

# 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; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$4,503,019,000] \$4,477,200,000** to remain available until September 30, **[2010] 2011**. (*Science Appropriations Act, 2009*.)

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

Identification code 80-0120-0-1-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Direct program activity .....		4,793	4,498
10.00 Total new obligations .....		4,793	4,498
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....			110
22.00 New budget authority (gross) .....		4,903	4,477
23.90 Total budgetary resources available for obligation .....		4,903	4,587
23.95 Total new obligations .....		-4,793	-4,498
24.40 Unobligated balance carried forward, end of year .....		110	89
<b>New budget authority (gross), detail:</b>			
Discretionary:			
40.00 Appropriation .....		4,503	4,477
40.01 Appropriation, Recovery Act .....		400	
43.00 Appropriation (total discretionary) .....		4,903	4,477
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....			2,583
73.10 Total new obligations .....		4,793	4,498
73.20 Total outlays (gross) .....		-2,210	-4,383
74.40 Obligated balance, end of year .....		2,583	2,698
<b>Outlays (gross), detail:</b>			
86.90 Outlays from new discretionary authority .....		2,210	2,106
86.93 Outlays from discretionary balances .....			2,277
87.00 Total outlays (gross) .....		2,210	4,383
<b>Net budget authority and outlays:</b>			
89.00 Budget authority .....		4,903	4,477
90.00 Outlays .....		2,210	4,383

This appropriation provides for the Science Mission Directorate, which is comprised of the agency's Earth and space science programs. The appropriation provides for all of the research; development; operations; salaries and related expenses; design, repair, rehabilitation, modification of facilities, and construction of new facilities; and other general and administrative activities supporting the programs within this account. Detailed performance goals associated with these activities are addressed in NASA's detailed budget request.

NASA's Science Mission Directorate encompasses four themes: Earth Science, Planetary Science, Heliophysics, and Astrophysics. The Directorate seeks 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. The Directorate achieves its objectives through robotic flight missions, ground-based scientific research and data analysis, and the development of new technologies for future missions.

Life on Earth prospers in a biosphere and climate powered by energy from the Sun and moderated by water and carbon cycles. Working with domestic and international partners, NASA provides accurate and objective scientific data and analysis to advance understanding of Earth system processes and phenomena, thus improving prediction and response capabilities for climate, weather, natural hazards, and even human-induced disasters. Employing a constellation of 13 Earth-observing satellites routinely making measurements, NASA continues using the view from space to study the Earth system and improve prediction of Earth system changes and the connection between Earth and its star, the Sun. NASA will be launching additional missions over the next several years to further enhance and expand understanding of Earth and its processes. These include the Aquarius mission (scheduled to be launched in 2010) which will make new, first-of-a-kind global measurements of ocean surface salinity, of known importance to the study of climate change, the National Polar-orbiting Operational Environmental Satellite System Preparatory Project (NPP, with an anticipated launch of 2011), the Landsat Data Continuity Mission (planned for launch in 2012), and the Global Precipitation Measurement Mission, which will provide accurate, global rain measurements every three hours and is to be launched in two parts in 2013 and 2014. In a continuing initiative, NASA also has begun implementation of a series of advanced Earth-observing satellite missions based on the recommendations of the National Research Council's Earth Science and Applications Decadal Survey, a community-consensus study released in 2007, that identified the most important Earth System Science questions and proposed a sequence of focused satellite missions to advance Earth science. In response to that study, NASA is developing the Soil Moisture Active Passive and the ICESat II satellites for launch by 2015 and is initiating a new Ventureclass series of missions to enable quick deployment of competed Earth sensing instruments. In addition, NASA will support activities to better leverage existing data sources and models in furthering climate and ocean science, as recommended in various community planning documents.

Planetary science seeks to discover the nature and origin of the celestial bodies among which we live and to explore whether life exists beyond Earth. To unlock the solar system's mysteries, NASA will continue its investigation of Mars from orbit and on the surface with a new generation of missions, including launching the Mars Science Laboratory rover (October 2011 launch, June 2012 arrival), which will dramatically increase in situ exploration capability with analytical laboratories focused on determining if Mars was habitable and if organics are present. Exploration will continue with the rovers Spirit and Opportunity, as well as the Mars Reconnaissance Orbiter and Mars Odyssey. The investigation of the outer planets will include such missions as the Cassini Saturn orbiter that has continued to return stunning images and revise scientific understanding of the ringed planet and its moons, the Juno mission that will further improve understanding of the origin and evolution of Jupiter (launch in August 2011), and the New Horizons (Pluto) mission which will

SCIENCE—Continued

complete NASA's initial reconnaissance of the solar system. Dawn, launched in September 2007, is on its nine-year mission to investigate in detail 1 Ceres and 4 Vesta, two main-belt asteroids that are among the largest proto-planets remaining intact since the formation of the solar system. MESSENGER, a mission to Mercury, will provide the first images covering the entire planet and collect detailed information on the composition and structure of Mercury's crust, its geologic history, the nature of its thin atmosphere and active magnetosphere, and the makeup of its core and polar materials. NASA exploration of the Moon includes GRAIL, a moon gravity mapping mission that will advance understanding of the thermal evolution of the Moon, as well as a series of robotic missions that will significantly increase our knowledge of the Earth's closest neighbor as we prepare for a human return to the Moon.

In seeking to understand the Sun, heliosphere, and planetary environments as a single, connected system, NASA's Heliophysics theme pursues three sets of missions: Solar Terrestrial Probe missions, Living with a Star missions, and Explorer missions. Solar Terrestrial Probe addresses fundamental science questions about the physics of plasma and the flow of mass and energy in the solar system, and includes the development of the Magnetospheric MultiScale mission, with an anticipated launch date not earlier than 2014. Living with a Star missions develop specific knowledge and understanding of those aspects of the Sun-Earth system that directly affect life and society. The first Living with a Star mission, Solar Dynamics Observatory, is planned to launch in 2009. Radiation Belt Storm Probes, the next Living with a Star mission, has an anticipated launch date not earlier than 2012. The Living with a Star program plans to provide a launch vehicle and one instrument/science investigation for a joint Solar Orbiter Collaboration with the European Space Agency. AIM and THEMIS are two Explorer missions that study the upper atmosphere of the earth and the magnetic connections and processes of the Earth's magnetosphere. Three other Explorer missions, IBEX, CINDI, and TWINS, were launched in 2008 to investigate physical conditions and processes of the coupled Sun-Earth system in the heliosphere, ionosphere, and magnetosphere respectively. NASA intends to select two new Small Explorer missions for formulation.

Within the Astrophysics theme, perplexing and important questions guide NASA's quest to understand the secrets of the universe: How does the universe work? Where did we come from? Are we alone? To answer these questions, NASA will continue to operate its prolific Hubble, Chandra, Spitzer, and Fermi space telescopes, while planning a series of future missions linked by powerful new technologies and complementary approaches to shared science goals. Toward this end, the Hubble Servicing Mission 4, scheduled to launch on Space Shuttle Atlantis in 2009, will extend the lifetime of critical components of this central data source. Together these missions will enhance NASA's ability to find planets around other stars and peer deep into the history of the universe and improve understanding of its structure. The Kepler mission, launched in 2009, will enable the discovery of Earth-size and smaller planets around other stars. NASA continues development of the James Webb Space Telescope to study the earliest galaxies and some of the first stars formed after the Big Bang. The astrophysics community is in the process of defining priorities for space- and ground-based investigations for the next decade under the auspices of the National Research Council. NASA is currently conducting concept definition activities for some of the missions under consideration, including the Joint Dark Energy Mission, which would provide the most accurate

inventory to date of the mysterious dark energy, a major component of the universe and a contributor to its rate of expansion.

Object Classification (in millions of dollars)

Identification code 80-0120-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1 Full-time permanent .....		190	194
11.3 Other than full-time permanent .....		11	11
11.5 Other personnel compensation .....		1	1
11.9 Total personnel compensation .....		202	206
12.1 Civilian personnel benefits .....		50	51
21.0 Travel and transportation of persons .....		18	18
22.0 Transportation of things .....		2	2
23.2 Rental payments to others .....		5	5
23.3 Communications, utilities, and miscellaneous charges .....		3	3
24.0 Printing and reproduction .....		2	2
25.1 Advisory and assistance services .....		133	136
25.2 Other services .....		213	219
25.3 Other purchases of goods and services from Government accounts .....		151	154
25.4 Operation and maintenance of facilities .....		12	13
25.5 Research and development contracts .....		3,188	2,853
25.7 Operation and maintenance of equipment .....		53	55
26.0 Supplies and materials .....		22	23
31.0 Equipment .....		59	61
32.0 Land and structures .....		59	60
41.0 Grants, subsidies, and contributions .....		621	637
99.9 Total new obligations .....		4,793	4,498

Employment Summary

Identification code 80-0120-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct:</b>			
1001 Civilian full-time equivalent employment .....		1,799	1,799

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; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$500,000,000] \$507,000,000**, to remain available until September 30, **[2010] 2011**. (*Science Appropriations Act, 2009.*)

Program and Financing (in millions of dollars)

Identification code 80-0126-0-1-402	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Direct program activity .....		588	559
10.00 Total new obligations .....		588	559
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....			62
22.00 New budget authority (gross) .....		650	507
23.90 Total budgetary resources available for obligation .....		650	569
23.95 Total new obligations .....		-588	-559
24.40 Unobligated balance carried forward, end of year .....		62	10
<b>New budget authority (gross), detail:</b>			
<b>Discretionary:</b>			
40.00 Appropriation .....		500	507

40.01	Appropriation, Recovery Act .....	150	
43.00	Appropriation (total discretionary) .....	650	507
<b>Change in obligated balances:</b>			
72.40	Obligated balance, start of year .....		318
73.10	Total new obligations .....	588	559
73.20	Total outlays (gross) .....	-270	-516
74.40	Obligated balance, end of year .....	318	361
<b>Outlays (gross), detail:</b>			
86.90	Outlays from new discretionary authority .....	270	243
86.93	Outlays from discretionary balances .....		273
87.00	Total outlays (gross) .....	270	516
<b>Net budget authority and outlays:</b>			
89.00	Budget authority .....	650	507
90.00	Outlays .....	270	516

This appropriation provides for the full costs associated with the aeronautics research program activities within the Aeronautics Research Mission Directorate (ARMD). The full costs provide for all of the research; development; operations; salaries and related expenses; 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. Costs include labor, travel, procurement, test and fabrication costs. Detailed performance goals associated with these activities are addressed in NASA's detailed budget request.

NASA's Aeronautics Research Mission Directorate is committed to expanding the boundaries of aeronautical knowledge for the benefit of the nation and the broad aeronautics community. NASA conducts cutting-edge research that includes foundational research across a number of core competencies that support aeronautics and space exploration activities; research in key areas related to the development of advanced aircraft technologies and systems, including those related to aircraft safety, environmental compatibility, and fuel efficiency; and research that supports the Next Generation Air Transportation System (NextGen) in partnership with the Joint Planning and Development Office.

NASA's aeronautics research directly supports the goal and objectives of the National Aeronautics Research and Development Policy that was established by Presidential Executive Order 13419 in December 2006. NASA ensures that it is aligned with the Policy by (1) conducting high-quality, cutting-edge research that benefits the constituents of the entire aeronautics community; (2) disseminating the results of all research to the widest practical and appropriate extent; (3) pursuing a coordinated approach to managing the Nation's research, development, test, and evaluation infrastructure; (4) fostering intellectual partnerships with industry and academia through a comprehensive acquisition strategy including, but not limited to cooperative Space Act Agreements and fully and openly competed research awards, emphasizing true collaborations among all partners through NASA Research Announcement and Requests for Proposals (RFP); and (5) establishing strong partnerships with other Government agencies and organizations, especially the Federal Aviation Administration, Department of Defense, and the Joint Planning and Development Office.

NASA Aeronautics consists of four integrated research programs and the Aeronautics Test Program. The Fundamental Aeronautics Program conducts cutting-edge research that enables the development of vehicles capable of atmospheric flight over a wide range of speeds. Because aircraft of the future will need to address multiple and often conflicting design challenges such as noise, emissions, and performance, a key focus will be the development of physics-based, multidisciplinary design, analysis, and optimiz-

ation tools. Such tools will make it possible to evaluate radically new vehicle designs and to assess the potential impact of innovative concepts and technologies on a vehicle's overall performance.

The Aviation Safety Program builds upon the unique safety-related research capabilities of NASA to develop innovative tools, concepts, methods, and technologies that will improve the intrinsic safety attributes of current and future aircraft, and that will help overcome aviation safety challenges that would otherwise constrain the full realization of the NextGen. Such challenges include significant increases in air traffic density, increased reliance on automation, and a greatly increased diversity of air vehicles.

The Airspace Systems Program addresses the air traffic management research needs of the Next Generation Air Transportation System (NextGen) in collaboration with the member agencies of the Joint Planning and Development Office (JPDO). NASA is working closely with the JPDO as well as other government, industry, and academic partners to enable the formation, development, integration, and demonstration of revolutionary concepts, capabilities, and technologies allowing significant increases in capacity, efficiency, and flexibility needed to meet the Nation's airspace and airportal (gates, taxiways, runways, and final approach airspace) requirements for decades to come. These goals are in direct support of the guidelines in the National Aeronautics research and development policy and plan.

The Integrated Systems Research Program, a new program beginning in FY 2010, will encompass systems-level research development of aircraft technologies in the relevant flight environments. The overarching purpose is to reduce the local and global environmental impacts of aviation. This includes the development of technologies to significantly reduce fuel consumption, engine emissions or pollutants, and engine and airframe noise. The rationale for beginning this program is its relationship to the NextGen. If the environmental impacts of aviation are not drastically improved from the current situation, growth of the air traffic management system and implementation of NextGen will be inhibited. The integrated system-level research in this program will be coordinated with on-going long-term, foundational research within the three other research programs, and will focus specifically on maturing and integrating technologies in major vehicle systems/subsystems for accelerated transition to practical application.

The Aeronautics Test Program ensures the strategic availability and accessibility of a critical suite of aeronautics test facilities that are deemed necessary to meet Agency Aeronautics Research, Agency, and national needs. Strategic utilization, operations, maintenance, and investment decisions are made for major wind tunnel/ground test facilities at NASA's Ames Research Center, Glenn Research Center, and Langley Research Center, and for the Western Aeronautical Test Range, support/testbed aircraft, and simulation and load laboratories at Dryden Flight Research Center.

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

Identification code 80-0126-0-1-402	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1	Full-time permanent .....	139	143
11.3	Other than full-time permanent .....	11	11
11.5	Other personnel compensation .....	1	1
11.9	Total personnel compensation .....	151	155
12.1	Civilian personnel benefits .....	37	38
21.0	Travel and transportation of persons .....	6	6
23.3	Communications, utilities, and miscellaneous charges .....	2	2
25.1	Advisory and assistance services .....	17	17
25.2	Other services .....	32	33

**AERONAUTICS—Continued**  
**Object Classification —Continued**

Identification code 80-0126-0-1-402	2008 actual	2009 est.	2010 est.
25.3 Other purchases of goods and services from Government accounts .....		9	10
25.4 Operation and maintenance of facilities .....		24	25
25.5 Research and development contracts .....		208	170
25.7 Operation and maintenance of equipment .....		11	11
26.0 Supplies and materials .....		14	14
31.0 Equipment .....		23	23
32.0 Land and structures .....		4	4
41.0 Grants, subsidies, and contributions .....		50	51
99.9 Total new obligations .....		588	559

**Employment Summary**

Identification code 80-0126-0-1-402	2008 actual	2009 est.	2010 est.
Direct:			
1001 Civilian full-time equivalent employment .....		1,430	1,430
Reimbursable:			
2001 Civilian full-time equivalent employment .....		1	1

**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; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control, and communications activities; program management, personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$3,505,469,000] \$3,963,100,000**, to remain available until September 30, **[2010] 2011**. (*Science Appropriations Act, 2009*.)

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

Identification code 80-0124-0-1-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Direct program activity .....		3,827	3,962
10.00 Total new obligations .....		3,827	3,962
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....			78
22.00 New budget authority (gross) .....		3,905	3,963
23.90 Total budgetary resources available for obligation .....		3,905	4,041
23.95 Total new obligations .....		-3,827	-3,962
24.40 Unobligated balance carried forward, end of year .....		78	79
<b>New budget authority (gross), detail:</b>			
Discretionary:			
40.00 Appropriation .....		3,505	3,963
40.01 Appropriation, Recovery Act .....		400	
43.00 Appropriation (total discretionary) .....		3,905	3,963
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....			1,524
73.10 Total new obligations .....		3,827	3,962
73.20 Total outlays (gross) .....		-2,303	-3,831
74.40 Obligated balance, end of year .....		1,524	1,655
<b>Outlays (gross), detail:</b>			
86.90 Outlays from new discretionary authority .....		2,303	2,464

86.93 Outlays from discretionary balances .....			1,367
87.00 Total outlays (gross) .....		2,303	3,831

**Net budget authority and outlays:**

89.00 Budget authority .....		3,905	3,963
90.00 Outlays .....		2,303	3,831

This appropriation provides for the full costs associated with the exploration activities of the agency, which consist of the programs within the Exploration Mission Directorate. 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; design, repair, rehabilitation, modification of facilities, and construction of new facilities; and other general and administrative activities supporting the programs within this account.

The Exploration Systems Mission Directorate was established to enable sustainable exploration and scientific discovery in the solar system. It is comprised of two major themes: Constellation Systems and Advanced Capabilities. NASA will review U.S. post-Shuttle human space flight activities this summer.

The Constellation Program within the Constellation Systems Theme is responsible for developing, demonstrating, and deploying the transportation, life support, and surface systems that will enable sustained human and robotic exploration of the Moon, Mars, and beyond. Human exploration will enable scientific activities and discoveries not obtainable with robotic explorers.

An important element of Constellation Systems Theme is the Commercial Crew and Cargo Program, which is providing incentives to spur private industry to provide cost-effective cargo delivery to the International Space Station, allowing NASA to focus its internal resources on exploration.

The Advanced Capabilities theme consists of three programs: the Lunar Precursor Robotic Program, the Exploration Technology Development Program, and the Human Research Program. Activities within these programs help prepare for human lunar exploration, test new technologies that enable exploration, and further understanding of the effects of space on human performance. The Lunar Precursor Robotic Program is developing a precursor mission to characterize the lunar environment.

The Lunar Reconnaissance Orbiter and Lunar Crater Observing and Sensing Satellite, scheduled to launch in 2009, will seek to find safe landing sites, locate potential resources, characterize the radiation environment, and demonstrate new technology. The Exploration Technology Development Program makes focused investments in innovations to reduce the cost and expand the capabilities of future space exploration missions. The Human Research Program focuses on ensuring the health, safety, and productivity of humans embarking on missions of exploration in the solar system. Projects advance knowledge critical for supporting long-term human survival and performance during operations beyond low Earth orbit, with a focus on improving medical care and human health maintenance.

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

Identification code 80-0124-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
Personnel compensation:			
11.1 Full-time permanent .....		352	361
11.3 Other than full-time permanent .....		37	38
11.5 Other personnel compensation .....		4	3
11.9 Total personnel compensation .....		393	402
12.1 Civilian personnel benefits .....		101	103
21.0 Travel and transportation of persons .....		22	22
22.0 Transportation of things .....		135	138
23.3 Communications, utilities, and miscellaneous charges .....		13	13
24.0 Printing and reproduction .....		1	1

25.1	Advisory and assistance services .....	295	302
25.2	Other services .....	117	120
25.3	Other purchases of goods and services from Government accounts .....	59	61
25.4	Operation and maintenance of facilities .....	190	195
25.5	Research and development contracts .....	2,119	2,212
25.7	Operation and maintenance of equipment .....	65	67
26.0	Supplies and materials .....	37	38
31.0	Equipment .....	29	30
32.0	Land and structures .....	163	167
41.0	Grants, subsidies, and contributions .....	88	91
99.9	Total new obligations .....	3,827	3,962

**Employment Summary**

Identification code 80-0124-0-1-252		2008 actual	2009 est.	2010 est.
Direct:				
1001	Civilian full-time equivalent employment .....		3,622	3,622

**EDUCATION**

For necessary expenses, not otherwise provided for, in carrying out aerospace and aeronautical education research and development activities, including research, development, operations, support, and services; program management; personnel and related costs, uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$169,200,000]** \$126,100,000, to remain available until September 30, **[2010]** 2011. (Science Appropriations Act, 2009.)

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

Identification code 80-0128-0-1-252		2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>				
00.01	Direct program activity .....		135	135
10.00	Total new obligations .....		135	135
<b>Budgetary resources available for obligation:</b>				
21.40	Unobligated balance carried forward, start of year .....			34
22.00	New budget authority (gross) .....		169	126
23.90	Total budgetary resources available for obligation .....		169	160
23.95	Total new obligations .....		-135	-135
24.40	Unobligated balance carried forward, end of year .....		34	25
<b>New budget authority (gross), detail:</b>				
Discretionary:				
40.00	Appropriation .....		169	126
<b>Change in obligated balances:</b>				
72.40	Obligated balance, start of year .....			93
73.10	Total new obligations .....		135	135
73.20	Total outlays (gross) .....		-42	-117
74.40	Obligated balance, end of year .....		93	111
<b>Outlays (gross), detail:</b>				
86.90	Outlays from new discretionary authority .....		42	32
86.93	Outlays from discretionary balances .....			85
87.00	Total outlays (gross) .....		42	117
<b>Net budget authority and outlays:</b>				
89.00	Budget authority .....		169	126
90.00	Outlays .....		42	117

This appropriation provides for the full costs associated with the education activities of the agency, which consist of the projects within the Office of Education. The full costs include all labor, travel, and procurement costs to execute these projects. Detailed performance goals associated with these activities are addressed in NASA's detailed budget request.

NASA's Education program works to inspire and educate students at all levels to pursue careers in the fields of science, technology, engineering, and mathematics (STEM), while also engaging the education community to reach this goal. The Education portfolio demonstrates a commitment to STEM education to ensure that the next generation of explorers and innovators is fully prepared to join NASA's workforce while contributing to national needs. NASA's educational activities are designed to inspire, engage, educate, and employ our Nation's youth. To achieve these goals, NASA will continue to: (1) strengthen the Nation's future STEM workforce through a portfolio of initiatives for students at all levels, especially underserved and underrepresented communities; (2) attract and retain students in STEM disciplines and encourage their pursuit of higher education in disciplines critical to NASA's scientific and technical needs; and (3) engage Americans in NASA's mission by building strategic partnerships and linkages between STEM formal and informal education providers.

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

Identification code 80-0128-0-1-252		2008 actual	2009 est.	2010 est.
Direct obligations:				
Personnel compensation:				
11.1	Full-time permanent .....		4	4
11.3	Other than full-time permanent .....		1	
11.9	Total personnel compensation .....		5	4
12.1	Civilian personnel benefits .....		1	1
21.0	Travel and transportation of persons .....		1	1
25.1	Advisory and assistance services .....		5	4
25.2	Other services .....		15	13
25.4	Operation and maintenance of facilities .....		2	1
25.5	Research and development contracts .....		12	12
25.7	Operation and maintenance of equipment .....		4	2
26.0	Supplies and materials .....		1	
31.0	Equipment .....		1	
41.0	Grants, subsidies, and contributions .....		88	97
99.9	Total new obligations .....		135	135

**Employment Summary**

Identification code 80-0128-0-1-252		2008 actual	2009 est.	2010 est.
Direct:				
1001	Civilian full-time equivalent employment .....		48	48

**CROSS AGENCY SUPPORT**

For necessary expenses, not otherwise provided for, in the conduct and support of science, aeronautics, exploration, space operations and education research and development activities, including research, development, operations, support, and services; maintenance; construction of facilities including repair, rehabilitation, revitalization, and modification of facilities, construction of new facilities and additions to existing facilities, facility planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; space flight, spacecraft control, and communications activities; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; not to exceed \$70,000 for official reception and representation expenses; and purchase, lease, charter, maintenance, and operation of mission and administrative aircraft, **[\$3,306,387,000]** \$3,400,600,000, to remain available until September 30, **[2010: Provided,** That \$2,024,000,000, together with not more than \$9,000,000 to be derived from receipts pursuant to 42 U.S.C. 2459j, shall be available for center management and operations: *Provided further,* That notwithstanding 42 U.S.C. 2459j, proceeds from enhanced use leases that may be made available for obligation for fiscal year 2009 shall not exceed \$9,000,000: *Provided further,* That each annual budget request shall include an annual estimate of gross receipts

CROSS AGENCY SUPPORT—Continued

and collections and proposed use of all funds collected pursuant to 42 U.S.C. 2459j; *Provided further*, That not less than \$45,000,000 shall be available for independent verification and validation activities, of which \$5,000,000 shall be available to develop core verification and validation competencies with small businesses, and \$40,000,000 shall be available for operations of the independent verification and validation facility; *Provided further*, That within the amounts appropriated \$67,500,000 shall be used for the projects, and in the amounts, specified in the explanatory statement described in section 4 (in the matter preceding division A of this consolidated Act) **2011**. (*Science Appropriations Act, 2009*.)

Program and Financing (in millions of dollars)

Identification code 80-0122-0-1-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Direct program activity .....		3,289	3,332
09.01 Reimbursable program .....		1,164	1,170
10.00 Total new obligations .....		4,453	4,502
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....			378
22.00 New budget authority (gross) .....		4,831	4,807
23.90 Total budgetary resources available for obligation .....		4,831	5,185
23.95 Total new obligations .....		-4,453	-4,502
24.40 Unobligated balance carried forward, end of year .....		378	683
<b>New budget authority (gross), detail:</b>			
Discretionary:			
40.00 Appropriation .....		3,306	3,401
40.01 Appropriation, Recovery Act .....		50	
43.00 Appropriation (total discretionary) .....		3,356	3,401
58.00 Spending authority from offsetting collections: Offsetting collections (cash) .....		1,475	1,406
70.00 Total new budget authority (gross) .....		4,831	4,807
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....			962
73.10 Total new obligations .....		4,453	4,502
73.20 Total outlays (gross) .....		-3,491	-4,585
74.40 Obligated balance, end of year .....		962	879
<b>Outlays (gross), detail:</b>			
86.90 Outlays from new discretionary authority .....		3,491	3,463
86.93 Outlays from discretionary balances .....			1,122
87.00 Total outlays (gross) .....		3,491	4,585
<b>Offsets:</b>			
Against gross budget authority and outlays:			
88.00 Offsetting collections (cash) from: Federal sources .....		-1,475	-1,406
<b>Net budget authority and outlays:</b>			
89.00 Budget authority .....		3,356	3,401
90.00 Outlays .....		2,016	3,179

This appropriation provides for the Agency supporting functions associated with the science, aeronautics, education, space operations, and exploration activities of the agency. This account provides for the research; development; operations; salaries and related expenses; maintenance; design, repair, rehabilitation, modification of facilities, and construction of new facilities; and other general and administrative activities supporting the programs within the Agency's five mission accounts.

Cross-Agency Support provides a strategic focus for managing agency mission support functions and some of NASA's unique research facilities. This budget area consists of three themes: Center Management and Operations, Agency Management and Operations, and Institutional Investments.

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. The five major programs included in this theme are Agency Management, Safety and Mission Success, Agency IT Services, Innovative Partnerships Program, and Strategic Capability Asset Program.

Institutional Investments provides for design and execution of non-programmatic of Facilities projects, Demolition of Facilities, and Environmental Compliance and Restoration activities.

Object Classification (in millions of dollars)

Identification code 80-0122-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
Personnel compensation:			
11.1 Full-time permanent .....		780	799
11.3 Other than full-time permanent .....		51	52
11.5 Other personnel compensation .....		40	41
11.8 Special personal services payments .....		1	1
11.9 Total personnel compensation .....		872	893
12.1 Civilian personnel benefits .....		224	229
13.0 Benefits for former personnel .....		3	3
21.0 Travel and transportation of persons .....		39	40
22.0 Transportation of things .....		4	4
23.1 Rental payments to GSA .....		36	36
23.2 Rental payments to others .....		2	2
23.3 Communications, utilities, and miscellaneous charges .....		68	68
24.0 Printing and reproduction .....		5	5
25.1 Advisory and assistance services .....		178	178
25.2 Other services .....		336	336
25.3 Other purchases of goods and services from Government accounts .....		83	83
25.4 Operation and maintenance of facilities .....		374	374
25.5 Research and development contracts .....		258	276
25.6 Medical care .....		5	5
25.7 Operation and maintenance of equipment .....		346	345
26.0 Supplies and materials .....		52	52
31.0 Equipment .....		63	63
32.0 Land and structures .....		252	251
41.0 Grants, subsidies, and contributions .....		89	89
99.0 Direct obligations .....		3,289	3,332
99.0 Reimbursable obligations .....		1,164	1,170
99.9 Total new obligations .....		4,453	4,502

Employment Summary

Identification code 80-0122-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct:</b>			
1001 Civilian full-time equivalent employment .....		7,934	7,934
<b>Reimbursable:</b>			
2001 Civilian full-time equivalent employment .....		16	16

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; construction of facilities including repair, rehabilitation, revitalization and modification of facilities, construction of new facilities and additions to existing facilities, facility

planning and design, and restoration, and acquisition or condemnation of real property, as authorized by law; environmental compliance and restoration; program management; personnel and related costs, including uniforms or allowances therefor, as authorized by 5 U.S.C. 5901-5902; travel expenses; purchase and hire of passenger motor vehicles; and purchase, lease, charter, maintenance and operation of mission and administrative aircraft, **【\$5,764,710,000】 \$6,175,600,000**, to remain available until September 30, **【2010: Provided, That of the amounts provided under this heading, \$2,981,724,000 shall be for Space Shuttle operations, production, research, development, and support, \$2,060,162,000 shall be for International Space Station operations, production, research, development, and support, and \$722,824,000 shall be for Space and Flight support】 2011. (Science Appropriations Act, 2009.)**

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

Identification code 80-0115-0-1-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Space operations .....	6,899	5,861	6,167
09.01 Reimbursable program .....	437		
10.00 Total new obligations .....	7,336	5,861	6,167
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....	610	212	116
22.00 New budget authority (gross) .....	6,814	5,765	6,176
22.10 Resources available from recoveries of prior year obligations .....	117		
22.22 Unobligated balance transferred from other accounts .....	7		
23.90 Total budgetary resources available for obligation .....	7,548	5,977	6,292
23.95 Total new obligations .....	-7,336	-5,861	-6,167
24.40 Unobligated balance carried forward, end of year .....	212	116	125
<b>New budget authority (gross), detail:</b>			
Discretionary:			
40.00 Appropriation .....	6,764	5,765	6,176
40.36 Unobligated balance permanently reduced .....	-25		
41.00 Transferred to other accounts .....	-165		
43.00 Appropriation (total discretionary) .....	6,574	5,765	6,176
Spending authority from offsetting collections:			
58.00 Offsetting collections (cash) .....	329		
58.10 Change in uncollected customer payments from Federal sources (unexpired) .....	-89		
58.90 Spending authority from offsetting collections (total discretionary) .....	240		
70.00 Total new budget authority (gross) .....	6,814	5,765	6,176
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....	1,725	2,235	1,864
73.10 Total new obligations .....	7,336	5,861	6,167
73.20 Total outlays (gross) .....	-6,836	-6,232	-5,956
73.40 Adjustments in expired accounts (net) .....	1		
73.45 Recoveries of prior year obligations .....	-117		
74.00 Change in uncollected customer payments from Federal sources (unexpired) .....	89		
74.10 Change in uncollected customer payments from Federal sources (expired) .....	37		
74.40 Obligated balance, end of year .....	2,235	1,864	2,075
<b>Outlays (gross), detail:</b>			
86.90 Outlays from new discretionary authority .....	4,819	4,264	4,568
86.93 Outlays from discretionary balances .....	2,017	1,968	1,388
87.00 Total outlays (gross) .....	6,836	6,232	5,956
<b>Offsets:</b>			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources .....	-320		
88.40 Non-Federal sources .....	-42		
88.90 Total, offsetting collections (cash) .....	-362		
Against gross budget authority only:			
88.95 Change in uncollected customer payments from Federal sources (unexpired) .....	89		
88.96 Portion of offsetting collections (cash) credited to expired accounts .....	33		

**Net budget authority and outlays:**

89.00 Budget authority .....	6,574	5,765	6,176
90.00 Outlays .....	6,474	6,232	5,956

This appropriation provides for the full costs associated with the space operations activities of the agency, which consist of the programs within the Space Operations Mission Directorate. 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; design, repair, rehabilitation, modification of facilities, and construction of new facilities; and other general and administrative activities supporting the programs within this account. Detailed 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 American, Russian, Canadian, European, and Japanese astronauts are conducting unique scientific and technological investigations in a micro-gravity environment. The 2010 President's Budget provides funding for Space Station launch processing activities, on-orbit assembly, and continuation of research payload and experiment deliveries to orbit. The objective of the Space Station is to support human space exploration and conduct science experiments unique to the location of the Space Station. NASA plans to complete assembly of the Space Station in 2010 prior to Shuttle retirement, including the delivery of the Cupola, Node 3, and logistics and supplies. The Alpha Magnetic Spectrometer (AMS) science experiment will be flown after these flights if it can be safely and affordably completed in calendar year 2010.

The Space Shuttle program's mission is to support space exploration by completing the assembly of the International Space Station by the end of the decade. The 2010 President's Budget request assumes the Space Shuttle will fly five missions in 2010, with an additional flight to deliver the AMS science payload if it can be safely and affordably completed in calendar year 2010. The 2010 President's Budget provides specific program investments for vehicle safety and supportability needed to maintain a viable Shuttle fleet until its retirement by the end of 2010. The 2010 Budget request will allow NASA to combat flight hardware obsolescence, maintain ground systems and facilities, and to continue progress towards an orderly phase-out of the program. In addition, the Shuttle program will support the Space Operations and Exploration Systems Mission Directorates to leverage select Shuttle flight hardware and ground systems to advance the development of future human spaceflight systems.

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 Navigations, Launch Services, Rocket Propulsion Testing, and Crew Health and Safety, and are provided to a wide range of customers including NASA, other U.S. federal agencies, foreign governments, and commercial customers. The services are critical for enabling the conduct of space exploration, aeronautical research, and physiological research. The 2010 President's Budget continues to support service continuity for the Tracking and Data Relay Satellite System, including two new satellites scheduled to launch in the 2013 timeframe. In 2010 NASA consolidates the Space Flight Operations Directorate project funding from Exploration Systems Mission Directorate and Space Operations Mission Directorate under the new line item, Human Space Flight Operations. Space Flight Crew Operations provides trained crew members and is responsible for all Johnson Space Center aircraft operations for all NASA human space flight endeavors.

**SPACE OPERATIONS—Continued**  
**Object Classification** (in millions of dollars)

Identification code 80-0115-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1 Full-time permanent .....	482	312	319
11.3 Other than full-time permanent .....	51	35	36
11.5 Other personnel compensation .....	21	4	4
11.9 Total personnel compensation .....	554	351	359
12.1 Civilian personnel benefits .....	140	90	92
13.0 Benefits for former personnel .....	1		
21.0 Travel and transportation of persons .....	24	18	18
22.0 Transportation of things .....	74	76	78
23.1 Rental payments to GSA .....	1		
23.2 Rental payments to others .....	3	2	3
23.3 Communications, utilities, and miscellaneous charges .....	82	53	54
24.0 Printing and reproduction .....	4	2	2
25.1 Advisory and assistance services .....	134	42	44
25.2 Other services .....	228	159	163
25.3 Other purchases of goods and services from Government accounts .....	203	183	188
25.4 Operation and maintenance of facilities .....	2,029	1,771	1,815
25.5 Research and development contracts .....	2,670	2,651	2,878
25.6 Medical care .....	1	1	
25.7 Operation and maintenance of equipment .....	374	199	203
26.0 Supplies and materials .....	62	58	60
31.0 Equipment .....	169	153	156
32.0 Land and structures .....	132	47	49
41.0 Grants, subsidies, and contributions .....	14	5	5
99.0 Direct obligations .....	6,899	5,861	6,167
99.0 Reimbursable obligations .....	437		
99.9 Total new obligations .....	7,336	5,861	6,167

**Employment Summary**

Identification code 80-0115-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct:</b>			
1001 Civilian full-time equivalent employment .....	5,238	3,622	3,622
<b>Reimbursable:</b>			
2001 Civilian full-time equivalent employment .....	42	11	11

**OFFICE OF INSPECTOR GENERAL**

For necessary expenses of the Office of Inspector General in carrying out the Inspector General Act of 1978, **[\$33,600,000]** \$36,400,000, to remain available until September 30, **[2010]** 2011. (*Science Appropriations Act, 2009.*)

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

Identification code 80-0109-0-1-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.01 Direct program activity .....	33	33	36
10.00 Total new obligations .....	33	33	36
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....	1	1	2
22.00 New budget authority (gross) .....	33	34	36
23.90 Total budgetary resources available for obligation .....	34	35	38
23.95 Total new obligations .....	-33	-33	-36
24.40 Unobligated balance carried forward, end of year .....	1	2	2
<b>New budget authority (gross), detail:</b>			
<b>Discretionary:</b>			
40.00 Appropriation .....	33	32	36
40.01 Appropriation, Recovery Act .....		2	
43.00 Appropriation (total discretionary) .....	33	34	36
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....	5	5	6
73.10 Total new obligations .....	33	33	36

73.20 Total outlays (gross) .....	-33	-32	-37
74.40 Obligated balance, end of year .....	5	6	5

**Outlays (gross), detail:**

86.90 Outlays from new discretionary authority .....	29	28	32
86.93 Outlays from discretionary balances .....	4	4	5
87.00 Total outlays (gross) .....	33	32	37

**Net budget authority and outlays:**

89.00 Budget authority .....	33	34	36
90.00 Outlays .....	33	32	37

The mission of the Office of Inspector General is to conduct audits and investigations of agency activities. 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 80-0109-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
11.1 Personnel compensation: Full-time permanent .....	20	21	19
12.1 Civilian personnel benefits .....	8	7	8
21.0 Travel and transportation of persons .....	1	1	1
26.0 Supplies and materials .....	4	4	8
99.9 Total new obligations .....	33	33	36

**Employment Summary**

Identification code 80-0109-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct:</b>			
1001 Civilian full-time equivalent employment .....	197	213	213

**SCIENCE, AERONAUTICS, AND EXPLORATION**

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

Identification code 80-0114-0-1-999	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
00.04 Aeronautics .....	734	22	
00.06 Science .....	6,187	191	
00.07 Exploration systems .....	4,493	307	
00.08 Cross-agency supt .....	613	67	
09.01 Reimbursable program .....	677		
10.00 Total new obligations .....	12,704	587	
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....	1,757	587	
22.00 New budget authority (gross) .....	11,287		
22.10 Resources available from recoveries of prior year obligations .....	243		
22.22 Unobligated balance transferred from other accounts .....	5		
23.90 Total budgetary resources available for obligation .....	13,292	587	
23.95 Total new obligations .....	-12,704	-587	
23.98 Unobligated balance expiring or withdrawn .....	-1		
24.40 Unobligated balance carried forward, end of year .....	587		
<b>New budget authority (gross), detail:</b>			
<b>Discretionary:</b>			
40.00 Appropriation .....	10,606		
40.36 Unobligated balance permanently reduced .....	-165		
42.00 Transferred from other accounts .....	165		
43.00 Appropriation (total discretionary) .....	10,606		
<b>Spending authority from offsetting collections:</b>			
58.00 Offsetting collections (cash) .....	627		
58.10 Change in uncollected customer payments from Federal sources (unexpired) .....	54		
58.90 Spending authority from offsetting collections (total discretionary) .....	681		
70.00 Total new budget authority (gross) .....	11,287		

**Change in obligated balances:**

72.40	Obligated balance, start of year .....	5,494	5,974	119
73.10	Total new obligations .....	12,704	587	
73.20	Total outlays (gross) .....	-11,957	-6,442	-439
73.40	Adjustments in expired accounts (net) .....	-18		
73.45	Recoveries of prior year obligations .....	-243		
74.00	Change in uncollected customer payments from Federal sources (unexpired) .....	-54		
74.10	Change in uncollected customer payments from Federal sources (expired) .....	48		
74.40	Obligated balance, end of year .....	5,974	119	-320

**Outlays (gross), detail:**

86.90	Outlays from new discretionary authority .....	6,901		
86.93	Outlays from discretionary balances .....	5,056	6,442	439
87.00	Total outlays (gross) .....	11,957	6,442	439

**Offsets:**

Against gross budget authority and outlays:

Offsetting collections (cash) from:

88.00	Federal sources .....	-628		
88.40	Non-Federal sources .....	-46		
88.90	Total, offsetting collections (cash) .....	-674		

Against gross budget authority only:

88.95	Change in uncollected customer payments from Federal sources (unexpired) .....	-54		
88.96	Portion of offsetting collections (cash) credited to expired accounts .....	47		

**Net budget authority and outlays:**

89.00	Budget authority .....	10,606		
90.00	Outlays .....	11,283	6,442	439

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

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

Identification code 80-0114-0-1-999	2008 actual	2009 est.	2010 est.
<b>Direct obligations:</b>			
<b>Personnel compensation:</b>			
11.1	Full-time permanent .....	1,229	
11.3	Other than full-time permanent .....	89	
11.5	Other personnel compensation .....	27	
11.9	Total personnel compensation .....	1,345	
12.1	Civilian personnel benefits .....	341	
13.0	Benefits for former personnel .....	3	
21.0	Travel and transportation of persons .....	72	
22.0	Transportation of things .....	136	
23.1	Rental payments to GSA .....	37	
23.2	Rental payments to others .....	10	
23.3	Communications, utilities, and miscellaneous charges .....	55	
24.0	Printing and reproduction .....	6	
25.1	Advisory and assistance services .....	529	
25.2	Other services .....	643	
25.3	Other purchases of goods and services from Government accounts .....	274	
25.4	Operation and maintenance of facilities .....	416	
25.5	Research and development contracts .....	6,244	587
25.6	Medical care .....	4	
25.7	Operation and maintenance of equipment .....	307	
26.0	Supplies and materials .....	121	
31.0	Equipment .....	155	
32.0	Land and structures .....	394	
41.0	Grants, subsidies, and contributions .....	936	
99.0	Direct obligations .....	12,028	587
99.0	Reimbursable obligations .....	676	
99.9	Total new obligations .....	12,704	587

**Employment Summary**

Identification code 80-0114-0-1-999	2008 actual	2009 est.	2010 est.
<b>Direct:</b>			
1001	Civilian full-time equivalent employment .....	12,699	
<b>Reimbursable:</b>			
2001	Civilian full-time equivalent employment .....	179	

**HUMAN SPACE FLIGHT**

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

Identification code 80-0111-0-1-252	2008 actual	2009 est.	2010 est.
<b>Direct program:</b>			
00.03	Investments and support .....	1	
10.00	Total new obligations (object class 33.0) .....	1	
<b>Budgetary resources available for obligation:</b>			
21.40	Unobligated balance carried forward, start of year .....	3	
22.10	Resources available from recoveries of prior year obligations ...	1	
22.21	Unobligated balance transferred to other accounts .....	-3	
23.90	Total budgetary resources available for obligation .....	1	
23.95	Total new obligations .....	-1	
24.40	Unobligated balance carried forward, end of year .....		

**Change in obligated balances:**

72.40	Obligated balance, start of year .....	26	8	2
73.10	Total new obligations .....	1		
73.20	Total outlays (gross) .....	-9	-6	
73.40	Adjustments in expired accounts (net) .....	-9		
73.45	Recoveries of prior year obligations .....	-1		
74.40	Obligated balance, end of year .....	8	2	2

**Outlays (gross), detail:**

86.93	Outlays from discretionary balances .....	9	6	
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**Net budget authority and outlays:**

89.00	Budget authority .....			
90.00	Outlays .....	9	6	

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 80-0110-0-1-999	2008 actual	2009 est.	2010 est.
<b>Direct program:</b>			
00.04	Construction of facilities .....	1	2
10.00	Total new obligations (object class 25.5) .....	1	2
<b>Budgetary resources available for obligation:</b>			
21.40	Unobligated balance carried forward, start of year .....	7	2
22.10	Resources available from recoveries of prior year obligations ...	1	

SCIENCE, AERONAUTICS AND TECHNOLOGY—Continued  
Program and Financing —Continued

Identification code 80-0110-0-1-999	2008 actual	2009 est.	2010 est.
22.21 Unobligated balance transferred to other accounts .....	-5		
23.90 Total budgetary resources available for obligation .....	3	2	
23.95 Total new obligations .....	-1	-2	
24.40 Unobligated balance carried forward, end of year .....	2		
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....	100	40	7
73.10 Total new obligations .....	1	2	
73.20 Total outlays (gross) .....	-44	-35	
73.40 Adjustments in expired accounts (net) .....	-18		
73.45 Recoveries of prior year obligations .....	-1		
74.10 Change in uncollected customer payments from Federal sources (expired) .....	2		
74.40 Obligated balance, end of year .....	40	7	7
<b>Outlays (gross), detail:</b>			
86.93 Outlays from discretionary balances .....	44	35	
<b>Offsets:</b>			
Against gross budget authority and outlays:			
88.40 Offsetting collections (cash) from: Non-Federal sources .....	1		
Against gross budget authority only:			
88.96 Portion of offsetting collections (cash) credited to expired accounts .....	-1		
<b>Net budget authority and outlays:</b>			
89.00 Budget authority .....			
90.00 Outlays .....	45	35	

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. 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 80-0112-0-1-999	2008 actual	2009 est.	2010 est.
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....	4	1	1
22.10 Resources available from recoveries of prior year obligations .....	1		
22.21 Unobligated balance transferred to other accounts .....	-4		
23.90 Total budgetary resources available for obligation .....	1	1	1
24.40 Unobligated balance carried forward, end of year .....	1	1	1
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....	7	3	2
73.20 Total outlays (gross) .....	-2	-1	
73.40 Adjustments in expired accounts (net) .....	-1		
73.45 Recoveries of prior year obligations .....	-1		
74.40 Obligated balance, end of year .....	3	2	2
<b>Outlays (gross), detail:</b>			
86.93 Outlays from discretionary balances .....	2	1	
<b>Net budget authority and outlays:</b>			
89.00 Budget authority .....			
90.00 Outlays .....	2	1	

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 80-4546-0-4-252	2008 actual	2009 est.	2010 est.
<b>Obligations by program activity:</b>			
09.00 Reimbursable program .....	84	83	83
10.00 Total new obligations (object class 25.2) .....	84	83	83
<b>Budgetary resources available for obligation:</b>			
21.40 Unobligated balance carried forward, start of year .....	17	13	13
22.00 New budget authority (gross) .....	78	83	83
22.10 Resources available from recoveries of prior year obligations .....	2		
23.90 Total budgetary resources available for obligation .....	97	96	96
23.95 Total new obligations .....	-84	-83	-83
24.40 Unobligated balance carried forward, end of year .....	13	13	13
<b>New budget authority (gross), detail:</b>			
Discretionary:			
58.00 Spending authority from offsetting collections: Offsetting collections (cash) .....	78	83	83
<b>Change in obligated balances:</b>			
72.40 Obligated balance, start of year .....	21	34	35
73.10 Total new obligations .....	84	83	83
73.20 Total outlays (gross) .....	-69	-82	-83
73.45 Recoveries of prior year obligations .....	-2		
74.40 Obligated balance, end of year .....	34	35	35
<b>Outlays (gross), detail:</b>			
86.90 Outlays from new discretionary authority .....	40	41	41
86.93 Outlays from discretionary balances .....	29	41	42
87.00 Total outlays (gross) .....	69	82	83
<b>Offsets:</b>			
Against gross budget authority and outlays:			
Offsetting collections (cash) from:			
88.00 Federal sources .....	-71	-35	-35
88.40 Non-Federal sources .....	-7	-48	-48
88.90 Total, offsetting collections (cash) .....	-78	-83	-83
<b>Net budget authority and outlays:</b>			
89.00 Budget authority .....			
90.00 Outlays .....	-9	-1	

The Working Capital Fund provides goods and services on a reimbursable basis. The Fund finances Scientific & Engineering Workstation Procurement and the NASA Shared Services Center. The Shared Services Center commenced operation in 2006 and performs selected financial management, human resources, information technology, and procurement services for NASA Headquarters and Centers.

Trust Funds

SCIENCE, SPACE, AND TECHNOLOGY EDUCATION TRUST FUND  
Special and Trust Fund Receipts (in millions of dollars)

Identification code 80-8978-0-7-503	2008 actual	2009 est.	2010 est.
01.00 Balance, start of year .....	14	14	14
01.99 Balance, start of year .....	14	14	14
<b>Receipts:</b>			
02.40 Earnings on Investments, Science, Space and Technology Education Trust Fund .....	1	1	1
04.00 Total: Balances and collections .....	15	15	15
<b>Appropriations:</b>			

05.00	Science, Space, and Technology Education Trust Fund .....	-1	-1	-1
07.99	Balance, end of year .....	14	14	14

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

Identification code 80-8978-0-7-503	2008 actual	2009 est.	2010 est.	
<b>Obligations by program activity:</b>				
00.01	Direct program activity .....	1	1	1
10.00	Total new obligations (object class 41.0) .....	1	1	1
<b>Budgetary resources available for obligation:</b>				
22.00	New budget authority (gross) .....	1	1	1
23.95	Total new obligations .....	-1	-1	-1
<b>New budget authority (gross), detail:</b>				
Mandatory:				
60.26	Appropriation (trust fund) .....	1	1	1
<b>Change in obligated balances:</b>				
73.10	Total new obligations .....	1	1	1
73.20	Total outlays (gross) .....	-1	-1	-1
74.40	Obligated balance, end of year .....			
<b>Outlays (gross), detail:</b>				
86.97	Outlays from new mandatory authority .....	1	1	1
<b>Net budget authority and outlays:</b>				
89.00	Budget authority .....	1	1	1
90.00	Outlays .....	1	1	1
<b>Memorandum (non-add) entries:</b>				
92.01	Total investments, start of year: Federal securities: Par value .....	14	15	15
92.02	Total investments, end of year: Federal securities: Par value .....	15	15	15

**NATIONAL SPACE GRANT PROGRAM**

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

Identification code 80-8977-0-7-252	2008 actual	2009 est.	2010 est.	
<b>Budgetary resources available for obligation:</b>				
21.40	Unobligated balance carried forward, start of year .....	3	3	3
24.40	Unobligated balance carried forward, end of year .....	3	3	3
<b>Net budget authority and outlays:</b>				
89.00	Budget authority .....			
90.00	Outlays .....			

**ADMINISTRATIVE PROVISIONS**

Notwithstanding the limitation on the duration of availability of funds appropriated to the National Aeronautics and Space Administration for any account in this Act, except for "Office of Inspector General", when any activity has been initiated by the incurrence of obligations for [construction of facilities or] environmental compliance and restoration activities as authorized by law, such amount available for such activity shall remain available until expended. [This provision does not apply to the amounts appropriated for institutional minor revitalization and minor construction of facilities, and institutional facility planning and design.]

Notwithstanding the limitation on the availability of funds appropriated to the National Aeronautics and Space Administration for any account in this Act, except for "Office of Inspector General", the amounts appropriated for construction of facilities shall remain available until September 30, [2011] 2014.

Funds for announced prizes otherwise authorized shall remain available, without fiscal year limitation, until the 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. 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.

[Notwithstanding any other provision of law, no funds shall be used to implement any Reduction in Force or other involuntary separations (except for cause) by the National Aeronautics and Space Administration prior to September 30, 2009.]

The unexpired balances of the Science, Aeronautics, and Exploration account, for activities for which funds are provided under this Act, may be transferred to the new accounts established in this Act that provide such activity. Balances so transferred shall be merged with the funds in the newly established accounts, but 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 Human Space Flight, Space Flight Capabilities, and Exploration Capabilities appropriations accounts shall remain available through fiscal year 2015 for the liquidation of valid obligations incurred during the period of fiscal year 2001 through fiscal year 2009.]

Funding designations and minimum funding requirements contained in any other Act shall not be applicable to funds appropriated by this title for the National Aeronautics and Space Administration.

[The Administrator of NASA shall, not later than February 2, 2009, submit to the appropriate committees of Congress a report that delineates by fiscal year, mission directorate and object class the full costs necessary for Space Shuttle retirement and transition activities for fiscal years 2006 through 2015 that includes, but is not limited to, the following: (1) the costs for environmental compliance and remediation; (2) the gross and net proceeds from exchange sales of excess Space Shuttle equipment; (3) the costs to maintain required facilities at Kennedy Space Center during the gap in human space flight; (4) the costs associated with preservation of historic properties; (5) the costs of workforce transition; and (6) other costs related to Space Shuttle retirement and transition.] (Science Appropriations Act, 2009.)

**GENERAL FUND RECEIPT ACCOUNT**

(in millions of dollars)

	2008 actual	2009 est.	2010 est.
<b>Offsetting receipts from the public:</b>			
80-322000 All Other General Fund Proprietary Receipts Including Budget Clearing Accounts .....	6	15	15
General Fund Offsetting receipts from the public.....	6	15	15
<b>Intragovernmental payments:</b>			
80-388500 Undistributed Intragovernmental Payments and Receivables from Cancelled Accounts .....	-1		
General Fund Intragovernmental payments .....	-1		