

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The FY 1995 budget for NASA features major budget account restructuring. The current accounts—Research and Development; Space Flight, Control, and Data Communications; Construction of Facilities; and Research and Program Management—will become Human Space Flight; Science, Aeronautics and Technology; and Mission Support. The table below shows a bridge between the old accounts and the new accounts. NASA will provide details for specific programs and activities in its budget schedules and other presentations.

NASA is proposing new appropriations language for the new accounts, and language for the current accounts is proposed for deletion.

BRIDGE OF "OLD" APPROPRIATIONS TO FY 1995 NEW APPROPRIATIONS STRUCTURE

(In thousands of dollars)

	Human Space Flight	Science, Aeronautics and Technology	Mission Support	Total
FY 1994:				
Research and development	2,435,200	4,724,800	369,300	7,529,300
Space flight, control and data communications	3,601,000	860,400	392,100	4,853,500
Research and program management	33,500	262,100	222,100	517,700
Construction of facilities	33,500	262,100	222,100	517,700
Total	6,069,700	5,847,300	2,619,008	14,536,008
FY 1993:				
Research and development	2,602,100	4,077,100	394,400	7,073,600
Space flight, control and data communications	3,878,000	672,200	508,600	5,058,800
Research and program management	191,900	145,100	189,400	526,400
Construction of facilities	191,900	145,100	189,400	526,400
Total	6,672,000	4,894,400	2,727,414	14,293,814

Federal Funds

General and special funds:

HUMAN SPACE FLIGHT

For necessary expenses, not otherwise provided for, the conduct and support of human space flight research and development activities, including research; development; operations; services; maintenance; construction, repair, rehabilitation, and modification of real and personal property; acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; \$5,719,900,000 to remain available until September 30, 1996: Provided, That amounts appropriated under this heading shall not be subject to the requirements set forth in section 9(e)-(r) of the Small Business Act, as amended (15 U.S.C. 638(e)-(r)), and any related requirements, including such requirements enacted in Public Law 102-564.

Program and Financing (in thousands of dollars)

Identification code 80-0111-0-1-252	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01 Space Station			1,795,120
00.02 Russian cooperation			142,595
00.03 Payload and utilization operations			338,390
00.04 Space shuttle			3,157,800
00.91 Subtotal, direct program			5,433,905
01.01 Reimbursable program			99,636
10.00 Total obligations			5,533,541
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance			285,995

24.40 Unobligated balance available, end of year: Treasury balance	285,995
39.00 Budget authority (gross)	5,819,536
Budget authority:	
Current:	
40.00 Appropriation	5,719,900
Permanent:	
68.00 Spending authority from offsetting collections	99,636
Relation of obligations to outlays:	
71.00 Total obligations	5,533,541
72.40 Obligated balance, start of year: Treasury balance	-1,578,645
74.40 Obligated balance, end of year: Treasury balance	-1,578,645
87.00 Outlays (gross)	3,954,896
Adjustments to gross budget authority and outlays:	
Offsetting collections from:	
88.00 Federal funds	-81,317
88.40 Non-Federal sources	-18,319
88.90 Total, offsetting collections	-99,636
89.00 Budget authority (net)	5,719,900
90.00 Outlays (net)	3,855,260

The appropriation provides for human space flight activities, including development of the Space Station, and operation of the Space Shuttle. This includes support of planned cooperative activities with Russia, upgrades to the performance and safety of the Space Shuttle and required construction projects in direct support of Space Station and Space Shuttle programs.

Performance Objectives:

Space Station.—The Space Station will be an international laboratory in low Earth orbit on which American, Russian, Canadian, European, and Japanese astronauts will conduct unique scientific and technological investigations in a micro-gravity environment. During FY 1993, the program underwent a major redesign activity to lower program costs. In FY 1994, the program is making the necessary design changes to integrate the augmented capabilities made possible by the addition of Russia to the International Partners. The program will complete transition to a new program structure, and will begin flight hardware fabrication. Hardware fabrication activities will continue in FY 1995.

Russian Cooperation.—The United States and Russia are planning to undertake a program of joint space missions involving the Space Shuttle and Russian Mir Space Station. In FY 1994, activities supporting these missions will continue, including mission planning, preparation of experiment hardware and procurement of the Shuttle hardware required to enable docking of the Space Shuttle to the Mir Space Station. In FY 1994, the first Russian cosmonaut will fly on the Space Shuttle. In FY 1995, a U.S. astronaut will spend several months on the Mir Space Station, and the first rendezvous and docking mission between the Space Shuttle and Mir will take place.

Payload and Utilization Operations.—These funds will support the mission planning and hardware preparation activities required to support the payload and experiment infrastructure, including the spacelab which is planned to be flown on the Space Shuttle. The Engineering Technical Base provides basic engineering and technical capabilities to support the NASA mission assigned to the programs carried out by the manned space flight centers. Four Spacelab flights are

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

planned for FY 1994 and four Spacelab flights are planned for FY 1995.

Space Shuttle.—The Space Shuttle is a reusable space vehicle which provides several unique capabilities to the United States space program. These include launching spacecraft and retrieving payloads from orbit for reuse, servicing and repairing satellites in space, safely transporting humans to and from space, and operating and returning space laboratories. In FY 1994, eight Shuttle missions are planned, including the first flight of a Russian cosmonaut. In FY 1995, eight Shuttle missions are planned, including the first docking mission between the Space Shuttle and the Russian Mir Space Station. Continued emphasis will be placed on enhancements to the safety and performance of the Space Shuttle.

Object Classification (in thousands of dollars)

Identification code 80-0111-0-1-252	1993 actual	1994 est.	1995 est.
Direct obligations:			
21.0			1,211
22.0			5,022
23.1			96
23.2			34,171
23.3			69,641
24.0			3,870
25.1			1,339
25.5			5,058,905
26.0			113,811
31.0			96,020
32.0			5,774
41.0			44,018
42.0			19
43.0			8
99.0			5,433,905
99.0			99,636
99.9			5,533,541

SCIENCE, AERONAUTICS AND TECHNOLOGY

For necessary expenses, not otherwise provided for, for the conduct and support of science, aeronautics, and technology research and development activities, including research; development; operations; services; maintenance, construction, repair, rehabilitation and modification of real and personal property; acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; \$5,901,200,000, to remain available until September 30, 1996.

Program and Financing (in thousands of dollars)

Identification code 80-0110-0-1-999	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01			1,678,270
00.02			447,355
00.03			1,176,670
00.04			853,575
00.05			576,935
00.06			323,855
00.07			457,140
00.08			92,340
00.91			5,606,140
01.01			526,640
10.00			6,132,780
Financing:			
21.40			
24.40			295,060

39.00	Budget authority (gross)	6,427,840
Budget authority:		
Current:		
40.00	Appropriation	5,901,200
Permanent:		
68.00	Spending authority from offsetting collections	526,640
Relation of obligations to outlays:		
71.00	Total obligations	6,132,780
72.40	Obligated balance, start of year: Treasury balance	
74.40	Obligated balance, end of year: Treasury balance	-2,585,208
87.00	Outlays (gross)	3,547,572
Adjustments to gross budget authority and outlays:		
Offsetting collections from:		
88.00	Federal funds	-506,189
88.40	Non-Federal sources	-20,451
88.90	Total, offsetting collections	-526,640
89.00	Budget authority (net)	5,901,200
90.00	Outlays (net)	3,020,932

This appropriation provides for the research and development activities of the National Aeronautics and Space Administration. Research and Development activities are listed in the Program and Financing schedule above. Funds are included for high priority investments in Mission to Planet Earth, Aeronautics, and new technology investments. Funds are included for the construction, maintenance, and operation of programmatic facilities.

Performance Objectives:

Space Science:

Physics and Astronomy.—This program contributes to our understanding of the origin of the universe, the fundamental laws of physics, and the study of the Earth's and other naturally occurring plasmas in the universe. Development activities on the Advanced X-Ray Astrophysics Facility, Gravity Probe-B, and other Astrophysics and Space Physics experiments will continue in FY 1994 and FY 1995. Astro-2 will be flown in FY 1995. In December 1993, the Hubble Space Telescope was successfully repaired and will assume full-up operations by late February of this year; and the first U.S. Global Geospace Science mission (WIND) is also scheduled to be launched in mid-to-late FY 1994.

Planetary Exploration.—This program encompasses the scientific exploration of the solar system including the planets and their satellites, comets and asteroids, and the interplanetary medium. Development activities will continue on the Cassini mission to Saturn for launch in 1997. In FY 1994, two new missions will begin development for launch within three years. These are the Mars Environmental Survey/Pathfinder (MESUR/Pathfinder) and the Near Earth Asteroid Rendezvous (NEAR) missions. In FY 1995, a Mars orbiter program, consisting of small orbiters and landers that will study Mars, will begin development. Galileo is currently en route to Jupiter and will arrive in December 1995.

Life and Microgravity Sciences.—This program uses the microgravity environment of space to conduct basic and applied research to understand the effect of gravity on living systems and to conduct research in the areas of fluid physics, materials science and biotechnology. In FY 1994, experiment and research activities will be conducted in support of the International Materials Laboratory (IML)-2 mission, and a U.S. microgravity payload mission (USMP-2). In FY 1995, the first Shuttle rendezvous mission with the Russian Space Station Mir will include experiments in life and microgravity sciences. In addition, a U.S. microgravity Spacelab (USML-2) flight will be conducted in FY 1995.

Mission to Planet Earth.—The goal of this program is to gain a better understanding of the processes in the atmos-

phere, oceans, land surface and interior of the Earth, and to advance our knowledge of the interactions between these environments. The Upper Atmosphere Research Satellite and TOPEX, supported by ground-based and airborne observations, continue to gather valuable scientific data on the Earth's environment. The first Shuttle radar mission (SRL 1 and 2) will fly in FY 1994, and Atlas-3 will fly in FY 1995. In FY 1995, development of the first Earth Observing Satellite (EOS) Mission for launch in 1998 and development of the Earth Observing System Data Information System (EOSDIS) will continue. In FY 1994, the EOSDIS Version 0 prototype will be available at four of the distributed active archive centers. In FY 1995, the final product generation system toolkits for algorithm development will be delivered to the scientists for use at the science computing facilities by both the EOS flight science teams and the EOS interdisciplinary investigators.

Aeronautical Research and Technology.—The goal of this program is to conduct aeronautical research and develop technology to strengthen U.S. leadership in civil and military aviation. In FY 1994 and FY 1995, basic research activities in various aeronautical disciplines will continue to develop innovative concepts, the physical understanding and the theoretical and computation tools required for the efficient design and operation of advanced aerospace systems. In addition, activities to develop technologies in selected areas will continue. This includes subsonic aircraft, high speed civil transportation, high-performance fixed and rotary wing aircraft, hypersonic research and technology and high performance computing. In the National Aerospace Plane program, FY 1994 will feature tests of the concept development engine, an important demonstration of hypersonic propulsion technologies. NASA will continue to operate critical national facilities for aeronautical research and for support of industry, Department of Defense and other NASA programs.

Advanced Concepts and Technology.—The goal of this program is to support the development and application of technologies critical to the economic, scientific and technological competitiveness of the U.S. and to promote U.S. industrial preeminence through strengthened linkages between the private sector and NASA technology efforts. In FY 1994, activities will support the more aggressive pursuit of the transfer of technology from NASA to the private sector through implementation of elements of the President's New Technology Investment Initiative. All the efforts are based on strong industry leadership aimed at lowering the cost of space activities, achieving near-term results, and which benefit the economy more directly. The advanced space transportation research programs may undergo further review pending the outcome of the Administration's on-going space transportation review.

Academic Programs.—The goal of this program is to promote excellence in America's education system through enhancing and expanding scientific and technological competence. NASA's education programs span from the elementary through graduate level, and are directed at students as well as faculty. The goal of the Minority University Research Program is to expand opportunities for talented students from underrepresented groups pursuing degrees in science and engineering, as well as strengthening the research capabilities of minority universities and colleges. In FY 1994 and FY 1995, the range of activities conducted under this program will continue to capture the interest of all students in science and technology, develop talented students at the undergraduate and graduate levels, provide research opportunities for students and faculty members at NASA centers and strengthen and enhance the research capabilities of the nation's colleges and universities.

Object Classification (in thousands of dollars)

Identification code 80-0110-0-1-999	1993 actual	1994 est.	1995 est.
Direct obligations:			
21.0			252
22.0			6,872
23.1			228
23.2			33,845
23.3			
			93,326
24.0			7,212
25.1			2,553
25.5			5,073,249
26.0			134,117
31.0			142,075
32.0			7,481
41.0			104,867
42.0			46
43.0			16
44.0			1
99.0			5,606,140
99.0			526,640
99.9			6,132,780

MISSION SUPPORT

For necessary expenses, not otherwise provided for, in carrying out mission support for human space flight programs and science, aeronautical, and technology programs, including research operations and support; space communications activities including operations, productions, and services; construction of facilities expenses including repair, rehabilitation, and modification of facilities, minor construction of new facilities and additions to existing facilities; facility planning and design; environmental compliance and restoration; acquisition or condemnation of real property, as authorized by law; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902); travel expenses; purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed thirty-three for replacement only) and hire of passenger motor vehicles; \$2,662,900,000, to remain available until September 30, 1996.

Program and Financing (in thousands of dollars)

Identification code 80-0112-0-1-999	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01			36,765
00.02			255,455
00.03			2,195,945
00.04			87,750
00.91			2,575,915
01.01			107,518
10.00			2,683,433
Financing:			
21.40			
			86,985
24.40			
			86,985
39.00			2,770,418
Budget authority:			
Current:			
40.00			2,662,900
Permanent:			
68.00			107,518
Relation of obligations to outlays:			
71.00			2,683,433
72.40			
74.40			-273,515
87.00			2,409,918

General and special funds—Continued

MISSION SUPPORT—Continued

Program and Financing (in thousands of dollars)—Continued

Identification code 80-0112-0-1-999	1993 actual	1994 est.	1995 est.
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal funds			-87,997
88.40 Non-Federal sources			-19,521
88.90 Total, offsetting collections			-107,518
89.00 Budget authority (net)			2,662,900
90.00 Outlays (net)			2,302,400

This appropriation provides for mission support, including: safety, reliability and quality assurance activities supporting agency programs; space communication services for NASA programs; salaries and related expenses in support of research in NASA field installations; design, repair, rehabilitation and modification of institutional facilities and construction of new institutional facilities; other operations activities supporting conduct of agency programs.

Performance Objectives:

Safety, Reliability and Quality Assurance.—The goal of this program is to assure the safety and quality of NASA missions, through the development, implementation and oversight of Agencywide safety, reliability, maintainability, and quality assurance policies and procedures. In FY 1994, the new Independent Validation and Verification Center will be initiated under the management of this office.

Space Communication Services.—Activities included in this program provide for the tracking, telemetry, command, data acquisition, communications and data processing required by all NASA flight projects. In FY 1994 and FY 1995, the networks and support systems which accomplish these tasks will continue operation. In FY 1995, the seventh Tracking and Data Relay Satellite (TDRS) will be launched.

Research and Program Management.—This activity provides for the salaries, travel support, other personnel expenses of the entire NASA civil service workforce. It also includes vital support to the civil service workforce and to the physical plant at the Centers and at NASA Headquarters.

Construction of Facilities.—This activity provides for the repair, rehabilitation and modification of administrative facilities, environmental compliance and restoration activities, the design of facilities projects, and the advanced planning related to future facilities needs. In FY 1994 and FY 1995, activities in support of maintenance and repair of administrative facilities at the NASA centers will be conducted, as well as activities in support of environmental compliance and restoration requirements. Funds are also included in FY 1994 to continue planning, in collaboration with industry, on the requirements and design of future wind tunnel facilities.

Object Classification (in thousands of dollars)

Identification code 80-0112-0-1-999	1993 actual	1994 est.	1995 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent			1,332,457
11.3 Other than full-time permanent			20,516
11.5 Other personnel compensation			20,959
11.8 Special personal services payments			7,219
11.9 Total personnel compensation			1,381,151
12.1 Civilian personnel benefits			275,397
13.0 Benefits for former personnel			435
21.0 Travel and transportation of persons			48,813
22.0 Transportation of things			2,042
23.1 Rental payments to GSA			20
23.2 Rental payments to others			4,686
23.3 Communications, utilities, and miscellaneous charges			10,932

24.0 Printing and reproduction			722
25.1 Consulting services			40
25.2 Other services			727,257
26.0 Supplies and materials			17,103
31.0 Equipment			32,495
32.0 Land and structures			65,301
41.0 Grants, subsidies, and contributions			9,515
42.0 Insurance claims and indemnities			4
43.0 Interest and dividends			1
43.0 Interest and dividends			1
99.0 Subtotal, direct obligations			2,575,915
99.0 Reimbursable obligations			107,518
99.9 Total obligations			2,683,433

Personnel Summary

Identification code 80-0112-0-1-999	1993 actual	1994 est.	1995 est.
Direct:			
Total compensable workyears:			
1001 Full-time equivalent employment			23,323
1005 Full-time equivalent of overtime and holiday hours			200
Reimbursable:			
2001 Total compensable workyears: Full-time equivalent employment			105

[RESEARCH AND DEVELOPMENT]

[For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed thirty-three for replacement only) and hire of passenger motor vehicles; \$7,509,300,000, to remain available until September 30, 1995: *Provided*, That not to exceed \$1,000,000 under this Act shall be available for the Towards Other Planetary Systems/ High Resolution Microwave Survey program (also known as the Search for Extraterrestrial Intelligence project): *Provided further*, That of the funds provided under this heading, \$1,946,000,000 is available only for the redesigned space station, of which (1) not to exceed \$160,000,000 shall be for termination costs connected only with Space Station Freedom contracts, (2) not to exceed \$172,000,000 shall be for space station operations and utilization capability development, and (3) not to exceed \$99,000,000 shall be for supporting development: *Provided further*, That not more than \$1,100,000,000 of the amounts made available under this heading for the redesigned space station may be obligated before March 31, 1994: *Provided further*, That none of the funds made available under this heading for the space station program may be used to pay, or enter into contracts with, the Republic of Russia: *Provided further*, That of the funds made available under this heading, not to exceed \$100,000,000 shall be available for activities to support cooperative space ventures between the United States and the Republic of Russia outlined in the joint agreement of September 2, 1993, of which (1) not to exceed \$50,000,000 shall be only for space transportation capability development activities and (2) not to exceed \$50,000,000 shall be only for space science activities other than life sciences: *Provided further*, That the funds made available in the immediately preceding proviso shall not be available until December 15, 1993: *Provided further*, That none of the funds made available under this heading may be used to pay or reimburse the Department of Defense for any expenses connected to any planetary exploration mission.] (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.*)

Program and Financing (in thousands of dollars)

Identification code 80-0108-0-1-999	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01 Space transportation capability development	683,271	691,324	33,130
00.02 Space station and new technology investments	2,051,129	1,974,031	97,300
Scientific investigations in space:			
00.10 Physics and astronomy	1,092,756		
00.11 Planetary exploration	470,608		
00.13 Life sciences	145,135		
Space science:			
00.14 Physics and astronomy		1,114,593	53,380
00.15 Planetary exploration		691,175	35,215
00.20 Space applications	1,132,926		
00.22 Life and microgravity science		466,502	23,815
00.23 Mission to planet earth		1,206,470	53,420
00.29 Advanced concepts and technology		443,879	21,635
00.30 Space research and technology	272,190		
00.31 Commercial programs	167,141		
00.41 Transatmospheric research and technology	26	21,128	1,000
00.42 Aeronautical research and technology	858,001	996,783	50,350
00.43 Safety, reliability and quality assurance	33,176	36,690	1,715
00.44 Academic program	79,383	121,145	4,275
00.45 Tracking and data advanced systems	23,248	23,787	1,230
00.91 Subtotal, direct program	7,008,990	7,787,507	376,465
01.01 Reimbursable program	521,971	690,000	
10.00 Total obligations	7,530,961	8,477,507	376,465
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance	-551,750	-634,672	-376,465
24.40 Unobligated balance available, end of year: Treasury balance	634,672	376,465	
25.00 Unobligated balance expiring	1,157		
39.00 Budget authority (gross)	7,615,040	8,219,300	
Budget authority:			
Current:			
40.00 Appropriation	7,089,300	7,529,300	
40.35 Appropriation rescinded	-14,300		
41.00 Transferred to other accounts	-6,400		
42.00 Transferred from other accounts	5,000		
43.00 Appropriation (total)	7,073,600	7,529,300	
Permanent:			
68.00 Spending authority from offsetting collections	541,440	690,000	
Relation of obligations to outlays:			
71.00 Total obligations	7,530,961	8,477,507	376,465
72.40 Obligated balance, start of year: Treasury balance	2,833,346	2,698,408	3,224,036
74.40 Obligated balance, end of year: Treasury balance	-2,698,408	-3,224,036	-615,391
77.00 Adjustments in expired accounts	-38,336		
87.00 Outlays (gross)	7,627,563	7,951,879	2,985,110
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal funds	-516,272	-654,900	
88.40 Non-Federal sources	-25,168	-35,100	
88.90 Total, offsetting collections	-541,440	-690,000	
89.00 Budget authority (net)	7,073,600	7,529,300	
90.00 Outlays (net)	7,086,123	7,261,879	2,985,110

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1993 actual	1994 est.	1995 est.
Enacted/requested:			
Budget Authority	7,073,600	7,529,300	
Outlays	7,086,123	7,261,879	2,985,110
Rescission proposal:			
Budget Authority		-88,000	
Outlays		-52,836	-29,608
Total:			
Budget Authority	7,073,600	7,441,300	
Outlays	7,086,123	7,209,043	2,955,502

This appropriation provides for research, development and operations activities of the National Aeronautics and Space

Administration. Research and development program activities are listed in the Program and Financing schedule above.

Object Classification (in thousands of dollars)

Identification code 80-0108-0-1-999	1993 actual	1994 est.	1995 est.
Direct obligations:			
21.0 Travel and transportation of persons	318	353	17
22.0 Transportation of things	8,665	9,628	465
23.1 Rental payments to GSA	287	319	15
23.2 Rental payments to others	42,674	47,392	2,291
23.3 Communications, utilities, and miscellaneous charges	117,673	130,747	6,320
24.0 Printing and reproduction	9,094	10,104	488
25.1 Consulting services	3,446	3,618	185
25.5 Research and development contracts	6,336,853	7,040,928	340,366
26.0 Supplies and materials	169,105	187,893	9,083
31.0 Equipment	179,139	199,042	9,622
32.0 Land and structures	9,432	10,480	507
41.0 Grants, subsidies, and contributions	132,225	146,916	7,102
42.0 Insurance claims and indemnities	58	64	3
43.0 Interest and dividends	20	22	1
44.0 Refunds	1	1	
99.0 Subtotal, direct obligations	7,008,990	7,787,507	376,465
99.0 Reimbursable obligations	521,971	690,000	
99.9 Total obligations	7,530,961	8,477,507	376,465

[SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS]

[For necessary expenses, not otherwise provided for, in support of space flight, spacecraft control and communications activities of the National Aeronautics and Space Administration, including operations, production, services, minor construction, maintenance, repair, rehabilitation, and modification of real and personal property; tracking and data relay satellite services as authorized by law; purchase, lease, charter, maintenance and operation of mission and administrative aircraft; \$4,878,400,000, to remain available until September 30, 1995.] (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.)

Program and Financing (in thousands of dollars)

Identification code 80-0105-0-1-252	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01 Shuttle production and capability development	1,059,961	1,085,273	51,755
00.02 Operations	3,130,698	2,728,148	137,180
00.03 Launch services		366,990	15,675
00.04 Tracking and data acquisition	847,336	785,576	38,065
00.91 Total direct program	5,037,995	4,965,987	242,675
01.01 Reimbursable program	220,707	219,000	
10.00 Total obligations	5,258,702	5,184,987	242,675
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance	-347,118	-355,162	-242,675
24.40 Unobligated balance available, end of year: Treasury balance	355,162	242,675	
25.00 Unobligated balance expiring	434		
39.00 Budget authority (gross)	5,267,180	5,072,500	
Budget authority:			
Current:			
40.00 Appropriation	5,086,000	4,853,500	
40.35 Appropriation rescinded	-27,200		
43.00 Appropriation (total)	5,058,800	4,853,500	
Permanent:			
68.00 Spending authority from offsetting collections	208,380	219,000	
Relation of obligations to outlays:			
71.00 Total obligations	5,258,702	5,184,987	242,675
72.40 Obligated balance, start of year: Treasury balance	1,575,269	1,592,698	1,794,649
74.40 Obligated balance, end of year: Treasury balance	-1,592,698	-1,794,649	-302,494
77.00 Adjustments in expired accounts	-7,730		
87.00 Outlays (gross)	5,233,542	4,983,036	1,734,830

General and special funds—Continued
[SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS]—Continued

Program and Financing (in thousands of dollars)—Continued

Identification code 80-0105-0-1-252	1993 actual	1994 est.	1995 est.
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal funds	-107,143	-181,000	
88.40 Non-Federal sources	-101,237	-38,000	
88.90 Total, offsetting collections	-208,380	-219,000	
89.00 Budget authority (net)	5,058,800	4,853,500	
90.00 Outlays (net)	5,025,162	4,764,836	1,734,830

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1993 actual	1994 est.	1995 est.
Enacted/requested:			
Budget Authority	5,058,800	4,853,500	
Outlays	5,025,162	4,764,036	1,734,830
Rescission proposal:			
Budget Authority		-32,000	
Outlays		-17,070	-11,001
Total:			
Budget Authority	5,058,800	4,821,500	
Outlays	5,025,162	4,746,966	1,723,829

This appropriation provides for production, operations and support activities for the Space Transportation System which includes the Space Shuttle and expendable launch vehicles; and for tracking, telemetry, command, and data acquisition support of all NASA flight projects.

Object Classification (in thousands of dollars)

Identification code 80-0105-0-1-252	1993 actual	1994 est.	1995 est.
Direct obligations:			
21.0 Travel and transportation of persons	1,768	1,743	85
22.0 Transportation of things	3,522	3,472	170
23.1 Rental payments to GSA	4	4	
23.2 Rental payments to others	32,409	31,946	1,561
23.3 Communications, utilities, and miscellaneous charges	50,141	49,424	2,415
24.0 Printing and reproduction	1,463	1,442	70
25.1 Consulting services	292	307	14
25.2 Other services	4,788,003	4,719,549	230,635
26.0 Supplies and materials	93,964	92,621	4,526
31.0 Equipment	60,380	59,517	2,908
32.0 Land and structures	4,326	4,264	208
41.0 Grants, subsidies, and contributions	1,720	1,695	83
43.0 Interest and dividends	3	3	
99.0 Subtotal, direct obligations	5,037,995	4,965,987	242,675
99.0 Reimbursable obligations	220,707	219,000	
99.9 Total obligations	5,258,702	5,184,987	242,675

[CONSTRUCTION OF FACILITIES]

[For construction, repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and for facility planning and design not otherwise provided, for the National Aeronautics and Space Administration, and for the acquisition or condemnation of real property, as authorized by law, \$550,300,000, to remain available until September 30, 1996: *Provided*, That, notwithstanding the limitation on the availability of funds appropriated under this heading by this appropriations Act, when any activity has been initiated by the incurrence of obligations therefor, the amount available for such activity shall remain available until expended, except that this provision shall not apply to the amounts appropriated pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design: *Provided further*, That no amount appropriated pursuant to this or any other Act may be used for the lease or construction of a new contrac-

tor-funded facility for exclusive use in support of a contract or contracts with the National Aeronautics and Space Administration under which the Administration would be required to substantially amortize through payment or reimbursement such contractor investment, unless an appropriations Act specifies the lease or contract pursuant to which such facilities are to be constructed or leased or such facility is otherwise identified in such Act: *Provided further*, That the Administrator may authorize such facility lease or construction, if he determines, in consultation with the Committees on Appropriations, that deferral of such action until the enactment of the next appropriations Act would be inconsistent with the interest of the Nation in aeronautical and space activities: *Provided further*, That, pursuant to Public Law 102-486, an amount equal to not more than 50 percent of all utility energy efficiency and water conservation cash rebates received by the National Aeronautics and Space Administration may be made available for additional energy efficiency and water conservation measures, including facility surveys: *Provided further*, That none of the funds provided in this Act to the National Aeronautics and Space Administration shall be available for other than termination costs of the advanced solid rocket motor program.]

[Notwithstanding any other provision of this Act, the amounts appropriated in this Act for fiscal year 1994 shall be: \$4,853,500,000 for the National Aeronautics and Space Administration "Space flight, control and data communications", \$517,700,000 for the National Aeronautics and Space Administration "Construction of facilities", \$7,529,300,000 for the National Aeronautics and Space Administration "Research and development", \$1,480,853,000 for the Environmental Protection Agency "Hazardous substance superfund", \$1,998,500,000 for the National Science Foundation "Research and related activities", and \$110,000,000 for the National Science Foundation "Academic research infrastructure".] (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.*)

Program and Financing (in thousands of dollars)

Identification code 80-0107-0-1-999	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01 Space transportation	239,316	123,543	21,140
00.11 Space science	2,472	4,909	
00.22 Mission to planet earth	18,768	87,012	7,000
00.31 Advanced concepts and technology	645	8,390	4,375
00.41 Aeronautical research and technology	45,967	191,976	74,200
00.42 Supporting activity	200,556	295,267	74,380
00.91 Total direct program	507,724	711,097	181,095
01.01 Reimbursable program	1,743	1,300	
10.00 Total obligations	509,467	712,397	181,095
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-356,206	-374,592	-181,095
U.S. Securities:			
21.41 Par value	-6,925	-6,105	-6,205
21.42 Unrealized discounts	115	50	50
Unobligated balance available, end of year:			
24.40 Treasury balance	374,592	181,095	
U.S. Securities:			
24.41 Par value	6,105	6,205	6,205
24.42 Unrealized discounts	-50	-50	-50
25.00 Unobligated balance expiring	131		
39.00 Budget authority (gross)	527,229	519,000	
Budget authority:			
Current:			
40.00 Appropriation	525,000	517,700	
41.00 Transferred to other accounts	-5,000		
42.00 Transferred from other accounts	6,400		
43.00 Appropriation (total)	526,400	517,700	
Permanent:			
68.00 Spending authority from offsetting collections	829	1,300	
Relation of obligations to outlays:			
71.00 Total obligations	509,467	712,397	181,095
72.00 Obligated balance, start of year: Treasury balance	408,855	359,740	529,991
74.00 Obligated balance, end of year: Treasury balance	-359,740	-529,991	-257,733
77.00 Adjustments in expired accounts	-988		
87.00 Outlays (gross)	557,595	542,146	453,353

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds—Continued

Adjustments to gross budget authority and outlays:			
88.00	Offsetting collections from: Federal funds	-829	-1,300
89.00	Budget authority (net)	526,400	517,700
90.00	Outlays (net)	556,766	540,846 453,353

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1993 actual	1994 est.	1995 est.
Enacted/requested:			
Budget Authority	526,400	517,700	
Outlays	556,766	540,846	453,353
Rescission proposal:			
Budget Authority		-25,000	
Outlays		-4,650	-12,975
Total:			
Budget Authority	526,400	492,700	
Outlays	556,766	536,196	440,378

This appropriation provides for contractual services for the design, repair, rehabilitation, and modification of facilities; the construction of new facilities; the purchase of land and equipment related to construction and modification; environmental compliance activities agencywide; and advanced design related to future facilities.

Object Classification (in thousands of dollars)

Identification code 80-0107-0-1-999	1993 actual	1994 est.	1995 est.
Direct obligations:			
22.0 Transportation of things	1	1	
25.2 Other services	37,025	51,856	13,206
26.0 Supplies and materials	1,632	2,286	582
31.0 Equipment	96,400	135,014	34,384
32.0 Land and structures	372,666	521,940	132,923
99.0 Subtotal, direct obligations	507,724	711,097	181,095
99.0 Reimbursable obligations	1,743	1,300	
99.9 Total obligations	509,467	712,397	181,095

[RESEARCH AND PROGRAM MANAGEMENT]

[For necessary expenses for personnel and related costs, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902) and travel expenses, \$1,635,508,000: *Provided*, That contracts may be entered into under this appropriation for training, investigations, costs associated with personnel relocation, and for other services, to be provided during the next fiscal year.] (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.*)

Program and Financing (in thousands of dollars)

Identification code 80-0103-0-1-999	1993 actual	1994 est.	1995 est.
Program by activities:			
Direct program:			
00.01 Space transportation	664,502	629,871	
00.02 Scientific investigations in space	279,853		
00.03 Space and terrestrial applications	133,056		
00.11 Space science		188,612	
00.21 Life and microgravity science		134,524	
00.22 Mission to planet earth		135,961	
00.31 Advanced concepts and technology	130,627	131,567	
00.41 Transatmospheric research and technology	10,422	7,976	
00.42 Aeronautical research and technology	300,620	328,069	
00.43 Safety, reliability and quality assurance	18,066	20,177	
00.44 Supporting activity	77,690	78,751	
00.91 Total direct program	1,614,836	1,655,508	
01.01 Reimbursable program	21,391	35,000	
10.00 Total obligations	1,636,227	1,690,508	
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance		-20,000	
24.40 Unobligated balance available, end of year: Treasury balance	20,000		
25.00 Unobligated balance expiring	178		

39.00	Budget authority (gross)	1,656,405	1,670,508
Budget authority:			
Current:			
40.00	Appropriation	1,635,014	1,635,508
Permanent:			
68.00	Spending authority from offsetting collections	21,391	35,000

Relation of obligations to outlays:

71.00	Total obligations	1,636,227	1,690,508
72.40	Obligated balance, start of year: Treasury balance	116,327	92,665
74.40	Obligated balance, end of year: Treasury balance	-92,665	-128,681
77.00	Adjustments in expired accounts	-16,857	
87.00	Outlays (gross)	1,643,030	1,654,492
			91,563

Adjustments to gross budget authority and outlays:

Offsetting collections from:			
88.00	Federal funds	-19,494	-30,300
88.40	Non-Federal sources	-1,897	-4,700
88.90	Total, offsetting collections	-21,391	-35,000
89.00	Budget authority (net)	1,635,014	1,635,508
90.00	Outlays (net)	1,621,639	1,619,492 91,563

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1993 actual	1994 est.	1995 est.
Enacted/requested:			
Budget Authority	1,635,014	1,635,508	
Outlays	1,621,639	1,619,492	91,563
Supplemental proposal:			
Budget Authority		60,000	
Outlays		55,331	4,669
Total:			
Budget Authority	1,635,014	1,695,508	
Outlays	1,621,639	1,674,823	96,232

This appropriation provides for salaries and related expenses in support of research in NASA field installations.

Object Classification (in thousands of dollars)

Identification code 80-0103-0-1-999	1993 actual	1994 est.	1995 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	1,242,243	1,277,896	
11.3 Other than full-time permanent	23,631	19,295	
11.5 Other personnel compensation	19,081	16,056	
11.8 Special personal services payments	6,828	6,791	
11.9 Total personnel compensation	1,291,783	1,320,038	
12.1 Civilian personnel benefits	248,758	262,141	
13.0 Benefits for former personnel	463	380	
21.0 Travel and transportation of persons	45,477	46,000	
22.0 Transportation of things	820	3,072	
25.2 Other services	27,535	23,877	
99.0 Subtotal, direct obligations	1,614,836	1,655,508	
99.0 Reimbursable obligations	21,391	35,000	
99.9 Total obligations	1,636,227	1,690,508	

Personnel Summary

Identification code 80-0103-0-1-999	1993 actual	1994 est.	1995 est.
Direct:			
Total compensable workyears:			
1001 Full-time equivalent employment	23,829	23,417	
1005 Full-time equivalent of overtime and holiday hours	220	210	
Reimbursable:			
2001 Total compensable workyears: Full-time equivalent employment	135	120	

OFFICE OF INSPECTOR GENERAL

For necessary expenses of the Office of the Inspector General in carrying out the provisions of the Inspector General Act of 1978,

General and special funds—Continued

OFFICE OF INSPECTOR GENERAL—Continued

as amended, [\$15,391,000] \$16,000,000, to remain available until September 30, 1996. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1994.)

Program and Financing (in thousands of dollars)

Identification code 80-0109-0-1-252	1993 actual	1994 est.	1995 est.
Program by activities:			
10.00 Total obligations	14,591	15,391	16,000
Financing:			
25.00 Unobligated balance expiring	471		
40.00 Budget authority (appropriation)	15,062	15,391	16,000
Relation of obligations to outlays:			
71.00 Total obligations	14,591	15,391	16,000
72.40 Obligated balance, start of year: Treasury balance	3,333	2,929	3,573
74.40 Obligated balance, end of year: Treasury balance	-2,929	-3,573	-4,020
77.00 Adjustments in expired accounts	-370		
90.00 Outlays	14,625	14,747	15,553

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

Object Classification (in thousands of dollars)

Identification code 80-0109-0-1-252	1993 actual	1994 est.	1995 est.
Personnel compensation:			
11.1 Full-time permanent	10,254	10,877	11,356
11.3 Other than full-time permanent	308	325	340
11.5 Other personnel compensation	218	250	250
11.9 Total personnel compensation	10,780	11,452	11,946
12.1 Civilian personnel benefits	2,440	2,489	2,554
21.0 Travel and transportation of persons	687	775	775
22.0 Transportation of things	72	75	75
23.2 Rental payments to others	6	5	5
25.1 Consulting services	24	10	10
25.2 Other services	76	245	235
26.0 Supplies and materials	506	60	100
31.0 Equipment		280	300
99.9 Total obligations	14,591	15,391	16,000

Personnel Summary

Identification code 80-0109-0-1-252	1993 actual	1994 est.	1995 est.
Total compensable workyears:			
1001 Full-time equivalent employment	214	210	210
1005 Full-time equivalent of overtime and holiday hours	2	2	2

Trust Funds

ENDEAVOR TEACHER FELLOWSHIP TRUST FUND

Program and Financing (in thousands of dollars)

Identification code 80-8550-0-7-503	1993 actual	1994 est.	1995 est.
Program by activities:			
10.00 Total obligations (object class 41.0)		15	15
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-4	-3	-3
U.S. Securities:			
21.41 Par value	-350	-355	-355
21.42 Unrealized discounts	3	3	3
Unobligated balance available, end of year:			
24.40 Treasury balance	3	3	3
U.S. Securities:			
24.41 Par value	355	355	355

24.42 Unrealized discounts	-3	-3	-3
60.05 Budget authority (appropriation) (indefinite)	4	15	15
Relation of obligations to outlays:			
71.00 Total obligations		15	15
90.00 Outlays		15	15

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

Program and Financing (in thousands of dollars)

Identification code 80-8978-0-7-503	1993 actual	1994 est.	1995 est.
Program by activities:			
10.00 Total obligations (object class 41.0)	1,251	1,350	1,350
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-2	-1	-1
U.S. Securities:			
21.41 Par value	-15,235	-15,360	-15,360
21.42 Unrealized discounts	4	9	9
Unobligated balance available, end of year:			
24.40 Treasury balance	1	1	1
U.S. Securities:			
24.41 Par value	15,360	15,360	15,360
24.42 Unrealized discounts	-9	-9	-9
60.05 Budget authority (appropriation) (indefinite)	1,370	1,350	1,350
Relation of obligations to outlays:			
71.00 Total obligations	1,251	1,350	1,350
72.40 Obligated balance, start of year: Treasury balance	332	462	300
74.40 Obligated balance, end of year: Treasury balance	-462	-300	-300
90.00 Outlays	1,121	1,512	1,350

MISCELLANEOUS TRUST FUNDS

Program and Financing (in thousands of dollars)

Identification code 80-9971-0-7-252	1993 actual	1994 est.	1995 est.
Financing:			
Unobligated balance available, start of year: Treasury balance			
21.40	-303	-441	-442
Unobligated balance available, end of year: Treasury balance			
24.40	441	442	443
60.05 Budget authority (appropriation) (indefinite)	138	1	1
Relation of obligations to outlays:			
71.00 Total obligations			
90.00 Outlays			

ADMINISTRATIVE PROVISIONS

Notwithstanding the limitation on the availability of funds appropriated for "Human Space Flight", "Science, Aeronautics, and Technology", or "Mission Support" by this appropriations Act, when any activity has been initiated by the incurrence of obligations for construction of facilities and for the acquisition or condemnation of real property, as authorized by law, the amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for "Human Space Flight", "Science, Aeronautics, and Technology", or "Mission Support" by this appropriations Act, the amounts appropriated pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design shall remain available until September 30, 1997.

No amount appropriated pursuant to this or any other Act may be used for the lease or construction of a new contractor-funded facility for exclusive use in support of a contract or contracts with the National Aeronautics and Space Administration under which the Administration would be required to substantially amortize through payment or reimbursement such contractor investment, unless an appropriations Act specifies the lease or contract pursuant to which such facilities are to be constructed or leased or such facility is otherwise identified in such Act. The Administrator may authorize such facility lease or construction, if he determines, in consultation with the Committees on Appropriations, that deferral of such action until the enactment

of the next appropriations Act would be inconsistent with the interest of the Nation in aeronautical and space activities.

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 funds for 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 to be available for the same purposes and under the same terms and conditions.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The 1996 budget for NASA reflects the budget account restructuring that was adopted in FY 1995. The three new restructured accounts are: Human Space Flight; Science, Aeronautics and Technology; and Mission Support. The table below shows a bridge for FY 1994 between the old accounts and the new accounts. The Inspector General account was not included in the restructuring and is excluded from the bridge table.

BRIDGE OF "OLD" APPROPRIATIONS TO 1995 NEW APPROPRIATIONS STRUCTURE

	(In thousands of dollars)			
	Human Space Flight	Science, Aeronautics and Technology	Mission Support	Total
FY 1994:				
Research and development	2,435,400	4,728,800	369,300	7,533,500
Space flight, control and data communications	3,604,600	849,300	381,200	4,835,100
Research and program management			1,673,508	1,673,508
Construction of facilities	34,300	249,100	209,300	492,700
Total	6,074,300	5,827,200	2,633,308	14,534,808

Federal Funds

General and special funds:

HUMAN SPACE FLIGHT

For necessary expenses, not otherwise provided for, in the conduct and support of human space flight research and development activities, including research; development; operations; services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; **[\$5,573,900,000]** \$5,509,600,000, to remain available until September 30, [1996] 1997. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995.)

Program and Financing (in thousands of dollars)

Identification code 80-0111-0-1-252	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Space station		1,788,050	1,839,270
00.02 US/Russian cooperative program		142,595	130,245
00.03 Payload and utilization operations		304,095	315,255
00.04 Space shuttle		2,993,040	3,226,005
00.91 Subtotal, direct program		5,227,780	5,510,775
01.01 Reimbursable program		106,398	109,466
10.00 Total obligations		5,334,178	5,620,241
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance			-287,117
24.40 Unobligated balance available, end of year: Treasury balance		287,117	285,942
39.00 Budget authority (gross)		5,621,295	5,619,066
Budget authority:			
Current:			
40.00 Appropriation		5,573,900	5,509,600
40.75 Procurement reduction pursuant to P.L. 103-327		-59,003	
43.00 Appropriation (total)		5,514,897	5,509,600
Permanent:			
68.00 Spending authority from offsetting collections		106,398	109,466

Relation of obligations to outlays:			
71.00	Total obligations	5,334,178	5,620,241
72.40	Obligated balance, start of year: Unpaid obligations:		
	Treasury balance		1,795,636
74.40	Obligated balance, end of year: Unpaid obligations:		
	Treasury balance	-1,795,636	-1,875,773
87.00	Outlays (gross)	3,538,542	5,540,104
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00	Federal sources	-75,862	-78,062
88.40	Non-Federal sources	-30,536	-31,404
88.90	Total, offsetting collections	-106,398	-109,466
89.00	Budget authority (net)	5,514,897	5,509,600
90.00	Outlays (net)	3,432,144	5,430,638

The appropriation provides for human space flight activities, including development of the Space Station, and operation of the Space Shuttle. This includes support of planned cooperative activities with Russia, upgrades to the performance and safety of the Space Shuttle and required construction projects in direct support of Space Station and Space Shuttle programs.

Performance Objectives:

Space Station.—The Space Station will be an international laboratory in low Earth orbit on which American, Russian, Canadian, European, and Japanese astronauts will conduct unique scientific and technological investigations in a micro-gravity environment. During 1993, the program underwent a major redesign activity to lower program costs. In 1994, the program began making the necessary management and design changes to integrate the augmented capabilities made possible by the addition of Russia to the International Partners. In FY 1995, the program will complete transition to a new program structure, and will begin flight hardware fabrication. Activities are well underway to support crew training, payload processing, and hardware element processing requirements. Hardware fabrication activities will continue in FY 1996. Final fabrication of flight hardware will be the focus of the program. First element launch is scheduled for late 1997.

US/Russian Cooperative Program.—The United States and Russia are planning to undertake a program of joint space missions involving the Space Shuttle and Russian Mir Space Station. In 1994, activities supporting these missions included mission planning, preparation of experiment hardware and procurement of the Shuttle hardware required to enable docking of the Space Shuttle to the Mir Space Station. In 1994, the first Russian cosmonaut flew on the Space Shuttle. In 1995, a U.S. astronaut will spend several months on the Mir Space Station, and the first rendezvous and docking mission between the Space Shuttle and Mir will take place. In FY 1996, three Shuttle flights to Mir are planned. Flight hardware to conduct experiments will be carried on these flights.

Payload and Utilization Operations.—These funds will support the mission planning and hardware preparation activities required to support the payload and experiment infrastructure, including the spacelab which is planned to be flown on the Space Shuttle. The Engineering and Technical Base provides basic engineering and technical capabilities to support the NASA mission assigned to the programs carried out by the human space flight centers. Four Spacelab flights are

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

planned for 1995 and two Spacelab flights are planned for FY 1996.

Space Shuttle.—The Space Shuttle is a reusable space vehicle which provides several unique capabilities to the United States space program. These include launching spacecraft and retrieving payloads from orbit for reuse, servicing and repairing satellites in space, safely transporting humans to and from space, and operating and returning space laboratories. During FY 1994, eight successful Shuttle missions were accomplished, including two Space Radar Lab missions and the highly successful Hubble Space Telescope repair/revisit mission. In 1995, seven Shuttle missions are planned, including the first docking mission between the Space Shuttle and the Russian Mir Space Station. In FY 1996, seven Shuttle missions are planned. Continued emphasis will be placed on enhancements to the safety and performance of the Space Shuttle.

Object Classification (in thousands of dollars)

Identification code 80-0111-0-1-252	1994 actual	1995 est.	1996 est.
Direct obligations:			
22.0 Transportation of things		6,234	6,572
23.1 Rental payments to GSA		15,805	16,660
23.2 Rental payments to others		4,606	4,855
23.3 Communications, utilities, and miscellaneous charges		75,568	79,659
24.0 Printing and reproduction		7,394	7,794
25.2 Other services	4,930,291	5,197,182	
26.0 Supplies and materials		112,706	118,807
31.0 Equipment		68,586	72,298
32.0 Land and structures		4,872	5,136
41.0 Grants, subsidies, and contributions		1,718	1,812
99.0 Subtotal, direct obligations		5,227,780	5,510,775
99.0 Reimbursable obligations		106,398	109,466
99.9 Total obligations		5,334,178	5,620,241

**SCIENCE, AERONAUTICS AND TECHNOLOGY
(INCLUDING RESCISSION OF FUNDS)**

For necessary expenses, not otherwise provided for, for the conduct and support of science, aeronautics, and technology research and development activities, including research; development; operations; services; maintenance; construction of facilities including repair, rehabilitation and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; **[\$5,901,200,000] \$6,006,900,000**, to remain available until September 30, **[1996] 1997**.

[Of the amounts provided under the heading, "CONSTRUCTION OF FACILITIES", for the Consortium for International Earth Science Information Network in Public Law 102-389, \$10,000,000 are rescinded.] (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995.)

Program and Financing (in thousands of dollars)

Identification code 80-0110-0-1-999	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Space science		1,692,900	1,950,055
00.02 Life and microgravity science		458,945	501,905
00.03 Mission to planet Earth		1,220,880	1,337,365
00.04 Aeronautical research and technology		830,200	921,345
00.05 Space access and technology		575,130	698,840
00.06 Launch services		317,205	16,695
00.07 Mission communication services		457,140	462,295
00.08 Academic Programs		97,090	117,875
00.91 Subtotal, direct program		5,649,490	6,006,375

01.01 Reimbursable program		618,852	648,664
10.00 Total obligations		6,268,342	6,655,039
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance			-311,710
24.40 Unobligated balance available, end of year: Treasury balance		311,710	312,235
39.00 Budget authority (gross)		6,580,052	6,655,564
Budget authority:			
Current:			
40.00 Appropriation		5,901,200	6,006,900
42.00 Transferred from other accounts		60,000	
43.00 Appropriation (total)		5,961,200	6,006,900
Permanent:			
68.00 Spending authority from offsetting collections		618,852	648,664
Relation of obligations to outlays:			
71.00 Total obligations		6,268,342	6,655,039
72.40 Obligated balance, start of year: Unpaid obligations: Treasury balance			2,737,992
74.40 Obligated balance, end of year: Unpaid obligations: Treasury balance		-2,737,992	-3,432,920
87.00 Outlays (gross)		3,530,350	5,960,111
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal sources		-592,240	-622,693
88.40 Non-Federal sources		-26,612	-25,971
88.90 Total, offsetting collections		-618,852	-648,664
89.00 Budget authority (net)		5,961,200	6,006,900
90.00 Outlays (net)		2,911,498	5,311,447

This appropriation provides for the research and development activities of the National Aeronautics and Space Administration. Funds are included for the construction, maintenance, and operation of programmatic facilities.

Performance Objectives:

Space Science:

Physics and Astronomy.—This program contributes to our understanding of the origin of the universe, the fundamental laws of physics, and the study of the Earth's and other naturally occurring plasmas in the universe. Development activities will continue in FY 1995-96 on the Advanced X-ray Astrophysics Facility in support of a launch in late 1998. Development activities on the Global Geospace Science program are nearing completion. The first of the two missions (Wind) was launched in November 1994 and initial operations are underway. The second mission (Polar) is in final testing prior to a November 1995 launch. Near-term Shuttle payload missions include the Astro-2 mission in early 1995 and reflight of the Tether Satellite System in mid 1996. In Explorers, the X-ray Timing Explorer is scheduled for launch in August 1995. Development activities continue on the Advanced Composition Explorer for a launch in late 1997. Several significant scientific discoveries were reported in 1994 based on data gathered from the Hubble Space Telescope, and similar results are anticipated in the future. Preparations are currently underway for a second servicing mission in early-mid 1997 which will provide two new science instruments and other servicing requirements as needed.

Planetary Exploration.—This program encompasses the scientific exploration of the solar system including the planets and their satellites, comets and asteroids, and the interplanetary medium. Development activities will continue on the Cassini mission to Saturn for launch in 1997. In FY 1994, the Mars Global Surveyor mission was initiated and launch is planned for late 1996. Funds are also requested in FY 1996 to initiate development of future Mars missions in FY 1998 and beyond. Development of the first two Dis-

covery class missions, Mars Pathfinder and the Near-Earth Asteroid Rendezvous, were also initiated in FY 1994 and are scheduled for launch in 1996. Initial funding is also included beginning in FY 1996 for future Discovery class missions. Preliminary studies are currently underway to prepare for the New Millennium Spacecraft initiative to begin in FY 1996. This program will incorporate critical new technologies into a series of small test missions designed to greatly reduce the mass and cost of future science instruments and spacecraft subsystems. After a six-year cruise period, Galileo will arrive at Jupiter in December 1995 to conduct a two-year tour of the planet and its moons.

Life and Microgravity Sciences.—This program uses the microgravity environment of space to conduct basic and applied research to understand the effect of gravity on living systems and to conduct research in the areas of fluid physics, materials science and biotechnology. In FY 1994, experiment and research activities were conducted in support of the International Materials Laboratory (IML)-2 mission, and a U.S. Microgravity Payload mission (USMP-2). In FY 1995, the first Shuttle rendezvous mission with the Russian Space Station Mir will include experiments in life and microgravity sciences. In addition, a U.S. microgravity Spacelab (USML-2) flight will be conducted in FY 1995. An aggressive four year cooperative program with the National Institute of Child Health and Human Development will begin in FY 1995. Research activities will focus on use of NASA's bioreactor technology in the area of AIDS research. In FY 1996, experiments will be conducted on the Life and Microgravity Spacelab mission (LMS) and on the third U.S. Microgravity Payload mission (USMP-3). Cooperative research with Russia will continue, including two module missions to the Mir Space Station carrying life and microgravity hardware.

Mission to Planet Earth.—The goal of this program is to gain a better understanding of the processes in the atmosphere, oceans, land surface and interior of the Earth, and to advance our knowledge of the interactions between these environments. The Upper Atmosphere Research Satellite and TOPEX, supported by ground-based and airborne observations, continue to gather valuable scientific data on the Earth's environment. In 1994, three Space Shuttle missions were flown (SRL-1 and -2, and ATLAS-3) with Earth Science as the major focus. In FY 1995, development of the first Earth Observing Satellite (EOS) Mission for launch in 1998 and development of the Earth Observing System Data Information System (EOSDIS) will continue. Mission to Planet Earth released EOSDIS Version 0 to the public in August 1994. Launch of the Total Ozone Mapping Spectrometer (TOMS) as a free-flying Earth probe is planned for FY 1995. Launch of TOMS and the NASA Scatterometer is planned for 1996. The release of EOSDIS Version 1 in 1996 will support the 1997 launch of the Tropical Rainfall Measurement Mission (TRMM).

Aeronautical Research and Technology.—The goal of this program is to conduct aeronautical research and develop technology to strengthen U.S. leadership in civil and military aviation. During FY 1994, significant augmentations to the Advanced Subsonic Technology Program took place and funding for continuation of all program elements is included in FY 1995 and FY 1996. Phase II of the High Speed Research program began in FY 1994 and is increasing in FY 1995 and FY 1996 and is directed at developing and verifying technologies essential for an economically viable and environmentally compatible future High Speed Civil Transport system. In the area of High Performance Computing, NASA has pioneered the implementation of design and simulation software on parallel machines and, in FY 1995 and FY 1996, will continue its leadership role in this area. In the Research and Technology base, research activities in various aeronautical disciplines will continue to develop innovative concepts,

the physical understanding and the theoretical and computation tools required for the efficient design and operation of advanced aerospace systems. NASA will continue to operate critical national facilities for aeronautical research and for support of industry, Department of Defense and other NASA programs.

Space Access and Technology.—The goal of this program is to provide new and innovative space technologies to meet the challenges and lower the cost of future space missions. In FY 1994, two proposals were selected for the Advanced Small Satellite Technology Initiative (SSTI). The initial two SSTI spacecraft will be developed and launched within 24 months for an average of about \$55 million each (including launch costs). Launch of these spacecraft, called "Lewis" and "Clark" is scheduled for mid-1996. In FY 1995 and 1996, the Reusable Launch Vehicle (RLV) program will fund technology development and concept definition activities in support of next-generation reusable systems and will also fund flight demonstration of the DC-XA, an upgrade of the DC-X vehicle developed and flown by DOD. Based on results of these activities, a decision will be made by the President no later than December, 1996, on whether to proceed with design, construction and flight testing of a large-scale, reusable launch vehicle demonstrator, designated the X-33.

Launch Services.—In FY 1995, this program provides expendable launch vehicles to launch selected NASA satellites to earth orbit and on to planetary missions. In FY 1996, funds for launch vehicles are included in program budgets.

Mission Communication Services.—The primary goal of this operational program in all years is to provide highly reliable, cost-effective telecommunications services in support of NASA's science and aeronautics programs. Other U.S. agencies, international space-faring agencies, and U.S. commercial enterprises are also supported on a reimbursable basis. Ground network, space network, and mission systems are provided under this program in support of planetary, deep space, Earth-orbiting, aeronautic, and suborbital systems.

Academic Programs.—The goal of this program is to promote excellence in America's education system through enhancing and expanding scientific and technological competence. NASA's education programs span from the elementary through graduate level, and are directed at students as well as faculty. The goal of the Minority University Research Program is to expand opportunities for talented students from underrepresented groups pursuing degrees in science and engineering, as well as strengthening the research capabilities of minority universities and colleges. In FY 1994-1996, the range of activities conducted under this program will continue to capture the interest of all students in science and technology, develop talented students at the undergraduate and graduate levels, provide research opportunities for students and faculty members at NASA centers and strengthen and enhance the research capabilities of the nation's colleges and universities.

Object Classification (in thousands of dollars)

Identification code: 80-0110-0-1-999	1994 actual	1995 est.	1996 est.
Direct obligations:			
22.0 Transportation of things		6,754	7,181
23.1 Rental payments to GSA		5,170	5,497
23.2 Rental payments to others		44,616	47,434
23.3 Communications, utilities, and miscellaneous charges		90,469	96,184
24.0 Printing and reproduction		7,189	7,643
25.1 Advisory and assistance services		4,219	4,486
25.2 Other services	5,088,191		5,409,618
26.0 Supplies and materials		137,774	146,477
31.0 Equipment		110,713	117,707
32.0 Land and structures		19,720	20,966
41.0 Grants, subsidies, and contributions		134,675	143,182
99.0 Subtotal, direct obligations		5,649,490	6,006,375

General and special funds—Continued

SCIENCE, AERONAUTICS AND TECHNOLOGY—Continued

(INCLUDING RESCISSION OF FUNDS)—Continued

Object Classification (in thousands of dollars)—Continued

Identification code 80-0110-0-1-999	1994 actual	1995 est.	1996 est.
99.0 Reimbursable obligations		618,852	648,664
99.9 Total obligations		6,268,342	6,655,039

NATIONAL AERONAUTICAL FACILITIES

[(INCLUDING RESCISSION)]

[For construction of new national wind tunnel facilities, including final design, modification of existing facilities, necessary equipment, and for acquisition or condemnation of real property as authorized by law, for the National Aeronautics and Space Administration, \$400,000,000, to remain available until March 31, 1997: *Provided*, That the funds made available under this heading shall be rescinded on July 15, 1995, unless the President requests at least \$400,000,000 in the fiscal year 1996 budget request for the National Aeronautics and Space Administration for continuation of this wind tunnel initiative.] (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995.*)

Program and Financing (in thousands of dollars)

Identification code 80-0113-0-1-402	1994 actual	1995 est.	1996 est.
Financing:			
40.00 Budget authority: Appropriation		400,000	
Relation of obligations to outlays:			
71.00 Total obligations			
90.00 Outlays			

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1994 actual	1995 est.	1996 est.
Enacted/requested:			
Budget Authority		400,000	
Outlays			
Supplemental proposal:			
Budget Authority			
Outlays			1,000
Total:			
Budget Authority		400,000	
Outlays			1,000

No budget authority is being requested for FY 1996. Instead NASA will use prior year authority to continue refining design options and working with industry on joint financing arrangements in order to support a possible funding request in the future. The supplemental schedule printed in this volume shows the estimated obligations and outlays.

MISSION SUPPORT

For necessary expenses, not otherwise provided for, in carrying out mission support for human space flight programs and science, aeronautical, and technology programs, including research operations and support; space communications activities including operations, production, and services; maintenance; construction of facilities including repair, rehabilitation, and modification of facilities, minor construction of new facilities and additions to existing facilities, facility planning and design, environmental compliance and restoration, and acquisition or condemnation of real property, as authorized by law; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902); travel expenses; purchase, lease, charter, maintenance, and

operation of mission and administrative aircraft; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed thirty-three for replacement only) and hire of passenger motor vehicles; [\$2,554,587,000] \$2,726,200,000, to remain available until September 30, [1996: *Provided*, That of the amounts made available under the heading "Research and program management" in Public Law 103-211, \$18,000,000 are rescinded immediately upon enactment of this Act: *Provided further*, That an additional \$18,000,000, to remain available until September 30, 1995, shall be immediately available for research and program management activities, contingent upon the enactment of the rescission in the preceding proviso before October 1, 1994] 1997. (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995.*)

Program and Financing (in thousands of dollars)

Identification code 80-0112-0-1-999	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Safety, reliability and quality assurance		36,765	37,655
00.02 Space communication services		198,455	313,875
00.03 Research and program management		2,165,661	2,203,780
00.04 Construction of facilities		81,000	153,840
00.91 Subtotal, direct program		2,481,881	2,709,150
01.00 Total direct program		2,481,881	2,709,150
01.01 Reimbursable program		136,286	138,738
10.00 Total obligations		2,618,167	2,847,888
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance			-90,706
24.40 Unobligated balance available, end of year: Treasury balance		90,706	107,756
39.00 Budget authority (gross)		2,708,873	2,864,938
Budget authority:			
Current:			
40.00 Appropriation		2,572,587	2,726,200
Permanent:			
68.00 Spending authority from offsetting collections		136,286	138,738
Relation of obligations to outlays:			
71.00 Total obligations		2,618,167	2,847,888
72.40 Obligated balance, start of year: Unpaid obligations: Treasury balance			404,623
74.40 Obligated balance, end of year: Unpaid obligations: Treasury balance		-404,623	-558,824
87.00 Outlays (gross)		2,213,544	2,693,687
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal sources		-127,457	-129,529
88.40 Non-Federal sources		-8,829	-9,209
88.90 Total, offsetting collections		-136,286	-138,738
89.00 Budget authority (net)		2,572,587	2,726,200
90.00 Outlays (net)		2,077,258	2,554,949

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1994 actual	1995 est.	1996 est.
Enacted/requested:			
Budget Authority		2,572,587	2,726,200
Outlays		2,077,259	2,554,950
Rescission proposal:			
Budget Authority		-1,000	
Outlays		-677	-250
Total:			
Budget Authority		2,571,587	2,726,200
Outlays		2,076,582	2,554,700

This appropriation provides for mission support, including: safety, reliability and quality assurance activities supporting

agency programs; space communication services for NASA programs; salaries and related expenses in support of research in NASA field installations; design, repair, rehabilitation and modification of institutional facilities and construction of new institutional facilities; and other operations activities supporting conduct of agency programs.

Performance Objectives:

Safety, Reliability and Quality Assurance.—The goal of this program is to assure the safety and quality of NASA missions, through the development, implementation and oversight of Agencywide safety, engineering, reliability, maintainability, and quality assurance policies and procedures. During FY 1994-FY 1996, flight program utilization of standards developed in this program will continue.

Space Communication Services.—Activities included in this program provide for the tracking, telemetry, command, data acquisition, communications and data processing required by NASA flight projects. In FY 1994-FY 1996, the networks and support systems which accomplish these tasks will continue operation. In FY 1995, the seventh Tracking and Data Relay Satellite (TDRS) will be launched. Completion of the upgrade of the TDRS White Sands Complex and early development of the TDRS Replenishment Spacecraft will occur in FY 1996.

Research and Program Management.—This activity provides for the salaries, travel support, other personnel expenses of the entire NASA civil service workforce. It also includes vital support to the civil service workforce and to the physical plant at the Centers and at NASA Headquarters.

Construction of Facilities.—This activity provides for the repair, rehabilitation and modification of administrative facilities, environmental compliance and restoration activities, the design of facilities projects, and the advanced planning related to future facilities needs. In FY 1994-FY 1996, activities in support of maintenance and repair of administrative facilities at the NASA centers will be conducted, as well as activities in support of environmental compliance and restoration requirements.

Object Classification (in thousands of dollars)

Identification code 80-0112-0-1-999	1994 actual	1995 est.	1996 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	1,284,655	1,325,762	
11.3 Other than full-time permanent	17,805	18,385	
11.5 Other personnel compensation	31,467	26,769	
11.8 Special personal services payments	6,785	7,372	
11.9 Total personnel compensation	1,340,712	1,378,288	
12.1 Civilian personnel benefits	272,504	278,313	
13.0 Benefits for former personnel	2,181	2,223	
21.0 Travel and transportation of persons	50,794	47,746	
22.0 Transportation of things	2,384	2,200	
23.1 Rental payments to GSA	634	983	
23.2 Rental payments to others	465	574	
23.3 Communications, utilities, and miscellaneous charges	3,458	5,140	
24.0 Printing and reproduction	328	492	
25.1 Advisory and assistance services	27	28	
25.2 Other services	726,227	841,664	
26.0 Supplies and materials	5,525	8,350	
31.0 Equipment	75,388	141,724	
32.0 Land and structures	313	424	
41.0 Grants, subsidies, and contributions	941	1,001	
99.0 Subtotal, direct obligations	2,481,881	2,709,150	
99.0 Reimbursable obligations	136,286	138,738	
99.9 Total obligations	2,618,167	2,847,888	

Personnel Summary

Identification code 80-0112-0-1-999	1994 actual	1995 est.	1996 est.
Direct:			
Total compensable workyears:			
1001 Full-time equivalent employment		22,959	22,908

1005 Full-time equivalent of overtime and holiday hours	220	220
Reimbursable:		
2001 Total compensable workyears: Full-time equivalent employment	116	120

MISSION SUPPORT

(REGO legislative proposal, not subject to PAYGO)

NASA is planning to spend roughly \$1 billion over the next five years to build three communications satellites to link some government spacecraft in orbit to the users and operators on the ground. It is possible that commercial firms could supply some part, perhaps even a major part, of these requirements. The impact to current spacecraft users will be examined prior to full commitment to commercial services. It is estimated that this proposal would achieve savings starting in FY 1997.

Federal Funds

General and special funds:

RESEARCH AND DEVELOPMENT

Program and Financing (in thousands of dollars)

Identification code 80-0108-0-1-999	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Space transportation capability development	706,874	77,541	
00.02 Space station	1,808,783	233,814	
00.14 Physics and astronomy	1,040,571	121,278	
00.15 Planetary exploration	631,694	41,620	
00.22 Life and microgravity science	354,246	130,004	
00.23 Mission to planet earth	1,082,798	151,177	
00.29 Advanced concepts and technology	407,668	85,916	
00.41 Transatmospheric research and technology	19,781	219	
00.42 Aeronautical research and technology	978,155	25,971	
00.43 Safety, reliability and quality assurance	31,111	7,343	
00.44 Academic program	89,745	30,178	
00.45 Tracking and data advanced systems	19,247	768	
00.91 Subtotal, direct program	7,170,673	905,829	
01.01 Reimbursable program	544,772		
10.00 Total obligations	7,715,445	905,829	
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance	-544,119	-905,829	
24.40 Unobligated balance available, end of year: Treasury balance	905,829		
25.00 Unobligated balance expiring	1,117		
39.00 Budget authority (gross)	8,078,272		
Budget authority:			
Current:			
Appropriation:			
40.00 Appropriation	7,529,300		
40.00 Supplemental appropriation	40,000		
40.35 Appropriation rescinded	-63,000		
42.00 Transferred from other accounts	27,200		
43.00 Appropriation (total)	7,533,500		
Permanent:			
68.00 Spending authority from offsetting collections	544,772		
Relation of obligations to outlays:			
71.00 Total obligations	7,715,445	905,829	
Obligated balance, start of year:			
72.10 Receivables from other government accounts	-137,708	-161,545	
72.40 Unpaid obligations: Treasury balance	2,926,196	3,354,868	566,967
Obligated balance, end of year:			
74.10 Receivables from other government accounts	161,545		
74.40 Unpaid obligations: Treasury balance	-3,354,868	-566,967	-106,581
77.00 Adjustments in expired accounts	-7,834		
87.00 Outlays (gross)	7,302,776	3,532,185	460,386
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal sources	-527,992		

General and special funds—Continued

RESEARCH AND DEVELOPMENT—Continued

Program and Financing (in thousands of dollars)—Continued

Identification code 80-0108-0-1-999	1994 actual	1995 est.	1996 est.
88.40 Non-Federal sources	-16,780		
88.90 Total, offsetting collections	-544,772		
89.00 Budget authority (net)	7,533,500		
90.00 Outlays (net)	6,758,004	3,532,185	460,386

This appropriation provides for research, development and operations activities of the National Aeronautics and Space Administration. Research and development program activities are listed in the Program and Financing schedule above.

Object Classification (in thousands of dollars)

Identification code 80-0108-0-1-999	1994 actual	1995 est.	1996 est.
Direct obligations:			
21.0 Travel and transportation of persons	323	41	
22.0 Transportation of things	8,573	1,083	
23.1 Rental payments to GSA	6,562	829	
23.2 Rental payments to others	56,629	7,154	
23.3 Communications, utilities, and miscellaneous charges	114,828	14,506	
24.0 Printing and reproduction	9,125	1,153	
25.1 Advisory and assistance services	5,355	676	
25.2 Other services	6,457,870	815,785	
26.0 Supplies and materials	174,870	22,090	
31.0 Equipment	140,523	17,751	
32.0 Land and structures	25,030	3,162	
41.0 Grants, subsidies, and contributions	170,936	21,593	
42.0 Insurance claims and indemnities	38	5	
43.0 Interest and dividends	11	1	
99.0 Subtotal, direct obligations	7,170,673	905,829	
99.0 Reimbursable obligations	544,772		
99.9 Total obligations	7,715,445	905,829	

SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS

Program and Financing (in thousands of dollars)

Identification code 80-0105-0-1-252	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Shuttle production and capability development	967,772	181,335	
00.02 Operations	2,748,574	95,448	
00.03 Launch services	286,466	72,702	
00.04 Tracking and data acquisition	755,012	61,330	
00.91 Total direct program	4,757,824	410,815	
01.01 Reimbursable program	137,231		
10.00 Total obligations	4,895,055	410,815	
Financing:			
21.40 Unobligated balance available, start of year: Treasury balance	-334,754	-410,815	
24.40 Unobligated balance available, end of year: Treasury balance	410,815		
25.00 Unobligated balance expiring	1,215		
39.00 Budget authority (gross)	4,972,331		
Budget authority:			
Current:			
40.00 Appropriation	4,853,500		
40.35 Appropriation rescinded	-32,000		
42.00 Transferred from other accounts	13,600		
43.00 Appropriation (total)	4,835,100		
Permanent:			
68.00 Spending authority from offsetting collections	137,231		
Relation of obligations to outlays:			
71.00 Total obligations	4,895,055	410,815	

Obligated balance, start of year:			
72.10 Receivables from other government accounts	-56,199	-89,746	
72.40 Unpaid obligations: Treasury balance	1,669,305	1,559,083	265,667
Obligated balance, end of year:			
74.10 Receivables from other government accounts	89,746		
74.40 Unpaid obligations: Treasury balance	-1,559,083	-265,667	-66,879
77.00 Adjustments in expired accounts	-2,354		
87.00 Outlays (gross)	5,036,470	1,614,485	198,788
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00 Federal sources	-123,927		
88.40 Non-Federal sources	-13,304		
88.90 Total, offsetting collections	-137,231		
89.00 Budget authority (net)	4,835,100		
90.00 Outlays (net)	4,899,239	1,614,485	198,788

This appropriation provides for production, operations and support activities for the Space Transportation System which includes the Space Shuttle and expendable launch vehicles; and for tracking, telemetry, command, and data acquisition support of all NASA flight projects.

Object Classification (in thousands of dollars)

Identification code 80-0105-0-1-252	1994 actual	1995 est.	1996 est.
Direct obligations:			
21.0 Travel and transportation of persons	1,612	139	
22.0 Transportation of things	5,674	490	
23.1 Rental payments to GSA	14,384	1,242	
23.2 Rental payments to others	4,192	362	
23.3 Communications, utilities, and miscellaneous charges	68,775	5,938	
24.0 Printing and reproduction	6,729	581	
25.2 Other services	4,485,466	387,298	
26.0 Supplies and materials	102,574	8,857	
31.0 Equipment	62,420	5,390	
32.0 Land and structures	4,434	383	
41.0 Grants, subsidies, and contributions	1,564	135	
99.0 Subtotal, direct obligations	4,757,824	410,815	
99.0 Reimbursable obligations	137,231		
99.9 Total obligations	4,895,055	410,815	

CONSTRUCTION OF FACILITIES

Program and Financing (in thousands of dollars)

Identification code 80-0107-0-1-999	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01 Space transportation	89,782	45,633	
00.11 Space science	826	4,083	
00.22 Mission to planet Earth	20,695	71,317	
00.31 Advanced concepts and technology	832	13,433	
00.41 Aeronautical research and technology	43,979	213,197	
00.42 Supporting activity	172,094	190,792	
00.91 Total direct program	328,208	538,455	
01.01 Reimbursable program	4,625		
10.00 Total obligations	332,833	538,455	
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-370,424	-534,855	
U.S. Securities:			
21.41 Par value	-6,105	-6,325	-2,725
21.42 Unrealized discounts	50	16	16
Unobligated balance available, end of year:			
24.40 Treasury balance	534,855		
U.S. Securities:			
24.41 Par value	6,325	2,725	2,850
24.42 Unrealized discounts	-16	-16	-16
25.00 Unobligated balance expiring	63		
39.00 Budget authority (gross)	497,581		125

Budget authority:			
Current:			
40.00	Appropriation	517,700	
40.35	Appropriation rescinded	-25,000	
43.00	Appropriation (total)	492,700	
Permanent:			
68.00	Spending authority from offsetting collections	4,881	125
Relation of obligations to outlays:			
71.00	Total obligations	332,833	538,455
Obligated balance, start of year:			
72.10	Receivables from other government accounts	-1,416	-1,159
72.40	Unpaid obligations: Treasury balance	365,580	321,559 318,334
Obligated balance, end of year:			
74.10	Receivables from other government accounts	1,159	
74.40	Unpaid obligations: Treasury balance	-321,559	-318,334 -159,778
77.00	Adjustments in expired accounts	-812	
87.00	Outlays (gross)	375,785	540,521 158,556
Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00	Federal sources	-3,230	
88.20	Interest on U.S. securities	-256	-125
88.40	Non-Federal sources	-1,395	
88.90	Total, offsetting collections	-4,881	-125
89.00	Budget authority (net)	492,700	
90.00	Outlays (net)	370,904	540,521 158,431

Summary of Budget Authority and Outlays

(in thousands of dollars)

	1994 actual	1995 est.	1996 est.
Enacted/requested:			
Budget Authority	492,700		
Outlays	370,904	540,521	158,431
Rescission proposal:			
Budget Authority		-27,000	
Outlays		-3,800	-14,664
Total:			
Budget Authority	492,700	-27,000	
Outlays	370,904	536,721	143,767

This appropriation provides for contractual services for the design, repair, rehabilitation, and modification of facilities; the construction of new facilities; the purchase of land and equipment related to construction and modification; environmental compliance activities agencywide; and advanced design related to future facilities.

Object Classification (in thousands of dollars)

Identification code 80-0107-0-1-999	1994 actual	1995 est.	1996 est.
Direct obligations:			
22.0	Transportation of things	-36	
25.2	Other services	34,826	60,353
26.0	Supplies and materials	1,423	2,319
31.0	Equipment	-4	
32.0	Land and structures	291,999	475,783
99.0	Subtotal, direct obligations	328,208	538,455
99.0	Reimbursable obligations	4,625	
99.9	Total obligations	332,833	538,455

RESEARCH AND PROGRAM MANAGEMENT

Program and Financing (in thousands of dollars)

Identification code 80-0103-0-1-999	1994 actual	1995 est.	1996 est.
Program by activities:			
Direct program:			
00.01	Space transportation	623,861	
00.11	Space science	194,212	
00.21	Life and microgravity science	137,058	

00.22	Mission to planet Earth	145,563	
00.31	Advanced concepts and technology	150,908	
00.42	Aeronautical research and technology	342,609	
00.43	Safety, reliability and quality assurance	21,230	
00.44	Supporting activity	77,466	
00.91	Total direct program	1,692,907	
01.01	Reimbursable program	19,158	
10.00	Total obligations	1,712,065	
Financing:			
21.40	Unobligated balance available, start of year: Treasury balance		-20,000
24.40	Unobligated balance available, end of year: Treasury balance		
25.00	Unobligated balance expiring	18,601	
39.00	Budget authority (gross)	1,710,666	

Budget authority:			
Current:			
Appropriation:			
40.00	Appropriation	1,635,508	
40.00	Supplemental appropriation	56,000	
43.00	Appropriation (total)	1,691,508	
Permanent:			
68.00	Spending authority from offsetting collections	19,158	

Relation of obligations to outlays:			
71.00	Total obligations	1,712,065	
Obligated balance, start of year:			
72.10	Receivables from other government accounts	-8,082	-8,231
72.40	Unpaid obligations: Treasury balance	100,747	137,260 8,462
Obligated balance, end of year:			
74.10	Receivables from other government accounts	8,231	
74.40	Unpaid obligations: Treasury balance	-137,260	-8,462 -555
77.00	Adjustments in expired accounts	-6,397	
87.00	Outlays (gross)	1,669,304	120,567 7,907

Adjustments to gross budget authority and outlays:			
Offsetting collections from:			
88.00	Federal sources	-18,233	
88.40	Non-Federal sources	-925	
88.90	Total, offsetting collections	-19,158	
89.00	Budget authority (net)	1,691,508	
90.00	Outlays (net)	1,650,146	120,567 7,907

This appropriation provides for salaries and related expenses in support of research in NASA field installations.

Object Classification (in thousands of dollars)

Identification code 80-0103-0-1-999	1994 actual	1995 est.	1996 est.
Direct obligations:			
Personnel compensation:			
11.1	Full-time permanent	1,267,215	
11.3	Other than full-time permanent	20,188	
11.5	Other personnel compensation	21,035	
11.8	Special personal services payments	6,285	
11.9	Total personnel compensation	1,314,723	
12.1	Civilian personnel benefits	264,845	
13.0	Benefits for former personnel	31,648	
21.0	Travel and transportation of persons	38,949	
22.0	Transportation of things	2,921	
25.1	Advisory and assistance services	3,599	
25.2	Other services	36,222	
99.0	Subtotal, direct obligations	1,692,907	
99.0	Reimbursable obligations	19,158	
99.9	Total obligations	1,712,065	

Personnel Summary

Identification code 80-0103-0-1-999	1994 actual	1995 est.	1996 est.
Direct:			
Total compensable workyears:			
1001	Full-time equivalent employment	23,565	
1005	Full-time equivalent of overtime and holiday hours	210	

General and special funds—Continued

RESEARCH AND PROGRAM MANAGEMENT—Continued

Personnel Summary—Continued

Identification code 80-0103-0-1-999	1994 actual	1995 est.	1996 est.
Reimbursable:			
2001 Total compensable workyears: Full-time equivalent employment	104		

OFFICE OF INSPECTOR GENERAL

For necessary expenses of the Office of the Inspector General in carrying out the provisions of the Inspector General Act of 1978, as amended, **[\$16,000,000] \$17,300,000.** (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995.)

Program and Financing (in thousands of dollars)

Identification code 80-0109-0-1-252	1994 actual	1995 est.	1996 est.
Program by activities:			
10.00 Total obligations	14,726	16,000	17,300
Financing:			
25.00 Unobligated balance expiring	665		
40.00 Budget authority (appropriation)	15,391	16,000	17,300
Relation of obligations to outlays:			
71.00 Total obligations	14,726	16,000	17,300
72.40 Obligated balance, start of year: Unpaid obligations:			
Treasury balance	2,929	2,814	3,590
74.40 Obligated balance, end of year: Unpaid obligations:			
Treasury balance	-2,814	-3,590	-4,194
77.00 Adjustments in expired accounts	180		
90.00 Outlays	15,021	15,224	16,696

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

Object Classification (in thousands of dollars)

Identification code 80-0109-0-1-252	1994 actual	1995 est.	1996 est.
Personnel compensation:			
11.1 Full-time permanent	10,708	11,111	12,125
11.3 Other than full-time permanent	245	340	340
11.5 Other personnel compensation	266	250	260
11.9 Total personnel compensation	11,219	11,701	12,725
12.1 Civilian personnel benefits	2,249	2,554	2,710
13.0 Benefits for former personnel	210		
21.0 Travel and transportation of persons	579	875	875
22.0 Transportation of things	21	75	75
23.2 Rental payments to others		5	5
23.3 Communications, utilities, and miscellaneous charges	3		
25.1 Advisory and assistance services	42	20	20
25.2 Other services	287	295	290
26.0 Supplies and materials	116	30	100
31.0 Equipment		445	500
99.9 Total obligations	14,726	16,000	17,300

Personnel Summary

Identification code 80-0109-0-1-252	1994 actual	1995 est.	1996 est.
Total compensable workyears:			
1001 Full-time equivalent employment	204	210	210
1005 Full-time equivalent of overtime and holiday hours	2	2	2

Trust Funds

ENDEAVOR TEACHER FELLOWSHIP TRUST FUND

Program and Financing (in thousands of dollars)

Identification code 80-8550-0-7-503	1994 actual	1995 est.	1996 est.
Program by activities:			
10.00 Total obligations (object class 41.0)		15	15
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-3	-3	-3
U.S. Securities:			
21.41 Par value	-355	-385	-385
21.42 Unrealized discounts	3	18	18
Unobligated balance available, end of year:			
24.40 Treasury balance	3	3	3
U.S. Securities:			
24.41 Par value	385	385	385
24.42 Unrealized discounts	-18	-18	-18
60.27 Budget authority (appropriation) (trust fund, indefinite)	15	15	15
Relation of obligations to outlays:			
71.00 Total obligations		15	15
90.00 Outlays		15	15

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

Program and Financing (in thousands of dollars)

Identification code 80-8978-0-7-503	1994 actual	1995 est.	1996 est.
Program by activities:			
10.00 Total obligations (object class 41.0)	1,000	1,350	1,350
Financing:			
Unobligated balance available, start of year:			
21.40 Treasury balance	-1	-1	-1
U.S. Securities:			
21.41 Par value	-15,360	-15,750	-15,750
21.42 Unrealized discounts	9	11	11
Unobligated balance available, end of year:			
24.40 Treasury balance	1	1	1
U.S. Securities:			
24.41 Par value	15,750	15,750	15,750
24.42 Unrealized discounts	-11	-11	-11
60.27 Budget authority (appropriation) (trust fund, indefinite)	1,388	1,350	1,350
Relation of obligations to outlays:			
71.00 Total obligations	1,000	1,350	1,350
72.40 Obligated balance, start of year: Unpaid obligations:			
Treasury balance	462	264	264
74.40 Obligated balance, end of year: Unpaid obligations:			
Treasury balance	-264	-264	-264
90.00 Outlays	1,198	1,350	1,350

MISCELLANEOUS TRUST FUNDS

Program and Financing (in thousands of dollars)

Identification code 80-9971-0-7-252	1994 actual	1995 est.	1996 est.
Program by activities:			
10.00 Total obligations	18	20	20
Financing:			
Unobligated balance available, start of year: Treasury balance			
21.40	-453	-606	-589
Unobligated balance available, end of year: Treasury balance			
24.40	606	589	572
60.27 Budget authority (appropriation) (trust fund, indefinite)	171	3	3
Relation of obligations to outlays:			
71.00 Total obligations	18	20	20

72.40	Obligated balance, start of year: Unpaid obligations:			
	Treasury balance	6		
74.40	Obligated balance, end of year: Unpaid obligations:			
	Treasury balance	-6		
90.00	Outlays	12	26	20

ADMINISTRATIVE PROVISIONS

[INCLUDING TRANSFER OF FUNDS]

[Of the budgetary resources available to the National Aeronautics and Space Administration during fiscal year 1995, \$59,003,000 are permanently canceled. The Administrator of the National Aeronautics and Space Administration shall allocate the amount of budgetary resources canceled among the agency's accounts available for procurement and procurement-related expenses. Amounts available for procurement and procurement-related expenses in each such account shall be reduced by the amount allocated to such account. For the purposes of this paragraph, the definition of "procurement" includes all stages of the process of acquiring property or services, beginning with the process of determining a need for a product or service and ending with contract completion and closeout, as specified in 41 U.S.C. 403(2).]

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, when any activity has been initiated by the incurrence of obligations for construction of facilities as authorized by law, the amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated in "Mission support" pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, the amounts appropriated for construction of facilities shall remain available until September 30, [1997] 1998.

Notwithstanding the limitation on the availability of funds appropriated for "Mission support" and "Inspector General", amounts made available by this Act for personnel and related costs and travel expenses of the National Aeronautics and Space Administration shall remain available until September 30, [1995] 1996 and may be used

to enter into contracts for training, investigations, cost associated with personnel relocation, and for other services, to be provided during the next fiscal year.

[No amount appropriated pursuant to this or any other Act may be used for the lease or construction of a new contractor-funded facility for exclusive use in support of a contract or contracts with the National Aeronautics and Space Administration under which the Administration would be required to substantially amortize through payment or reimbursement such contractor investment, unless an appropriations Act specifies the lease or contract pursuant to which such facilities are to be constructed or leased or such facility is otherwise identified in such Act. The Administrator may authorize such facility lease or construction, if he determines, in consultation with the Committees on Appropriations, that deferral of such action until the enactment of the next appropriations Act would be inconsistent with the interest of the Nation in aeronautical and space activities.]

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 funds for 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 to be available for the same purposes and under the same terms and conditions.

[The fourth proviso in the paragraph under the heading "Science, space, and technology education trust fund" in the Department of Housing and Urban Development—Independent Agencies Appropriations Act, 1989 (Public Law 101-404, 102 Stat. 1014, 1028) is amended by striking out "for a ten-year period" and inserting in lieu thereof "hereafter".]

[Notwithstanding any other provision of law or regulation, the National Aeronautics and Space Administration shall convey, without reimbursement, to the City of Slidell, Louisiana, all rights, title, and interest of the United States in the property, including all improvements thereon, known as the Slidell Computer Complex, and consisting of approximately 14 acres in the City of Slidell, St. Tammany Parish, Louisiana: *Provided*, That appropriated funds may be used to effect this conveyance: *Provided further*, That in consideration of this conveyance, the National Aeronautics and Space Administration may require such other terms and conditions as the Administrator deems appropriate to protect the interests of the United States.] (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1995*)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds

General and special funds:

HUMAN SPACE FLIGHT

For necessary expenses, not otherwise provided for, in the conduct and support of human space flight research and development activities, including research, development, operations, services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, \$5,362,900,000 to remain available until September 30, 1998.

Note.—A regular 1996 appropriation for this account had not been enacted at the time this budget was prepared. The 1996 amounts included in this budget are based on the levels provided in three continuing resolutions: P.L. 104-91, P.L. 104-92 and P.L. 104-99.

Program and Financing (in millions of dollars)			
Identification code 80-0111-0-1-252	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
Direct program:			
00.01 Space station	1,693	1,967	1,805
00.02 US/Russian cooperative program	124	149	138
00.03 Payload and utilization operations	312	307	274
00.04 Space shuttle	3,110	3,037	3,151
00.91 Subtotal, direct program	5,239	5,460	5,368
01.01 Reimbursable program	81	97	108
10.00 Total obligations	5,320	5,557	5,476
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance		276	273
22.00 New budget authority (gross)	5,596	5,554	5,471
23.90 Total budgetary resources available for obligation	5,596	5,830	5,744
23.95 New obligations	-5,320	-5,557	-5,476
24.40 Unobligated balance available, end of year:			
Uninvested balance	276	273	268
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	5,574	5,457	5,363
40.35 Appropriation rescinded	-59		
43.00 Appropriation (total)	5,515	5,457	5,363
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	25	97	108
68.10 Change in orders on hand from Federal sources	56		
68.90 Spending authority from offsetting collections (total)	81	97	108
70.00 Total new budget authority (gross)	5,596	5,554	5,471
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation		1,711	2,101
72.95 Orders on hand from Federal sources		56	56
72.99 Total unpaid obligations, start of year		1,767	2,157
73.10 New obligations	5,320	5,557	5,476
73.20 Total outlays (gross)	-3,553	-5,167	-5,493
Unpaid obligations, end of year:			
74.40 Obligated balance: Appropriation	1,711	2,101	2,084
74.95 Orders on hand from Federal sources	56	56	56
74.99 Total unpaid obligations, end of year	1,767	2,157	2,140
Outlays (gross), detail:			
86.90 Outlays from new current authority	3,528	3,502	3,431

86.93 Outlays from current balances	1,568	1,954	
86.97 Outlays from new permanent authority	25	97	108
86.98 Outlays from permanent balances			
87.00 Total outlays (gross)	3,553	5,167	5,493
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	-22	-81	-79
88.40 Non-Federal sources	-3	-16	-29
88.90 Total, offsetting collections (cash)	-25	-97	-108
88.95 Change in orders on hand from Federal sources	-56		
Net budget authority and outlays:			
89.00 Budget authority	5,515	5,457	5,363
90.00 Outlays	3,528	5,070	5,385

The appropriation provides for human space flight activities, including development of the Space Station, and operation of the Space Shuttle. This includes support of planned cooperative activities with Russia, upgrades to the performance and safety of the Space Shuttle and required construction projects in direct support of Space Station and Space Shuttle programs.

Performance Objectives

Space Station.—The Space Station will be an international laboratory in low Earth orbit on which American, Russian, Canadian, European, and Japanese astronauts will conduct unique scientific and technological investigations in a micro-gravity environment. During 1993, the program underwent a major redesign activity to lower program costs. In 1994, the program began making the necessary management and design changes to integrate the augmented capabilities made possible by the addition of Russia to the International Partners. In 1995, the program completed transition to a new program structure, and began flight hardware fabrication. Activities are well underway to support crew training, payload processing, and hardware element processing requirements. Hardware fabrication activities will continue in 1996. Final fabrication of flight hardware will be the focus of the program. First element launch is scheduled for late 1997.

U.S./Russian Cooperative Program.—The United States and Russia are planning to undertake a program of joint space missions involving the Space Shuttle and Russian Mir Space Station. In 1995, a U.S. astronaut spent several months on the Mir Space Station, and the first rendezvous and docking mission between the Space Shuttle and Mir took place. In 1996, three Shuttle flights to Mir are planned. Flight hardware to conduct experiments will be carried on these flights. These flights will provide valuable opportunities to gain experience in working with our Russian partners, which will be crucial to the success of building and operating the international Space Station. These flights will continue in FY 1997, with three additional flights planned, completing phase I of this cooperative precursor to Space Station.

Payload and Utilization Operations.—These funds will support the mission planning and hardware preparation activities required to support the payload and experiment infrastructure, including the spacelab which is planned to be flown on the Space Shuttle. The Engineering and Technical Base provides basic engineering and technical capabilities to support the NASA mission assigned to the programs carried out by the human space flight centers. The program will support

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

seven missions planned in 1997, including the Microgravity Sciences Laboratory (MSL-1) spacelab mission, three missions to the MIR and the Hubble Telescope maintenance mission. In addition, 13 Hitchhiker and several GAS payloads will be supported. In FY 1997, over 23 major and secondary payloads will be launched. The Spacelab program is scheduled to be terminated in 1998.

Space Shuttle.—The Space Shuttle is a reusable space vehicle which provides several unique capabilities to the United States space program. These include launching spacecraft and retrieving payloads from orbit for reuse, servicing and repairing satellites in space, safely transporting humans to and from space, and operating and returning space laboratories. In 1995, six Shuttle missions were accomplished, including the first docking mission between the Space Shuttle and the Russian Mir Space Station. In 1996, eight Shuttle missions are planned. Activities supporting consolidation of Shuttle contracts into one Space Flight Operations contract will be completed in FY 1996. This will result in significant reductions in the cost of operating the Space Shuttle through FY 2000 and beyond, with no impact on safety, performance or schedule.

In 1997, seven shuttle flights are planned. Continued emphasis will be placed on enhancements to the safety and performance of the Space Shuttle.

Object Classification (in millions of dollars)

Identification code 80-0111-0-1-252	1995 actual	1996 est.	1997 est.
Direct obligations:			
22.0 Transportation of things	4	4	4
23.3 Communications, utilities, and miscellaneous charges	38	40	39
24.0 Printing and reproduction	3	3	3
25.1 Advisory and assistance services	1,378	1,436	1,412
25.2 Other services	1,221	1,273	1,251
25.3 Purchases of goods and services from Government accounts	39	41	40
25.4 Operation and maintenance of facilities	8	8	8
25.5 Research and development contracts	2,301	2,397	2,358
25.7 Operation and maintenance of equipment	86	90	88
26.0 Supplies and materials	87	91	89
31.0 Equipment	28	29	29
32.0 Land and structures	44	46	45
41.0 Grants, subsidies, and contributions	2	2	2
99.0 Subtotal, direct obligations	5,239	5,460	5,368
99.0 Reimbursable obligations	81	97	108
99.9 Total obligations	5,320	5,557	5,476

SCIENCE, AERONAUTICS AND TECHNOLOGY

[(INCLUDING RESCISSION OF FUNDS)]

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics and technology research and development activities, including research, development, operations, services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, \$5,862,100,000, to remain available until September 30, 1998. Chapter VII of Public Law 104-6 is amended under the heading, "National Aeronautics and Space Administration," by replacing "1997" with "1998" and "1996" with "1997."

Note.—A regular 1996 appropriation for this account had not been enacted at the time this budget was prepared. The 1996 amounts included in this budget are based on the levels provided in three continuing resolutions: P.L. 104-91, P.L. 104-92 and P.L. 104-99.

Program and Financing (in millions of dollars)

Identification code 80-0110-0-1-999	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
Direct program:			
00.01 Space science	1,590	2,094	1,864
00.02 Life and microgravity science	393	538	499
00.03 Mission to planet Earth	1,059	1,390	1,369
00.04 Aeronautical research and technology	866	873	886
00.05 Space access and technology	560	691	723
00.06 Launch services	282	52	.....
00.07 Mission communication services	455	445	423
00.08 Academic Programs	78	121	97
00.91 Subtotal, direct program	5,283	6,204	5,861
01.01 Reimbursable program	389	580	586
10.00 Total obligations	5,672	6,784	6,447
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance		651	293
22.00 New budget authority (gross)	6,323	6,426	6,448
23.90 Total budgetary resources available for obligation	6,323	7,077	6,741
23.95 New obligations	-5,672	-6,784	-6,447
24.40 Unobligated balance available, end of year:			
Uninvested balance	651	293	294
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	5,936	5,846	5,862
40.35 Appropriation rescinded	-52	.....	.....
42.00 Transferred from other accounts	50	.....	.....
43.00 Appropriation (total)	5,934	5,846	5,862
50.00 Reappropriation .....	.....	.....	365
50.35 Reappropriation deferred .....	.....	.....	-365
53.00 Reappropriation (total) .....	.....	.....	.....
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	117	580	586
68.10 Change in orders on hand from Federal sources	272	.....	.....
68.90 Spending authority from offsetting collections (total)	389	580	586
70.00 Total new budget authority (gross)	6,323	6,426	6,448
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation .....	.....	2,576	3,367
72.95 Orders on hand from Federal sources .....	.....	272	272
72.99 Total unpaid obligations, start of year .....	.....	2,848	3,639
73.10 New obligations	5,672	6,784	6,447
73.20 Total outlays (gross)	-2,824	-5,993	-6,218
Unpaid obligations, end of year:			
74.40 Obligated balance: Appropriation	2,576	3,367	3,596
74.95 Orders on hand from Federal sources	272	272	272
74.99 Total unpaid obligations, end of year	2,848	3,639	3,868
Outlays (gross), detail:			
86.90 Outlays from new current authority	2,695	2,689	2,748
86.93 Outlays from current balances .....	.....	2,724	2,884
86.97 Outlays from new permanent authority	129	580	586
86.98 Outlays from permanent balances .....	.....	.....	.....
87.00 Total outlays (gross)	2,824	5,993	6,218
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	-113	-558	-561
88.40 Non-Federal sources	-4	-22	-25
88.90 Total, offsetting collections (cash)	-117	-580	-586
88.95 Change in orders on hand from Federal sources	-272	.....	.....
Net budget authority and outlays:			
89.00 Budget authority	5,934	5,846	5,862
90.00 Outlays	2,707	5,413	5,632

This appropriation provides for the research and development activities of the National Aeronautics and Space Admin-

istration. Funds are included for the construction, maintenance, and operation of programmatic facilities.

Performance Objectives

Space Science:

Beginning in FY 1997, the Physics and Astronomy and Planetary Exploration budget line items will be consolidated into one budget line item, Space Science. This consolidation reflects the management and organization of space science activities at NASA and has no impact on program content.

Physics and Astronomy.—This program contributes to our understanding of the origin of the universe, the fundamental laws of physics, and the study of the Earth's and other naturally occurring plasmas in the universe. Development activities will continue in 1996–1997 on the Advanced X-ray Astrophysics Facility in support of a launch in late 1998. Development activities on the Global Geospace Science program are complete. The first of the two missions (Wind) was launched in November 1994 and initial operations are underway. The second mission (Polar) is due to be launched in the near future. Development activities continue on the Relativity (Gravity Probe-B) mission. The Preliminary Design Review was completed in March, 1995, four months ahead of schedule. In Explorers, the X-ray Timing Explorer was successfully launched in December 1995. Development activities continue on the Advanced Composition Explorer for a launch in late 1997. Selection of candidate missions for the Small- (SMEX) and Medium (MIDEX)-class Explorer programs continues. These missions emphasize reduced mission costs and accelerated launch schedules. Several significant scientific discoveries were reported in 1995 based on data gathered from the Hubble Space Telescope, and similar results are anticipated in the future. Preparations are currently underway for a second servicing mission in early-mid 1997 which will provide two new science instruments and other servicing requirements as needed. Funding is included to continue development activities on the Stratospheric Observatory for Infrared Astronomy (SOFIA). A commercial operator for development and operation of the SOFIA aircraft is expected to be selected in 1996. Initial operations are expected by the end of FY 2000. Definition activities on the Space Infrared Telescope Facility (SIRTF) and TIMED missions will continue.

Planetary Exploration.—This program encompasses the scientific exploration of the solar system including the planets and their satellites, comets and asteroids, and the interplanetary medium. Development activities will continue on the Cassini mission to Saturn for launch in 1997. Development activities on the Mars Global Surveyor mission continue with launch planned for late 1996. Funds are requested for development of future Mars missions in 1998 and beyond. Development activities on the first two Discovery class missions, Mars Pathfinder and the Near-Earth Asteroid Rendezvous, are nearing completion, and these missions are scheduled for launch in 1996. The Lunar Prospector mission is scheduled for launch in 1997. Funding is also included for future Discovery class missions. The New Millennium Spacecraft program is underway. This program will incorporate critical new technologies into a series of small test missions designed to greatly reduce the mass and cost of future science instruments and spacecraft subsystems. After a six-year cruise period, Galileo arrived at Jupiter in December 1995 to conduct a two-year tour of the planet and its moons.

Life and Microgravity Sciences.—This program uses the microgravity environment of space to conduct basic and applied research to understand the effect of gravity on living systems and to conduct research in the areas of fluid physics, materials science and biotechnology. In 1995, the 116 day

stay of an U.S. astronaut on the MIR, followed by the successful shuttle/MIR rendezvous, provided an excellent opportunity to conduct a wide range of research. Subsequent flights to MIR will provide the means for continuing research activities. In 1996, six major shuttle missions involving materials and life sciences experiments are planned. These missions will provide the opportunity to refine the definition, design and development of experiment hardware planned for use on the Space Station. In 1997, four major shuttle missions are planned with a life sciences or microgravity focus. These include the Materials Sciences Laboratory mission and three NASA/MIR missions. An aggressive four year cooperative program with the National Institute of Child Health and Human Development began in 1995. Research activities will focus on use of NASA's bioreactor technology in the area of AIDS research.

Mission to Planet Earth.—The goal of this program is to gain a better understanding of the processes in the atmosphere, oceans, land surface and interior of the Earth, and to advance our knowledge of the interactions between these environments. The Upper Atmosphere Research Satellite and TOPEX, supported by ground-based and airborne observations, continue to gather valuable scientific data on the Earth's environment. In 1994, three Space Shuttle missions were flown (SRL-1 and -2, and ATLAS-3) with Earth Science as the major focus. Funding is included for the continued development of the first Earth Observing Satellite (EOS) Mission (EOS AM-1) for launch in 1998 and development of the Earth Observing System Data Information System (EOSDIS). Fabrication of all AM-1 spacecraft subsystems is proceeding on schedule to support the planned launch in mid-1998. In 1996, work on EOSDIS Version 1 will continue, with completion planned in FY 1997. EOSDIS will complete Version 2, which will support the EOSDIS and Landsat-7 missions. Launch of the Total Ozone Mapping Spectrometer (TOMS) as a free-flying Earth probe is awaiting resolution of technical issues with the Pegasus XL launch vehicle. Launch of TOMS and the NASA Scatterometer is planned for 1996. The release of EOSDIS Version 1 in 1997 will support the 1997 launch of the Tropical Rainfall Measurement Mission (TRMM.)

Aeronautical Research and Technology.—The goal of this program is to conduct aeronautical research and develop technology to strengthen U.S. leadership in civil and military aviation. In 1995, the Advanced Subsonic Technology program continued to make substantial progress, and funding to continue all elements is included in FY 1996 and FY 1997. Funding is provided to continue Phase II of the High Speed Research program directed at developing and verifying technologies essential for an economically viable and environmentally compatible future High Speed Civil Transport system. In the area of High Performance Computing, NASA has pioneered the implementation of design and simulation software on parallel machines. Funding is included to continue NASA's leadership role in this area. In the Research and Technology base, research activities in various aeronautical disciplines will continue to develop innovative concepts, the physical understanding and the theoretical and computation tools required for the efficient design and operation of advanced aerospace systems. NASA will continue to operate critical national facilities for aeronautical research and for support of industry, Department of Defense and other NASA programs.

Space Access and Technology.—The goal of this program is to provide new and innovative space technologies to meet the challenges and lower the cost of future space missions. The initial two Small Satellite Technology Initiative (SSTI) missions, "Lewis" and "Clark" are scheduled to be launched in 1996, pending resolution of technical concerns with the Lockheed launch vehicle. The SSTI program continues in FY

General and special funds—Continued

SCIENCE, AERONAUTICS AND TECHNOLOGY—Continued

[(INCLUDING RESCISSION OF FUNDS)]—Continued

1977 in close coordination with New Millennium program activities underway in the Office of Mission to Planet Earth. In 1995 and 1996, the Reusable Launch Vehicle (RLV) program continues to pursue technology development and concept definition activities in support of next-generation reusable systems and will also fund flight demonstration of the DC-XA, an upgrade of the DC-X vehicle developed and flown by DOD. Based on results of these activities, a decision will be made by the President no later than December, 1996, on whether to proceed with design, construction and flight testing of a large-scale, reusable launch vehicle demonstrator, designated the X-33. Funding for this program continues in FY 1997.

Mission Communication Services.—The primary goal of this operational program in all years is to provide highly reliable, cost-effective telecommunications services in support of NASA's science and aeronautics programs. Other U.S. agencies, international space-faring agencies, and U.S. commercial enterprises are also supported on a reimbursable basis. Ground network, space network, and mission systems are provided under this program in support of planetary, deep space, Earth-orbiting, aeronautic, and suborbital systems.

Academic Programs.—The goal of this program is to promote excellence in America's education system through enhancing and expanding scientific and technological competence. NASA's education programs span from the elementary through graduate level, and are directed at students as well as faculty. The goal of the Minority University Research Program is to expand opportunities for talented students from underrepresented groups pursuing degrees in science and engineering, as well as strengthening the research capabilities of minority universities and colleges. In 1995-1997, the range of activities conducted under this program will continue to capture the interest of all students in science and technology, develop talented students at the undergraduate and graduate levels, provide research opportunities for students and faculty members at NASA centers and strengthen and enhance the research capabilities of the nation's colleges and universities.

Funding is also provided in a government-wide account for several NASA science missions. These funds are included to make these programs consistent with OMB's fixed asset policy. This policy requires all or distinct portions of a fixed asset's budget authority be identified upfront. NASA will transition the rest of their fixed asset programs to be consistent with this policy in the FY 1998 budget.

Object Classification (in millions of dollars)

Identification code 80-0110-0-1-999	1995 actual	1996 est.	1997 est.
Direct obligations:			
22.0 Transportation of things	3	4	3
23.2 Rental payments to others	1	1	1
23.3 Communications, utilities, and miscellaneous charges	82	96	91
24.0 Printing and reproduction	2	2	2
25.1 Advisory and assistance services	743	868	825
25.2 Other services	708	827	785
25.3 Purchases of goods and services from Government accounts	207	242	230
25.4 Operation and maintenance of facilities	13	15	14
25.5 Research and development contracts	2,825	3,298	3,135
25.7 Operation and maintenance of equipment	46	54	51
26.0 Supplies and materials	131	153	145
31.0 Equipment	110	128	122
32.0 Land and structures	40	82	44
41.0 Grants, subsidies, and contributions	372	434	413
99.0 Subtotal, direct obligations	5,283	6,204	5,861
99.0 Reimbursable obligations	389	580	586

99.9 Total obligations	5,672	6,784	6,447
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MISSION SUPPORT

For necessary expenses, not otherwise provided for, in carrying out mission support for human space flight programs and science, aeronautical, and technology programs, including research operations and support; space communications activities including operations, production and services; maintenance; construction of facilities including repair, rehabilitation, and modification of facilities, minor construction of new facilities and additions to existing facilities, facility planning and design, environmental compliance and restoration, and acquisition or condemnation of real property, as authorized by law; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase, lease charter, maintenance, and operation of mission and administrative aircraft; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed 33 for replacement only) and hire of passenger motor vehicles; \$2,562,200,000, to remain available until September 30, 1998.

Note.—A regular 1996 appropriation for this account had not been enacted at the time this budget was prepared. The 1996 amounts included in this budget are based on the levels provided in three continuing resolutions: P.L. 104-91, P.L. 104-92, and P.L. 104-99.

Program and Financing (in millions of dollars)

Identification code 80-0112-0-1-999	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
Direct program:			
00.01 Safety, reliability and quality assurance	29	46	37
00.02 Space communication services	171	294	290
00.03 Research and program management	2,126	2,054	2,080
00.04 Construction of facilities	78	142	150
00.91 Subtotal, direct program	2,404	2,536	2,557
01.00 Total direct program	2,404	2,536	2,557
01.01 Reimbursable program	74	125	141
10.00 Total obligations	2,478	2,661	2,698
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance		128	94
22.00 New budget authority (gross)	2,607	2,627	2,703
22.30 Unobligated balance expiring	-1		
23.90 Total budgetary resources available for obligation	2,606	2,755	2,797
23.95 New obligations	-2,478	-2,661	-2,698
24.40 Unobligated balance available, end of year:			
Uninvested balance	128	94	99
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	2,572	2,502	2,562
40.35 Appropriation rescinded	-39		
43.00 Appropriation (total)	2,533	2,502	2,562
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	25	125	141
68.10 Change in orders on hand from Federal sources	49		
68.90 Spending authority from offsetting collections (total)	74	125	141
70.00 Total new budget authority (gross)	2,607	2,627	2,703
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation		375	501
72.95 Orders on hand from Federal sources		49	49
72.99 Total unpaid obligations, start of year		424	550
73.10 New obligations	2,478	2,661	2,698
73.20 Total outlays (gross)	-2,054	-2,535	-2,603
Unpaid obligations, end of year:			
74.40 Obligated balance: Appropriation	375	501	596
74.95 Orders on hand from Federal sources	49	49	49
74.99 Total unpaid obligations, end of year	424	550	645

Outlays (gross), detail:				
86.90	Outlays from new current authority	2,004	1,977	2,014
86.93	Outlays from current balances		433	448
86.97	Outlays from new permanent authority	50	125	141
87.00	Total outlays (gross)	2,054	2,535	2,603
Offsets:				
Against gross budget authority and outlays:				
Offsetting collections (cash) from:				
88.00	Federal sources	-25	-114	-123
88.40	Non-Federal sources		-11	-18
88.90	Total, offsetting collections (cash)	-25	-125	-141
88.95	Change in orders on hand from Federal sources	-49		
Net budget authority and outlays:				
89.00	Budget authority	2,533	2,502	2,562
90.00	Outlays	2,029	2,410	2,462

This appropriation provides for mission support, including: safety, reliability and quality assurance activities supporting agency programs; space communication services for NASA programs; salaries and related expenses in support of research in NASA field installations; design, repair, rehabilitation and modification of institutional facilities and construction of new institutional facilities; and other operations activities supporting conduct of agency programs.

Performance Objectives:

Safety, Reliability and Quality Assurance.—The goal of this program is to assure the safety and quality of NASA missions, through the development, implementation and oversight of Agencywide safety, engineering, reliability, maintainability, and quality assurance policies and procedures. During 1995–1997, flight program utilization of standards developed in this program will continue.

Space Communication Services.—Activities included in this program provide for the tracking, telemetry, command, data acquisition, communications and data processing required by NASA flight projects. In 1995–1997, the networks and support systems which accomplish these tasks will continue operation. In 1995, the seventh Tracking and Data Relay Satellite (TDRS) was launched. Completion of the upgrade of the TDRS White Sands Complex and early development of the TDRS Replenishment Spacecraft will occur in 1996.

Research and Program Management.—This activity provides for the salaries, travel support, other personnel expenses of the entire NASA civil service workforce. It also includes vital support to the civil service workforce and to the physical plant at the Centers and at NASA Headquarters.

Construction of Facilities.—This activity provides for the facility construction activities to preserve NASA's core infrastructure, environmental compliance and restoration activities, the design of facilities projects, and the advanced planning related to future facilities needs. In 1995–1997, activities in support of discrete projects to repair and modernize the basic infrastructure and institutional facilities at NASA centers will be conducted, as well as activities in support of environmental compliance and restoration requirements.

Funding is also provided in a government-wide account for NASA's Tracking and Data Relay System. These funds are included to make these programs consistent with OMB's fixed asset policy. This policy requires all or distinct portions of a fixed asset's budget authority be identified upfront. NASA will transition the rest of their fixed asset programs to be consistent with this policy in the FY 1998 budget.

Object Classification (in millions of dollars)

Identification code 80–0112–0–1–999	1995 actual	1996 est.	1997 est.	
Direct obligations:				
Personnel compensation:				
11.1	Full-time permanent	1,234	1,213	1,252
11.3	Other than full-time permanent	18	18	19

11.5	Other personnel compensation	22	23	21
11.8	Special personal services payments	6	7	8
11.9	Total personnel compensation	1,280	1,261	1,300
12.1	Civilian personnel benefits	261	235	245
13.0	Benefits for former personnel	37	37	38
21.0	Travel and transportation of persons	45	46	46
22.0	Transportation of things	7	8	8
23.1	Rental payments to GSA	18	22	21
23.2	Rental payments to others	2	2	2
23.3	Communications, utilities, and miscellaneous charges	59	72	70
24.0	Printing and reproduction	7	9	8
25.1	Advisory and assistance services	70	86	83
25.2	Other services	378	464	450
25.3	Purchases of goods and services from Government accounts	11	13	13
25.4	Operation and maintenance of facilities	11	13	13
25.5	Research and development contracts	57	70	68
25.7	Operation and maintenance of equipment	43	53	51
26.0	Supplies and materials	27	33	32
31.0	Equipment	12	15	14
32.0	Land and structures	76	93	91
41.0	Grants, subsidies, and contributions	3	4	4
99.0	Subtotal, direct obligations	2,404	2,536	2,557
99.0	Reimbursable obligations	74	125	141
99.9	Total obligations	2,478	2,661	2,698

Personnel Summary

Identification code 80–0112–0–1–999	1995 actual	1996 est.	1997 est.	
Direct:				
Total compensable workyears:				
1001	Full-time equivalent employment	22,048	21,450	20,940
1005	Full-time equivalent of overtime and holiday hours	220	220	220
Reimbursable:				
2001	Total compensable workyears: Full-time equivalent employment	116	105	90

Federal Funds

General and special funds:

RESEARCH AND DEVELOPMENT

Program and Financing (in millions of dollars)

Identification code 80–0108–0–1–999	1995 actual	1996 est.	1997 est.	
Obligations by program activity:				
Direct program:				
00.01	Space transportation capability development	70		
00.02	Space station	230	2	
00.14	Physics and astronomy	114		
00.15	Planetary exploration	33		
00.22	Life and microgravity science	128		
00.23	Mission to planet earth	146		
00.29	Advanced concepts and technology	80		
00.42	Aeronautical research and technology	22		
00.43	Safety, reliability and quality assurance	7		
00.44	Academic program	30		
00.45	Tracking and data advanced systems	1		
00.91	Subtotal, direct program	861	2	
01.01	Reimbursable program	87		
10.00	Total obligations	948	2	
Budgetary resources available for obligation:				
21.40	Unobligated balance available, start of year:			
	Uninvested balance	906	2	
22.00	New budget authority (gross)	45		
22.30	Unobligated balance expiring	-1		
23.90	Total budgetary resources available for obligation	950	2	
23.95	New obligations	-948	-2	
24.40	Unobligated balance available, end of year:			
	Uninvested balance	2		
New budget authority (gross), detail:				
Current:				
40.36	Unobligated balance rescinded	-42		

General and special funds—Continued

RESEARCH AND DEVELOPMENT—Continued

Program and Financing (in millions of dollars)—Continued

Identification code 80-0108-0-1-999	1995 actual	1996 est.	1997 est.
Permanent:			
Spending authority from offsetting collections:			
68.00			
68.10	424	146	
	Offsetting collections (cash)		
68.90	-337	-146	
	Change in orders on hand from Federal sources		
68.90			
	Spending authority from offsetting collections (total)	87	
70.00			
	Total new budget authority (gross)	45	
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40			
72.95	3,193	753	5
	Obligated balance: Appropriation		
	Orders on hand from Federal sources	483	146
72.99			
	Total unpaid obligations, start of year	3,676	899
73.10			
73.20	948	2	
	New obligations		
73.40			
	Total outlays (gross)	-3,710	-894
	Adjustments in expired accounts	-15	
Unpaid obligations, end of year:			
74.40			
74.95	753	5	
	Obligated balance: Appropriation		
	Orders on hand from Federal sources	146	
74.99			
	Total unpaid obligations, end of year	899	5
Outlays (gross), detail:			
86.93			
86.98	3,286	748	5
	Outlays from current balances		
	Outlays from permanent balances	424	146
87.00			
	Total outlays (gross)	3,710	894
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00			
88.40	-393	-146	
	Federal sources		
	Non-Federal sources	-31	
88.90			
	Total, offsetting collections (cash)	-424	-146
88.95			
	Change in orders on hand from Federal sources	337	146
Net budget authority and outlays:			
89.00			
90.00	-42		
	Budget authority		
	Outlays	3,286	748

Starting in the FY 1996 budget, the NASA budget reflected an account restructuring that was adopted in FY 1995. NASA's Research and Development activities are now being performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support.

Object Classification (in millions of dollars)

Identification code 80-0108-0-1-999	1995 actual	1996 est.	1997 est.
Direct obligations:			
22.0	2		
23.1	2		
23.2	2		
23.3			
	Communications, utilities, and miscellaneous charges	12	
24.0			
	Printing and reproduction	1	
25.1	540		
25.2			
	Advisory and assistance services	43	
25.3			
	Other services		
	Purchases of goods and services from Government accounts	9	
25.4			
	Operation and maintenance of facilities	27	
25.5			
	Research and development contracts	107	2
25.7			
	Operation and maintenance of equipment	5	
26.0			
	Supplies and materials	26	
31.0			
	Equipment	16	
32.0			
	Land and structures	5	
41.0			
	Grants, subsidies, and contributions	64	
99.0			
	Subtotal, direct obligations	861	2
99.0			
	Reimbursable obligations	87	
99.9			
	Total obligations	948	2

SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS

Program and Financing (in millions of dollars)

Identification code 80-0105-0-1-252	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
Direct program:			
00.01			
	Shuttle production and capability development	168	
00.02			
	Operations	65	
00.03			
	Launch services	73	
00.04			
	Tracking and data acquisition	61	
00.91			
	Subtotal, direct program	367	
01.01			
	Reimbursable program	36	
10.00			
	Total obligations	403	
Budgetary resources available for obligation:			
21.40			
	Unobligated balance available, start of year:		
	Uninvested balance	411	1
22.00			
	New budget authority (gross)	-7	
23.90			
	Total budgetary resources available for obligation	404	1
23.95			
	New obligations	-403	
24.40			
	Unobligated balance available, end of year:		
	Uninvested balance	1	1
New budget authority (gross), detail:			
Current:			
40.36			
	Unobligated balance rescinded	-43	
Permanent:			
Spending authority from offsetting collections:			
68.00			
	Offsetting collections (cash)	214	12
68.10			
	Change in orders on hand from Federal sources	-178	-12
68.90			
	Spending authority from offsetting collections (total)	36	
70.00			
	Total new budget authority (gross)	-7	
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40			
	Obligated balance: Appropriation	1,469	424
72.95			
	Orders on hand from Federal sources	190	12
72.99			
	Total unpaid obligations, start of year	1,659	436
73.10			
	New obligations	403	
73.20			
	Total outlays (gross)	-1,623	-392
73.40			
	Adjustments in expired accounts	-3	-12
Unpaid obligations, end of year:			
74.40			
	Obligated balance: Appropriation	424	32
74.95			
	Orders on hand from Federal sources	12	
74.99			
	Total unpaid obligations, end of year	436	32
Outlays (gross), detail:			
86.93			
	Outlays from current balances	1,409	392
86.98			
	Outlays from permanent balances	214	
87.00			
	Total outlays (gross)	1,623	392
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00			
	Federal sources	-138	-12
88.45			
	Offsetting governmental collections	-76	
88.90			
	Total, offsetting collections (cash)	-214	-12
88.95			
	Change in orders on hand from Federal sources	178	12
Net budget authority and outlays:			
89.00			
	Budget authority	-43	
90.00			
	Outlays	1,409	380

Starting in the FY 1996 budget, the NASA budget reflected an account restructuring that was adopted in FY 1995. NASA's Space Flight, Control and Data Communications activities are now being performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support.

Object Classification (in millions of dollars)

Identification code 80-0105-0-1-252	1995 actual	1996 est.	1997 est.
Direct obligations:			
22.0 Transportation of things	1		
23.2 Rental payments to others	2		
23.3 Communications, utilities, and miscellaneous charges	1		
24.0 Printing and reproduction	1		
25.1 Advisory and assistance services	246		
25.2 Other services	49		
25.3 Purchases of goods and services from Government accounts	18		
25.5 Research and development contracts	37		
25.7 Operation and maintenance of equipment	3		
26.0 Supplies and materials	2		
31.0 Equipment	7		
99.0 Subtotal, direct obligations	367		
99.0 Reimbursable obligations	36		
99.9 Total obligations	403		

CONSTRUCTION OF FACILITIES

Program and Financing (in millions of dollars)

Identification code 80-0107-0-1-999	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
00.01 Space transportation	34	30	5
00.11 Space science	7		
00.22 Mission to planet Earth	12	3	
00.31 Advanced concepts and technology	7	7	1
00.41 Aeronautical research and technology	141	57	13
00.42 Supporting activity	96	70	14
10.00 Total obligations	297	167	33
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
21.40 Treasury balance	535	197	32
21.41 U.S. Securities: Par value	6	3	1
21.99 Total unobligated balance, start of year	541	200	33
22.00 New budget authority (gross)	-44		
23.90 Total budgetary resources available for obligation	497	200	33
23.95 New obligations	-297	-167	-33
Unobligated balance available, end of year:			
24.40 Uninvested balance	197	32	
24.41 U.S. Securities: Par value	3	1	
24.99 Total unobligated balance, end of year	200	33	
New budget authority (gross), detail:			
Current:			
40.36 Unobligated balance rescinded	-44		
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	4		
68.10 Change in orders on hand from Federal sources	-4		
68.90 Spending authority from offsetting collections (total)			
70.00 Total new budget authority (gross)	-44		
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation	320	311	349
72.95 Orders on hand from Federal sources	4		
72.99 Total unpaid obligations, start of year	324	311	349
73.10 New obligations	297	167	33
73.20 Total outlays (gross)	-309	-129	-164
74.40 Unpaid obligations, end of year: Obligated balance: Appropriation	311	349	218
Outlays (gross), detail:			
86.93 Outlays from current balances	309	129	164
87.00 Total outlays (gross)	309	129	164

Offsets:

Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.40 Non-Federal sources	-3		
88.45 Offsetting governmental collections	-1		
88.90 Total, offsetting collections (cash)	-4		
88.95 Change in orders on hand from Federal sources	4		
Net budget authority and outlays:			
89.00 Budget authority	-44		
90.00 Outlays	305	129	164

Starting in the FY 1996 budget, the NASA budget reflected an account restructuring that was adopted in FY 1995. NASA's Construction of Facilities activities are now being performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support.

Object Classification (in millions of dollars)

Identification code 80-0107-0-1-999	1995 actual	1996 est.	1997 est.
25.1 Advisory and assistance services	2		
25.2 Other services	46		
25.4 Operation and maintenance of facilities	6		
26.0 Supplies and materials	1		
31.0 Equipment	8		
32.0 Land and structures	234	167	33
99.9 Total obligations	297	167	33

RESEARCH AND PROGRAM MANAGEMENT

Program and Financing (in millions of dollars)

Identification code 80-0103-0-1-999	1995 actual	1996 est.	1997 est.
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
21.40 Uninvested balance	18		
22.00 New budget authority (gross)	-18		
23.90 Total budgetary resources available for obligation			
23.95 New obligations			
New budget authority (gross), detail:			
Current:			
40.36 Unobligated balance rescinded	-18		
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	9		
68.10 Change in orders on hand from Federal sources	-9		
68.90 Spending authority from offsetting collections (total)			
70.00 Total new budget authority (gross)	-18		
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation	129	23	
72.95 Orders on hand from Federal sources	9		
72.99 Total unpaid obligations, start of year	138	23	
73.10 New obligations			
73.20 Total outlays (gross)	-107	-23	
73.40 Adjustments in expired accounts	-8		
74.40 Unpaid obligations, end of year: Obligated balance: Appropriation	23		
Outlays (gross), detail:			
86.93 Outlays from current balances	107	23	
87.00 Total outlays (gross)	107	23	
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	-8		
88.40 Non-Federal sources	-1		
88.90 Total, offsetting collections (cash)	-9		

General and special funds—Continued

RESEARCH AND PROGRAM MANAGEMENT—Continued

Program and Financing (in millions of dollars)—Continued

Identification code 80-0103-0-1-999	1995 actual	1996 est.	1997 est.
88.95 Change in orders on hand from Federal sources	9		
Net budget authority and outlays:			
89.00 Budget authority	-18		
90.00 Outlays	98	23	

Starting in the FY 1996 budget, the NASA budget reflected an account restructuring that was adopted in FY 1995. NASA's Research and Program Management activities are now being performed in Mission Support.

OFFICE OF INSPECTOR GENERAL

For necessary expenses of the Office of Inspector General in carrying out the Inspector General Act of 1978, as amended, \$17,000,000.

Note.—A regular 1996 appropriation for this account had not been enacted at the time this budget was prepared. The 1996 amounts included in this budget are based on the levels provided in three continuing resolutions: P.L. 104-91, P.L. 104-92 and P.L. 104-99.

Program and Financing (in millions of dollars)

Identification code 80-0109-0-1-252	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
10.00 Total obligations	16	16	17
Budgetary resources available for obligation:			
22.00 New budget authority (gross)	16	16	17
23.95 New obligations	-16	-16	-17
New budget authority (gross), detail:			
40.00 Appropriation	16	16	17
Change in unpaid obligations:			
72.40 Unpaid obligations, start of year: Obligated balance:			
Appropriation	3	3	3
73.10 New obligations	16	16	17
73.20 Total outlays (gross)	-15	-16	-17
74.40 Unpaid obligations, end of year: Obligated balance:			
Appropriation	3	3	3
Outlays (gross), detail:			
86.90 Outlays from new current authority	11	14	15
86.93 Outlays from current balances	3	2	2
87.00 Total outlays (gross)	15	16	17
Net budget authority and outlays:			
89.00 Budget authority	16	16	17
90.00 Outlays	14	16	17

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

Object Classification (in millions of dollars)

Identification code 80-0109-0-1-252	1995 actual	1996 est.	1997 est.
11.1 Personnel compensation: Full-time permanent	11	12	13
12.1 Civilian personnel benefits	2	2	3
21.0 Travel and transportation of persons	1	1	1
25.2 Other services	1	1	
26.0 Supplies and materials	1		
99.9 Total obligations	16	16	17

Personnel Summary

Identification code 80-0109-0-1-252	1995 actual	1996 est.	1997 est.
Total compensable workyears:			
1001 Full-time equivalent employment	191	210	207
1005 Full-time equivalent of overtime and holiday hours	2	2	2

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

Unavailable Collections (in millions of dollars)

Identification code 80-8978-0-7-503	1995 actual	1996 est.	1997 est.
Balance, start of year:			
01.99 Balance, start of year			
Receipts:			
02.01 Earnings on investments: Science, Space and Technology Education, Trust Fund	1	1	1
Appropriation:			
05.01 Science, space, and technology education trust fund	-1	-1	-1
07.99 Total balance, end of year			

Program and Financing (in millions of dollars)

Identification code 80-8978-0-7-503	1995 actual	1996 est.	1997 est.
Obligations by program activity:			
10.00 Total obligations (object class 41.0)	1	1	1
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
U.S. Securities:			
21.41 Par value	16	16	16
21.42 Unrealized discounts	1	1	1
21.99 Total unobligated balance, start of year	17	17	17
22.00 New budget authority (gross)			
23.90 Total budgetary resources available for obligation	17	17	17
23.95 New obligations	-1	-1	-1
Unobligated balance available, end of year:			
U.S. Securities:			
24.41 Par value	16	16	16
24.42 Unrealized discounts	1	1	1
24.99 Total unobligated balance, end of year	17	17	17
New budget authority (gross), detail:			
60.27 Appropriation (trust fund, indefinite)	1	1	1
Change in unpaid obligations:			
73.10 New obligations	1	1	1
73.20 Total outlays (gross)	-1	-1	-1
Outlays (gross), detail:			
86.97 Outlays from new permanent authority	1	1	1
87.00 Total outlays (gross)	1	1	1
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays	1	1	1

ADMINISTRATIVE PROVISIONS

[(INCLUDING TRANSFER OF FUNDS)]

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, when (1) any activity has been initiated by the incurrence of obligations for construction of facilities as authorized by law, or (2) amounts are provided for full-funding for the New Millennium Initiative, and for the Tracking and Data Relay Satellite (TDRS) replenishment program in the Treasury, Postal Service and General Government Appropriations Acts, 1997, such amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated in "Mission support" pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction

of new facilities and additions to existing facilities, and facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, the amounts appropriated for construction of facilities shall remain available until September 30, 1999.

Notwithstanding the limitation on the availability of funds appropriated for "Mission support" and "Inspector General", amounts made available by this Act for personnel and related costs and travel expenses of the National Aeronautics and Space Administration shall remain available until September 30, 1997 and may be used to enter into contracts for training, investigations, cost associated with personnel relocation, and for other services, to be provided during the next fiscal year.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds

General and special funds:

HUMAN SPACE FLIGHT

For necessary expenses, not otherwise provided for, in the conduct and support of human space flight research and development activities, including research, development, operations, and services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **[\$5,362,900,000]** \$5,326,500,000, to remain available until September 30, **[1998]** 1999, of which \$2,121,300,000 shall be for the International Space Station.

For necessary expenses of the International Space Station, to become available on October 1 of the fiscal year specified and remain available for that and the following fiscal year, as follows: for fiscal year 1999, \$2,109,200,000; for fiscal year 2000, \$1,914,600,000; for fiscal year 2001, \$1,596,800,000; and for fiscal year 2002, \$1,147,000,000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1997.)

Program and Financing (in millions of dollars)

Identification code 80-0111-0-1-252	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
Direct program:			
00.01 Space station	2,004	1,986	2,114
00.02 US/Russian cooperative program	136	150	7
00.03 Payload and utilization operations	289	293	232
00.04 Space shuttle	3,081	3,105	2,984
00.91 Subtotal, direct program	5,510	5,534	5,337
01.01 Reimbursable program	70	82	70
10.00 Total obligations	5,580	5,616	5,407
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance	276	221	277
22.00 New budget authority (gross)	5,527	5,622	5,397
22.22 Unobligated balance transferred from other accounts	50		
23.90 Total budgetary resources available for obligation	5,803	5,893	5,674
23.95 New obligations	-5,580	-5,616	-5,407
24.40 Unobligated balance available, end of year:			
Uninvested balance	221	277	266
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	5,457	5,363	5,327
42.00 Transferred from other accounts	177		
43.00 Appropriation (total)	5,457	5,540	5,327
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	78	82	70
68.10 Change in orders on hand from Federal sources	-8		
68.90 Spending authority from offsetting collections (total)	70	82	70
70.00 Total new budget authority (gross)	5,527	5,622	5,397
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation	1,711	1,770	1,884
72.95 Orders on hand from Federal sources	56	48	48
72.99 Total unpaid obligations, start of year	1,767	1,818	1,932
73.10 New obligations	5,580	5,616	5,407
73.20 Total outlays (gross)	-5,530	-5,502	-5,674
Unpaid obligations, end of year:			
74.40 Obligated balance: Appropriation	1,770	1,884	1,617

74.95 Orders on hand from Federal sources	48	48	48
74.99 Total unpaid obligations, end of year	1,818	1,932	1,665
Outlays (gross), detail:			
86.90 Outlays from new current authority	3,558	3,954	3,857
86.93 Outlays from current balances	1,894	1,466	1,747
86.97 Outlays from new permanent authority	26	82	70
86.98 Outlays from permanent balances	52		
87.00 Total outlays (gross)	5,530	5,502	5,674
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	-42	-57	-57
88.40 Non-Federal sources	-36	-25	-13
88.90 Total, offsetting collections (cash)	-78	-82	-70
88.95 Change in orders on hand from Federal sources	8		
Net budget authority and outlays:			
89.00 Budget authority	5,457	5,540	5,327
90.00 Outlays	5,452	5,420	5,604

This appropriation provides funding for human space flight activities, including development of the Space Station, the Space Station research program, and operation of the Space Shuttle. This includes support of planned cooperative activities with Russia, upgrades to the performance and safety of the Space Shuttle, and required construction projects in direct support of Space Station and Space Shuttle programs.

Performance Objectives

Space Station.—The Space Station will be an international laboratory in low Earth orbit on which American, Russian, Canadian, European, and Japanese astronauts will conduct unique scientific and technological investigations in a micro-gravity environment. The Administration continues to be strongly committed to development of the International Space Station, and the preservation of the partnerships between the United States, Russia, Europe, Japan, and Canada. The proposed budget provides multi-year funding for the complete development of the Station within the annual \$2.1 billion ceiling and the \$17.4 billion development constraints, with Station assembly beginning in late 1997 and finishing by 2002. The Administration continues to monitor progress through this crucial development period and will consider future funding, schedule, or content adjustments if they prove necessary to minimize program costs, maintain international participation, and ensure a Station capable of continuous scientific and technological research and permanent human presence in space. In 1996, node and laboratory module fabrication neared completion, and qualification testing of flight hardware components began. Activities are well underway to support crew training, payload processing, and hardware element processing requirements. In 1997, final fabrication of flight hardware, qualification testing, and assembly and integration will be the focus of the program. First element launch is scheduled for late 1997. The FY 1998 budget incorporates all elements of the \$2.1 billion per year program into the Human Space Flight appropriation. This will allow maximum flexibility in providing a balanced program.

U.S./Russian Cooperative Program.—The United States and Russia are continuing a program of joint space missions. In 1996, three Shuttle flights to Mir took place, highlighted by the 181 day stay of Astronaut Shannon Lucid on the Mir

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

Space Station. In 1997, American astronauts will have a continuing presence aboard the Mir conducting scientific research. Flight hardware to conduct experiments has been and will continue to be placed on the Mir. These flights provide valuable opportunities to gain experience in working with our Russian partners, which will be crucial to the success of building and operating the International Space Station. These flights will continue in FY 1997, with three additional flights planned. Two additional flights are planned in FY 1998, completing phase I of this cooperative precursor to Space Station.

Payload and Utilization Operations.—These funds will support the mission planning and hardware preparation activities required to support the payload and experiment infrastructure, including the spacelab. In 1997–1998, 2 module missions (MSL–1 and Neurolab) will be flown, along with 3 pallet missions. The Spacelab program is scheduled to be terminated in 1998, following the Neurolab mission.

Activities funded by the Payload Processing budget support the technical expertise and facilities necessary to perform payload buildup, test and checkout, integration, servicing, transportation and installation into the launch vehicle. In FY 1997, over 30 major and secondary payloads will be supported; in FY 1998, more than 20 major and secondary payloads will be supported. The Advanced Projects program develops technologies to enhance crew safety for the Space Shuttle and International Space Station, implements improvements to reduce cost of space flight operations, and pursues advanced technology developments for future human space flight requirements. Under this program, the X–38 experimental vehicle is being designed to demonstrate the technology and processes required to produce a crew return vehicle for the International Space Station. The Engineering and Technical Base provides basic engineering and technical capabilities to support the NASA mission assigned to the programs carried out by the Human Space Flight Centers. These funds support a core environment dedicated to multiprogram laboratories, test facilities and associated systems, including a skill base to respond to research, testing and simulations.

Space Shuttle.—The Space Shuttle is a reusable space vehicle that provides several unique capabilities to the United States space program. These include launching spacecraft and retrieving payloads from orbit for reuse, servicing and repairing satellites in space, safely transporting humans to and from space, and operating and returning space laboratories. In 1996, eight Shuttle missions were accomplished, including the three docking missions between the Space Shuttle and the Russian Mir Space Station. Activities supporting consolidation of Shuttle contracts into one Space Flight Operations contract were completed in FY 1996. This will result in significant reductions in the cost of operating the Space Shuttle through FY 2000 and beyond, with no impact on safety, performance or schedule.

In 1997, seven shuttle flights are planned. Continued emphasis will be placed on enhancements to the safety and performance of the Space Shuttle. Upgrades to the shuttle to increase its reliability and maintainability will be continued. In FY 1998, seven shuttle flights are planned, including two assembly flights for the International Space Station. Completion and first flight of major engine upgrades will also occur.

Object Classification (in millions of dollars)

Identification code 80–0111–0–1–252	1996 actual	1997 est.	1998 est.
Direct obligations:			
22.0 Transportation of things	5	5	5

23.3	Communications, utilities, and miscellaneous charges	48	48	46
24.0	Printing and reproduction	4	4	4
25.1	Advisory and assistance services	1,560	1,567	1,511
25.2	Other services	74	74	72
25.3	Purchases of goods and services from Government accounts	47	47	46
25.4	Operation and maintenance of facilities	119	120	115
25.5	Research and development contracts	2,876	2,889	2,784
25.7	Operation and maintenance of equipment	73	73	71
25.8	Subsistence and support of persons	412	414	399
26.0	Supplies and materials	105	105	102
31.0	Equipment	45	45	44
32.0	Land and structures	140	141	136
41.0	Grants, subsidies, and contributions	2	2	2
99.0	Subtotal, direct obligations	5,510	5,534	5,337
99.0	Reimbursable obligations	70	82	70
99.9	Total obligations	5,580	5,616	5,407

SCIENCE, AERONAUTICS AND TECHNOLOGY

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics and technology research and development activities, including research, development, operations, and services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **[\$5,762,100,000] \$5,642,000,000**, to remain available until September 30, [1998] 1999. [Chapter VII of Public Law 104–6 is amended under the heading, “National Aeronautics and Space Administration” by replacing “September 30, 1997” with “September 30, 1998” and “1996” with “1997”]. Under the heading, “National Aeronautical Facilities,” NASA, in Public Law 103–327, as amended, delete “September 30, 1998” and insert “September 30, 1999”; delete “October 1, 1997” and insert “October 1, 1998”.

For necessary expenses of certain space projects under development, to become available on October 1 of the fiscal year specified and remain available for that and the following fiscal year, as follows: for fiscal year 1999, \$504,900,000; for fiscal year 2000, \$253,800,000; for fiscal year 2001, \$149,700,000; and for fiscal year 2002, \$25,800,000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1997.)

[For an additional amount for “Science, Aeronautics and Technology”, \$5,000,000, to remain available until September 30, 1998.] (Omnibus Consolidated Appropriations Act, 1997.)

Program and Financing (in millions of dollars)

Identification code 80–0110–0–1–999	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
Direct program:			
00.01 Space science	1,935	2,131	2,040
00.02 Life and microgravity science	456	409	222
00.03 Mission to planet Earth	1,178	1,587	1,415
00.04 Aeronautical research and technology	877	24	.....
00.05 Space access and technology	686	84	.....
00.06 Launch services	52	.....	.....
00.07 Mission communication services	451	413	392
00.08 Academic programs	86	158	107
00.09 Aeronautics & space transportation technology .....	.....	1,276	1,463
00.91 Subtotal, direct program	5,721	6,082	5,639
01.01 Reimbursable program	421	692	652
10.00 Total obligations	6,142	6,774	6,291
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance	615	821	280
22.00 New budget authority (gross)	6,350	6,282	6,294
22.21 Unobligated balance transferred to other accounts .....	.....	–50	.....
22.30 Unobligated balance expiring	–1	.....	.....
23.90 Total budgetary resources available for obligation	6,964	7,053	6,574
23.95 New obligations	–6,142	–6,774	–6,291

24.00	Unobligated balance available, end of year:			
	Uninvested balance	821	280	282
New budget authority (gross), detail:				
Current:				
40.00	Appropriation	5,929	5,767	5,642
41.00	Transferred to other accounts		-177	
43.00	Appropriation (total)	5,929	5,590	5,642
Permanent:				
Spending authority from offsetting collections:				
68.00	Offsetting collections (cash)	377	692	652
68.10	Change in orders on hand from Federal sources	44		
68.90	Spending authority from offsetting collections (total)	421	692	652
70.00	Total new budget authority (gross)	6,350	6,282	6,294
Change in unpaid obligations:				
Unpaid obligations, start of year:				
72.40	Obligated balance: Appropriation	2,576	3,281	3,973
72.95	Orders on hand from Federal sources	272	316	316
72.99	Total unpaid obligations, start of year	2,848	3,597	4,289
73.10	New obligations	6,142	6,774	6,291
73.20	Total outlays (gross)	-5,394	-6,082	-6,058
Unpaid obligations, end of year:				
74.40	Obligated balance: Appropriation	3,281	3,973	4,206
74.95	Orders on hand from Federal sources	316	316	316
74.99	Total unpaid obligations, end of year	3,597	4,289	4,522
Outlays (gross), detail:				
86.90	Outlays from new current authority	2,159	2,809	2,725
86.93	Outlays from current balances	2,876	2,581	2,681
86.97	Outlays from new permanent authority	96	692	652
86.98	Outlays from permanent balances	263		
87.00	Total outlays (gross)	5,394	6,082	6,058
Offsets:				
Against gross budget authority and outlays:				
Offsetting collections (cash) from:				
88.00	Federal sources	-363	-645	-631
88.40	Non-Federal sources	-14	-47	-21
88.90	Total, offsetting collections (cash)	-377	-692	-652
88.95	Change in orders on hand from Federal sources	-44		
Net budget authority and outlays:				
89.00	Budget authority	5,929	5,590	5,642
90.00	Outlays	5,018	5,390	5,406

This appropriation provides for the research and development activities of the National Aeronautics and Space Administration. Funds are included for the construction, maintenance, and operation of programmatic facilities.

Performance Objectives

Space Science:

The Space Science program seeks to answer fundamental questions concerning: the galaxy and the universe; the connection between 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 program is comprised of a base program of research and development activities, including research and flight mission activities, and major flight missions which provide major space based facilities. In 1996, several scientific discoveries rocked fundamental theories and re-opened discussion of long-held beliefs. Among the highlights were the discovery of evidence in a meteorite believed to have come from Mars that may indicate life began on Mars early in its history; the discovery of a possible subsurface ocean on Europa; and, the possible discovery of deep frozen lakes on the south pole of the Earth's moon.

To capitalize on these enormous successes during the past year, the NASA budget request for FY 1998 highlights the Origins program. The program focuses on fundamental

questions regarding the creation of the universe and planetary systems, and the possibility of life beyond Earth. A strategy for addressing these questions would involve returning surface samples from Mars; visiting comets and other planetary bodies; and deploying powerful telescopes to detect Earth-like planets elsewhere in our galaxy. NASA's Origins program is responsive to the President's new civil space policy and is a vital component of the Administration's investment strategy in science and technology.

Development activities will continue in 1997-1998 on the Advanced X-ray Astrophysics Facility (AXAF) in support of a launch in late 1998. Funding was included in FY 1996 and FY 1997 to complete development of the Cassini spacecraft, scheduled for launch in October, 1997. The Global Geospace Science mission spacecraft, Wind and Polar, are currently operating and providing data on the interactions between the Sun and the Earth. Development activities continue on the Relativity (Gravity Probe-B) mission, which remains ahead of schedule for launch in 2000. Funding was also included to complete definition activity on the Space Infrared Telescope Facility (SIRTF) in 1997 and initiate development activities in FY 1998. Development activities on the Thermosphere, Ionosphere, Mesosphere Energetics and Dynamics (TIMED) mission are scheduled to begin in mid-1997. Development activities on the Stratospheric Observatory for Infrared Astronomy (SOFIA) have received continued support. A commercial operator for development, modification and operation of the SOFIA aircraft was selected in December 1996. Several significant scientific discoveries were reported in 1996 based on data gathered from the Hubble Space Telescope (HST), and similar results are anticipated in the future. The second HST servicing mission in February 1997 will provide two new science instruments and other servicing requirements as needed. Galileo's highly successful, two-year tour of Jupiter and its moons will continue through 1998.

In Explorer missions, the Fast Auroral Snapshot (FAST) was launched in August 1996. Development activities continue on the Advanced Composition Explorer (ACE) for a launch in 1997, and on the Far Ultraviolet Spectroscopy Explorer (FUSE) for a launch in 1998. Definition is underway on the Microwave Anisotropy Probe (MAP) and Imager for Magnetopause-to-Aurora Global Exploration (IMAGE) Medium-Class Explorer (MIDEX) missions. Selection of candidate missions for the Small-(SMEX) and MIDEX-class Explorer programs continues. These missions emphasize reduced mission costs and accelerated launch schedules.

The Mars Global Surveyor was launched in November 1996, and funds are requested for the development of future Mars missions in 1998 and beyond. The first two Discovery-class missions were launched in 1996: the Near-Earth Asteroid Rendezvous was launched in February 1996; and the Mars Pathfinder was launched in December 1996. The Lunar Prospector mission is scheduled for launch in 1997, and the Stardust mission is to be launched in 1999. Funding is also included for future Discovery-class missions. The New Millennium program is underway to provide flight demonstrations for critical new technologies which will greatly reduce the mass and cost of future science instruments and spacecraft subsystems, while maintaining or improving mission capabilities. Development activities continue on the Deep Space Mission-1 and -2, scheduled for launch in June 1998 and January 1999, respectively.

The Space Science program assumed most of the responsibility for Agency-wide core technology development following dissolution of the Office of Space Access and Technology. Space Science is also undertaking an aggressive technology development effort to enable new missions to the outer planets, and to search for Earth-like planets around nearby

General and special funds—Continued

SCIENCE, AERONAUTICS AND TECHNOLOGY—Continued

stars. New technologies are also being pursued to enhance our capability to explore Mars robotically, and perhaps to confirm the past or current presence of life on that planet.

Life and Microgravity Science.—This program uses the microgravity environment of space to conduct basic and applied research to understand the effect of gravity on living systems and to conduct research in the areas of fluid physics, materials science and biotechnology. In 1996, six shuttle missions involving materials and life sciences experiments were conducted, including two Spacelab missions and three NASA/Mir missions. In addition to conducting basic and applied research, these missions have provided the opportunity to refine the definition, design, and development of experiment hardware planned for use on the International Space Station. In 1997, four shuttle missions including the Materials Sciences Laboratory (MSL-1) mission and three NASA/Mir missions are planned. In 1998, the NASA/NIH Neurolab mission is planned, which will continue the agency's efforts to expand its collaborative activities with the National Institutes of Health and other Federal agencies to maximize the return on science investments. In addition to this mission, the program will be supporting the launch of the Alpha Magnetic Spectrometer (AMS). The Space Station research program and the remaining two NASA/Mir missions will be incorporated into the Human Space Flight Appropriation within the Space Station program.

Mission to Planet Earth.—The purpose of NASA's Mission to Planet Earth (MTPE) enterprise is to understand the total Earth system and the effects of natural and human-induced changes on the global environment. MTPE is pioneering the new interdisciplinary field of research called Earth system science, which recognizes that the Earth's land surface, oceans, atmosphere, ice sheets and *biota* are both dynamic and highly interactive. Earth system science is an area of research with the potential for immense benefit to the nation, yielding new knowledge and tools for weather forecasting, agriculture, urban and land use planning, and other areas of economic and environmental importance. In concert with other agencies and the global research community, MTPE is providing the scientific foundation needed for the complex policy choices that lie ahead on the road to sustainable development. MTPE has established three broad goals to fulfill its purpose: (1) expand scientific knowledge of the Earth system using NASA's unique capabilities from the vantage points of space, aircraft and *in situ* platforms; (2) disseminate information about the Earth system; and, (3) enable productive use of MTPE science and technology in the public and private sectors.

The Earth Observing System (EOS), the centerpiece of Mission to Planet Earth, is a program of multiple spacecraft missions (the AM, PM, Chemistry series, Landsat 7, and others) and interdisciplinary science investigations aimed at providing a 15 year data set of key parameters needed to understand global climate change. The first EOS satellite launches will be in 1998. Preceding EOS are a number of individual satellite and Shuttle-based missions which are helping to reveal basic processes. The Upper Atmosphere Research Satellite, launched in 1991, collects data on atmospheric chemistry. The Total Ozone Mapping Spectrometer instrument, launched in 1978 and 1991, measures ozone distribution and depletion. Two total ozone mapping spectrometer instruments were launched in 1996, one on the Japanese Advanced Earth Observing System (ADEOS) mission and the other on a dedicated U.S. Earth probe. France and the U.S. collaborated on the Ocean Topography Experiment (TOPEX/Poseidon), launched in 1992, to study ocean topography and circulation. The NASA scatterometer, also launched on the Japanese

ADEOS in 1996, maps ocean winds. In 1997 the Tropical Rainfall Measuring Mission (TRMM) will measure tropical precipitation. Complementing EOS will be a series of small, rapid development Earth System Science Pathfinders (ESSP). Data from MTPE will be captured from the satellites, processed into useful data products, and broadly distributed by the EOS Data and Information System (EOSDIS). In FY 1997, NASA initiated a data purchase program designed to acquire data sets from private sources that are necessary to accomplish the broad research goals of Earth system science. MTPE assumed responsibility for the small spacecraft technology initiative (Lewis and Clark) and the commercial remote sensing program. The MTPE science program is essential to the discovery of new concepts and to the design of future missions. The MTPE research is coordinated through the U.S. Global Change Research Program (USGCRP), the Committee on the Environment and Natural Resources (CENR) Subcommittee on Global Change Research, and the various boards and committees at the National Academy of Sciences.

Aeronautics and Space Transportation Technology.—The goal of this enterprise is to pioneer high-payoff, critical technologies with effective transfer of design tools and technology products to industry and government.

Within Aeronautics, the High Speed Research Program continued to develop technologies to establish the viability of an economical and environmentally sound High Speed Civil Transport. This vehicle—if built by U.S. industry—could promote U.S. leadership in long-range commercial air travel markets of the next century. Development of this vehicle could offer returns of \$200 billion in sales and 140,000 high-quality jobs for the United States. In FY 1996, a preliminary conceptual definition of a supersonic transport technology configuration was selected and efforts to develop these technologies continue. In FY 1996, in cooperation with the FAA, the Advanced Subsonics Technology program significantly expanded its efforts in critical air traffic technologies. Research will continue to emphasize aviation capacity as well as improving the environment through noise and emissions reductions. Funding is included to continue development of high payoff technologies enabling a safe, highly productive global air transportation system with reduced environmental impact.

In FY 1996, the High Performance Computing and Communications Program achieved sustained multidisciplinary application speeds never before reached by any NASA application. Funding is included to continue NASA's leadership role in this vital area. As part of the HPCC program, the President's FY 1998 budget proposes to provide \$100 million each year for the next three years to support the new Next Generation Internet initiative. The program's goal is to develop a research network capable of achieving speeds of 100 to 1,000 times faster than today's Internet and yield large gains in the quality of service. This initiative will involve several Federal agencies including the Departments of Defense, Energy, and Commerce, the National Science Foundation, and NASA. NASA's contribution to this effort is \$10 million annually for three years. In FY 1997, research activities within the research and technology base continue to develop innovative concepts, explore new areas of theory and create the computational models of the aeronautical principles that will lead to more efficient design and operation of advanced aerospace systems. NASA will continue to operate critical national facilities for aeronautical research in support of industry, Department of Defense and other NASA programs.

The Space Transportation Technology program is developing new technologies aimed at revitalizing access to space. The technologies targeted will reduce launch costs dramatically over the next decade, and increase safety and the reliability of current and future generation launch vehicles. New performance plateaus for in-space propulsion will be estab-

lished, while reducing the cost and weight of launch vehicles. In 1996, the Reusable Launch Vehicle (RLV) Program continued to pursue technology development and concept definition activities in support of next-generation reusable systems, focusing on the X-34 and X-33 flight demonstrators. The decision was made to proceed with Phase II of the X-33 program. Funding for the RLV program is included to continue technology development in preparation for the flight of technology demonstrators. The Advanced Space Transportation Program (ASTP) is developing key technologies to dramatically reduce space transportation costs across the mission spectrum. ASTP will focus on technological advances with the potential of reducing launch costs beyond RLV goals, as well as developing technology required to support NASA strategic needs that are not addressed by RLV.

The Commercial Technology Program's focus in FY 1996 has been to invest 10 percent of the NASA R&D budget in commercial partnerships with industry. Based on experience to date, these commercial partnerships are expected to increase the return on the government's R&D investment, allowing NASA to do more with limited funds, and strengthen the international competitiveness of key industry sectors. In FY 1997 and 1998, the program will emphasize increasing commercial partnerships with industry and continue to refine a technology and partnership database.

Mission Communication Services.—The primary goal of this operational program is to provide highly reliable, cost-effective telecommunications services in support of NASA's science and aeronautics programs. Other U.S. agencies, international space-faring agencies, and U.S. commercial enterprises are supported on a reimbursable basis. Ground network, space network, and mission systems are provided under this program in support of planetary, deep space, Earth-orbiting, aeronautics, and suborbital systems.

Academic Programs.—The goal of this program is to promote excellence in America's education system through enhancing and expanding scientific and technological competence. NASA's education programs span from the elementary through graduate levels, and are directed at students and faculty. The goal of the Minority University Research Program is to expand opportunities for talented students from underrepresented groups who are pursuing degrees in science and engineering, and to strengthen the research capabilities of minority universities and colleges. The range of activities conducted under this program will continue to capture the interest of all students in science and technology, develop talented students at the undergraduate and graduate levels, provide research opportunities for students and faculty members at NASA centers, and strengthen and enhance the research capabilities of the nation's colleges and universities.

The FY 1998 budget proposes multi-year appropriations in Science, Aeronautics, and Technology for development of a Space Infrared Telescope Facility (SIRTF), a Stratospheric Observatory for Infrared Astronomy (SOFIA), and an X-33 launch vehicle technology demonstrator. The multi-year funding will ensure the stability to manage and execute these programs within their budget and schedule commitments.

Object Classification (in millions of dollars)

Identification code 80-0110-0-1-999	1996 actual	1997 est.	1998 est.
Direct obligations:			
22.0 Transportation of things	3	3	3
23.1 Rental payments to GSA	1	1	
23.2 Rental payments to others			1
23.3 Communications, utilities, and miscellaneous charges	69	74	68
24.0 Printing and reproduction	3	3	3
25.1 Advisory and assistance services	525	558	517
25.2 Other services	309	328	305
25.3 Purchases of goods and services from Government accounts	354	376	349
25.4 Operation and maintenance of facilities	92	98	91

25.5	Research and development contracts	3,104	3,300	3,060
25.6	Medical care			
25.7	Operation and maintenance of equipment	136	145	134
25.8	Subsistence and support of persons	363	386	357
26.0	Supplies and materials	90	96	89
31.0	Equipment	173	184	170
32.0	Land and structures	32	34	32
41.0	Grants, subsidies, and contributions	467	496	460
99.0	Subtotal, direct obligations	5,721	6,082	5,639
99.0	Reimbursable obligations	421	692	652
99.9	Total obligations	6,142	6,774	6,291

MISSION SUPPORT

For necessary expenses, not otherwise provided for, in carrying out mission support for human space flight programs and science, aeronautical, and technology programs, including research operations and support; space communications activities including operations, production and services; maintenance; construction of facilities including repair, rehabilitation, and modification of facilities, minor construction of new facilities and additions to existing facilities, facility planning and design, environmental compliance and restoration, and acquisition or condemnation of real property, as authorized by law; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed 33 for replacement only) and hire of passenger motor vehicles; **[\$2,562,200,000] \$2,513,200,000**, to remain available until September 30, **[1998] 1999**.

For necessary expenses of certain space projects under development, to become available on October 1 of the fiscal year specified and remain available for that and the following fiscal year, as follows: for fiscal year 1999, \$120,400,000; for fiscal year 2000, \$58,000,000; for fiscal year 2001, \$70,000,000; for fiscal year 2002, \$98,200,000; and for fiscal year 2003, \$52,600,000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1997.)

Program and Financing (in millions of dollars)

Identification code 80-0112-0-1-999	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
Direct program:			
00.01 Safety, reliability and quality assurance	38	40	38
00.02 Space communication services	298	285	249
00.03 Research and program management	2,012	2,102	2,071
00.04 Construction of facilities	110	169	157
00.91 Subtotal, direct program	2,458	2,596	2,515
01.00 Total direct program	2,458	2,596	2,515
01.01 Reimbursable program	111	132	135
10.00 Total obligations	2,569	2,728	2,650
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance	128	151	115
22.00 New budget authority (gross)	2,594	2,694	2,648
22.30 Unobligated balance expiring	-1		
23.90 Total budgetary resources available for obligation	2,721	2,845	2,763
23.95 New obligations	-2,569	-2,728	-2,650
24.40 Unobligated balance available, end of year:			
Uninvested balance	151	115	114
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	2,483	2,562	2,513
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	81	132	135
68.10 Change in orders on hand from Federal sources	30		
68.90 Spending authority from offsetting collections (total)	111	132	135
70.00 Total new budget authority (gross)	2,594	2,694	2,648

General and special funds—Continued

MISSION SUPPORT—Continued

Program and Financing (in millions of dollars)—Continued

Identification code 80-0112-0-1-999	1996 actual	1997 est.	1998 est.
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Appropriation	375	460	594
72.95 Orders on hand from Federal sources	49	79	79
72.99 Total unpaid obligations, start of year	424	539	673
73.10 New obligations	2,569	2,728	2,650
73.20 Total outlays (gross)	-2,454	-2,594	-2,651
Unpaid obligations, end of year:			
74.40 Obligated balance: Appropriation	460	594	593
74.95 Orders on hand from Federal sources	79	79	79
74.99 Total unpaid obligations, end of year	539	673	672
Outlays (gross), detail:			
86.90 Outlays from new current authority	1,950	2,085	2,066
86.93 Outlays from current balances	399	377	450
86.97 Outlays from new permanent authority	59	132	135
86.98 Outlays from permanent balances	46		
87.00 Total outlays (gross)	2,454	2,594	2,651
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources	-78	-118	-123
88.40 Non-Federal sources	-3	-14	-12
88.90 Total, offsetting collections (cash)	-81	-132	-135
88.95 Change in orders on hand from Federal sources	-30		
Net budget authority and outlays:			
89.00 Budget authority	2,483	2,562	2,513
90.00 Outlays	2,373	2,462	2,516

This appropriation provides funding for mission support and includes: safety, reliability and quality assurance activities supporting agency programs; space communication services for NASA programs; salaries and related expenses in support of research in NASA field installations; design, repair, rehabilitation and modification of institutional facilities and construction of new institutional facilities; and other operations activities supporting conduct of agency programs.

Performance Objectives

Safety, Reliability and Quality Assurance.—The goal of this program is to assure the safety and quality of NASA missions through the development, implementation and oversight of Agency-wide safety, engineering, reliability, maintainability, and quality assurance policies and procedures.

Space Communication Services.—Activities included in this program provide for the tracking, telemetry, command, data acquisition, communications and data processing required by NASA flight projects. In 1996–1998, the networks and support systems that accomplish these tasks will continue operation. Completion of the upgrade of the Tracking and Data Relay Satellite (TDRS) White Sands Complex and early development of the TDRS Replenishment Spacecraft occurred and will continue in 1997 and 1998. The FY 1998 budget proposes multi-year appropriations for development and launch of three Tracking and Data Relay Satellite (TDRS) replenishment spacecraft. The multi-year funding will support NASA's plans for the TDRS fixed price spacecraft contract with industry.

Research and Program Management.—This activity provides for the salaries, travel support, other personnel expenses of the entire NASA civil service workforce, and includes vital support to the physical plant at the Centers and at NASA Headquarters.

Construction of Facilities.—This activity provides for: facility construction activities to preserve NASA's core infrastruc-

ture; environmental compliance and restoration activities, design of facilities projects, and advanced planning related to future facilities needs. In 1996–1998, activities in support of discrete projects to repair and modernize the basic infrastructure and institutional facilities at NASA centers will be conducted, as well as activities in support of environmental compliance and restoration requirements.

Object Classification (in millions of dollars)

Identification code 80-0112-0-1-999	1996 actual	1997 est.	1998 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	1,215	1,261	1,268
11.3 Other than full-time permanent	17	10	9
11.5 Other personnel compensation	23	22	19
11.8 Special personal services payments	7	11	12
11.9 Total personnel compensation	1,262	1,304	1,308
12.1 Civilian personnel benefits	249	277	278
13.0 Benefits for former personnel	1	1	1
21.0 Travel and transportation of persons	42	46	46
22.0 Transportation of things	5	3	1
23.1 Rental payments to GSA	18	20	18
23.2 Rental payments to others	1	1	1
23.3 Communications, utilities, and miscellaneous charges	47	51	47
24.0 Printing and reproduction	6	7	6
25.1 Advisory and assistance services	34	37	34
25.2 Other services	107	116	106
25.3 Purchases of goods and services from Government accounts	23	25	23
25.4 Operation and maintenance of facilities	66	72	65
25.5 Research and development contracts	41	44	41
25.6 Medical care	3	3	3
25.7 Operation and maintenance of equipment	124	134	123
25.8 Subsistence and support of persons	275	289	262
26.0 Supplies and materials	22	24	22
31.0 Equipment	19	20	19
32.0 Land and structures	108	117	106
41.0 Grants, subsidies, and contributions	5	5	5
99.0 Subtotal, direct obligations	2,458	2,596	2,515
99.0 Reimbursable obligations	111	132	135
99.9 Total obligations	2,569	2,728	2,650

Personnel Summary

Identification code 80-0112-0-1-999	1996 actual	1997 est.	1998 est.
Direct:			
Total compensable workyears:			
1001 Full-time equivalent employment	20,828	20,411	19,469
1005 Full-time equivalent of overtime and holiday hours	180	170	170
Reimbursable:			
2001 Total compensable workyears: Full-time equivalent employment	110	90	90

Federal Funds

General and special funds:

RESEARCH AND DEVELOPMENT

Program and Financing (in millions of dollars)

Identification code 80-0108-0-1-999	1996 actual	1997 est.	1998 est.
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested balance	1	1	1
22.30 Unobligated balance expiring			
23.90 Total budgetary resources available for obligation	1	1	1
23.95 New obligations			
24.40 Unobligated balance available, end of year:			
Uninvested balance	1	1	1
New budget authority (gross), detail:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	86	60	
68.10 Change in orders on hand from Federal sources	-86	-60	

68.90	Spending authority from offsetting collections (total)			
Change in unpaid obligations:				
Unpaid obligations, start of year:				
72.40	Obligated balance: Appropriation	753	230	
72.95	Orders on hand from Federal sources	146	60	
72.99	Total unpaid obligations, start of year	899	290	
73.10	New obligations			
73.20	Total outlays (gross)	-596	-290	
73.40	Adjustments in expired accounts	-13		
Unpaid obligations, end of year:				
74.40	Obligated balance: Appropriation	230		
74.95	Orders on hand from Federal sources	60		
74.99	Total unpaid obligations, end of year	290		
Outlays (gross), detail:				
86.93	Outlays from current balances	596	290	
86.97	Outlays from new permanent authority			
86.98	Outlays from permanent balances			
87.00	Total outlays (gross)	596	290	
Offsets:				
Against gross budget authority and outlays:				
Offsetting collections (cash) from:				
88.00	Federal sources	-80	-60	
88.40	Non-Federal sources	-6		
88.90	Total, offsetting collections (cash)	-86	-60	
88.95	Change in orders on hand from Federal sources	86	60	
Net budget authority and outlays:				
89.00	Budget authority			
90.00	Outlays	511	230	

Since FY 1995 NASA's Research and Development activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS

Program and Financing (in millions of dollars)

Identification code 80-0105-0-1-252	1996 actual	1997 est.	1998 est.
Budgetary resources available for obligation:			
21.40	Unobligated balance available, start of year:		
	Uninvested balance	1	4
22.10	Resources available from recoveries of prior year obligations	4	
23.90	Total budgetary resources available for obligation	5	4
23.95	New obligations		
24.40	Unobligated balance available, end of year:		
	Uninvested balance	4	4
New budget authority (gross), detail:			
Spending authority from offsetting collections:			
68.00	Offsetting collections (cash)	7	5
68.10	Change in orders on hand from Federal sources	-7	-5
68.90	Spending authority from offsetting collections (total)		
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40	Obligated balance: Appropriation	424	171
72.95	Orders on hand from Federal sources	12	5
72.99	Total unpaid obligations, start of year	436	176
73.10	New obligations		
73.20	Total outlays (gross)	-248	-132
73.40	Adjustments in expired accounts	-8	-4
73.45	Adjustments in unexpired accounts	-4	
Unpaid obligations, end of year:			
74.40	Obligated balance: Appropriation	171	40
74.95	Orders on hand from Federal sources	5	

74.99	Total unpaid obligations, end of year	176	40	30
Outlays (gross), detail:				
86.93	Outlays from current balances	248	132	10
86.97	Outlays from new permanent authority			
86.98	Outlays from permanent balances			
87.00	Total outlays (gross)	248	132	10
Offsets:				
Against gross budget authority and outlays:				
Offsetting collections (cash) from:				
88.00	Federal sources	-6	-5	
88.45	Offsetting governmental collections	-1		
88.90	Total, offsetting collections (cash)	-7	-5	
88.95	Change in orders on hand from Federal sources	7	5	
Net budget authority and outlays:				
89.00	Budget authority			
90.00	Outlays	241	127	10

Since FY 1995 NASA's Space Flight, Control and Data Communications activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

CONSTRUCTION OF FACILITIES

Program and Financing (in millions of dollars)

Identification code 80-0107-0-1-999	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
00.01	Space transportation	27	20
00.22	Mission to planet Earth		1
00.41	Aeronautical research and technology	18	43
00.42	Supporting activity	55	36
10.00	Total obligations	100	100
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
21.40	Treasury balance	197	98
21.41	U.S. Securities: Par value	3	2
21.99	Total unobligated balance, start of year	200	100
23.90	Total budgetary resources available for obligation	200	100
23.95	New obligations	-100	-100
Unobligated balance available, end of year:			
24.40	Uninvested balance	98	
24.41	U.S. Securities: Par value	2	
24.99	Total unobligated balance, end of year	100	
Change in unpaid obligations:			
Unpaid obligations, start of year: Obligated balance:			
72.40	Appropriation	311	146
73.10	New obligations	100	100
73.20	Total outlays (gross)	-265	-40
Unpaid obligations, end of year: Obligated balance:			
74.40	Appropriation	146	206
Outlays (gross), detail:			
86.93	Outlays from current balances	265	40
Net budget authority and outlays:			
89.00	Budget authority		
90.00	Outlays	265	40

Since FY 1995 NASA's Construction of Facilities activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

General and special funds—Continued

CONSTRUCTION OF FACILITIES—Continued

Object Classification (in millions of dollars)

Identification code 80-0107-0-1-999	1996 actual	1997 est.	1998 est.
25.1 Advisory and assistance services	1	1	.....
25.2 Other services	5	5	.....
25.4 Operation and maintenance of facilities	1	1	.....
32.0 Land and structures	93	93	.....
99.9 Total obligations	100	100	.....

RESEARCH AND PROGRAM MANAGEMENT

Program and Financing (in millions of dollars)

Identification code 80-0103-0-1-999	1996 actual	1997 est.	1998 est.
Change in unpaid obligations:			
72.40 Unpaid obligations, start of year: Obligated balance:			
Appropriation	23	10	.....
73.10 New obligations			
73.20 Total outlays (gross)	-6	-10	.....
73.40 Adjustments in expired accounts	-7		.....
74.40 Unpaid obligations, end of year: Obligated balance:			
Appropriation	10		.....
Outlays (gross), detail:			
86.93 Outlays from current balances	6	10	.....
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays	6	10	.....

Since FY 1995 NASA's Research and Program Management activities have been performed in Mission Support. 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, [**\$17,000,000**] **\$18,300,000.** (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1997.)

Program and Financing (in millions of dollars)

Identification code 80-0109-0-1-252	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
10.00 Total obligations	16	17	18
Budgetary resources available for obligation:			
22.00 New budget authority (gross)	16	17	18
23.95 New obligations	-16	-17	-18
New budget authority (gross), detail:			
40.00 Appropriation	16	17	18
Change in unpaid obligations:			
72.40 Unpaid obligations, start of year: Obligated balance:			
Appropriation	3	3	3
73.10 New obligations	16	17	18
73.20 Total outlays (gross)	-16	-17	-18
74.40 Unpaid obligations, end of year: Obligated balance:			
Appropriation	3	3	3
Outlays (gross), detail:			
86.90 Outlays from new current authority	14	14	15
86.93 Outlays from current balances	2	3	3
87.00 Total outlays (gross)	16	17	18
Net budget authority and outlays:			
89.00 Budget authority	16	17	18

90.00 Outlays	16	17	18
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The mission of the Office of Inspector General is to conduct audits and investigations of agency activities. The Inspector General keeps the Administrator informed of problems and deficiencies in agency programs and operations.

Object Classification (in millions of dollars)

Identification code 80-0109-0-1-252	1996 actual	1997 est.	1998 est.
11.1 Personnel compensation: Full-time permanent	12	13	14
12.1 Civilian personnel benefits	2	3	3
21.0 Travel and transportation of persons	1	1	1
25.2 Other services	1		.....
99.9 Total obligations	16	17	18

Personnel Summary

Identification code 80-0109-0-1-252	1996 actual	1997 est.	1998 est.
Total compensable workyears:			
1001 Full-time equivalent employment	190	198	198
1005 Full-time equivalent of overtime and holiday hours	3	3	3

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

Unavailable Collections (in millions of dollars)

Identification code 80-8978-0-7-503	1996 actual	1997 est.	1998 est.
Balance, start of year:			
01.99 Balance, start of year			
Receipts:			
02.01 Earnings on investments; Science, Space and Technology Education, Trust Fund	1	1	1
Appropriation:			
05.01 Science, space, and technology education trust fund	-1	-1	-1
07.99 Total balance, end of year			

Program and Financing (in millions of dollars)

Identification code 80-8978-0-7-503	1996 actual	1997 est.	1998 est.
Obligations by program activity:			
00.01 General education aids	1		.....
10.00 Total obligations (object class 41.0)	1		.....
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
U.S. Securities:			
21.41 Par value	16	16	16
21.42 Unrealized discounts			1
21.99 Total unobligated balance, start of year	16	16	17
22.00 New budget authority (gross)	1	1	1
23.90 Total budgetary resources available for obligation	17	17	18
23.95 New obligations	-1		.....
Unobligated balance available, end of year:			
U.S. Securities:			
24.41 Par value	16	16	17
24.42 Unrealized discounts		1	1
24.99 Total unobligated balance, end of year	16	17	18
New budget authority (gross), detail:			
60.27 Appropriation (trust fund, indefinite)	1	1	1
Change in unpaid obligations:			
73.10 New obligations	1		.....
73.20 Total outlays (gross)	-1	-1	-1
Outlays (gross), detail:			
86.97 Outlays from new permanent authority	1	1	1
Net budget authority and outlays:			
89.00 Budget authority	1	1	1
90.00 Outlays	1	1	1

ADMINISTRATIVE PROVISIONS

【(INCLUDING TRANSFER OF FUNDS)】

Notwithstanding the limitation on the availability of funds appropriated for “Human space flight”, “Science, aeronautics and technology”, or “Mission support” by this appropriations Act, when 【(1)】 any activity has been initiated by the incurrence of obligations for construction of facilities as authorized by law, 【or (2)】 amounts are provided for full-funding for the Tracking and Data Relay Satellite (TDRS) replenishment program,】 such amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated in “Mission support” pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for “Human space flight”, “Science, aeronautics and technology”, or “Mission support” by this appropriations Act, the amounts appropriated for construction of facilities shall remain available until September 30, 【1999】 2000.

Notwithstanding the limitation on the availability of funds appropriated for “Mission support” and “Office of Inspector General”,

amounts made available by this Act for personnel and related costs and travel expenses of the National Aeronautics and Space Administration shall remain available until September 30, 【1997】 1998 and may be used to enter into contracts for training, investigations, cost associated with personnel relocation, and for other services, to be provided during the next fiscal year.

【Upon the determination by the Administrator that such action is necessary, the Administrator may, with the approval of the Office of Management and Budget, transfer not to exceed \$177,000,000 of funds made available in this Act to the National Aeronautics and Space Administration for the International Space Station between “Science, aeronautics and technology” and “Human space flight”, to be merged with and to be available for the same purposes, and for the same time period, as the appropriation to which transferred: *Provided*, That such authority may not be used unless for higher priority items than those for which originally appropriated: *Provided further*, That the Administrator of the National Aeronautics and Space Administration shall notify the Congress promptly of all transfers made pursuant to this authority.】 (*Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1997.*)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Federal Funds

General and special funds:

HUMAN SPACE FLIGHT

For necessary expenses, not otherwise provided for, in the conduct and support of human space flight research and development activities, including research, development, operations, and services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **[\$5,506,500,000]** \$5,511,000,000, to remain available until September 30, **[1999: Provided, That of the \$2,351,300,000 made available under this heading for Space Station activities, only \$1,500,000,000 shall be available before March 31, 1998] 2000.**

For necessary expenses of the International Space Station, to become available on October 1 of the fiscal year specified and remain available for that and the following fiscal year, as follows: for fiscal year 2000, \$2,134,000,000; for fiscal year 2001, \$1,933,000,000; for fiscal year 2002, \$1,766,000,000; for fiscal year 2003, \$1,546,000,000; for fiscal year 2004, \$350,000,000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998.)

Program and Financing (in millions of dollars)

Identification code 80-0111-0-1-252	1997 actual	1998 est.	1999 est.
Obligations by program activity:			
Direct program:			
00.01 Space station	2,088	2,273	2,272
00.02 US/Russian cooperation and program assurance	230	137	3
00.03 Payload and utilization operations	267	325	184
00.04 Space shuttle	3,001	2,849	3,052
09.01 Reimbursable program	69	71	200
10.00 Total obligations	5,655	5,655	5,711
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested	222	226	149
22.00 New budget authority (gross)	5,609	5,578	5,711
22.22 Unobligated balance transferred from other accounts	50		
23.90 Total budgetary resources available for obligation	5,881	5,804	5,860
23.95 New obligations	-5,655	-5,655	-5,711
24.40 Unobligated balance available, end of year:			
Uninvested	226	149	149
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	5,363	5,507	5,511
42.00 Transferred from other accounts	177		
43.00 Appropriation (total)	5,540	5,507	5,511
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	84	71	200
68.10 Change in orders on hand from Federal sources	-15		
68.90 Spending authority from offsetting collections (total)	69	71	200
70.00 Total new budget authority (gross)	5,609	5,578	5,711
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Uninvested	1,770	1,700	1,708
72.95 Orders on hand from Federal sources	48	33	33
72.99 Total unpaid obligations, start of year	1,818	1,733	1,741
73.10 New obligations	5,655	5,655	5,711
73.20 Total outlays (gross)	-5,740	-5,647	-5,674
73.40 Adjustments in expired accounts	-1		

Unpaid obligations, end of year:			
74.40 Obligated balance: Uninvested	1,700	1,708	1,745
74.95 Orders on hand from Federal sources	33	33	33
74.99 Total unpaid obligations, end of year	1,733	1,741	1,778
Outlays (gross), detail:			
86.90 Outlays from new current authority	3,808	3,651	3,654
86.93 Outlays from current balances	1,865	1,925	1,820
86.97 Outlays from new permanent authority	33	71	200
86.98 Outlays from permanent balances	34		
87.00 Total outlays (gross)	5,740	5,647	5,674
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.40 Non-Federal sources	-35	-15	-11
88.45 Offsetting governmental collections	-49	-56	-189
88.90 Total, offsetting collections (cash)	-84	-71	-200
88.95 Change in orders on hand from Federal sources	15		
Net budget authority and outlays:			
89.00 Budget authority	5,540	5,507	5,511
90.00 Outlays	5,656	5,576	5,474

This appropriation provides funding for human space flight activities, including development of the Space Station, the Space Station research program, and operation of the Space Shuttle. This includes support of planned cooperative activities with Russia, upgrades to the performance and safety of the Space Shuttle, and required construction projects in direct support of Space Station and Space Shuttle programs.

Performance Objectives

Space Station.—The Space Station will be an international laboratory in low Earth orbit on which American, Russian, Canadian, European, and Japanese astronauts will conduct unique scientific and technological investigations in a micro-gravity environment. The goal of the Station is to support activities requiring the unique attributes of humans in space and establish a permanent human presence in Earth orbit. The proposed budget provides multi-year funding through an advanced appropriation for the complete development of the Station with Station assembly beginning in mid-1998 and finishing by the end of 2003. With the first launch to assemble this unique orbital laboratory only a few months away, the budget includes sufficient funding to keep subsequent assembly missions on schedule and provide a long-term solution to the safe return of the full complement of Station crewmembers.

In 1997, node and laboratory module fabrication were completed, the node was delivered to the launch site, and qualification testing of flight hardware components continued. Activities are well underway to support crew training, payload processing, and hardware element processing requirements. In 1998, continued fabrication of flight hardware, qualification testing, and assembly and integration will be the focus of the program. First element launch is scheduled for the summer of 1998. In 1999, plans are to complete phase 2 (the first ten assembly flights) of the Station.

U.S./Russian Cooperation and Program Assurance.—As part of an operating plan approved in May 1997, the U.S./Russian budget line was discontinued, and a new budget line entitled U.S./Russian Cooperation and Program Assurance was established. It includes two activities, U.S./Russian Cooperation and Russian Program Assurance (RPA). U.S./Rus-

General and special funds—Continued

HUMAN SPACE FLIGHT—Continued

sian Cooperation continues the support to the Russian Space Agency, including the cooperative use of Mir. The RPA budget was established to implement contingency plans in response to the slippage of the Russian service module (SM) to the Space Station, from May 1998 to December 1998. The United States and Russia are continuing a program of joint space missions. In 1997, three Shuttle flights to Mir took place, highlighted by the continual presence of American astronauts aboard the Mir conducting scientific research. Flight hardware to conduct experiments has been and will continue to be placed on the Mir. These flights provide valuable opportunities to gain experience in working with our Russian partners, which will be crucial to the success of building and operating the International Space Station (ISS). Two additional flights are planned in FY 1998, completing phase I of this cooperative precursor to Space Station.

The RPA provides contingency planning funds to address ISS program requirements resulting from delays on the part of Russia in meeting its commitments to the ISS program. The first step in the contingency plan is to protect against a potential further delay in the SM. The ISS program is purchasing, from the U.S. Naval Research Laboratory (NRL), an interim control module (ICM) to provide attitude control and reboost functions for continuation of the ISS assembly sequence in case the Russian SM is launched later than December 1998. The NRL's ICM will be prepared for a February 1999 launch and will be attached to the back of the Russian built functional cargo block (FGB). If the SM is launched in December 1998, the ICM will be reconfigured to be attached to the SM. The ICM would then be able to dock to the back of the SM in 1999 to back up any shortfall of Russian Progress fuel resupply vehicles.

Payload and Utilization Operations.—These funds will support the mission planning and hardware preparation activities required to support the payload and experiment infrastructure, including the Spacelab. In 1997–1998, 3 module missions (MSL–1 reflight and Neurolab) will be flown, along with 2 pallet missions. The Spacelab program is scheduled to be terminated in 1998, following the Neurolab mission. In FY 1999, one (Spacelab) science mission will be supported, in addition to seven assembly flights for the ISS.

Activities funded by the Payload Processing budget support the technical expertise and facilities necessary to perform payload buildup, test and checkout, integration, servicing, transportation and installation into the launch vehicle. In FY 1998, over 20 major and secondary payloads will be supported; in FY 1999, a similar number will be supported, including major hardware for ISS assembly. Advanced Projects pursues advanced technology developments for future human space flight requirements. Under this program, the X–38 experimental vehicle is being designed to demonstrate the technology and processes required to produce a crew return vehicle for the ISS. Beginning in FY 1999, funding for Advanced Projects other than X–38 and X–38 transition costs, will be terminated. The Engineering and Technical Base provides basic engineering and technical capabilities to support the NASA mission assigned to the programs carried out by the Human Space Flight Centers. These funds support a core environment dedicated to multiprogram laboratories, test facilities and associated systems, including a skill base to respond to research, testing and simulations.

Space Shuttle.—The Space Shuttle is a partially reusable space vehicle that provides several unique capabilities to the United States space program. These include launching spacecraft and retrieving payloads from orbit for reuse, servicing and repairing satellites in space, safely transporting humans to and from space, and operating and returning space labora-

tories. In FY 1998, six missions are planned, including the final two flights to the Russian Mir Space Station, and the initial assembly flight for the ISS. Activities supporting consolidation of Shuttle contracts into one Space Flight Operations contract were completed in FY 1996. This will result in significant reductions in the cost of operating the Space Shuttle through FY 2000 and beyond, with no impact on safety, performance or schedule.

In 1999, eight shuttle flights are planned, seven of which are in support of ISS assembly. Upgrades to the shuttle to increase its reliability and maintainability will be continued. Major Shuttle upgrades, including the Super Light Weight Tank and the Alternate Turbo Pump, will be completed with initial flights planned to occur in 1998.

Object Classification (in millions of dollars)

Identification code 80–0111–0–1–252	1997 actual	1998 est.	1999 est.
Direct obligations:			
22.0 Transportation of things	3	3	3
23.3 Communications, utilities, and miscellaneous charges	63	63	62
24.0 Printing and reproduction	4	4	4
25.1 Advisory and assistance services	1,197	1,197	1,181
25.2 Other services	308	308	304
25.3 Purchases of goods and services from Government accounts	128	128	126
25.4 Operation and maintenance of facilities	91	91	90
25.5 Research and development contracts	3,480	3,478	3,433
26.0 Supplies and materials	92	92	91
31.0 Equipment	85	85	84
32.0 Land and structures	131	131	129
41.0 Grants, subsidies, and contributions	4	4	4
99.0 Subtotal, direct obligations	5,586	5,584	5,511
99.0 Reimbursable obligations	69	71	200
99.9 Total obligations	5,655	5,655	5,711

SCIENCE, AERONAUTICS AND TECHNOLOGY

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics and technology research and development activities, including research, development, operations, and services; maintenance; construction of facilities including repair, rehabilitation, and modification of real and personal property, and acquisition or condemnation of real property, as authorized by law; space flight, spacecraft control and communications activities including operations, production, and services; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **[\$5,690,000,000] \$5,457,400,000**, to remain available until September 30, [1999] 2000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998.)

Program and Financing (in millions of dollars)

Identification code 80–0110–0–1–999	1997 actual	1998 est.	1999 est.
Obligations by program activity:			
Direct program:			
00.01 Space science	2,039	2,093	2,057
00.02 Life and microgravity science	396	249	240
00.06 Earth science	1,403	1,597	1,374
00.07 Mission communication services	428	387	381
00.08 Academic programs	134	155	102
00.09 Aeronautics and space transportation technology	1,409	1,424	1,314
09.01 Reimbursable program	440	643	653
10.00 Total obligations	6,249	6,548	6,121
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested	1,186	508	283
22.00 New budget authority (gross)	6,030	6,323	6,110
22.21 Unobligated balance transferred to other accounts	–94		
22.30 Unobligated balance expiring	–365		
23.90 Total budgetary resources available for obligation	6,757	6,831	6,393
23.95 New obligations	–6,249	–6,548	–6,121

24.40	Unobligated balance available, end of year:			
	Uninvested	508	283	272
New budget authority (gross), detail:				
Current:				
40.00	Appropriation	5,767	5,690	5,457
40.79	Line item veto cancellation		-10	
41.00	Transferred to other accounts	-177		
43.00	Appropriation (total)	5,590	5,680	5,457
50.00	Reappropriation		365	
50.35	Reappropriation rescinded		-365	
53.00	Reappropriation (total)			
Permanent:				
Spending authority from offsetting collections:				
68.00	Offsetting collections (cash)	451	643	653
68.10	Change in orders on hand from Federal sources	-11		
68.90	Spending authority from offsetting collections (total)	440	643	653
70.00	Total new budget authority (gross)	6,030	6,323	6,110
Change in unpaid obligations:				
Unpaid obligations, start of year:				
72.40	Obligated balance: Uninvested	3,316	3,222	3,537
72.95	Orders on hand from Federal sources	316	305	305
72.99	Total unpaid obligations, start of year	3,632	3,527	3,842
73.10	New obligations	6,249	6,548	6,121
73.20	Total outlays (gross)	-6,340	-6,233	-6,308
73.40	Adjustments in expired accounts	-15		
Unpaid obligations, end of year:				
74.40	Obligated balance: Uninvested	3,222	3,537	3,350
74.95	Orders on hand from Federal sources	305	305	305
74.99	Total unpaid obligations, end of year	3,527	3,842	3,655
Outlays (gross), detail:				
86.90	Outlays from new current authority	2,535	2,408	2,314
86.93	Outlays from current balances	3,380	3,182	3,341
86.97	Outlays from new permanent authority	111	643	653
86.98	Outlays from permanent balances	316		
87.00	Total outlays (gross)	6,340	6,233	6,308
Offsets:				
Against gross budget authority and outlays:				
Offsetting collections (cash) from:				
88.40	Non-Federal sources	-22	-47	-29
88.45	Offsetting governmental collections	-429	-596	-624
88.90	Total, offsetting collections (cash)	-451	-643	-653
88.95	Change in orders on hand from Federal sources	11		
Net budget authority and outlays:				
89.00	Budget authority	5,590	5,680	5,457
90.00	Outlays	5,889	5,590	5,655

This appropriation provides for the research and development activities of the National Aeronautics and Space Administration. Funds are included for the construction, maintenance, and operation of programmatic facilities.

Funding for Space Science, Earth Science, Aeronautics and Space Transportation Technology is proposed as part of the Research Fund for America. This proposal highlights the Administration's priority to providing needed and sustained investments in important Federal research programs on a deficit neutral basis. A discussion of the Research Fund for America, and two other funds for the environment and transportation, can be found in Section II of the *Budget* volume.

Performance Objectives

Space Science.—The Space Science program seeks to answer fundamental questions concerning: the galaxy and the universe; the connection between 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 program is comprised of a base program of research and development activities, including research and flight mission

activities, and major flight missions which provide major space-based facilities. In 1997, highlights included the July 4 landing of the Pathfinder spacecraft on Mars, the first Mars landing since the Viking missions in 1976 and the first ever to use air bags to cushion impact on the surface. Shortly after Pathfinder's landing, the Sojourner rover began its own exploration of nearby rocks and other features. The images from both craft were posted to the Internet, where more than 500 million "hits" were recorded by the end of July. The international Cassini mission left Earth bound for Saturn on October 15, 1997. With the European Space Agency's Huygens probe and a high-gain antenna provided by the Italian Space Agency, Cassini will arrive at Saturn July 1, 2004. Also, astronauts flawlessly performed major maintenance and upgrades to the orbiting Hubble Space Telescope, replacing older hardware with two dramatically improved instruments that are helping astronomers probe the universe in greater detail than ever before. This year, Hubble uncovered over 1,000 bright, young star clusters bursting to life in a brief, intense, brilliant "fireworks show" at the heart of a nearby pair of colliding galaxies. The Hubble image of the galactic collision was printed on the front pages of newspapers around the world as well as on the cover of Newsweek magazine. Images captured during Galileo's closest flyby of Europa on February 20 showed features of the Jovian moon, lending credence to the possibility of hidden, subsurface oceans. The findings generated new questions about the possibility of life on Europa. Scientists using the joint European Space Agency/NASA Solar and Heliospheric Observatory (SOHO) spacecraft have discovered "jet streams" or "rivers" of hot, electrically charged plasma flowing beneath the surface of the sun. These new findings will help scientists understand the famous 11-year sunspot cycle and associated increases in solar activity that can disrupt the Earth's power and communications systems.

To capitalize on these enormous successes during the past year, the NASA budget request for FY 1999 once again highlights Space Science. Space Science continues to focus on the Origins program and fundamental questions regarding the creation of the universe and planetary systems and the possibility of life beyond Earth. In addition to planning for the deployment of powerful telescopes to detect Earth-like planets elsewhere in our galaxy, planning has begun for a Europa mission to launch in 2003 to directly observe potential subsurface oceans on Europa, and the Mars Surveyor Program is augmented to enhance the Mars 2001 lander. NASA will also initiate a series of Solar-Terrestrial Probes to track solar phenomena and their impact on the Earth, and initiate mission development for a gamma-ray telescope to understand the final stages of stars' lives and to seek out the most extreme environments in the universe.

Development activities will continue in 1998–1999 on the Advance X-ray Astrophysics Facility (AXAF) in support of a launch in early FY 1999. Development activities continue on the Relativity (Gravity Probe-B) mission, which remains on schedule for launch in 2000. The Space Infrared Telescope Facility (SIRTF) initiates development in April 1998, with launch planned for December 2001. Development activities on the Thermosphere, Ionosphere, Mesosphere Energetics and Dynamics (TIMED) mission began in 1997, with launch planned in 2000. Development activities on the Stratospheric Observatory for Infrared Astronomy (SOFIA) continue to receive support. The Second Hubble Space Telescope (HST) servicing mission in February 1997 provided two new science instruments and other servicing, and the upgraded telescope is providing new insights into our universe by investigating objects in the near-infrared portion of the electromagnetic spectrum. Funding for HST continues to support operations, as well as preparation for the third servicing mission in 1999. Galileo's highly successful tour of Jupiter and its moons has

General and special funds—Continued

SCIENCE, AERONAUTICS AND TECHNOLOGY—Continued

been extended through 1999, with a focus on the moons Europa and Io.

In Explorer missions, the Advanced Composition Explorer (ACE) was launched in August 1997 and development activities continue on the Far Ultraviolet Spectroscopy Explorer (FUSE) for a launch in 1998. Development is also underway for the Microwave Anisotropy Probe (MAP) and Imager for Magnetosphere-to-Aurora Global Exploration (IMAGE) Medium-Class Explorer (MIDEX) missions. Three new Small (SMEX) missions were selected in 1997: the High Energy Spectroscopic Imager (HESSI) is to launch in 2000; the Galaxy Evolution Explorer (GALEX) will launch in 2001; the Two Wide-Angle Neutral-Atom Spectrometers (TWINS) has been selected as a mission of opportunity, to be launched in 2001 or 2003 aboard a currently undesignated U.S. Government mission. These missions emphasize reduced mission costs and accelerated launch schedules.

The Mars Global Surveyor entered Mars orbit in September 1997, and funds are requested for the development of future Mars missions in 1998 and beyond. The third Discovery-class mission, Lunar Prospector, launched in January 1998, the fourth, the Stardust mission, is to be launched in 1999. Two new Discovery missions were selected in 1997: the Comet Nucleus Tour (CONTOUR) to be launched in 2002; and Genesis, a solar wind sample return mission, to be launched in 2001. The New Millennium program is underway to provide flight demonstrations of critical new technologies which will greatly reduce the mass and cost of future science instruments and spacecraft subsystems, while maintaining or improving mission capabilities. Development activities continue on the Deep Space-1 and Deep Space-2 missions, scheduled for launch in July 1998 and January 1999, respectively.

The Space Science program is responsible for Agency-wide core technology development. Space Science is also undertaking an aggressive technology development effort to enable new missions to the outer planets, and to search for Earth-like planets around nearby stars. New technologies are also being pursued to enhance our capability to explore Mars robotically, and perhaps to confirm the past or current presence of life on that planet.

Life and Microgravity Science.—This program uses the microgravity environment of space to conduct basic and applied research to understand the effect of gravity on living systems and to conduct research in the areas of fluid physics, materials science and biotechnology. In addition to conducting basic and applied research, this program provides the opportunity to refine the definition, design, and development of experiment hardware planned for use on the ISS. In FY 1998 five Shuttle missions involving Life and Microgravity Science are planned, including the USMP-4 mission and Neurolab, the final Spacelab series flight. The final two NASA/Mir missions are planned for 1998. The NASA/NIH Neurolab mission will continue the agency's efforts to expand its collaborative activities with the National Institutes of Health and other Federal agencies to maximize the return on science investments. In FY 1999, as assembly of the ISS continues, the program will fly one science mission (STS-95) on a Spacelab carrier with ISS precursor science experiments. The U.S. Laboratory will be launched for ISS mid-year, which will allow Life and Microgravity hardware and experiments to be established aboard the ISS and will begin a new era of research.

Earth Science.—The purpose of NASA's Earth Science (ES) enterprise is to understand the total Earth system and the effects of natural and human-induced changes on the global environment. ES is pioneering the new interdisciplinary field of research called Earth system science, which recognizes that the Earth's land surface, oceans, atmosphere, ice sheets and

biota are both dynamic and highly interactive. Earth system science is an area of research with the potential for immense benefit to the nation, yielding new knowledge and tools for weather forecasting, agriculture, urban and land use planning, and other areas of economic and environmental importance. In concert with other agencies and the global research community, ES is providing the scientific foundation needed for the complex policy choices that lie ahead on the road to sustainable development. ES has established three broad goals to fulfill its purpose: (1) expand scientific knowledge of the Earth system using NASA's unique capabilities from the vantage points of space, aircraft and *in situ* platforms; (2) disseminate information about the Earth system; and, (3) enable productive use of ES science and technology in the public and private sectors.

The Earth Observing System (EOS), the centerpiece of Earth Science, is a program of multiple spacecraft missions (the AM, PM, Chemistry series, Landsat 7, and others) and interdisciplinary science investigations aimed at providing a 15-year data set of key parameters needed to understand global climate change. The first EOS satellite launches will be in 1998. Preceding EOS are a number of individual satellite and Shuttle-based missions which are helping to reveal basic processes. The Upper Atmosphere Research Satellite, launched in 1991, collects data on atmospheric chemistry. The Total Ozone Mapping Spectrometer instrument, launched in 1978 and 1991, measures ozone distribution and depletion. Two total ozone mapping spectrometer instruments were launched in 1996, one on the Japanese Advanced Earth Observing System (ADEOS) mission and the other on a dedicated U.S. Earth probe. France and the U.S. collaborated on the Ocean Topography Experiment (TOPEX/Poseidon), launched in 1992, to study ocean topography and circulation. The NASA scatterometer, also launched on the Japanese ADEOS in 1996, provided 10 months of ocean winds data. The failure of Japan's ADEOS satellite meant the loss of the NASA scatterometer (as well as one of the two TOMS). NASA will launch QUIKSCAT in November 1998 to minimize the loss of ocean winds data. In 1997 the Tropical Rainfall Measuring Mission (TRMM) began measuring tropical precipitation. Complementing EOS will be a series of small, rapid development Earth System Science Pathfinders (ESSP). Data from ES will be captured from the satellites, processed into useful data products, and broadly distributed by the EOS Data and Information System (EOSDIS). In FY 1997, NASA initiated a data purchase program designed to acquire data sets from private sources that are necessary to accomplish the broad research goals of Earth system science. The ES science program is essential to the discovery of new concepts and to the design of future missions. The ES research is coordinated through the U.S. Global Change Research Program (USGCRP), the Committee on the Environment and Natural Resources (CENR) Subcommittee on Global Change Research, and the various boards and committees at the National Academy of Sciences.

Aeronautics and Space Transportation Technology.—The goal of this Enterprise is to pioneer long-term high risk, high payoff technologies that are effectively transferred to industry and government. This Enterprise has developed dramatic technology goals which are grouped into three areas: global civil aviation, revolutionary technology leaps, and access to space. These technology goals reflect the national priorities for aeronautics and space.

Within Aeronautics, the High-Speed Research program continued to develop technologies to establish the viability of an economical and environmentally sound High Speed Civil Transport. This vehicle—if built by U.S. industry—could promote U.S. leadership in long-range commercial air travel markets of the next century. Development of this vehicle could offer returns of \$200 billion in sales and 140,000 high-quality

jobs for the United States. In FY 1997, a two-dimensional bifurcated inlet concept and a center-stick flight controller concept were selected for further research and evaluation. In FY 1999, funding is included to extend High-Speed Research to mitigate risk in two critical areas—propulsion and airframe materials and structures. In FY 1997, the Advanced Subsonic Technology program completed the set of National Airspace System operational scenarios in support of aviation capacity research. In FY 1998, the Aging Aircraft element will be completed with the field demonstrations on non-destructive evaluation prototypes that can locate cracks, corrosion and disbonds in aircraft fuselages. Funding is included to continue development of high payoff technologies that enable a safe, highly productive global air transportation system with reduced environmental impact.

The High Performance Computing and Communications program demonstrated significant reductions in cost and time in performing three-dimensional aerodynamic simulations that reduced the development time for an extremely fuel-efficient, high pressure compressor by 50%. In FY 1998, this program's NASA Research & Education Network (NREN) begins activities supporting development of the Next Generation Internet (NGI) to increase quality, security and certainty of Internet transmissions on a network capable of 1,000 times the capacity of the 1996 baseline. This initiative will involve several Federal agencies, including the Departments of Defense, Energy and Commerce, the National Science Foundation, and NASA. In FY 1997, research activities within the research and technology base developed innovative concepts, explored new areas of theory and created the computational models of the aeronautical principles that lead to more efficient design and operation of advanced aerospace systems. In FY 1998, the safety research will be initiated in support of the Administration's Aviation Safety initiative and in FY 1999, the research and technology base will continue to develop advanced concepts and technologies that will allow safe, economical and environmentally compatible air transportation systems.

The Space Transportation Technology program is developing new technologies aimed at revitalizing access to space. The technologies targeted will reduce launch costs dramatically over the next decade, and increase the safety and reliability of current and future generation launch systems. In 1997, the Reusable Launch Vehicle (RLV) program continued to pursue technology development, design and business planning activities in support of next-generation reusable systems, on the X-33 and X-34 flight demonstrators. The X-33 and X-34 have completed their critical design reviews and initiated fabrication of flight hardware. Funding for the RLV program in 1998 and 1999 is included to continue X-33 and X-34 technology development, hardware fabrication and test, in preparation for the flight of the technology demonstrators, both of which will fly in 1999. The Advanced Space Transportation Program (ASTP) is developing key technologies to dramatically reduce space transportation costs across the mission spectrum. ASTP will focus on technological advances with the potential of reducing launch costs beyond RLV goals, as well as on developing technology required to support NASA strategic needs that are not currently addressed by RLV. Industry-led Future Space Launch trade studies in 1999 and 2000 will support an end-of-the-decade decision called for in the National Space Transportation Policy on the development of an operational launch system to reduce NASA's launch costs. \$760 million in placeholder funds are set aside in the outyears to pursue existing, planned or new vehicles in response to this decision.

The Commercial Technology Program's focus in FY 1997 has been to invest 10–15 percent of the NASA R&D budget in commercial partnerships with industry. Based on experience to date, these commercial partnerships are expected to

increase the return on the government's R&D investment, allowing NASA to do more with limited funds, and strengthen the international competitiveness of key industry sectors. In FY 1997 and 1998, the program will emphasize increasing commercial partnerships with industry and continue to refine and expand a technology and partnership database.

Mission Communication Services.—The primary goal of this operational program is to provide highly reliable, cost-effective telecommunications services in support of NASA's science and aeronautics programs. Other U.S. agencies, international space-faring agencies, and U.S. commercial enterprises are supported on a reimbursable basis. Ground network, space network, and mission systems are provided under this program in support of planetary, deep space, Earth-orbiting, aeronautics, and suborbital systems.

Academic Programs.—The goal of this program is to promote excellence in America's education system through enhancing and expanding scientific and technological competence. NASA's education programs span from the elementary through graduate levels, and are directed at students and faculty. The goal of the Minority University Research Program is to expand opportunities for talented students from underrepresented groups who are pursuing degrees in science and engineering, and to strengthen the research capabilities of minority universities and colleges. The range of activities conducted under this program will continue to capture the interest of all students in science and technology, develop talented students at the undergraduate and graduate levels, provide research opportunities for students and faculty members at NASA centers, and strengthen and enhance the research capabilities of the nation's colleges and universities.

Object Classification (in millions of dollars)

Identification code 80-0110-0-1-999	1997 actual	1998 est.	1999 est.
Direct obligations:			
22.0 Transportation of things	4	4	4
23.1 Rental payments to GSA	1	1	
23.2 Rental payments to others			1
23.3 Communications, utilities, and miscellaneous charges	81	82	76
24.0 Printing and reproduction	5	5	5
25.1 Advisory and assistance services	669	680	630
25.2 Other services	807	820	760
25.3 Purchases of goods and services from Government accounts	259	263	244
25.4 Operation and maintenance of facilities	67	68	63
25.5 Research and development contracts	3,000	3,050	2,824
25.7 Operation and maintenance of equipment	133	135	125
26.0 Supplies and materials	61	62	57
31.0 Equipment	199	202	187
32.0 Land and structures	37	38	35
41.0 Grants, subsidies, and contributions	486	495	457
99.0 Subtotal, direct obligations	5,809	5,905	5,468
99.0 Reimbursable obligations	440	643	653
99.9 Total obligations	6,249	6,548	6,121

MISSION SUPPORT

For necessary expenses, not otherwise provided for, in carrying out mission support for human space flight programs and science, aeronautical, and technology programs, including research operations and support; space communications activities including operations, production and services; maintenance; construction of facilities including repair, rehabilitation, and modification of facilities, minor construction of new facilities and additions to existing facilities, facility planning and design, environmental compliance and restoration, and acquisition or condemnation of real property, as authorized by law; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901–5902; travel expenses; purchase, lease, charter, maintenance, and operation of mission and administrative aircraft; not to exceed \$35,000 for official reception and representation expenses; and purchase (not to exceed 33 for replacement only) and hire of passenger motor vehicles;

General and special funds—Continued

MISSION SUPPORT—Continued

[\$2,433,200,000] \$2,476,600,000, to remain available until September 30, [1999] 2000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998.)

Program and Financing (in millions of dollars)

Identification code 80-0112-0-1-999	1997 actual	1998 est.	1999 est.
Obligations by program activity:			
Direct program:			
00.01 Safety, reliability and quality assurance	41	37	36
00.02 Space communication services	287	210	179
00.03 Research and program management	2,059	2,093	2,095
00.04 Construction of facilities	166	153	150
01.00 Total direct program	2,553	2,493	2,460
09.01 Reimbursable program	133	122	132
10.00 Total obligations	2,686	2,615	2,592
Budgetary resources available for obligation:			
21.40 Unobligated balance available, start of year:			
Uninvested	151	160	100
22.00 New budget authority (gross)	2,695	2,555	2,609
23.90 Total budgetary resources available for obligation	2,846	2,715	2,709
23.95 New obligations	-2,686	-2,615	-2,592
24.40 Unobligated balance available, end of year:			
Uninvested	160	100	117
New budget authority (gross), detail:			
Current:			
40.00 Appropriation	2,562	2,433	2,477
Permanent:			
Spending authority from offsetting collections:			
68.00 Offsetting collections (cash)	106	122	132
68.10 Change in orders on hand from Federal sources	27		
68.90 Spending authority from offsetting collections (total)	133	122	132
70.00 Total new budget authority (gross)	2,695	2,555	2,609
Change in unpaid obligations:			
Unpaid obligations, start of year:			
72.40 Obligated balance: Uninvested	460	526	704
72.95 Orders on hand from Federal sources	79	106	106
72.99 Total unpaid obligations, start of year	539	632	810
73.10 New obligations	2,686	2,615	2,592
73.20 Total outlays (gross)	-2,583	-2,437	-2,432
73.40 Adjustments in expired accounts	-11		
Unpaid obligations, end of year:			
74.40 Obligated balance: Uninvested	526	704	862
74.95 Orders on hand from Federal sources	106	106	106
74.99 Total unpaid obligations, end of year	632	810	968
Outlays (gross), detail:			
86.90 Outlays from new current authority	1,989	1,931	1,966
86.93 Outlays from current balances	479	383	336
86.97 Outlays from new permanent authority	76	122	132
86.98 Outlays from permanent balances	39		
87.00 Total outlays (gross)	2,583	2,437	2,432
Offsets:			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.40 Non-Federal sources	-6	-31	-13
88.45 Offsetting governmental collections	-100	-91	-119
88.90 Total, offsetting collections (cash)	-106	-122	-132
88.95 Change in orders on hand from Federal sources	-27		
Net budget authority and outlays:			
89.00 Budget authority	2,562	2,433	2,477
90.00 Outlays	2,478	2,315	2,300

This appropriation provides funding for mission support and includes: safety, reliability and quality assurance activities

supporting agency programs; space communication services for NASA programs; salaries and related expenses in support of research in NASA field installations; design, repair, rehabilitation and modification of institutional facilities and construction of new institutional facilities; and other operations activities supporting conduct of agency programs.

Performance Objectives

Safety, Reliability and Quality Assurance.—The goal of this program is to assure the safety and quality of NASA missions through the development, implementation and oversight of Agency-wide safety, engineering, reliability, maintainability, and quality assurance policies and procedures.

Space Communication Services.—Activities included in this program provide for the tracking, telemetry, command, data acquisition, communications and data processing required by NASA flight projects. In 1997–1999, the networks and support systems that accomplish these tasks will continue operation. Completion of the upgrade of the Tracking and Data Relay Satellite (TDRS) White Sands Complex and early development of the TDRS Replenishment Spacecraft occurred and will continue in 1997 and 1998. Development of a remote ground terminal at Guam which will extend network capability by providing for coverage of the zone of exclusion will be completed in FY 1998. Development of the replenishment Tracking and Data Relay satellites is ongoing. The first satellite will be launched in late FY 1999. The NASA Integrated Services Network consolidated all NASA wide area network systems in FY 1997.

Research and Program Management.—This activity provides for the salaries, travel support, other personnel expenses of the entire NASA civil service workforce, and includes vital support to the physical plant at the Centers and at NASA Headquarters.

Construction of Facilities.—This activity provides for: facility construction activities to preserve NASA's core infrastructure; environmental compliance and restoration activities, design of facilities projects, and advanced planning related to future facilities needs. In 1997–1999, activities in support of discrete projects to repair and modernize the basic infrastructure and institutional facilities at NASA centers will be conducted, as well as activities in support of environmental compliance and restoration requirements.

Object Classification (in millions of dollars)

Identification code 80-0112-0-1-999	1997 actual	1998 est.	1999 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent	1,214	1,216	1,218
11.3 Other than full-time permanent	22	23	22
11.5 Other personnel compensation	24	24	23
11.8 Special personal services payments	8	8	9
11.9 Total personnel compensation	1,268	1,271	1,272
12.1 Civilian personnel benefits	252	253	253
13.0 Benefits for former personnel	31	31	15
21.0 Travel and transportation of persons	45	46	47
22.0 Transportation of things	6	3	3
23.1 Rental payments to GSA	17	16	16
23.2 Rental payments to others	1	1	1
23.3 Communications, utilities, and miscellaneous charges	71	66	65
24.0 Printing and reproduction	8	7	7
25.1 Advisory and assistance services	41	38	37
25.2 Other services	328	307	300
25.3 Purchases of goods and services from Government accounts	26	24	24
25.4 Operation and maintenance of facilities	63	59	58
25.5 Research and development contracts	116	108	106
25.6 Medical care	3	3	3
25.7 Operation and maintenance of equipment	64	60	58
26.0 Supplies and materials	23	22	21
31.0 Equipment	35	33	32
32.0 Land and structures	152	142	139
41.0 Grants, subsidies, and contributions	3	3	3

99.0	Subtotal, direct obligations	2,553	2,493	2,460
99.0	Reimbursable obligations	133	122	132
99.9	Total obligations	2,686	2,615	2,592

Personnel Summary

Identification code 80-0112-0-1-999	1997 actual	1998 est.	1999 est.	
Direct:				
1001	Total compensable workyears: Full-time equivalent employment	19,793	19,274	18,434
Reimbursable:				
2001	Total compensable workyears: Full-time equivalent employment	90	90	85

RESEARCH AND DEVELOPMENT

Program and Financing (in millions of dollars)

Identification code 80-0108-0-1-999	1997 actual	1998 est.	1999 est.
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Budgetary resources available for obligation:				
21.40	Unobligated balance available, start of year: Uninvested	1		
22.30	Unobligated balance expiring	-1		
23.90	Total budgetary resources available for obligation			

New budget authority (gross), detail:				
Spending authority from offsetting collections:				
68.00	Offsetting collections (cash)	26	34	
68.10	Change in orders on hand from Federal sources	-26	-34	
68.90	Spending authority from offsetting collections (total)			

Change in unpaid obligations:				
Unpaid obligations, start of year:				
72.40	Obligated balance: Uninvested	230	104	
72.95	Orders on hand from Federal sources	60	34	
72.99	Total unpaid obligations, start of year	290	138	
73.20	Total outlays (gross)	-127	-138	
73.40	Adjustments in expired accounts	-25		
Unpaid obligations, end of year:				
74.40	Obligated balance: Uninvested	104		
74.95	Orders on hand from Federal sources	34		
74.99	Total unpaid obligations, end of year	138		

Outlays (gross), detail:				
86.93	Outlays from current balances	127	138	

Offsets:				
Against gross budget authority and outlays:				
88.45	Offsetting collections (cash) from: Offsetting governmental collections	-26	-34	
88.95	Change in orders on hand from Federal sources	26	34	

Net budget authority and outlays:				
89.00	Budget authority			
90.00	Outlays	101	104	

Since FY 1995 NASA's Research and Development activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

SPACE FLIGHT, CONTROL AND DATA COMMUNICATIONS

Program and Financing (in millions of dollars)

Identification code 80-0105-0-1-252	1997 actual	1998 est.	1999 est.
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Budgetary resources available for obligation:				
21.40	Unobligated balance available, start of year: Uninvested	4		
22.30	Unobligated balance expiring	-4		

23.90	Total budgetary resources available for obligation			
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New budget authority (gross), detail:

Spending authority from offsetting collections:				
68.00	Offsetting collections (cash)	3	2	
68.10	Change in orders on hand from Federal sources	-3	-2	
68.90	Spending authority from offsetting collections (total)			

Change in unpaid obligations:

Unpaid obligations, start of year:				
72.40	Obligated balance: Uninvested	171	56	
72.95	Orders on hand from Federal sources	5	2	
72.99	Total unpaid obligations, start of year	176	58	
73.20	Total outlays (gross)	-95	-58	
73.40	Adjustments in expired accounts	-23		
Unpaid obligations, end of year:				
74.40	Obligated balance: Uninvested	56		
74.95	Orders on hand from Federal sources	2		
74.99	Total unpaid obligations, end of year	58		

Outlays (gross), detail:

86.93	Outlays from current balances	95	58	
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Offsets:

Against gross budget authority and outlays:				
88.40	Offsetting collections (cash) from: Non-Federal sources	-3	-2	
88.95	Change in orders on hand from Federal sources	3	2	

Net budget authority and outlays:

89.00	Budget authority			
90.00	Outlays	92	56	

Since FY 1995 NASA's Space Flight, Control and Data Communications activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

CONSTRUCTION OF FACILITIES

Program and Financing (in millions of dollars)

Identification code 80-0107-0-1-999	1997 actual	1998 est.	1999 est.
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Obligations by program activity:				
00.01	Supporting activity	9	26	
00.02	Space transportation	8	8	
00.03	Mission to Planet Earth	1		
00.04	Aeronautical research and technology	28	20	
10.00	Total obligations	46	54	

Budgetary resources available for obligation:				
Unobligated balance available, start of year:				
21.40	Uninvested	98	54	
21.41	U.S. Securities: Par value	2	2	
21.99	Total unobligated balance, start of year	100	56	
23.90	Total budgetary resources available for obligation	100	56	
23.95	New obligations	-46	-54	
Unobligated balance available, end of year:				
24.40	Uninvested	54		
24.41	U.S. Securities: Par value	2		
24.99	Total unobligated balance, end of year	56		

Change in unpaid obligations:

Unpaid obligations, start of year: Obligated balance:				
72.40	Uninvested	147	68	52
73.10	New obligations	46	54	
73.20	Total outlays (gross)	-122	-70	-52
73.40	Adjustments in expired accounts	-1		
Unpaid obligations, end of year: Obligated balance:				
74.40	Uninvested	68	52	

Outlays (gross), detail:

86.93	Outlays from current balances	122	70	52
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General and special funds—Continued

CONSTRUCTION OF FACILITIES—Continued

Program and Financing (in millions of dollars)—Continued

Identification code 80-0107-0-1-999	1997 actual	1998 est.	1999 est.
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays	122	70	52

Since FY 1995 NASA's Construction of Facilities activities have been performed in Human Space Flight; Science, Aeronautics and Technology; and Mission Support. This account shows spending from balances prior to the account restructuring.

Object Classification (in millions of dollars)

Identification code 80-0107-0-1-999	1997 actual	1998 est.	1999 est.
25.2 Other services	5	5	
25.4 Operation and maintenance of facilities	1	1	
32.0 Land and structures	40	48	
99.9 Total obligations	46	54	

RESEARCH AND PROGRAM MANAGEMENT

Program and Financing (in millions of dollars)

Identification code 80-0103-0-1-999	1997 actual	1998 est.	1999 est.
Change in unpaid obligations:			
72.40 Unpaid obligations, start of year: Obligated balance: Uninvested	10	1	
73.20 Total outlays (gross)	-2		
73.40 Adjustments in expired accounts	-7	-1	
74.40 Unpaid obligations, end of year: Obligated balance: Uninvested	1		
Outlays (gross), detail:			
86.93 Outlays from current balances	2		
Net budget authority and outlays:			
89.00 Budget authority			
90.00 Outlays	2		

Since FY 1995 NASA's Research and Program Management activities have been performed in Mission Support. 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, **[\$18,300,000]** \$20,000,000. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998.)

Program and Financing (in millions of dollars)

Identification code 80-0109-0-1-252	1997 actual	1998 est.	1999 est.
Obligations by program activity:			
10.00 Total obligations	17	18	20
Budgetary resources available for obligation:			
22.00 New budget authority (gross)	17	18	20
23.95 New obligations	-17	-18	-20
New budget authority (gross), detail:			
40.00 Appropriation	17	18	20
Change in unpaid obligations:			
72.40 Unpaid obligations, start of year: Obligated balance: Uninvested	3	2	2

73.10 New obligations	17	18	20
73.20 Total outlays (gross)	-17	-18	-20
73.40 Adjustments in expired accounts	-1		
74.40 Unpaid obligations, end of year: Obligated balance: Uninvested	2	2	2

Outlays (gross), detail:

86.90 Outlays from new current authority	15	16	17
86.93 Outlays from current balances	2	2	2
87.00 Total outlays (gross)	17	18	20

Net budget authority and outlays:

89.00 Budget authority	17	18	20
90.00 Outlays	17	18	20

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

Object Classification (in millions of dollars)

Identification code 80-0109-0-1-252	1997 actual	1998 est.	1999 est.
11.1 Personnel compensation: Full-time permanent	12	14	16
12.1 Civilian personnel benefits	3	3	3
21.0 Travel and transportation of persons	1	1	1
25.2 Other services	1		
99.9 Total obligations	17	18	20

Personnel Summary

Identification code 80-0109-0-1-252	1997 actual	1998 est.	1999 est.
1001 Total compensable workyears: Full-time equivalent employment	187	198	210

Trust Funds

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

Unavailable Collections (in millions of dollars)

Identification code 80-8978-0-7-503	1997 actual	1998 est.	1999 est.
Balance, start of year:			
01.99 Balance, start of year			
Receipts:			
02.01 Earnings on investments: Science, Space and Technology Education, Trust Fund	1	1	1
Appropriation:			
05.01 Science, space, and technology education trust fund	-2	-1	-1
07.99 Total balance, end of year			

Program and Financing (in millions of dollars)

Identification code 80-8978-0-7-503	1997 actual	1998 est.	1999 est.
Obligations by program activity:			
10.00 Total obligations (object class 41.0)	1		
Budgetary resources available for obligation:			
Unobligated balance available, start of year:			
U.S. Securities:			
21.41 Par value	16	16	17
21.42 Unrealized discounts			1
21.99 Total unobligated balance, start of year	16	16	18
22.00 New budget authority (gross)	2	1	1
23.90 Total budgetary resources available for obligation	18	17	19
23.95 New obligations	-1		
Unobligated balance available, end of year:			
U.S. Securities:			
24.41 Par value	16	17	17
24.42 Unrealized discounts		1	1
24.99 Total unobligated balance, end of year	16	18	18
New budget authority (gross), detail:			
60.27 Appropriation (trust fund, indefinite)	2	1	1

Change in unpaid obligations:			
73.10	New obligations	1	
73.20	Total outlays (gross)	-2	-1
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Outlays (gross), detail:			
86.97	Outlays from new permanent authority	2	1
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Net budget authority and outlays:			
89.00	Budget authority	2	1
90.00	Outlays	2	1

ADMINISTRATIVE PROVISIONS

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, when any activity has been initiated by the incurrence of obligations for construction of facilities as authorized by law, such amount available for such activity shall remain available until expended. This provision does not apply to the amounts appropriated in "Mission support" pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

Notwithstanding the limitation on the availability of funds appropriated for "Human space flight", "Science, aeronautics and technology", or "Mission support" by this appropriations Act, the amounts appropriated for construction of facilities shall remain available until September 30, [2000] 2001.

Notwithstanding the limitation on the availability of funds appropriated for "Mission support" and "Office of Inspector General",

amounts made available by this Act for personnel and related costs and travel expenses of the National Aeronautics and Space Administration shall remain available until September 30, [1998] 1999 and may be used to enter into contracts for training, investigations, costs associated with personnel relocation, and for other services, to be provided during the next fiscal year.

[Of the funds provided to the National Aeronautics and Space Administration in this Act, the Administrator shall by November 1, 1998, make available no less than \$400,000 for a study by the National Research Council, with an interim report to be completed by June 1, 1998, that evaluates, in terms of the potential impact on the Space Station's assembly schedule, budget, and capabilities, the engineering challenges posed by extravehicular activity (EVA) requirements, United States and non-United States space launch requirements, the potential need to upgrade or replace equipment and components after assembly complete, and the requirement to decommission and disassemble the facility.]

NASA shall develop a revised appropriation structure for submission in the Fiscal Year 2000 budget request consisting of two basic appropriations (the Human Space Flight Appropriation and the Science, Aeronautics and Technology Appropriation) with a separate (third) appropriation for the Office of the Inspector General. The appropriations shall each include the planned full costs (direct and indirect costs) of NASA's related activities and allow NASA to shift civil service salaries, benefits and support between and/or among appropriations or accounts, as required, for the safe, timely, and successful accomplishment of NASA missions. (Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1998.)