



LASP

Laboratory for Atmospheric and Space Physics
University of Colorado **Boulder**

Welcome to The Laboratory for Atmospheric and Space Physics

The 29th annual National Space Symposium
April 8-12

Partnerships

Presentation by Tom Sparn

Planetary Science • Space Physics • Solar Influences • Atmospheric Science • Engineering • Mission Operations & Data Systems

<http://lasp.colorado.edu>

LASP Partnerships



LASP Science Partnerships

- Colorado Partners
 - Denver Museum of Nature and Science
 - National Center for Atmospheric Research (NCAR)
 - NOAA Space Environment Center
 - Space Science Institute
 - Southwest Research Institute
 - Lockheed Martin
- International Partners
 - Canadian Space Agency
 - Max Planck (Cassini)
 - European Space Agency



Local Business Connections

Mission partners

Lockheed Martin
Ball Aerospace
Northrop Grumman
GeoOptics
Moog Engineering



Science partners

HAO
NOAA
NCAR
SwRI
SSI
NIST



*And, many other connections to
and from Colorado businesses*

Production partners

Multiple machine shops
Electrical Assembly houses
PW Board manufacturer
Plating Vendors
Electronic parts suppliers

Colorado aerospace industry partners

Colorado Space Coalition
Colorado Space Business Roundtable
WIRED program – education and
aerospace panels

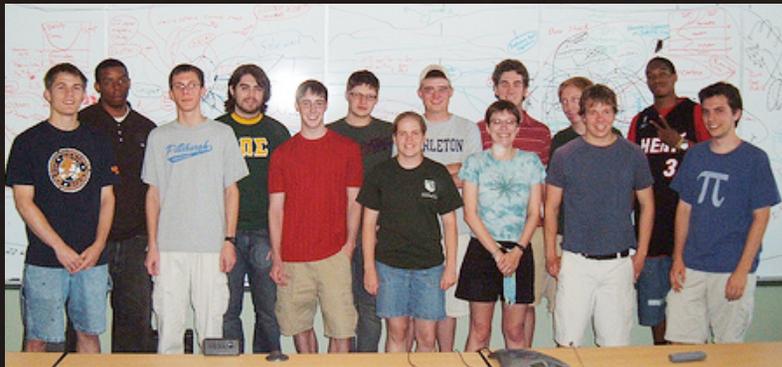
Education and Public Outreach—Highlights

Offerings by the Colorado Center for Lunar Dust and Atmospheric Studies (CCLDAS) include:

- New media practitioners professional development workshops
- Student seminar series: Learning to interact with the media
- Public Symposia with Elon Musk and Alan Stern



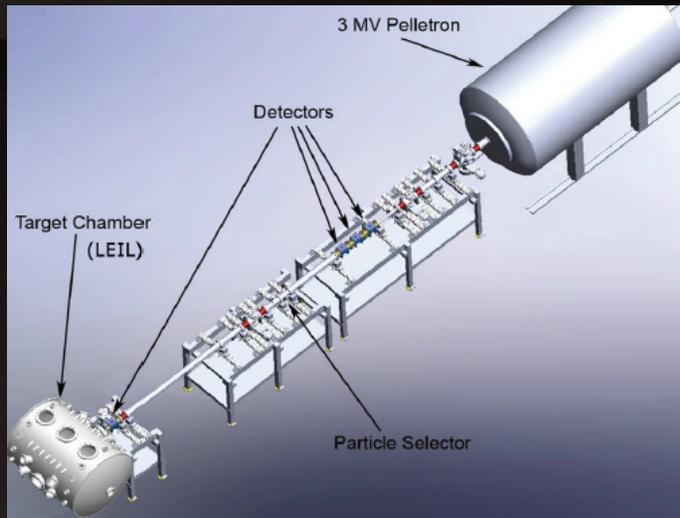
In April 2012, Elon Musk and Alan Stern spoke to a standing-room-only crowd about the future of commercial space flight.



Sophomore- and junior-level undergraduates join us for a summer-long immersion into solar and space physics.

The NSF Research Experiences for Undergraduates (REU) Program brings about 15 promising undergraduates to LASP for an eight-week summer research experience.

Colorado Center for Lunar Dust and Atmospheric Studies (CCLDAS)



Experimental capabilities:

Space environmental simulators (UV, plasma)

Hypervelocity dust impacts (particle radius: 0.01 – 10 micron; speed: 1 – 80 km/s)

Experimental goals:

Explore the effects of hypervelocity dust impacts on: a) optical devices; b) secondary dust particle, neutral gas, and plasma production; c) electrical interference on antennas; and d) the testing and calibration of dedicated dust instruments.

The facility is available for use by the lunar, space and plasma physics communities.

CISM: The Center for Integrated Space Weather Modeling

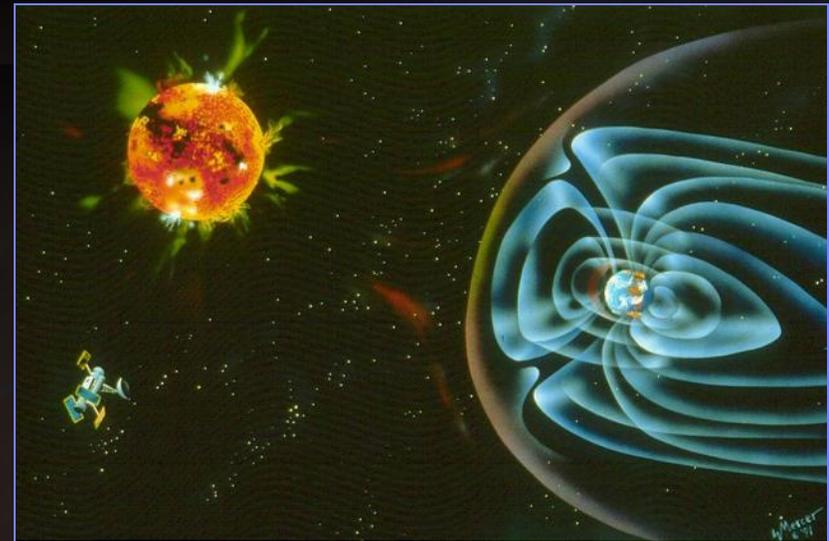
LASP's Principal Role: The Knowledge Transfer Team

Goal:

To provide access to models, as well as technology exchange opportunities and fellowships.

- Allows CISM scientists to communicate their innovations to the broad government and industry community.
- Allows the community to convey their needs to the CISM scientists.

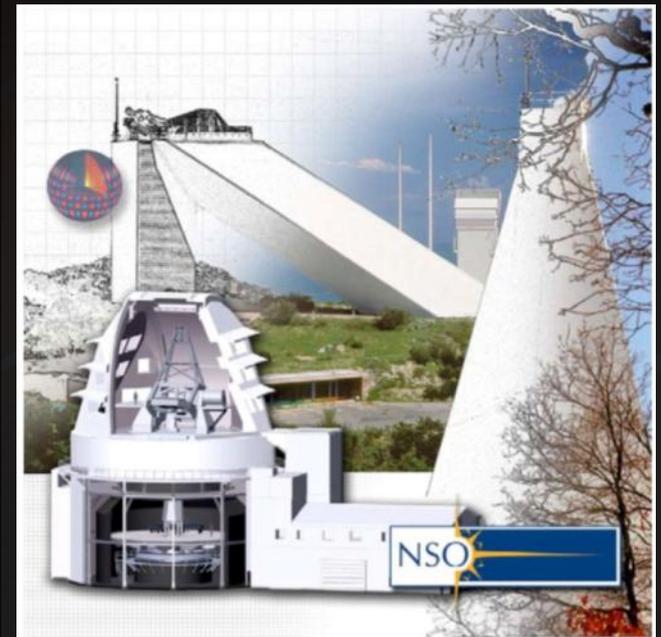
Partners include Lockheed Martin, Ball Aerospace, Boeing, Metatech and NOAA/SEC's user community



NSO: CU-Boulder Chosen for New Headquarters

National Solar Observatory (NSO) :
premier national facility for ground based solar observations.

- Advanced Technology Solar Telescope (ATST) on Haleakela in Hawaii, designed to observe the Sun with an astonishing 50km resolution.
- NSO is consolidating operations and chose CU-Boulder as the site for their new headquarters.
- The move will enhance collaborative efforts in ground-based observation and instrumentation, theory and modeling, and space-based observations



LASP Summary

- LASP is a world class research institute with a long track record of space mission successes .
- LASP is unique in its full-cycle approach to space programs to develop innovative, low-cost solutions to problems
- LASP can provide a broad-range of services:
 - Engineering design
 - Production
 - Test and calibration facilities
 - Mission operations

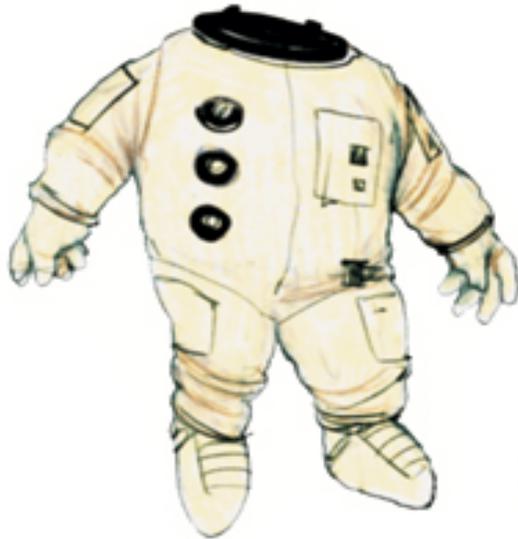
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Space Exploration Uniforms





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Thank you for your attention.
While at the National Space Symposium please
contact Thomas Sparn (303) 591-1861 if you have
further questions.



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