

Application ID: **7069** Year: **2006****STUDENT INFORMATION**

Name: Andrew S Friedman Birth Date: 04/07/1979 Birth City: San Diego Birth State: CA Birth Country: US		
Permanent Address:	Departmental Address:	Hours Completed:
Street: 26 Everett Street, Child Hall Room 403	Institution: Harvard University	Bachelors: 170 Master's: 0 Doctoral: 32
City: Cambridge	Department: Astronomy	GPA (4.0 Scale):
State: MA	Street: 60 Garden Street, Office A-104	
Zip: 02138	City: Cambridge	Bachelors: 3.92 Master's: 0.00 Doctoral: 3.71
Phone: 617 493-4170	State/Zip: MA, 02138	Expected Date of Graduation:
Email: afriedman@cfa.harvard.edu	Phone: 617 495-4484	
Fax:	Email: afriedman@cfa.harvard.edu	Bachelors: 12/2001 Master's: Doctoral: 06/2008
Degree to be supported by this award: PhD Academic Major: Astrophysics		
Previous NASA Education Programs:		

Colleges or Universities Attended

Institution	Location	Dates Attended	Degree	Major
University of California-Berkeley	Berkeley, CA	09/1998 12/2001	BS	Physics & Astrophysics
Harvard University	Cambridge, MA	09/2002 01/2006	PhD	Astronomy (degree in progress)

Applicant BackgroundGender: **Male** Individual with Disabilities: **No** Race: **White or Caucasian****Proposal Information**

Type of Proposal: New Grant Number: Proposed Start/Renewal Date: 07/01/2006
Research Title: Cosmological Applications of Novel Standardized Candles
Submission Information:
NASA Centers/Mission Directorates: OSS - Ms. Dolores Holland GSFC - Dr. Neil Gehrels

ABSTRACT AND BUDGET INFORMATION

Abstract: The proposed project aims to measure the expansion history and acceleration of the universe using novel standardized candles including long duration Gamma-Ray bursts (GRBs) and near-infrared light curves of Type Ia supernovae (IR SNe Ia). For the Astroparticle Physics Laboratory [GSFC] opportunity, I would collaborate with Dr. Neil Gehrels, P.I. of the Swift satellite, using its data to test the cosmological applications of GRBs. The Structure and Evolution of the Universe (SEU) [SMD-SS] proposal discusses both GRBs and IR SNe Ia. Both cosmology research proposals are directly relevant to the missions goals at the specific NASA centers.

Budget Information - Total Requested: \$24000

Student Stipend: **\$ 18000**
 Student Allowance: **\$ 3000** - Tuition: \$2,000 Travel: \$1,000
 University Allowance: **\$ 3000** - Tuition: \$3,000

Faculty Advisor Information:	Official Responsible for Committing Institution:
Name: Robert P. Kirshner	Name: Julie Humphreys
Institution: Harvard University	Institution: Harvard University
Department: Astronomy	Title: Sponsored Programs Officer and
Institution Address: 60 Garden Street	Institution Address: 1350 Massachusetts Ave, Holyoke Center Suite 600

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ANTICIPATED USE OF CENTER OR UNIVERSITY FACILITIES AND RESOURCES

Anticipated use: For the Astroparticle Physics Laboratory opportunity at the NASA GODDARD SPACE FLIGHT CENTER, after consulting with my NASA technical advisor, Dr. Neil Gehrels, I would plan to do research in residence at Goddard for approximately 1-2 weeks during the year. When I am on site or working remotely, I hope to use a moderate amount of supercomputer time (to be determined) through the NASA center for computational sciences. For the Structure and Evolution of the Universe (SEU) opportunity through the NASA SCIENCE MISSION DIRECTORATE (SMD-SS), my research would be conducted on site at the Harvard-Smithsonian Center For Astrophysics.
