



NASA Budget Comparison

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

Update 4*

This document provides an overview of the NASA FY 2011 budget appropriated by Congress in comparison to other budget planning documents and past year budget levels. 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 – FY 2011 Funding[†]

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY 2011 Budget Request	NASA Authorization Act of 2010	Full-Year Continuing Appropriations Act, 2011
Science	4,706.20	4,493.30	5,005.60	5,005.60	4,945.30
Aeronautics and Space Research and Technology	511.7	507.00	1,151.80	929.6	535.00
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,808.30
Space Operations	5,526.20	6,180.60	4,887.80	5,508.50	5,508.50
Education	146.8	183.80	145.80	145.80	145.80
Cross-Agency Support	3,242.90	3,095.10	3,111.40	3,111.40	3,111.40
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	394.30	394.30
Inspector General	32.6	36.40	37.00	37.00	36.40
NASA FY 2011	17,309.40	18,724.30	19,000.00	19,000.00	18,485.00

*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 FY 2010, an increase of 1.47 percent. The total NASA budget in the Full-Year Continuing Appropriations Act, 2011 is \$18.485 billion. This is a decrease of 1.28 percent from the NASA budget enacted in FY 2010.

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

Science

The total budget for Science is the same, \$5,005.6 million, in the President's Budget Proposal and the Authorization Act, and reflects an 11.4 percent increase over the budget enacted in FY 2010. The House Full-Year Continuing Appropriations Act, 2011 provides 4,945.30, a 10.1 percent increase over the budget enacted in FY 2010.

Aeronautics and Space Research and Technology

The President's Budget Request contains \$1,151.8 million for Aeronautics and Space Research and Technology. This is more than double the \$507 million that was enacted in FY 2010. The Authorization Act proposes \$929.6 million for Aeronautics and Space Research and Technology, an 83.4 percent increase over the amount enacted in FY 2010. The Full-Year Continuing Appropriations Act, 2011 proposes \$535 million for Aeronautics and Space Research and Technology, just 5.52 percent more than 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 FY 2010. The Full-Year Continuing Appropriations Act, 2011 proposes slightly less than the authorization level, at \$3,808 million, which is less than one percent higher than the budget enacted in FY 2010.

Space Operations

The funding for Space Operations will decrease in FY 2011 compared to FY 2010. The President's Proposal includes funding of \$4,887.8 million. Both the Authorization Act and the Full-Year Continuing Appropriations Act, 2011 propose \$5,508.5 million, a decrease of 10.9 percent compared to FY 2010. The Authorization Act and the Full-Year Continuing Appropriations Act, 2011 both make it possible for an additional shuttle flight, beyond the current manifest, to be flown in FY 2011.

Education

The President's proposal, the Authorization Act, and the Full-Year Continuing Appropriations Act, 2011 all include \$145.8 million for Education. This is a decrease of 20.7 percent compared to the \$183.8 million enacted in FY 2010.

Cross-Agency Support

The President's proposal, the Authorization Act, and the Full-Year Continuing Appropriations Act, 2011 all 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 FY 2010.

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 and the Full-Year Continuing Appropriations Act, 2011 both propose \$394.3 million, a decrease of 12.0 percent from FY 2010.

Inspector General

The President's proposal and the Authorization Act include \$37 million. The Full-Year Continuing Appropriations Act, 2011 propose a slightly lower level of funding, at \$36.4 million, which is equal to the amount enacted in FY 2010.

Exploration

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY 2011 Budget Request	NASA Authorization Act of 2010	Full-Year Continuing Appropriations Act, 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 Precursor 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	N/A
<i>Commercial Cargo</i>	N/A	N/A	312.00	300.00	N/A
<i>Commercial Crew</i>	N/A	N/A	500.00	312.00	N/A
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
Other	N/A	N/A	N/A	N/A	808.30
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,808.30

Exploration Research and Development

The President's budget request included \$1,551.4 million for Exploration Research and Development and the Authorization Act includes \$505 million. There is not a specific funding level provided for this activity in the Full-Year Continuing Appropriations Bill, 2011.

Commercial Spaceflight

The President's budget request included \$812 million for commercial spaceflight, and the Authorization Act included \$612 million, however, the Full-Year Continuing Appropriations Bill, 2011 does not specify a specific funding level in this area.

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 Full-Year Continuing Appropriations Act, 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 FY 2010. The Full-Year Continuing Appropriations Act, 2011 notes that \$1.2 billion is for the "multipurpose crew vehicle," and that \$1.8 billion shall be for the heavy lift launch vehicle system, which should have a "lift capability not less than 130 tons and which shall have an upper stage and other core elements developed simultaneously."

Space Operations

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

Exploration Research and Development

The President's budget request includes \$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. The Full-Year Continuing Appropriations Act, 2011 does not specify an amount for this sub-category.

International Space Station

The President's budget request and the Authorization Act both provide \$2,779.8 million for the International Space Station. The Full-Year Continuing Appropriations Act, 2011 does not specify an amount for this sub-category.

Space and Flight Support

The President's budget request and the Authorization Act both provide \$1,119 million for the International Space Station. The Full-Year Continuing Appropriations Act, 2011 does not specify an amount for this sub-category.

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 4

The document was updated to reflect:

- 1) Full-Year Continuing Appropriations Act, 2011

Also, information about previous authorization and appropriations proposals was 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 – FY 2011 Funding

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY 2011 Budget Request	NASA Authorization Act of 2010	Full-Year Continuing Appropriations Act, 2011
Science	4,706.20	4,493.30	5,005.60	5,005.60	4,945.30
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	535.00
Aeronautics Research	N/A	507.00	579.60	579.60	535.00
Space Technology	N/A	0.00	572.20	350.00	N/A
Exploration	3,143.10	3,779.80	4,263.40	3,868.00	3,808.30
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 Precursor 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	N/A
<i>Commercial Cargo</i>	N/A	N/A	312.00	300.00	N/A
<i>Commercial Crew</i>	N/A	N/A	500.00	312.00	N/A
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	5,508.50
Space Shuttle	3,266.70	3,139.40	989.10	1,609.70	N/A
International Space Station	1,813.20	2,317.00	2,779.80	2,779.80	N/A
Space and Flight Support	446.3	724.20	1,119.00	1,119.00	N/A
<i>Post-Shuttle Workforce Transition Initiative (H)</i>	N/A	N/A	N/A	N/A	N/A
<i>Additional Shuttle launch and launch complex development</i>	N/A	N/A	N/A	N/A	N/A
Education	146.8	183.80	145.80	145.80	145.80
Cross-Agency Support	3,242.90	3,095.10	3,111.40	3,111.40	3,111.40
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	394.30	394.30
Science R&D	N/A	N/A	N/A	N/A	N/A
Exploration R&D	N/A	N/A	N/A	N/A	N/A
Space Operations R&D	N/A	N/A	N/A	N/A	N/A
Institutional Construction of Facilities	N/A	N/A	N/A	N/A	N/A
Environmental Compliance and Remediation	N/A	N/A	N/A	N/A	N/A
Inspector General	32.6	36.40	37.00	37.00	36.40
NASA FY 2011	17,309.40	18,724.30	19,000.00	19,000.00	18,485.00

Appendix C: NASA Budget Proposals – FY 2011 Funding (Including past proposals)

Budget Authority, \$ in million	FY 2008 Enacted	FY 2010 Enacted	President's FY 2011 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	Full-Year Continuing Appropriations Act, 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	4,945.30
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	N/A
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	N/A
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	N/A
Heliophysics	840.9	627.40	641.90	646.90	646.90	641.90	641.90	N/A	641.90	N/A
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	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	535.00
Aeronautics Research	N/A	507.00	579.60	579.60	579.60	579.60	579.60	375.00	579.60	535.00
Space Technology	N/A	0.00	572.20	572.20	572.20	350.00	350.00	512.10	325.00	N/A
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	3,808.30
Exploration Research and Development	N/A	454.00	1,551.40	215.00	215.00	505.00	505.00	N/A	350.00	N/A
Heavy Lift and Propulsion Technology	N/A	N/A	559.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Human Research	N/A	N/A	215.00	215.00	215.00	155.00	155.00	N/A	155.00	N/A
Exploration Technology and Demonstration Program	N/A	N/A	652.40	0.00	0.00	N/A	N/A	N/A	150.00	N/A
Exploration Precursor Robotic Mission Program	N/A	N/A	125.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A
Exploration Technology Development (S)	N/A	N/A	N/A	N/A	N/A	250.00	250.00	N/A	N/A	N/A
Robotic Precursor Studies and Instruments (S)	N/A	N/A	N/A	N/A	N/A	100.00	100.00	N/A	45.00	N/A
Advanced Capabilities	671.1	454.00	0.00	N/A	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	N/A
Commercial Orbital Transportation System demonstration program (H)	N/A	N/A	N/A	14.00	14.00	N/A	N/A	N/A	N/A	N/A
Commercial Crew Transportation-Related Activities (H)	N/A	N/A	N/A	50.00	50.00	N/A	N/A	N/A	N/A	N/A
Loan and Loan Guarantee Program (H)	N/A	N/A	N/A	100.00	100.00	N/A	N/A	N/A	N/A	N/A
Commercial Cargo	N/A	N/A	312.00	N/A	N/A	300.00	300.00	N/A	312.00	N/A
Commercial Crew	N/A	N/A	500.00	N/A	N/A	312.00	312.00	N/A	250.00	N/A
Constellation Transition	N/A	0.00	1,900.00	N/A	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
Constellation Systems	2,471.90	3,325.80	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Restructured Exploration Program (H)	N/A	N/A	N/A	4,156.30	3,631.30	N/A	N/A	N/A	N/A	N/A
Multipurpose crew vehicle (S)	N/A	N/A	N/A	N/A	N/A	1,120.00	1,120.00	N/A	1,100.00	1,200.00
Space Launch System (S)	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	5,508.50
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	N/A
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	N/A
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	N/A
Post-Shuttle Workforce Transition Initiative (H)	N/A	N/A	N/A	60.00	60.00	N/A	N/A	N/A	N/A	N/A
Additional Shuttle launch and launch complex development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Education	146.8	183.80	145.80	145.80	145.80	145.80	145.80	205.20	145.80	145.80
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	3,111.40
Construction and Environmental Compliance and Restoration	N/A	448.30	397.30	407.30	407.30	394.30	394.30	508.70	381.30	394.30
Science R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exploration R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Space Operations R&D	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Institutional Construction of Facilities	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Environmental Compliance and Remediation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Inspector General	32.6	36.40	37.00	38.40	38.40	37.00	37.00	37.00	38.00	36.40
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	18,485.00