

(1) IHY 2nd Whole Sun Month (the “Whole Heliosphere Interval”)

(2) Ulysses Fast Latitude Scan III (the Winter 2008 Quadrature)

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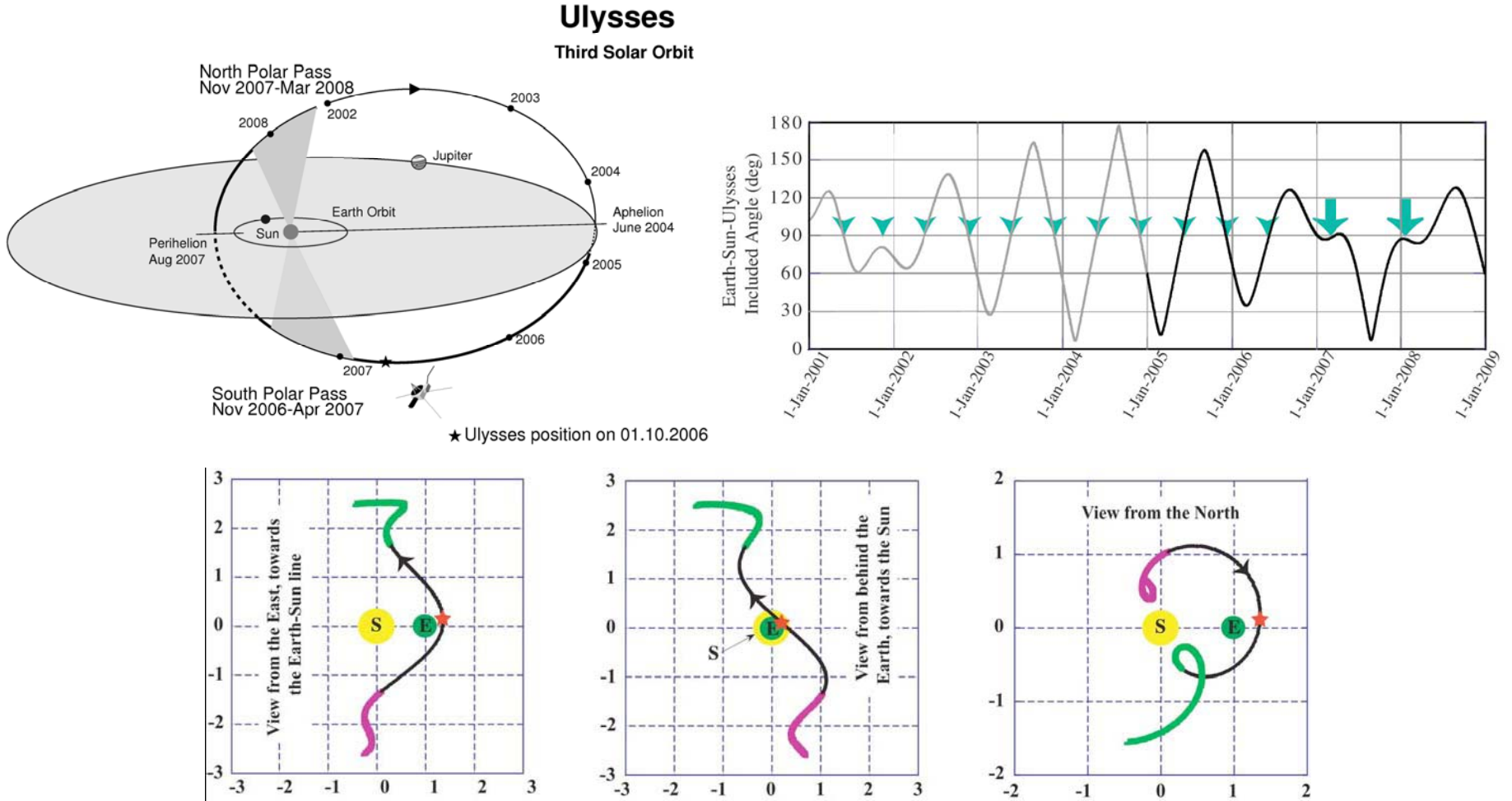
Content:

- Where is Ulysses? (and where will Ulysses be?)
- What is the *Whole Heliosphere Interval* & why is it in Spring 2008?
- Why is Fast Latitude Scan III important?
- Quadratures with Earth/SOHO, STEREO A/B.
- Future radial (or, more accurately, *longitude*) alignments

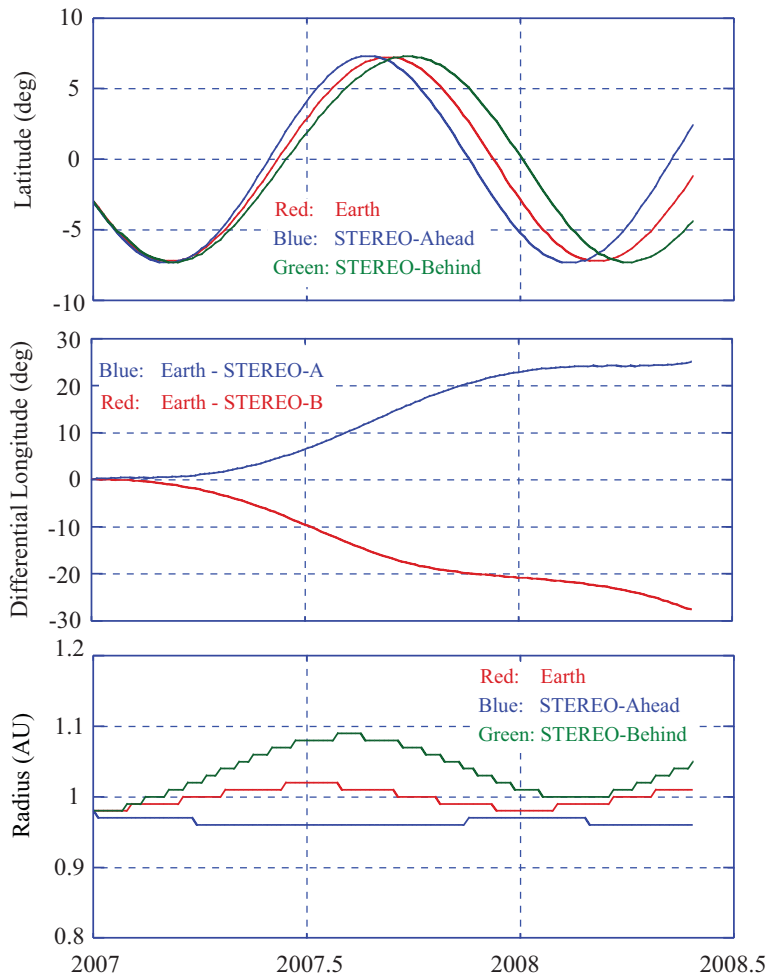
My assigned discussion topics:

- What can STEREO do to support the *Whole Heliosphere Interval*?
- Combining STEREO with other assets/data for FLS III (esp. the winter '08 quadrature)
- In general, what should STEREO do?

from: "Ulysses' Position Angle During the Winter 2007 and Winter 2008 Extended Earth/SOHO-Sun-Ulysses Quadratures *and* Locations of STEREO-Ahead(A) and -Behind(b) Relative to Earth" (Suess & Poletto, avail. as pdf)



Ulysses' motion from 19 December 2006 through 28 May 2008, as viewed in the SOHO(Earth)-Sun fixed frame of reference. Left: viewed from east of the SOHO-Sun line. The red start at the equator crossing shows a radial alignment with Earth. Middle: viewed from behind SOHO, towards the Sun. Right: viewed from above the heliographic equatorial plane. Axis units are AU. Maroon is the winter 2007 quadrature and green is the winter 2008 quadrature.



Relative positions of Earth, STEREO A, and STEREO B. The longitudes and latitudes are in heliographic coordinates. The plots run from 1 January 2007 through 30 May 2008. The Radius plots appears ‘jagged’ because the radius value is only given to two significant figures after the decimal at the GSFC web site I used:

<http://cohoweb.gsfc.nasa.gov/helios/heli.html>

The document “Ulysses’ Position Angle During the Winter 2007 and Winter 2008 Extended Earth/SOHO-Sun-Ulysses Quadratures and Locations of STEREO-Ahead(A) and -Behind(b) Relative to Earth” has these numbers in *tabular form*, in addition to the plots shown here.

I will shortly (in a few weeks) add listings of the quadratures and *longitude* alignments through 2010/2011 with:

STEREO A
 STEREO B
 Earth/SOHO

In doing this, I will calculate the *included angle*, rather than just finding the longitude difference.



Whole Heliosphere Interval

Originating from Carrington Rotation 2068

March 20 - April 16, 2008

(from Sarah Gibson)

What is WHI?

Internationally coordinated **observing and modeling** effort

What are WHI's science goals?

- Characterize the **3-D solar minimum heliosphere**
- **Trace** the effects of **solar structure and activity** through the **solar wind** to the **Earth** and **other planetary** systems

How does it work?

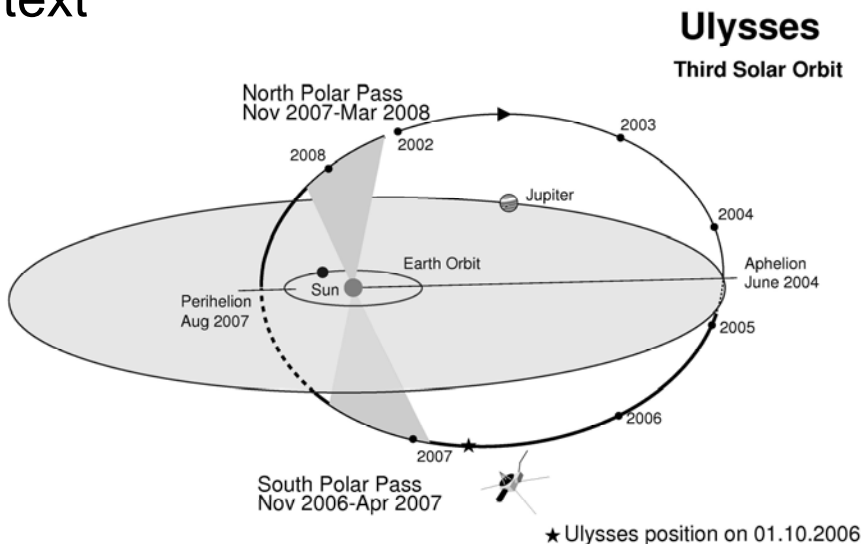
- Will involve **ground- and space-based** observations
- From the **solar interior** to the **heliopause**
- **Synoptic observing programs** will provide baseline measurements
- **Targeted observing campaigns**: day-to-day coordinated observations
- **Modeling and connecting observations** post-WHI via **web and workshops**



Whole Heliosphere Interval

Why is it timely?

- **International Heliophysical Year**
- One solar cycle after **Whole Sun Month**
- **Solar minimum** with new observational and modeling capability
- **Ulysses** in extended quadrature!
- **STEREO A/B** are available to do the solar context and help with the 1AU context



How to get involved?

<http://ihy2007.org/WHI/WHI.shtml>

Synopsis:

- STEREO A/B, Ulysses, SOHO, ... play well together from last summer through May 2008 in terms of being well-positioned *relative to each other* for studying large scale heliospheric processes.
 1. Earth/SOHO/ACE/Cluster - Ulysses radial alignment in August 2007
 2. The extended winter 2008 quadrature with Ulysses' limb position bracketed between SOHO and STEREO A and then B.
 3. The *Whole Heliosphere Interval* to characterize the state of the heliosphere by taking advantage of these and other parts of the well-positioned Great Heliosphere Observatory (esp. Voyagers 1/2 and IBEX).
- With the multiple locations in heliolongitude of Earth/SOHO/ACE, Ulysses, and STEREO A/B, there will be *many* opportunities to study the structure of propagating transients in the heliosphere.
- Ulysses is funded through March 2008 (possibly through March 2009) and is taking part in the Senior Review.
- Ulysses will reach aphelion and return to the heliographic equator in early 2010.

Suggested discussion topics:

- What can STEREO do to support the *Whole Heliosphere Interval*?
- Combining STEREO with other assets/data for FLS III (esp. the winter '08 quadrature)
- In general, what should STEREO do?