To: All Employees

From: A.V. Diaz, Director 

Subject: Goddard's FY99 Performance Plan

The attached Goddard Performance Plan for Fiscal Year 1999 identifies actions and commitments we have made to Agency and Enterprise Strategic Plans and Performance Plans. Goddard's Performance Plan should be viewed as a working document that will evolve to match Agency changes. It should be used to align individual, program/project, and organizational plans.

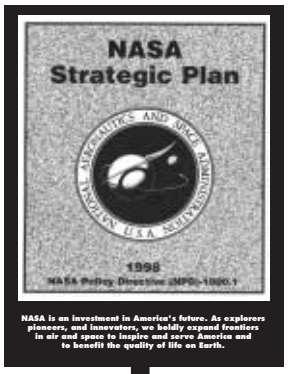
As the first step in supporting this alignment, all employees, with their supervisors, should identify those elements of the Agency Strategic Plan and Goddard Strategic Implementation Plan which their work directly supports. Second, in many instances, employees should be able to link to specific performance elements for a given year. A work sheet to identify these alignments is part of this Performance Plan package.

Organizations and programs/projects are accountable for those performance goals for which they have primary responsibility and for which they provide support. Organizational responsibilities, however, go beyond these specific performance goals. They include the development of employees, facilities, equipment and other capabilities that are essential to the performance of our mission. They also include creating and sustaining the Center's organizational values that our Strategic Implementation Plan identifies as key to our future success. Each organization and program/project should identify the performance goals in this Performance Plan for which they have primary responsibility, as well as those for which they provide a supporting role, and integrate these into all aspects of its planning.

As we use this Performance Plan, we need to examine the way we have expressed our performance goals to assure that they provide value to our customers. Since this is the first year we have been challenged to provide such specific linkages, we will use this as an opportunity to learn how to best state these performance goals and evolve our planning activities to take advantage of our experience.

Finally, I encourage all employees to become involved and contribute to their organization's planning. Please take the time to review both the Strategic Implementation Plan and those portions of the Performance Plan that relate to your work. Use the information contained in these plans to guide day-to-day actions and decisions. Your insights, your creativity, and your direct involvement are crucial to the Center's performance.

October 14, 1998




**Enterprise Strategic Plans**


# Performance Plan for Fiscal Year 1999

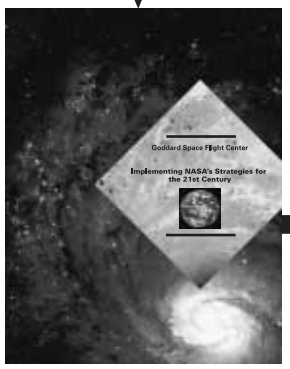
The Government Performance and Results Act requires all agencies to develop strategic plans to improve management and performance of agency mission and goals, to support congressional decision making, and to improve citizen confidence in their government's performance.

The Goddard Strategic Implementation Plan and the Goddard FY99 Performance Plan have been developed to identify the mission, goals, and strategies Goddard must pursue to support the Agency and Enterprise Strategic Plans and the specific performance targets that are established for each fiscal year. The Goddard FY99 Performance Plan is derived directly from the objectives and performance targets established by NASA in its fiscal 1999 Performance Plan and covers objectives and performance targets for both the Enterprises and the Crosscutting Processes which support all Agency activities and Enterprises.

The first section of this Performance Plan identifies the Objectives and Performance Targets for NASA's four Enterprises and the GSFC Goal 1 and Goal 2 performance goals that support these Enterprise Performance Targets. The second section identifies NASA's four Crosscutting Goals and the GSFC Goals 3, 4, 5 and 6 that support these Crosscutting Goals and their Performance Targets.

GSFC Performance Goals can be identified with the Enterprise Objective, for example, Earth Science Enterprise goal 1 is "ES.1" and the GSFC performance goals that support ES.1 are GSFC Goal 1: 1A, 1B, 1C; and Goal 2: 2A, 2B, 2C, and 2D. Likewise, GSFC Goals 3—6 are matrixed with the NASA Crosscutting Objectives they support. "Manage Strategically" is MS.1, and is supported by GSFC Performance Goals: 4A thru 4K; 5A thru 5F; and 6A thru 6J.

This Performance Plan serves as the cornerstone for developing organizational performance plans and individual employee performance plans.




**GSFC FY99 Performance Plan** → **Organizational Performance Plans** → **Employee Performance Plans**

## References

NASA's Four Enterprises:
- Space Science
- Earth Science
- Human Exploration and the Development of Space
- Aeronautics and Space Transportation Systems

NASA's Crosscutting Processes:
- Manage Strategically
- Provide Aerospace Products and Capabilities
- Generate Knowledge
- Communicate Knowledge

Information and copies of Agency and Enterprise Strategic and Performance Plans are accessible through the

NASA Office of Policy and Plans home page
Available at: http://www.hq.nasa.gov/office/codez/plans.html

GSFC Strategic Implementation Plan
Available at: http://pao.gsfc.nasa.gov/gsfc/strategic/gsfcplan.htm

GSFC Performance Plan for Fiscal Year 1999
Available at: http://internal.gsfc.nasa.gov/directives/perform.pdf

# Linking Individual Performance Plans to Agency and Center Performance Plans

Goddard Space Flight Center's Employee Performance Communication System (EPCS) focuses on two-way communication concerning work and work requirements. This communication should:

1. Provide mutual understanding of performance standards;
2. Emphasize achievements rather than labels;
3. Emphasize and identify developmental activities; and
4. Provide mutual understanding of how the employee's performance links to the NASA Strategic Plan or the Center's Strategic Implementation Plan through organizational performance plans.

In connection with the issuance of the NASA and GSFC Performance Plans for Fiscal Year 1999, GSFC supervisors are responsible for assuring that a discussion is held with each employee for whom they are responsible to clarify how each employee's individual performance contributes to the achievement of NASA's Performance Plan and the Center's Performance Plan, which ties directly to the NASA plan.

To assist in communicating and documenting this linkage, the form printed on this page is available to relate one or more key **Job Elements** from an employee's EPCS performance plan to key **Performance Target(s)** from the GSFC Performance Plan and to **Key Objective(s)** from the NASA Performance Plan. In order to make a clear link, the supervisor may find it necessary to go to the underlying GSFC Strategic Implementation Plan goals and objectives or the NASA Strategic Plan's goals. Once discussed, the supervisor should sign the form, provide a copy to the employee, and maintain the original. It is not necessary for the employee to sign this form.

Copies of the form may be downloaded from the Office of Human Resources Home Page at **http://ohr.gsfc.nasa.gov.** Click on "Hot Topics." Select "Employee Performance and Communication (EPCS)." Select the word file attached to "Linking the Employee to the Agency Strategic Plan."

GSFC EMPLOYEE PERFORMANCE COMMUNICATION SYSTEM

LINKING THE EMPLOYEE TO THE AGENCY STRATEGIC PLAN

Employee Name _____

For Employee's Performance Period from _____ to _____

KEY **OBJECTIVE** FROM THE FISCAL YEAR 1999 NASA PERFORMANCE PLAN OR **GOAL** FROM THE NASA STRATEGIC PLAN:

**KEY PERFORMANCE TARGET** FROM THE FY1999 GSFC PERFORMANCE PLAN OR **GOAL** FROM THE GSFC STRATEGIC IMPLEMENTATION PLAN:

**KEY JOB ELEMENT** FROM THE EMPLOYEE'S PERFORMANCE PLAN THAT LINKS TO THE ABOVE:

The employee and supervisor should discuss the link between the employee's job responsibility and the NASA Strategic Plan or NASA Annual Performance Plan, including as appropriate an intervening link to the Center's plans. The supervisor will provide a copy of this completed summary to the employee.

_____

Supervisor's Signature and Date of Discussion

# Goddard FY99 Performance Plan (October 14, 1998)

| Earth Science Enterprise Objectives and Performance Targets | GSFC | |
|---|---|---|
| | National Resource (GSFC Goal 1) | Center of Excellence (GSFC Goal 2) |
| **ES.1 Objective: Understand the causes and consequences of land-cover/land-use change.** | | |
| Begin to refresh global archive of 30m land imagery from Landsat 7. | 1A. Process and analyze Landsat 7 data. | 2A. Validate products for general use. |
| Begin to collect near daily measurements of the terrestrial biosphere. | 1B. Provide EOS AM1 data and supplementary data sources to make global measurements. | 2B. Update estimates of global productivity and document the extent of ecosystem changes. |
| Collect near daily global measurements of ocean color. | 1C. Provide SeaWiFS data to authorized scientific community users. | 2C. Calibrate and use SeaWiFS data to understand and predict changes in coastal areas.<br>2D. Calculate ocean chlorophyll concentration and carbon uptake using MODIS & SeaWiFS data to estimate biological productivity of oceans. |
| **ES.2 Objective: Predict seasonal to interannual climate variations.** | | |
| Begin 3-year sequence of instantaneous measurements of rainfall rates and monthly accumulations in the global tropics. | 1A. Develop and enhance satellite data sets that provide precipitation estimates. | 2A. Use TRMM, TOPEX, SSM/I, and SeaWiFS data to study and document development & decline of '97/'98 El Niño event.<br>2B. Identify physical and dynamical processes of short-term climate variations and teleconnections between tropical and extratropical regions. |
| | 1B. Improve the skill for predicting monsoon life-cycle, intraseasonal climate variations and El Niño and La Niña Southern Oscillation. | 2C. Use TRMM data to get a first-time measurement of global tropical precipitation to use in global models and to reduce uncertainty in global tropical rainfall estimates from 30% to 10%.<br>2D. Improve parametization of physical processes of radiation, convection, and air-sea/land interactions.<br>2E. Test global and regional climate system models with predictive capabilities.<br>2F. Make available to scientific community a variety of climate subsystem models of the atmosphere, land and oceans, biosphere as well as coupled models. |
| | 1C. Conduct intensive science/validation field campaigns with aircraft/ships and ground based systems in conjunction with TRMM. | 2G. Use TRMM and in situ data to derive accurate latent heating profiles to improve global circulation input into global climate models.<br>2H. Determine cirrus cloud characteristics in diverse regimes in order to better understand climate radiative balance. |
| | 1D. Operate ground, aircraft and shuttle-based lidars and radiometers to study cirrus and other cloud characteristics. | 2I. Use lidar information from various platforms to determine cirrus microphysical properties. |
| | 1E. Participate in climate model intercomparisons. | 2J. Evaluate mesoscale model simulations of critical atmospheric physical processes and surface interactions to better understand their impact on climate variations.<br>2K. Compare model simulations of cloud and precipitation evolution and structure to actual data from TRMM and other satellite and aircraft remote sensing observations. |
| **ES.3 Objective: Identify natural hazards, processes and mitigation strategies for floods, droughts, and volcanoes.** | | |
| | 1A. Operate in-orbit spacecraft and distribute data from TRMM, TOMS, and EOS AM1.<br>1B. Turnover Landsat 7 to NOAA. | 2A. Analyze climate data for long-term change of droughts and floods and possible relation to natural and human caused climate forcings.<br>2B. Identify causes and consequences of major floods and droughts in different regions of the world and document their linkages with major climate fluctuations such as El Nino or global warming.<br>2C. Develop requirements for detection and tracking from space of volcanic hazards to aviation. |
| **ES.4 Objective: Detect long-term climate change, causes, and impacts.** | | |
| Begin to conduct daily observations of cloud properties such as extent, height, optical thickness, and particle size. | 1A. Launch and operate EOS AM1. | 2A. Use AM1 and other s/c, aircraft instruments, and modeling to better understand the role that clouds & aerosols play in the Earth's climate. |
| Map aerosol formation, distribution, and sinks over the land and oceans. | 1B. Calibrate TOPEX.<br>1C. Calibrate EOS AM1. | 2B. Determine the effects of clouds and aerosols on the solar heating and IR cooling of the atmosphere and the Earth's surface.<br>2C. Develop new state-of-the-art instruments to make the needed measurements more accurately and cheaply. |
| **ES.5 Objective: Understand the causes of variation in ozone concentration and distribution in the upper and lower atmosphere.** | | |
| Initiate the full Southern Hemisphere Additional Ozonesonde (SHADOZ) network to obtain the first ever climatology of upper troposphere ozone in the tropics. | 1A. Collect ozonesonde data 2–4 times per month, check for data quality and validate it. | 2A. Check ozonesonde data for quality and validate.<br>2B. Provide the principal investigator for SHADOZ. |
| Toms will use new retrieval methods to collect and analyze three new data products. | 1B. Continue to operate TOMS instrument. | 2C. Conduct measurements of ozone, UV-absorbing aerosols, and associated trace gases from ground, aircraft, balloon, rocket and satellite platforms.<br>2D. Create highly accurate, well-validated, long-term data set of ozone and UVB from ultraviolet satellite sensors.<br>2E. Design/development of UV/visible sensors to make ozone related measurements from space. |
| Continue the detailed multi-aircraft study of tropospheric chemistry over the tropical Pacific Ocean. | 1C. Develop/conduct aircraft campaigns to study atmospheric chemistry.<br>1D. Improve 2D chemistry transport model.<br>1E. Improve 3D chemistry transport model. | 2F. Acquire and analyze atmospheric chemistry data from sensors operated by US and international partners.<br>2G. Develop numerical models to understand patterns of behavior of ozone and to predict its future state.<br>2H. Develop sophisticated computer tools to merge multi-platform data. |
| **ES.6 Objective: Improve dissemination of Earth science research results.** | 1A. Complete at least two activities that enhance science community and public knowledge of and support for the Enterprise mission and its science. | 2A. Make data sets derived from models, aircraft campaigns, and space flight missions readily available to users.<br>2B. Write and distribute Earth Science Updates.<br>2C. Increase number of effective Institutes and cooperative arrangements.<br>2D. Update models of Earth's magnetic field.<br>2E. Update models of Earth's gravity field. |
| Make available Earth science data and land-surface characteristics, ocean surface conditions, and climate to users within 5 days. | 1B. Complete development of EOSDIS to support AM1 and Landsat 7. | 2F. Deliver new data on prediction, land surface, and climate and ship to users. Produce EOS AM1 and Landsat Level 2 and 3 products for regional and global validation. |
| Increase the volume of data archived by 10%, compared to FY97.<br>Increase the number of distinct customers by 20%, compared to FY97.<br>Increase products delivered from the DAAC's by 10% compared to FY97 | 1C. Acquire and distribute data from AM1 using EOSDIS.<br>— Double number of data files delivered by Goddard DAAC during FY97.<br>1D. Double number of GCMD DIFs viewed by users as compared to CY97.<br>1E. Complete development of EOS Polar Ground Network. | 2G. Increase data volume archived in FY97. |
| **ES.7 Objective: Increase public understanding of Earth System Science through education and outreach.** | 1A. Exhibit Earth science information and research results in 3 science centers or museums with an attendance over 500,000/yr.<br>1B. All completed ESE education products should receive an "Excellent" rating following peer review. Produce 2 products/yr. | 2A. Make results of research broadly available to the public in understandable language. |
| Award 50 new graduate student research grants and 20 early career fellowships in Earth Science. | 1C. Award Goddard's share of the 50 new graduate student research grants. | |
| Conduct at least 300 workshops to train teachers in ESE products. | 1D. Conduct at least 200 workshops on ESE products. | |
| Increase the number of schools participating in GLOBE to 8,000 in FY99. | 1E. Increase school participation in GLOBE. | |
| **ES.8 Objective: Develop and transfer advanced remote sensing technology.** | 1A. In partnership with NOAA design and build next generation of orbiting Earth science operational instruments.<br>1B. Install distributed shared memory architecture in NCCS.<br>1C. Develop candidates for second generation EOS instruments. | 2A. Provide world-class computing center to keep GSFC at research forefront; by improving throughput for Earth system models. |
| Demonstrate a new capability to double the calibration quality for moderate resolution land imagery. | 1D. Calibrate MODIS instrument after launch. | 2B. Work with industry to develop an 80% reduction in mass for future land-imaging instruments, i.e., E0-1. |
| Transfer at least one technology development to a commercial entity for operational use. | 1E. Expand Instrument Incubator program. | 2C. Work with industry, academia and local governments to transfer technologies for global, regional, and local applications. |
| Advance at least 25% of funded instrument technology developments: one TRL to enable future science missions to reduce their total costs. | 1F. Complete next generation technology in support of hyperspectral instruments including K-band array, transponder and data handling capabilities.<br>1G. Plan upgrade for networks for 600 mps capability.<br>1H. Help to develop Technology Vision and Roadmap for Earth Science Enterprise. | 2D. Determine core needs for future instruments and initiate R&D on development and performance of these instruments. |
| **ES.9 Objective: Extend the use of Earth science research to national, state, and local applications.** | | |
| Establish at least 5 new Regional Earth Science Application Centers. | 1A. Compete for new regional Applications Centers to bring Earth science data to universities and state and local institutions.<br>1B. Provide technical support for established Regional Application Centers. | |
| Establish at least 8 new projects, with the US Department of Agriculture. | | 2A. Work with USDA to develop remote sensing techniques for crops. |
| Complete solicitation for at least 7 cooperative agreements with state and local governments in land use planning, land capability analysis, critical areas management, and water resources management. | 1C. Partner with DOD, CDC, DCI, and NPS to develop use of remote sensing. | 2B. Work with state and local governments to test new instruments, e.g., beach mapping using a scanning LIDAR altimeter.<br>2C. Work with the FAA to develop remote sensing techniques for aviation hazards. |
| **ES.10 Support the development of a robust commercial remote sensing industry.** | | |
| Establish 75 commercial partnerships in 'value-added' remote sensing product development. | 1A. Help NASA grow from 37 commercial partnerships in "value added" remote sensing product development in FY98 to 75 by the end of FY99. | 2A. Use of Small Business Innovative Research (SBIR) and Small Technology Transfer Research (STTR) to support development of commercial partnerships. |
| **ES.11 Objective: Make major scientific contributions to national and international environmental assessments** | | |
| Make significant contribution to assessments of Atmospheric Effects of Aviation, in collaboration with the Federal Aviation Administration. The contributed model results of the climate effects of measured aircraft emissions will be provided to the Intergovernmental Panel on Climate Change. | 1A. Manage airborne effects of aviation projects. | 2A. Conduct scientific investigation of aircraft and their effect on the atmosphere. |
| Make significant contribution to U.S. regional/national assessment(s) in partnership with USGCRP agencies. | 1B. Provide leadership as project and mission scientists of NASA's satellite and aircraft missions. | 2B. Maintain a critical mass of multidisciplinary scientists and computer professionals required to support such assessments. |
| Provide a lead chapter author as well as most of the global scale data to the World Meteorological Organization (WMO) Ozone assessment. | 1C. Create long-term data sets of ozone and UVB for such assessments. | 2C. Prepare input for WMO ozone assessment. |
| Provide global-scale observations and analyses for the Intergovernmental Panel on Climate Change Assessment Report, sponsored by the United Nations Environment Programme and WMO. | 1D. Operate Earth sensing satellites. | 2D. Analyze and publish data results. |
| **ES12. Successfully launch three S/C within 10% budget on average.** | 1A. Launch EOS AM1.<br>1B. Launch Landsat 7. | 2A. Study and document interannual and decadal changes in land-cover/land-use and the interactions of land cover and climate change.<br>2B. Lead the calibration & validation of data to produce research quality data products from AM1 and Landsat 7. |

# Goddard FY99 Performance Plan (October 14, 1998)

| Space Science Enterprise Objectives and Performance Targets | GSFC | |
|---|---|---|
| | National Resource (GSFC Goal 1) | Center of Excellence (GSFC Goal 2) |
| **SS.1 Objective: Solve mysteries of the universe.**<br>Successfully launch four spacecraft within 10% of budget on average. | 1A. Launch TERRIERS, SWAS, WIRE, and FUSE.<br>1B. Test fly a scale model (about 2 million cu ft) super-pressure balloon to support development of Ultra-Long Duration Ballooning capability.<br>1C. Maintain sounding rocket launch rate of 20/yr with at least 95% vehicle success rate.<br>1D. Maintain Balloon launch rate of 20/yr with at least 90% balloon success rate. | 2A. Submit 2 category 1 proposals for new science missions with GSFC in lead role. |
| Complete Hubble Space Telescope 3-year project and measure the Hubble constant within an accuracy of approximately 10%. | 1E. Operate HST and complete the NICMOS pre-servicing science program.<br>1F. Finish development and test of 3rd generation HST camera (ACS) with discovery efficiency (field of view X quantum efficiency) 10 times that of WFPC2.<br>1G. Complete transition plan to move HST flight operations to STScI.<br>1H. For NGST, start 2 Phase A studies, complete 2 mirror system demonstrators, and complete focal-plane instrumentation study.<br>1I. Lightweight optics program: build operational unit of 1-m telescope with diffraction-limited performance.<br>1J. Sensor development: analyze visible-light telescopic performance of ICID array for UV flight applications. | 2B. Complete HST project to determine the Hubble constant within an accuracy of 10% thereby determining the age of the universe.<br>2C. Apply HST to fundamental cosmology and astrophysics problems.<br>2D. Conduct census of giant black holes with Goddard's Space Telescope Imaging Spectrograph (STIS) instrument. |
| The Rossi X-Ray Timing Explorer (RXTE) will observe physical phenomenon 25,000 times closer to the event horizon of black holes than permitted with optical wavelength measurements. | 1K. Operate RXTE and obtain more than 14 million seconds of on-source data, while supporting over 130 guest observers.<br>1L. Complete Constellation-X in-house and industry mission trade studies and select baseline mission design.<br>1M. Complete MAP spacecraft build and initiate instrument-spacecraft integration.<br>1N. Complete IRAC flight instrument, test and deliver instrument.<br>1O. Complete I&T of XRS instrument for ASTRO-E.<br>1P. Support ESA integration of XMM spacecraft in preparation for July '99 launch.<br>1Q. Prepare MOXE and SXRP instruments for delivery in FY99.<br>1R. Operate CCRO, refill EGRET spark chamber with final gas load, and transition to fully automated ground system.<br>1S. Develop GLAST anti-coincidence detector technology, prototype hardware for beam test, and prepare instrument development proposal.<br>1T. Complete OWL feasibility study and prepare technology development proposal.<br>1U. Complete 4X8 sub-mm bolometer array to evaluate for FIRST focal plane application.<br>1V. Perform 2nd TopHat midlatitude test flight and integrate instrument package for shipment to Antarctica.<br>1W. Enable Fabry-Perot camera operations at Apache Point Observatory by implementing on-site fiber optics communications. | 2E. Apply RXTE to fundamental cosmology and astrophysics problems.<br>2F. Observe physical phenomena 25,000 times closer to the event horizon of black holes than possible with optical wavelength measurements.<br>2G. Perform one new test of the General Theory of Relativity.<br>2H. Investigate strong magnetic fields.<br>2I. Apply CGRO to fundamental cosmology and astrophysics problems.<br>2J. Investigate sources and physical origin of gamma ray bursts to provide more reliable information on distance and location.<br>2K. Analyze balloon and ACE data to obtain age of galactic cosmic rays.<br>2L. Explore the highest energy emissions from giant black holes with multi-wavelength sensitivity and time coverage.<br>2M. Investigate the earliest galaxies in the universe.<br>2N. Study early galaxy formation, beginning of star formation and chemical evolution of galaxies and intergalactic and interstellar media.<br>2O. Analyze balloon microwave experiment data on shape and structure of universe. |
| **SS.2 Objective: Explore the solar system.**<br>The Transition Region and Coronal Explorer (TRACE) will observe energy propagation from solar disturbances beginning at the bottom of the visible solar atmosphere into the corona high above a spatial resolution 5 times better than previous capabilities. | 1A. Operate TRACE 5 days/week, 10 hours/day, taking science data at about 240,000 Megabits/day, outside eclipse season.<br>1B. Support Program Office in completing SOLAR STEREO A.O.<br>1C. Participate in routine mission operations testing of Planet-B, Cassini Orbiter and Huygens Probe Mass Spectrometers during their flights toward Mars and Saturn.<br>1D. Launch and retrieve Spartan 201-05 on STS-95.<br>1E. Launch IEH-3 (includes UVSTAR), SEM and CRYOTSU on STS-95. | 2A. Observe solar phenomena with spatial resolution 5 times better in each coordinate than attained at similar wavelengths with the SOHO EIT and with higher time cadence.<br>2B. Test the theory of magnetic reconnection.<br>2C. Make preparations for Mars encounter in October 1999. |
| **SS.3 Objective: Discover planets around other stars.** | 1A. Apply STIS and NICMOS to planet/planetary systems search. | 2A. Complete STIS Internal Key Project plan for coronagraphic imagery of circumstellar possible protoplanetary disks. |
| **SS.4 Objective: Search for life beyond Earth.** | 1A. Lead NGST studies as step toward Planet Finder; complete NGST coronagraph instrument study.<br>1B. Apply planetary atmospheres expertise to develop new concepts to investigate extrasolar planets. | 2A. Develop strategy for GSFC to build/strengthen astrobiology expertise.<br>2B. Increase research on extrasolar planetary systems and parent stars. |
| **SS.5 Objective: Investigate the composition, evolution, and resources on Mars, the Moon, and small bodies.**<br>The Mars Global Surveyor (MGS) will achieve final science orbit in FY99, measure the topography within 10-meter precision, provide high-resolution 1.5 meter imaging data, and provide the first thermal infrared spectrometer of the planet. | 1A. Operate MGS laser altimeter.<br>1B. Operate MGS magnetometer. | 2A. Topographically map Mars to 10 meter precision.<br>2B. Make the first large scale map of the locations of magnetic concentrations on Mars. |
| **SS.6 Objective: Improve the reliability of space weather forecasting.**<br>Conduct solar activity observations with a series of NASA spacecraft to achieve complete coverage (maximum and minimum) of the solar cycle, an increase from 35%. | 1A. Increase by 65%, data on 11-year solar activity cycle using WIND, POLAR, TRACE, SOHO, ACE and IMP-8.<br>1B. Provide real-time WIND and ACE data to NOAA and science community.<br>1C. Develop LENA flight instrument for IMAGE.<br>1D. Complete ISTP MOC reengineering. | 2A. Observe the solar-cycle dependence of coronal mass ejections.<br>2B. Determine the pre-existing solar magnetic conditions that lead to geomagnetic storms.<br>2C. Determine effects of interplanetary shocks on Earth. |
| **SS.7 Objective: Develop innovative technologies for Space Science Enterprise missions and for external customers.** | 1A. Support HQ completion and release of the Explorers Technology NRA. Initiate new technology projects selected from NRA.<br>1B. Initiate Explorers instrument sustaining technology projects selected from the 1998 MIDEX AO.<br>1C. Complete HOST mission.<br>— Evaluate Reverse Brayton cycle cryocooler in orbit<br>— Evaluate high density memory.<br>— Evaluate ultra sensitive accelerometer system.<br>1D. Deploy crosscutting technology process. | 2A. Implement a crosscutting technology program.<br>2B. Develop and test small cryogenic coolers for both Space and Earth science missions.<br>2C. Investigate nano-satellite and interferometry techniques for simultaneous observations from satellite constellations. |
| **SS.8 Objective: Incorporate education and enhanced public understanding of science integral components of Space Science missions and research.** | In addition see Goal 3 related to NASA's crosscutting processes: Generate Knowledge and Communicate Knowledge. | |
| Account for 4% of the 150 "most important science stories" in the annual review by Science News. | 1A. Contribute to NASA's accounting for 4% of the 150 "most important science stories" in the annual review by Science News. | |
| Account for no less than 25% of total contributions to the college textbook Astronomy: From the Earth to the Universe. | 1B. Contribute to NASA's accounting for at least 25% of total contributions to the college textbook Astronomy: From the Earth to the Universe. | |
| Each new Space Science Enterprise mission initiated in FY99 will have a funded education and outreach program. | 1C. Each new mission initiated in FY99 will have a funded education and outreach program and a website. | |
| The Space Science Enterprise will complete an organized network of scientists to formulate and implement space science education and outreach programs. | 1D. Achieve coverage on every major US broadcast TV network of at least one space science story during FY99 derived from GSFC missions. | 2A. Goddard will contribute to an organized network of contracts to formulate and implement space science education and outreach programs. |

# Goddard FY99 Performance Plan (October 14, 1998)

| Human Exploration and Development of Space Enterprise | GSFC | |
|---|---|---|
| | National Resource (GSFC Goal 1) | Center of Excellence (GSFC Goal 2) |
| **HEDS.1** Enable humans to conduct unique in situ research and development for scientific, engineering, and commercial applications. | 1A. Complete Spartan 400 Phase A study effort.<br>1B. Provide TDRSS support for the ISS. | 2A. Develop concept for Radiation Technology Demonstration mission for JSC. |
| **HEDS.2** Advance human exploration of space by successfully conducting robotic missions. | | 2A. Develop concepts for the ISS attached payloads. |

| Aeronautics and Space Transportation Systems Enterprise | GSFC | |
|---|---|---|
| | National Resource (GSFC Goal 1) | Center of Excellence (GSFC Goal 2) |
| **ASTT.1** Develop and transfer cutting-edge technologies: Provide new technologies, processes, world-class facilities and services and make aeronautics and space programs more affordable. | 1A. Goddard will provide 15% of its SGI/T3E supercomputer time to obtain factors of 100-fold improvements over current computing systems.<br>1B. Work through COSMO to share technologies in mass storage and supercomputing. | 2A. Provide 200-fold improvement over FY92 baseline in-time-to-solution for grand challenge application on teraflop/s testbed.<br>2B. Provide portable, scalable, distributed visualization of multiterabyte 4-D datasets on teraflop/s scalable system. |
| **ASTT.2** Develop and transfer cutting-edge technologies (e.g., develop and demonstrate an RLV). | 1A. Support X-33 development with ground instrumentation.<br>1B. Support X-34 development with ground instrumentation and facilities for possible landings or takeoffs.<br>1C. Develop prototype RPV's for science missions. | |
| **ASTT.3** Develop and transfer cutting-edge technologies in support of industry and U.S. Government R&D. | | 2A. Participate in the adaptation of GPS technologies for launch vehicle support. |

NASA Crosscutting Processes: Communicate Knowledge Process – **(CK)**
Manage Strategically Process – **(MS)**
Provide Aerospace Products and Capabilities Process – **(PAPC)**
Generate Knowledge Process – **(GK)**

| NASA Crosscutting FY99 Performance Goals | | Goddard FY99 Performance Goals | |
|---|---|---|---|
| Objectives | Performance Targets | Literacy (GSFC Goal 3) | |
| **Communicate Knowledge** | | | |
| **CK.1** Develop educational outreach programs. | 1.1 Increase the number of educators who participate annually in the NEWEST/NEWMAST educational outreach program from 170 to 500. | 3A. Increase the number of educators participating in the NEWEST/NEWMAST program, consistent with Agency funding. | |
| | | Goddard Contributing Objectives<br>3B. Increase the number of graduate students receiving degrees, where there is a direct connection with a Goddard mission, by 5% (baseline FY98).<br>3C. Increase interaction with joint technical institutes and academic facilities, including minority universities, 5% over FY98 (e.g., UMES Bridge Program).<br>3D. Increase student cooperative learning experiences by providing more sounding rocket and balloon flight opportunities, supporting the Cooperative Learning Program, Project Hope and sponsoring the Virginia Space Flight Academy.<br>3E. Manage two new UNEX missions.<br>3F. Respond to media requests for information within 1 business day.<br>3G. Enhance the quality and utility of educational programs by obtaining qualitative and quantitative customer feedback for 100% of these programs using the NASA EDCAT system. | |
| | 1.2 Increase the number of students reached through NEWEST/NEWMAST from 37,000 to 42,000. | 3H. Enhance science and technology literacy by increasing state-level partnerships by 5% over FY98.<br>3I. With teacher input, develop K-12 science curricula and educational packages to implement the National Education Standards for Earth and Space Sciences, Technology, and Geography.<br>3J. Increase the number of students who benefit from educator participation in the NEWEST/NEWMAST program, consistent with Agency funding. | |
| | 1.3 Maintain the participation level in Agencywide educational programs at above 1 million teachers and students. | 3K. Increase sponsorship of Preservice Teacher Training Program by 200% above the FY98 level.<br>3L. Increase, by 10% over the FY98 level, the number of teachers sponsored, as well as the number of teachers and schools served, in professional development programs.<br>3M. Expand sponsorship of K-14 student programs over the FY98 baseline:<br>— by 10% the number of students sponsored.<br>— by 20% the number of schools served.<br>3N. Donate $10M of computer equipment to schools. | |
| **CK.2** Increase NASA citations in independent publications. | 2.1 Increase the number of citations of NASA research to no less than 250. | 3O. Achieve a citation rate for GSFC publications comparable to other world-class research institutions. | |

NASA Crosscutting Processes: Communicate Knowledge Process – **(CK)**
Manage Strategically Process – **(MS)**
Provide Aerospace Products and Capabilities Process – **(PAPC)**
Generate Knowledge Process – **(GK)**

# Goddard FY99 Performance Plan (October 14, 1998)

| NASA Crosscutting FY99 Performance Goals | | Goddard FY99 Performance Goals | | |
|---|---|---|---|---|
| **Objectives** | **Performance Targets** | **Workforce (GSFC Goal 4)** | **Infrastructure (GSFC Goal 5)** | **Processes (GSFC Goal 6)** |
| **Manage Strategically** | | | | |
| **MS.1** Optimize investment strategies and systems to align human, physical, and financial resources with customer requirements, while ensuring compliance with applicable statutes and regulations. | 1.1 Reduce the Civil Service workforce level to below 19,000. | 4A. Achieve Goddard's workforce ceiling.<br>4B. Revitalize the workforce through an aggressive workforce refocusing program, such as the Wallops Technician Retraining Program.<br>4C. Revitalize the Cooperative Education and Fresh Out Hiring Programs, emphasizing diversity and affirmative action. | | |
| | | Goddard Contributing Objectives<br>4D. Enhance the organizational culture by:<br>1. Developing action plans to address Center-level and Directorate-level Culture Survey feedback. (1Q)<br>2. Initiating the new Center-level Awards and Recognition Program (1Q) and establishing a process for evaluating the first program year.<br>3. Reviewing Directorate-level awards and recognition practices and communicating results to employees. (2Q)<br>4E. Assess workforce, facilities, and tools required to accomplish 2003 mission.<br>1. Publish Directorate Transition Plans. (1Q)<br>2. Report assessment results to Enterprises. (1Q)<br>3. Reflect Transition Responsibilities in Individual Performance Plans. (2Q)<br>4F. Observe high ethical standards and ensure decisions/actions comply with statutes and regulations.<br>4G. Achieve an 80% certification level for procurement professionals, consistent with their current grade. | | Goddard Contributing Objectives<br>6A. Align Individual Performance Plan's with Agency and Center strategic and performance plans. (1Q)<br>6B. Implement ISO 9000. (3Q)<br>6C. Continue implementation of WFF Mission 2000 by increasing the customer base and transferring UNEX project management, as well as GAS and SEM management and operations, from Greenbelt to WFF.<br>6D. Achieve Center-level readiness for FY00 implementation of the Integrated Financial Management System.<br>6E. Implement the Center's New Business Process and incorporate technology goals and strategies.<br>6F. Participate in required annual ethics training and seek legal counseling, as necessary, for ethics, statutory and regulatory advice.<br>6G. 1. 70% of GSFC management complete the Manager's track of Tools for Navigating Change (TNC).<br>2. 30% of all Center employees take at least 1 TNC class. |
| | 1.2 Maintain a diverse NASA workforce through the downsizing efforts. | 4H. Implement the Goddard Diversity Management Plan and integrate diversity into the design and implementation of key Center initiatives, including Project Goddard, Wallops 2000, Cooperative Education and Fresh Out Hiring Programs, and the Culture Survey assessment process. | | |
| | 1.3 Reduce the number of Agency lost workdays by 5%. | 4I. Reduce lost workdays by 25% (baseline FY97).<br>4J. Reduce lost time injuries by 25% (baseline FY97).<br>4K. Train all supervisors regarding their safety responsibilities. | 5A. Eliminate "repeat findings" in facility annual safety surveys. | 6H. Restructure SESC for executive representation and accountability.<br>6I. Implement line management reporting of injuries/accidents and their mitigation to Code 100.<br>6J. Implement directorate-level metrics for safety responsibilities. |
| | 1.4 Achieve a 5% increase in physical resource costs avoided through alternate investment strategies from the previous year. | | 5B. Reduce energy consumption by 18% for non-mission variable buildings from the FY95 BTU/square foot consumption level.<br>5C. Close Bermuda Tracking Station. | |
| | 1.5 Achieve 70% or greater of resource authority obligations within the fiscal year. | | 5D. Reduce uncosted budget authority by 40% of the FY97 EOY level by achieving performance more closely aligned to obligation and cost plans.<br>5E. Assess the FY98 obligation and cost performance for potential process improvements. (1Q)<br>5F. Obligate 70% of resources authority received by May 31, 1999. | |
| **MS.2** Improve effectiveness and efficiency of Agency acquisitions through increased use of techniques and management that enhance contractor innovation and performance. | 2.1 Increase obligated funds available for Performance-Based Contracts (PBC) to 80% (See NASA Performance Plan for exclusions). | | | 6K. Increase obligated funds available for Performance-Based Contracts [NOTE: includes NASA Sounding Rocket Operations Contract (NSROC)]. |
| | 2.2 Achieve at least the 8% goal for funding to small disadvantaged businesses (See NASA Performance Plan for inclusions). | | | 6L. Achieve at least the 8% goal for funding to small disadvantaged business. |
| **MS.3** Improve information technology capability and services. | 3.1 Improve Information Technology (IT) return on investment and customer satisfaction by maintaining a positive return on investment and a "Satisfactory" rating from IT customers. | | 5G. Assure all mission critical systems, non-mission critical systems, and COTS products are Y2K compliant. (2Q)<br>5H. Reduce operating costs and enhance service by adopting standard commercial protocols for network communications.<br>5I Complete deployment of the Asynchronous Transfer Mode (ATM) network for the science community. (2Q)<br>5J. Fully implement the Internet Protocol (IP) network to support terrestrial communications. (2Q)<br>5K. Enhance workforce productivity by connecting every building to 10baseT cable. | 6M. Develop a Center network strategic plan (1Q).<br>6N. Implement ODIN Phase 1 (1Q). |
| **Provide Aerospace Products and Capabilities** | | | | |
| **PAPC.1** Meet schedule and cost commitments. | 1.1 Keep the development and upgrade of major scientific facilities and capital assets within 110% of cost and schedule estimates on average. | | 5A. Complete Greenbelt Rehousing Plan. (3Q)<br>5B. ESSB Initiative<br>– Outfit and occupy ESSB. (3Q)<br>– Begin buildings 21/22 renovation. (3Q)<br>– Publish Next Phase Move Outline Plan. (4Q)<br>5C. Finalize Facility Master Plan for Greenbelt and Wallops.<br>5D. Implement a Reliability Centered Maintenance Program. | 6A. Implement NPG 7120.5A, NASA Program and Project Management, Processes and Requirements.<br>6B. Develop advanced propulsion technologies.<br>6C. Launch Seawinds.<br>6D. Launch GOES-L.<br>6E. Launch SAC-C.<br>6F. Launch FUSE.<br>6G. Launch TDRS-H.<br>6H. Launch NOAA-L.<br>6I. Launch FUSE. |
| | | | Goddard Contributing Objectives<br>5E. Identify facilities and tools required to support Goddard's 2003 mission. (1Q) | |
| **PAPC.2** Ensure the availability of NASA's spacecraft and facilities. | 2.1 Maintain average operating time lost to unscheduled downtime for NASA spacecraft and facilities to less than 10% of total scheduled operating time. | | 5F. Maintain the WFF Test Range as a National Resource by expanding the customer base, reducing operating costs, and modernizing the facility.<br>5G. Complete development and begin Integration and Test on Spartan 251. | 6A. Develop a process to measure core facilities downtime and track downtime.<br>6B Implement an Advanced Materials Management System. |
| **PAPC.3** Reduce mission cost and development time. | 3.1 Reduce average spacecraft cost for Space Science and Earth Science missions to $190M, and reduce the average spacecraft development time to 4 years, 6 months. | | 5H. Reduce the cost of Goddard's space operations, broaden the range of service options, emphasize the use of technology, increase standardization and interoperability, and contribute to NASA commercialization objectives by supporting the SOMO transition to an Agencywide Consolidated Space Operations Contract (CSOC).<br>5I. Reduce the cost and complexity of launch services from the WFF test range, providing full launch services for less than $300K per ELV. | 6C. Commercialize the SMEX Lite system architecture to decrease cost of small space missions.<br>6D. Develop WFF Test Range Cost Reduction Plan.<br>6E. Reduce mission concept development time by 50% from the FY98 mean development time through Intelligent Synthesis Environment and Integrated Mission Design Center (IMDC) tools.<br>6F. Reduce project logistics support costs by 10% below original cost estimate. |
| **PAPC.4** Leverage NASA's research and development budget through commercial partnerships. | 4.1 Dedicate 10 to 20% of the Agency's Research and Development budget to commercial partnerships. | | | 6G. Issue delivery orders under the Rapid Spacecraft IDIQ contract within 30 days of receipt of purchase request.<br>6H. Implement new partnership agreement with the Virginia Space Flight Authority.<br>6I. Update the Goddard Technology Plan (3Q) and reengineer Goddard's Technology Commercialization Process.<br>6J. Survey Goddard's largest contractors to enhance New Technology reporting and partnering opportunities.<br>6K. Initiate the Goddard Technology Business Incubator and evaluate its performance.<br>6L. Achieve a 25% successful transition of Small Business Innovative Research/Small Business Technology Transfer contracts into either Goddard missions or commercial products. |
| | | | | Goddard Contributing Objectives<br>6M. Partner with DoD on Spartan and proceed to the integration and test phase for small propulsion systems and robotically operated satellites. |

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| **Generate Knowledge** | | | | |
| **GK.1** Select research projects through peer-reviewed and merit-based competition. | 1.1 Submit 80% of Agency Research projects to peer-reviewed processes. | | | 6A. Submit for peer review at least 80% of GSFC proposals in Earth and space science areas. |
| **GK.2** Provide information to the public and data to researchers. | 2.1 Provide monthly updates for all missions, and when possible on a weekly basis. Make available for researchers fully calibrated, verified, and validated science data products within 1 year of acquisition.<br>Note: Goddard's Earth and Space Science specific performance goals are listed with the Enterprise Objectives and Performance Goals. | | 5A. Increase the use of the Goddard Library web page by 20% over the FY97 level. | 6B. Increase the number of discrete product titles and events targeted to external groups by 25% (baseline FY98).<br>6C. Provide monthly updates for all missions, weekly if possible.<br>6D. Make fully calibrated, verified and validated science data available to researchers within 1 year of acquisition. |
| | | Goddard Contributing Objectives<br>4A. Increase the number of visiting scientists, RRA's, graduate students participating in Goddard programs by 10% over FY98 level.<br>4B. Increase, by 5%, the number of science research co-op agreements with universities, including predominantly minority institutions.<br>4C. Enhance the quality of knowledge communicated to the public and to the media by involving principal investigators and project managers in all mission-related media activities.<br>4D. Collaboratively establish, with the web-based managers in the technical community, guidelines for enhancing public access to web-based information. | | Goddard Contributing Objectives<br>6E. A minimum of 50% of new programs will be the result of partnerships.<br>6F. Number of patent applications in FY99 (baseline FY98).<br>6G. Number of applications using GSFC-developed technology (baseline FY98).<br>6H. Identify resources dedicated to long lead time research and technology. |