

# FY 2007 Appropriations for the National Aeronautics & Space Administration (NASA)

[http://www.nasa.gov/pdf/142458main\\_FY07\\_budget\\_full.pdf](http://www.nasa.gov/pdf/142458main_FY07_budget_full.pdf)

(numbers are in millions)

NASA	FY 2006 Final	President's FY 2007 Request	FY07 House	FY07 Senate	FY07 Joint Resolution
<b>Science, Aeronautics and Exploration</b>	<b>9,721.3</b>	<b>10,524.4</b>	<b>10,482.0</b>	<b>10,488.8</b>	<b>10,075.0</b>
<b>Science</b>	<b>5,253.7</b>	<b>5,330.0</b>	<b>5,404.8</b>		<b>5,251.0</b>
Solar System Exploration	1,582.3	1,610.2			
The Universe	1,507.9	1,509.2			
Earth-Sun System	2,163.5	2,210.6			
Living w/ a Star	239.2	226.3		242.8	
NPOESS Preparatory Project	31.7	70.1			
Solar Terrestrial Probes	94.4	84.1			
Solar-B (Sept. 2006 launch)	14.1	16.4			
Education & Outreach	22.7	23.3			
<b>Exploration Systems</b>	<b>3,050.1</b>	<b>3,978.3</b>	<b>3,827.6</b>		<b>3,401.0</b>
<b>Aeronautics Research</b>	<b>884.1</b>	<b>724.4</b>	<b>824.4</b>	<b>759.4</b>	<b>890.0</b>
Aviation Safety	148.4	102.2			
<b>Education Programs</b>	<b>162.4</b>	<b>153.3</b>	<b>153.3</b>		
Minority Univ. Research & Education	36.1	40.6			
<b>Exploration Capabilities</b>	<b>6,869.7</b>	<b>6,234.4</b>	<b>6,193.5</b>	<b>6,234.9</b>	<b>6,140.0</b>
<b>TOTAL, NASA</b>	<b>16,623.0</b>	<b>16,792.3</b>	<b>16,709.0</b>	<b>17,757.0</b>	<b>16,778.8</b>

**Detail on [House Joint Resolution \(1/31/07\)](#):**

The long wait for a resolution of the FY 2007 appropriations bills begins to unfold this week as the U.S. House of Representatives passed a year-long funding resolution. The resolution provides funding for federal agencies and programs funded in nine of the 11 annual appropriations bills. It totals \$463.5 billion, which is the amount remaining under the budget resolution following the enactment of the Department of Defense Appropriations Act and the Department of Homeland Security Appropriations Act.

The resolution uses the FY 2006 enacted funding level as the base level of funding, and makes adjustments in some areas to fund high priority needs, including several priorities of the research and education communities. There are no Congressionally directed earmarks included in the resolution, but the funding used for earmarks in FY 2006 has been retained by many agencies.

The funding resolution would provide an additional \$354 million for NASA's Science, Aeronautics, and Exploration account for a total of \$10.075 billion, or 3.6 percent above the FY 2006 level, but still \$449 million below the Administration's FY 2007 budget request. The primary recipients of this increase are Aeronautics, which would receive \$890 million for aeronautics research, an increase of \$166 million above the Administration's request and \$6.3 million above FY 2006 levels; and Exploration Systems, which would receive \$3.401 billion, a decrease of \$928 million below the Administration's request but \$351 million above FY 2006 funding levels. The latter would fund some of the priorities of the President's Vision for Space Exploration.

On the other hand, the Science Mission Directorate would receive \$5.251 billion, which is \$79 million below the Administration's request and \$3 million below FY 2006 funding levels. Late last year the community was hopeful that NASA science would benefit from an effort by Senators Mikulski (D-MD) and Hutchison (R-TX) to add \$1 billion to NASA overall. However, that effort was put on hold following the November elections.

The resolution would also provide Exploration Capabilities (which includes the Shuttle program and the International Space Station) with \$6.140 billion, \$95 million below the Administration's request and \$765 million below FY 2006 levels.

**Detail on Senate Mark (7/13/06):**

On Thursday, July 13, the full Senate Appropriations Committee marked up and reported out the Commerce-Justice-Science Appropriations bill for FY 2007. Included in this appropriations bill is funding for the National Aeronautics and Space Administration (NASA). The full Committee adopted a number of amendments to the bill reported out of Subcommittee on Tuesday, July 11. The most notable amendment adopted was a proposal by Senators Mikulski and Hutchison to add \$1 billion to the budget of NASA to replenish the programs that have borne the brunt of the costs of the loss of the Columbia orbiter and the costs incurred for return to flight.

The Committee fully funds the President's request for the American Competitiveness Initiative (ACI) for the NSF and the National Institute for Standards and Technology (NIST). The Committee also calls on OSTP to consider the inclusion of both NASA and NOAA research activities in next year's -- FY 2008 -- proposal for the ACI.

The additional \$1 billion in “emergency” funding contained in the Mikulski-Hutchison amendment is to be distributed to NASA programs at the discretion of the Administrator. The funds for NASA are for the costs of returning the Space Shuttle to flight as well as to reimburse critical science, aeronautics and exploration programs that were cut to pay for repairs. Within the NASA total, the Committee is recommending \$10.5 billion for Science, Aeronautics, and Exploration – this is \$852 million more than last year and \$35 million below the budget request. For the Exploration account, the Committee is providing \$6.235 billion – a level equal to the President’s request.

### **Detail on House Mark (6/21/06):**

Yesterday, the House Appropriations Committee approved the FY 07 Science, State, Justice, Commerce and Related Agencies bill, which includes funding for NASA. The House funded NASA at \$16.7 billion, \$83 million below the request. Citing its concern with the need to maintain the nation’s leadership in science and technology, the committee provided additional funding for NASA’s aeronautics research and science programs.

The \$75 million increase in the Science directorate is directed to the following:

- an increase of \$50 million above the request for research and analysis (to be allocated equitably among all themes);
- an increase of \$15 million above the request to initiate planning for an orbiter/landing mission to Europa
- an increase of 10 million for continued technology development for Terrestrial Planet Finder.

The Committee report also stated its concern about “the damage to our nation’s research institutions that can result from abrupt and unexpected termination of peer-reviewed scientific research grants. The Committee expects NASA will avoid such actions in the future, to the extent possible. When negotiating terms of university research grants, NASA should include close-out provisions that retain adequate flexibility for the agency, while at the same time providing sufficient mechanisms for minimizing adverse impacts on university educational and research programs.”

### **Detail on President’s FY 2007 Request:**

Continuing efforts to fulfill the President’s Vision for Space Exploration, announced two years ago, NASA would receive a \$519.1 million (3.2 percent\*) increase as proposed by the FY 2007 budget request, which would bring the total funding level to \$16.792 billion. When compared to the overall tightening of non-defense discretionary programs within the federal budget, NASA fared better than several other agencies but not as well as some.

*\* percent change does not include a one time \$349.8 million allocated in FY 2006 for Katrina relief related to space shuttle operations. If included, NASA's overall budget would only rise 1 percent when compared to FY 2006.*

**Big winner.** Contained within the Exploration Systems Mission Directorate, the Constellation Systems theme would receive a \$1.234 billion (76.4 percent) increase. This theme includes support for the Crew Exploration Vehicle, the Crew Launch Vehicle, and other systems for human exploration of the Moon and Mars deemed necessary for the President’s Vision.

**Receiving slight increases.** Despite the continued success of the Mars rovers, the recent launch of New Horizons to Pluto, the successful return of Stardust, and other important scientific missions, the Science Mission Directorate would receive only a \$76.3 million (1.5 percent) increase (less than inflation) under the proposed request, with all three themes within Science receiving a share of the increase: Solar System Exploration (\$27.9 million); The Universe (\$1.3 million); Earth-Sun System (\$47.1 million). Within the overall directorate, several missions receive increases while others are slated for deferment or termination in order to accommodate this budget.

**Receiving decreases:** The Aeronautics Research Mission Directorate would receive a \$159.7 million (18.1 percent) decrease from NASA's FY 2006 operating plan. Cross-Agency support programs, including education programs, would receive a \$41.8 million (7.8 percent) decrease.

The NASA budget is organized into three funding accounts – the Science, Aeronautics, and Exploration (SAE) account, which includes almost all the science and academic programs; the Exploration Capabilities (EC) account, which includes the Space Flight support; and the Inspector General account.

Like last year's budget request - the lion's share of the increase would go to the Office of Exploration Systems, within SAE, to fund initiatives supported by the President's Moon- Mars Vision.

### **Science, Aeronautics and Exploration (SAE)**

**Office of Science Directorate.** Within the SAE account, the Office of Science, which includes both space and earth science activities, would receive \$5.330 billion, an increase of \$76.3 million (1.5 percent) from the FY 2006 level. This slight increase comes after a several hundred million dollar decrease in last year's budget and reflects a science budget, which reduces the overall number of missions in the pipeline in order to fully fund missions selected as a high priority. Projected growth for the Office of Science over the next several years is projected at 1 percent. The Office of Science includes three Enterprises:

*Solar System Exploration* – The request would provide \$1.610 billion, which would be a \$27.9 million (1.8 percent) increase. This funding level would include:

- \$700.2 M (up 7.7 percent) to continue the Mars Exploration program, although more than \$600 million has been removed from out-year growth;
- \$161.9 M (up 11.0 percent) for the Discovery program, which will release the next Announcement of Opportunity in FY 06, though is projected to decrease significantly over the next four years;
- \$246.9 M (down 3.0 percent) to continue deep-space mission support, including Cassini, Stardust, Genesis, and MESSENGER;
- \$154.9 M (up 4.5 percent) for the New Frontiers program which supports Juno and the New Horizons mission to Pluto;
- \$72.6 M (up 28.0 percent) for technology development of in-space propulsion and radioisotope power system development; and
- \$273.6 M (down 16.2 percent) for Solar System Research, which supports R&A for individual missions.

*The Universe* – The request would provide \$1.509 billion, which would be a \$1.2 million (or 0.07 percent) increase; however, the Universe budget is expected to be reduced up to \$200 million over

the next four years at the same time as several large missions ramp up. This budget reflects NASA's overall reduction in the number of missions in this theme, which are in active development, and receiving full funding for on-time launches. This funding level would include:

- \$443.1 M (up 21.7 percent) to James Webb Space Telescope, the next generation replacement of the Hubble telescope, for a launch date no earlier than 2013;
- \$268.6 M (up 25.4 percent) for Hubble;
- \$98.5 M (down 15.8 percent) to rephase and replan the Space Interferometry Mission with a launch date no earlier than 2015/2016;
- \$67.6 M (down 20.7 percent) for the Explorer program, which recently announced that the last peer-reviewed mission NuStar would not be confirmed;
- \$21.2 M (up 50.4 percent) for the Beyond Einstein program, although this funding is more than half of the expected budget as of the FY 06 request and LISA and Con-X are reported to be indefinitely deferred; and
- SOFIA is proposed to be placed under review, with its budget zeroed out this year.

*Earth-Sun System* – The request would provide \$2.210 billion, which would be a \$47.2 million (2.2 percent) increase. This funding level would include:

- \$226.3 M (down 5.4 percent) for the Living With a Star program, of which \$166M will be allocated Solar Dynamics Observatory;
- \$84.1 M (down 11 percent) for the Solar Terrestrial Probes program, which includes funding for the Solar Terrestrial Relations Observatory;
- \$878.4 M (down 0.4 percent or relatively flat) for Earth Sun system research;
- \$73.4 M (down 43.5 percent) for the Explorer program, which is co-managed in Earth-Sun System and the Universe enterprises – this program would release the next Announcement of Opportunity for a MIDEX in FY 2006 but overall the program is much smaller than projected in the last budget request;
- \$161.4 M (up 13.8 percent) for the Earth System Science Pathfinder program which includes expected launches of Cloudsat and Aquarius in April of 2006 but cancels Hydros; and
- \$301.7 M (up 84.1 percent) for Earth Systematic Missions.

The large increase for the Earth Systematic Missions is largely due to big increases for Landsat and the Ocean Surface Topography Mission (OSTM).

- Landsat would increase \$71 M (or 262 percent) with an open competition scheduled for FY 2007.
- OSTM would increase \$20 M (or 100 percent).
- Global Precipitation Mission would receive \$24.2 M, with a rephased launch expected in 2012.
- Glory would receive \$52.0 M, which is essentially flat funding reflecting the fact that it was deemed a free-flyer and not a future mission of opportunity.

**Office of Exploration Systems Directorate.** Within the SAE account, the Office of Exploration Systems, which includes the majority of the President's programs supported within the Moon-Mars Vision announced in January 2004, would receive \$3.978 billion, an increase of \$928.2 million (30.4 percent) from the FY 2006 level. The Office of Exploration Systems includes three Enterprises:

*Constellation Systems* – The request proposes a \$1.324 billion (76.4 percent) increase. A majority of this funding would be for further developments in a new Crew Exploration Vehicle and a Crew Launch Vehicle.

*Exploration Systems Research and Technology* – The request proposes a \$46.4 million (6.7 percent) decrease. This program would receive significantly less money than originally projected in prior years. This is primarily due to a virtual elimination of the Prometheus nuclear propulsion technology development program, revocation of previously awarded grants and contracts for exploration research, and a phase out of the Centennial Challenges program.

*Human Systems Research and Technology* – The request proposes a \$349.5 million (56.0 percent) decrease. This Enterprise includes programs included in the former Biological and Physical Research Enterprise and the large budget decrease reflects a continuing trend within NASA to reduce funding for this program until the ISS has finished assembly.

**Office of Aeronautics Research Directorate.** Within the SAE account, the Office of Aeronautics Research would receive \$724.4 million, a decrease of \$205 million (22.1 percent) from the FY 2006 level. Aeronautics research was proposed for a large decrease last year as well, however, Congress restored much of the program close to the FY 2005 levels. In recent years, the President’s budget request has consistently proposed to reduce this office and it is projected to continue to receive these reductions in future years. The request would include:

- \$447.2 M (down 20.4 percent, or only 10.5 percent when diverted funds for the Test Program are included) for the Fundamental Aeronautics Program, will include the old Vehicle Systems Program, with four key areas (hypersonics, supersonics, subsonics fixed wing, and subsonics rotary wing);
- \$102.2 M (down 31 percent) for Aviation Safety;
- \$120.0 M (down 31 percent) for Airspace Systems to research and develop innovative solutions for a safe, efficient, high capacity airspace system in the air and on the ground; and
- \$55.0 M (a new program) for the Aeronautics Test Program to ensure availability of critical Aeronautics research center wind tunnel infrastructure.

**Education Program.** Within the SAE account, the Education program would receive \$153.3 million (down 5.6 percent) from the FY 2006 level. This is the third year in a row that the office would be reduced but it is projected to receive this same level in future years. The majority of this decrease would be in the Higher Education and Informal Education programs.

Within the Higher Education program:

- The phase out begun in FY 2005 of the Undergraduate Student Research Program (USRP) has stopped and USRP would receive \$3.69 M;
- The Science and Technology Scholarship program has been deferred; and
- Space Grant would receive \$28.7 M.

**Innovative Partnerships Program.** Within the SAE account, the Innovative Partnerships program would receive \$197.9 million (down 7.9 percent) but is projected to receive small increases in subsequent years. The program would terminate funding for University Research Engineering and Technology Institutes (URETI) and the procurement of a single technology transfer center would be for \$5 million per year, or roughly half that originally planned.

**Exploration Capabilities.** The Exploration Capabilities account would receive \$6.234 billion, (down 4.4 percent) from the FY 06 level (excluding one time emergency funding for Katrina response and recovery). This amount would include:

- 8.4 percent decrease for the Space Shuttle program;
- 3.3 percent increase for the International Space Station – primarily for assembly and support; and
- 8.2 percent increase for Space and Flight Support.