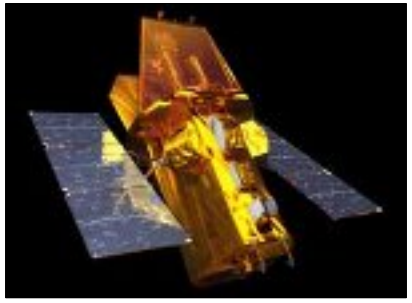
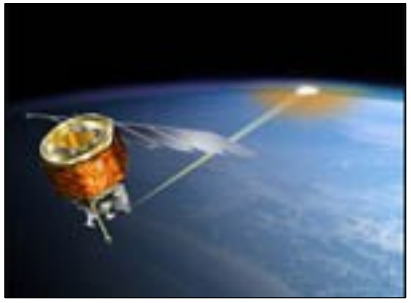
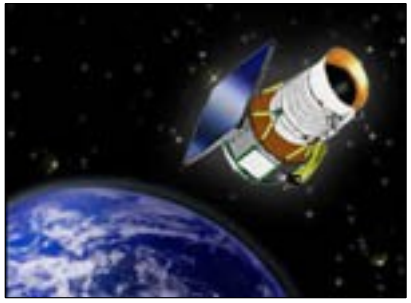
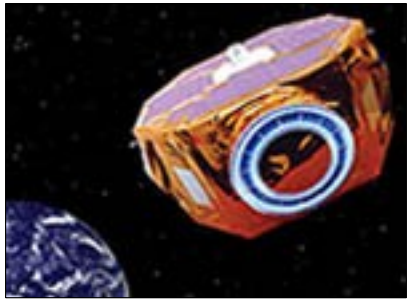





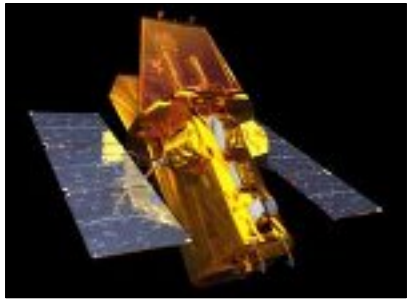
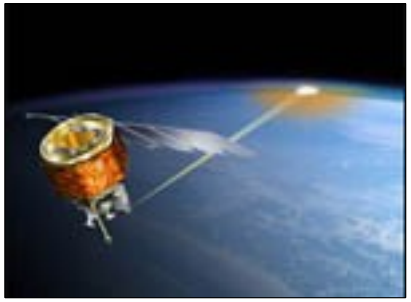
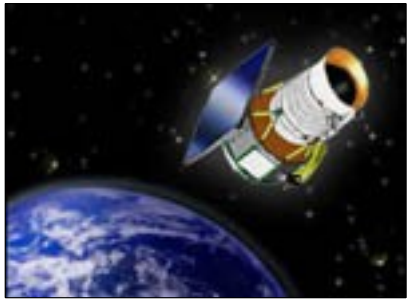
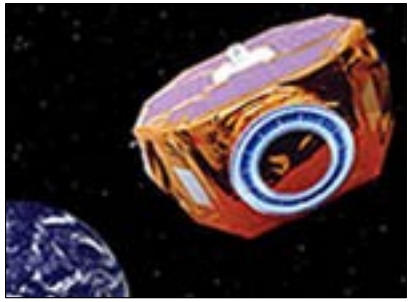
Explorer (EX) Announcements of Opportunity

NNH11ZDA002O
NNH08ZDA009O-EXPMO11
NNH10ZDA001N-EXUSPI10

Step 1 Selection: September 27, 2011

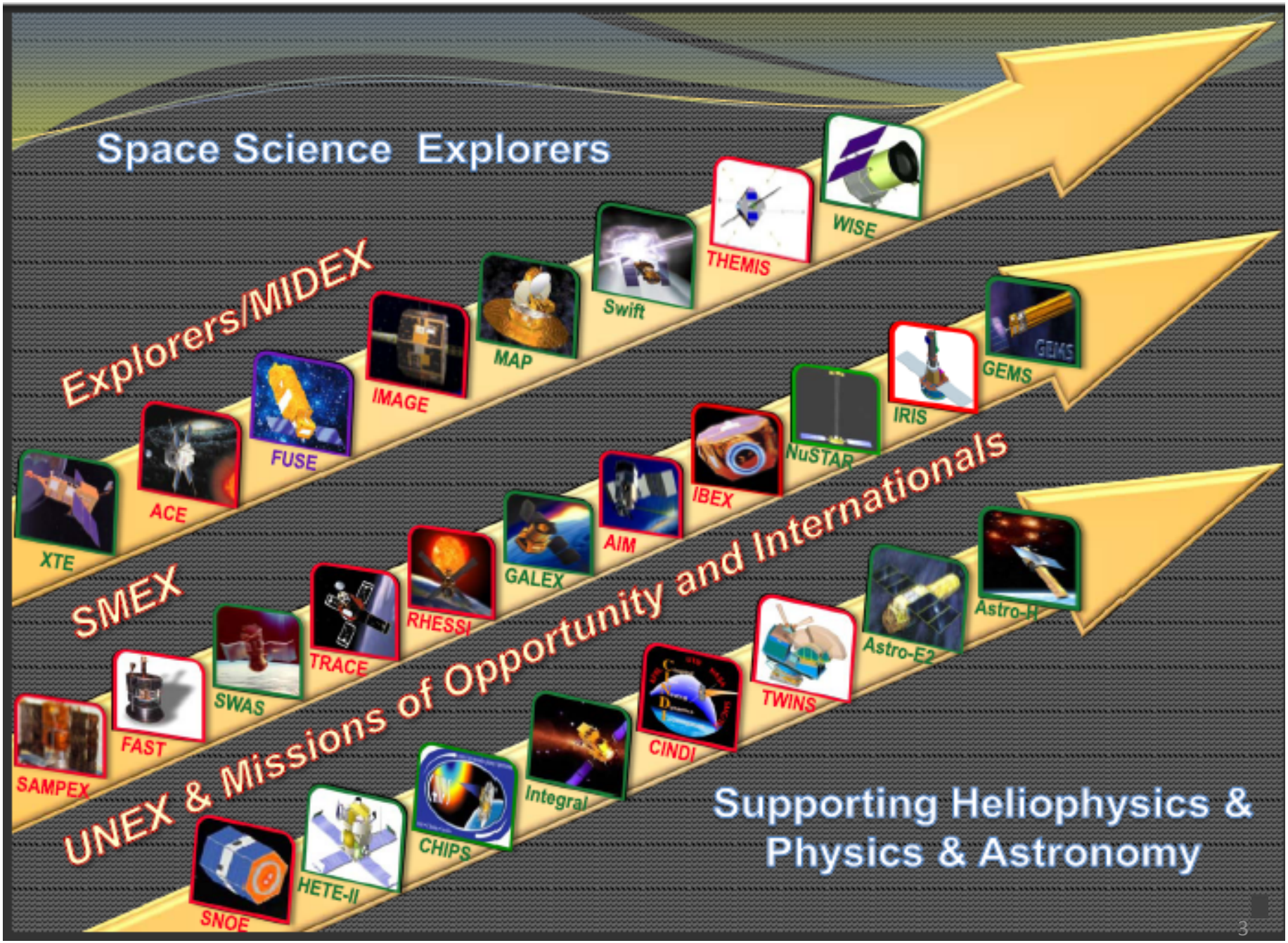
Phase A Concept Study Reports: September 21, 2012

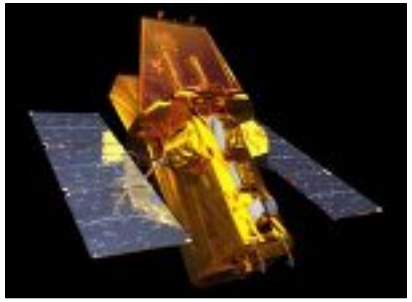
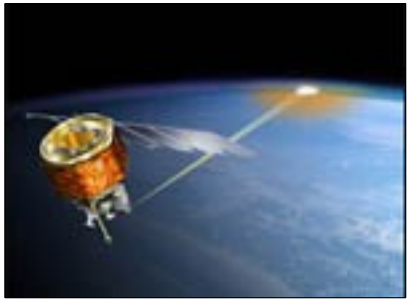
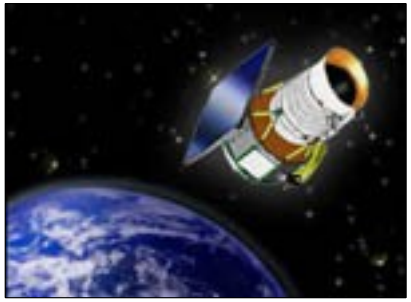
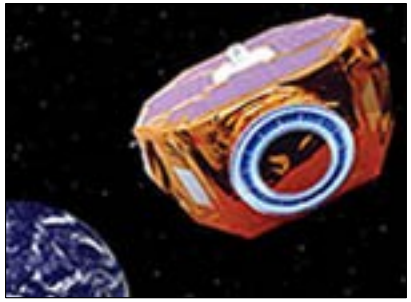
Phase B Selection (target): March 2013

The Explorer Program released (November 1, 2010) <u>three</u> solicitations for new science investigations:

- **Explorer 2011 Announcement of Opportunity** (EX2011 AO) – NNH11ZDA002O
- **Explorer 2011 Science Missions of Opportunity** Program Element Appendix for the Stand Alone Missions of Opportunity Notice (EX2011 MO SALMON PEA) – NNH08ZDA009O-EXPMO11.
- **Explorer U.S. Participating Investigators** Program Element for the Research Opportunities in Space and Earth Sciences 2010 NRA (EX2011 USPI ROSES PE) –EXUSPI.

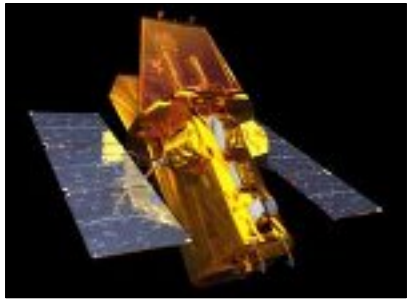
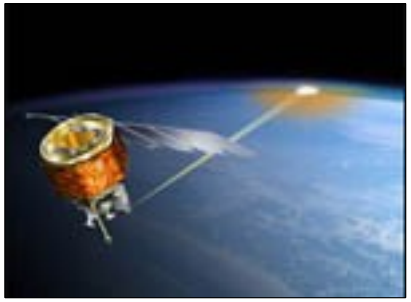
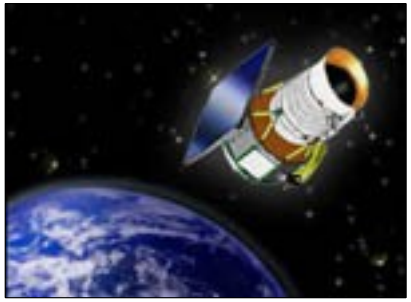
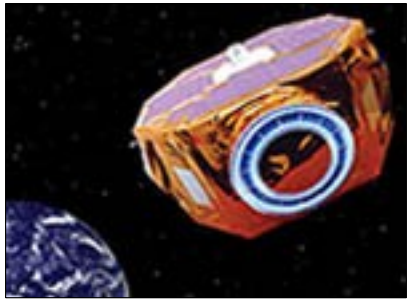

Space Science Explorers
Explorers/MIDEX
WISE
THEMIS
Swift
MAP
IMAGE
FUSE
ACE
XTE
GEMS
IRIS
NuSTAR
IBEX
AIM
GALEX
RHESSI
TRACE
SWAS
FAST
SAMPEX
Astro-H
Astro-E2
TWINS
CINDI
Integral
CHIPS
HETE-II
SNOE
SMEX
UNEX & Missions of Opportunity and Internationals
Supporting Heliophysics &
Physics & Astronomy

The Explorer Program conducts Principal Investigator (PI)-led space science investigations in SMD's heliophysics and astrophysics programs.

Explorer investigations are intended to obtain an understanding of the Sun and its interactions with the Earth and the Solar System and/or to discover the origin, structure, evolution, and destiny of the Universe and search for Earth-like planets.

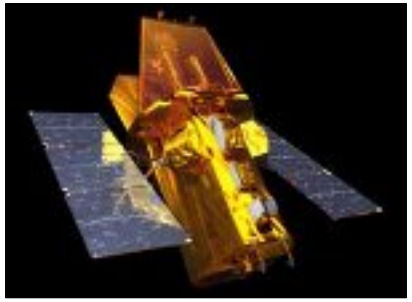
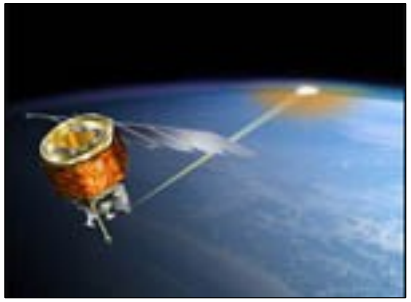
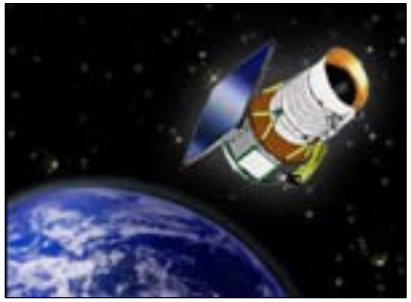
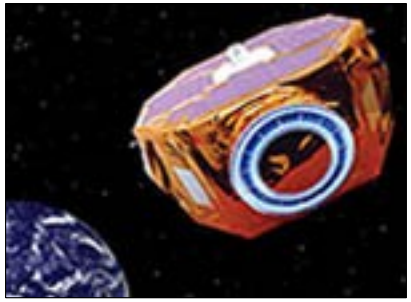
Full information: http://explorers.larc.nasa.gov/EX

Full Missions (EX)

- The PI-managed mission cost cap is $200M in Fiscal Year (FY) 2011 dollars, not including the cost of the Expendable Launch Vehicle (ELV) or any contributions
- EX missions were conceived in response to the availability of expendable launch vehicles. EX missions fall between the previous Small Explorer (SMEX) and Medium Explorer (MIDEX) classes
- Standard launch services on an ELV will be provided for EX missions at no charge against the mission cost cap
  - Only the launch services described in the Explorer Program Library's launch services document will be provided.
  - There will be a charge against the mission cost cap for mission unique and special launch services.

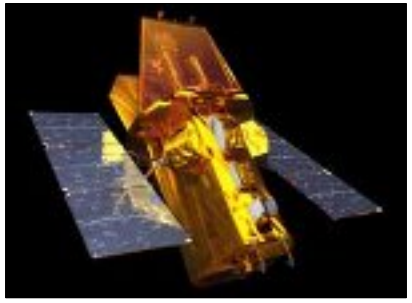
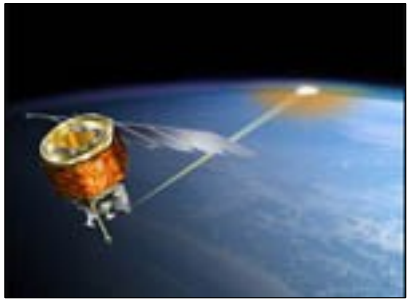
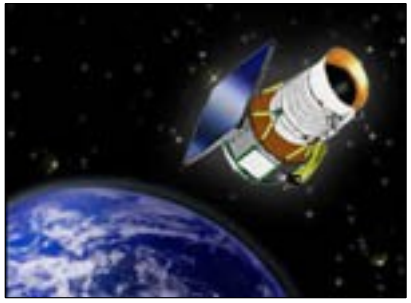
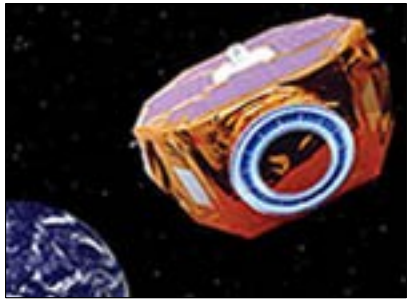
Full information: http://explorers.larc.nasa.gov/EX

Missions of Opportunity

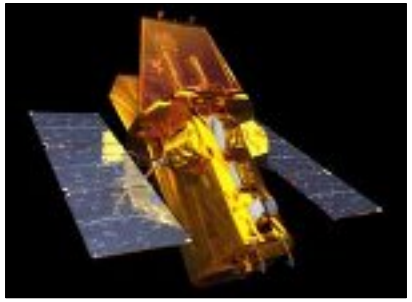
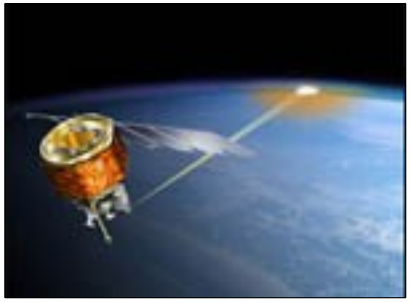
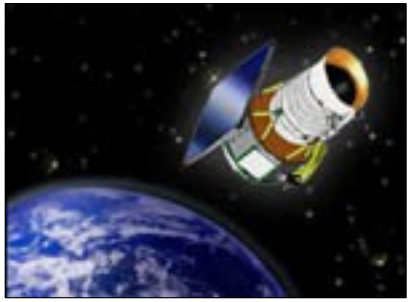
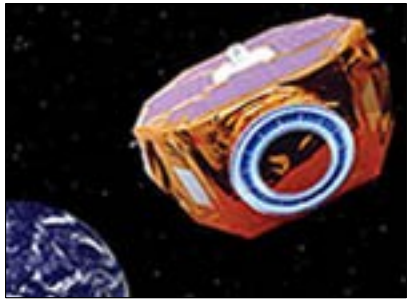
- The PI-managed mission cost cap for an Explorer MO is $55M in Fiscal Year (FY) 2011 dollars.
- Three MO types are specified – Partner Missions of Opportunity (PMOs), New Science Missions using Existing Spacecraft, and Small Complete Missions (SCMs), including investigations requiring flight on long duration balloons, investigations on the International Space Station (ISS), investigations launched as secondary payloads, or investigations launched as hosted payloads.
- In addition, U.S. Participating Investigators are proposed through the Research Opportunities in Space and Earth Sciences (ROSES)

Full information: http://explorers.larc.nasa.gov/EX

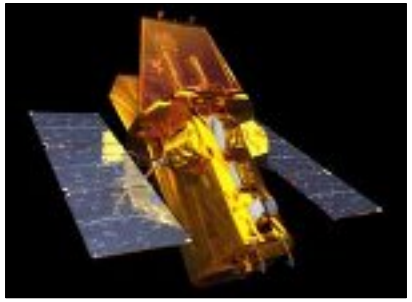
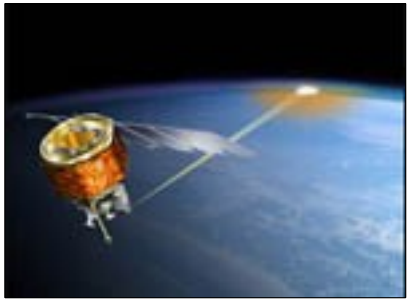
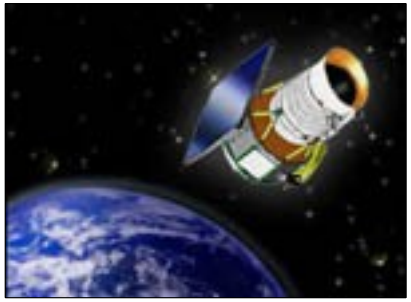
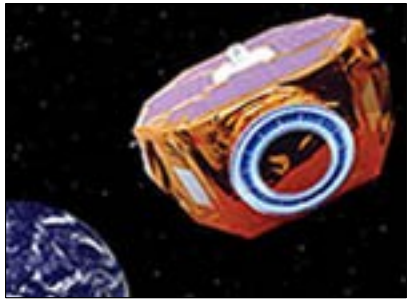
Selected EX Missions to proceed with Mission Concept Studies

- **FINESSE** - the Fast INfrared Exoplanet Spectroscopy Survey Explorer – Mark Swain, Jet Propulsion Laboratory
- **TESS** - Transiting Exoplanet Survey Satellite, George Ricker, Massachusetts Institute of Technology
- **ICON** - The Ionospheric CONnection Explorer (ICON) , Thomas Immel, University of California Berkeley
- **OHMIC** - Observatory for Heteroscale Magnetosphere-Ionosphere Coupling (OHMIC) , James Burch, Southwest Research Institute
- **ASTRE** - Atmosphere-Space Transition Region Explorer, Robert Pfaff, NASA Goddard Space Flight Center

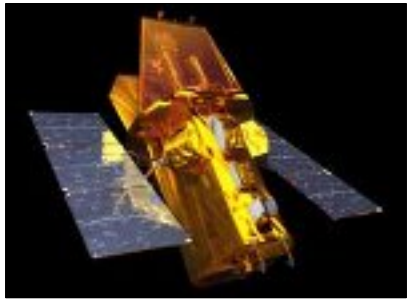
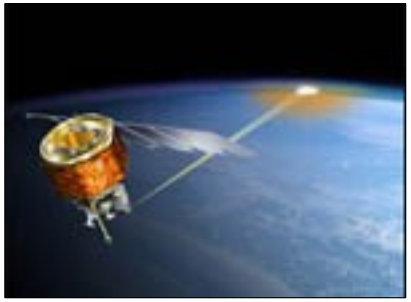
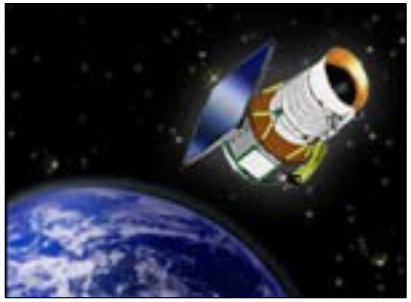
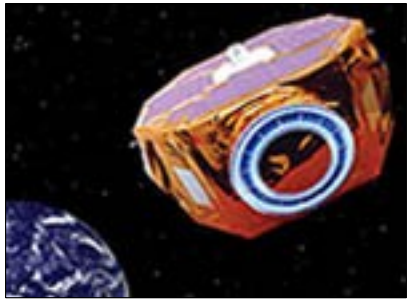
Selected Missions of Opportunity to proceed with Mission Concept Studies

- **IMSA** - Ion Mass Spectrum Analyzer for the SCOPE Mission, Lynn Kistler, University of New Hampshire
- **GUSSTO** - Gal/Xgal U/LDB Spectroscopic/Stratospheric THz Observatory, Christopher Walker, University of Arizona
- **NICER** - Neutron star Interior Composition ExploreR, Keith Gendreau, NASA Goddard Space Flight Center
- **GOLD** - Global-scale Observations of the Limb and Disk, Richard Eastes, University of Central Florida
- **CPI** - A Coronal Physics Investigator (CPI) Experiment for the International Space Station, John Kohl, Smithsonian Astrophysical Observatory

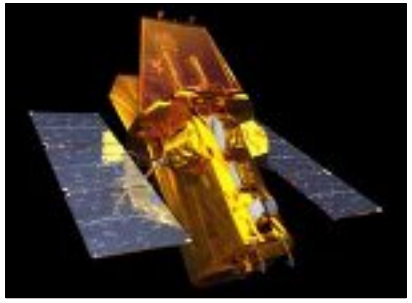
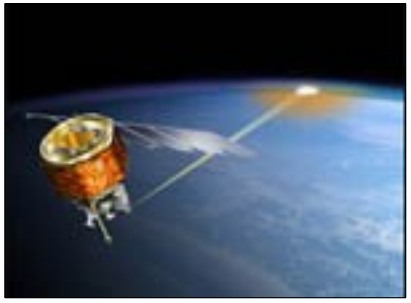
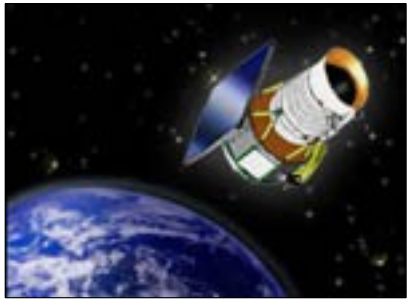
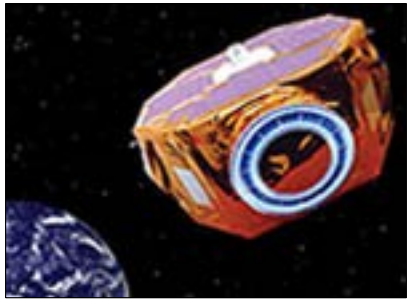
Selected Technology Development

- **EXCEDE**- The EXoplanetary Circumstellar Environments and Disk Explorer, Glenn Schneider, PI, University of Arizona, Tucson

Selected ROSES 2010 E.7: Explorer Program U.S. Participating Investigators

- **W. Peterson**: U. of Colorado: Investigations of the mid-latitude thermospheric response to variations in solar irradiance and geomagnetic activity using photoelectron and other observations from the Canadian ePOP Mission
- **J. Forbes**: USPI-GOCE: U. of Colorado: Middle Thermosphere Variability due to Sources From Above and Below
- **J.D. Moses**: Naval Research Laboratory: US Participation in the Solar Orbiter Multi Element Telescope for Imaging and Spectroscopy (METIS)

Explorer 2011 Programmatic Factors

- The currently approved Astrophysics Explorer Program planning budget is to select and execute one full Explorer mission and one Mission of Opportunity to proceed into Phase B and subsequent mission phases.
- The currently approved Heliophysics Explorer Program planning budget is to select and execute one full Explorer mission to proceed into Phase B and subsequent mission phases. Assuming budget authority, the Heliophysics Explorer Program will endeavor to select one Mission of Opportunity in addition to the full Explorer mission.
- Selection decisions will incorporate the most recent budget planning information available at that time.

Explorer Program Schedule

Milestone	Target Date
Step 1 Selections announced	September 27, 2011
Initiate Phase A Concept Studies	October 18, 2011
Phase A Concept Study Reports due	**September 21, 2012**
Down-selection of investigation(s) for flight (target)	**March 2013**
Commitment need date for a Partner MO	December 31, 2013
Decision Date for New Missions using existing spacecraft	December 31, 2013
Launch Readiness Date for proposed mission	NLT December 31, 2018
Launch Readiness for Small Complete Missions	NLT December 31, 2018
Future Astrophysics Explorer AO – MO	**Fall 2012**
Future Astrophysics Explorer AO – SMEX	**FY2014**
Future Heliophysics Explorer AO – SMEX	**FY2015**