

An aerial photograph of a globe with a grid of latitude and longitude lines. Two business people in dark suits are shaking hands on the globe's surface. Their shadows are cast long and dark on the globe. The globe is centered on the Atlantic Ocean, with North and South America visible on the left and Europe and Africa on the right.

# Conference Papers

The Best Way to Publicize Your Work

# Why Publish at Conferences?

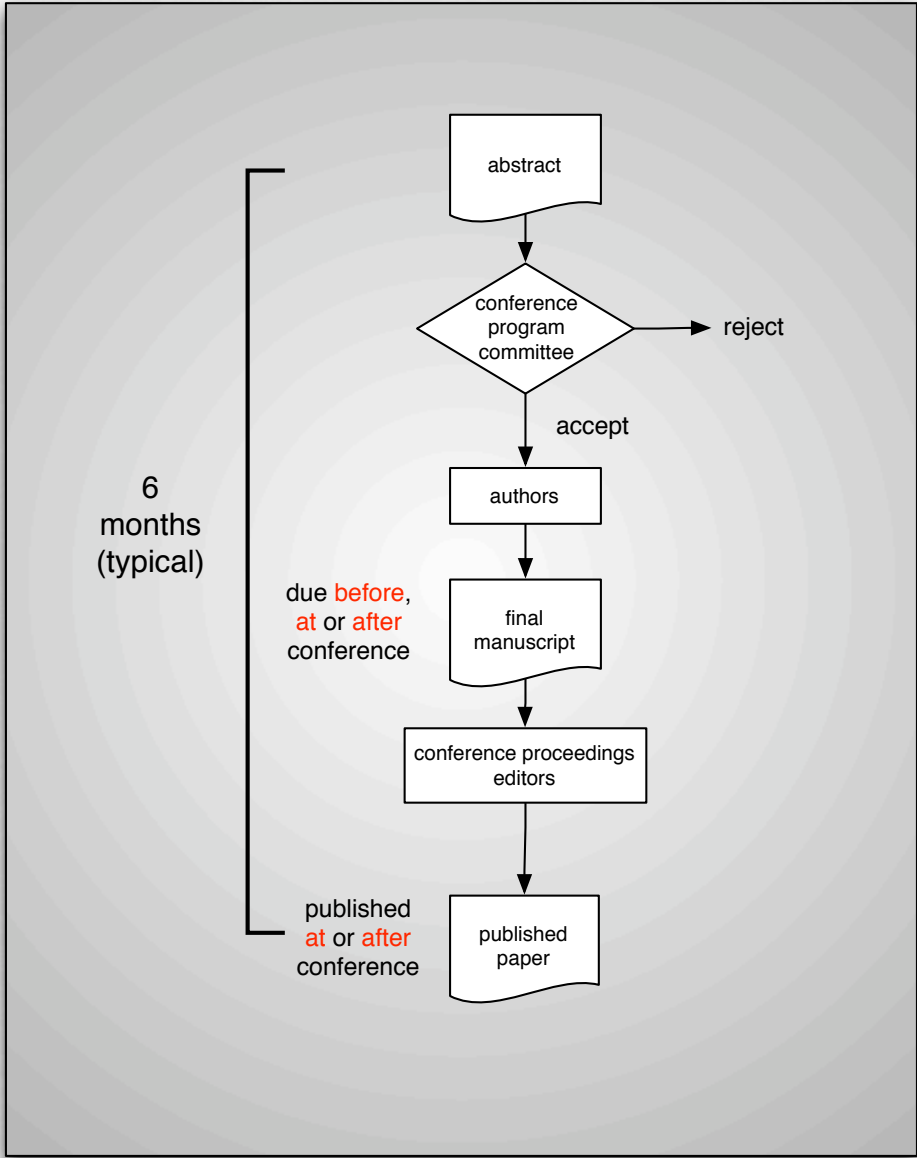
- *Peer recognition*
  - career development, professional contacts, etc
- *“Test” publication* to get comments of professional audience
- *More current results* than journal paper

# Audience

- Equal and unequal peers
- Sometimes peer-reviewed before acceptance, sometimes not
  - varies widely among conferences

# The “Process”

- *No iterations*
- *Quicker turnaround than journal paper submissions*



# Reviews

- Reviewers are typically the *conference chair and co-chairs*
- *Only abstract or "extended" abstract*
  - papers are either *accepted or not*; no iterations
  - sometimes recommended to be a *poster (interactive)*
    - *paper*

# Manuscript Format

- usually, *simple double-spaced format for abstract*
- Final accepted manuscript formatting *typically done entirely by authors* (word processor file)
- More and more conference proceedings are being published as PDF files on CD for cost savings and convenience

# Author Order

- *Same rules* as for journal papers
- *First author does not necessarily present* paper at conference
  - Depends on travel arrangements



# Content

- *Smaller version* of journal paper
- *Same rules* for content (abstract, introduction, conclusions, etc) apply

# Length

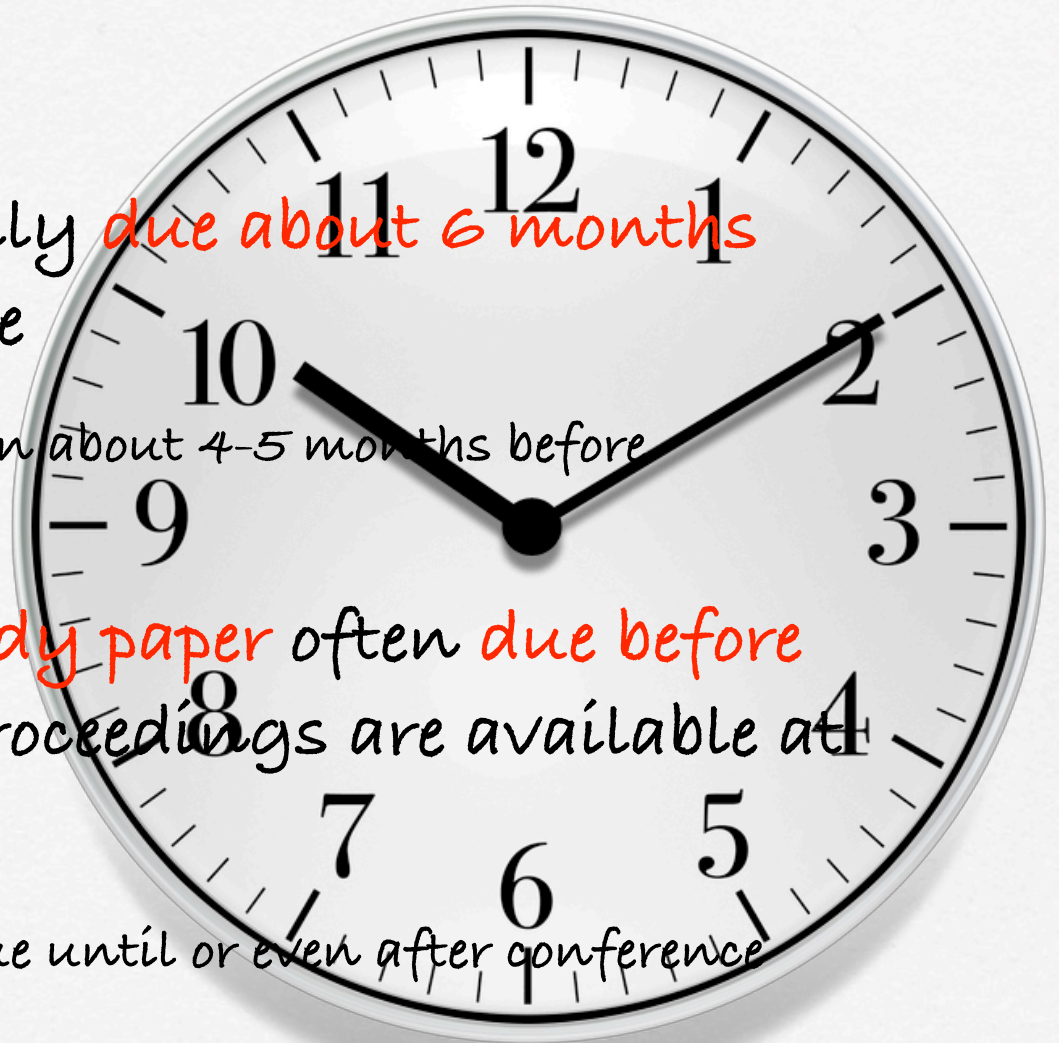
- *See conference guidelines*
- Typically, *5-7 pages* in final published form
- Some conferences publish only abstracts

# General Advice

- Group tables and figures at the end of text
  - Check publication guidelines for conference
- Color
  - probably not possible for paper proceedings
  - no problem for CD proceedings

# Timing

- Abstract typically due about 6 months before conference
- acceptance decision about 4-5 months before conference
- Proceedings-ready paper often due before conference so proceedings are available at conference
- Sometimes not due until or even after conference



# The “Other” Paper

- The **presentation**
- Typically **PowerPoint** (or other format) on a laptop computer
- **very compressed** version of proceedings paper
- Sometimes includes **newer results that may not be in proceedings paper**

# Length

- Keep it short!
- Rule #1: no more than 1 slide/minute
  - About 15-20 slides for 20 minutes
  - Do not exceed 25 slides in 20 minutes

# Content

- Remember you have **very little time** to convey your work, but . . .
- The **audience requires time** to understand what you're talking about (they start "cold")
- Carefully select only the **most important points**
  - Refer to proceedings paper for details

- Rule #2: No more than 3 bullet items/  
slide
- Rule #3: No more than 2 lines/bullet
- Audience should not have to "read" your  
slide




- Rule #4: use only *small* tables
- *Graphs are much better* than tables
- Rule #5: keep your slide format simple
  - Do not include distracting elements
  - Background "master slide" usually contains author's affiliation, e.g. University of Arizona


A spiral-bound notebook with a dark blue cover and a silver spiral binding at the top. The page is blank white with the text "Don't . . ." written in red in the center.

Don't . . .

...clutter your slides with useless graphics and text

 **NMP EO-1** **ENGINEERING COLLOQUIUM**

**NMP ROLE**  
*Flight Validation of Breakthrough Technologies to Benefit Space and Earth Science Missions*

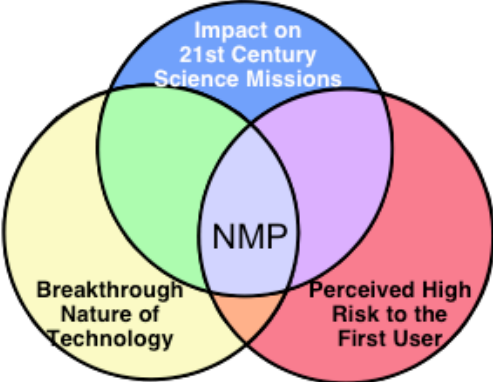


**Breakthrough technologies**

- Enable new capabilities to meet Science needs
- Reduce costs of future missions

**Flight validation**

- Mitigates risks to first users
- Enables rapid technology infusion into future missions



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...use unnecessarily complicated graphics



NMP EO-1

ENGINEERING COLLOQUIUM

## NMP Technology Evolution

*SEEDING*



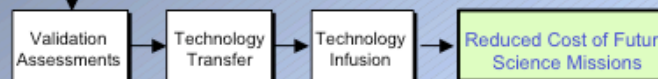
*SELECTING*



*DEVELOPING*



*VALIDATING*

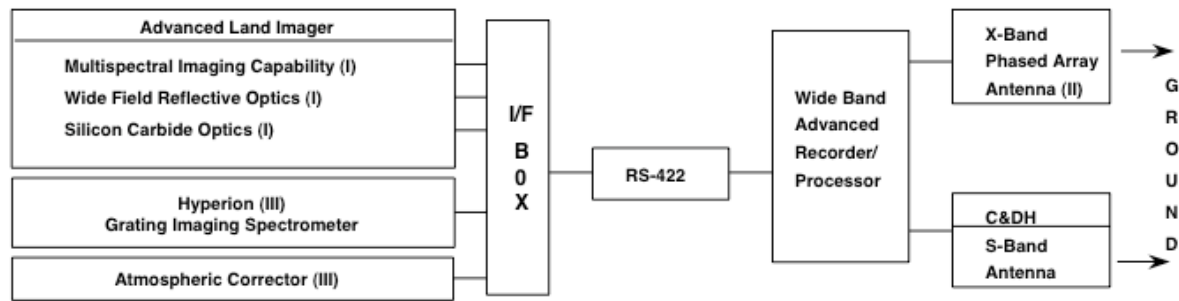


End-to-End Continuity Ensures Future Savings

...OR...

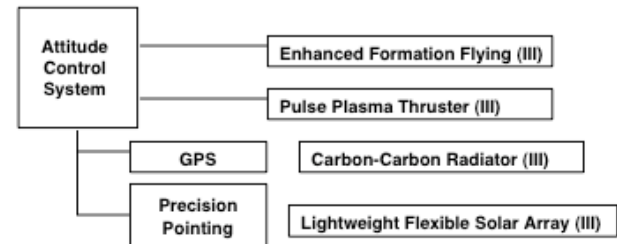


## EO-1 Technologies



### EO-1 TECHNOLOGIES

- Multispectral Imaging Capability
- Wide Field Reflective Optics
- Silicon Carbide Optics
- Grating Imaging Spectrometer (HYPERION)
- Atmospheric Corrector (AC)
- X-Band Phased Array Antenna
- Enhanced Formation Flying (EFF)
- Pulse Plasma Thruster (PPT)
- Carbon-Carbon Radiator (CCR)
- Lightweight Flexible Solar Array
- Wideband Advanced Recorder / Processor (WARP)



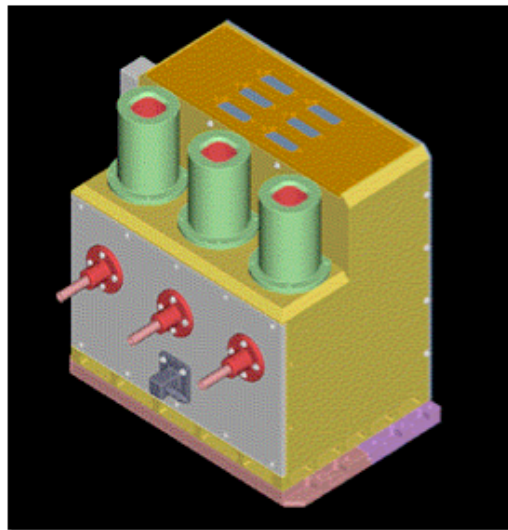
...and *one more*...



NMP EO-1

ENGINEERING COLLOQUIUM

## *LEISA Atmospheric Corrector*



- ◆ **Correct High Spatial Resolution Multispectral Imager Data (ALI and Landsat) for Atmospheric Effects on Surface Reflectance.**
  - *In multispectral images, thin cirrus clouds are not distinguishable from surface reflectance effects. LAC's high spectral resolution allows differentiation between cirrus clouds and surfaces by looking in water vapor absorption bands. Effects may be removed or data flagged*
  - *Atmospheric aerosols and water vapor attenuate light reflected from surface, decreasing apparent surface reflectance. LAC's spectral measurement capability allows simultaneous retrieval of water vapor amounts and estimation of effect on atmospheric transmittance. This may be divided out of multispectral images to obtain true surface reflectance.*

# Bad



NMP EO-1

ENGINEERING COLLOQUIUM

## *Lightweight Flexible Solar Array (LFSA)*

### **Technology Need:**

Increase payload mass fraction.

### **Description:**

The LFSA is a lightweight photovoltaic(PV) solar array which uses thin film **Copper Indium Diselenide** solar cells and **shaped memory hinges** for deployment. Chief advantages of this technology are:

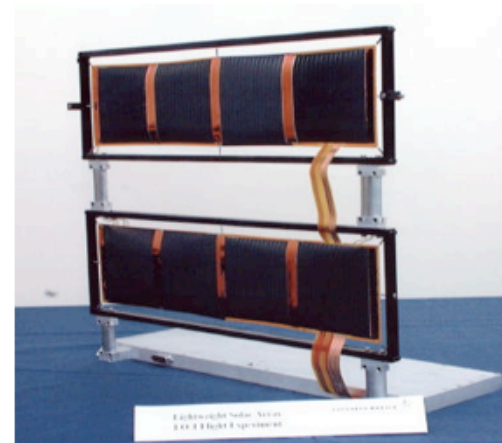
- *Greater than **100Watt/kg** specific energies compared to conventional Si/GaAs array which average **20-40 Watts/kg**.*
- ***Simple shockless deployment mechanism eliminates the need for more complex mechanical solar array deployment systems.** Avoids harsh shock to delicate instruments.*

### **Validation:**

The LFSA deployment mechanism and power output will be measured on-orbit to determine its ability to withstand long term exposure to radiation, thermal environment and degradation due to exposure to Atomic Oxygen.

### **Partners**

Phillips Lab, Lockheed Martin Corp



### **Benefits to Future Missions:**

This technology provides much higher power to weight ratios (specific energy) which will enable future missions to increase science payload mass fraction.

# Good



NMP EO-1

ENGINEERING COLLOQUIUM

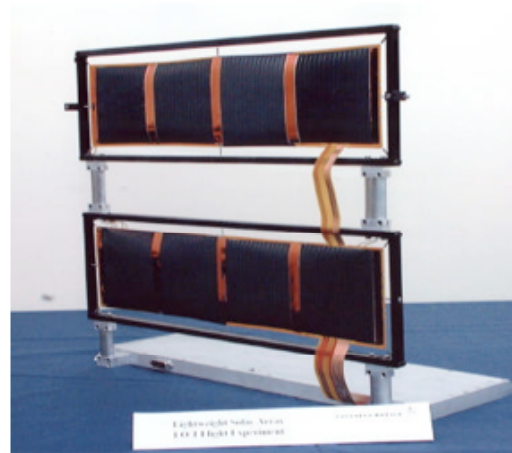
## *Lightweight Flexible Solar Array (LFSA)*

### Benefits:

- >100W/kg power/weight ratio
- shockless deployment

### Description:

- lightweight photovoltaic solar array
- Copper-Indium-Diselenide cells
- shaped memory hinges



### Partners:

- Phillips Lab
- Lockheed Martin Corp.

### Validation:

- measure effects of
- on-orbit radiation
- thermal stresses
- exposure to atomic oxygen