Paul Gilbert

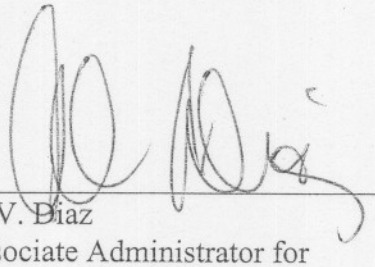
Program Commitment Agreement

Discovery Program

April 2005

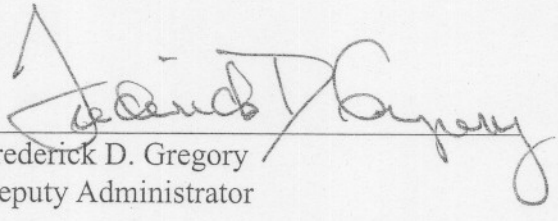
It is the responsibility of each of the signing parties to notify the other in the event that a commitment cannot be met and to initiate the timely renegotiations of the terms of this agreement.

Agreements:



A. V. Diaz
Associate Administrator for
Science Mission Directorate

4/28/05
Date



Frederick D. Gregory
Deputy Administrator

3 AUG 05
Date

PROGRAM COMMITMENT AGREEMENT
DISCOVERY PROGRAM

PROGRAM OBJECTIVES

The Discovery Program is designed to accomplish frequent, high-quality planetary science investigations, using innovative and efficient management approaches. The Program's prime objective is to enhance our understanding of the solar system as it is today and of solar system formation and evolution. In the process, it seeks to contain total mission cost and development time and improve performance through the use of validated new technology and through commitment to, and control of, design, development and operations costs. Also, it seeks to enhance public awareness of, and appreciation for, space exploration and to incorporate educational and public outreach activities as integral parts of space science investigations.

The goals and strategies outlined in the Science Mission Directorate Strategic Plan encompass a wide range of scientific questions spanning many scientific disciplines. NASA seeks to address these questions by supporting investigations in several broad categories; however, the Discovery Program solicits only those investigations which lead to flight projects that investigate planetary science. The term "planetary science" encompasses the scientific objectives in the Strategic Plan that address:

- The Solar System Exploration theme.
- The search for extrasolar planetary systems elements of the Astronomical Search for Origins theme.

Discovery missions are planetary system(s) science missions intended for the exploration of solar system bodies, either by traveling to them or by remote examination from the vicinity of Earth.

PROGRAM OVERVIEW

The Discovery Program is a science program of frequent, small spacecraft missions that will perform high-quality focused scientific investigations. The program is composed of a long-term series of space science missions that are independent, but share a common funding and management structure. The program emphasizes missions that can be accomplished under the leadership of the scientific research community.

The Discovery Program provides the following two classes of projects:

> Missions – complete, self-standing NASA Space Science investigations characterized by definition, development, launch service, and mission operations and data analysis costs not to typically exceed a Program cost cap of $450 million (in Fiscal Year 2005 dollars) total cost to NASA.

Missions of Opportunity (MO) – investigations characterized by being part of a non-Space Science mission of any size and having a NASA cost under $35 million (in Fiscal Year 2005 dollars) total cost to NASA. These missions are conducted on a no-exchange-of-funds basis with the organization sponsoring the mission. NASA intends to solicit proposals for MO with each Discovery Announcement of Opportunity (AO).

PROGRAM AUTHORITY

The Discovery Program is a multiple-project program with responsibility for implementation assigned to the Discovery Program Office located at the Marshall Space Flight Center (MSFC). Program authority is delegated from the Associate Administrator for the Science Mission Directorate (AA/SMD) through the MSFC Center Director to the Discovery Program Manager at MSFC. The Program Manager will perform NPR 7120.5, NASA Program and Project Management Processes and Requirements responsibilities. The AA of the Science Mission Directorate is the selecting official for individual projects of the Discovery Program.

The Discovery Program and its program management process, including the specific responsibilities at each level, are documented in the Discovery Program Plan. The Science Mission Directorate Program Management Council (PMC) is the governing PMC for the Discovery Program.

Program level requirements for each project are approved by the Science Mission Directorate at the time of project confirmation, prior to the start of project implementation. These approved requirements become an Appendix to the Discovery Program Plan. The Principal Investigator (PI) for each Discovery project is responsible for the overall success of the project and is accountable to the AA/SMD for the scientific success and to the Discovery Program Manager for the programmatic success.

TECHNICAL PERFORMANCE COMMITMENT

The Discovery Program performance commitment should include the following:

a) The Discovery Program will launch an average of one mission per 18 to 24 months commensurate with the availability of adequate funding.

b) Discovery Projects shall use a cost-effective, domestic, flight-proven Expendable Launch Vehicle (ELV). Each Discovery AO describes the launch vehicle details or appropriate access to space. SMD provides access to space and launch vehicle funding. These funds are part of the total cost cap for each mission. Foreign launch vehicles may be utilized only if contributed by the foreign organization (on a no-exchange-of-funds basis) and the launch vehicle meets NASA quality and reliability standards.

Purchase of foreign launch vehicles requires obtainment of a Presidential waiver.

c) For each mission, the primary planned launch date shall be within the time period specified by the associated AO, typically 35 months from the start of project implementation.

There will be no period of proprietary data rights for Discovery investigations. Mission teams will be allowed a brief validation period for collecting the scientific, engineering, and ancillary data and validating the scientific data prior to depositing it in the appropriate space science data archival system.

SCHEDULE COMMITMENT

The Discovery Program includes multiple projects. The following table reflects the current active projects.

Projects	Beginning of Formulation	Approval for Implementation	End of Prime Mission (EOM)
Missions			
Stardust	10/1994	11/1995	9/2006
Genesis	4/1997	9/1998	2/2008
MESSENGER	11/1998	6/2001	3/2012
Deep Impact	11/1998	5/2001	3/2006
Dawn	1/2001	9/2003	7/2016
Kepler	1/2001	1/2005	*
Missions of Opportunity			
ASPERA-3	11/1998	10/1999	3/2007
Moon Mineralogy Mapper	02/2005**		

*The EOM date is in replan due to program budget constraints.
** Tentatively selected pending final approval

Key program-controlled milestones (launch window date, encounter date, etc.) are identified as appropriate for each mission during the Discovery selection process. These milestones are then documented in a Program-Level Requirements Appendix to the Discovery Program Plan, which is approved by the Science Mission Directorate. The active milestone schedule for project implementation is documented in the mission project plan, which is approved by the Discovery Program Office.

COST COMMITMENT

Discovery Program

The cost commitment for the Discovery Program is reflected in the President's FY 2005 Budget, Integrated Budget and Performance Document (IBPD) for the multiple SMD science themes encompassed by Discovery projects, released in February 2005, and available publicly at http://www.nasa.gov/pdf/107489main_FY06_1_sae.pdf.

Discovery Projects

Life-Cycle costs for each mission are established during the Discovery selection process. A mission cost cap is then documented in a Program-Level Requirements Appendix to the Discovery Program Plan, which is maintained by the Discovery Program Office and approved by the Science Mission Directorate. The active cost phasing for project implementation is documented in the mission project plan, which is approved by the Discovery Program Office.

ACQUISITION STRATEGY

The Discovery Program has established an acquisition strategy that contracts for whole missions (concept through delivery of the science data and analysis). Discovery investigations will be selected through the AO process, where multiple investigations are selected for Phase A Concept Studies with a competitive down-select to proceed to the Phase B part of Formulation. Investigations will typically be selected to proceed from one phase to the next through execution of contract options based on successful technical, cost, and schedule performance in the previous phases. A Confirmation Review with the Science Mission Directorate PMC will be held at the end of Formulation, soon after the Preliminary Design Review (PDR), to determine whether to confirm the mission to enter Implementation. The NASA AA/SMD will make all final decisions to proceed to follow-on phases.

HIGH RISK AREAS

Technical, managerial and monetary risks for each Discovery investigation will be carefully examined as part of the selection process. All technical and programmatic risks will be further reviewed as part of the project Confirmation Review conducted during the PDR timeframe to assure risks have been mitigated to an acceptable level prior to entering detailed design and development.

INTERNAL AGREEMENTS

The Langley Research Center will support the AO and evaluation process. The Kennedy Space Center (KSC) will support the AO and evaluation process in the area of launch services, as well as provide government-furnished services and products to approved Discovery projects. Each project will be supported by KSC as defined in individual project documentation.

EXTERNAL AGREEMENTS

There are no external agreements for the Discovery Program. External agreements for individual Discovery projects will be generated when necessary and are referenced in the Project Appendices to the Discovery Program Plan.

INDEPENDENT REVIEWS

An Independent Review Team (IRT) has been created for the Discovery Program, and a Program Implementation Review (PIR) of the program will be conducted periodically by the IRT. A Confirmation Review for each project substitutes for the Non-Advocate Review (NAR).

As a selected Discovery project nears the end of its Formulation phase, the SMD will organize and implement an independent confirmation assessment of the project's readiness to transition into Implementation.

Since Discovery projects are selected through a competitive proposal process and firm mission cost caps are established upon selection, if at any time during Implementation of a project the estimated cost-to-complete exceeds the firm cost cap, the Discovery project is subject to a termination review. Cost increases that are completely beyond the control of the Principal Investigator and Project may be an exception that could result in an increase to the cost cap. Such increases would be documented in the appropriate Project documentation. Any changes to the overall Discovery Program costs will be reflected in an approved change to the PCA.

OUTCOMES

The Discovery Program directly supports the Agency's Vision by producing outcomes to support its Objectives and Goals, as shown in the Table below.

:

Agency	Outcomes
Objective "Explore the solar system and the universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere" Goals "Explore the universe and search for life" "Inspire the next generation of explorers"	Frequent launch of small high-quality planetary science investigations to acquire science and engage the public in shaping and sharing the experience of exploration and discovery. Science data which will be used in research to address the Solar System Exploration theme and the search for extrasolar planetary systems elements of the Astronomical Search for Origins theme. Education and outreach products to inspire and motivate students to pursue careers in science, technology, engineering, and mathematics

WAIVERS

None.

PCA ACTIVITIES LOG

Date	Event	Change	Addendum	Cancellation Review Req'd	EAA Signature	Administrator Signature
2/21/03	Update to reflect 7120.5B	Entire Document		No	E. Weiler	F. Gregory
04/12/05	Annual Update plus 7120.5C	Multiple Updates		No		