APPENDIX F

Guidelines for Investigations Proposing a NASA-Provided Spacecraft

The following guidelines apply to the preparation of proposals by potential investigators selecting the NASA-provided spacecraft mode of implementation in response to this Announcement of Opportunity. The material presented is a guide for the prospective proposer and not intended to be all encompassing. The proposer should, however, provide information relative to those items applicable or as otherwise required by this AO.

The proposer should first submit a Step-One Proposal, as outlined below. Based on the evaluation of Step-One Proposals, NASA will select a number of investigations for further consideration. Each of these investigations will then submit a Step-Two Proposal, with evaluation leading to selection of two primary and two alternate missions, as described in Section I.B of the body of this AO.

The guidelines for the Cover Letter, Table of Contents, Identifying Information and Investigation Summary Form apply to both the Step-One and Step-Two Proposals. Guidelines specific to each proposal step follow.

Cover Letter

A letter or cover page should be forwarded with the proposal. It should be signed by the investigator and by an institutional official who is authorized to certify institutional support and sponsorship of the investigation and of the management of the proposal. It should also be signed by the authorizing official from each organization represented on the team who is authorized to commit that institution to the proposed investigation.

Table of Contents

The proposal should contain a table of contents.

Identifying Information

The proposal should contain a short descriptive title for the investigation, the names of all investigators, the names of all participating organizations or institutions and the full name, address, and telephone number of the Principal Investigator (PI).

Investigation Summary Form

The salient features of the proposed investigation should be summarized in an "Investigation Summary Form," which is provided as Figure F-7 at the back of this Appendix. A figure or drawing of the instrument and/or spacecraft may be included at the proposer's discretion.

STEP-ONE PROPOSAL

1. SCIENCE INVESTIGATION AND INVESTIGATION PLAN

This section should address the following:

a. Summary. A concise statement describing the investigation, its conduct, and the anticipated results.

b. Objective and Significant Aspects. A brief definition of the objectives, their value, and their relationships to past, current, and future effort. The history and basis for the proposal, including demonstration of the need for such an investigation. A statement of present development in the discipline field.

c. Investigation Approach

   1. Fully describe the concept of the investigation.
   2. Detail the method and procedures for carrying out the investigation.

The above information will constitute the Baseline Mission. This section must also identify a minimum acceptable data and scientific return for the mission (the Minimum Science Mission), below which the mission would not be worth pursuing. Options for descoping the mission from the Baseline Mission to the Minimum Science Mission, and their impact to the investigation, should be briefly discussed. Proposals should include only one Baseline Mission and one Minimum Science Mission. **NASA will not consider more than one Baseline Mission or Minimum Science Mission per proposal.**

2. TECHNICAL APPROACH

The Technical Approach should describe the method and procedures for investigation definition, design, development, manufacturing, integration and test, ground operations, and mission operations. This section should also describe the expected products and end items associated with each phase.

a. Mission Operations Concept and Requirements — This section should address the operational phase of the mission from launch to end of mission. The following elements should be addressed:
   1. Mission operations scenario
   2. Spacecraft pointing requirements
   3. Attitude determination
   4. Orbit determination
   5. Communications requirements
   6. Mission lifetime
   7. Launch and/or operational (data collection) window(s)
   8. Orbital requirements
   9. Use of NASA ground system and operations functions and capabilities defined in Appendix C

b. Instrumentation — This section should describe the instrumentation and the criteria used for its selection. A description of the instrument, including layout and block diagrams, should be provided. The state of maturity of the instrument, including breadboards, prototypes, existing instrumentation and heritage, should be described. Prior instrument investigation studies performed should be summarized. Instrument performance requirements should be related to the investigation goals and objectives for both the Baseline Mission and Minimum Science Mission as described in Section 1 above. A description of the technology/development risks and the plan to address them should be included. The following basic instrument information should be provided:
   1. size
   2. mass
   3. shape
   4. mechanical interface with the spacecraft
   5. field of view
   6. power consumption (nominal, peak, duty cycle, standby)
   7. basic functional description
   8. basic operational description

9. power interface

10. telemetry and command interface

c. Investigation requirements on the spacecraft — This section should discuss the instrument requirements on the spacecraft. Required spacecraft resources should be described and requests for capabilities beyond the baseline in Appendix B should be specifically identified. A description of the payload layout and configuration should be included. Key instrument features and sensitivities should be identified, including electrostatic discharge, magnetics, contamination, electromagnetic interference, etc.

d. Spacecraft -- This section should describe the spacecraft design concept based on the Medium Explorer Spacecraft defined in Appendix B or other spacecraft of known cost.

3. DATA REDUCTION AND ANALYSIS PLAN

This plan should detail the method and format of the data reduction and analysis effort. A plan and schedule for distribution of reduced data to Co-investigators should be included. The plan should also include a schedule for the submission of reduced data to the National Space Science Data Center (NSSDC), Greenbelt, MD. Justification must be provided for the need for, and duration of, any proprietary rights for the PI for any data obtained as part of the mission's scientific investigation.

4. MANAGEMENT PLAN

This section should summarize the investigator's proposed management approach. The management organization and decision-making process should be described, teaming arrangements should be discussed, and responsibilities of team members and institutional commitments should be detailed. Unique capabilities that each member organization brings to the team, as well as previous experience with similar systems and equipment, should be addressed.

A top-level schedule for the definition and development phases should be provided. Key interdependencies, critical paths, and long lead procurements should be identified.

5. COST PLAN (U.S. Investigations Only)

The cost plan should summarize the total mission cost by major categories of cost. Top level costs should be provided for the definition, development, and operations phases. Proposers should refer to the Work Breakdown Structure (WBS) in Figure F-3 for cost elements to be considered in developing the top level costs.

The cost plan should include the following:

a. Breakdown of development and operations costs into the following broad categories (including budget reserve for each category):
    1. Instrument
    2. Spacecraft
    3. Mission systems integration and test
    4. Operations preparations
    5. MO&DA
b. Definition phase cost for the following cases:
    1. 10-month definition phase
    2. 22-month extended definition phase
c. Alternate investigation funding for 1 or 2 years
d. Rationale for cost and budget reserve

STEP-TWO PROPOSAL

VOLUME I

INVESTIGATION AND TECHNICAL PLAN

1. SCIENCE INVESTIGATION AND INVESTIGATION PLAN

This section should only address changes to the Science Investigation and Investigation Plan from the Step-One Proposal. Any descoping of the investigation from the Baseline Mission defined in Step-One should be identified.

2. TECHNICAL APPROACH

The Technical Approach should detail the method and procedures for investigation definition, design, development, integration, ground operations, and mission operations. This section should also detail the expected products and end items associated with each phase.

This section must be complete in itself without need to request additional data. Failure to furnish complete data may preclude evaluation of the proposal.

a. Mission Design — This section should fully describe the operational phase of the mission from launch to end of mission. The following mission elements should be addressed:

1. Mission operations scenarios — preliminary mission timeline covering typical science operations scenarios indicating periods of acquisition, data downlink, etc.,
2. Spacecraft pointing requirements:
   - where, when, which axis
   - accuracy
   - stability
   - special requests (maneuvers, Sun/Moon/Earth avoidance, etc.)
3. Attitude determination
   - when
   - stability/accuracy
4. Orbit determination — in-track, across-track, altitude, frequency
5. Communications requirements — facilities, data rates, bit error rate, etc.
6. Mission lifetime
7. Launch and/or operational (data collection) window(s)
   - science related
   - other
8. Orbital requirements:
   - required
   - desired
   - constraints (SAA avoidance, etc.)

b. Instrumentation — This section should fully describe the instrumentation and the criteria used for its selection. It should indicate items that are proposed to be developed, as well as any existing instrumentation or design heritage. Particular attention should be paid to describing any required technology development, the risks involved, and alternative approaches. Performance characteristics of the instrumentation should be related to the measurement and investigation objectives as stated in Section 1, for both the Baseline Mission and Minimum Science Mission. The following basic instrument information should be included:

1. size
2. mass
3. center of gravity
4. shape
5. mechanical interface with the spacecraft
6. thermal paths
7. field of view
8. power consumption (nominal, peak, duty cycle, standby)
9. basic functional description
10. basic operational description
11. power interface
12. telemetry and command interface

c. Spacecraft — This section should describe the spacecraft design concept and system architecture based on the Medium Explorer Spacecraft defined in Appendix B or other spacecraft of known cost. Required spacecraft resources should be described and requests for capabilities beyond the baseline in Appendix B should be specifically identified. Along with a description of the payload layout and configuration, this section should address accommodation of the instrumentation by the spacecraft as follows:

   1. preferred launch orientation
   2. instrument location constraints:
      - relative to other instruments
      - relative to spacecraft components
   3. alignment to axis
   4. baffling or other protection
   5. thermal environment/temperature limits:
      - operational
      - survival
   6. data processing (onboard and on the ground)
   7. telemetry — type, quantity, sample rate, time tagging, format
   8. commands — type, quantity, function, timing constraints, frequency
   9. timing (clocks) — resolution, accuracy, transfer method
   10. environmental sensitivities — electrical cleanliness, magnetic fields, contamination
   11. data collection and storage — volume, frequency, speed/rate, bit error rate

12. required U.S. Government support — Government furnished equipment, services, facilities

d. Manufacturing, Integration, and Test — This section should describe the manufacturing strategy to produce and test the hardware/software necessary to accomplish the investigation. It should include a description of the main processes/procedures planned in the fabrication of flight hardware, software, transitioning from design to production, production personnel resources, incorporation of new technology/materials, and the preliminary test and verification program. A preliminary schedule for manufacturing, integration, and test activities should be included. A description of the planned end items, including engineering and qualification hardware, should be included. The use of any existing test facilities and processes should be described.

e. Mission Operations — This section should identify requirements for mission operations support including mission planning. Requirements should be referenced to the baseline functions and capabilities defined in Appendix C. Requests for enhancements beyond the baseline should be specifically identified. Special communications facilities that are needed must be described. Any special orbital requirements, such as time of month, time of day, phase of moon, and lighting conditions are to be given in detail. Describe real-time ground support requirements and indicate any special equipment or skills required of ground personnel.

f. Ground and Data Systems — This section should discuss the ground operations support required for the proposed investigation. Requirements should be referenced to the baseline functions and capabilities defined in Appendix C. Requests for enhancements beyond the baseline should be specifically identified. The approach to the development of the ground and data system (GDS), including the use, if any, of existing facilities should be described. Details of communications needs, tracking needs, and special techniques should be delineated. Describe the communications facilities that will be used, including any NASA facilities or special facilities. All usage of NASA communication facilities should be explicitly described. Any mission-unique facilities must be adequately described. Describe all communications, tracking, and ground support requirements. Describe the software development approach and its relationship to the spacecraft software development.

g. Performance Assurance — This section should contain the approach to performance assurance as described in Appendix D.

h. New Technology and Technology Transfer — This section should describe those technologies to be considered for potential application to the investigation and their rationale. The methods by which these new technologies will be assessed and their risks reduced, as well as the means to validate these technologies, should be described. The potential for transfer of new technology from this mission to other applications in NASA, the Federal Government, and/or in the private sector should be described. Alternative approaches to the use of these new technologies should be identified.

3. DATA REDUCTION AND ANALYSIS PLAN

This section should only address changes to the Data Reduction and Analysis Plan from the Step-One Proposal.

VOLUME II

MANAGEMENT PLAN

The Management Plan should describe the management approach and the facilities and equipment required. This section sets forth the investigator's approach for managing the work, the recognition of essential management functions, and the overall integration of these functions. This section should specifically discuss the decision-making process to be used by the team, focusing particularly on the roles of the Principal Investigator and Project Manager in that process. The management plan gives insight into the organizations proposed for the work, including the internal operations and lines of authority with delegations, together with internal interfaces and relationships with NASA, major subcontractors, and associated investigators. It also identifies the institutional commitment of all team members, and the institutional roles and responsibilities. The use of innovative processes, techniques, and activities by mission teams in accomplishing their objectives is encouraged when cost, schedule, and technical improvements can be demonstrated.

a. Management Processes and Plans, Schedule, and Procurement Strategy — This section should describe the management processes and plans, schedules, and procurement strategy necessary for the logical and timely pursuit of the work, accompanied by a description of the work plan. This section should also describe the proposed methods of hardware and software acquisition. Specifically, it should include the following, as applicable:

   1. Unique or proprietary capabilities that each member organization brings to the team, as well as previous experience with similar systems and equipment.

2. Management processes which the investigator team proposes to:
    a. develop and maintain the hardware and software requirements and specifications;
    b. manage and control development progress;
    c. manage and conduct technology development;
    d. manage and conduct design;
    e. manage, review, and control hardware/software, documentation, etc. changes;
    f. manage and conduct systems engineering and integration;
    g. manage and conduct procurement including make or buy decisions, subcontract management, etc.;
    h. manage and conduct the testing and verification programs, including final checkout and calibration;
    i. assure safety, reliability, and quality;
    j. manage and conduct mission operations;
    k. manage and conduct data reduction, analysis, and archiving;
    l. coordinate with team members and document agreements;
    m. manage and control finances within cost limitations; and
    n. report progress to NASA.
3. The specific decision-making process regarding all aspects of the investigation, including descoping, and the individual with ultimate decision-making authority in such cases.
4. Availability of proposed personnel on the team to successfully administer the investigation contract and technically monitor the implementation.

The schedule and work flow should be clearly laid out, and the method for internal review, control, and direction discussed, including whether or not a form of performance measurement system will be used.

b. Roles, Responsibilities, and Experience of Team Members — The roles, responsibilities, time commitment, and experience of all key personnel must be described in this section, with particular emphasis placed on the responsibilities assigned to the PI and the Project Manager. In addition, information should be provided which indicates what percentage of time will be devoted to the mission, the duration of service, and how changes in personnel will be accomplished.

1. Principal Investigator. The role(s), responsibilities, and time commitment of the Principal Investigator should be discussed here.
2. Project Manager. The role, responsibilities, time commitment, and experience of the Project Manager should be discussed in this section.

3. Other Key Personnel. The roles, responsibilities, time commitments, and experience of the Co-Investigators and other key personnel in the investigation should be described in this section.

The management structure of the investigation team must be described in the proposal. The proposal must identify the teaming approach to be used and describe the responsibilities of each team member and their contributions to the investigation.

Financial responsibilities of all team partners must be described. The mechanisms (contracts, subcontracts, cooperative agreements, memoranda of agreement, letters of endorsement, etc.) by which organizations commit to participate as partners on a proposing team must be clearly identified. Include a description of the fee strategy, where appropriate, and the rationale. The proposal signature page must include the signature of an official from each organization represented on the team or contributing to the investigation who is authorized to commit that organization to the proposed investigation. Failure to include any such authorization may be grounds for rejection of the proposal. Non-U.S. organizations participating as team partners must also meet this requirement.

Any experience (successes and failures) of team partners in meeting cost and schedule constraints in similar projects within the last ten years should be discussed.

c. Risk Management and Descope Options — This section should describe the approach to risk management to be taken by the team. Particular emphasis should be placed on describing how the various elements of risk will be managed to ensure successful accomplishment of the investigation within cost and schedule constraints. In the event risks cannot be managed successfully and mission objectives must be revised toward the Minimum Science Mission, then this section should briefly describe the descope options available, their phasing, and their effect on mission performance relative to the previously defined Minimum Science Mission. This section should identify the latest possible dates at which descope options may be implemented and the procedure by which they would be accomplished.

d. Facilities and Equipment — All major facilities, laboratory equipment, and ground-support equipment (GSE) (including those of the team's proposed contractors and those of NASA and other U.S. Government agencies) essential to the mission in terms of its system and subsystems are to be indicated, distinguishing, insofar as possible, between those already in existence and those that will be developed in order to execute the investigation. The outline of new facilities and equipment should also indicate the lead time involved and the planned schedule for construction, modification, and/or acquisition of the facilities.

e. Educational and Public Outreach — This section should discuss the degree to which this investigation will generate educational opportunities and contribute to the Nation's educational initiatives. The involvement of teachers and/or students in the investigation should be documented here, as should any educational activities to be implemented. Coordination and collaboration with educational institutions should be discussed. Activities to enhance the level of understanding and awareness of space science by the public should be described.

f. Small and Small Disadvantaged Businesses — This section should describe the opportunities offered by the investigation for small and small disadvantaged businesses. It should also describe the breadth of participation in the investigation by members of the industry, academic, not-for-profit, and Federal communities, as well as discussing the opportunities offered by the investigation for other members of these communities. This section should identify the percentage of work, expressed as percentage of total subcontract cost/price and total contract cost/price, to be performed by small businesses (SB's) and small disadvantaged businesses (SDB's). Goals for SB and SDB subcontracting are contained in Appendix E.

VOLUME III

COST PLAN (U.S. Investigations Only)

The cost plan should summarize the total investigation cost by major categories of cost as well as by function. The plan should address the definition, development, and operations phases.

1. The categories of cost should include the following:
   a. <u>Direct Labor</u>. List by labor category, with labor hours and rates for each. Provide actual salaries of all personnel and the percentage of time each individual will devote to the effort.
   b. <u>Overhead</u>. Include indirect cost, which because of its incurrence for common or joint objectives, is not readily subject to treatment as a direct cost. Usually this is in the form of a percentage of the direct labor costs.
   c. <u>Materials</u>. This should give the total cost of the bill of materials including estimated cost of each major item. Include lead time of critical items.
   d. <u>Subcontracts</u>. List those over $25,000, specify the vendor and the basis for estimated cost. Include any baseline or supporting studies.
   e. <u>Other Costs</u>. Costs not covered elsewhere.
   f. <u>General and Administrative Expense</u>. This includes the expenses of the institution's general and executive offices and other miscellaneous

expenses related to the overall business.

g. Fee (if applicable).

2. Separate schedules summarizing cost by category and phase (in the format shown in Figures F-1 and F-2) should be provided for each functional element of the mission, as defined by the proposer's Work Breakdown Structure (WBS). A reference WBS for a NASA-provided spacecraft mission is included as Figure F-3. Costs should be presented at level 2 of the WBS (i.e., 1.0 Management; 2.0 Science Support; etc.) except where significant development work is included (e.g., 4.0 Instrument Systems). In these areas, costs should be allocated and presented to the subsystem level (e.g., 4.3 Instrument Data System), and a rationale for the estimate should be included. Costs should be presented in FY 1994 dollars. A NASA inflation index is included as Figure F-4. These rates will be used to convert FY 1994 dollars to bid rates unless the proposing organization has formally negotiated other rates. In that case, the negotiated rates should be provided in Figures F-1 and F-2. Guidelines for allocating costs between the instrument and the NASA-provided spacecraft are provided as Figure F-5.

3. Separate and complete cost plans are required for the case of a 10-month definition phase as well as a 22-month definition phase, as shown in Figures F-1 and F-2. Note that for the 22-month definition phase, funding for the first year is limited to $500,000. In addition, proposers shall complete a Standard Form (SF) 1411, included as Figure F-6, for Phases I and II (see Appendix G).

4. Proposers shall also separately propose costs necessary to cover 1 or 2 years of effort to maintain a nucleus of the investigation team, if selected as an alternate investigation.

SUMMARY OF ELEMENTS OF COST
(FY94 DOLLARS)

	PHASE I 10-MONTH DEFINITION	PHASE II 3-MONTH INITIAL DESIGN AND DEVELOPMENT	PHASE III DESIGN, DEVELOPMENT & OPS (LAUNCH + 30 DAYS) YEAR 1* YEAR 2 YEAR3	TOTAL DEF., DESIGN & DEVEL.	PHASE IV MO&DA (BEGINS 31 DAYS AFTER LAUNCH) YEAR 1 YEAR 2 YEAR3 TOTAL
DIRECT LABOR					
HOURS (BY LABOR CATEGORIES)					
COSTS (BY LABOR CATEGORIES)					
OVERHEAD ($/%)					
OTHER DIRECT COSTS					
SUBCONTRACTS**					
MATERIALS					
OTHER					
TOTAL ODC					
SUBTOTAL					
G&A ($/%)					
TOTAL COST					
FEE ($/%)					
TOTAL FY94$					
INFLATION FACTOR					

* COVERS A 9 MONTH PERIOD, I.E., PHASES II & III TOTAL 36 MONTHS

** FOR SUBCONTRACTS OVER $25,000, THE CONTRACTOR WILL PROVIDE THE SAME DETAILS AS IN THEIR OWN PROPOSAL.

FIGURE F-1 SUMMARY OF ELEMENTS OF COST

SUMMARY OF ELEMENTS OF COST
(FY94 DOLLARS)

	PHASE I 22-MONTH DEFINITION YEAR1 YEAR2	PHASE II 3-MONTH INITIAL DESIGN AND DEVELOPMENT	PHASE III DESIGN, DEVELOPMENT & OPS (LAUNCH + 30 DAYS) YEAR 1* YEAR 2 YEAR3	TOTAL DEF., DESIGN & DEVEL.	PHASE IV MO&DA (BEGINS 31 DAYS AFTER LAUNCH) YEAR 1 YEAR 2 YEAR3 TOTAL
DIRECT LABOR					
HOURS (BY LABOR CATEGORIES)					
COSTS (BY LABOR CATEGORIES)					
OVERHEAD ($/%)					
OTHER DIRECT COSTS					
SUBCONTRACTS**					
MATERIALS					
OTHER					
TOTAL ODC					
SUBTOTAL					
G&A ($/%)					
TOTAL COST					
FEE ($/%)					
TOTAL FY94$					
INFLATION FACTOR					

* COVERS A 9 MONTH PERIOD, I.E., PHASES II & III TOTAL 36 MONTHS

** FOR SUBCONTRACTS OVER $25,000, THE CONTRACTOR WILL PROVIDE THE SAME DETAILS AS IN THEIR OWN PROPOSAL.

FIGURE F-2 SUMMARY OF ELEMENTS OF COST (EXTENDED DEF.)

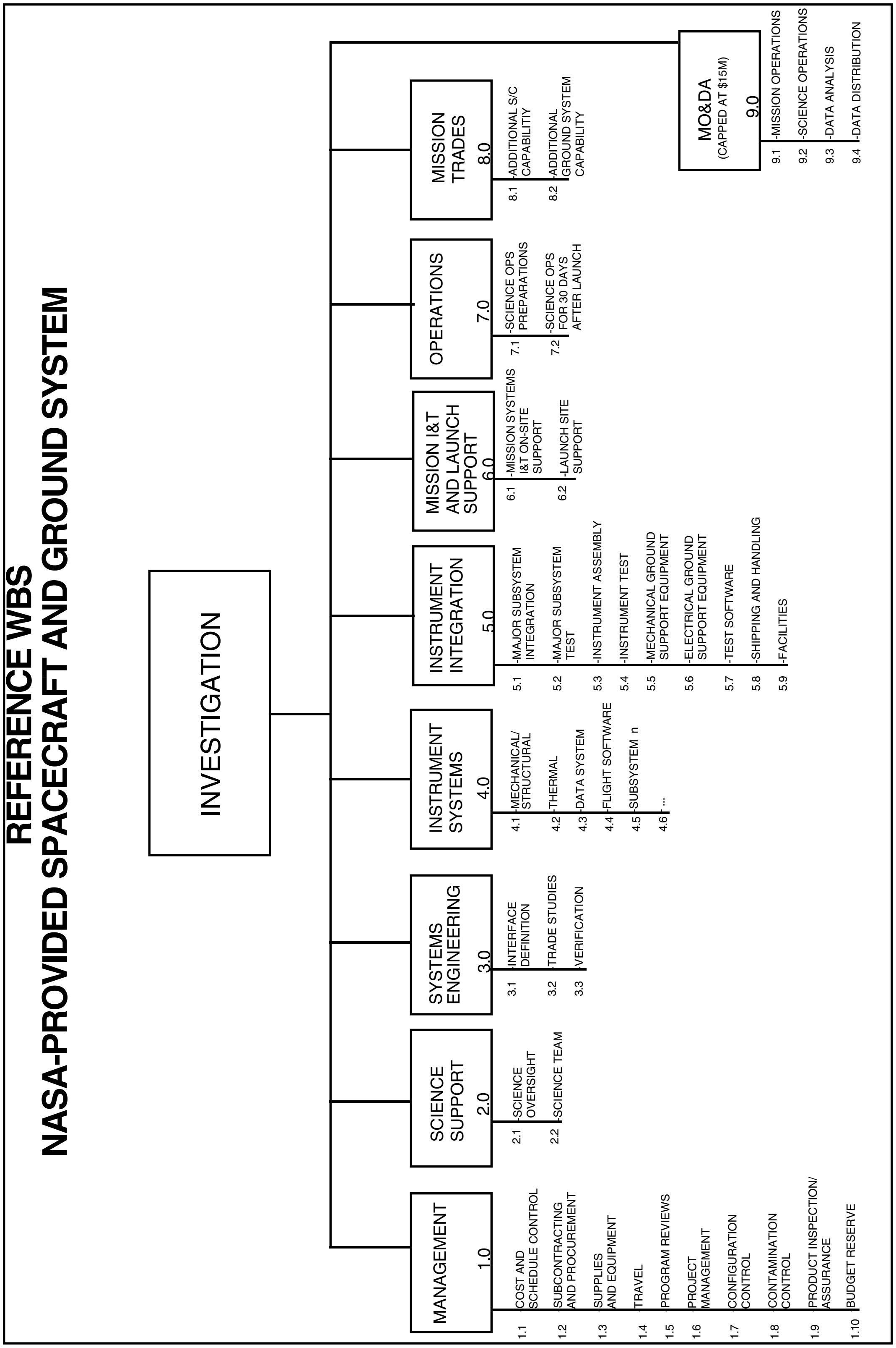

FIGURE F-3 REFERENCE WBS

Fiscal Year	Inflation Rate
FY 1995	4.7%
FY 1996	4.8%
FY 1997	5.1%
FY 1998	5.1%
FY 1999	4.7%
FY 2000	4.4%
FY 2001	4.4%
FY 2002	4.4%
FY 2003 and Outyears	4.6%

FIGURE F-4 NASA INFLATION INDEX

For investigations proposing to use a spacecraft provided by GSFC, costs for the definition and development of the instrument and science mission operations preparations should not exceed $40M in FY 1994 dollars, including a realistic budget reserve. The following costs must be accounted for within that cap:

- Science Support
- Science Payload Management
- Science Payload Systems Engineering
- Science Payload and Science Operations Preps Resource Management (Scheduling, Financial, etc.)
- Science Payload Definition
- Science Payload Development
  - Design
  - Fabrication/Procurement
  - Assembly/Integration
  - Qualification/Acceptance Testing
- Delivery and Checkout of Science Payload at GSFC or Spacecraft Contractor Facility
- Science Payload Support During Observatory I&T
- Science Payload Support at the Launch Site
- Science Payload Performance Assurance
- Science Payload Support to Mission Safety Program
- Science Operations Preparations, including Science Operations Center development
- Science Operations for 30 Days after Launch
- Spacecraft Optional Capability Above Baseline Defined in Appendix B
- Ground System and Operations Capability Above Baseline Defined in Appendix C
- Contamination Control Above "Visibly Clean" (Including Cost of Clean Rooms and Any Required Special Handling of the Spacecraft at GSFC, the Spacecraft Contractor's Facility or the Launch Site)
- GSFC Contractor Support Requested by PI
- Cost of Civil Servant and Contractor Support Requested by PI
- Cost of GSFC or Spacecraft Contractor Facilities Requested by PI
- Budget Reserve on All Above Costs

FIGURE F-5 ALLOCATION OF COSTS WITHIN $70M COST CAP

The following costs are allocated to the remaining $30M under the cost cap:

- Mission Management
- Project Scientist Support
- Mission Systems Engineering
- Mission Resource Management (Scheduling, Financial, etc.)
- Spacecraft Definition
- Development of Spacecraft with Capability Not to Exceed that Defined in Appendix B
  - Design
  - Fabrication/Procurement
  - Assembly/Integration
  - Qualification/Acceptance Testing
- Observatory Integration and Test
- Spacecraft Performance Assurance
- Observatory Performance Assurance
- Mission Safety Program
- Launch Vehicle Interface Support
- Transportation to Launch Site
- Launch Site Operations
- Mission Operations Preparations with Capability not to Exceed that Defined in Appendix C
- Mission Operations for 30 Days after Launch
- Non-Science Payload Contractor Support
- Cost of Non-Science Payload Civil Servants and Contractors
- Cost of Non-Science Payload Facilities Usage
- Budget Reserve on All Above Costs

FIGURE F-5 (CONT.) ALLOCATION OF COSTS WITHIN $70M COST CAP

FIGURE F-6 SF 1411 (CONTRACT PRICING PROPOSAL COVER SHEET)

Proposal #
NASA Use Only

Medium - Class Explorer (MIDEX)

Investigation Summary Form

PRINCIPAL INVESTIGATOR			
INSTITUTION			
DEPARTMENT			
ADDRESS / STREET			
CITY / TOWN	STATE	ZIP / POSTAL CODE	COUNTRY
TELEPHONE	FAX	E-MAIL ADDRESS	

INVESTIGATION TITLE
INVESTIGATION ABSTRACT

DISCIPLINE AREA (CHECK AS APPLY)

[ ] SPACE PHYSICS
- [ ] IONOSPHERIC
- [ ] MESOSPHERIC
- [ ] THERMOSPHERIC
- [ ] COSMIC
- [ ] MAGNETOSPHERIC
- [ ] HELIOSPHERIC
- [ ] SOLAR

[ ] ASTROPHYSICS
- [ ] RADIO
- [ ] INFRARED
- [ ] SUBMILLIMETER
- [ ] OPTICAL
- [ ] ULTRAVIOLET
- [ ] X-RAY
- [ ] GAMMA-RAY
- [ ] GRAVITY

SPACECRAFT MODE (CHECK ONE)
- [ ] NASA-PROVIDED
- [ ] PI-MODE

TOTAL BUDGET AMOUNT (EXCLUDING MO&DA)	TOTAL MO & DA BUDGET
$ ____________________________	$ ____________________

FIGURE F-7 INVESTIGATION SUMMARY FORM

Proposal #
NASA Use Only

PRINCIPAL INVESTIGATOR
INVESTIGATION TITLE

LIST OF CO-INVESTIGATORS

NAME	INSTITUTION

INSTITUTIONAL ENDORSEMENT INSTITUTION NAME	
NAME AND TITLE OF AUTHORIZING OFFICIAL	
SIGNATURE	DATE

FIGURE F-7 (CONT.) INVESTIGATION SUMMARY FORM