



NASA Budget Comparison

NASA FY 2008 Enacted Budget, NASA FY2010 Enacted Budget, President's FY2011 Budget Request
NASA Authorization Act of 2010, House Full-Year Continuing Appropriations Bill, 2011,

Update 3*

This document provides an overview of three current NASA budget proposals. The first section provides a comparison of funding levels provided by each. The analysis then looks in detail at similarities and differences within Exploration and within Space Operations.

NASA Budget Proposals Overview – FY2011 Funding[†]

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY2011 Budget Request	NASA Authorization Act of 2010	House Full-Year Continuing Appropriation Bill, 2011
Science	4,706.20	4,493.30	5,005.60	5,005.60	5,005.60
Aeronautics and Space Research and Technology	511.7	507.00	1,151.80	929.6	1,138.60
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,706.00
Space Operations	5,526.20	6,180.60	4,887.80	5,508.50	5,247.90
Education	146.8	183.80	145.80	145.80	180.00
Cross-Agency Support	3,242.90	3,095.10	3,111.40	3,111.40	3,085.70
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	394.30	528.70
Inspector General	32.6	36.40	37.00	37.00	37.50
NASA FY 2011	17,309.40	18,724.30	19,000.00	19,000.00	18,930.00

*For a more detailed breakdown of the budget proposals, see the Appendix B on page 9.

Total NASA Budget

As seen in the table above, the total NASA budget, in the President's Budget Request and the NASA Authorization Act of 2010, is equal to \$19.0 billion. This is \$275.7 million more than the NASA budget enacted in FY2010, an increase of 1.47 percent. The total NASA budget in the proposed House Full-Year Continuing Appropriations Bill, 2011 is \$18.93 billion. This is an increase of 1.09 percent.

* A list of documents used to complete this update can be found in Appendix B, on page 6.

[†] Please note that the numbers used for this table, including both the individual mission directorate budgets as well as the overall budget estimates, reflect the numbers explicitly called out in the relevant document. In some cases, the sum of the budgets for each category does not match the total funding level given in the document.

Science

The total budget for Science is the same, \$5,005.6 million, in the President's Budget Proposal, the Authorization Act, and the proposed House Full-Year Continuing Appropriations Bill, 2011. This is an 11.4 percent increase over the budget enacted in FY2010.

Aeronautics and Space Research and Technology

The President's Budget Request contains \$1,151.8 million for Aeronautics and Space Research and Technology, at. This is more than double the \$507 million that was enacted in FY2010. The Authorization Act proposes \$929.6 million for Aeronautics and Space Research and Technology, an 83.4 percent increase over the amount enacted in FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 proposes \$1,138.6 million for Aeronautics and Space Research and Technology, again more than double the amount enacted in FY 2010.

Exploration

The President's Proposal includes an Exploration budget of \$4,263.4 million. The Authorization Act proposes the \$3,868 million, which is a 2.3 percent increase over the budget enacted in FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 proposes slightly less than the authorization level, at \$3,706 million, which is about 2 percent less than the budget enacted in FY2010.

Space Operations

The funding for Space Operations will decrease in FY2011 compared to FY2010. The President's Proposal includes funding \$4,887.8 million. The Authorization Act proposes \$5,508.5 million, a decrease of 10.9 percent compared to FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 proposes \$5,247.90 million, a 15.1 percent decrease from the \$6,180.6 million enacted in FY2010. The Authorization Act, and the proposed House Full-Year Continuing Appropriations Bill, 2011 both make it possible for an additional shuttle flight, beyond the current manifest, to be flown in FY 2011.

Economic Development

The total levels of exploration and space operations provided for in the House Full-Year Continuing Appropriations Bill could change, as the bill states, "that of funds provided under the headings "Space Operations" and "Exploration" in this Act, up to \$60,000,000 may be transferred to "Department of Commerce, Economic Development Administration, Economic Development Assistance Programs" to spur regional economic growth in areas impacted by Shuttle retirement and Exploration programmatic changes."

Education

The President's proposal and the Authorization Act both include \$145.8 million for Education. This is a decrease of 20.7 percent compared to the \$183.8 million enacted in FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 proposes \$180 million for Education, a decrease of slightly more than 2 percent from the amount enacted in FY2010.

Cross-Agency Support

The President's proposal and the Authorization Act both include \$3,111.4 million for Cross-Agency Support. This is an increase of 0.5 percent compared to the \$3,095.1 million enacted in FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 proposes of \$3,085.70 million, a decrease of 0.3 percent from FY2010.

Construction and Environmental Compliance and Restoration

The President's Budget Proposal includes \$397.3 million for Construction and Environmental Compliance and Restoration. The Authorization Act proposes \$394.3 million, a decrease of 12.0 percent from FY2010. The

proposed House Full-Year Continuing Appropriations Bill, 2011 proposes the highest funding amount, with \$528.7 million, an increase of 17.9 percent from FY2010.

Inspector General

The funding levels for the Inspector General are similar in all proposals. The President’s proposal and the Authorization Act include \$37 million. The House Full-Year Continuing Appropriations Bill, 2011 propose a slightly higher level of funding, at \$37.5 million. All of these represent an increase compared to the FY2010 funding level of \$36.4 million.

Exploration

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY2011 Budget Request	NASA Authorization Act of 2010	House Full-Year Continuing Appropriation Bill, 2011
Exploration Research and Development	N/A	454.00	1,551.40	505.00	N/A
<i>Heavy Lift and Propulsion Technology</i>	N/A	N/A	559.00	N/A	N/A
<i>Human Research</i>	N/A	N/A	215.00	155.00	N/A
<i>Exploration Technology and Demonstration Program</i>	N/A	N/A	652.40	N/A	N/A
<i>Exploration Precursor Robotic Mission Program</i>	N/A	N/A	125.00	N/A	N/A
<i>Exploration Technology Development (S)</i>	N/A	N/A	N/A	250.00	N/A
<i>Robotic Pre-cursor Studies and Instruments (S)</i>	N/A	N/A	N/A	100.00	N/A
<i>Advanced Capabilities</i>	671.1	454.00	0.00	N/A	N/A
Commercial Spaceflight	N/A	0.00	812.00	612.00	550
<i>Commercial Cargo</i>	N/A	N/A	312.00	300.00	300
<i>Commercial Crew</i>	N/A	N/A	500.00	312.00	250
Constellation Transition	N/A	0.00	1,900.00	N/A	N/A
Space Vehicles	N/A	3,325.80	0.00	2,751.00	3,000.00
<i>Constellation Systems</i>	2,471.90	3,325.80	0.00	N/A	N/A
<i>Multipurpose crew vehicle (S)</i>	N/A	N/A	N/A	1,120.00	1,200.00
<i>Space Launch System (S)</i>	N/A	N/A	N/A	1,631.00	1,800.00
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,706.00

Exploration Research and Development

The President's budget request included \$1,551.4 million for Exploration Research and Development and the Authorization Act includes \$155 million. There is no funding provided for this activity in the proposed House Full-Year Continuing Appropriations Bill, 2011. However, the proposed appropriations bill does state that within the Aeronautics budget, "\$559,000,000 shall be for space technology activities proposed for "Aeronautics" and exploration technology and demonstration program activities proposed for "Exploration" in the National Aeronautics and Space Administration congressional justification that accompanied the President's Fiscal Year 2011 budget."

Commercial Spaceflight

The President's budget request included \$812 million for commercial spaceflight, the Authorization Act included \$612 million, and the proposed House Full-Year Continuing Appropriations Bill, 2011 currently includes slightly less, at \$550 million.

Constellation Transition/ Space Vehicles

The President's Budget Request contains \$1.9 billion for Constellation transition and \$559 million for research and development on heavy lift propulsion and technology. The Authorization Act includes \$2,751 million for space vehicles, including a multipurpose crew vehicle, as well as a space launch system. The proposed House

Full-Year Continuing Appropriations Bill, 2011 includes \$3 billion for this area. While this is more than the amount included in the Authorization Act, it is still 9.8% less than the funding for Constellation Systems in FY2010. The proposed House Full-Year Continuing Appropriations Bill, 2011 notes that \$1.2 billion is for the “Orion multipurpose crew vehicle,” and that \$1.8 billion shall be for the heavy lift launch vehicle system, should have an “initial lift capability... not less than 130 tons and that the upper stage and other core elements shall be simultaneously developed.”

Space Operations

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY2011 Budget Request	NASA Authorization Act of 2010	House Full-Year Continuing Appropriation Bill, 2011
Space Shuttle	3,266.70	3,139.40	989.10	1,609.70	989.1
International Space Station	1,813.20	2,317.00	2,779.80	2,779.70	2,745.00
Space and Flight Support	446.3	724.20	1,119.00	1,119.00	688.8
<i>Post-Shuttle Workforce Transition Initiative</i>	N/A	N/A	N/A	N/A	60
<i>Additional Shuttle launch and launch complex development</i>	N/A	N/A	N/A	N/A	825
Space Operations	5,526.20	6,180.60	4,887.80	5,508.50	5,247.90

Exploration Research and Development

The President's budget request and the proposed House Full-Year Continuing Appropriations Bill, 2011 both include \$989.1 million for the Space Shuttle program. This is 38.5 percent less than the \$1,609.7 million included in the Authorization Act.

International Space Station

The President's budget request and the Authorization Act both provide \$2,779.8 million for the International Space Station. The proposed House Full-Year Continuing Appropriations Bill, 2011 provides slightly less, at \$2,745 million.

Space and Flight Support

The President's budget request and the Authorization Act both provide \$1,119 million for the International Space Station. The proposed House Full-Year Continuing Appropriations Bill, 2011 provides \$688.8 million, 38.4 percent less than the President's proposal and the Authorization Act.

Additional Shuttle launch and launch complex development

The proposed House Full-Year Continuing Appropriations Bill, 2011 also includes \$825 million for "additional Space Shuttle costs, launch complex development only for activities at the Kennedy Space Center related to the civil, nondefense launch complex, use at other National Aeronautics and Space Administration flight facilities that are currently scheduled to launch cargo to the International Space Station, and development of ground operations for the heavy lift launch vehicle and the Orion multipurpose crew vehicle."

About the Space Foundation

The Space Foundation is an international, nonprofit organization and the foremost advocate for all sectors of the space industry - civil, commercial, military and intelligence. Founded in 1983, the Space Foundation is a leader in space awareness activities, educational programs that bring space into the classroom, and major industry events, all in support of its mission "to advance space-related endeavors to inspire, enable, and propel humanity." An expert in all aspects of the global space industry, the Space Foundation publishes [*The Space Report: The Authoritative Guide to Global Space Activity*](#) and provides three [indices](#) that track daily performance of the space industry. Through its [Space Certification](#) and [Space Technology Hall of Fame](#) programs, the Space Foundation recognizes space-based technologies and innovations that have been adapted to improve life on Earth. Headquartered in Colorado Springs, the Space Foundation conducts research and analysis and government affairs activities from its Washington, D.C., office and has field representatives in Houston, Texas, and Cape Canaveral, Fla. For more information, visit www.SpaceFoundation.org. Follow us on [Twitter](#), [Facebook](#), and [LinkedIn](#), and read about the latest space news and Space Foundation activities in [Space Watch](#).

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Appendix A: Summary of Changes in Update 3

The document was updated to reflect:

- 1) The Authorization Act
- 6) Proposed Senate Appropriations Bill, CR v3, 12-8-2010

Also, information about previous authorization and appropriations proposals were removed from the body of the document. Appendix C includes a comparison of the funding levels of all past proposals as well as the funding levels of the proposed Senate appropriations bill.

Appendix B: NASA Budget Proposals – FY2011 Funding

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY2011 Budget Request	NASA Authorization Act of 2010	House Full-Year Continuing Appropriation Bill, 2011
Science	4,706.20	4,493.30	5,005.60	5,005.60	5,005.60
Earth Science	1,280.30	1,420.70	1,801.80	1,801.80	N/A
Planetary Science	1,247.50	1,341.30	1,485.70	1,485.70	N/A
Astrophysics	1,337.50	1,103.90	1,076.30	1,076.30	N/A
Heliophysics	840.9	627.40	641.90	641.90	N/A
Aeronautics and Space Research and Technology	511.7	507.00	1,151.80	929.60	1,138.60
Aeronautics Research	N/A	507.00	579.60	579.60	579.6
Space Technology	N/A	0.00	572.20	350.00	559
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,706.00
Exploration Research and Development	N/A	454.00	1,551.40	505.00	N/A
<i>Heavy Lift and Propulsion Technology</i>	N/A	N/A	559.00	N/A	N/A
<i>Human Research</i>	N/A	N/A	215.00	155.00	N/A
<i>Exploration Technology and Demonstration Program</i>	N/A	N/A	652.40	N/A	N/A
<i>Exploration Precursor Robotic Mission Program</i>	N/A	N/A	125.00	N/A	N/A
<i>Exploration Technology Development (S)</i>	N/A	N/A	N/A	250.00	N/A
<i>Robotic Pre-cursor Studies and Instruments (S)</i>	N/A	N/A	N/A	100.00	N/A
<i>Advanced Capabilities</i>	671.1	454.00	0.00	N/A	N/A
Commercial Spaceflight	N/A	0.00	812.00	612.00	550
<i>Commercial Cargo</i>	N/A	N/A	312.00	300.00	300
<i>Commercial Crew</i>	N/A	N/A	500.00	312.00	250
Constellation Transition	N/A	0.00	1,900.00	N/A	N/A
Space Vehicles	N/A	3,325.80	0.00	2,751.00	3,000.00
<i>Constellation Systems</i>	2,471.90	3,325.80	0.00	N/A	N/A
<i>Multipurpose crew vehicle</i>	N/A	N/A	N/A	1,120.00	1,200.00
<i>Space Launch System</i>	N/A	N/A	N/A	1,631.00	1,800.00
Space Operations	5,526.20	6,180.60	4,887.80	5,508.50	5,247.90
Space Shuttle	3,266.70	3,139.40	989.10	1,609.70	989.1
International Space Station	1,813.20	2,317.00	2,779.80	2,779.80	2,745.00
Space and Flight Support	446.3	724.20	1,119.00	1,119.00	688.8
<i>Post-Shuttle Workforce Transition Initiative (H)</i>	N/A	N/A	N/A	N/A	60
<i>Additional Shuttle launch and launch complex development</i>	N/A	N/A	N/A	N/A	825
Education	146.8	183.80	145.80	145.80	180.00
Cross-Agency Support	3,242.90	3,095.10	3,111.40	3,111.40	3,085.70
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	394.30	528.70
Science R&D	N/A	N/A	N/A	N/A	40.50
Exploration R&D	N/A	N/A	N/A	N/A	109.80
Space Operations R&D	N/A	N/A	N/A	N/A	15.60
Institutional Construction of Facilities	N/A	N/A	N/A	N/A	300.70
Environmental Compliance and Remediation	N/A	N/A	N/A	N/A	62.10
Inspector General	32.6	36.40	37.00	37.00	37.50
NASA FY 2011	17,309.40	18,724.30	19,000.00	19,000.00	18,930.00

Appendix C: NASA Budget Proposals – FY2011 Funding (Including past proposals)

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY2011 Budget Request	House Auth Bill FY 2011	House Auth Bill FY 2011 w/ Shuttle Flight	Senate Auth Bill FY 2011	NASA Auth Act of 2010	House Approp Bill FY 2011	Senate Approp Bill FY 2011	House Full- Year Continuing Appropriati on Bill, 2011
Science	4,706.20	4,493.30	5,005.60	5,015.70	5,015.70	5,005.60	5,005.60	4,704.50	5,005.60	5,005.60
Earth Science	1,280.30	1,420.70	1,801.80	1,801.80	1,801.80	1,801.80	1,801.80	N/A	1,801.80	
Planetary Science	1,247.50	1,341.30	1,485.70	1,485.70	1,485.70	1,485.70	1,485.70	N/A	1,485.70	
Astrophysics	1,337.50	1,103.90	1,076.30	1,076.30	1,076.30	1,076.30	1,076.30	N/A	1,076.30	
Heliophysics	840.9	627.40	641.90	646.90	646.90	641.90	641.90	N/A	641.90	
Suborbital Augmentation to Astrophysics and Heliophysics (H)	N/A	N/A	N/A	5.00	5.00	N/A	N/A	N/A	N/A	
Aeronautics and Space Research and Technology	511.7	507.00	1,151.80	1,151.80	1,151.80	929.60	929.60	887.10	904.60	1,138.60
Aeronautics Research	N/A	507.00	579.60	579.60	579.60	579.60	579.60	375.00	579.60	579.6
Space Technology	N/A	0.00	572.20	572.20	572.20	350.00	350.00	512.10	325.00	559
Exploration	3,143.10	3,779.80	4,263.40	4,535.30	4,010.30	3,868.00	3,868.00	3,563.50	3,912.00	3,706.00
Exploration Research and Development	N/A	454.00	1,551.40	215.00	215.00	505.00	505.00	N/A	350.00	
<i>Heavy Lift and Propulsion Technology</i>	N/A	N/A	559.00	N/A	N/A	N/A	N/A	N/A	N/A	
<i>Human Research</i>	N/A	N/A	215.00	215.00	215.00	155.00	155.00	N/A	155.00	
<i>Exploration Technology and Demonstration Program</i>	N/A	N/A	652.40	0.00	0.00	N/A	N/A	N/A	150.00	
<i>Exploration Precursor Robotic Mission Program</i>	N/A	N/A	125.00	0.00	0.00	N/A	N/A	N/A	N/A	
<i>Exploration Technology Development (S)</i>	N/A	N/A	N/A	N/A	N/A	250.00	250.00	N/A	N/A	
<i>Robotic Pre-cursor Studies and Instruments (S)</i>	N/A	N/A	N/A	N/A	N/A	100.00	100.00	N/A	45.00	
<i>Advanced Capabilities</i>	671.1	454.00	0.00	N/A	N/A	N/A	N/A	N/A	N/A	
Commercial Spaceflight	N/A	0.00	812.00	164.00	164.00	612.00	612.00	N/A	562.00	550
<i>Commercial Orbital Transportation System demonstration program (H)</i>	N/A	N/A	N/A	14.00	14.00	N/A	N/A	N/A	N/A	N/A
<i>Commercial Crew</i>	N/A	N/A	N/A	50.00	50.00	N/A	N/A	N/A	N/A	N/A

<i>Transportation-Related Activities (H)</i>										
<i>Loan and Loan Guarantee Program (H)</i>	N/A	N/A	N/A	100.00	100.00	N/A	N/A	N/A	N/A	N/A
<i>Commercial Cargo</i>	N/A	N/A	312.00	N/A	N/A	300.00	300.00	N/A	312.00	300
<i>Commercial Crew</i>	N/A	N/A	500.00	N/A	N/A	312.00	312.00	N/A	250.00	250
Constellation Transition	N/A	0.00	1,900.00	N/A	N/A	N/A	N/A	N/A	N/A	
Space Vehicles	N/A	3,325.80	0.00	4,156.30	3,631.30	2,751.00	2,751.00	N/A	3,000.00	3,000.00
<i>Constellation Systems</i>	2,471.90	3,325.80	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Restructured Exploration Program (H)</i>	N/A	N/A	N/A	4,156.30	3,631.30	N/A	N/A	N/A	N/A	
<i>Multipurpose crew vehicle (S)</i>	N/A	N/A	N/A	N/A	N/A	1,120.00	1,120.00	N/A	1,100.00	1,200.00
<i>Space Launch System (S)</i>	N/A	N/A	N/A	N/A	N/A	1,631.00	1,631.00	N/A	1,900.00	1,800.00
Space Operations	5,526.20	6,180.60	4,887.80	4,594.30	5,119.30	5,508.50	5,508.50	4,460.50	5,533.40	5,247.90
Space Shuttle	3,266.70	3,139.40	989.10	989.10	1,689.10	1,609.70	1,609.70	N/A	1,609.70	989.1
International Space Station	1,813.20	2,317.00	2,779.80	2,804.80	2,629.80	2,779.80	2,779.80	N/A	2,779.80	2,745.00
Space and Flight Support	446.3	724.20	1,119.00	740.40	740.40	1,119.00	1,119.00	N/A	1,144.00	688.8
<i>Post-Shuttle Workforce Transition Initiative (H)</i>	N/A	N/A	N/A	60.00	60.00	N/A	N/A	N/A	N/A	60
<i>Additional Shuttle launch and launch complex development</i>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	825
Education	146.8	183.80	145.80	145.80	145.80	145.80	145.80	205.20	145.80	180.00
Cross-Agency Support	3,242.90	3,095.10	3,111.40	3,111.40	3,111.40	3,111.40	3,111.40	4,633.50	3,079.30	3,085.70
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	407.30	407.30	394.30	394.30	508.70	381.30	528.70
Science R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40.50
Exploration R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	109.80
Space Operations R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15.60
Institutional Construction of Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	300.70
Environmental Compliance and Remediation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	62.10
Inspector General	32.6	36.40	37.00	38.40	38.40	37.00	37.00	37.00	38.00	37.50
NASA FY 2011	17,309.40	18,724.30	19,000.00	19,000.00	19,000.00	19,000.00	19,000.00	19,000.00	19,000.00	18,930.00