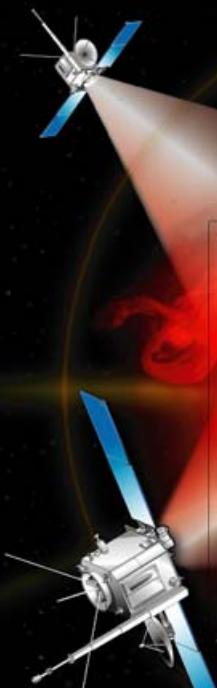




THE SUN LIKE IT'S NEVER  
BEEN SEEN BEFORE!  
..IN 3D..



UNH • UCB • NRL • Obs. Paris • UMN • JHU/APL • NASA GSFC

## STEREO SWG May 2-3, 2005 Hamburg, Germany Agenda items

### May 2

8:30-8:45	Welcome	Kraupe/Bothmer
8:45-9:15	Mission Status	Kaiser/Guhathakurta/Reynolds/Chrissotimos
9:15-11:45	Instrument status	Pls
11:45-12:30	SSC status	Thompson
14:15-17:30	Space Weather beacon	Biesecker/Webb

### May 3

08:30-09:30	NASA/Goddard PAO	Weintraub
09:30-10:00	Stereoscopy/SOHO	Bothmer et al.
10:00-10:30	Stereo visualization	Liewer/DeJong
11:00-12:00	U.S. EPO	Craig
12:00-13:00	Press conference	Kaiser/Pls
14:15-14:30	SECCHI 3-D	Vourlidas
14:30-14:45	3-D reconstruction	Boursier et al.
14:45-15:00	3-D CMEs/ICMEs	Bothmer et al.
15:00-15:15	Multipoint/Imaging	Luhman/Galvin
15:15-15:30	SWAVESstereoscopy	Kaiser
16:00-16:15	Streamer belt sims	Saez et al.
16:15-16:30	Radio/white light	Pick
16:30-16:45	Polar plumes	Llebaria et al.
17:00-17:30	Future meet/summary	Kaiser et al.



# Future Meetings

- STEREO-Solar-B workshop Nov 15-18, 2005 Hawaii
- Launch – spring 2006 at the Cape
- Post-launch meetings (proposal)
  - Semi-annual full SWGs (alternate between US and Europe?)
  - RHESSEI-like topical workshops (~1/year)
    - Overall organizer
    - SOC for specific workshops

**STEREO/Solar-B Workshop  
Turtle Bay Resort, Oahu, Hawaii  
November 15-18, 2005**



[http://sprg.ssl.berkeley.edu/impact/stereo\\_workshop\\_2005/](http://sprg.ssl.berkeley.edu/impact/stereo_workshop_2005/)

## Fifth General Workshop

*June 7-11, 2005*, Locarno, Switzerland

# RHESSI workshops

RHESSI/NESSI3 Topical Workshop on  
*Distribution Functions of Energetic Flare  
Particles*

*March 30 - April 1, 2005*, University of Glasgow, Scotland

## RHESSI/SoHO/TRACE joint workshop

*December 8-11, 2004*, Sonoma, California, USA.

## Fourth General Workshop

*July 25-28, 2004*, Centre International d'Ateliers Scientifiques du Chateau de  
Meudon, Paris, France (after the [COSPAR 2004 meeting](#)).

RHESSI/NESSI2 Topical Workshop on  
*Distribution Functions of Energetic  
Flare Particles*

Solar Flare Physics in the RHESSI Era  
A Series of Workshops

*March 24-26, 2004*, University of Glasgow, Scotland

## Third General Workshop

ACE/RHESSI/WIND joint workshop

*October 6-10, 2003*, Taos, NM [Report](#)

## Second General Workshop

*June 20-21, 2003* in Greenbelt, MD, near Goddard Space Flight Center, after the  
[AAS-SPD meeting](#) in Columbia, MD, from June 16-20. (There will also be a  
special topical session on RHESSI at that meeting.)

RHESSI/NESSI Topical Workshop on  
*Distribution Functions of Energetic  
Flare Particles*

*June 4-6, 2003*, University of Glasgow, Scotland

## **First General Workshop**

*October 17-20, 2002*, Space Science Laboratory at the University of California,  
Berkeley [Report](#)

# STEREO – The Book

Chapter title	Page 'estimation'	Responsibility
Introduction	10	Kaiser et al.
Spacecraft	20	Driesman/Hynes
Orbits	10	Sharer
SECCHI	50	Howard et al.
IMPACT	50	Luhmann et al.
PLASTIC	25	Galvin et al.
SWAVES	25	Bougeret et al.
Modeling	20	Aschwanden
SWx beacon	15	Biesecker/Webb
Ground system	15	Eichstedt/Thompson
Totals	~250	

Goal: Book published by start of operations (summer, 2006)

Therefore: Chapters submitted by December, 2005

# Ulysses Quadratures

- Winter 2007 & Winter 2008 -

- Steve Suess -

In winter 2007 and, again, in winter 2008 Ulysses will undergo *exceptional* quadratures with SOHO and STEREO. They are *exceptional* because they last for 5 months and 6 months, respectively. A SOHO quadrature occurs when the SOHO-Sun-Ulysses included angle is  $90^{\circ}$ . Useful limb observations can be made, with the expectation that the observed plasma will be detected at Ulysses, over approximately one week on either side of the quadrature date. This is because the included angle usually changes by  $\sim 1^{\circ}/\text{day}$  and the extrapolated source for plasma observed at Ulysses is usually no better than  $\pm 7^{\circ}$  at the Sun. During the *exceptional* quadratures, the included angle is  $90^{\circ} \pm 5^{\circ}$  for 5 months in winter 2007, and is  $90^{\circ} \pm 10^{\circ}$  for 6 months in winter 2008. Because of the locations of STEREO A/B relative to the Earth during these times, they are also favorable located for quadrature studies during these intervals.

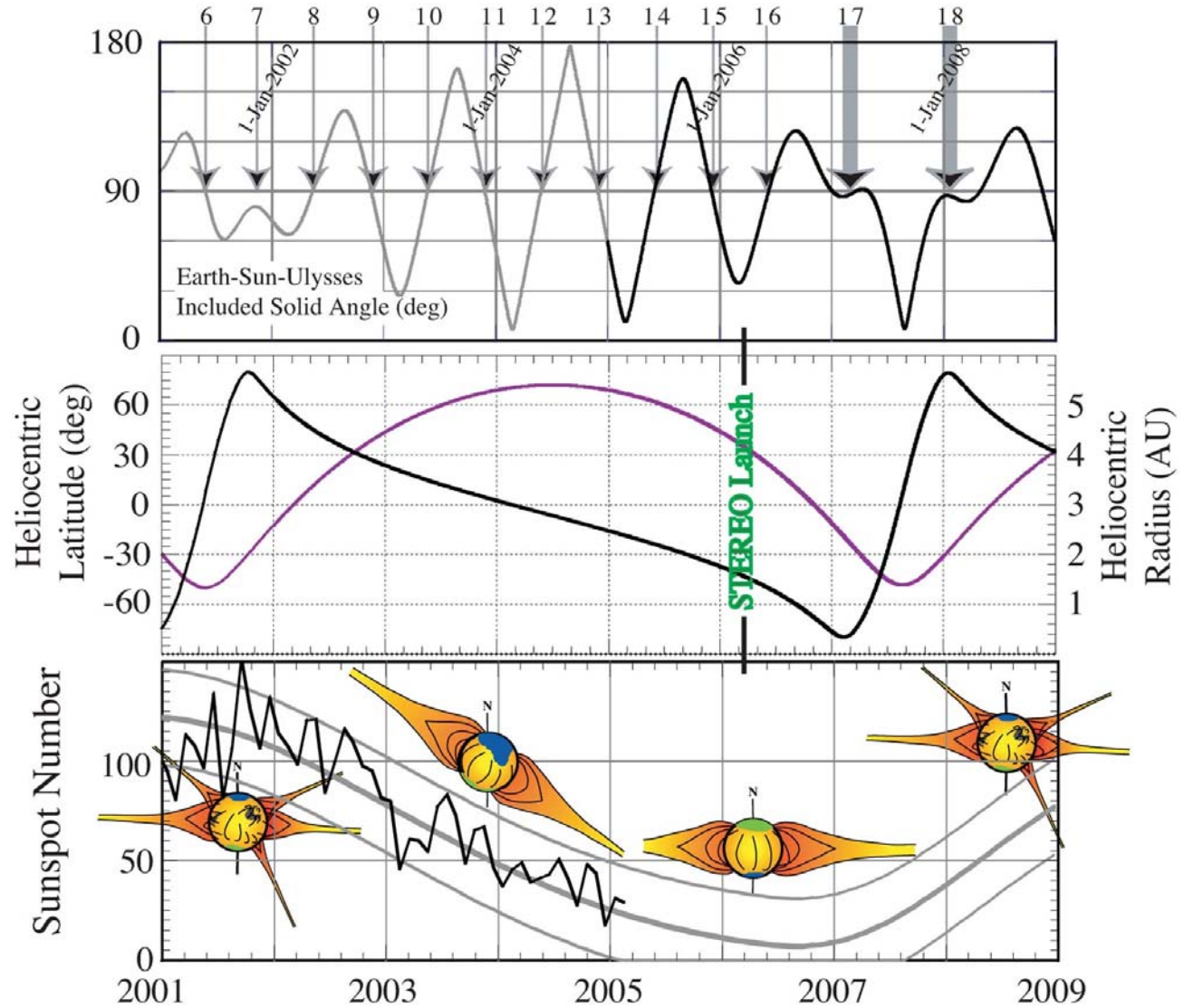
These *exceptional* quadratures are briefly described here, beginning with SOHO and then going on to STEREO.

Shown here are:

Top: The SOHO (or Earth)-Sun-Ulysses included angle. The numbers refer to quadratures starting from the launch of SOHO. #17 and #18 are the *exceptional* quadratures.

Middle: The radius (purple) and heliographic latitude (black) of Ulysses.

Bottom: The sunspot number and predicted sunspot number (*ex. D. Hathaway*) through 2008, along with the typical appearance of the Sun.



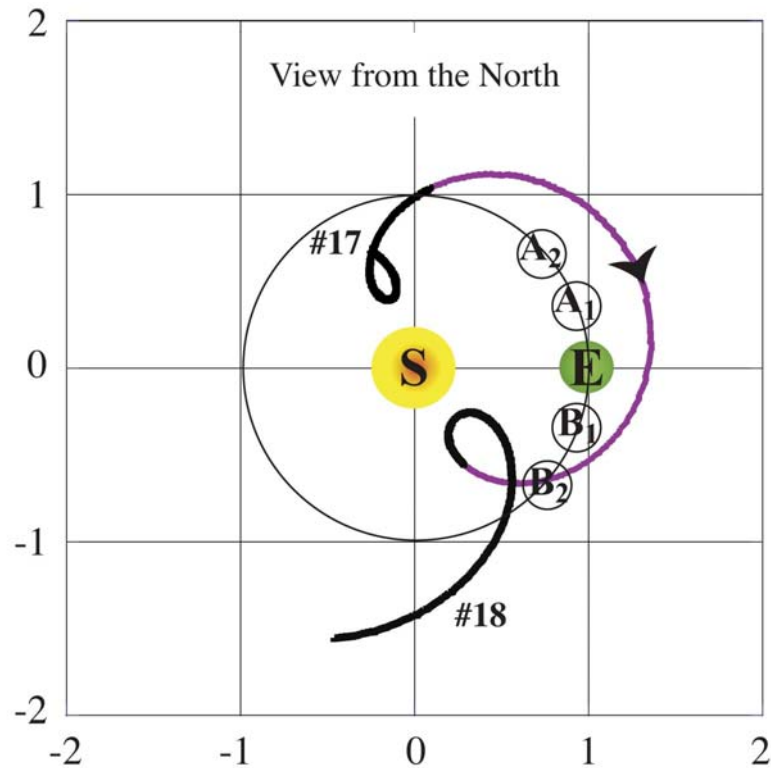


These three panels reproduce the location of Ulysses in an Earth-Sun fixed coordinate system, as shown in the previous panel.

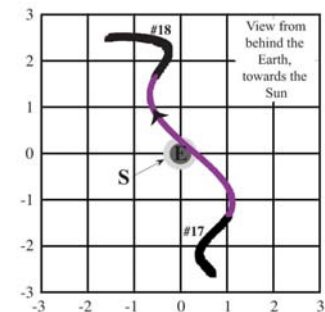
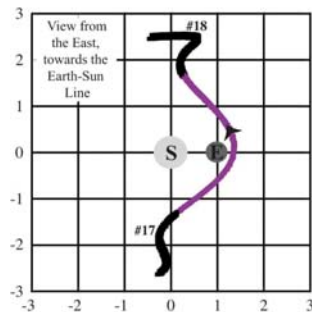
Here, the locations of STEREO A and B are indicated approximately 1 year and 2 years after launch, assuming a launch in February 2006.

Together with SOHO, STEREO A/B will be able to begin, and analyze in detail, quadrature observations in winter 2007, well before STEREO A/B are  $90^\circ$  apart.

In winter 2008, STEREO A/B will be  $60-90^\circ$  apart and well situated for: (i) Three point triangulation of radio bursts using Ulysses. (ii) Widely dispersed + quadrature observations of events directed at Ulysses.



The circled 'A' and 'B' indicate the locations of STEREO A and B spacecraft approximately one and two years after launch, which is expected to be in February 2006. For the winter 2007 quadrature, in which Ulysses will be at high southern latitude, this places Ulysses at a good location for both quadrature observations with STEREO A/B and for three-point radio triangulation of Type II radio bursts.



# Early Spring, 2006



Produced by Johns-Hopkins Applied Physics Laboratory

Launch + ~90 days



Produced by NASA/Goddard Space Flight Center



<http://stereo.gsfc.nasa.gov>