmospheric Research and Technology programs, Construction of Facilities activities, and Research and Program Management activities for the support of such programs, and use such funds for the preparation of the Mars Observer spacecraft for launch in 1992.

(f) Notwithstanding the provisions of subsection (h), appropriations authorized in this Act for "Research and development" and "Space flight, control and data communications" may be used for (1) any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the National Aeronautics and Space Administration (hereinafter in this title referred to as the "Administration") for the performance of research and development contracts, and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator of the National Aeronautics and Space Administration (hereinafter in

this title referred to as the "Administrator") determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to ensure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" and "Space flight, control and data communications" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$500,000, unless the Administrator or the Administrator's designee has notified the President of the Senate and the Speaker of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives of the nature, location, and estimated cost of such facility.

42 USC 2459a.

(g) When so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development", for "Space flight, control and data communications", or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of 12 months beginning at any time during the fiscal year.

(h) Appropriations made pursuant to subsection (d) may be used, but not to exceed \$35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator, and the Administrator's determination shall be final and conclusive upon the accounting officers of the Government.

(i) Of the funds appropriated pursuant to subsections (a), (b), and (d), not in excess of \$100,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and for repair, rehabilitation, or modification of facilities: *Provided*, That, of the funds appropriated pursuant to subsection (a) or (b), not in excess of \$500,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs: *Provided further*, That, of the funds appropriated pursuant to subsection (d), not in excess of \$500,000 per project, including collateral equipment, may be used for repair, rehabilitation, or modification of facilities controlled by the General Services Administration.

SEC. 102. Authorization is granted whereby any of the amounts prescribed in paragraphs (1) through (13) of section 101(c) of this title—

Reports.

(1) in the discretion of the Administrator or the Administrator's designee, may be varied upward 10 percent; or

(2) following a report by the Administrator or the Administrator's designee to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives on the circumstances of such action, may be varied upward 25 percent; to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

SEC. 103. Not to exceed one-half of 1 percent of the funds appropriated pursuant to section 101 (a) or (b) of this title may be

transferred to and merged with the "Construction of facilities" appropriation, and when so transferred, together with \$10,000,000 of funds appropriated pursuant to section 101(c) of this title (other than funds appropriated pursuant to paragraph (14) of such section) shall be available for expenditure to construct, expand, and modify laboratories and other installations at any location (including locations specified in section 101(c)), if (1) the Administrator determines that such action is necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) the Administrator determines that deferral of such action until the enactment of the next authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless a period of 30 days has passed after the Administrator or the Administrator's designee has transmitted to the President of the Senate and to the Speaker of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a written report containing a full and complete statement concerning (A) the nature of such construction, expansion, or modification, (B) the cost thereof including the cost of any real estate action pertaining thereto, and (C) the reason why such construction, expansion, or modification is necessary in the national interest.

Reports.

SEC. 104. Notwithstanding any other provision of this title, no amount appropriated pursuant to this title may be used for any program—

(1) deleted by the Congress from requests as originally made either to the Committee on Commerce, Science, and Transportation of the Senate or the Committee on Science, Space, and Technology of the House of Representatives;

(2) in excess of the amount actually authorized for that particular program by section 102 (a), (b), and (d); and

(3) which has not been presented to either such Committee; unless a period of 30 days has passed after the receipt by the President of the Senate and the Speaker of the House of Representatives and each such committee of notice given by the Administrator or the Administrator's designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action.

SEC. 105. No civil space station authorized under section 101(a)(1) of this title may be used to carry or place in orbit any nuclear weapon or any other weapon of mass destruction, to install any such weapon on any celestial body, or to station any such weapon in space in any other manner. This civil space station may be used only for peaceful purposes.

SEC. 106. (a) The Administrator is directed to undertake the construction of a permanently manned space station (hereinafter referred to as the "space station") to become operational in 1995. The space station will be used for the following purposes—

42 USC 2451  
note.

(1) the conduct of scientific experiments, applications experiments, and engineering experiments;

(2) the servicing, rehabilitation, and construction of satellites and space vehicles;

(3) the development and demonstration of commercial products and processes; and

(4) the establishment of a space base for other civilian and commercial space activities.

(b) The space station shall be developed and operated in a manner that supports other science and space activities.

(c) In order to reduce the cost of operations of the space station and its ground support system, the Administrator shall undertake the development of such advanced technologies as may be appropriate within the level of funding authorized in this Act.

(d) The Administrator shall seek to have portions of the space station constructed and operated by the private sector, where appropriate.

(e) The Administrator shall promote international cooperation in the space station program by undertaking the development, construction, and operation of the space station in conjunction with (but not limited to) the Governments of Europe, Japan, and Canada.

(f) The space station shall be designed, developed, and operated in a manner that enables evolutionary enhancement.

SEC. 107. (a) For each of the fiscal years 1989 through 1996, the Administrator, along with the President's submission to the Congress of the annual budget request for the National Aeronautics and Space Administration, shall submit a capital development plan for the space station program. Each such plan shall include the estimated cost of all direct research and development; space flight, control and data communications; construction of facilities; and research and program management for the fiscal year involved and the two succeeding fiscal years.

(b) For fiscal year 1989, the capital development plan shall also include a statement outlining the total cost, schedule, and configuration of the Administration's space station proposal, as well as an analysis of the "Report of the Committee on the Space Station of the National Research Council". Such analysis shall examine alternatives for the configuration of the space station including but not limited to low cost alternatives.

SEC. 108. In order to ensure that the development of the space station is part of a balanced civilian space program, the Administrator is instructed to establish as a goal a funding profile that limits (1) space station total annual costs under the capital development plan in section 107 to 25 percent of the total budget request for the National Aeronautics and Space Administration and (2) all space station direct operations costs, except for those costs associated with the utilization of the space station, to 10 percent of the total budget request for the National Aeronautics and Space Administration.

SEC. 109. (a) It is the sense of the Congress that the launching and servicing of the space station should be accomplished by the most cost-effective use of space transportation systems, including the space shuttle and expendable launch vehicles.

(b) Not later than January 15, 1988, the Administrator shall submit a preliminary report on the cost-effective use of space transportation systems for the launch of space station elements during the development and operation of the space station. The Administrator shall consider—

International  
agreements.  
Canada.  
Europe.  
Japan.  
42 USC 2451  
note.

42 USC 2451  
note.

42 USC 2451  
note.

Reports.

(1) the potential use of future advanced or heavy lift expendable launch vehicles for purposes of the assembly and operation of the space station;

(2) the use of existing expendable launch vehicles of the National Aeronautics and Space Administration, the Department of Defense, and the Private Sector;

(3) the requirement for space shuttle launches; and

(4) the risk of capital losses from the use of expendable launch vehicles and the space shuttle.

SEC. 110. (a) The Administrator shall set and collect reasonable user fees for the use and maintenance of the space station. 42 USC 2451 note.

(b) The Administrator shall set user fees so as to—

(1) promote the use of the space station consistent with the policy set forth in section 106;

(2) recover the costs of the use of the space station, including reasonable charges for any enhancement needed for such use; and

(3) conserve and efficiently allocate the resources of the space station.

(c) The Administrator may, on a case-by-case basis, waive or modify such user fees when in the Administrator's judgment such waiver or modification will further the goals and purposes of the National Aeronautics and Space Act of 1958, including—

(1) the advancement of scientific or engineering knowledge;

(2) international cooperation; and

(3) the commercial use of space.

SEC. 111. No later than September 30, 1988, the Administrator shall submit a detailed plan for collecting reimbursements for the utilization of the space station under section 110, including the services to be offered, the methodology and bases by which prices will be charged, and the estimated revenues. 42 USC 2451 note.

SEC. 112. The Intergovernmental Agreement currently being negotiated between the United States Government and Canada, Japan, and member governments of the European Space Agency, and the Memorandum of Understanding currently being negotiated between the National Aeronautics and Space Administration and its counterpart agencies in Canada, Japan, and Europe concerning the detailed design, development, construction, operation, or utilization of the space station shall be submitted to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives. No such agreement shall take effect until 30 days have passed after the receipt by such committees of the agreement. International agreements. Canada. Europe. Japan. 42 USC 2451 note.

SEC. 113. (a) It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible. 42 USC 2459 note.

(b) The Administrator shall report to the Congress on the extent to which such consideration has been given and such ways and means explored during fiscal year 1987, and shall submit such report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate by January 15, 1988. Reports.

International  
agreements.

SEC. 114. (a) The Administrator shall award to a domestic firm a contract that, under the use of competitive procedures, would be awarded to a foreign firm, if—

(1) the final product of the domestic firm will be completely assembled in the United States;

(2) when completely assembled, not less than 50 percent of the final product of the domestic firm will be domestically produced; and

(3) the difference between the bids submitted by the foreign and domestic firms is not more than 6 percent.

(b) This section shall not apply to the extent to which—

(1) such applicability would not be in the public interest;

(2) compelling national security considerations require otherwise; or

(3) the United States Trade Representative determines that such an award would be in violation of the General Agreement on Tariffs and Trade or an international agreement to which the United States is a party.

(c) For purposes of this section—

(1) the term "domestic firm" means a business entity that is incorporated in the United States and that conducts business operations in the United States; and

(2) the term "foreign firm" means a business entity not described in paragraph (1).

(d) This section shall apply only to contracts for which—

(1) amounts are made available pursuant to this Act; and

(2) solicitations for bids are issued after the date of the enactment of this Act.

SEC. 115. Title II of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451 et seq.) is amended by adding at the end the following:

"DONATIONS FOR SPACE SHUTTLE ORBITER

"SEC. 208. (a) The Administrator may accept gifts and donations of services, money, and real, personal, tangible, and intangible property, and use such gifts and donations for the construction of a space shuttle orbiter.

"(b)(1) The authority of the Administrator to accept gifts or donations pursuant to subsection (a) of this section shall terminate five years after the date of the enactment of this section.

"(2) All gifts and donations accepted by the Administrator pursuant to subsection (a) of this section which are not needed for construction of a space shuttle orbiter shall be used by the Administrator for an appropriate purpose—

"(A) in tribute to the dedicated crew of the space shuttle Challenger; and

"(B) in furtherance of the exploration of space.

"(c) The name of a space shuttle orbiter constructed in whole or in part with gifts or donations whose acceptance and use are authorized by subsection (a) of this section shall be selected by the Administrator from among suggestions submitted by students in elementary and secondary schools."

SEC. 116. (a) It is the sense of the Congress that the space shuttle is a critical national resource that should be preserved; that it should be used primarily for those missions which require its unique capabilities; and that a diversified family of expendable launch

Gifts and  
property.  
42 USC 2476b.

vehicles should be incorporated by use into the Nation's civilian space flight program.

(b) The Administrator shall establish a program for launching payloads by means of expendable launch vehicles and, if available, by commercial launch services.

(c) The Administrator shall take such action as may be necessary to ensure that expendable launch vehicles or, if available, commercial launch services are obtained for the launch of the following payloads:

(1) Roentgen Satellite (ROSAT), for launch in 1990.

(2) Tracking and Data Relay Satellite (TDRS)-F, or a planetary mission.

(3) Extreme Ultraviolet Explorer (EUVE), for launch in 1991.

(4) Mars Observer, for launch in 1992.

(d) The Administrator shall report to the Congress not later than January 15, 1988, on the Administrator's compliance with this section, and shall submit such report to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives.

Reports.

SEC. 117. Title III of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2451 et seq.) is amended by adding at the end the following:

“CONTRACTS REGARDING EXPENDABLE LAUNCH VEHICLES

“SEC. 311. (a) The Administrator may enter into contracts for expendable launch vehicle services that are for periods in excess of the period for which funds are otherwise available for obligation, provide for the payment for contingent liability which may accrue in excess of available appropriations in the event the Government for its convenience terminates such contracts, and provide for advance payments reasonably related to launch vehicle and related equipment, fabrication, and acquisition costs, if any such contract limits the amount of the payments that the Federal Government is allowed to make under such contract to amounts provided in advance in appropriation Acts. Such contracts may be limited to sources within the United States when the Administrator determines that such limitation is in the public interest.

42 USC 2459c.

“(b) If funds are not available to continue any such contract, the contract shall be terminated for the convenience of the Government, and the costs of such contract shall be paid from appropriations originally available for performance of the contract, from other, unobligated appropriations currently available for the procurement of launch services, or from funds appropriated for such payments.”

SEC. 118. (a) It is the sense of the Congress that the capital investment in space satellites and vehicles should be enhanced and protected by establishing a system of servicing, rehabilitation, and repair capabilities in orbit (hereinafter referred to as “satellite servicing”).

(b) The Administrator shall conduct a thorough and comprehensive study of satellite servicing with a view toward establishing national goals and objectives for utilizing such capabilities.

(c) In conducting the study of satellite servicing under this section, the Administrator shall give consideration to—

(1) the use of the space shuttle, the space station, and other space vehicles to carry out or support satellite servicing;

- (2) all potential users of satellite servicing capabilities, including civilian, defense, private, and foreign satellites and space vehicles;
- (3) experience to date with in-orbit satellite servicing including the costs of such operations and the fees charged users that are not from the National Aeronautics and Space Administration;
- Insurance. (4) the pertinence of satellite servicing to insurance, including the character, cost, and availability of insurance;
- (5) the pertinence of satellite servicing to satellite and vehicle design;
- (6) the pertinence of satellite servicing to the National Aeronautics and Space Administration and other space programs, including science and applications programs; and
- (7) the prices to be charged for satellite servicing such that the full costs of such servicing can be recovered.
- Reports. (d) The Administrator shall complete the study and present a full report on it to the Congress on or before January 15, 1988.

SEC. 119. The Administrator shall review the findings, recommendations, and proposed space agenda of the National Commission on Space as set forth in its report submitted under section 204(c) of the National Aeronautics and Space Administration Authorization Act, 1985 (Public Law 98-361; 98 Stat. 422), and shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives, within 60 days after the date of enactment of this Act, a recommendation for a long-range implementation plan, including an impact assessment of such implementation on personnel, budget, and other resources.

SEC. 120. Section 24 of the Commercial Space Launch Act (49 U.S.C. App. 2623) is amended by adding at the end thereof the following: "There is authorized to be appropriated to the Secretary to carry out this Act \$4,548,000 for fiscal year 1988."

SEC. 121. (a) It is the sense of the Congress that the solid rocket motor project of the space shuttle program would benefit from competition, and that an advanced solid rocket motor would enhance the margin of safety, reliability, and performance of the space shuttle.

(b) By the date on which the President submits to the Congress the fiscal year 1990 budget request for the National Aeronautics and Space Administration, the Administrator shall issue a request for proposals to acquire by means of a competitive procurement an advanced solid rocket motor. The Administrator shall also consider ways and means to improve quality control, reduce operational hazards, reduce costs, increase competition, and enhance manufacturing processes, including, but not limited to, constructing a government-owned and contractor-operated solid rocket motor production facility and providing for a dual source of supply of the advanced solid rocket motor.

(c) Until a request for proposals has been issued under subsection (b) of this section, no contract for the purchase of additional solid rocket motors shall be extended or signed by the Administrator. The Administrator may proceed with the procurement of long-lead materials for the solid rocket motors from the current contractor only after the Administrator has certified to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of

Representatives that such action is necessary to prevent a delay in the space shuttle launch schedule.

(d) The Administrator shall notify the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives if the competitive procurement specified in subsection (b) cannot be conducted. The Administrator shall transmit such notice along with a complete explanation of the reasons supporting such determination. Following such determination, but no sooner than 30 days following the transmission of the notice required under this subsection, the Administrator shall—

(1) conduct a competition to select a qualified second source of supply (in addition to the current contractor) for flight sets of the redesigned solid rocket motor that is currently under development; or

(2) recompetete the current source of supply for flight sets of the redesigned solid rocket motor.

(e) No later than March 31, 1988, the Administrator shall present to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a comprehensive acquisition plan for the advanced solid rocket motor in accordance with this section.

## TITLE II—NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM

SEC. 201. This title may be cited as the "National Space Grant College and Fellowship Act".

SEC. 202. The Congress finds that—

(1) the vitality of the Nation and the quality of life of the citizens of the Nation depend increasingly on the understanding, assessment, development, and utilization of space resources;

(2) research and development of space science, space technology, and space commercialization will contribute to the quality of life, national security, and the enhancement of commerce;

(3) the understanding and development of the space frontiers require a broad commitment and an intense involvement on the part of the Federal Government in partnership with State and local governments, private industry, universities, organizations, and individuals concerned with the exploration and utilization of space;

(4) the National Aeronautics and Space Administration, through the national space grant college and fellowship program, offers the most suitable means for such commitment and involvement through the promotion of activities that will result in greater understanding, assessment, development, and utilization; and

(5) Federal support of the establishment, development, and operation of programs and projects by space grant colleges, space grant regional consortia, institutions of higher education, institutes, laboratories, and other appropriate public and private entities is the most cost-effective way to promote such activities.

SEC. 203. The purposes of this title are to—

(1) increase the understanding, assessment, development, and utilization of space resources by promoting a strong educational

National Space  
Grant College  
and Fellowship  
Act.  
Education.  
Grants.  
Contracts.  
42 USC 2486  
note.  
42 USC 2486.

42 USC 2486a.

base, responsive research and training activities, and broad and prompt dissemination of knowledge and techniques;

(2) utilize the abilities and talents of the universities of the Nation to support and contribute to the exploration and development of the resources and opportunities afforded by the space environment;

(3) encourage and support the existence of interdisciplinary and multidisciplinary programs of space research within the university community of the Nation, to engage in integrated activities of training, research and public service, to have cooperative programs with industry, and to be coordinated with the overall program of the National Aeronautics and Space Administration;

(4) encourage and support the existence of consortia, made up of university and industry members, to advance the exploration and development of space resources in cases in which national objectives can be better fulfilled than through the programs of single universities;

(5) encourage and support Federal funding for graduate fellowships in fields related to space; and

(6) support activities in colleges and universities generally for the purpose of creating and operating a network of institutional programs that will enhance achievements resulting from efforts under this title.

42 USC 2486b.

Sec. 204. As used in this title, the term—

(1) "Administration" means the National Aeronautics and Space Administration;

(2) "Administrator" means the Administrator of the National Aeronautics and Space Administration;

(3) "aeronautical and space activities" has the meaning given to such term in section 103(1) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2452(1));

(4) "field related to space" means any academic discipline or field of study (including the physical, natural, and biological sciences, and engineering, space technology, education, economics, sociology, communications, planning, law, international affairs, and public administration) which is concerned with or likely to improve the understanding, assessment, development, and utilization of space;

(5) "panel" means the space grant review panel established pursuant to section 210 of this title;

(6) "person" means any individual, any public or private corporation, partnership, or other association or entity (including any space grant college, space grant regional consortium, institution of higher education, institute, or laboratory), or any State, political subdivision of a State, or agency or officer of a State or political subdivision of a State;

(7) "space environment" means the environment beyond the sensible atmosphere of the Earth;

(8) "space grant college" means any public or private institution of higher education which is designated as such by the Administrator pursuant to section 208 of this title;

(9) "space grant program" means any program which—

(A) is administered by any space grant college, space grant regional consortium, institution of higher education, institute, laboratory, or State or local agency; and

(B) includes two or more projects involving education and one or more of the following activities in the fields related to space—

- (i) research,
- (ii) training, or
- (iii) advisory services;

(10) "space grant regional consortium" means any association or other alliance which is designated as such by the Administrator pursuant to section 208 of this title;

(11) "space resource" means any tangible or intangible benefit which can only be realized from—

- (A) aeronautical and space activities; or
- (B) advancements in any field related to space; and

(12) "State" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

SEC. 205. (a) The Administrator shall establish and maintain, within the Administration, a program to be known as the national space grant college and fellowship program. The national space grant college and fellowship program shall consist of the financial assistance and other activities provided for in this title. The Administrator shall establish long-range planning guidelines and priorities, and adequately evaluate the program.

42 USC 2486c.

(b) Within the Administration, the program shall—

(1) apply the long-range planning guidelines and the priorities established by the Administrator under subsection (a) of this section;

(2) advise the Administrator with respect to the expertise and capabilities which are available through the national space grant college and fellowship program, and make such expertise available to the Administration as directed by the Administrator;

(3) evaluate activities conducted under grants and contracts awarded pursuant to sections 206 and 207 of this title to assure that the purposes set forth in section 203 of this title are implemented;

(4) encourage other Federal departments, agencies, and instrumentalities to use and take advantage of the expertise and capabilities which are available through the national space grant college and fellowship program, on a cooperative or other basis;

(5) encourage cooperation and coordination with other Federal programs concerned with the development of space resources and fields related to space;

(6) advise the Administrator on the designation of recipients supported by the national space grant college and fellowship program and, in appropriate cases, on the termination or suspension of any such designation; and

(7) encourage the formation and growth of space grant and fellowship programs.

(c) To carry out the provisions of this title, the Administrator may—

(1) accept conditional or unconditional gifts or donations of services, money, or property, real, personal or mixed, tangible or intangible;

Gifts and property.

Regulations.

42 USC 2486d.

(2) accept and use funds from other Federal departments, agencies, and instrumentalities to pay for fellowships, grants, contracts, and other transactions; and

(3) issue such rules and regulations as may be necessary and appropriate.

SEC. 206. (a) The Administrator may make grants and enter into contracts or other transactions under this subsection to assist any space grant and fellowship program or project if the Administrator finds that such program or project will carry out the purposes set forth in section 203 of this title. The total amount paid pursuant to any such grant or contract may equal 66 percent, or any lesser percent, of the total cost of the space grant and fellowship program or project involved, except that this limitation shall not apply in the case of grants or contracts paid for with funds accepted by the Administrator pursuant to section 205(c)(2) of this title.

(b) The Administrator may make special grants under this subsection to carry out the purposes set forth in section 203 of this title. The amount of any such grant may equal 100 percent, or any lesser percent, of the total cost of the project involved. No grant may be made under this subsection, unless the Administrator finds that—

(1) no reasonable means is available through which the applicant can meet the matching requirement for a grant under subsection (a) of this section;

(2) the probable benefit of such project outweighs the public interest in such matching requirement; and

(3) the same or equivalent benefit cannot be obtained through the award of a contract or grant under subsection (a) of this section or section 207 of this title.

Regulations.

(c) Any person may apply to the Administrator for a grant or contract under this section. Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe.

(d)(1) Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in paragraphs (2) and (3) of this subsection and to such other terms, conditions and requirements as the Administrator considers necessary or appropriate.

(2) No payment under any grant or contract under this section may be applied to—

(A) the purchase of any land;

(B) the purchase, construction, preservation, or repair of any building; or

(C) the purchase or construction of any launch facility or launch vehicle.

(3) Notwithstanding paragraph (2) of this subsection, the items in subparagraphs (A), (B), and (C) of such paragraph may be leased upon written approval of the Administrator.

Regulations.

(4) Any person who receives or utilizes any proceeds of any grant or contract under this section shall keep such records as the Administrator shall by regulation prescribe as being necessary and appropriate to facilitate effective audit and evaluation, including records which fully disclose the amount and disposition by such recipient of such proceeds, the total cost of the program or project in connection with which such proceeds were used, and the amount, if any, of such cost which was provided through other sources. Such records shall be maintained for three years after the completion of such a program or project. The Administrator and the Comptroller

General of the United States, or any of their duly authorized representatives, shall have access, for the purpose of audit and evaluation, to any books, documents, papers and records of receipts which, in the opinion of the Administrator or the Comptroller General, may be related or pertinent to such grants and contracts.

SEC. 207. (a) The Administrator shall identify specific national needs and problems relating to space. The Administrator may make grants or enter into contracts under this section with respect to such needs or problems. The amount of any such grant or contract may equal 100 percent, or any lesser percent, of the total cost of the project involved.

42 USC 2486e.

(b) Any person may apply to the Administrator for a grant or contract under this section. In addition, the Administrator may invite applications with respect to specific national needs or problems identified under subsection (a) of this section. Application shall be made in such form and manner, and with such content and other submissions, as the Administrator shall by regulation prescribe. Any grant made, or contract entered into, under this section shall be subject to the limitations and provisions set forth in section 206(d) (2) and (4) of this title and to such other terms, conditions, and requirements as the Administrator considers necessary or appropriate.

SEC. 208. (a)(1) The Administrator may designate—

42 USC 2486f.

(A) any institution of higher education as a space grant college; and

(B) any association or other alliance of two or more persons, other than individuals, as a space grant regional consortium.

(2) No institution of higher education may be designated as a space grant college, unless the Administrator finds that such institution—

(A) is maintaining a balanced program of research, education, training, and advisory services in fields related to space;

(B) will act in accordance with such guidelines as are prescribed under subsection (b)(2) of this section; and

(C) meets such other qualifications as the Administrator considers necessary or appropriate.

(3) No association or other alliance of two or more persons may be designated as a space grant regional consortium, unless the Administrator finds that such association or alliance—

(A) is established for the purpose of sharing expertise, research, educational facilities or training facilities, and other capabilities in order to facilitate research, education, training, and advisory services, in any field related to space;

(B) will encourage and follow a regional approach to solving problems or meeting needs relating to space, in cooperation with appropriate space grant colleges, space grant programs, and other persons in the region;

(C) will act in accordance with such guidelines as are prescribed under subsection (b)(2) of this section; and

(D) meets such other qualifications as the Administrator considers necessary or appropriate.

(b) The Administrator shall by regulation prescribe—

Regulations.

(1) the qualifications required to be met under subsection (a) (2)(C) and (3)(D) of this section; and

(2) guidelines relating to the activities and responsibilities of space grant colleges and space grant regional consortia.

(c) The Administrator may, for cause and after an opportunity for hearing, suspend or terminate any designation under subsection (a) of this section.

42 USC 2486g.

SEC. 209. (a) The Administrator shall support a space grant fellowship program to provide educational and training assistance to qualified individuals at the graduate level of education in fields related to space. Such fellowships shall be awarded pursuant to guidelines established by the Administrator. Space grant fellowships shall be awarded to individuals at space grant colleges, space grant regional consortia, other colleges and institutions of higher education, professional associations, and institutes in such a manner as to assure wide geographic and institutional diversity in the pursuit of research under the fellowship program.

(b) The total amount which may be provided for grants under the space grant fellowship program during any fiscal year shall not exceed an amount equal to 50 percent of the total funds appropriated for such year pursuant to this title.

(c) Nothing in this section shall be construed to prohibit the Administrator from sponsoring any research fellowship program, including any special emphasis program, which is established under an authority other than this title.

42 USC 2486h.

SEC. 210. (a) The Administrator shall establish an independent committee known as the space grant review panel, which shall not be subject to the provisions of the Federal Advisory Committee Act (5 U.S.C. App. 1 et seq.; Public Law 92-463).

(b) The panel shall take such steps as may be necessary to review, and shall advise the Administrator with respect to—

(1) applications or proposals for, and performance under, grants and contracts awarded pursuant to sections 206 and 207 of this title;

(2) the space grant fellowship program;

(3) the designation and operation of space grant colleges and space grant regional consortia, and the operation of space grant and fellowship programs;

(4) the formulation and application of the planning guidelines and priorities pursuant to section 205 (a) and (b)(1) of this title; and

(5) such other matters as the Administrator refers to the panel for review and advice.

(c) The Administrator shall make available to the panel any information, personnel and administrative services and assistance which is reasonable to carry out the duties of the panel.

(d)(1) The Administrator shall appoint the voting members of the panel. A majority of the voting members shall be individuals who, by reason of knowledge, experience, or training, are especially qualified in one or more of the disciplines and fields related to space. The other voting members shall be individuals who, by reason of knowledge, experience or training, are especially qualified in, or representative of, education, extension services, State government, industry, economics, planning, or any other activity related to efforts to enhance the understanding, assessment, development, or utilization of space resources. The Administrator shall consider the potential conflict of interest of any individual in making appointments to the panel.

(2) The Administrator shall select one voting member to serve as the Chairman and another voting member to serve as the Vice

Chairman. The Vice Chairman shall act as Chairman in the absence or incapacity of the Chairman.

(3) Voting members of the panel who are not Federal employees shall be reimbursed for actual and reasonable expenses incurred in the performance of such duties.

(4) The panel shall meet on a biannual basis and, at any other time, at the call of the Chairman or upon the request of a majority of the voting members or of the Administrator.

(5) The panel may exercise such powers as are reasonably necessary in order to carry out the duties enumerated in subsection (b) of this section.

SEC. 211. Each department, agency or other instrumentality of the Federal Government which is engaged in or concerned with, or which has authority over, matters relating to space—

42 USC 2486i.

(1) may, upon a written request from the Administrator, make available, on a reimbursable basis or otherwise, any personnel (with their consent and without prejudice to their position and rating), service, or facility which the Administrator considers necessary to carry out any provision of this title;

(2) may, upon a written request from the Administrator, furnish any available data or other information which the Administrator considers necessary to carry out any provision of this title; and

(3) may cooperate with the Administration.

SEC. 212. (a) The Administrator shall submit to the Congress and the President, not later than January 1, 1989, and not later than February 15 of every odd-numbered year thereafter, a report on the activities of the national space grant and fellowship program.

42 USC 2486j.

(b) The Director of the Office of Management and Budget and the Director of the Office of Science and Technology Policy in the Executive Office of the President shall have the opportunity to review each report prepared pursuant to subsection (a) of this section. Such Directors may submit, for inclusion in such report, comments and recommendations and an independent evaluation of the national space grant college and fellowship program. Such comments and recommendations shall be submitted to the Administrator not later than 90 days before such a report is submitted pursuant to subsection (a) of this section and the Administrator shall include such comments and recommendations as a separate section in such report.

SEC. 213. The Administrator shall not under this title designate any space grant college or space grant regional consortium or award any fellowship, grant, or contract unless such designation or award is made in accordance with the competitive, merit-based review process employed by the Administration on the date of enactment of this Act.

42 USC 2486k.

SEC. 214. (a) There are authorized to be appropriated for the purposes of carrying out the provisions of this title sums not to exceed—

Appropriation  
authorization.  
42 USC 2486l.

- (1) \$10,000,000 for each of fiscal years 1988 and 1989; and
- (2) \$15,000,000 for each of fiscal years 1990 and 1991.

(b) Such sums as may be appropriated under this section shall remain available until expended.

Land Remote-Sensing Commercialization Act Amendments of 1987.  
15 USC 4201 note.  
15 USC 4201 note.

### TITLE III—AMENDMENTS TO THE LAND REMOTE-SENSING COMMERCIALIZATION ACT OF 1984

SEC. 301. This title may be cited as the "Land Remote-Sensing Commercialization Act Amendments of 1987".

SEC. 302. The Congress finds and declares that—

(1) the implementation of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4201 et seq.) has begun and some of the major milestones contained in that Act have been met;

(2) Congress remains strongly committed to the guiding principles set forth in that Act;

(3) notwithstanding the accomplishments thus far, the relationships among the involved Federal agencies and the private sector have not yet been adequately defined; and

(4) inasmuch as the technical development and commercial applications of future land remote-sensing systems cannot now be predicted with certainty, it is in the national interest of the United States that the involved Federal agencies and the private sector remain flexible in carrying out their respective responsibilities under that Act.

SEC. 303. It is therefore the purpose of this title to set forth amendments to the Land Remote-Sensing Commercialization Act of 1984 to ensure that—

(1) the original intent of that Act is carried out in the most effective manner consistent with the guiding principles expressed therein;

(2) specific mechanisms for carrying out the original intent of that Act are provided in those cases where none have materialized thus far; and

(3) the working relationships among involved Federal agencies and private sector parties for the purpose of carrying out that Act are fully developed and mutually understood.

SEC. 304. Section 202(a)(4) of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4212(a)(4)) is amended by inserting before the semicolon at the end thereof the following: ", except in the case of research and development activities conducted in accordance with section 504".

SEC. 305. Title III of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4221 et seq.) is amended by adding at the end thereof the following new section:

#### "DISPOSITION OF GOVERNMENT ASSETS

"SEC. 308. Following the completion of a contract made pursuant to this title, the Secretary may, upon 30 days advance notice to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives, dispose of assets (other than real property) under the control of the Secretary in a manner which best ensures the continuation of the contractor's commercial activity."

SEC. 306. Section 502 of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4262) is amended to read as follows:

#### "RESEARCH AND DEVELOPMENT ACTIVITIES OF FEDERAL AGENCIES

"SEC. 502. Each Federal agency is authorized and encouraged to provide data gathered in experimental remote-sensing space pro-

15 USC 4201 note.

Contracts.  
15 USC 4228.

grams to related research and development programs funded by the Federal Government (including application programs) and to cooperative research programs if the Federal agency involved determines that the data will not be used—

“(1) for any commercial purpose; or

“(2) in substantial competition with data available from a licensee under this Act;

except pursuant to section 503.”

SEC. 307. Title V of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4261 et seq.) is amended by adding at the end thereof the following new section:

“RESEARCH AND DEVELOPMENT ACTIVITIES OF SYSTEM OPERATORS

“SEC. 504. Notwithstanding section 601, any system operator under title II, III, or IV of this Act, or any marketing entity under section 503 of this Act, may provide data for any research and development programs if—

15 USC 4264.

“(1) a complete and timely disclosure of the results of such research and development is made in the open technical literature or is otherwise made publicly available;

“(2) the system operator or marketing entity provides to the Secretary an annual report of all research and development data transactions including the nature of any cooperative agreements and the prices charged for data; and

Reports.

“(3) the data are not used for commercial purposes or in substantial competition with data available from a licensee under this Act.”

SEC. 308. Section 603 of the Land Remote-Sensing Commercialization Act of 1984 (15 U.S.C. 4273) is amended to read as follows:

“NONREPRODUCTION

“SEC. 603. In addition to such other terms and conditions as the system operator may set forth in compliance with section 601 of this Act, the system operator may require that unenhanced data not be reproduced or disseminated by any foreign or domestic purchaser.”

Approved October 30, 1987.

LEGISLATIVE HISTORY—H.R. 2782 (S. 1164):

HOUSE REPORTS: No. 100-204 (Comm. on Science, Space, and Technology).

SENATE REPORTS: No. 100-87 accompanying S. 1164 (Comm. on Commerce, Science, and Transportation).

CONGRESSIONAL RECORD, Vol. 133 (1987):

July 9, considered and passed House.

July 10, considered and passed Senate, amended, in lieu of S. 1164.

Oct. 8, House concurred in Senate amendment with an amendment.

Oct. 13, Senate concurred in House amendment.