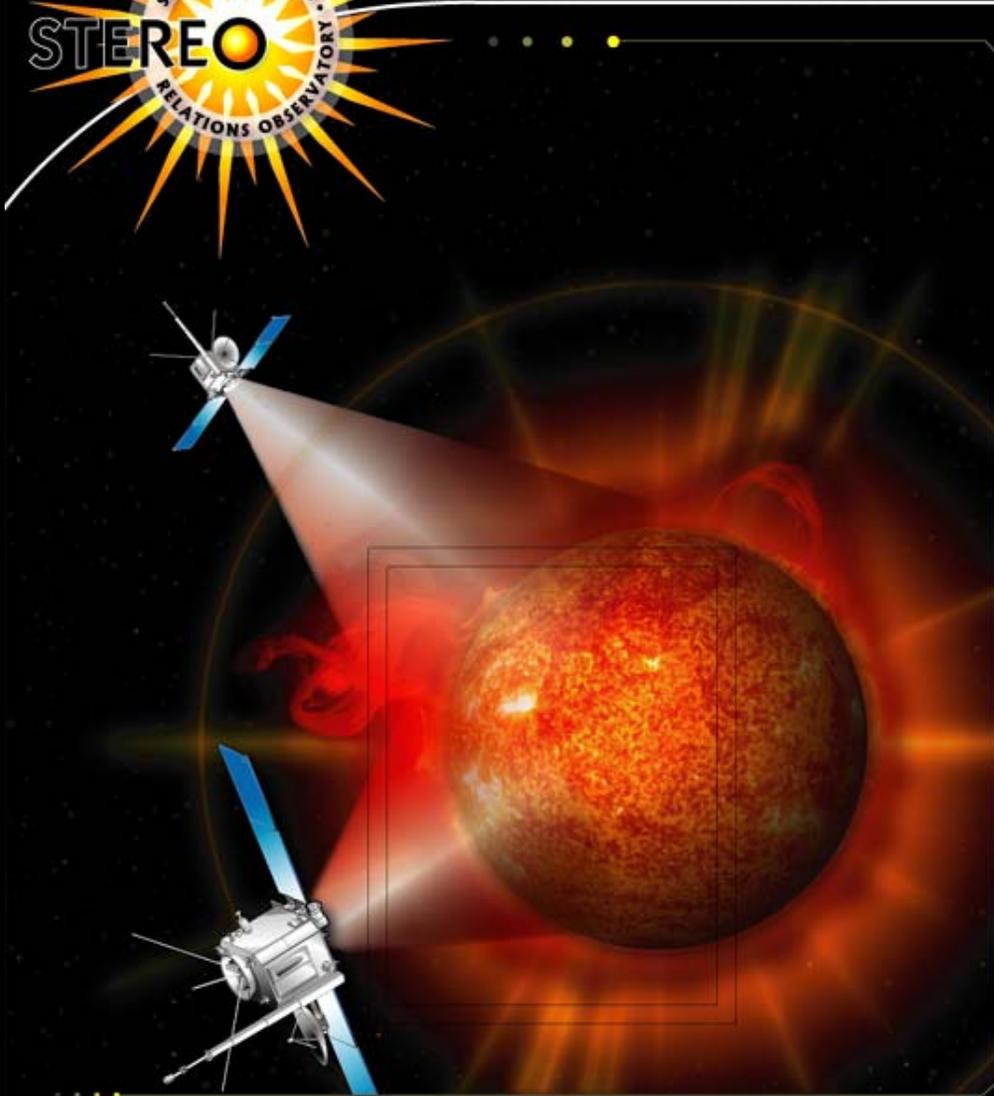


THE SUN LIKE IT'S NEVER  
BEEN SEEN BEFORE!  
..IN 3D..



## The STEREO Science Center

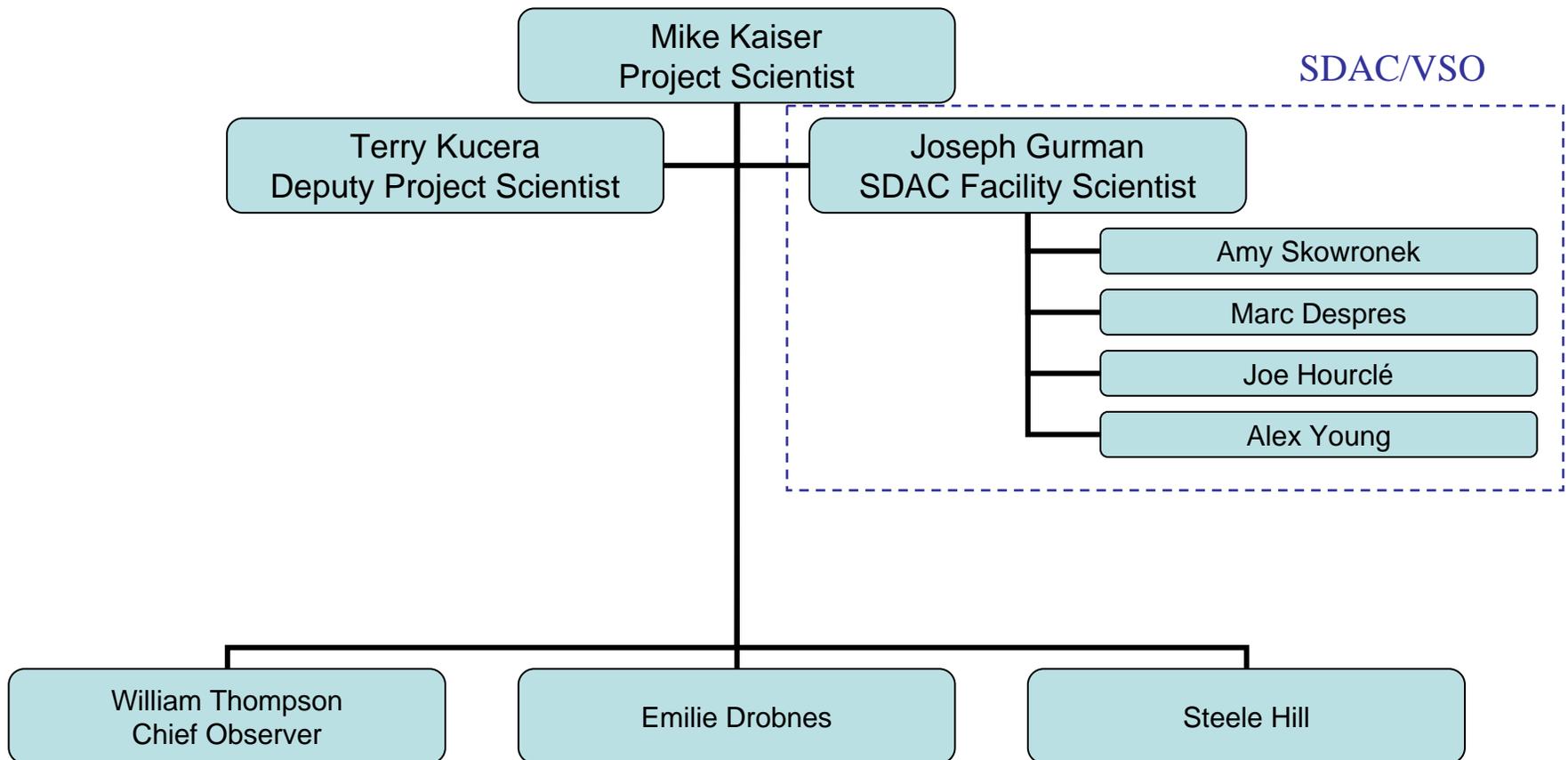
William Thompson  
L-3 Communications  
NASA Goddard Space Flight Center

# STEREO Science Center

- We're the “one-stop shopping” center for the STEREO mission.
- We perform the following functions:
  1. Collect telemetry and processed data, archive it, and serve it on the web.
  2. Receive beacon data from the DSN and NOAA antenna partners, process it, and make space weather products available in near real-time.
  3. Focal point for science coordination
  4. Focal point for education and public outreach.
- Co-located with the Solar Data Analysis Center (SDAC) at NASA/Goddard.

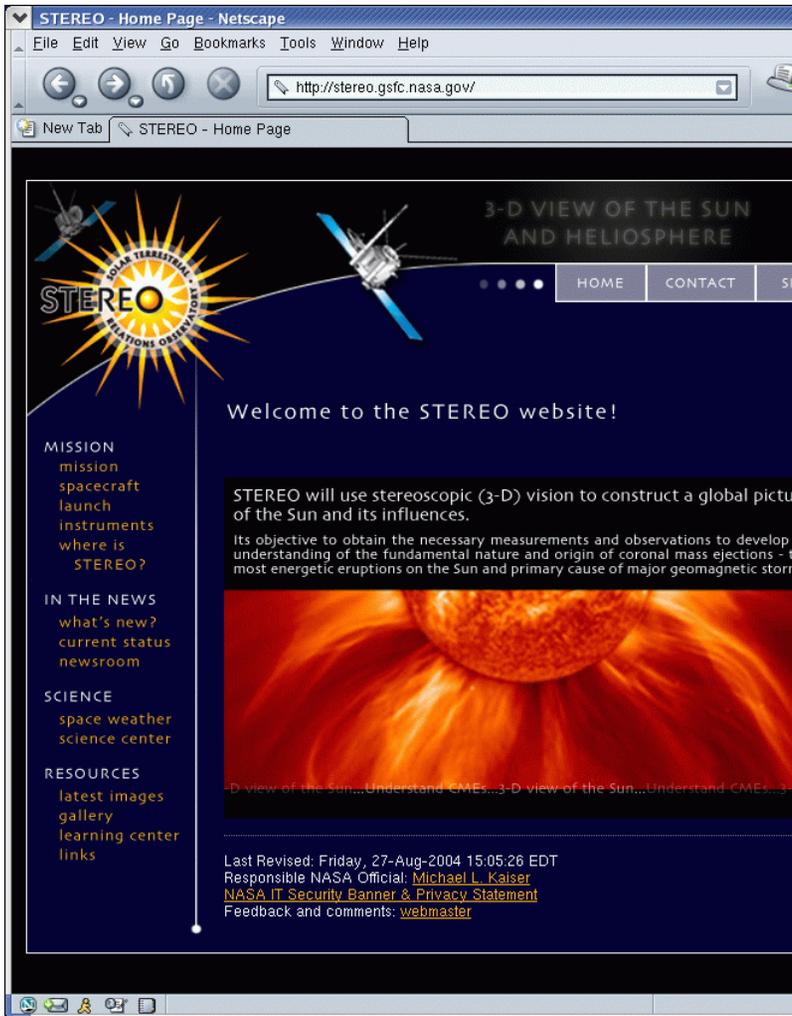
# SSC Organizational Chart

The SSC will share personnel with the Solar Data Analysis Center/Virtual Solar Observatory.

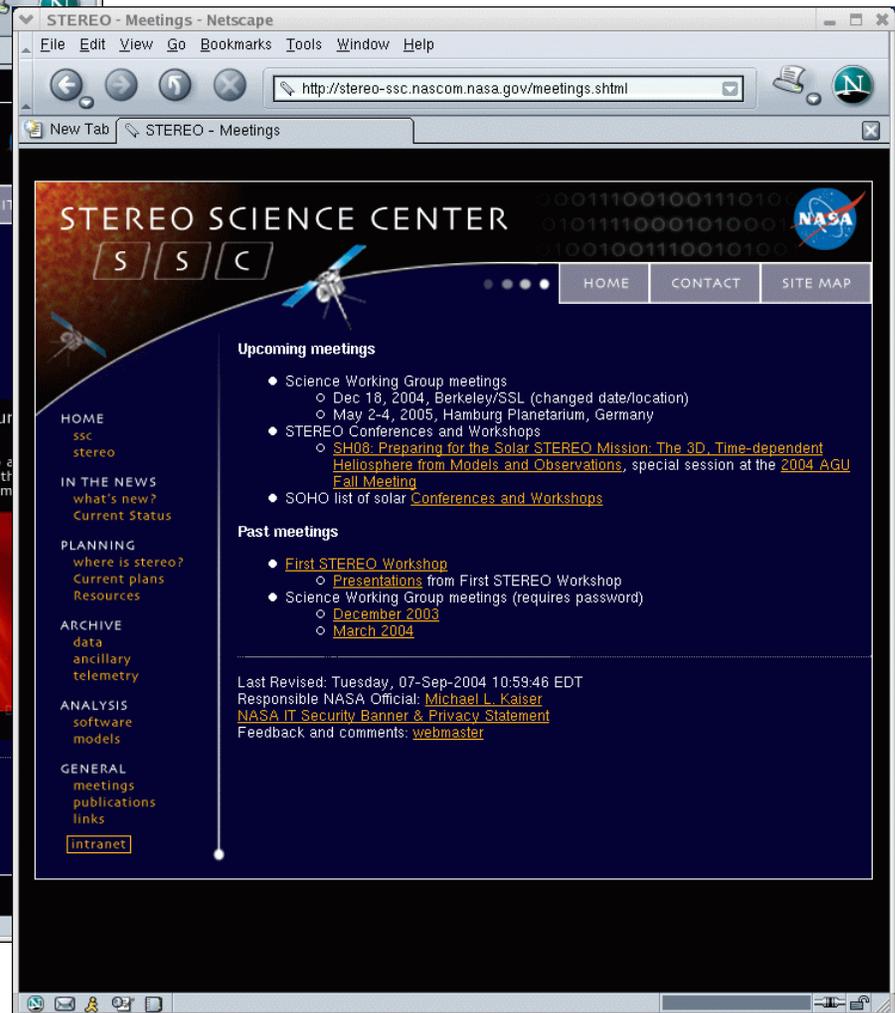


# http://stereo.gsfc.nasa.gov

*Professional scientists*



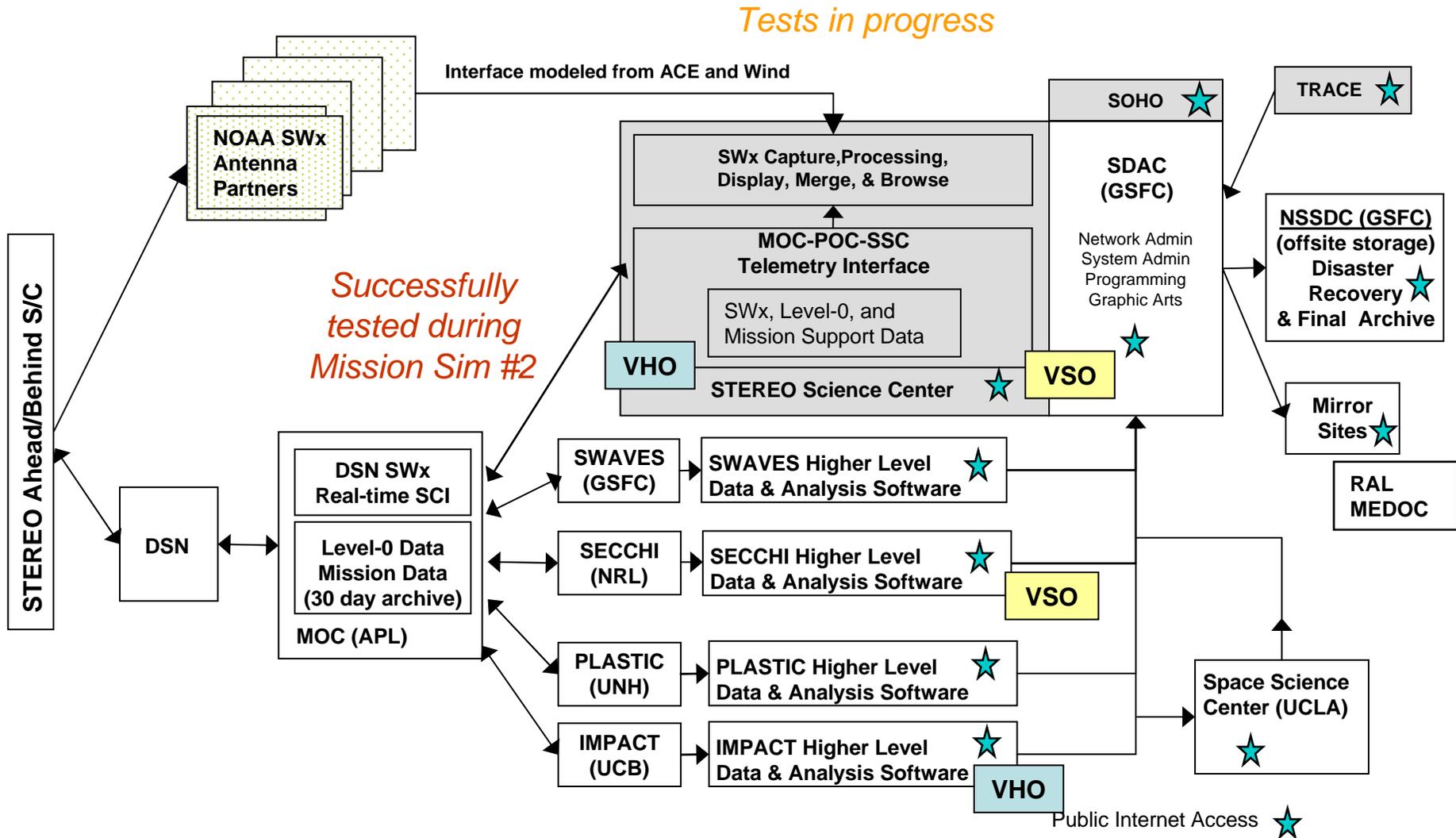
*General public*



# Virtual Observatories

- STEREO will interact both with the Virtual Solar Observatory (VSO), and with the Virtual Heliospheric Observatory (VHO)
- The VSO interface will emphasize the imaging data
  - Sharing personnel between VSO and STEREO
- The VHO interface will emphasize the in situ data
  - Personnel on the STEREO/IMPACT team are also involved in VHO
- Anticipate that there will be connections between VSO/VHO and other virtual observatories, e.g. EGSO, VSPO, ...

# Data Flow/SSC Block Diagram



# Planning Process

- **Semi-annual SWG meetings**

- Main focus for long-range scientific planning
- 6-month plan, starting in 1 month
- Establishes telemetry (and SSR) allocations
- Defines campaigns

*Based on SOHO experience*

- **Monthly Teleconference**

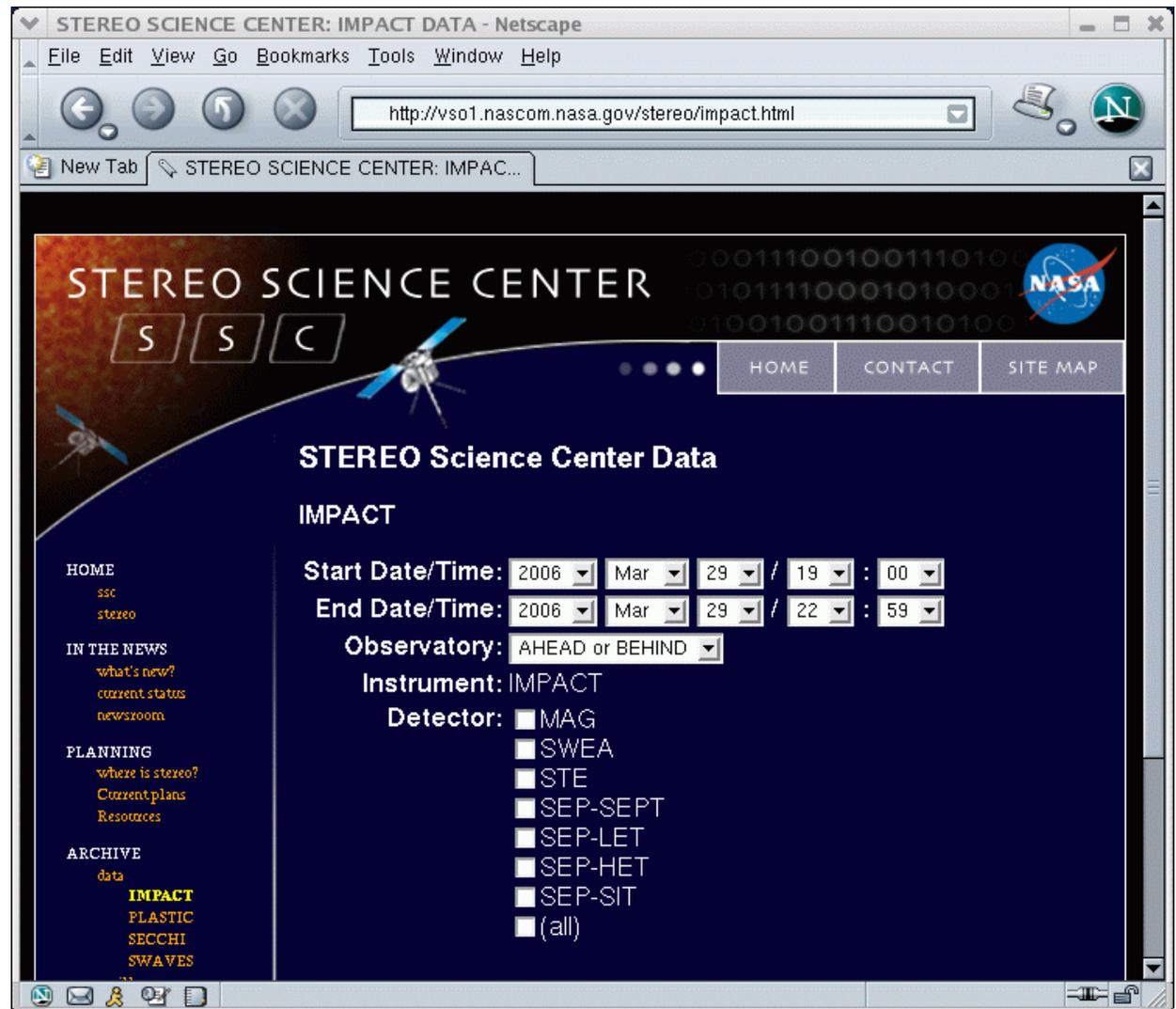
- Refines details
- Forecast DSN schedule available
- Final definition of telemetry (and SSR) allocations

- **Weekly “Virtual Meeting”**

- Either teleconference or electronic (e.g. e-mail), depending on requirements.
- Conflict-free DSN schedule available

# Data Catalog Searches

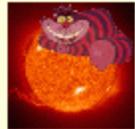
- Have started the process of defining the search forms for the data.
- The basic search parameters are date, observatory, sub-instrument, and a few others.
- More detailed searches will be added in a second phase.



# Event lists & VSO — Search



## VSO Time / Catalog Search Form Version 1.0



Start Date/Time: 2005 Jan 12 / 22 : 00

End Date/Time: 2005 Jan 13 / 01 : 59

or

Whole catalog

**Start with a search menu to narrow down time range and selected properties.**

### Catalogs

SOHO/LASCO CME Catalog

CME Type

All

Halo

Partial Halo

Halo+Partial Halo

Non-Halo

Visibility

C2 or C3

C2 and C3

At least C2

GOES X-Ray Catalog

Class

Match Type: =

All

Active Region

Enter Active Region #

Search

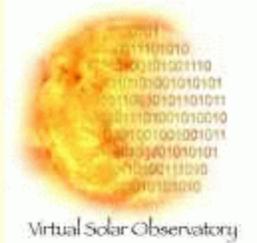
Clear

*SOHO catalog shown as representative test case.*

### Notes

- SOHO/LASCO CME Catalog: This CME Catalog has been compiled by [Seiji Yashiro \(Homepage\)](#) and [Grzegorz Michalek](#) under the guidance of [Nat Gopalswamy](#). Comments or questions about this catalog? Please contact [the authors](#).
- GOES X-Ray Catalog: This catalog is from the [National Geophysical Data Center](#).

# Event lists & VSO — Browse



## VSO Catalog Search Results

### SOHO/LASCO CME Catalog

*Search Params not available*

row Total: 4

Search VSO Help:

**Go**

Summary Terms [\[show\]](#)

Query Menu [\[hide\]](#)

Search Status [\[show\]](#)

Rows Returned [\[show\]](#)

Add/Remove Columns [\[show\]](#)

CheckBox Tools

Select ...?

All Above this box

All Below this box

Just this box

**Select All** **Clear**

<< prev - 1 - next >>

[Sort Only](#) | [Rearrange only](#) | [Sort & Rearrange](#) ?

[Views: All](#) ?

<input type="checkbox"/> First Obs. [UT]	<input type="checkbox"/> Calculated Onset [UT]	<input type="checkbox"/> Central PA [deg]	<input type="checkbox"/> Angular Width [deg]	<input type="checkbox"/> Linear Fit Speed [km/s]	<input type="checkbox"/> 2nd Order Fit Speed [km/s]	<input type="checkbox"/> Acceleration [m/s^2]	<input type="checkbox"/> Measured PA [deg]	<input type="checkbox"/> Halo CME?	<input type="checkbox"/> # of Obs.	<input type="checkbox"/> In C2?	<input type="checkbox"/> In C3?	<input type="checkbox"/> Comments
<input type="checkbox"/> 2002-01-04 09:30:05	2002-01-04 08:58:26	Halo	360	896	1066	-26.1	45	halo cme	10	true	true	
<input type="checkbox"/> 2002-01-08 17:54:05	2002-01-08 17:41:34	Halo	360	1794	1405	81.4	89	halo cme	5	true	true	
<input type="checkbox"/> 2002-01-14 05:35:07	2002-01-14 05:26:06	Halo	360	1492	1230	52.3	246	halo cme	19	true	true	
<input type="checkbox"/> 2002-01-27 12:30:05	2002-01-27 11:58:27	Halo	360	1136	1259	-19.2	312	halo cme	8	true	true	

End up with browse tool. Eventually, this will include graphics for each event.

**Export to Text**

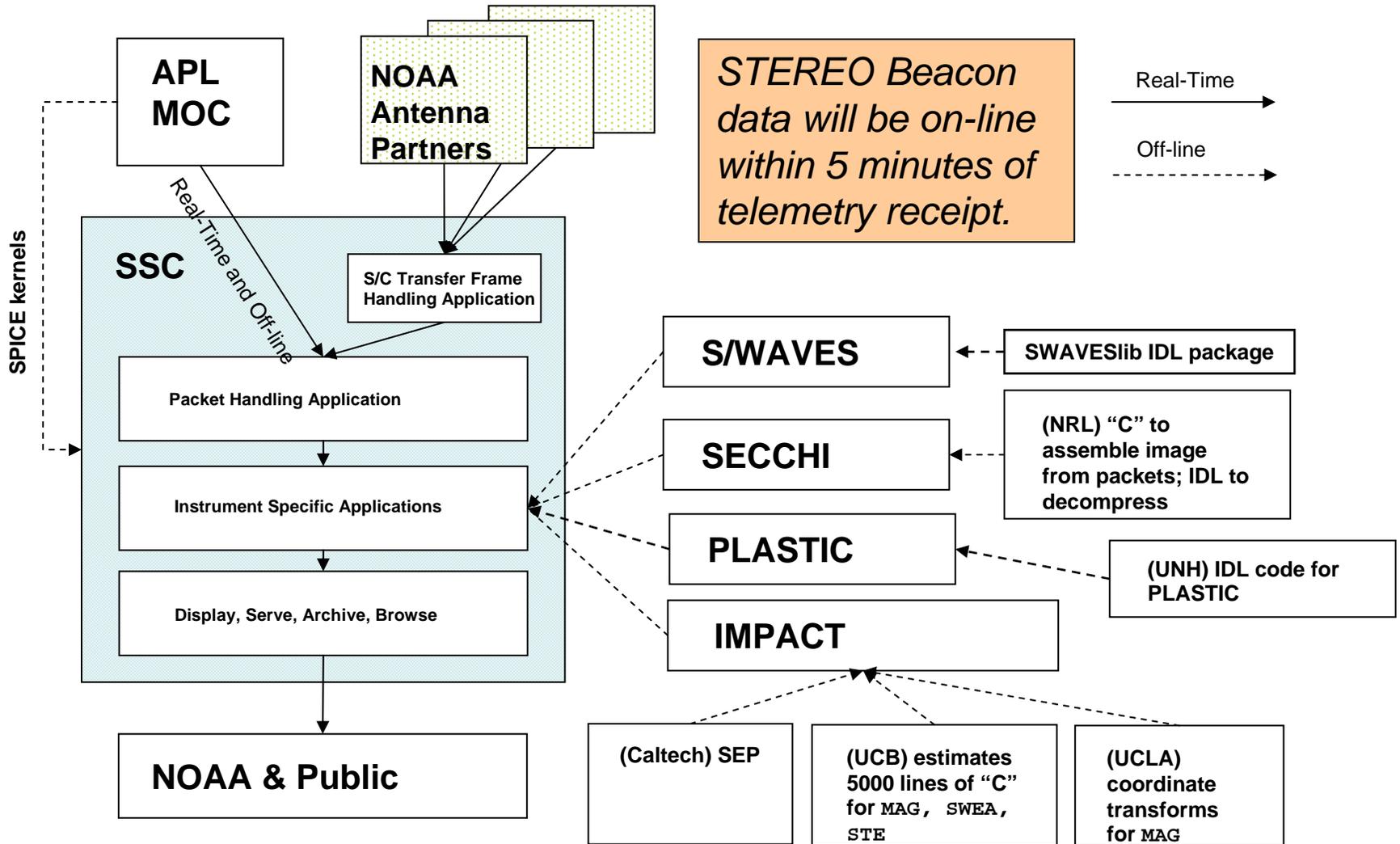
**Search Against Catalog**

**Request Data**

Button goes to search tool for data associated with event.

2:41 PM MST

# Space Weather Beacon Processing



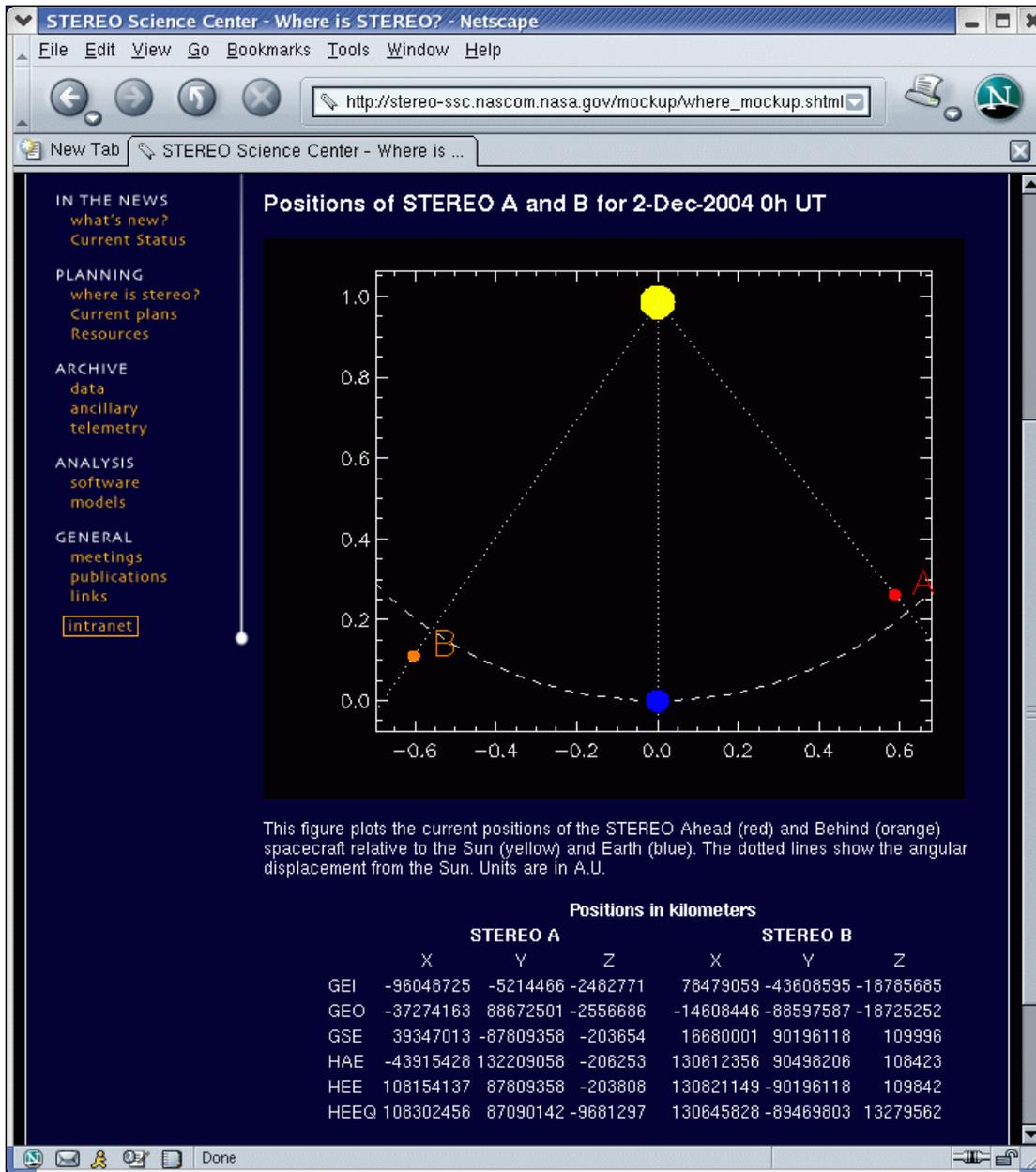
# SolarSoft Example: Latest Events

- Automatically updated page shows latest solar events.
- Shows power of SolarSoft library.
- Planning on using a version of this for displaying recent STEREO data on the web.



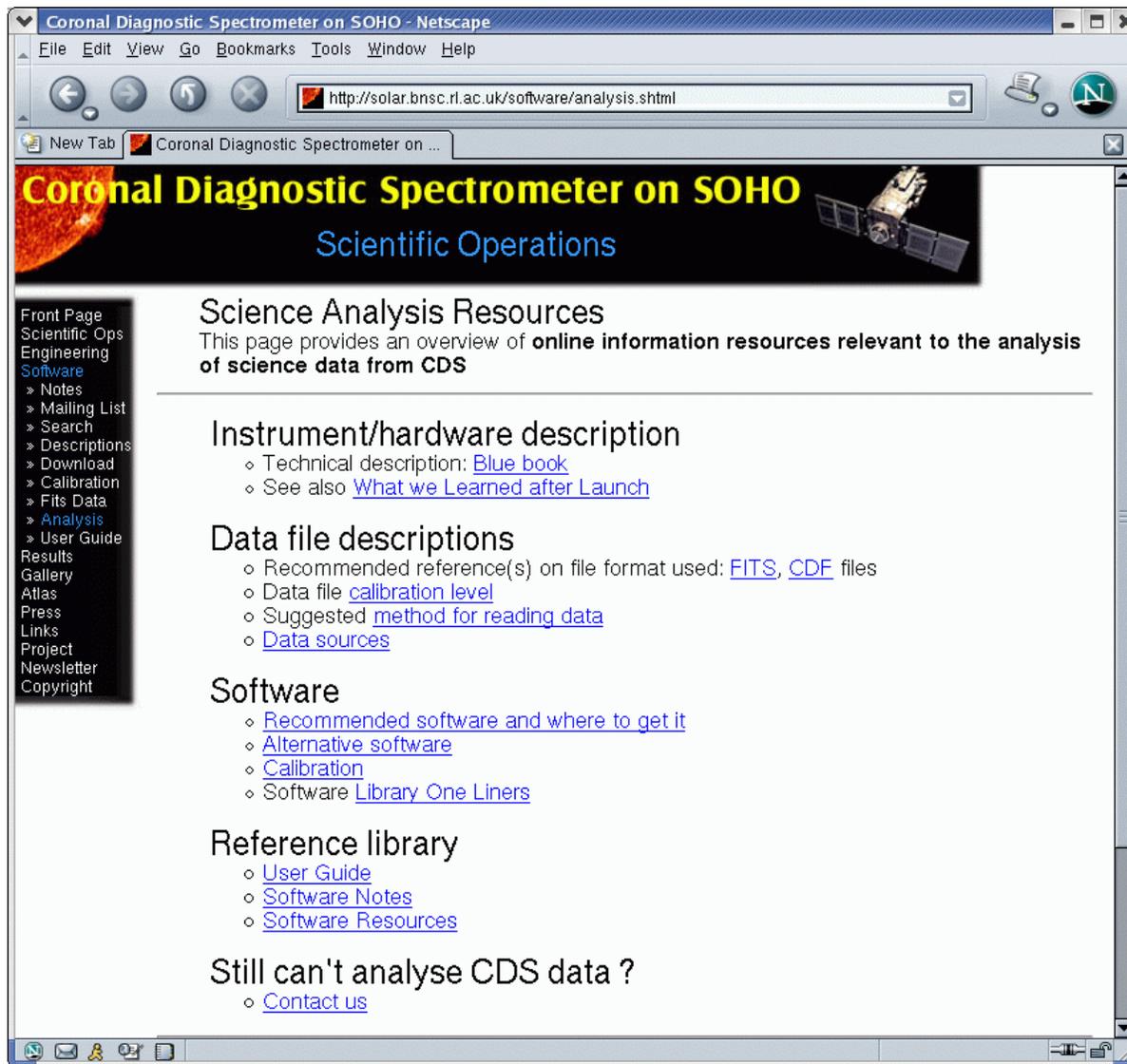
[http://www.lmsal.com/solarsoft/latest\\_events/](http://www.lmsal.com/solarsoft/latest_events/)

## Where is STEREO? Mockup



- Automatically generated using SPICE software.
- Data calculated for today's date in 2007—will reset on January 1<sup>st</sup>
- Updated daily via cron job
- Graphical display of STEREO A, B, Sun, and Earth on ecliptic plane
- Table shows x,y,z positions of STEREO A and B in several standard coordinate systems.

# Instrument Resources Pages

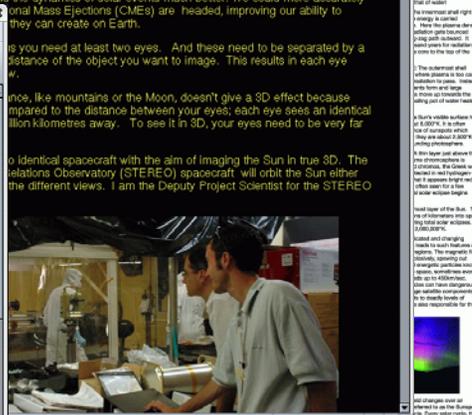
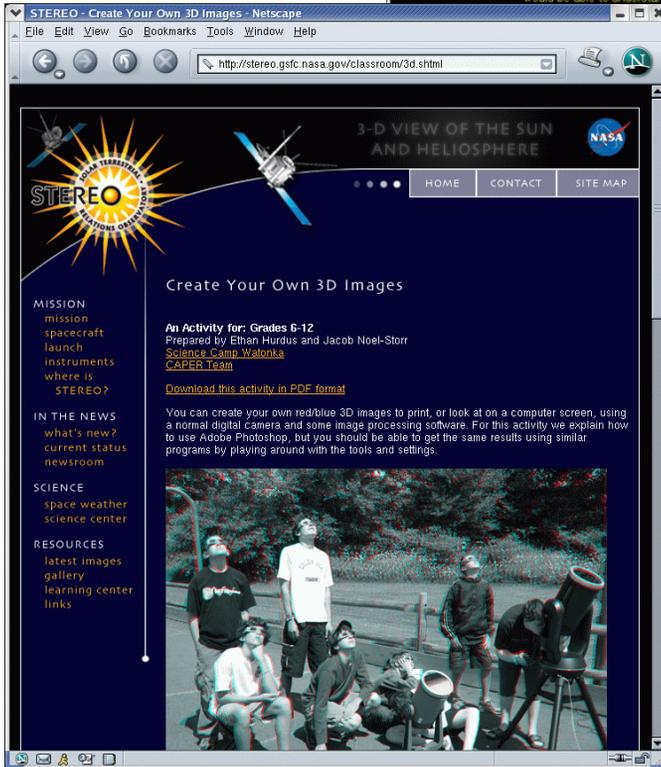
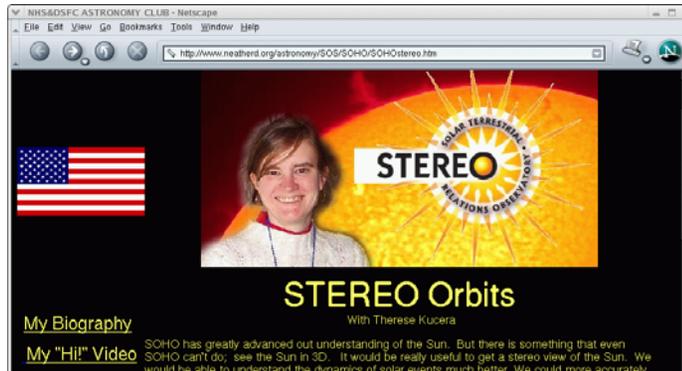


- A useful concept is to have resource pages for each instrument.
- Similar format for each instrument.
- Provides information about file formats, calibration, analysis software, and contact information.
- We ask that each STEREO team provide and maintain such a page.
- See the SOHO pages at the URL below for examples.

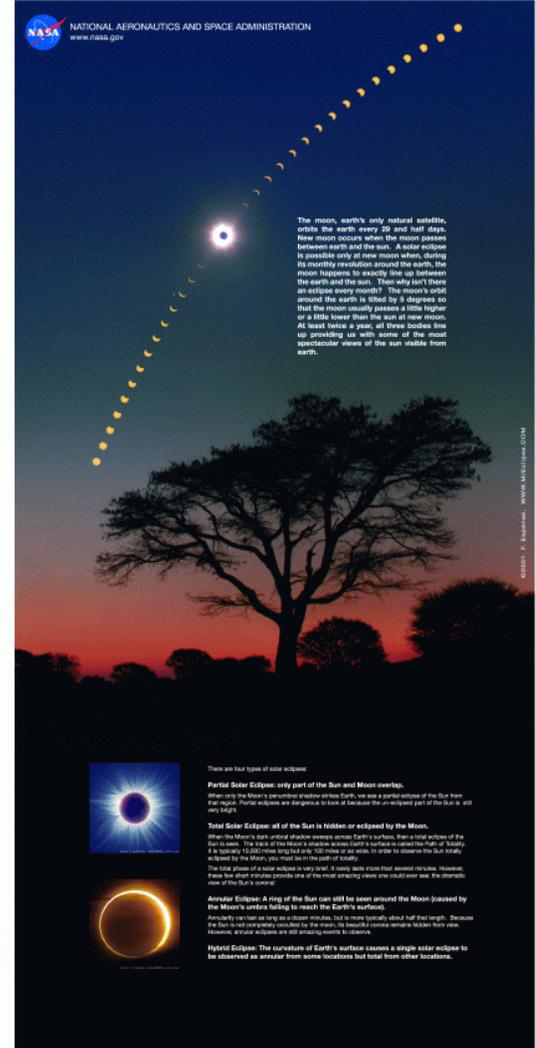
<http://soho.nascom.nasa.gov/mission/instruments.html>

# Outreach Activities

Websites,  
lesson plans



## Posters



# *A Request*

- We would like to put the presentations from this meeting on the STEREO website.
- Please give your presentations to either myself or Mike Kaiser, or mail them to me at

**William.Thompson@gssc.nasa.gov**

