

DOCUMENT FORMAT

For the FY 2004 President's Budget submission, NASA began using a new budget structure and presentation format. Both are designed to be easy to navigate and to present the costs and benefits of budget items consistently and clearly. The new format also integrates the budget request and annual performance plan into one document.

Budget Levels

There are three budget levels. At the first level are the Enterprises, NASA's primary areas of activity. At the second are Themes, programmatic subdivisions of Enterprises that function as program "investment portfolios." At the third level, individual programs within the Themes are discussed according to four categories based on the stage of effort: Development, Operations, Research, and Technology and Advanced Concepts. At each of the three budget levels, the document presents consistent types of information to allow comparison across the budget at that budget level and to facilitate document navigation.

LEVEL 1

Level 1 sections present the Enterprise's purpose, recent and planned accomplishments, and descriptions of each Theme for which the Enterprise is responsible.

LEVEL 2

To facilitate evaluation of the Theme as an investment, Level 2 sections present the "business case" for each Theme, display the budget request, and discuss it in terms of the President's Research and Development Investment Criteria (relevance, quality, and performance). Theme sections include data on the programs and projects that comprise the Theme, including their content, methodology, period of performance, and accountable manager. Also included are performance plan data, the outcomes and annual performance goals that the Theme will accomplish.

LEVEL 3

At this level, programs and projects are assigned to four categories: Development, Operations, Research, and Technology and Advanced Concepts. (An exception is the Education Theme, which includes Education Activities at Level 3.) The document describes the program or project, its purpose, its contribution to the Theme and to the Agency's strategic and performance plans, and its technical commitments. It also addresses implementation aspects, such as the acquisition strategy, partnering agreements, and independent reviews, and specifies the budget request, including the complete life cycle cost where pertinent.

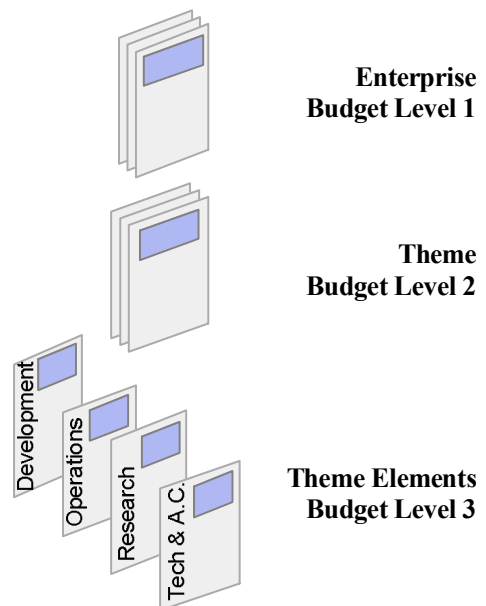
Programs and projects in all of the categories--Development, Operations, Research, and Technology and Advanced Concepts--work together to achieve the Theme's goals. For example, a Research project may investigate Theme questions using data collected from flight projects built under Development and flown under Operations. Technology and Advanced Concepts activities seek the cutting-edge capabilities needed to develop new operational projects.

Development

Development includes design, development, testing, and evaluation. During this phase, a program or project must meet specific technical requirements and substantiate its life cycle cost projections. For a spacecraft, Development begins with a Program Commitment Agreement signature and continues through launch.

Operations

Operations includes the activities required to operate something (e.g., a facility, spacecraft, or instrument). Examples of programs and projects in the Operations phase are facilities on board the International Space Station, orbiting spacecraft, and instruments onboard the spacecraft.



The budget is presented according to three levels: Enterprises, Themes, and Theme Elements (programs and projects in the Development, Operations, Research, and Technology and Advanced Concepts phases).

Reference: Document Format Overview and FY 2005 Changes

Research

Research includes basic and applied research experiments and includes analysis of data from facilities or instruments in the Operations phase. Because there are so many Principal Investigators conducting experiments and data analysis, Research activities are discussed only at the portfolio level.

Technology and Advanced Concepts

These programs focus on activities to bring new technologies and advanced concepts to the point of yielding practical benefits. Technologies are rated according to readiness level. A table identifies the technology's intended application, if it is targeted to support a specific mission. Advanced Concepts projects typically move to the Development phase once certified as mature.

CHANGES FROM FY 2004

The budget changed dramatically with the introduction of the new integrated budget and performance approach last year. In the FY 2005 budget, there some changes to improve the IBPD such as, a new Risk Mitigation section that has been added to Level 3. The risk section presents a brief snapshot at high-level risk issues that are regularly monitored throughout the year, including—cost, benefit, and risk.

Another improvement this year is greater data continuity. The new format introduced in the FY 2004 budget featured consistent information at each budget level to allow comparison of the relative costs and benefits of various programs. It is now possible to compare a program's past and projected cost and benefits

Reference: How to Read a Data Sheet

READING DATA SHEETS IN THE NEW BUDGET FORMAT

Level 1 (Enterprise) Data Sheets

The large Enterprise image and the smaller Theme images are consistent icons providing a visual navigation aid. Each Enterprise section includes the icons for the Themes that the Enterprise carries out. Icons depict actual or planned Enterprise or Theme achievements.

Level 2 (Theme) Data Sheets

Theme sections justify the budget request in terms of relevance, quality, and performance, and state the performance commitment for which the Theme is accountable. They use the Theme icon introduced in the Enterprise section.

OVERVIEW

This section provides a broad picture of Theme activities. It answers the question, "What is the investment and what are its benefits?" It also synthesizes prior year program highlights. Since each Theme contributes to achievement of the Agency's strategic goals and objectives, each Theme includes in its overview a table that excerpts the Plan and shows the long-term objectives that the Theme is responsible for achieving. For each objective, there are contributing lower-level performance measures through which the Theme must demonstrate annual progress toward the objective.

RELEVANCE

Relevance, quality, and performance are Research and Development (R&D) Investment Criteria established by the White House Office of Science and Technology Policy (OSTP) and the Office of Management and Budget (OMB). R&D investments must have clear plans; be relevant to national priorities, agency missions, and relevant fields; and justify their claim on taxpayer resources.

Each Theme includes a narrative demonstrating the Theme's relevance to national priorities, the NASA Strategic Plan, and the scientific community. Relevance to education and public benefits are discussed separately. Every Theme contributes to educational outreach initiatives. Each Theme also must articulate its public benefits by answering the question, "How will NASA's exploration and investigations change the way we live in and view our world?" Relevance must be verifiable by the independent reviews listed at the Theme and lower levels.

IMPLEMENTATION

The implementation chart is a strategic roadmap showing how the Level Three programs and projects help achieve Theme goals and objectives. Programs and projects are color-coded according to whether they are Development, Operations, Research, or Technology and Advanced Concepts efforts. A vertical bar highlights the budget request year. The column on the right shows the purpose of each element and indicates how elements work together.

Theme Element	Schedule by Fiscal Year											Purpose					
	95	96	97	98	99	00	01	02	03	04	05		06	07	08	09	10
SSME Advanced Health Management System (AHMS)																	Provides improved real-time monitoring of engine performance and environmental data.
Cockpit Avionics Upgrade																	Increases crew performance margins throughout all critical flight operations phases.

Tech & Adv Concept
 Development
 Operations
 Research

STATUS

This section reports noteworthy Theme accomplishments of the previous fiscal year. This discussion is general, not focused on specific performance measures. Also included is the score that the Theme earned on the Performance Assessment Rating Tool (PART), an OMB-developed mechanism to assess programs across the government according to common criteria. For an in-depth discussion of FY 2003 performance, see NASA's *Fiscal Year 2003 Performance and Accountability Report*.

Reference: How to Read a Data Sheet

PERFORMANCE MEASURES

This section states the Theme's performance measures, which include both multiyear outcomes and annual performance goals (APGs). APGs contribute to achievement of outcomes, and both measures contribute to achieving objectives. Numbering for strategic objectives and outcomes is consistent with the numbering for goals and objectives in the Strategic Plan. For APGs, the first part of the number signifies the year of performance, the second part is the standard abbreviation of the Theme name, and the third part is the number of the measure within the Theme. For example, 4MEP9 is the ninth metric in the Mars Exploration Program Theme for the FY04 Performance Plan. Themes are also accountable for uniform metrics (consistent across all Themes) that, in the aggregate, help assess overall Agency performance on criteria such as cost control and competitive contract awards.

INDEPENDENT REVIEW

Relevance and quality are verified through independent reviews listed at the Theme and lower levels. A review is identified as retrospective, focused on ongoing efforts, or a prospective evaluation of planning and implementation. If there are no reviews at the Theme level, project level reviews are listed; for these reviews, refer to the appropriate page.

BUDGET

The budget tables present the proposed FY 2005 budget, including prior year numbers for FY 2003 and (likely enacted) for FY 2004. All of the Themes' Level 3 programs and projects are shown as Development, Operations, Research, or Technology and Advanced Concepts.

Budget Authority (\$ millions)	FY03	FY04	Change	FY05	Comments
Space Shuttle	3,301.4	3,945.0	+374.2	4,319.2	
<u>Development</u>	<u>96.8</u>	<u>96.3</u>	<u>-9.1</u>	<u>87.2</u>	
Checkout and Launch Control System (CLCS)	13.1				

Level 3 (Program and Project) Data Sheets

Level 3 data sheets describe a program or project in one of four phases: Development, Operations, Research, and Technology and Advanced Concepts, and include the following sections.

PURPOSE

States what the program or project is to accomplish, links this purpose to the Strategic Plan's Objectives, and states a commitment to specific performance Outcomes and APGs from the Theme sheet (above).

OVERVIEW

The Overview explains the elements of the activity and summarizes the work being performed.

PROGRAM MANAGEMENT

NASA manages its programs and projects according to internal policies and procedures specified in NASA Procedures and Guidelines (NPG) 7120.5B. The budget document indicates whether each program is compliant with NPG 7120.5B and specifies its accountable management officials, primary points of contact, and responsible Centers.

Reference: How to Read a Data Sheet

TECHNICAL COMMITMENT

This section states NASA's specifications and schedule commitments. The dated baseline appears directly under the section heading for easy reference.

For Development efforts, the baseline takes the form of a documented agreement, in most cases a NASA Program Commitment Agreement with precise, fixed requirements. The data sheet typically displays these at a top level. For spacecraft, schedule commitments include launch dates.

For Operations efforts, this section states the elements to be operated and key schedule milestones, particularly those scheduled for FY 2005. For Research efforts, this section describes the portfolio and notes planned periodic research announcements.

Technology and Advanced Concepts efforts may be listed individually or combined, depending on how they are to be managed and used. For Technology efforts, a table identifies the future mission applications to be supported. A Technology Readiness Level (TRL) roadmap shows progress of and plans for the technology's maturation and associated funding. Advanced Concepts sections list preliminary requirements. The table on this page shows definitions of increasing levels of technology readiness used in the TRL tables throughout this document.

Technical Specifications	FY 2005 President's Budget						
	FY03	FY04	FY05	FY06	FY07	FY08	FY09
Develop and demonstrate technologies that prevent unsafe flight situations due to breakdown between human and machine interface. (In formulation/Safety Follow-on)	TRL			3	3	4	5
	\$M			35.80	35.50	42.80	39
Develop safety relevant technologies to detect and/or eliminate natural hazards that could compromise safe ATS operations. (In formulation/Safety Follow-on)	TRL			2	3	4	4
	\$M			17.60	18.50	20.40	19.90

Technology Readiness Level

Increasing Maturity ↑

9. Actual system proven through successful mission operations
8. Actual system completed and qualified through test and demonstration
7. System prototype demonstration in an operational environment
6. System/subsystem model or prototype demonstration in a relevant environment
5. Component and/or breadboard validation in relevant environment
4. Component and/or breadboard validation in laboratory environment
3. Analytical and experimental critical function and/or characteristic proof of concept
2. Technology concept and/or application formulated Invention begins
1. Basic principles observed and reported

ACQUISITION STRATEGY & PERFORMING ORGANIZATIONS

Programs and projects use various procurement strategies; for example, research procurements differ from spacecraft development procurements both in how they are solicited and in the type of procurement vehicle used (e.g., grants versus cost-plus contracts). Research and data analysis efforts are predominantly grants selected through peer review and most of the work occurs at universities. Spacecraft development contracts are usually competitively awarded to private industry. Whatever the strategy, the discussion in this section for each program and project must include certain standard procurement data on the direct procurement funding, based on the most recent fiscal year for which data are available.

First, a general discussion presents highlights of and changes to the acquisition strategy and lists key performing organizations. Next, a current acquisitions table characterizes the budget according to type, selection method, and performing organization. Another table addresses future acquisitions, including major planned announcements. This table is general and not intended to be exhaustive; it provides a snapshot and a means to compare near-term strategies across Themes. The tables specify selection time frames and acquisition goals (e.g., full and open competition) to the extent that they are currently known. This can entail specifying the month, but in some cases only the year is available.

Reference: How to Read a Data Sheet

RISK MITIGATION

This section shows key known risks. The general categories across the top of the table refer to data in other parts of the Level 3 data sheet and indicate the current or possible future impact of risk mitigation on each category. Color-coded stoplight indicators denote the level of attention a risk requires, the probability of its occurrence, the severity of an occurrence, and the state of the mitigation plan. The stoplight colors indicate

Top Risks	G Overall	G Cost	Y Schedule	G Technical	Probability	Impact	Mitigation Plan
Y	Flight issue may divert contractor resources from AHMS tasks				Low	Moderately High	
R	Initial DCU/DSP software delivery may not be suitable for hot-fire test				Moderately High	Moderately High	
Y	Software requirements volatility				Medium	Medium	

G	Green	Mitigation plan is working.
Y	Yellow	Mitigation plan is not working as intended, but no management attention is required.
R	Red	Mitigation plan is not working as intended, and management attention is required.

AGREEMENTS

This section lists significant internal or external agreements associated with the program or project. "Internal" means internal to NASA (i.e., cross-Theme or cross-Enterprise). "External" denotes agreements between NASA and outside organizations such as other U. S. Government agencies or foreign entities.

INDEPENDENT REVIEW

This section identifies the independent reviews that will verify program or project relevance and quality. These may also be listed at the Theme level and at Level 3. Information includes the topics covered, whether it is a relevance or a quality review, and the review's timing: retrospective, concurrent with the effort under review, or prospective.

BUDGET AND LIFE CYCLE COST

This section presents the FY 2005 budget request. For Development efforts, it includes the life cycle cost, comprised of all prior years and the budget-to-complete (BTC). For Operations, Research, and Technology and Advanced Concepts it includes funding for FY 2003 and FY 2004.

Acronyms

AA	Associate Administrator	ATCSCC	Air Route Traffic Control Center
AAH	Advanced Animal Habitat	ATI	Advanced Technology Initiatives
AATT	Advanced Air Transportation Technologies	ATLO	Assembly, Test, Launch Operations
ACE	Advanced Composition Explorer	ATM	Air Traffic Management
ACRIMSAT	Active Cavity Radiometer Irradiance Monitor Satellite	ATMS	Advanced Technology Microwave Sounder
ACS	Advanced Camera for Surveys	ATP	Authority to Proceed
AEDC	Arnold Engineering Development Center	ATS	Air Transportation System
AESP	NASA Aerospace Education Services Program	AU	Astronomical Unit
AFRL	Air Force Research Laboratory	AVC	Advanced Vehicle Concepts
AHMS	Advanced Health Management System	AvSSP	Aviation Safety and Security Program
AHST	Advanced Human Support Technology	BAT	Burst Alert Telescope
AIM	Aeronomy of Ice in the Mesosphere	BATC	Ball Aerospace and Technology Corporation
AIRS	Atmospheric Infrared Sounder	BCP	Ball Commercial Platform
AIST	Advanced Information Systems Technology	BNL	Brookhaven National Laboratory
ALICE	FIX from Code s Small Development Projects	BPRAC	Biological & Physical Science Research Committee
ALTV	Approach and Landing Test Vehicle	BPRE	Biological & Physical Research Enterprise
AMS	Alpha Magnetic Spectrometer	BPS	Biomass Production System
AMSR	Advanced Microwave Scanning Radiometer	BR	Bioastronautics Research
AMSU	Advanced Microwave Sounding Unit	BR&C	Biomedical Research and Countermeasures
AO	Announcement of Opportunity	BRP	Biological Research Projects
AOC	Airline Operations Center	BSM	Booster Separation Motors (?)
AOS	Airspace Operations Systems	BSR	Biological Sciences Research
APL	Applied Physics Laboratory (John Hopkins)	BSTC	Biospecimen Temperature Controller
APMC	Agency Program Management Council	BTF	Biotechnology Facility
APS	Advanced Polarimeter Sensor	BTR	Biotechnology Refrigerator
APT	Advanced Platform Technology	BVT	Breakthrough Vehicle Technologies
ARC	Ames Research Center	BoR	Bureau of Reclamation
ARIS	Active Rack Isolation System	CA	Cooperative Agreements
AS	Airspace Systems	CAASD	Center for Advanced Aviation System Development
ASC	Aviation System Capacity	CADRE	Crop Assessment Data Retrieval and Evaluation
ASEB	Aeronautics and Space Engineering Board	CAIB	Columbia Accident Investigation Board
ASF	Alaska SAR Facility	CALIPSO	Cloud – Aerosol Lidar and Infrared Pathfinder Satellite Observations
ASI	Agenzia Spaziale Italiana or Italian Space Agency	CAM	Centrifuge Accommodations Module
ASO	Astronomical Search for Origins	CAMEX	Convection And Moisture Experiment
ASP	Airspace Systems Programs	CAN	Cooperative Agreement Notice
ASVM	Aircraft & Systems Vulnerability Mitigation	CAPPS	Checkout and Payload Processing Services
AT	Aeronautics Technology	CARA	California Association for Research in Astronomy
ATAC	Air Transport Association of Canada		
ATC	Air Traffic Control		

Acronyms

CARD	Cost Analysis Requirements Document	CPCG - V	Commercial Protein Crystal Growth - Video
CAS	Commercial Advisory Subcommittee	CPR	Cloud Profiling Radar
CAU	Cockpit Avionics Upgrade	CR	Centrifuge
CBTM	Commercial Biomedical Testing Module	CRV	Crew Return Vehicle
CCAD	Center for Computer – Aided Design	CSA	Canadian Space Agency
CCD	Charge – Coupled Device	CSOC	Consolidated Space Operations Contract
CCRI	Climate Change Research Initiative	CTV	Crew Transfer Vehicle
CCSP	Climate Change Science Program	CXO	Chandra X - Ray Observatory
CCTP	Climate Change Technology Program	CY	Calendar Year
CCU	Cell Culture Unit	CalTech	California Institute of Technology
CDC	Center for Disease Control	CoF	Construction of Facilities
CDR	Critical Design Review	CoTF	Classroom of the Future
CENR	Committee on Environment and Natural Resources Research	CrIS	Cross - Track Infrared Sounder
CEOS	Committee on Earth Observation Satellites	DA	Data Analysis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	DAA	Deputy Associate Administrator
CEV	Crew Exploration Vehicle	DARA	See DLR
CFC	Chlorofluorocarbon	DARPA	Defense Advanced Research Projects Agency
CFO	Chief Financial Officer	DART	Demonstration of Autonomous Rendezvous Technology
CFR	Code of Federal Regulations	DCU	Digital Control Unit
CGBA	Commercial Generic Bioprocessing Apparatus	DDR&E	Director, Defense Research and Engineering
CHIPS	Cosmic Hot Interstellar Plasma Spectrometer	DDT&E	Design Development Test and Evaluation
CICT	Computing, Information, and Communications Technology	DES	Dewar and Enclosure Subsystem
CINDI	Coupled Ion Neutral Dynamics Investigation	DEVELOP	Digital Earth Virtual Environment and Learning Outreach Program
CIPA	Curriculum Improvement Partnership Awards	DFRC	Dryden Flight Research Facility
CIR	Combustion Integrated Rack	DHS	Department of Homeland Security
CLCS	Checkout and Launch Control System	DLR	German Aerospace Center
CMAQ	Community Multi – scale and Air Quality	DNA	Deoxyribose Nucleic Acid
CMC	Ceramic Matrix Composite	DOD	Department of Defense
CME	Coronal Mass Ejection	DOE	Department of Energy
CNES	Centre Nationale D'Etudes Spatiale or French Space Agency	DOT	Department of Transportation
CNIS	Communication, Network, and Information Security	DRUMS	Dynamically Responding Ultrasonic Matrix System
CNS	Communication, Navigation & Surveillance	DSMS	Deep Space Mission System
CO	Colorado	DSN	Deep Space Network
CO 2	Carbon Dioxide	DSP	Digital Signal Processing
COS	Cosmic Origins Spectrograph	DSS	Decision Support Systems
COTF	Classroom of the Future	DST	Decision Support Tool
CPCG – H	Commercial Protein Crystal Growth – High Density	DYNAMX	Critical Dynamics in Microgravity
		DoD	Department of Defense
		DoE	Department of Energy

Acronyms

DoT	Department of Transportation	ESSAAC	Earth System Science Applications Advisory Committee
E&PO	Education and Public Outreach	ESTO	Earth Science Technology Office
EA 92	Energy Act of 1992	ESTP	Earth Science Technology Program
EAS	Efficient Aircraft Spacing	ET	External Tank
EASI	Efficient Aerodynamic Shapes & Integration	ETA	External Tank Assembly
ECHO	EOSDIS Clearinghouse	EUMETSAT	European Organization for the Exploitation of Meteorological
ECLSS	Environmental Control and Life Support System	EUSO	Extreme Universe Space Observatory
ECR	Environmental Compliance and Restoration	EUV	Extreme Ultraviolet
ECS	Engineering for Complex Systems	EVA	Extravehicular Activity
ECT	Enabling Concepts and Technologies	EVE	Extreme Ultraviolet Variability Experiment
ED	Education Programs	EXPRESS	Expedite the Processing of Experiments to the Space Station (Pallet)
EDG	EOSDIS Data Gateway	FAA	Federal Aviation Administration
EDL	Entry, Descent, and Landing	FACI	First Article Configuration Inspection
EFMP	Efficient Flight Path Management	FAD	Formulation Authorization Document
EFPM	Efficient Flight Path Management	FAR	Faculty Awards for Research
EHTN	Environmental Health Tracking Network	FAST	Fast Auroral Snapshot
EIS	Executive Information System	FAT	Final Assembly and Test
ELV	Expendable Launch Vehicle	FCF	Fluids and Combustion Facility
ELVIS	Expendable Launch Vehicle Integrated Support	FEMA	Federal Emergency Management Agency
EM	Experiment Module	FFP	Firm Fixed Price
EMD	Engineering, Manufacturing and Development	FHA	Flight Hardware Available
EMPC	Enterprise Program Management Council	FIR	Fluids Integrated Rack
ENR	Energetics	FL	Florida
EOS	Earth Observing System	FL 180	Flight Level
EOSDIS	Earth Observing System Data and Information System	FL 400	Flight Level
EPA	Environmental Protection Agency	FPOSE	Focused Physical Oceanography and Solid Earth
EMPC	Enterprise Program Management Council	FPP	Freon Pump Package
EPO	Education and Public Outreach	FR	Flight Rule
EPPS	Energetic Particle and Plasma Spectrometer	FRAM	Flight Releasable Attachment Mechanism
EPSCoR	Experimental Program to Stimulate Competitive Research	FRCS	Forward Reaction Control System
ERAST	Environmental Research Aircraft and Sensor Technology	FRGF	Flight Releasable Grapple Fixture
ERBS	Earth Radiation Budget Satellite	FSB	Fundamental Space Biology
ESA	Earth Science Applications	FSW	Flight Software
ESDIS	Earth Science Data and Information System	FUSE	Far Ultraviolet Spectroscopic Explorer
ESE	Earth Science Enterprise	FUV	Far Ultraviolet
ESMF	Earth Science Model Framework	FY	Fiscal Year
ESMO	Earth Science Mission Operations	GA	General Aviation
ESS	Earth System Science	GALEX	Galaxy Evolution Explorer
		GASMAP	Gas Analyzer System for Metabolic Analysis Physiology

Acronyms

GBM	GLAST Burst Monitor	HMI	Helioseismic and Magnetic Imager
GE	General Electric	HMP	Human Measures and Performance
GEC	Global Electrodynamics Connection	HQ	Headquarters
GEMS	Great Explorations in Math and Science	HRF	Human Research Facility
GEO	Geosynchronous Earth Orbit	HRI	High Resolution Imager
GFDL	Geophysical Fluid Dynamics Laboratory	HRT	High Resolution Tracker
GFE	Government Furnished Equipment	HSB	Humidity Sounder Brazil
GHz	Gigahertz	HSI	Hispanic Serving Institutions
GIFTS	Geosynchronous Imaging Fourier Transform Spectrometer	HST	Hubble Space Telescope
GIFTS – IOMI	Geosynchronous Imaging Fourier Transform	HVPS	High Voltage Power Supply
GIS	Geographic Information System	HW	Hardware
GISS	Goddard Institute for Space Science	HyGEIA	Hyperspectral Sensor for Global Environmental Imaging and Analysis
GLAS	Geoscience Laser Altimeter System	IAA	International Academy of Astronautics
GLAST	Gamma – ray Large Area Space Telescope	IATCS	Internal Active Thermal Control System
GLOBE	Global Learning & Observations to Benefit the Environment	IC	Institutional Committee
GM – ITM	Geospace Mission – Ionosphere – Thermosphere Mapper	ICAO	International Civil Aviation Organization
GOJ	Government of Japan	ICE	Independent Cost Estimate
GP – B	Gravity Probe – B	ICESat	Ice, Cloud and Elevation Satellite
GPM	Global Precipitation Measurement	IDEA	ISS Downlink Enhancement Architecture
GPMC	Governing Program Management Council	IES	Ion Electron Spectrometer
GPS	Global Positioning System	IGA	Intergovernmental Agreement
GRACE	Gravity Recovery and Climate	IIR	Independent Implementation Review
GRB	Gamma Ray Burst	IIRT	Independent Implementation Review Team
GRC	Glenn Research Center	IMAGE	Imager for Magnetopause – to – Aurora Global Exploration
GRNS	Gamma – Ray and Neutron Spectrometer	IMPACT	In situ Measurements of Particles and CME Transients
GRS	Gamma Ray Spectrometer	INTEGRAL	International Gamma Ray Astrophysics Laboratory
GSA	General Services Administration	INTEX	Intercontinental Chemical Transport Experiment
GSFC	Goddard Space Flight Center	IPAO	Independent Program Assessment Office
GSRP	Graduate Student Research Program	IPD	Integrated Powerhead Demonstrator
GST	Global Sciences and Technology, Inc.	IPO	Integrated Program Office
GWAC	Government – Wide Agency Contracts	IPS	Integrated Planning System
GeV	Giga – Electron – Volt	IPS	Intelligent Propulsion Systems
HALE	High – Altitude, Long – Endurance	IR	Infrared
HAZUS	Hazards U. S.	IRA	Institutional Research Awards
HBCU	Historically Black Colleges and Universities	IRC	Initial Confirmation Review
HDMAX	High Definition TV Camera	IRT	Independent Review Team
HETE – 2	High Energy Transient Explorer	IS	Implementing Strategies
HHR	Habitat Holding Rack	ISAS	Institute of Space and Astronautical Science
HIRDLS	High Resolution Dynamic Limb Sounder	ISIS	International Subrack Interface Standard
HMF	Hypergolic Maintenance Facility		

Acronyms

ISP	In – Space Propulsion	LOX	Liquid Oxygen
ISPR	International Standard Payload Rack	LPL	Lunar and Planetary Laboratory, University of Arizona
ISS	International Space Station	LRA	Laser Retroreflector Array
ISSRC	International Space Station Research Capabilities	LRD	Launch Readiness Date
ISTP	Integrated Space Transportation Plan	LSAS	Life Sciences Advisory Subcommittee
IT	Information Technology	LSG	Life Sciences Glovebox
ITAS	Integrated Tailored Aerostructures	LSTO	Launch Services Task Order
ITF	Integrated Training Facility	LT	Long Term
ITM	Ionspheric/Thermospheric/Mesospheric	LTMPF	Low Temperature Microgravity Physics Facility
ITS	Impactor Target Sensor	LWS	Living With a Star
ITSR	Information Technology Strategic Research	LaRC	Langley Research Center
ITTP	Innovative Technology Transfer Partnerships	MAG	Magnetometer
IV&V	Independent Verification and Validation	MAP	Missions Assurance Program
IVHM	Intelligent Vehicle Health Management	MAPGEN	Mixed Initiative Activity Planning Generator
JACIE	Joint Agency Committee for Imagery Evaluation	MARES	Muscle Atrophy and Resistive Exercise System
JAXA	Japanese Aerospace Exploration Agency	MARSIS	Mars Advanced Radar for Subsurface and Ionospheric Sounding
JEM	Japanese Experiment Module	MASCS	Mercury Atmospheric and Surface Composition Spectrometer
JHU	John Hopkins University	MC	Master Controller
JIMO	Jupiter Icy Moons Orbiter	MCC	Mission Control Center
JPL	Jet Propulsion Laboratory	MCC – H	Mission Control Center – Houston
JSC	Johnson Space Center	MCC – M	Mission Control Center – Moscow
JSRA	Joint Sponsored Research Agreement	MCR	Mission Confirmation Review
JSRDA	Joint Sponsored Research and Development Agreement	MDAP	Mars Data Analysis Program
JWST	James Webb Space Telescope	MDCA	Multi – user Droplet Combustion Apparatus
KSC	Kennedy Space Center	MDIS	Mercury Dual Imaging System
LASP	Laboratory for Atmospheric and Space Physics	MDS	Modular and Distributed Systems
LAT	Large Area Telescope	MELFI	Minus Eighty (Degrees Celsius) Laboratory Freezer for ISS
LBTI	Large Binocular Telescope Interferometer	MEP	Mars Exploration Program
LCC	Launch Control Center	MEPAG	Mars Exploration Program Analysis Group
LDCM	Landsat Data Continuity Mission	MER	Mars Exploration Rover
LE	Lunar Exploration	MER – CIP	Mars Exploration Rover Collaborative Information Portal
LEAP	Low Emissions Alternative Power	MERBoard	Mars Exploration Rovers Board
LEO	Low Earth Orbiting	MERLIN	Microgravity Experiment Research Locker/Incubator
LGF	Large Gradient Furnace	MESSENGER	Mercury Surface, Space Environment, Geochemistry and Ranging
LH 2	Liquid Hydrogen	MFR	Mars Fundamental Research
LISA	Laser Interferometer Space Antenna		
LMA	Lockheed Martin Astronautics		
LMM	Light Microscopy Module		
LOA	Letter of Agreement		

Acronyms

MGS	Mars Global Surveyor	NAI	National Aerospace Initiative
MIB	Mishap Investigation Board	NAPA	National Academy of Public Administration
MIDEX	Medium - Size Explorer	NAR	Non – Advocacy Review
MIDP	Mars Instrument Development Program	NAS	National Airspace System
MIRO	Microwave Instrument for Rosetta Orbiter	NASA	National Aeronautics and Space Administration
MIT	Massachusetts Institute of Technology	NASBO	NASA Alliance for Small Business Opportunity
MLA	Mercury Laser Altimeter	NASDA	National Space Development Agency of Japan
MLS	Microwave Limb Sounder	NAVAIR	Naval Air Systems Command
MMO	Multi - Mission Operations	NBL	Neutral Buoyancy Lab
MMR	Modular Multispectral Radiometer	NCEP	National Centers for Environmental Prediction
MMRTG	Multi - Missions Radioisotope Thermoelectric Generators	NENS	Near Earth Networks Services
MMS	Magnetospheric Multiscale	NEXT	NASA Exploration Team
MO	Missions of Opportunity	NExTNAS	NASA Exploratory Technologies for the National Airspace System
MO&DA	Mission Operations & Data Analysis	NFFP	NASA Faculty Fellowship Program
MOA	Memorandum of Agreement	NGLT	Next Generation Launch Technology
MODIS	Moderate - resolution Imaging Spectroradiometer	NGST	Next Generation Space Telescope
MOMS	Mission Operations and Mission Services	NIAC	NASA Institute of Advanced Concepts
MOU	Memorandum of Understanding	NICMOS	Near Infrared Camera and Multi – Object Spectrometer
MPLM	Multi - Purpose Logistic Modules	NIH	National Institutes of Health
MRA	Mars Research and Analysis	NIMA	National Imagery and Mapping Agency
MRI	Medium Resolution Imager	NISN	NASA Integrated Services Network
MRO	Mars Reconnaissance Orbiter	NLS	NASA Launch Services
MSFC	Marshall Space Flight Center	NMP	New Millennium Program
MSL	Mars Science Laboratory	NOAA	National Oceanic and Atmospheric Administration
MSL - EM	Materials Science Laboratory Experiment Module	Nox	Nitrogen Oxide
MSM	Mission and Science Measurement	NPOES	National Polar – orbiting Operational Environmental Satellite
MSMT	Mission and Science Measurement Technology	NPOESS	National Polar – orbiting Operational Environmental Satellite System
MSRF	Materials Science Research Facility	NPP	NPOESS Preparatory Project
MSRR	Materials Science Research Rack	NPR	NASA Procedural Requirement
MTO	Mars Telesat Orbiter	NRA	NASA Research Announcement
MUREP	Minority University Research and Education Program	NRC	Nuclear Regulatory Commission
MUSES - C	Mu Space Engineering Spacecraft-C	NSBRI	National Space Biomedical Research Institute
MUSS	Multi - User Systems and Support	NSCORS	NASA Specialized Centers of Research
McTMA	Multi - Center Traffic Management Advisor	NSF	National Science Foundation
MeV	Million Electron Volts	NSI	Nuclear Systems Initiative (Program)
MoA	Memorandum of Agreement	NSRL	NASA Space Radiation Laboratory
MoU	Memorandum of Understanding		
NAC	NASA Advisory Committee		
NACA	National Advisory Committee for Aeronautics		

Acronyms

NSTAR	NASA Solar Electric Propulsion Technology Application Readiness	PIU	Payload Interface Unit
NTTC	National Technology Transfer Center	PLASTIC	PLASma and SupraThermal Ion and Composition
Nd YAG	Neodymium (3+) – Doped Yttrium Aluminum Garnet Laser	PMC	Program Management Council
OAT	Office of Aerospace Technology	PMSR	Preliminary Mission System Review
OBPR	Office of Biological and Physical Research	PO	Physical Oceanography (at Jet Propulsion Laboratory)
OBSS	Orbiter Boom Sensor System	POC	Point of Contact
OCO	Orbiting Carbon Observatory	POCAAS	Payload Operations Concepts and Architecture Assessment Study
OGA	Oxygen Generation Assembly	POIC	Payloads Operations Information Center
OH	Ohio	POIF	Payloads Office Integration Function
OIG	Office of Inspector General	PPARC	Particle Physics CNES
OMB	Office of Management and Budget	PPM	Parts Per Million
OMI	Ozone Measuring Instrument	PRU	Plant Research Unit
OMM	Orbiter Major Modifications	PSO	Primary Science Orbit
OMPS	Ozone Mapping and Profiler Suite	PSR	Physical Sciences Research
OMU	Other Minority Universities	PSU	Pennsylvania State University
ONR	Office of Naval Research	PU	Plutonium
OPF	Orbiter Processing Facility	PW	Pratt & Whitney
ORR	Operations Readiness Review	PaRIS	Passive Rack Isolation System
ORU	Orbital Replacement Unit	QAT	Quiet Aircraft Technology
OSF	Office of Space Flight	QMI	Quench Module Insert
OSP	Orbital Space Plane	RASC	Revolutionary Aero Space Concepts
OSS	Office of Space Science	RBM	Radiation Belt Mapper Mission
OSTM	Ocean Surface Topography Mission	RCC	Reinforced Carbon Carbon
PACE	Precollege Awards for Excellence	RCRA	Resource Conservation and Recovery Act
PAD	Pad Abort Demonstrator	REASoN	Research, Education and Applications Solutions Network
PAM	Prospecting Autonomous Nano – Technology Swarm Missions	ReMAP	Research Maximization and Prioritization Task Force
PAO	Public Affairs Office	RETScreen	Renewable Energy Technology (Renewable Energy Project Analysis Software)
PARCS	Primary Atomic Reference Clock in Space	RF	Radio Frequency
PART	Program Assessment Rating Tool	RHESSI	Reuven Ramaty High Energy Solar Spectroscopic Imager
PB	Plum Brook	RHU	Radioactive Heater Units
PBRF	Plum Brook Reactor Facility	RI	Research Institution
PBS	President's Budget Submit	RIPS	Runway Incursion Prevention System
PCA	Program Commitment Agreement	RLV	Reusable Launch Vehicle
PCBM	Passive Common Berthing Mechanism	RMS	Remote Manipulator System
PCS	Physics of Colloids in Space	ROA	Remotely Operated Aircraft
PDR	Preliminary Design Review	ROSINA	Rosetta Orbiter Spectrometer for Ion and Neutral Analysis
PDS	Passive Dosimeter System	ROSS	Research Opportunities In Space Science
PER	Pre – Environmental Review		
PGBA	Plant Generic Bioprocessing Apparatus		
PI	Principal Investigator		
PIMC	Program Institutional Management Council		

Acronyms

RP	Rocket Propellant	SEU	Structure and Evolution of the Universe
RPC	Research Partnership Center	SFE	Space Flight Enterprise
RPFS	Research Partnerships and Flight Support	SFLC	Space Flight Leadership Council
RPT	Rocket Propulsion Test	SFOC	Space Flight Operations Contract
RSA	Russian Space Agency	SFS	Space and Flight Support
RSB	Rudder Speed Brake	SHARAD	Shallow Radar
RSRM	Reusable Solid Rocket Motor	SHARP	Slender Hypervelocity Aerothermodynamic Research Probes
RSS	Rack Support Systems	SHARPP	Solar Heliospheric Activity Research and Prediction Program
RTF	Return To Flight	SIM	Space Interferometry Mission
RXTE	Rossi X – Ray Timing Explorer	SIPS	Science Investigator - Led Processing System
ReMAP	Research Maximization and Prioritization Task Force	SIRTF	Space Infrared Telescope Facility
S&MA	Safety and Mission Assurance	SLEP	Shuttle Service Life Extension Program
SAA	Space Act Agreement	SLI	Space Launch Initiative
SAGAT	Situation Awareness Global Assessment Technique	SLTL	Space Transfer & Launch Technology
SAGE	Stratospheric Aerosol and Gas Experiment	SLWT	Super Lightweight Tank
SAIC	Science Applications International Corporation	SM 4	Servicing Mission 4
SAMPEX	Solar Anomalous and Magnetospheric Particle Explorer	SMCDS	Space Mission Communications and Data Services
SAMS	Space Acceleration Measurement System	SMEX	Small Explorer
SAO	Smithsonian Astrophysical Observatory	SMO	Systems Management Organization
SAR	Synthetic Aperture Radar	SMPMC	Systematic Measurements Program Management Council
SATS	Small Aircraft Transportation System	SMS	Science Measurement Systems
SATSLab	Small Aircraft Transportation System Laboratory	SOA	State of the Art
SAU	Strategic Airspace Usage	SOFIA	Stratospheric Observatory for Infrared Astronomy
SB	Small Business	SOHO	Solar Heliospheric Observer
SBIR	Small Business Innovative Research	SORCE	Solar Radiation and Climate Experiment
SBT	Space – Based Technology	SPD	Space Product Development
SC	Spacecraft	SPD – EM	Space Product Development - Experiment Module
SCU	Santa Clara University	SPF	Software Production Facility
SDMAC	Space Department Management Committee	SPIDR	Spectroscopy and Photometry of the Intergalactic Medium's Diffuse Radiation
SDO	Solar Dynamics Observatory	SPP	Science Power Platform
SDR	System Design Review	SPRL	Space Physics Research Laboratory
SE&I	Systems Engineering and Integration	SQF	Solidification Quench Furnace
SEC	Sun – Earth Connection	SRB	Solid Rocket Booster
SECAS	Sun – Earth Connection Advisory Subcommittee	SSAC	Space Science Advisory Committee
SECCHI	Sun - Earth Connection Coronal and Heliospheric Investigation	SSB	Space Studies Board
SEEDS	Strategic Evolution of ESE Data Systems	SSBRP	Space Station Biological Research Project
SEMAA	Science, Engineering, Mathematics and Aerospace Academy	SSC	Stennis Space Center

Acronyms

SSE	Solar System Exploration	TMCO	Technical, Management, Cost and Other Program Factors
SSES	Solar System Exploration Subcommittee	TOMS	Total Ozone Mapping Spectrometer
SSME	Space Shuttle Main Engines	TOPEX	Ocean Topographic Experiment
SSMO	Space Sciences Mission Operations	TPF	Terrestrial Planet Finder
SSP	Space Shuttle Program	TPS	Thermal Protection System
SSPCM	Solid State Power Control Module	TRACE	Transition Region and Coronal Explorer
SSRMS	Space Station Remote Manipulator System	TRL	Technology Readiness Level
SSTF	Space Station Training Facility	TRMM	Tropical Rainfall Measuring Mission
STEM	Science, Technology, Engineering and Mathematics	TRW	Northrop Grumman Space Technology
STEREO	Solar Terrestrial Relations Observatory	TS	Transportation Systems
STLT	Space Transfer & Launch Technology	TSA	Transportation Security Administration
STP	Solar Terrestrial Probes	TSC	Telecommunications Support Center
STS	Space Transportation System	TSI	Total Solar Irradiance
STScI	Space Telescope Science Institute	TTA	Technical Task Agreements
STTR	Small Business Technology Transfer Program	TTP	Technology Transfer Partnerships
SUMO	Superconducting Microwave Oscillator Experiment	TWINS	Two Wide – angle Imaging Neutral – atom Spectrometers
SVA	Strategic Vehicle Architecture	UARS	Upper Atmosphere Research Satellite
SVD	System Vulnerability Detection	UAV	Unmanned Aerial Vehicle
SVS	Synthetic Vision System	UCAR	University Corporation for Atmospheric Research
SW	Software	UCLA	University of California, Los Angeles
SWAVES	STEREO/WAVES	UEET	Ultra – Efficient Engine Technology
SWEPT	System – Wide Evaluation and Planning Tool	UHF	Ultra High Frequency
SpaceDRUMS	Space – Dynamically Responding Ultrasonic Matrix System	UK	United Kingdom
SpoRT	Short – term Prediction Research and Transition	ULF	Utilization and Logistics Flight
SwRI	Southwest Research Institute	UNESCO	United Nations Educational, Scientific and Cultural Organization
TBCC	Turbine Based Combined Cycle	URC	University Research Center
TBD	To Be Determined	URETI	University Research Engineering, and Technology Institute
TBD	To Be Determined	US	United States
TCAT	21st Century Aircraft Technology Project	USA	United States of America
TCU	Tribal Colleges and Universities	USACE	United States Army Corps of Engineers
TDRS	Tracking and Data Relay Satellite	USAF	United States Air Force
TDRSS	Tracking and Data Relay Satellite System	USAID	United States Agency for International Development
TEB	Technology Executive Board	USBoR	United States Bureau of Reclamation
TES	Troposphere Emission Spectrometer	USDA	United States Department of Agriculture
TFM	Traffic Flow Management	USFS	United States Forest Service
THEMIS	Thermal Emission Imaging System	USGS	United States Geological Survey
TIMED	Thermosphere, Ionosphere, Mesosphere, Energetics and Dynamics	USN	United States Navy
		USRA	Universities Space Research Association

Acronyms

USRP	Undergraduate Student Research Program	WISE	Widefield Infrared Survey Explorer
UV	Ultraviolet	WMAP	Wilkinson Microwave Anisotropy Probe
UVOT	UltraViolet/Optical Telescope	WORF	Window Observational Facility
VAB	Vehicle Assembly Building	WPA	Water Processor Assembly
VAMS	Virtual Airspace Modeling and Simulation	WRS	Water Recycling System
VAST	Virtual Airspace Simulation Technology	WSOA	Wide Swath Ocean Altimeter
VIIRS	Visible – Infrared Imager Radiometer Suite	WSTF	White Sands Test Facility
VIPeR	Vehicle Integrated Performance Team	WakeVAS	Wake Vortex Advisory System
VPCAR	Vapor Phase Catalytic Ammonia Removal	XMM	X - Ray Multi - Mirror Mission
VS	Vehicle Systems	XRS	X - Ray Spectrometer
VSP	Vehicle Systems Program	XRT	X - Ray Telescope
VST	Virtual Silicon Technology Inc .	XUV	Soft X - Ray
TOL	Vertical Take Off and Landing	kW	Kilowatt
WFC 3	Wide Field Camera 3	keV	Kilo - Electron Volt
WGA	Western Governors Association		