NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds

General and special funds:

[SCIENCE, AERONAUTICS AND EXPLORATION] *EXPLORATION, SCIENCE, AND AERONAUTICS*

(INCLUDING TRANSFER OF FUNDS)

For necessary expenses, not otherwise provided for, in the conduct and support of [science, aeronautics and exploration] *exploration, science, and aeronautics* research and development activities, including research, development, operations, support and services; maintenance; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control and communications activities including operations, production, and services; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; not to exceed $35,000 for official reception and representation expenses; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, [$7,929,900,000] *$7,690,000,000*, to remain available until September 30, [2005] *2006*, of which amounts as determined by the Administrator for salaries and benefits; training, travel and awards; facility and related costs; information technology services; science, engineering, fabricating and testing services; and other administrative services may be transferred to ["Space flight] *"Exploration* capabilities" in accordance with section 312(b) of the National Aeronautics and Space Act of 1958, as amended by Public Law 106–377. *(Division G, H.R. 2673, Consolidated Appropriations Bill, FY 2004.)*

Program and Financing (in millions of dollars)

Identification code 80–0114–0–1–999		2003 actual	2004 est.	2005 est.
	Obligations by program activity:			
00.01	Space science		3,773	4,063
00.02	Earth science		1,532	1,492
00.03	Biological & physical research		936	1,045
00.04	Aeronautics		983	925
00.05	Education		215	171
09.01	Reimbursable program		677	664
10.00	Total new obligations		8,116	8,360
	Budgetary resources available for obligation:			
21.40	Unobligated balance carried forward, start of year			391
22.00	New budget authority (gross)		8,507	8,354
23.90	Total budgetary resources available for obligation		8,507	8,745
23.95	Total new obligations		−8,116	−8,360
24.40	Unobligated balance carried forward, end of year		391	385
	New budget authority (gross), detail:			
	Discretionary:			
40.00	Appropriation		7,876	7,690
40.35	Appropriation permanently reduced		−46	
43.00	Appropriation (total discretionary)		7,830	7,690
68.00	Spending authority from offsetting collections: Offsetting collections (cash)		677	664
70.00	Total new budget authority (gross)		8,507	8,354
	Change in obligated balances:			
72.40	Obligated balance, start of year			3,367
73.10	Total new obligations		8,116	8,360
73.20	Total outlays (gross)		−4,748	−7,796
74.40	Obligated balance, end of year		3,367	3,932
	Outlays (gross), detail:			
86.90	Outlays from new discretionary authority		4,748	4,663
86.93	Outlays from discretionary balances			3,133
87.00	Total outlays (gross)		4,748	7,796
	Offsets:			
	Against gross budget authority and outlays:			
	Offsetting collections (cash) from:			
88.00	Federal sources		−630	−617
88.40	Non-Federal sources		−47	−47
88.90	Total, offsetting collections (cash)		−677	−664
	Net budget authority and outlays:			
89.00	Budget authority		7,830	7,690
90.00	Outlays		4,071	7,132

This appropriation provides for the full costs associated with the Exploration, Science and Aeronautics (ESA) activities of the Agency, which consist of the Space Science, Earth Science, Biological and Physical Research, Aeronautics, and Education Programs. The full costs include both the direct and the indirect costs supporting these programs, and provide for all of the research; development; operations; salaries and related expenses; design, repair, rehabilitation, and modification of facilities and construction of new facilities; maintenance and operation of existing facilities; and other general and administrative activities supporting Exploration, Science and Aeronautics programs.

Detailed performance goals associated with the Exploration, Science and Aeronautics activities are addressed in NASA's FY 2005 Integrated Budget and Performance Document.

Space science.—NASA's Space Science Enterprise seeks to answer fundamental questions concerning the galaxy and the universe; the connections among the Sun, Earth and heliosphere; the origin and evolution of planetary systems; and the origin and distribution of life in the universe. The Space Science Enterprise achieves its objectives through flight missions (e.g. robotic spacecraft), ground-based scientific research and data analysis, and the development of new technologies for future missions.

More than 30 Space Science spacecraft will be operating during FY 2005. These include astronomical telescopes, such as the Hubble Space Telescope, the Chandra X–Ray Observatory and the Spitzer Space Telescope; interplanetary spacecraft to Mercury, Mars, Saturn, and comets; and missions studying the Sun and its influence on Earth. Research based on data from these missions will revolutionize our understanding of the universe and our place in it, while continuing to capture the imagination of the public, and especially schoolchildren.

In addition to Mars Exploration, which is augmented in this budget, NASA will be working on a wide variety of exciting, previously approved programs for launch after FY 2005. For example, the New Horizons mission to Pluto and beyond will complete NASA's initial reconnaissance of the solar systems. The Solar Terrestrial Relations Observatory (STEREO) will advance understanding of the Sun's corona (its outer "atmosphere") and the origin of huge eruptions of solar material known as coronal mass ejections. The Gamma-ray Large-Area Space Telescope (GLAST) will investigate the high-energy world of black holes and neutron stars. And in the next decade, the James Webb Space Telescope, the Laser Interferometer Space Antenna, the Jupiter Icy Moons Orbiter, a new generation of Mars missions, and others will provide unprecedented potential for discovery.

Earth science.—NASA's Earth Science Enterprise contributes to the Agency's mission to understand and protect our home planet by using our view from space to study the Earth system and improve prediction of Earth system change. The Earth Science Enterprise seeks to answer a question of funda-

General and special funds—Continued

[SCIENCE, AERONAUTICS AND EXPLORATION] *EXPLORATION, SCIENCE, AND AERONAUTICS*—Continued

(INCLUDING TRANSFER OF FUNDS)—Continued

mental importance to science and society: How is the Earth system changing, and what are the consequences for life on Earth? In pursuit of answers to this question, NASA has pioneered the interdisciplinary research field of Earth System Science, which recognizes that the Earth's land surface, oceans, atmosphere, ice sheets, and life itself all interact in a highly dynamic system. Employing a constellation of over 18 Earth observing satellites with over 80 remote sensing instruments, NASA has made it an Agency goal to understand the Earth system and apply Earth System Science to improve prediction of climate, weather, and natural hazards. Within this goal, NASA has defined two strategic objectives corresponding with our two budget themes, Earth System Science and Earth Science Applications: (1) observe, analyze, and model the Earth system to discover how it is changing and the consequences for life on Earth; and (2) expand and accelerate the realization of economic and societal benefits from Earth science information and technology.

Within Earth System Science, NASA works with the science community to identify questions on the frontiers of science that have profound societal importance, and to which remote sensing of the Earth can make a defining contribution. These science questions become the foundation of a research strategy, which defines requirements for scientific observations. NASA uses the global view from space to contribute to the U.S. Government's Climate Change Science and Technology Programs. We have identified key areas of investment that will enable us to reduce the scientific uncertainties surrounding the forces acting on the climate system.

Within Earth Science Applications, NASA enables the application of information and knowledge gained through partnerships with other federal agencies. These partnerships focus on innovative approaches for using Earth science information and knowledge to provide decision support information. This information is used to address a variety of national priorities, including economic issues and homeland security. Through the Earth Science Applications theme, NASA is working with organizations with the appropriate information infrastructure to apply NASA's Earth science results to help manage coastal environments, agriculture and water resources, and aviation safety; monitor air and water quality, forest fires, and the impacts of infectious diseases and invasive species; and conduct hurricane forecasting and disaster relief efforts. The potential socioeconomic benefits of these applications are significant.

Biological and physical research.—NASA's Biological and Physical Research Enterprise (BPRE) addresses the opportunities and challenges of space flight through basic and applied research on the ground and in space aboard the International Space Station. In concert with the new exploration vision, NASA will refocus BPRE research on activities that prepare human explorers to travel beyond low Earth orbit, such as the development of countermeasures against space radiation and the long-term effects of reduced gravity. BPRE consists of three themes: Biological Sciences Research, Physical Sciences Research, and Research Partnerships and Flight Support.

Physical Science Research supports basic and applied research that takes advantage of the unique environment of space to expand our understanding of the fundamental laws of nature. The theme supports NASA's mission to explore the universe and search for life both through applied research to improve safety and efficiency of human space flight and through exploratory research on the fundamental laws of nature.

Biological Science Research conducts basic and applied research to enable and support a safe human presence in space in support of NASA's mission to explore the universe and search for life. This theme conducts fundamental biological research as an integral element of understanding how space affects life. This theme also supports research to identify, characterize, and control the physiological and psychological challenges to human health associated with human space flight and space exploration, including risks associated with exposure to radiation, microgravity, and prolonged individual and group isolation. The theme also includes research and development to improve the reliability and performance of life support systems and interactions between the crew and the spacecraft systems.

The FY 2005 budget reflects the priorities of the new national vision for space exploration. The budget expands planned biomedical research and countermeasures experiments, including the Human Research Initiative and links all research to the Enterprise's strategic goals.

Aeronautics.—The Aeronautics Enterprise addresses three of NASA's goals through the Aeronautics Technology theme. To achieve the goal of "enabling a safer, more secure, efficient, and environmentally friendly air transportation system", the theme conducts research and develops enabling technology that will: reduce the aircraft fatal accident rate and the vulnerability of the air transportation system to threats; protect the local and global environmental quality by reducing aircraft noise and emissions; and enable more people and goods to travel faster and farther with fewer delays. NASA works closely with the Federal Aviation Administration in developing these technologies. Additionally, in support of the Agency goal "to create a more secure world and improve the quality of life by investing in technologies and to collaborate with other agencies, industry and academia," Aeronautics Technology supports national security through aeronautical partnerships with the Department of Homeland Security, the Department of Defense and other government agencies. Finally, this theme enables pioneering aeronautical concepts to support earth and space science missions and new commercial markets in support of NASA's goal to "enable revolutionary capabilities through new technology."

Aeronautics Technology consists of three integrated programs. The Aviation Safety and Security Program directly addresses the safety and security research & technology development needs of the nation's aviation system to either prevent both unintentional and intentional actions that would cause damage, harm, and loss of life or mitigate the consequences when these types of situations occur. The Airspace Systems Program conducts research and technology development that will enable revolutionary improvements to, and modernization of, the National Airspace System, as well as the introduction of new systems for vehicles whose operation can take advantage of the improved, modern air traffic management system. The Vehicle Systems Program develops enabling technologies that will produce future vehicles that are environmentally friendly, quieter, faster, more efficient, and technologically superior and/or support science missions and commercial applications requiring high altitude, long endurance, and remote operations.

Education.—The Education Enterprise plays the leading role in NASA's mission to inspire the next generation of explorers. From the excitement of the launch countdown to awe-inspiring images of planets and galaxies, aeronautics and space exploration can ignite imaginations young and old. The journey to space, however, does not start at the launch pad—it starts in the classroom. The NASA mission—to understand, explore, and inspire—depends upon people with the ingenuity to invent new tools, the passion to solve problems, and the courage to ask difficult questions. Inspiring the next generation of scientists, technologists, engineers, and educators

means engaging the education community and inviting them to participate in our ongoing work and process of discovery.

To this end, the Education Enterprise works to inspire and motivate students at all levels to pursue careers in the fields of science, technology, engineering, and mathematics (STEM), as well as teaching. The Enterprise partners with academic institutions, professional education associations, industry, and other Government agencies to provide teachers and faculty with the experiences that capitalize on the excitement of NASA's discoveries to spark their students' interest and involvement. The Enterprise provides students with opportunities for involvement in NASA's vast research efforts to promote the STEM disciplines and encourage them to pursue higher education at the graduate and doctoral levels. Finally, The Enterprise engages the public in the experiences of exploration and discovery.

NASA's strategy to accomplish its goals in education involves the achievement of four objectives: (1) Increase the number of elementary and secondary students and teachers who are involved in NASA-related education opportunities; (2) support higher education research capability and opportunities that attract and prepare increasing numbers of students and faculty for NASA-related careers; (3) increase the number and diversity of students, teachers, faculty, and researchers from underrepresented and underserved communities in NASA-related STEM fields; and (4) increase student, teacher, and public access to NASA education resources via the establishment of e-Education as a principal learning support system. NASA engages the public in the experience of exploration and discovery by improving public understanding of science and technology, including NASA aerospace technology, research, and exploration missions.

Object Classification (in millions of dollars)

Identification code 80–0114–0–1–999	2003 actual	2004 est.	2005 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent		873	945
11.3 Other than full-time permanent		31	39
11.5 Other personnel compensation		16	17
11.8 Special personal services payments		4	4
11.9 Total personnel compensation		924	1,005
12.1 Civilian personnel benefits		211	236
13.0 Benefits for former personnel		3	
21.0 Travel and transportation of persons		34	38
22.0 Transportation of things		6	6
23.1 Rental payments to GSA		14	14
23.3 Communications, utilities, and miscellaneous charges		74	75
24.0 Printing and reproduction		4	4
25.1 Advisory and assistance services		136	138
25.2 Other services		679	693
25.3 Other purchases of goods and services from Government accounts		264	269
25.4 Operation and maintenance of facilities		241	246
25.5 Research and development contracts		3,222	3,313
25.7 Operation and maintenance of equipment		82	84
26.0 Supplies and materials		156	159
31.0 Equipment		102	104
32.0 Land and structures		188	192
41.0 Grants, subsidies, and contributions		1,099	1,120
99.0 Direct obligations		7,439	7,696
99.0 Reimbursable obligations		677	664
99.9 Total new obligations		8,116	8,360

Personnel Summary

Identification code 80–0114–0–1–999	2003 actual	2004 est.	2005 est.
Direct:			
1001 Total compensable workyears: Civilian full-time equivalent employment		9,184	9,933
Reimbursable:			
2001 Total compensable workyears: Civilian full-time equivalent employment		63	50

[Space Flight] *Exploration* Capabilities

(including transfer of funds)

For necessary expenses, not otherwise provided for, in the conduct and support of [space flight] *exploration* capabilities research and development activities, including research, development, operations, support and services; maintenance; construction of facilities including repair, rehabilitation, revitalization and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control and communications activities including operations, production, and services; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase and hire of passenger motor vehicles; not to exceed $35,000 for official reception and representation expenses; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, [$7,512,100,000] *$8,526,400,000*, to remain available until September 30, [2005, of which $15,000,000 of amounts for the Space Shuttle Life Extension Program shall be for the development and independent assessment of concepts to increase Space Shuttle crew survivability for crew sizes of 4 to 7 astronauts, and] *2006,* of which amounts as determined by the Administrator for salaries and benefits; training, travel and awards; facility and related costs; information technology services; science, engineering, fabricating and testing services; and other administrative services may be transferred to ["Science, aeronautics and exploration"] *"Exploration, science, and aeronautics"* in accordance with section 312(b) of the National Aeronautics and Space Act of 1958, as amended by Public Law 106–377. *(Division G, H.R. 2673, Consolidated Appropriations Bill, FY 2004.)*

Program and Financing (in millions of dollars)

Identification code 80–0115–0–1–252	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
00.01 Space flight		5,581	6,634
00.02 Exploration Systems		1,564	1,842
09.01 Reimbursable program		357	351
10.00 Total new obligations		7,502	8,827
Budgetary resources available for obligation:			
21.40 Unobligated balance carried forward, start of year			376
22.00 New budget authority (gross)		7,878	8,877
23.90 Total budgetary resources available for obligation		7,878	9,253
23.95 Total new obligations		−7,502	−8,827
24.40 Unobligated balance carried forward, end of year		376	426
New budget authority (gross), detail:			
Discretionary:			
40.00 Appropriation		7,566	8,526
40.35 Appropriation permanently reduced		−45	
43.00 Appropriation (total discretionary)		7,521	8,526
68.00 Spending authority from offsetting collections: Offsetting collections (cash)		357	351
70.00 Total new budget authority (gross)		7,878	8,877
Change in obligated balances:			
72.40 Obligated balance, start of year			2,031
73.10 Total new obligations		7,502	8,827
73.20 Total outlays (gross)		−5,471	−8,330
74.40 Obligated balance, end of year		2,031	2,528
Outlays (gross), detail:			
86.90 Outlays from new discretionary authority		5,471	6,149
86.93 Outlays from discretionary balances			2,181
87.00 Total outlays (gross)		5,471	8,330
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources		−303	−297
88.40 Non-Federal sources		−54	−54
88.90 Total, offsetting collections (cash)		−357	−351

General and special funds—Continued

[SPACE FLIGHT] *EXPLORATION* CAPABILITIES—Continued

(INCLUDING TRANSFER OF FUNDS)—Continued

Program and Financing (in millions of dollars)—Continued

Identification code 80–0115–0–1–252		2003 actual	2004 est.	2005 est.
	Net budget authority and outlays:			
89.00	Budget authority		7,521	8,526
90.00	Outlays		5,114	7,979

This appropriation provides for the full costs associated with the capabilities that support Agency research, which consist of the Exploration Systems and Space Flight Enterprises. The full costs include both the direct and the indirect costs supporting these programs, and provide for all of the research; development; operations; salaries and related expenses; design, repair, rehabilitation, and modification of facilities and construction of new facilities; maintenance and operation of existing facilities; and other general and administrative activities supporting Exploration Capabilities programs.

Detailed performance goals associated with the Exploration Capabilities activities are addressed in NASA's FY 2005 Integrated Budget and Performance Document. The Exploration Capabilities activities include Space Flight and Exploration Systems, and are described below.

Space flight.—Space Flight encompasses the following themes: International Space Station (ISS), Space Shuttle Program, and Space and Flight Support.

The ISS is a complex of research laboratories in low Earth orbit (LEO) in which American, and international astronauts are conducting unique scientific and technological investigations in a micro-gravity environment. The objectives of the ISS program are to support on-orbit scientific research and other activities that require human participation. In concert with the new exploration vision, NASA will refocus U.S. Space Station research on activities that prepare human explorers to travel beyond low Earth orbit, such as the development of countermeasures against space radiation and the long-term effects of reduced gravity. Over the past two years, the program has re-established cost control credibility and is positioned to address enhancements needed to expand ISS research capabilities. Flight hardware required to support the launch of all assembly elements has been delivered to the launch site and is undergoing integrated test and acceptance. The Columbia accident delayed completion of ISS assembly and introduced additional cost risk to the program. The FY 2005 Budget provides funding for the completion of ground development activities, resumption of vehicle on-orbit assembly with a crew of three, logistics re-supply and crew exchange using the Space Shuttle, resumption of research payload and experiment deliveries to orbit, and reserves sufficient to address Columbia-related impacts. Prior to the accident, sixteen U.S. assembly and logistic missions were successfully completed. Completion of the U.S. Core configuration is expected to occur 17 to 18 months after Shuttle return to flight.

The Space Shuttle has served as the centerpiece of the Nation's human space flight program for more than 20 years. This vehicle is the workhorse for Space Station assembly and remains instrumental for the laboratory's completion. Consequently, NASA will return the Shuttle to service to complete the Space Station, doing so with safety as its top priority and based on the Columbia Accident Investigation Board's recommendations. But because the aging system remains costly to operate, lacks some safety capabilities that could be incorporated into future systems, and lacks the capability to fly beyond low Earth orbit, NASA plans to retire the Shuttle at the end of this decade, once its role in Space Station assembly is complete. The FY 2005 budget will allow NASA to meet the intended flight rates, provide appropriate contingency planning to assure transportation and assembly support to the ISS program, and include high priority projects for safety and supportability. These projects will combat obsolescence of vehicles, ground systems, and facilities, in order to maintain the program's safety and viability through this decade.

Space and Flight Support is comprised of programs that provide on-going customer support for a wide range of services including environmental activities, space communications, Launch Services, and rocket propulsion systems testing. These services are provided to a wide range of customers including NASA, other Federal agencies, foreign governments and commercial interests.

Exploration systems.—The Exploration Systems Enterprise includes three new themes that will function cooperatively to enable sustainable exploration and scientific discovery in the solar system. The themes are Lunar Exploration, Human and Robotic Technology, and Transportation Systems. The themes in the new Exploration Systems Enterprise incorporate three themes that were formerly in the Aerospace Technology Enterprise: Space Launch Initiative, Mission and Science Measurement, and Innovative Technology Transfer Partnerships.

The Lunar Exploration (LE) theme will define requirements for a planetary surface exploration architecture that will be tested on the lunar surface, assigning functions to humans and robots based on their respective capabilities and characteristics. The specific number, frequency, duration, sizes and types of human lunar missions and systems will be determined based on which capabilities require demonstration at the moon, operational concepts for future human and robotic Mars exploration, and research results from ongoing Mars robotic missions. The Lunar Exploration Theme will develop and conduct robotic missions beginning in 2008 to test system capabilities, gather engineering data for future systems development, identify resources, and characterize the operating environment at the lunar surface. These precursor missions will lay a foundation for human missions to the Moon in the next decade that will demonstrate how humans and robots work together as integrated elements of the architecture that will be used to explore Mars and other destinations in the years to come. These human and robotic missions to the moon will also seek to address lunar science priorities.

The Human and Robotic Technology (HRT) theme represents NASA's commitment to investing in the technologies and capabilities that will make the national vision for space exploration possible. Through applied technology research, focused technology maturation, and timely technology transition, the HRT theme will develop technologies that can be integrated into missions in the LE theme and applied by other NASA's enterprises. Working with NASA and non-NASA researchers and technologists, through directed investments and innovative partnerships, the HRT theme will advance a range of high-leverage technologies and space operations concepts, mature and validate key technologies, and transition them into applications to enable safe, affordable and sustainable human and robotic exploration of the solar system. The HRT theme will work closely with other government agencies, industry, academia and potential international partners to leverage common requirements and identify innovative ideas. The HRT theme incorporates activities and funds from the former Mission and Science Measurement theme and the former Innovative Technology Transfer Partnerships theme, including the Small Business Innovative Research (SBIR) and Small Business Technology Transfer Research (STTR) programs.

The Transportation Systems (TS) theme will provide crew transfer capabilities as an integral element of a developing architecture to support exploration missions to the Moon,

Mars and beyond. The activities of the TS theme will be focused on the objective of developing and demonstrating a vehicle to provide crew transportation for missions beyond low Earth orbit. NASA will conduct the initial test flight of this vehicle before the end of this decade in order to provide an operational capability to support human exploration missions beyond low Earth orbit no later than 2014. The TS theme incorporates remaining funds from the former Space Launch Initiative theme.

Object Classification (in millions of dollars)

Identification code 80–0115–0–1–252	2003 actual	2004 est.	2005 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent		709	746
11.3 Other than full-time permanent		25	26
11.5 Other personnel compensation		18	19
11.8 Special personal services payments		10	11
11.9 Total personnel compensation		762	802
12.1 Civilian personnel benefits		178	190
13.0 Benefits for former personnel		4	
21.0 Travel and transportation of persons		29	31
22.0 Transportation of things		6	7
23.1 Rental payments to GSA		2	1
23.3 Communications, utilities, and miscellaneous charges		57	69
24.0 Printing and reproduction		5	6
25.1 Advisory and assistance services		38	46
25.2 Other services		350	423
25.3 Other purchases of goods and services from Government accounts		99	120
25.4 Operation and maintenance of facilities		2,429	2,933
25.5 Research and development contracts		2,768	3,343
25.7 Operation and maintenance of equipment		45	54
26.0 Supplies and materials		164	198
31.0 Equipment		93	113
32.0 Land and structures		97	117
41.0 Grants, subsidies, and contributions		19	23
99.0 Direct obligations		7,145	8,476
99.0 Reimbursable obligations		357	351
99.9 Total new obligations		7,502	8,827

Personnel Summary

Identification code 80–0115–0–1–252	2003 actual	2004 est.	2005 est.
Direct:			
1001 Total compensable workyears: Civilian full-time equivalent employment		9,422	9,197
Reimbursable:			
2001 Total compensable workyears: Civilian full-time equivalent employment		24	24

Human Space Flight

Program and Financing (in millions of dollars)

Identification code 80–0111–0–1–252	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
Direct program:			
00.01 Space station	1,517	132	
00.02 Payload and ELV support	89	7	
00.03 Investments and support	1,189	54	
00.04 Space shuttle	3,005	281	
00.05 Space communications and data systems	156	11	
00.07 Safety, mission assurance & engineering	47	3	
09.01 Reimbursable program	251		
10.00 Total new obligations	6,254	488	
Budgetary resources available for obligation:			
21.40 Unobligated balance carried forward, start of year	373	488	
22.00 New budget authority (gross)	6,374		
22.10 Resources available from recoveries of prior year obligations	3		
23.90 Total budgetary resources available for obligation	6,750	488	
23.95 Total new obligations	−6,254	−488	
23.98 Unobligated balance expiring or withdrawn	−8		
24.40 Unobligated balance carried forward, end of year	488		
New budget authority (gross), detail:			
Discretionary:			
40.00 Appropriation	6,231		
40.35 Appropriation permanently reduced	−15		
41.00 Transferred to other accounts	−67		
43.00 Appropriation (total discretionary)	6,149		
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	261		
68.10 Change in uncollected customer payments from Federal sources (unexpired)	−36		
68.90 Spending authority from offsetting collections (total discretionary)	225		
70.00 Total new budget authority (gross)	6,374		
Change in obligated balances:			
72.40 Obligated balance, start of year	1,697	1,678	626
73.10 Total new obligations	6,254	488	
73.20 Total outlays (gross)	−6,302	−1,540	−323
73.40 Adjustments in expired accounts (net)	−11		
73.45 Recoveries of prior year obligations	−3		
74.00 Change in uncollected customer payments from Federal sources (unexpired)	36		
74.10 Change in uncollected customer payments from Federal sources (expired)	7		
74.40 Obligated balance, end of year	1,678	626	303
Outlays (gross), detail:			
86.90 Outlays from new discretionary authority	4,506		
86.93 Outlays from discretionary balances	1,796	1,540	323
87.00 Total outlays (gross)	6,302	1,540	323
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	−163		
88.40 Non-Federal sources	−105		
88.90 Total, offsetting collections (cash)	−268		
Against gross budget authority only:			
88.95 Change in uncollected customer payments from Federal sources (unexpired)	36		
88.96 Portion of offsetting collections (cash) credited to expired accounts	7		
Net budget authority and outlays:			
89.00 Budget authority	6,149		
90.00 Outlays	6,034	1,540	323

NASA's "Human Space Flight" account included the International Space Station; Payload and ELV Support; Human Exploration and Development of Space Investments and Support; Space Communications and Data Systems; and Safety, Mission Assurance and Engineering). In FY 2004, these activities—except for Safety, Mission Assurance and Engineering, which was allocated as an indirect charge to all programs—along with the Crosscutting Technologies portion of the Aerospace Technology Enterprise, were included under the "Space Flight Capabilities" account. Beginning in FY 2005, the "Space Flight Capabilities" account has been renamed the "Exploration Capabilities" account. This account shows spending from balances prior to the account restructuring.

Object Classification (in millions of dollars)

Identification code 80–0111–0–1–252	2003 actual	2004 est.	2005 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	569		
11.3 Other than full-time permanent	5		
11.5 Other personnel compensation	16		
11.8 Special personal services payments	13		
11.9 Total personnel compensation	603		
12.1 Civilian personnel benefits	131		
21.0 Travel and transportation of persons	23		
22.0 Transportation of things	6		

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

Object Classification (in millions of dollars)—Continued

Identification code 80–0111–0–1–252		2003 actual	2004 est.	2005 est.
23.1	Rental payments to GSA	1		
23.3	Communications, utilities, and miscellaneous charges	51	4	
24.0	Printing and reproduction	5	1	
25.1	Advisory and assistance services	34	3	
25.2	Other services	312	28	
25.3	Other purchases of goods and services from Government accounts	88	8	
25.4	Operation and maintenance of facilities	2,170	202	
25.5	Research and development contracts	2,207	206	
25.7	Operation and maintenance of equipment	39	4	
26.0	Supplies and materials	146	14	
31.0	Equipment	84	8	
32.0	Land and structures	86	8	
41.0	Grants, subsidies, and contributions	17	2	
99.0	Direct obligations	6,003	488	
99.0	Reimbursable obligations	251		
99.9	Total new obligations	6,254	488	

Personnel Summary

Identification code 80–0111–0–1–252		2003 actual	2004 est.	2005 est.
	Direct:			
1001	Total compensable workyears: Civilian full-time equivalent employment	6,822		
	Reimbursable:			
2001	Total compensable workyears: Civilian full-time equivalent employment	30		

SCIENCE, AERONAUTICS AND TECHNOLOGY

Program and Financing (in millions of dollars)

Identification code 80–0110–0–1–999		2003 actual	2004 est.	2005 est.
	Obligations by program activity:			
	Direct program:			
00.01	Space science	3,296	393	
00.02	Biological and physical research	848	90	
00.03	Earth science	1,667	180	
00.04	Aerospace technology	2,695	288	
00.06	Academic programs	169	58	
09.01	Reimbursable program	526		
10.00	Total new obligations	9,201	1,009	
	Budgetary resources available for obligation:			
21.40	Unobligated balance carried forward, start of year	593	1,009	
22.00	New budget authority (gross)	9,620		
22.10	Resources available from recoveries of prior year obligations	29		
23.90	Total budgetary resources available for obligation	10,242	1,009	
23.95	Total new obligations	−9,201	−1,009	
23.98	Unobligated balance expiring or withdrawn	−32		
24.40	Unobligated balance carried forward, end of year	1,009		
	New budget authority (gross), detail:			
	Discretionary:			
40.00	Appropriation	9,208		
40.35	Appropriation permanently reduced	−60		
42.00	Transferred from other accounts	67		
43.00	Appropriation (total discretionary)	9,215		
	Spending authority from offsetting collections:			
68.00	Offsetting collections (cash)	426		
68.10	Change in uncollected customer payments from Federal sources (unexpired)	−21		
68.90	Spending authority from offsetting collections (total discretionary)	405		
70.00	Total new budget authority (gross)	9,620		
	Change in obligated balances:			
72.40	Obligated balance, start of year	3,748	4,153	1,406
73.10	Total new obligations	9,201	1,009	
73.20	Total outlays (gross)	−8,775	−3,756	−923
73.40	Adjustments in expired accounts (net)	−12		
73.45	Recoveries of prior year obligations	−29		
74.00	Change in uncollected customer payments from Federal sources (unexpired)	21		
74.10	Change in uncollected customer payments from Federal sources (expired)	−1		
74.40	Obligated balance, end of year	4,153	1,406	483
	Outlays (gross), detail:			
86.90	Outlays from new discretionary authority	5,264		
86.93	Outlays from discretionary balances	3,511	3,756	923
87.00	Total outlays (gross)	8,775	3,756	923
	Offsets:			
	Against gross budget authority and outlays:			
	Offsetting collections (cash) from:			
88.00	Federal sources	−196		
88.40	Non-Federal sources	−221		
88.90	Total, offsetting collections (cash)	−417		
	Against gross budget authority only:			
88.95	Change in uncollected customer payments from Federal sources (unexpired)	21		
88.96	Portion of offsetting collections (cash) credited to expired accounts	−9		
	Net budget authority and outlays:			
89.00	Budget authority	9,215		
90.00	Outlays	8,358	3,756	923

NASA's "Science, Aeronautics and Technology" account included Space Science, Biological and Physical Research, Earth Science, Aerospace Technology, and Academic Enterprises. Beginning in 2004, Space Science, Biological and Physical Research, Earth Science, the Aeronautics portion of Aerospace Technology, and Academic Programs (which was renamed Education Programs in FY 2004), were included under the "Science, Aeronautics and Exploration" account. Beginning in FY 2005, the Science, Aeronautics and Exploration account has been renamed the "Exploration, Science and Aeronautics" account. This account shows spending from balances prior to the account restructuring.

Object Classification (in millions of dollars)

Identification code 80–0110–0–1–999		2003 actual	2004 est.	2005 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	949		
11.3	Other than full-time permanent	17		
11.5	Other personnel compensation	26		
11.8	Special personal services payments	2		
11.9	Total personnel compensation	994		
12.1	Civilian personnel benefits	219		
21.0	Travel and transportation of persons	36		
22.0	Transportation of things	8		
23.1	Rental payments to GSA	17		
23.3	Communications, utilities, and miscellaneous charges	91	12	
24.0	Printing and reproduction	6	1	
25.1	Advisory and assistance services	167	23	
25.2	Other services	834	114	
25.3	Other purchases of goods and services from Government accounts	325	44	
25.4	Operation and maintenance of facilities	295	40	
25.5	Research and development contracts	3,687	503	
25.7	Operation and maintenance of equipment	101	14	
26.0	Supplies and materials	192	26	
31.0	Equipment	126	17	
32.0	Land and structures	231	31	
41.0	Grants, subsidies, and contributions	1,346	184	
99.0	Direct obligations	8,675	1,009	
99.0	Reimbursable obligations	526		
99.9	Total new obligations	9,201	1,009	

Personnel Summary

Identification code 80–0110–0–1–999	2003 actual	2004 est.	2005 est.
Direct:			
1001 Total compensable workyears: Civilian full-time equivalent employment	11,603		
Reimbursable:			
2001 Total compensable workyears: Civilian full-time equivalent employment	63		

Mission Support

Program and Financing (in millions of dollars)

Identification code 80–0112–0–1–999	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
Direct program:			
00.03 Construction of facilities	33	14	
01.00 Total direct program	33	14	
10.00 Total new obligations (object class 32.0)	33	14	
Budgetary resources available for obligation:			
21.40 Unobligated balance carried forward, start of year	47	14	
23.95 Total new obligations	−33	−14	
24.40 Unobligated balance carried forward, end of year	14		
Change in obligated balances:			
72.40 Obligated balance, start of year	187	78	
73.10 Total new obligations	33	14	
73.20 Total outlays (gross)	−138	−92	
73.40 Adjustments in expired accounts (net)	−1		
74.10 Change in uncollected customer payments from Federal sources (expired)	−3		
74.40 Obligated balance, end of year	78		
Outlays (gross), detail:			
86.93 Outlays from discretionary balances	138	92	
Offsets:			
Against gross budget authority and outlays:			
88.40 Offsetting collections (cash) from: Non-Federal sources	−3		
Against gross budget authority only:			
88.96 Portion of offsetting collections (cash) credited to expired accounts	3		
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays	135	92	

NASA's "Mission Support" account included Research and Program Management and Construction of Facilities (CoF), which have not been included in a separate appropriation since 2001. Instead, those "Mission Support" activities are budgeted as part of the full costs associated with projects in the Exploration, Science and Aeronautics account or the Exploration Capabilities account (except for environmental activities, which had previously been included in CoF, and is now budgeted separately under Exploration Capabilities). This account shows spending from balances prior to the account restructuring.

From 1995 to 2003, CoF activities were included in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. Beginning in 2004, NASA's CoF activities were performed in the Science, Aeronautics and Exploration or Enabling Capabilities accounts. Beginning in FY 2005, the Science, Aeronautics and Exploration account has been renamed the "Exploration, Science and Aeronautics" account and the "Space Flight Capabilities" account has been renamed the "Exploration Capabilities" account. This account shows spending from balances prior to the account restructuring.

Office of Inspector General

For necessary expenses of the Office of Inspector General in carrying out the Inspector General Act of 1978, as amended, [$27,300,000] *$27,600,000. (Division G, H.R. 2673, Consolidated Appropriations Bill, FY 2004.)*

Program and Financing (in millions of dollars)

Identification code 80–0109–0–1–252	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
00.01 Direct program activity	25	27	28
10.00 Total new obligations	25	27	28
Budgetary resources available for obligation:			
22.00 New budget authority (gross)	26	27	28
23.95 Total new obligations	−25	−27	−28
23.98 Unobligated balance expiring or withdrawn	−1		
New budget authority (gross), detail:			
Discretionary:			
40.00 Appropriation	26	27	28
Change in obligated balances:			
72.40 Obligated balance, start of year	3	3	4
73.10 Total new obligations	25	27	28
73.20 Total outlays (gross)	−24	−27	−28
73.40 Adjustments in expired accounts (net)	−1		
74.40 Obligated balance, end of year	3	4	4
Outlays (gross), detail:			
86.90 Outlays from new discretionary authority	21	24	25
86.93 Outlays from discretionary balances	3	3	3
87.00 Total outlays (gross)	24	27	28
Net budget authority and outlays:			
89.00 Budget authority	26	27	28
90.00 Outlays	24	27	28

The mission of the Office of Inspector General is to conduct audits and investigations of agency activities. The Inspector General keeps the Administrator and Congress informed of problems and deficiencies in agency programs and operations.

Object Classification (in millions of dollars)

Identification code 80–0109–0–1–252	2003 actual	2004 est.	2005 est.
11.1 Personnel compensation: Full-time permanent	16	18	19
12.1 Civilian personnel benefits	6	7	7
21.0 Travel and transportation of persons	1	1	1
26.0 Supplies and materials	2	1	1
99.9 Total new obligations	25	27	28

Personnel Summary

Identification code 80–0109–0–1–252	2003 actual	2004 est.	2005 est.
Direct:			
1001 Total compensable workyears: Civilian full-time equivalent employment	191	213	213

Trust Funds

Science, Space, and Technology Education Trust Fund

Unavailable Receipts (in millions of dollars)

Identification code 80–8978–0–7–503	2003 actual	2004 est.	2005 est.
01.99 Balance, start of year			
Receipts:			
02.40 Earnings on investments, Science, space and technology education	1	1	1
04.00 Total: Balances and collections	1	1	1
Appropriations:			
05.00 Science, space, and technology education trust fund	−1	−1	−1
07.99 Balance, end of year			

General and special funds—Continued

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND—Continued

Program and Financing (in millions of dollars)

Identification code 80–8978–0–7–503	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
00.01 Direct program activity		1	1
10.00 Total new obligations (object class 41.0)	1	1	1
Budgetary resources available for obligation:			
21.40 Unobligated balance carried forward, start of year	13	13	15
22.00 New budget authority (gross)	1	1	1
23.90 Total budgetary resources available for obligation	14	14	16
23.95 Total new obligations	−1	−1	−1
24.40 Unobligated balance carried forward, end of year	13	15	15
New budget authority (gross), detail:			
Mandatory:			
60.26 Appropriation (trust fund)	1	1	1
Change in obligated balances:			
73.10 Total new obligations	1	1	1
73.20 Total outlays (gross)	−1	−1	−1
Outlays (gross), detail:			
86.97 Outlays from new mandatory authority	1	1	1
Net budget authority and outlays:			
89.00 Budget authority	1	1	1
90.00 Outlays	1	1	1
Memorandum (non-add) entries:			
92.01 Total investments, start of year: Federal securities: Par value	14	14	15
92.02 Total investments, end of year: Federal securities: Par value	14	15	15

NATIONAL SPACE GRANT PROGRAM

Program and Financing (in millions of dollars)

Identification code 80–8977–0–7–252	2003 actual	2004 est.	2005 est.
Obligations by program activity:			
00.01 Direct program activity		3	
10.00 Total new obligations (object class 41.0)		3	
Budgetary resources available for obligation:			
21.40 Unobligated balance carried forward, start of year	3	3	
23.95 Total new obligations		−3	
24.40 Unobligated balance carried forward, end of year	3		
Change in obligated balances:			
73.10 Total new obligations		3	
73.20 Total outlays (gross)		−3	
Outlays (gross), detail:			
86.98 Outlays from mandatory balances		3	
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays		3	

ADMINISTRATIVE PROVISIONS

Notwithstanding the limitation on the availability of funds appropriated for [“Science, aeronautics and exploration”] *“Exploration, science, and aeronautics”,* or [“Space Exploration flight capabilities”] *“Exploration capabilities”* by this appropriations Act, when any activity has been initiated by the incurrence of obligations for construction of facilities or environmental compliance and restoration activities as authorized by law, such amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated for institutional minor revitalization and construction of facilities, and institutional facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for [“Science, aeronautics and exploration”] *“Exploration, science, and aeronautics”*, or [“Space flight] “*Exploration* capabilities” by this appropriations Act, the amounts appropriated for construction of facilities shall remain available until September 30, [2006] *2007*.

From amounts made available in this Act for these activities, the Administration may transfer amounts between [aeronautics of] the [“Science, aeronautics and exploration”] “*Exploration, science, and aeronautics*” account and [crosscutting technologies of] the [“Space flight] “*Exploration* capabilities” account.

Funds for announced prizes otherwise authorized shall remain available, without fiscal year limitation, until the prize is claimed or the offer is withdrawn.

The unexpired balances of prior appropriations to NASA for activities for which funds are provided under this Act may be transferred to the new account established for the appropriation that provides such activity under this Act. Balances so transferred may be merged with funds in the newly established account and thereafter may be accounted for as one fund under the same terms and conditions. *(Division G, H.R. 2673, Consolidated Appropriations Bill, FY 2004.)*