

USA Team

Oct 2, 2001

Mission of Opportunities proposal at the MIDEX AO

All phases (A-E) inclusive \$25M

FY 2002 - 2010 (9 years)

Proposal due: Oct. 30, 2001

Univ. of Alabama in Huntsville

Univ. of California, Berkeley

Univ. of California, Los Angeles

NASA Marshall Space Flight Center,
National Space Science & Technology Center

Univ. of Texas, Austin

Vanderbilt University

Major Sub-system Contribution

Optics - NASA / MSFC + NSSTC
& UAH

Other Contribution

- Science Data Analysis (including Theory)
- Simulations
- Consultation roles in { Electronics (Berkeley)
Detector (Los Angeles)
- Ground Support (MSFC)

Physical Parameters (mm)		Optical Parameters (mm)	
Diameter Entrance Pupil	1,900.00	Circular	
Length	3,625.01		
Element Axial Thickness	20		
Diameter First Fresnel Lens	2,486.14	Base Radius	+4,098.36
Diameter Second Fresnel Lens	2,500.00	Base Radius	-2,557.54
Diameter-Stop	1,830.29	Circular	
Diameter-Focal Plane	2,250.00	Vertex Radius/ Aspheric Cnst./	2,238.32/ +2.476898/

Section E - Table 1.2

New emphases:

① propose "f:lt" mode for the 3rd Year
 $5\Omega \text{ } 500,000 \text{ km}^2 \text{ sr} \rightarrow 5,000,000 \text{ km}^2 \text{ sr}$

② Theory Team \rightarrow Models
plug-in in M.C (S. Gorna)

Tom Weiler (Z-bursts, monopole, ...)

Toshi Tajima (Plasma acceleration)

Ian Axford
Roger Blandford (Extended
diffused shock acceleration)

+

③ Definition of GZK-cutoff = Fe $\sim 3 \times 10^{20} \text{ eV}$

④ bridging to the OWL
(NASA Strategic Planning ≥ 2012)

Red Team Reviewing Text available

① main Text

② 4 Foldouts

at <ftp://cosmic.uah.edu>

username: astro

password: airwatch

Proposal status
Draft is ready

Red Team Review Oct. 2, 3

Debriefing Oct. 4, 5

Revision Oct. 6~10

Final review Oct. ~15

Deadline in NASA/MSFC Oct ~16

NASA/MSFC Directorate Review
Compliance Review
Certification
Printing } Oct. 16-26

Sending Oct. 26~28

P. I. James H. Adams (NASA/MSFC)

Instrument Scientist: Y. T. (UAH)

Project Manager: TBD : (Sonny Mitchell)

Optics Manager: Roy Young (NASA/MSFC) / Lloyd Hillman (UAH)

NASA 'Mission of Opportunity' Proposal:

- Funded from the margin in the Explorer Mission Budget
 - request should be as low as possible, certainly <\$35M
- Proposal deadline: 30 October, 2001
 - Selections to be announced in ~ April, 200²~~1~~
- Phase A will start ~June, 2002 and last 4 months
- Continued funding depends on selection after Phase A
 - Selections announced in ~3 months after the end of Phase A (JANUARY 2003)

Even assuming selection our proposal, we should be prepared for selection announcement and funding delays.

	Risk	Impact	Risk Level*	Mitigation Strategy	Project Phase Requiring Mitigation
1	Space Shuttle or ISS schedule delays	Increased cost due to schedule slippage	9/3	Develop agreement with the Europeans for the delivery of the OS and FS at a fixed point in time and mothball the science effort until launch is eminent	D
2	Changes to OS design due to mismatch of European and US development schedules	Increased cost due to schedule slippage caused by redesign effort	7/3	Development/approval of ICD's early in the project life cycle	B, C
3	Polymer shrinkage due to long term exposure to space environment	Increased cost due to schedule slippage caused by material testing/search	3/6	Long term vacuum testing of candidate polymer materials early in the project to quantify affects	B, C
4	Inability to manufacture large double sided curved Fresnel lenses that meet the EUSO performance requirements	Cancellation of the project	2/9	Conduct manufacturing tests, investigate replication techniques, and produce prototypes early in the project life cycle	B, C
5	Optical misalignment due to thermal fluctuations	Increased cost due to schedule slippage caused by redesign/correction effort	1/5	Development of a metering structure designed to tolerate thermal variations	C, D

Note: *Risk level is defined as **Likelihood of Occurrence / Severity of Impact** on a scale from 1 to 10 with 10 being the highest and 1 being the lowest.

Table E.5.7-1 EUSO Project Risks