

# NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

## Federal Funds

### SCIENCE

For necessary expenses, not otherwise provided for, in the conduct and support of science research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$5,589,400,000]** \$5,302,500,000, to remain available until September 30, **[2017: Provided,** That the formulation and development costs (with development cost as defined under section 30104 of title 51, United States Code) for the James Webb Space Telescope shall not exceed \$8,000,000,000: *Provided further,* That should the individual identified under subsection (c)(2)(E) of section 30104 of title 51, United States Code, as responsible for the James Webb Space Telescope determine that the development cost of the program is likely to exceed that limitation, the individual shall immediately notify the Administrator and the increase shall be treated as if it meets the 30 percent threshold described in subsection (f) of section 30104: *Provided further,* That, of the amounts provided, \$175,000,000 is for an orbiter with a lander to meet the science goals for the Jupiter Europa mission as outlined in the most recent planetary science decadal survey: *Provided further,* That the National Aeronautics and Space Administration shall use the Space Launch System as the launch vehicle for the Jupiter Europa mission, plan for a launch no later than 2022, and include in the fiscal year 2017 budget the 5-year funding profile necessary to achieve these goals **]** 2018. (*Science Appropriations Act, 2016.*)

#### Program and Financing (in millions of dollars)

Identification code 080-0120-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Science (Direct) .....	5,274	5,589	5,302
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	277	273	273
1021 Recoveries of prior year unpaid obligations .....	27		
1050 Unobligated balance (total) .....	304	273	273
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	5,245	5,589	5,302
1120 Appropriations transferred to other accts CECR [080-0130] .....	-2		
1160 Appropriation, discretionary (total) .....	5,243	5,589	5,302
1930 Total budgetary resources available .....	5,547	5,862	5,575
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	273	273	273
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	3,175	3,253	3,379
3010 Obligations incurred, unexpired accounts .....	5,274	5,589	5,302
3011 Obligations incurred, expired accounts .....	19		
3020 Outlays (gross) .....	-5,172	-5,463	-5,424
3040 Recoveries of prior year unpaid obligations, unexpired .....	-27		
3041 Recoveries of prior year unpaid obligations, expired .....	-16		
3050 Unpaid obligations, end of year .....	3,253	3,379	3,257
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	3,175	3,253	3,379
3200 Obligated balance, end of year .....	3,253	3,379	3,257
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	5,243	5,589	5,302
Outlays, gross:			
4010 Outlays from new discretionary authority .....	2,277	2,740	2,599
4011 Outlays from discretionary balances .....	2,895	2,723	2,825
4020 Outlays, gross (total) .....	5,172	5,463	5,424
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4033 Non-Federal sources .....	-1		

Additional offsets against gross budget authority only:				
4052	Offsetting collections credited to expired accounts .....	1		
4070	Budget authority, net (discretionary) .....	5,243	5,589	5,302
4080	Outlays, net (discretionary) .....	5,171	5,463	5,424
4180	Budget authority, net (total) .....	5,243	5,589	5,302
4190	Outlays, net (total) .....	5,171	5,463	5,424

#### Summary of Budget Authority and Outlays (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority .....	5,243	5,589	5,302
Outlays .....	5,171	5,463	5,424
Legislative proposal, subject to PAYGO:			
Budget Authority .....			298
Outlays .....			146
Total:			
Budget Authority .....	5,243	5,589	5,600
Outlays .....	5,171	5,463	5,570

The Science appropriation provides for NASA's science mission, which is comprised of the agency's Earth and space science programs: Earth Science, Planetary Science, Heliophysics, the James Webb Space Telescope, and Astrophysics. These programs, which are managed by the Science Mission Directorate, seek to answer fundamental questions concerning the ways in which Earth's climate is changing; the comparison of Earth with other planets in the solar system and around other stars; the connections among the Sun, Earth, and heliosphere; and the origin and evolution of planetary systems, the galaxy, and the universe, including the origin and distribution of life in the universe. Program objectives are pursued through robotic flight missions, ground-based scientific research and data analysis, and the development of new technologies for future missions.

The Science appropriation provides for all of the research, development, operations, salaries and related expenses, and other general and administrative activities required to execute the programs within this account. Costs include labor, travel, procurement, and test and fabrication costs. Performance goals associated with these activities are addressed in NASA's detailed budget request.

#### Object Classification (in millions of dollars)

Identification code 080-0120-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
Personnel compensation:			
11.1 Full-time permanent .....	240	241	249
11.3 Other than full-time permanent .....	6	4	4
11.5 Other personnel compensation .....	2	2	2
11.9 Total personnel compensation .....	248	247	255
12.1 Civilian personnel benefits .....	70	73	75
21.0 Travel and transportation of persons .....	23	23	24
22.0 Transportation of things .....	11	11	12
23.2 Rental payments to others .....	4	4	5
23.3 Communications, utilities, and miscellaneous charges .....	3	3	4
24.0 Printing and reproduction .....	2	2	2
25.1 Advisory and assistance services .....	83	85	87
25.2 Other services from non-Federal sources .....	199	200	202
25.3 Other goods and services from Federal sources .....	147	150	153
25.4 Operation and maintenance of facilities .....	15	16	17
25.5 Research and development contracts .....	3,696	3,987	3,662
25.7 Operation and maintenance of equipment .....	77	79	81
26.0 Supplies and materials .....	31	31	31
31.0 Equipment .....	47	48	49
41.0 Grants, subsidies, and contributions .....	618	630	643
99.9 Total new obligations .....	5,274	5,589	5,302

SCIENCE—Continued  
Employment Summary

Identification code 080-0120-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	1,908	1,894	1,875

SCIENCE  
(Legislative proposal, subject to PAYGO)

Program and Financing (in millions of dollars)

Identification code 080-0120-4-1-252	2015 actual	2016 est.	2017 est.
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Obligations by program activity:			
0001 Science (Direct) .....			298
0900 Total new obligations (object class 25.5) .....			298

Budgetary resources:			
Budget authority:			
Appropriations, mandatory:			
1200 Appropriation .....			298
1930 Total budgetary resources available .....			298

Change in obligated balance:			
Unpaid obligations:			
3010 Obligations incurred, unexpired accounts .....			298
3020 Outlays (gross) .....			-146
3050 Unpaid obligations, end of year .....			152
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			152

Budget authority and outlays, net:			
Mandatory:			
4090 Budget authority, gross .....			298
Outlays, gross:			
4100 Outlays from new mandatory authority .....			146
4180 Budget authority, net (total) .....			298
4190 Outlays, net (total) .....			146

AERONAUTICS

For necessary expenses, not otherwise provided for, in the conduct and support of aeronautics research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$640,000,000]** \$634,500,000, to remain available until September 30, **[2017]** 2018. (Science Appropriations Act, 2016.)

Program and Financing (in millions of dollars)

Identification code 080-0126-0-1-402	2015 actual	2016 est.	2017 est.
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Obligations by program activity:			
0001 Aeronautics (Direct) .....	653	640	635

Budgetary resources:			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	18	13	13
1021 Recoveries of prior year unpaid obligations .....	6		
1050 Unobligated balance (total) .....	24	13	13
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	651	640	635
1120 Appropriations transferred to other acct [080-0130] .....	-9		
1160 Appropriation, discretionary (total) .....	642	640	635
1930 Total budgetary resources available .....	666	653	648
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	13	13	13

Change in obligated balance:

Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	253	322	379
3010 Obligations incurred, unexpired accounts .....	653	640	635
3011 Obligations incurred, expired accounts .....	3		
3020 Outlays (gross) .....	-578	-583	-638
3040 Recoveries of prior year unpaid obligations, unexpired .....	-6		
3041 Recoveries of prior year unpaid obligations, expired .....	-3		
3050 Unpaid obligations, end of year .....	322	379	376
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	253	322	379
3200 Obligated balance, end of year .....	322	379	376

Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	642	640	635
Outlays, gross:			
4010 Outlays from new discretionary authority .....	358	313	311
4011 Outlays from discretionary balances .....	220	270	327
4020 Outlays, gross (total) .....	578	583	638
4180 Budget authority, net (total) .....	642	640	635
4190 Outlays, net (total) .....	578	583	638

Summary of Budget Authority and Outlays (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority .....	642	640	635
Outlays .....	578	583	638
Legislative proposal, subject to PAYGO:			
Budget Authority .....			56
Outlays .....			27
Total:			
Budget Authority .....	642	640	691
Outlays .....	578	583	665

This appropriation provides for the full costs associated with NASA's Aeronautics Research mission which aims to expand the boundaries of aeronautical knowledge for the benefit of the nation and the broad aeronautics community. The mission is managed by NASA's Aeronautics Research Mission Directorate, and consists of the following integrated research programs: Airspace Operations and Safety, Advanced Air Vehicles, Integrated Aviation Systems, and Transformative Aeronautics Concepts. Full costs of these programs cover all of the research; development; operations; salaries and related expenses; and other general and administrative activities required to execute the programs. Costs include labor, travel, procurement, test, and fabrication costs. Performance goals associated with these activities are addressed in NASA's detailed budget request.

Object Classification (in millions of dollars)

Identification code 080-0126-0-1-402	2015 actual	2016 est.	2017 est.
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Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	145	149	156
11.3 Other than full-time permanent .....	3	3	3
11.9 Total personnel compensation .....	148	152	159
12.1 Civilian personnel benefits .....	50	45	47
21.0 Travel and transportation of persons .....	7	7	8
22.0 Transportation of things .....	1	1	1
23.3 Communications, utilities, and miscellaneous charges .....	3	3	3
25.1 Advisory and assistance services .....	11	11	12
25.2 Other services from non-Federal sources .....	30	30	32
25.3 Other goods and services from Federal sources .....	8	8	8
25.4 Operation and maintenance of facilities .....	33	33	34
25.5 Research and development contracts .....	235	223	200
25.7 Operation and maintenance of equipment .....	36	36	37
26.0 Supplies and materials .....	14	14	14
31.0 Equipment .....	31	31	33
32.0 Land and structures .....	2	2	2
41.0 Grants, subsidies, and contributions .....	44	44	45
99.9 Total new obligations .....	653	640	635

**Employment Summary**

Identification code 080-0126-0-1-402	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	1,283	1,248	1,255

**AERONAUTICS**

(Legislative proposal, subject to PAYGO)

**Program and Financing** (in millions of dollars)

Identification code 080-0126-4-1-402	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Aeronautics (Direct) .....			56
0900 Total new obligations (object class 25.5) .....			56
<b>Budgetary resources:</b>			
Budget authority:			
Appropriations, mandatory:			
1200 Appropriation .....			56
1930 Total budgetary resources available .....			56
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3010 Obligations incurred, unexpired accounts .....			56
3020 Outlays (gross) .....			-27
3050 Unpaid obligations, end of year .....			29
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			29
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross .....			56
Outlays, gross:			
4100 Outlays from new mandatory authority .....			27
4180 Budget authority, net (total) .....			56
4190 Outlays, net (total) .....			27

**21ST CENTURY CLEAN TRANSPORTATION PLAN INVESTMENTS, NASA**

This account provides support for research and development for revolutionary low carbon emission aircraft, including associated transportation systems, as part of a multiagency effort to enable a 21st century clean transportation system.

**21ST CENTURY CLEAN TRANSPORTATION PLAN INVESTMENTS, NASA**

(Legislative proposal, subject to PAYGO)

**Program and Financing** (in millions of dollars)

Identification code 080-5900-4-2-402	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Aeronautics .....			100
0900 Total new obligations (object class 25.5) .....			100
<b>Budgetary resources:</b>			
Budget authority:			
Appropriations, mandatory:			
1201 Appropriation (special or trust fund) .....			100
1930 Total budgetary resources available .....			100
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3010 Obligations incurred, unexpired accounts .....			100
3020 Outlays (gross) .....			-49
3050 Unpaid obligations, end of year .....			51
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			51
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross .....			100
Outlays, gross:			
4100 Outlays from new mandatory authority .....			49

4180 Budget authority, net (total) .....	100
4190 Outlays, net (total) .....	49

**SPACE TECHNOLOGY**

For necessary expenses, not otherwise provided for, in the conduct and support of space technology research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$686,500,000]** \$690,600,000, to remain available until September 30, **[2017: Provided, That \$133,000,000 shall be for the RESTORE satellite servicing program for completion of pre-formulation and initiation of formulation activities for RESTORE and such funds shall not support activities solely needed for the asteroid redirect mission] 2018. (Science Appropriations Act, 2016.)**

**Program and Financing** (in millions of dollars)

Identification code 080-0131-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Space Technology (Direct) .....	575	687	691
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	21	48	48
1021 Recoveries of prior year unpaid obligations .....	6		
1050 Unobligated balance (total) .....	27	48	48
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	596	687	691
1930 Total budgetary resources available .....	623	735	739
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	48	48	48
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	344	378	501
3010 Obligations incurred, unexpired accounts .....	575	687	691
3011 Obligations incurred, expired accounts .....	1		
3020 Outlays (gross) .....	-535	-564	-675
3040 Recoveries of prior year unpaid obligations, unexpired .....	-6		
3041 Recoveries of prior year unpaid obligations, expired .....	-1		
3050 Unpaid obligations, end of year .....	378	501	517
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	344	378	501
3200 Obligated balance, end of year .....	378	501	517
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	596	687	691
Outlays, gross:			
4010 Outlays from new discretionary authority .....	247	240	242
4011 Outlays from discretionary balances .....	288	324	433
4020 Outlays, gross (total) .....	535	564	675
4180 Budget authority, net (total) .....	596	687	691
4190 Outlays, net (total) .....	535	564	675

**Summary of Budget Authority and Outlays** (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority .....	596	687	691
Outlays .....	535	564	675
Legislative proposal, subject to PAYGO:			
Budget Authority .....			136
Outlays .....			48
Total:			
Budget Authority .....	596	687	827
Outlays .....	535	564	723

This appropriation provides for the full costs associated with program activities under the NASA Space Technology Mission Directorate which

SPACE TECHNOLOGY—Continued

conducts research and development in space technologies serving multiple customers within NASA, private industry, academia, and other government agencies. The full costs provide for all of the research; development; operations; salaries and related expenses; and other general and administrative activities required to execute the programs within this account. Costs include labor, travel, procurement, and those associated with fabrication, tests and flight demonstrations. The Space Technology appropriation also supports the operations of the NASA Office of the Chief Technologist.

The programs within Space Technology enable new missions by drawing on talent from the NASA workforce, academia, small businesses and the broader space enterprise to deliver innovative solutions that dramatically improve technological capabilities for NASA and the Nation. The appropriation funds several programs, including Agency Technology and Innovation, Small Business Innovative Research (SBIR), Small Business Technology Transfer (STTR), Space Technology Research and Development. Performance goals associated with these activities are addressed in NASA's detailed budget request.

Object Classification (in millions of dollars)

Identification code 080-0131-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1 Full-time permanent .....	91	83	87
11.3 Other than full-time permanent .....	1	1	1
11.9 Total personnel compensation .....	92	84	88
12.1 Civilian personnel benefits .....	27	26	27
21.0 Travel and transportation of persons .....	5	5	5
22.0 Transportation of things .....	2	2	2
25.1 Advisory and assistance services .....	23	24	25
25.2 Other services from non-Federal sources .....	31	32	33
25.3 Other goods and services from Federal sources .....	9	9	9
25.4 Operation and maintenance of facilities .....	2	2	2
25.5 Research and development contracts .....	339	491	487
25.7 Operation and maintenance of equipment .....	6	7	8
26.0 Supplies and materials .....	3	3	3
31.0 Equipment .....	2	2	2
41.0 Grants, subsidies, and contributions .....	34		
99.9 Total new obligations .....	575	687	691

Employment Summary

Identification code 080-0131-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	754	721	722

SPACE TECHNOLOGY

(Legislative proposal, subject to PAYGO)

Program and Financing (in millions of dollars)

Identification code 080-0131-4-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Space Technology (Direct) .....			136
0900 Total new obligations (object class 25.5) .....			136
<b>Budgetary resources:</b>			
<b>Budget authority:</b>			
<b>Appropriations, mandatory:</b>			
1200 Appropriation .....			136
1930 Total budgetary resources available .....			136
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3010 Obligations incurred, unexpired accounts .....			136
3020 Outlays (gross) .....			-48
3050 Unpaid obligations, end of year .....			88
<b>Memorandum (non-add) entries:</b>			
3200 Obligated balance, end of year .....			88

Budget authority and outlays, net:

<b>Mandatory:</b>			
4090 Budget authority, gross .....			136
<b>Outlays, gross:</b>			
4100 Outlays from new mandatory authority .....			48
4180 Budget authority, net (total) .....			136
4190 Outlays, net (total) .....			48

EXPLORATION

For necessary expenses, not otherwise provided for, in the conduct and support of exploration research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$4,030,000,000]** \$3,163,900,000, to remain available until September 30, **[2017: Provided,** That not less than \$1,270,000,000 shall be for the Orion Multi-Purpose Crew Vehicle: *Provided further,* That not less than \$2,000,000,000 shall be for the Space Launch System (SLS) launch vehicle, which shall have a lift capability not less than 130 metric tons and which shall have core elements and an enhanced upper stage developed simultaneously: *Provided further,* That of the amounts provided for SLS, not less than \$85,000,000 shall be for enhanced upper stage development: *Provided further,* That \$410,000,000 shall be for exploration ground systems: *Provided further,* That the National Aeronautics and Space Administration shall provide to the Committees on Appropriations of the House of Representatives and the Senate, concurrent with the annual budget submission, a 5-year budget profile and funding projection that adheres to a 70 percent Joint Confidence Level and is consistent with the Key Decision Point C (KDP-C) for the SLS and with the management agreement contained in the KDP-C for the Orion Multi-Purpose Crew Vehicle: *Provided further,* That \$350,000,000 shall be for exploration research and development.] **2018. (Science Appropriations Act, 2016.)**

Program and Financing (in millions of dollars)

Identification code 080-0124-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Exploration (Direct) .....	4,469	4,030	3,164
<b>Budgetary resources:</b>			
<b>Unobligated balance:</b>			
1000 Unobligated balance brought forward, Oct 1 .....	105	58	58
1021 Recoveries of prior year unpaid obligations .....	55		
1050 Unobligated balance (total) .....	160	58	58
<b>Budget authority:</b>			
<b>Appropriations, discretionary:</b>			
1100 Appropriation .....	4,357	4,030	3,164
1121 Appropriations transferred from other acct CECR [080-0130] .....	4		
1121 Appropriations transferred from other acct [080-0115] .....	6		
1160 Appropriation, discretionary (total) .....	4,367	4,030	3,164
1930 Total budgetary resources available .....	4,527	4,088	3,222
<b>Memorandum (non-add) entries:</b>			
1941 Unexpired unobligated balance, end of year .....	58	58	58
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,923	1,502	1,772
3010 Obligations incurred, unexpired accounts .....	4,469	4,030	3,164
3011 Obligations incurred, expired accounts .....	13		
3020 Outlays (gross) .....	-4,837	-3,760	-3,526
3040 Recoveries of prior year unpaid obligations, unexpired .....	-55		
3041 Recoveries of prior year unpaid obligations, expired .....	-11		
3050 Unpaid obligations, end of year .....	1,502	1,772	1,410
<b>Memorandum (non-add) entries:</b>			
3100 Obligated balance, start of year .....	1,923	1,502	1,772
3200 Obligated balance, end of year .....	1,502	1,772	1,410
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
4000 Budget authority, gross .....	4,367	4,030	3,164
<b>Outlays, gross:</b>			
4010 Outlays from new discretionary authority .....	2,869	2,418	1,898

4011	Outlays from discretionary balances .....	1,968	1,342	1,628
4020	Outlays, gross (total) .....	4,837	3,760	3,526
	Offsets against gross budget authority and outlays:			
	Offsetting collections (collected) from:			
4033	Non-Federal sources .....	-1		
	Additional offsets against gross budget authority only:			
4052	Offsetting collections credited to expired accounts .....	1		
4070	Budget authority, net (discretionary) .....	4,367	4,030	3,164
4080	Outlays, net (discretionary) .....	4,836	3,760	3,526
4180	Budget authority, net (total) .....	4,367	4,030	3,164
4190	Outlays, net (total) .....	4,836	3,760	3,526

**Summary of Budget Authority and Outlays** (in millions of dollars)

	2015 actual	2016 est.	2017 est.
Enacted/requested:			
Budget Authority .....	4,367	4,030	3,164
Outlays .....	4,836	3,760	3,526
Legislative proposal, subject to PAYGO:			
Budget Authority .....			173
Outlays .....			104
Total:			
Budget Authority .....	4,367	4,030	3,337
Outlays .....	4,836	3,760	3,630

This appropriation provides for costs associated with NASA's development of systems and capabilities required for human exploration of space. The systems and capabilities include launch and crew vehicles for missions beyond low Earth orbit, technologies and countermeasures to keep astronauts healthy and functional during deep space missions, and technologies to reduce launch mass and the cost of deep space missions. The full costs provide for the research; development; operations; salaries and related expenses; and other general and administrative activities required to execute the programs within this account. Costs include labor, travel, procurement, test and fabrication costs. Performance goals associated with these activities are addressed in NASA's detailed budget request.

NASA's human space exploration programs include Space Launch System, Orion, Exploration Ground Systems, Advanced Exploration Systems, and Human Research. The programs are managed by NASA's Human Exploration and Operations Mission Directorate, which also manages programs in the Space Operations account.

**Object Classification** (in millions of dollars)

Identification code 080-0124-0-1-252	2015 actual	2016 est.	2017 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	356	366	380
11.3 Other than full-time permanent .....	3	2	2
11.5 Other personnel compensation .....	2	1	1
11.8 Special personal services payments .....	1	1	1
11.9 Total personnel compensation .....	362	370	384
12.1 Civilian personnel benefits .....	106	115	119
13.0 Benefits for former personnel .....		1	1
21.0 Travel and transportation of persons .....	16	16	16
22.0 Transportation of things .....	7	7	8
23.3 Communications, utilities, and miscellaneous charges .....	3	3	4
25.1 Advisory and assistance services .....	313	319	325
25.2 Other services from non-Federal sources .....	39	39	40
25.3 Other goods and services from Federal sources .....	47	47	48
25.4 Operation and maintenance of facilities .....	111	113	115
25.5 Research and development contracts .....	3,173	2,703	1,804
25.7 Operation and maintenance of equipment .....	105	107	109
26.0 Supplies and materials .....	21	22	22
31.0 Equipment .....	61	62	62
32.0 Land and structures .....	33	33	33
41.0 Grants, subsidies, and contributions .....	72	73	74
99.9 Total new obligations .....	4,469	4,030	3,164

**Employment Summary**

Identification code 080-0124-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	3,037	3,010	2,996

**EXPLORATION**  
(Legislative proposal, subject to PAYGO)

**Program and Financing** (in millions of dollars)

Identification code 080-0124-4-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Exploration (Direct) .....			173
0900 Total new obligations (object class 25.5) .....			173
<b>Budgetary resources:</b>			
Budget authority:			
Appropriations, mandatory:			
1200 Appropriation .....			173
1930 Total budgetary resources available .....			173
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3010 Obligations incurred, unexpired accounts .....			173
3020 Outlays (gross) .....			-104
3050 Unpaid obligations, end of year .....			69
Memorandum (non-add) entries:			
3200 Obligated balance, end of year .....			69
<b>Budget authority and outlays, net:</b>			
Mandatory:			
4090 Budget authority, gross .....			173
Outlays, gross:			
4100 Outlays from new mandatory authority .....			104
4180 Budget authority, net (total) .....			173
4190 Outlays, net (total) .....			104

**EDUCATION**

For necessary expenses, not otherwise provided for, in the conduct and support of aerospace and aeronautical education research and development activities, including research, development, operations, support, and services; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$115,000,000]** \$100,100,000, to remain available until September 30, **[2017]**, of which \$18,000,000 shall be for the Experimental Program to Stimulate Competitive Research and \$40,000,000 shall be for the National Space Grant College program **[2018]**. (*Science Appropriations Act, 2016.*)

**Program and Financing** (in millions of dollars)

Identification code 080-0128-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Education (Direct) .....	111	115	100
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	25	34	34
1021 Recoveries of prior year unpaid obligations .....	1		
1050 Unobligated balance (total) .....	26	34	34
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	119	115	100
1930 Total budgetary resources available .....	145	149	134
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	34	34	34
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	158	159	129
3010 Obligations incurred, unexpired accounts .....	111	115	100
3011 Obligations incurred, expired accounts .....	1		

EDUCATION—Continued  
Program and Financing—Continued

Identification code 080-0128-0-1-252	2015 actual	2016 est.	2017 est.
3020 Outlays (gross) .....	-109	-145	-114
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1		
3041 Recoveries of prior year unpaid obligations, expired .....	-1		
3050 Unpaid obligations, end of year .....	159	129	115
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	158	159	129
3200 Obligated balance, end of year .....	159	129	115
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	119	115	100
Outlays, gross:			
4010 Outlays from new discretionary authority .....	14	24	21
4011 Outlays from discretionary balances .....	95	121	93
4020 Outlays, gross (total) .....	109	145	114
4180 Budget authority, net (total) .....	119	115	100
4190 Outlays, net (total) .....	109	145	114

This appropriation provides for the full costs associated with NASA's education activities within the Office of Education. NASA's Education program works to educate and inspire students at all levels to pursue careers in the fields of science, technology, engineering, and mathematics (STEM). The full costs provide for all of the research; development; operations; salaries and related expenses; and other general and administrative activities required to execute the programs within this account. Costs include labor, travel, procurement, test and fabrication costs. Performance goals associated with these activities are addressed in NASA's detailed budget request.

The Budget continues NASA's efforts to consolidate its education efforts into a more focused portfolio funded through the Office of Education. Additionally, the Budget provides \$25 million to NASA's Science Mission Directorate to support cooperative agreements that will connect NASA science to learners of all ages. NASA will continue to work closely with other agencies and stakeholders to reach a wider group of students and teachers and to support key areas identified by the Federal STEM Education 5-Year Strategic Plan.

NASA's Education appropriation funds a portfolio of activities that provides opportunities to a diverse audience of educators and learners, including women, minorities, and persons with disabilities. NASA will continue to improve STEM education through an internal competitive process that invests in NASA's most effective education programs. NASA's investments will include support for Minority Serving Institutions and community colleges, which generally serve a high proportion of minority students, preparing them for study at a four-year institution.

Object Classification (in millions of dollars)

Identification code 080-0128-0-1-252	2015 actual	2016 est.	2017 est.
Direct obligations:			
Personnel compensation:			
11.1 Full-time permanent .....	6	7	7
11.8 Special personal services payments .....	1		
11.9 Total personnel compensation .....	7	7	7
12.1 Civilian personnel benefits .....	2	2	2
25.1 Advisory and assistance services .....	7	7	7
25.2 Other services from non-Federal sources .....	9	9	9
25.5 Research and development contracts .....	8	9	9
25.7 Operation and maintenance of equipment .....	4	4	4
41.0 Grants, subsidies, and contributions .....	74	77	62
99.9 Total new obligations .....	111	115	100

Employment Summary

Identification code 080-0128-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	52	60	60

SAFETY, SECURITY AND MISSION SERVICES

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics, space technology, exploration, space operations and education research and development activities, including research, development, operations, support, and services; maintenance and repair, facility planning and design; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; not to exceed \$63,000 for official reception and representation expenses; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$2,768,600,000] \$2,836,800,000**, to remain available until September 30, **[2017] 2018**. (*Science Appropriations Act, 2016.*)

Program and Financing (in millions of dollars)

Identification code 080-0122-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Cross Agency Support (Direct) .....	2,759	2,769	2,837
0801 Cross Agency Support (Reimbursable) .....	2,379	2,692	2,543
0900 Total new obligations .....	5,138	5,461	5,380
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	212	249	270
1021 Recoveries of prior year unpaid obligations .....	31		
1050 Unobligated balance (total) .....	243	249	270
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	2,758	2,769	2,837
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	2,168	2,713	2,724
1701 Change in uncollected payments, Federal sources .....	218		
1750 Spending auth from offsetting collections, disc (total) .....	2,386	2,713	2,724
1900 Budget authority (total) .....	5,144	5,482	5,561
1930 Total budgetary resources available .....	5,387	5,731	5,831
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	249	270	451
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,820	1,859	1,720
3010 Obligations incurred, unexpired accounts .....	5,138	5,461	5,380
3011 Obligations incurred, expired accounts .....	13		
3020 Outlays (gross) .....	-5,051	-5,600	-5,675
3040 Recoveries of prior year unpaid obligations, unexpired .....	-31		
3041 Recoveries of prior year unpaid obligations, expired .....	-30		
3050 Unpaid obligations, end of year .....	1,859	1,720	1,425
Uncollected payments:			
3060 Uncollected pymts, Fed sources, brought forward, Oct 1 .....	-988	-1,105	-1,105
3070 Change in uncollected pymts, Fed sources, unexpired .....	-218		
3071 Change in uncollected pymts, Fed sources, expired .....	101		
3090 Uncollected pymts, Fed sources, end of year .....	-1,105	-1,105	-1,105
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	832	754	615
3200 Obligated balance, end of year .....	754	615	320

Budget authority and outlays, net:

Discretionary:			
4000 Budget authority, gross .....	5,144	5,482	5,561
Outlays, gross:			
4010 Outlays from new discretionary authority .....	3,254	4,385	4,449
4011 Outlays from discretionary balances .....	1,797	1,215	1,226
4020 Outlays, gross (total) .....	5,051	5,600	5,675
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	-2,026	-2,466	-2,476
4033 Non-Federal sources .....	-232	-247	-248
4040 Offsets against gross budget authority and outlays (total) ....	-2,258	-2,713	-2,724

Additional offsets against gross budget authority only:			
4050	Change in uncollected pymts, Fed sources, unexpired .....	-218	
4052	Offsetting collections credited to expired accounts .....	90	
4060	Additional offsets against budget authority only (total) .....	-128	
4070	Budget authority, net (discretionary) .....	2,758	2,769 2,837
4080	Outlays, net (discretionary) .....	2,793	2,887 2,951
4180	Budget authority, net (total) .....	2,758	2,769 2,837
4190	Outlays, net (total) .....	2,793	2,887 2,951

This appropriation provides for NASA's supporting functions associated with the science, aeronautics, space technology, education, space operations, exploration, and construction and environmental compliance and restoration activities of the agency. This account provides for the operations and maintenance; salaries and related expenses; and other general and administrative activities supporting the programs within the Agency's six mission accounts.

Safety, Security, and Mission Services provides a strategic focus for managing agency mission support functions and some of NASA's unique research facilities.

Center Management and Operations includes the basic costs to manage and operate each of the nine NASA field centers and to maintain the technical capabilities required to support the Agency's Mission. This Budget is not directly identified or aligned to a specific program or project requirement, but is necessary for efficient and effective administration and operation of the NASA Centers.

Agency Management and Operations provides for the management and oversight of Agency programs, the performance of Agency-wide activities and functions, and the maintenance of unique research capabilities and facilities. Responsibilities include the determination of programs and projects; establishment of management policies, procedures, and performance criteria; evaluation of progress; and the coordination and integration of all phases of the Agency's mission.

**Object Classification** (in millions of dollars)

Identification code 080-0122-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1	Full-time permanent .....	916	950 989
11.3	Other than full-time permanent .....	2	19 19
11.5	Other personnel compensation .....	27	24 26
11.9	Total personnel compensation .....	945	993 1,034
12.1	Civilian personnel benefits .....	211	290 302
13.0	Benefits for former personnel .....	2	3 4
21.0	Travel and transportation of persons .....	2	2 2
22.0	Transportation of things .....	4	4 4
23.1	Rental payments to GSA .....	34	35 35
23.2	Rental payments to others .....	3	3 4
23.3	Communications, utilities, and miscellaneous charges .....	66	66 67
24.0	Printing and reproduction .....	4	4 4
25.1	Advisory and assistance services .....	212	185 185
25.2	Other services from non-Federal sources .....	274	280 282
25.3	Other goods and services from Federal sources .....	44	45 45
25.4	Operation and maintenance of facilities .....	248	153 153
25.5	Research and development contracts .....	176	155 158
25.6	Medical care .....	6	8 8
25.7	Operation and maintenance of equipment .....	432	441 445
26.0	Supplies and materials .....	18	19 19
31.0	Equipment .....	35	36 37
32.0	Land and structures .....	25	27 27
41.0	Grants, subsidies, and contributions .....	18	20 22
99.0	Direct obligations .....	2,759	2,769 2,837
99.0	Reimbursable obligations .....	2,379	2,692 2,543
99.9	Total new obligations .....	5,138	5,461 5,380

**Employment Summary**

Identification code 080-0122-0-1-252	2015 actual	2016 est.	2017 est.
1001	Direct civilian full-time equivalent employment .....	7,474	7,796 7,775

2001	Reimbursable civilian full-time equivalent employment .....	421	324 317
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**CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION**

For necessary expenses for construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law, and environmental compliance and restoration, **[\$388,900,000] \$419,800,000**, to remain available until September 30, **[2021] 2022: Provided**, That proceeds from leases deposited into this account shall be available for a period of 5 years **[to the extent and in amounts as provided in annual appropriations Acts: Provided further**, That such proceeds referred to in the preceding proviso shall be available for obligation for fiscal year 2016 in an amount not to exceed **\$9,470,300]**: **Provided further**, That each annual budget request shall include an annual estimate of gross receipts and collections and proposed use of all funds collected pursuant to section 20145 of title 51, United States Code. (*Science Appropriations Act, 2016.*)

**Program and Financing** (in millions of dollars)

Identification code 080-0130-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001	Construction and Environmental Compliance and Restoration (Direct) .....	492	389 420
0801	Construction and Environmental Compliance and Restoration (Reimbursable) .....	3	7 7
0900	Total new obligations .....	495	396 427
<b>Budgetary resources:</b>			
<b>Unobligated balance:</b>			
1000	Unobligated balance brought forward, Oct 1 .....	203	162 160
1021	Recoveries of prior year unpaid obligations .....	19	
1050	Unobligated balance (total) .....	222	162 160
<b>Budget authority:</b>			
<b>Appropriations, discretionary:</b>			
1100	Appropriation .....	419	389 420
1120	Appropriations transferred to other acct Exploration [080-0124] .....	-4	
1121	Appropriations transferred from other acct Space Operations [080-0115] .....	1	
1121	Appropriations transferred from other acct Aeronautics [080-0126] .....	9	
1121	Appropriations transferred from other acct Science [080-0120] .....	2	
1160	Appropriation, discretionary (total) .....	427	389 420
<b>Spending authority from offsetting collections, discretionary:</b>			
1700	Collected .....	8	5 5
1900	Budget authority (total) .....	435	394 425
1930	Total budgetary resources available .....	657	556 585
<b>Memorandum (non-add) entries:</b>			
1941	Unexpired unobligated balance, end of year .....	162	160 158
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3000	Unpaid obligations, brought forward, Oct 1 .....	804	735 591
3010	Obligations incurred, unexpired accounts .....	495	396 427
3020	Outlays (gross) .....	-545	-540 -427
3040	Recoveries of prior year unpaid obligations, unexpired .....	-19	
3050	Unpaid obligations, end of year .....	735	591 591
<b>Memorandum (non-add) entries:</b>			
3100	Obligated balance, start of year .....	804	735 591
3200	Obligated balance, end of year .....	735	591 591
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
4000	Budget authority, gross .....	435	394 425
<b>Outlays, gross:</b>			
4010	Outlays from new discretionary authority .....	19	59 64
4011	Outlays from discretionary balances .....	526	481 363
4020	Outlays, gross (total) .....	545	540 427
<b>Offsets against gross budget authority and outlays:</b>			
<b>Offsetting collections (collected) from:</b>			
4033	Non-Federal sources .....	-8	-5 -5
4180	Budget authority, net (total) .....	427	389 420
4190	Outlays, net (total) .....	537	535 422

CONSTRUCTION AND ENVIRONMENTAL COMPLIANCE AND RESTORATION—Continued

This appropriation provides for NASA's construction and environmental compliance and restoration activities, and allows the agency to use the net proceeds from Enhanced Use Leases for maintenance, capital revitalization, and improvement of real property assets and related personal property at NASA Centers under the authority of section 20145 of the National Aeronautics and Space Act (51 U.S.C. 20145). The costs provide for all of the research; development; operations; design, repair, rehabilitation, modification of facilities, and construction of new facilities; and other general and administrative activities required to execute the programs within this account.

Object Classification (in millions of dollars)

Identification code 080-0130-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
23.3 Communications, utilities, and miscellaneous charges .....	1	1	2
25.1 Advisory and assistance services .....	19	19	20
25.2 Other services from non-Federal sources .....	38	38	40
25.3 Other goods and services from Federal sources .....	16	16	16
25.4 Operation and maintenance of facilities .....	37	37	38
25.5 Research and development contracts .....	18	18	20
25.6 Medical care .....	1	1	1
25.7 Operation and maintenance of equipment .....	1	1	1
32.0 Land and structures .....	361	258	282
99.0 Direct obligations .....	492	389	420
99.0 Reimbursable obligations .....	3	7	7
99.9 Total new obligations .....	495	396	427

SPACE OPERATIONS

For necessary expenses, not otherwise provided for, in the conduct and support of space operations research and development activities, including research, development, operations, support and services; space flight, spacecraft control and communications activities, including operations, production, and services; maintenance and repair, facility planning and design; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by sections 5901 and 5902 of title 5, United States Code; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **[\$5,029,200,000] \$5,075,800,000**, to remain available until September 30, **[2017] 2018**. (*Science Appropriations Act, 2016*.)

Program and Financing (in millions of dollars)

Identification code 080-0115-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Space Operations (Direct) .....	3,828	5,029	5,076
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	134	169	169
1001 Discretionary unobligated balance brought fwd, Oct 1 .....	2		
1021 Recoveries of prior year unpaid obligations .....	37		
1050 Unobligated balance (total) .....	171	169	169
Budget authority:			
Appropriations, discretionary:			
1100 Appropriation .....	3,828	5,029	5,076
1120 Appropriations transferred to other accts CECR [080-0130] .....	-1		
1120 Appropriations transferred to other acct [080-0124] .....	-6		
1160 Appropriation, discretionary (total) .....	3,821	5,029	5,076
Appropriations, mandatory:			
1221 Appropriations transferred from other acct [011-5512] ....	2		
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	3		
1900 Budget authority (total) .....	3,826	5,029	5,076
1930 Total budgetary resources available .....	3,997	5,198	5,245
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	169	169	169
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1,490	1,590	1,471

3010 Obligations incurred, unexpired accounts .....	3,828	5,029	5,076
3011 Obligations incurred, expired accounts .....	18		
3020 Outlays (gross) .....	-3,700	-5,148	-5,102
3040 Recoveries of prior year unpaid obligations, unexpired .....	-37		
3041 Recoveries of prior year unpaid obligations, expired .....	-9		
3050 Unpaid obligations, end of year .....	1,590	1,471	1,445
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	1,490	1,590	1,471
3200 Obligated balance, end of year .....	1,590	1,471	1,445
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	3,824	5,029	5,076
Outlays, gross:			
4010 Outlays from new discretionary authority .....	2,204	3,771	3,812
4011 Outlays from discretionary balances .....	1,496	1,377	1,290
4020 Outlays, gross (total) .....	3,700	5,148	5,102
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4030 Federal sources .....	-1		
4033 Non-Federal sources .....	-4		
4040 Offsets against gross budget authority and outlays (total) ....	-5		
Additional offsets against gross budget authority only:			
4052 Offsetting collections credited to expired accounts .....	2		
4070 Budget authority, net (discretionary) .....	3,821	5,029	5,076
4080 Outlays, net (discretionary) .....	3,695	5,148	5,102
Mandatory:			
4090 Budget authority, gross .....	2		
4180 Budget authority, net (total) .....	3,823	5,029	5,076
4190 Outlays, net (total) .....	3,695	5,148	5,102

This appropriation provides for the full costs associated with the space operations activities of the agency. The full costs include all labor, travel, procurement, test and fabrication costs to execute these programs, which provide for all of the research; development; operations; salaries and related expenses; and other general and administrative activities supporting the programs within this account. Major themes within the Space Operations account include the International Space Station, Space Transportation and Space and Flight Support. Performance goals associated with these activities are addressed in NASA's detailed budget request.

The International Space Station is a complex of research laboratories in low Earth orbit in which America and its international partners, including Russia, Canada, Europe, and Japan, conduct unique scientific and technological investigations in a microgravity environment. The objective of the International Space Station is to support human space exploration and conduct science experiments and technology development unique to the on-orbit attributes of the facility.

Space and Flight Support is comprised of multiple capabilities that provide on-going customer support for a wide range of services. The programs include Space Communications and Navigation, Human Space Flight Operations, Launch Services, Rocket Propulsion Testing, and the multi-user 21st Century Space Launch Complex. They are provided to a wide range of customers including NASA, other U.S. Federal agencies, foreign governments, and commercial customers. The programs are managed by NASA's Human Exploration and Operations Mission Directorate, which also manages programs in the Exploration account.

The Space Transportation theme's objective is to transport U.S. astronauts and cargo safely back and forth to America's orbiting national laboratory, ISS. This newly created theme combines the Commercial Crew Program and ISS Crew and Cargo. Maintaining the ISS requires a fleet of vehicles and launch locations to transport astronauts, science experiments, critical supplies, maintenance hardware, replenish propellant, and dispose of waste. The Commercial Crew Program partners with the U.S. private sector to develop and operate safe, reliable, and affordable crew transportation to low-Earth orbit. Within ISS Crew and Cargo Transportation, NASA currently purchases cargo transportation to the ISS under the CRS contracts with Orbital ATK and SpaceX and crew transportation from the Russian Space Agency, Roscosmos.



**Object Classification** (in millions of dollars)

Identification code 080-0115-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1 Full-time permanent .....	258	253	262
11.3 Other than full-time permanent .....	3	2	2
11.5 Other personnel compensation .....	2	1	1
11.9 Total personnel compensation .....	263	256	265
12.1 Civilian personnel benefits .....	76	78	81
21.0 Travel and transportation of persons .....	11	12	12
22.0 Transportation of things .....	1,141	1,164	1,187
23.2 Rental payments to others .....	2	2	3
23.3 Communications, utilities, and miscellaneous charges .....	3	3	2
24.0 Printing and reproduction .....	1	1	1
25.1 Advisory and assistance services .....	71	72	73
25.2 Other services from non-Federal sources .....	95	97	99
25.3 Other goods and services from Federal sources .....	25	25	25
25.4 Operation and maintenance of facilities .....	49	50	51
25.5 Research and development contracts .....	1,769	2,911	2,912
25.7 Operation and maintenance of equipment .....	271	276	282
26.0 Supplies and materials .....	16	16	16
31.0 Equipment .....	16	17	18
41.0 Grants, subsidies, and contributions .....	19	49	49
99.9 Total new obligations .....	3,828	5,029	5,076

**Employment Summary**

Identification code 080-0115-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	2,046	2,027	2,017

**OFFICE OF INSPECTOR GENERAL**

For necessary expenses of the Office of Inspector General in carrying out the Inspector General Act of 1978, **[\$37,400,000]** \$38,100,000, of which \$500,000 shall remain available until September 30, **[2017]** 2018. (Science Appropriations Act, 2016.)

**Program and Financing** (in millions of dollars)

Identification code 080-0109-0-1-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Office of Inspector General (Direct) .....	36	38	38
0801 Office of Inspector General (Reimbursable) .....	1	1	1
0900 Total new obligations .....	37	39	39
<b>Budgetary resources:</b>			
<b>Unobligated balance:</b>			
1000 Unobligated balance brought forward, Oct 1 .....		1	1
<b>Budget authority:</b>			
<b>Appropriations, discretionary:</b>			
1100 Appropriation .....	37	38	38
<b>Spending authority from offsetting collections, discretionary:</b>			
1700 Collected .....	1	1	1
1900 Budget authority (total) .....	38	39	39
1930 Total budgetary resources available .....	38	40	40
<b>Memorandum (non-add) entries:</b>			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3000 Unpaid obligations, brought forward, Oct 1 .....	4	3	2
3010 Obligations incurred, unexpired accounts .....	37	39	39
3020 Outlays (gross) .....	-38	-40	-38
3050 Unpaid obligations, end of year .....	3	2	3
<b>Memorandum (non-add) entries:</b>			
3100 Obligated balance, start of year .....	4	3	2
3200 Obligated balance, end of year .....	3	2	3
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
<b>Outlays, gross:</b>			
4000 Budget authority, gross .....	38	39	39
<b>Outlays from new discretionary authority:</b>			
4010 Outlays from new discretionary authority .....	34	39	36
4011 Outlays from discretionary balances .....	4	1	2
4020 Outlays, gross (total) .....	38	40	38

Offsets against gross budget authority and outlays:

	2015 actual	2016 est.	2017 est.
<b>Offsetting collections (collected) from:</b>			
4030 Federal sources .....	-1	-1	-1
4180 Budget authority, net (total) .....	37	38	38
4190 Outlays, net (total) .....	37	39	37

This appropriation provides for the full costs associated with the operations of the NASA Office of Inspector General. The mission of the Office of Inspector General is to conduct audits and investigations of agency activities to prevent and detect fraud, waste, abuse, and mismanagement. The Inspector General keeps the Administrator and the Congress informed of problems and deficiencies in agency programs and operations.

**Object Classification** (in millions of dollars)

Identification code 080-0109-0-1-252	2015 actual	2016 est.	2017 est.
<b>Direct obligations:</b>			
11.1 Personnel compensation: Full-time permanent .....	22	24	24
12.1 Civilian personnel benefits .....	8	8	8
21.0 Travel and transportation of persons .....	1	1	1
25.2 Other services from non-Federal sources .....	3	3	3
25.3 Other goods and services from Federal sources .....	1	2	2
99.0 Direct obligations .....	35	38	38
99.0 Reimbursable obligations .....	1	1	1
99.5 Adjustment for rounding .....	1		
99.9 Total new obligations .....	37	39	39

**Employment Summary**

Identification code 080-0109-0-1-252	2015 actual	2016 est.	2017 est.
1001 Direct civilian full-time equivalent employment .....	187	188	189
2001 Reimbursable civilian full-time equivalent employment .....	7	7	7

**SCIENCE, AERONAUTICS, AND EXPLORATION**

**Program and Financing** (in millions of dollars)

Identification code 080-0114-0-1-999	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0001 Science, Aeronautics, and Exploration (Direct) .....	1		
0900 Total new obligations (object class 32.0) .....	1		
<b>Budgetary resources:</b>			
<b>Unobligated balance:</b>			
1000 Unobligated balance brought forward, Oct 1 .....	2	1	1
1930 Total budgetary resources available .....	2	1	1
<b>Memorandum (non-add) entries:</b>			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
<b>Unpaid obligations:</b>			
3000 Unpaid obligations, brought forward, Oct 1 .....	1	1	1
3010 Obligations incurred, unexpired accounts .....	1		
3020 Outlays (gross) .....	-1		
3050 Unpaid obligations, end of year .....	1	1	1
<b>Memorandum (non-add) entries:</b>			
3100 Obligated balance, start of year .....	1	1	1
3200 Obligated balance, end of year .....	1	1	1
<b>Budget authority and outlays, net:</b>			
<b>Discretionary:</b>			
<b>Outlays, gross:</b>			
4011 Outlays from discretionary balances .....	1		
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....	1		

NASA's Science, Aeronautics and Exploration account formerly included Science, Aeronautics Research, Exploration Systems and Cross Agency Support Programs. Beginning in 2009, Science, Aeronautics, Exploration, Education and Cross Agency Support were split into five separate appro-

SCIENCE, AERONAUTICS, AND EXPLORATION—Continued

priation accounts. The Science, Aeronautics, and Exploration account shows spending from balances prior to the account restructuring.

HUMAN SPACE FLIGHT

Program and Financing (in millions of dollars)

Identification code 080-0111-0-1-252	2015 actual	2016 est.	2017 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....		1	1
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	1		
1900 Budget authority (total) .....	1		
1930 Total budgetary resources available .....	1	1	1
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	7	7	
3020 Outlays (gross) .....		-7	
3050 Unpaid obligations, end of year .....	7		
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	7	7	
3200 Obligated balance, end of year .....	7		
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	1		
Outlays, gross:			
4011 Outlays from discretionary balances .....		7	
Offsets against gross budget authority and outlays:			
Offsetting collections (collected) from:			
4033 Non-Federal sources .....	-1		
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....	-1	7	

NASA's Human Space Flight account formerly included the International Space Station; Space Shuttle Payload and Expendable Launch Vehicle Support; Human Exploration and Development of Space Investments and Support; Space Communications and Data Systems; and Safety, Mission Assurance and Engineering. Beginning in 2004, Safety, Mission Assurance, and Engineering was allocated as an indirect charge to all programs and all other programs (along with the Crosscutting Technologies portion of the Aerospace Technology Enterprise) were rolled into the Space Flight Capabilities account. In 2005, the Space Flight Capabilities account was renamed the Exploration Capabilities account. In 2009, the Exploration Capabilities account was renamed Space Operations. The Human Space Flight account shows spending from balances prior to the account restructuring.

SCIENCE, AERONAUTICS AND TECHNOLOGY

Program and Financing (in millions of dollars)

Identification code 080-0110-0-1-999	2015 actual	2016 est.	2017 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	1	1	1
1930 Total budgetary resources available .....	1	1	1
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1	1	1
3050 Unpaid obligations, end of year .....	1	1	1
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	1	1	1
3200 Obligated balance, end of year .....	1	1	1

4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			

NASA's Science, Aeronautics and Technology account formerly included Space Science, Biological and Physical Research, Earth Science, Aerospace Technology, and Education. Beginning in 2004, Space Science, Biological and Physical Research, Earth Science, the Aeronautics portion of Aerospace Technology, and Education were rolled into the Science, Aeronautics and Exploration account. These programs are now funded by the Aeronautics, Education, Science, and Exploration accounts. The Science, Aeronautics, and Technology account shows spending from balances prior to the account restructuring.

MISSION SUPPORT

Program and Financing (in millions of dollars)

Identification code 080-0112-0-1-999	2015 actual	2016 est.	2017 est.
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....		1	1
1021 Recoveries of prior year unpaid obligations .....	1		
1050 Unobligated balance (total) .....	1	1	1
1930 Total budgetary resources available .....	1	1	1
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	1	1	1
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	1		
3040 Recoveries of prior year unpaid obligations, unexpired .....	-1		
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	1		
4180 Budget authority, net (total) .....			
4190 Outlays, net (total) .....			

NASA's Mission Support account formerly included Research and Program Management and Construction of Facilities. The Mission Support account shows spending from residual construction of facilities balances from prior to 2004.

WORKING CAPITAL FUND

Program and Financing (in millions of dollars)

Identification code 080-4546-0-4-252	2015 actual	2016 est.	2017 est.
<b>Obligations by program activity:</b>			
0801 Working Capital Fund (Reimbursable) .....	420	433	433
<b>Budgetary resources:</b>			
Unobligated balance:			
1000 Unobligated balance brought forward, Oct 1 .....	11	10	37
1050 Unobligated balance (total) .....	11	10	37
Budget authority:			
Spending authority from offsetting collections, discretionary:			
1700 Collected .....	419	460	462
1930 Total budgetary resources available .....	430	470	499
Memorandum (non-add) entries:			
1941 Unexpired unobligated balance, end of year .....	10	37	66
<b>Change in obligated balance:</b>			
Unpaid obligations:			
3000 Unpaid obligations, brought forward, Oct 1 .....	141	162	99
3010 Obligations incurred, unexpired accounts .....	420	433	433
3020 Outlays (gross) .....	-399	-496	-469
3050 Unpaid obligations, end of year .....	162	99	63
Memorandum (non-add) entries:			
3100 Obligated balance, start of year .....	141	162	99
3200 Obligated balance, end of year .....	162	99	63
<b>Budget authority and outlays, net:</b>			
Discretionary:			
4000 Budget authority, gross .....	419	460	462

Outlays, gross:				
4010	Outlays from new discretionary authority .....	255	391	393
4011	Outlays from discretionary balances .....	144	105	76
4020	Outlays, gross (total) .....	399	496	469
Offsets against gross budget authority and outlays:				
Offsetting collections (collected) from:				
4030	Federal sources .....	-408	-450	-452
4033	Non-Federal sources .....	-11	-10	-10
4040	Offsets against gross budget authority and outlays (total) ....	-419	-460	-462
4080	Outlays, net (discretionary) .....	-20	36	7
4180	Budget authority, net (total) .....			
4190	Outlays, net (total) .....	-20	36	7

The Working Capital Fund provides goods and services on a reimbursable basis. The Fund consists of three program activities. The first is the Solutions for Enterprise-wide Procurement program, which finances, on an agency-wide basis, scientific and engineering workstation procurement. The second program is the Information Technology Infrastructure Integration Program which consolidates and centralizes management of NASA information technology services in the areas of Tier 1 service desk and ordering, web services and technologies, enterprise business and management applications, integrated network/communications services, end user services, and data center services. The last program, NASA's Shared Services Center, performs selected financial management, human resources, information technology, and procurement services for NASA Headquarters and Centers.

**Object Classification** (in millions of dollars)

Identification code 080-4546-0-4-252	2015 actual	2016 est.	2017 est.	
Reimbursable obligations:				
11.1	Personnel compensation: Full-time permanent .....	13	15	15
12.1	Civilian personnel benefits .....	4	5	5
21.0	Travel and transportation of persons .....	1	1	1
25.2	Other services from non-Federal sources .....	69	69	69
25.4	Operation and maintenance of facilities .....	5	5	5
25.7	Operation and maintenance of equipment .....	328	338	338
99.9	Total new obligations .....	420	433	433

**Employment Summary**

Identification code 080-4546-0-4-252	2015 actual	2016 est.	2017 est.	
2001	Reimbursable civilian full-time equivalent employment .....	142	142	142

**Trust Funds**

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND

**Special and Trust Fund Receipts** (in millions of dollars)

Identification code 080-8978-0-7-503	2015 actual	2016 est.	2017 est.	
0100	Balance, start of year .....	15	15	15
Receipts:				
Current law:				
1140	Earnings on Investments, Science, Space and Technology Education Trust Fund .....	1	1	1
2000	Total: Balances and receipts .....	16	16	16
Appropriations:				
Current law:				
2101	Science, Space, and Technology Education Trust Fund .....	-1	-1	-1
5099	Balance, end of year .....	15	15	15

**Program and Financing** (in millions of dollars)

Identification code 080-8978-0-7-503	2015 actual	2016 est.	2017 est.	
<b>Obligations by program activity:</b>				
0001	Science, Space, and Technology Education Trust Fund (Direct) .....	1	1	1
0900	Total new obligations (object class 41.0) .....	1	1	1

<b>Budgetary resources:</b>				
Budget authority:				
Appropriations, mandatory:				
1201	Appropriation (special or trust fund) .....	1	1	1
1930	Total budgetary resources available .....	1	1	1

<b>Change in obligated balance:</b>				
Unpaid obligations:				
3010	Obligations incurred, unexpired accounts .....	1	1	1
3020	Outlays (gross) .....	-1	-1	-1

<b>Budget authority and outlays, net:</b>				
Mandatory:				
4090	Budget authority, gross .....	1	1	1
Outlays, gross:				
4100	Outlays from new mandatory authority .....		1	1
4101	Outlays from mandatory balances .....	1		
4110	Outlays, gross (total) .....	1	1	1
4180	Budget authority, net (total) .....	1	1	1
4190	Outlays, net (total) .....	1	1	1

<b>Memorandum (non-add) entries:</b>				
5000	Total investments, SOY: Federal securities: Par value .....	16	16	16
5001	Total investments, EOY: Federal securities: Par value .....	16	16	16

NATIONAL SPACE GRANT PROGRAM

**Program and Financing** (in millions of dollars)

Identification code 080-8977-0-7-252	2015 actual	2016 est.	2017 est.	
<b>Budgetary resources:</b>				
Unobligated balance:				
1000	Unobligated balance brought forward, Oct 1 .....	1	1	1
1930	Total budgetary resources available .....	1	1	1
Memorandum (non-add) entries:				
1941	Unexpired unobligated balance, end of year .....	1	1	1
4180	Budget authority, net (total) .....			
4190	Outlays, net (total) .....			

ADMINISTRATIVE PROVISIONS

(INCLUDING TRANSFERS OF FUNDS)

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

[Not to exceed 5 percent of any appropriation made available for the current fiscal year for the National Aeronautics and Space Administration in this Act may be transferred between such appropriations, but no such appropriation, except as otherwise specifically provided, shall be increased by more than 10 percent by any such transfers. Balances so transferred shall be merged with and available for the same purposes and the same time period as the appropriations to which transferred. Any transfer pursuant to this provision shall be treated as a reprogramming of funds under section 505 of this Act and shall not be available for obligation except in compliance with the procedures set forth in that section.]

The spending plan required by this Act shall be provided by NASA at the theme, program, project and activity level. The spending plan, as well as any subsequent change of an amount established in that spending plan that meets the notification requirements of section 505 of this Act, shall be treated as a reprogramming under section 505 of this Act and shall not be available for obligation or expenditure except in compliance with the procedures set forth in that section.

[The unexpired balances for Commercial Spaceflight Activities contained within the Exploration account may be transferred to the Space Operations account for such activities. Balances so transferred shall be merged with the funds in the Space Operations account and shall be available under the same terms, conditions and period of time as previously appropriated.]

For the closeout of all Space Shuttle contracts and associated programs, amounts that have expired but have not been cancelled in the Exploration, Space Operations, Human Space Flight, Space Flight Capabilities, and Exploration Capabilities appropriations accounts shall remain available through fiscal year 2025 [for the liquidation of valid obligations incurred during the period of fiscal year 2001 through fiscal year 2013].

Section 20145 of title 51 is amended by striking subsection (g). (Science Appropriations Act, 2016.)

**GENERAL FUND RECEIPT ACCOUNTS**

(in millions of dollars)

	2015 actual	2016 est.	2017 est.
Offsetting receipts from the public:			
080-322000 All Other General Fund Proprietary Receipts Including Budget Clearing Accounts .....	2	15	15

General Fund Offsetting receipts from the public .....	2	15	15
Intragovernmental payments:			
080-388500 Undistributed Intragovernmental Payments and Receivables from Cancelled Accounts .....	2	.....	.....
General Fund Intragovernmental payments .....	2	.....	.....