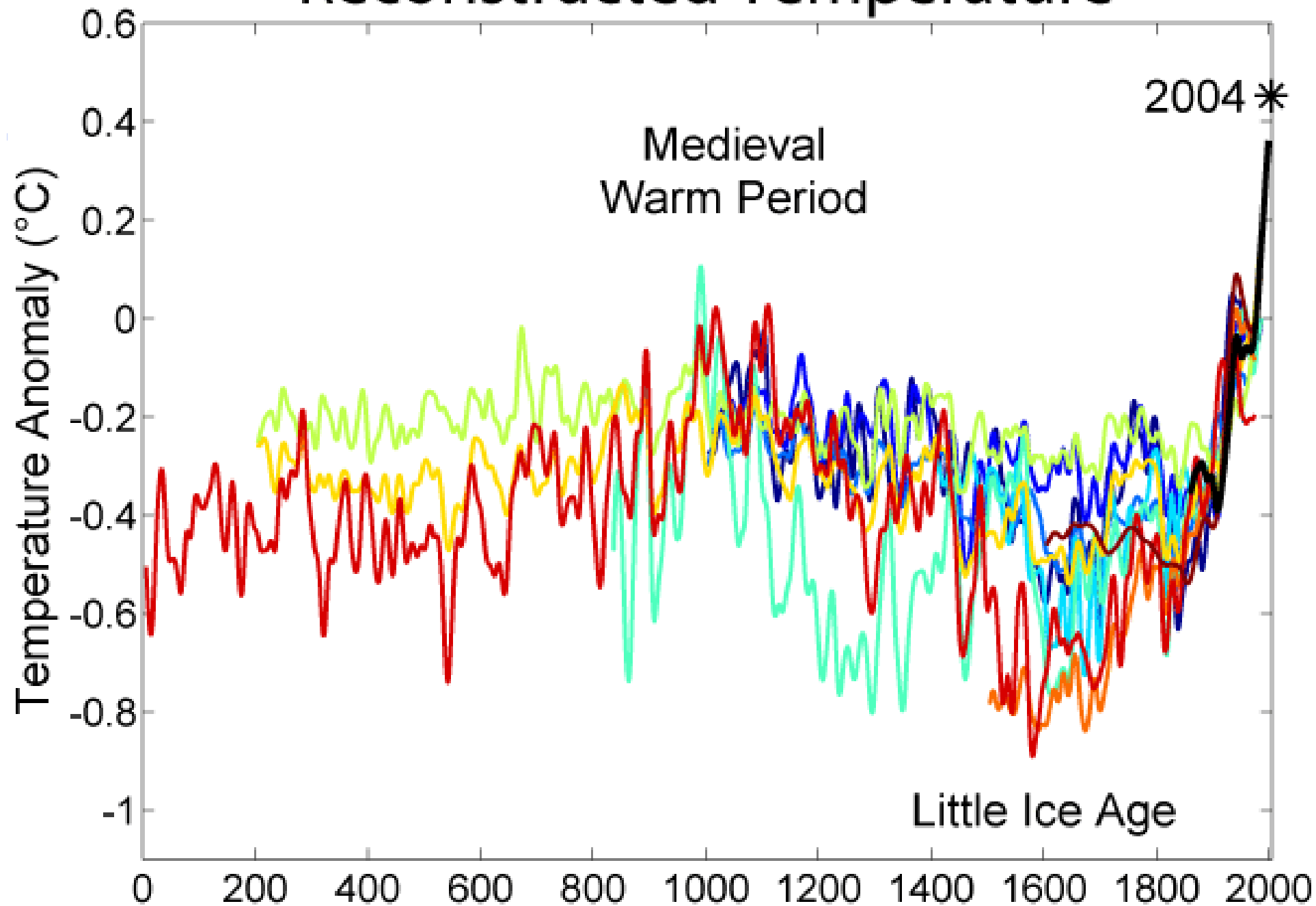

First Results of the Sova-Picard TSI Instrument

Steven Dewitte

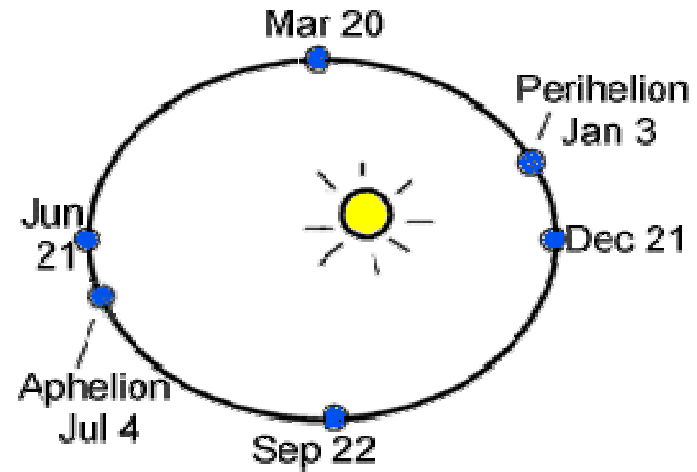


Picard science committee, Paris, 28/11/2011

Reconstructed Temperature

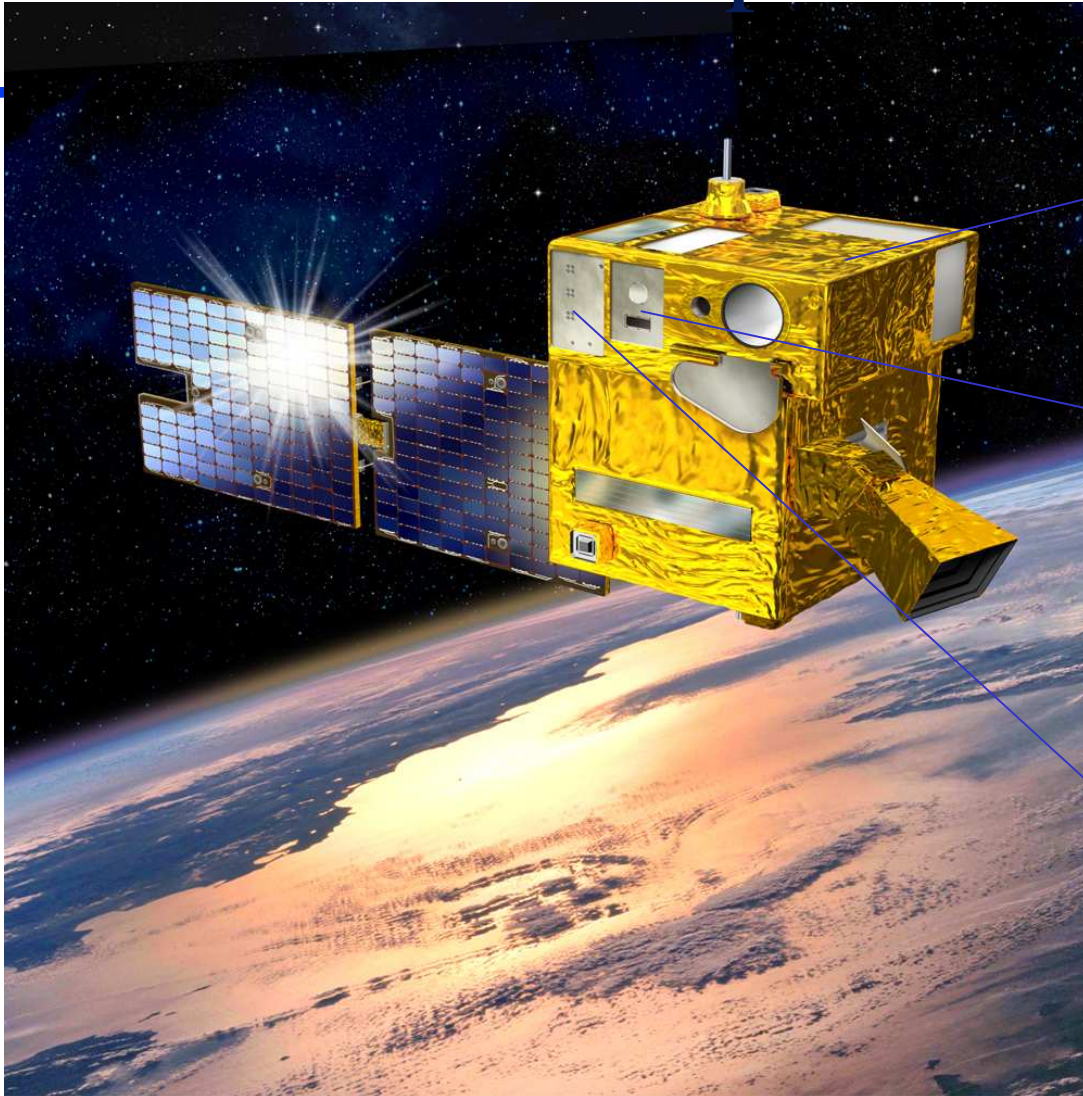


Picard : a pioneer astronomer



Picard science committee, Paris, 28/11/2011

Picard: a new space mission



© CNES - Mars 2008 // Illustration D. Ducros

◆ SODISM (CNRS – LATMOS)

- Imaging telescope

◆ SOVAP (RMIB)

- Radiometer
- Bolometric sensor (ROB)

◆ PREMOS (PMOD)

- Radiometer
- Photometer

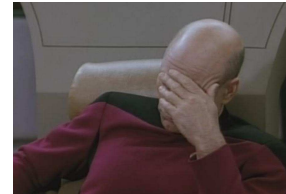
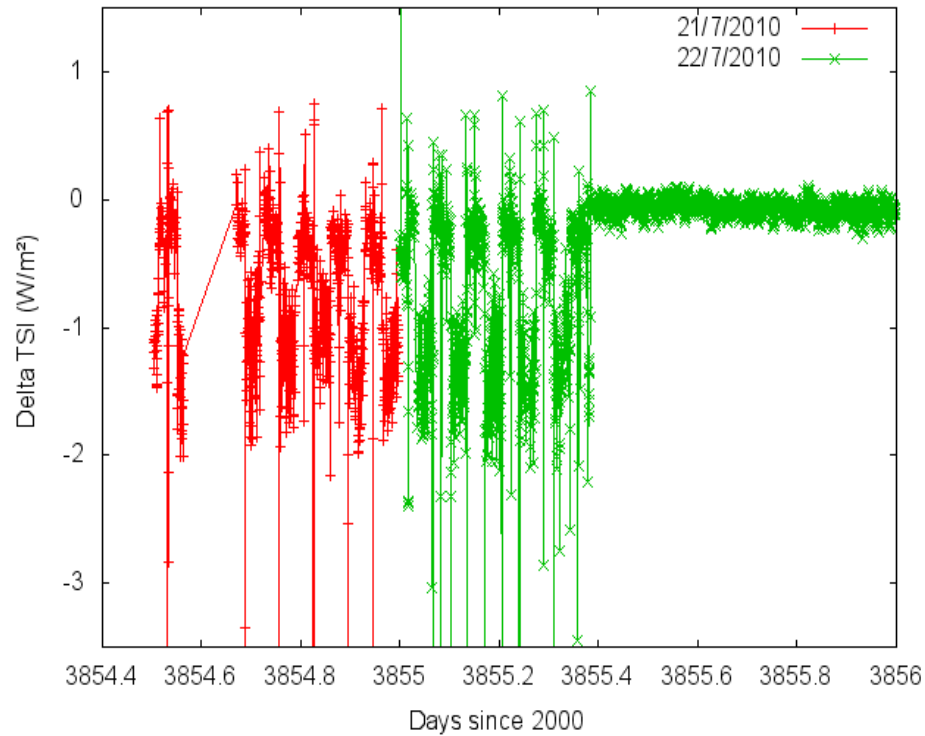
Picard science committee, Paris, 28/11/2011

Picard: the commander waits for the first results ...



Picard science committee, Paris, 28/11/2011

First solar measurements Sovap

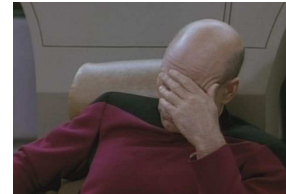
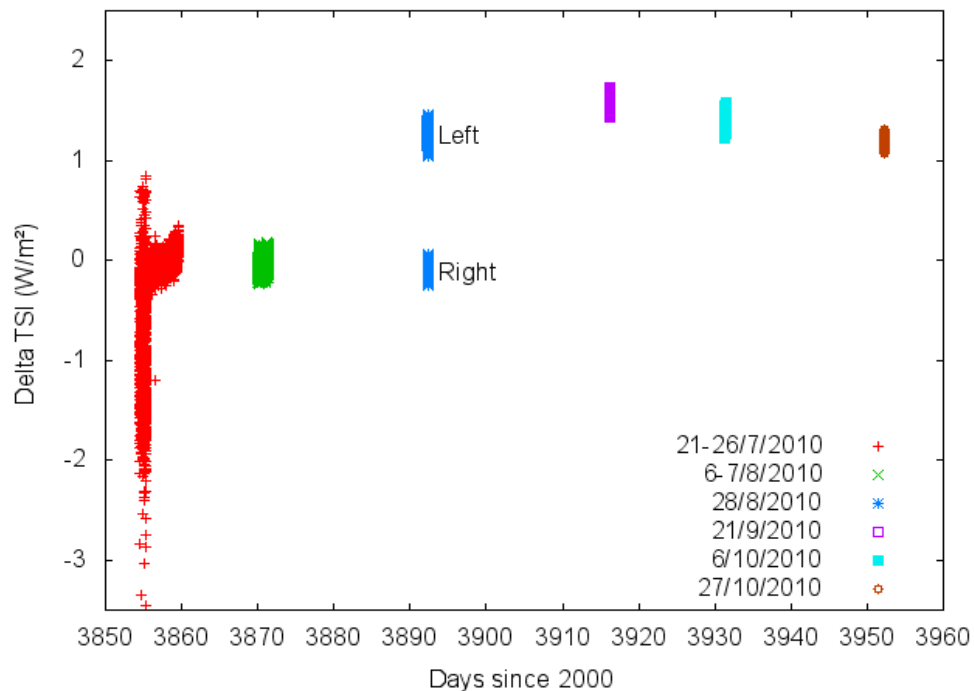


Huge variations due to bad pointing.



Good measurements in fine pointing mode

Sovap 21/7-27/10/2010



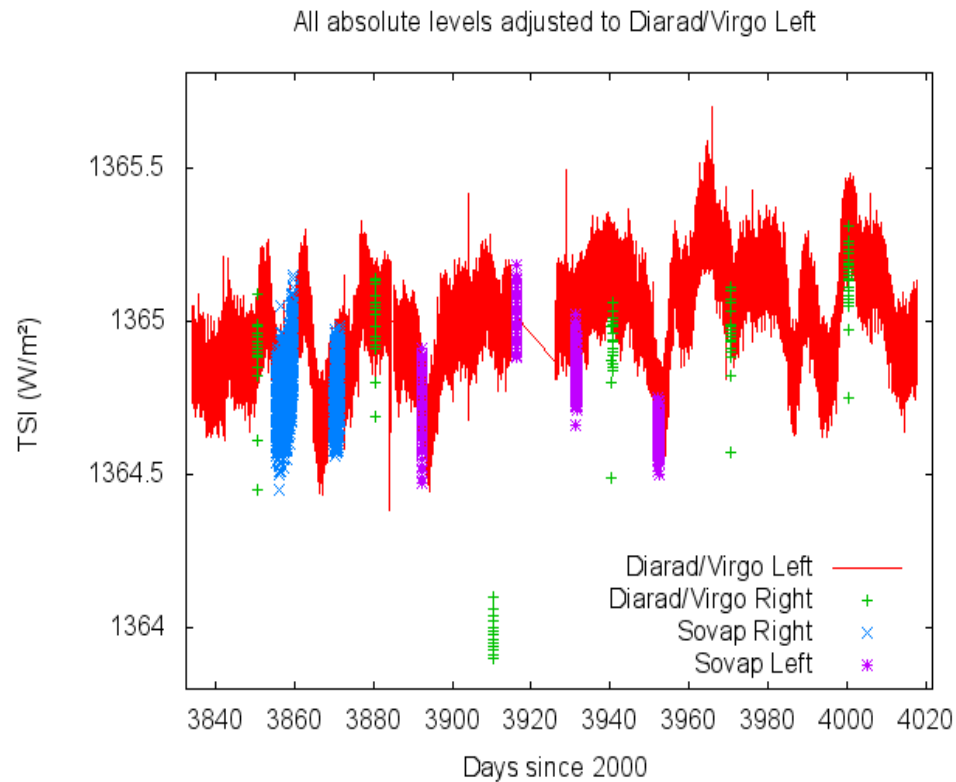
Right channel seems lost.



Long term variation
TSI still measured
with left channel.

Picard science committee, Paris, 28/11/2011

Comparison Sovap Diarad/Virgo



Same TSI variations
are measured.

Picard science committee, Paris, 28/11/2011

Permanent opening right shutter

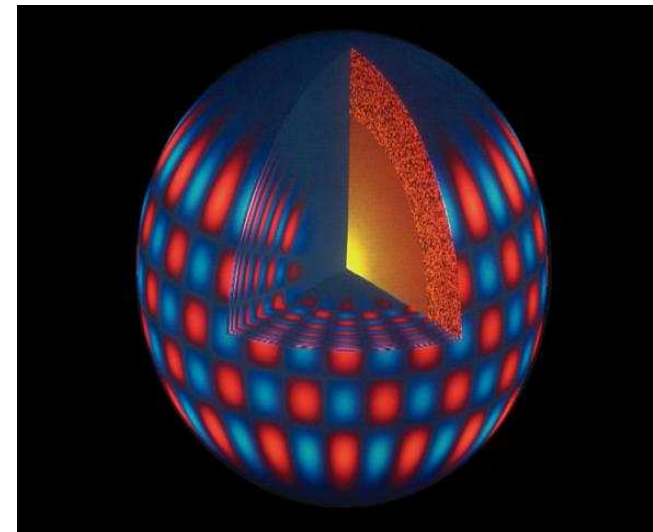
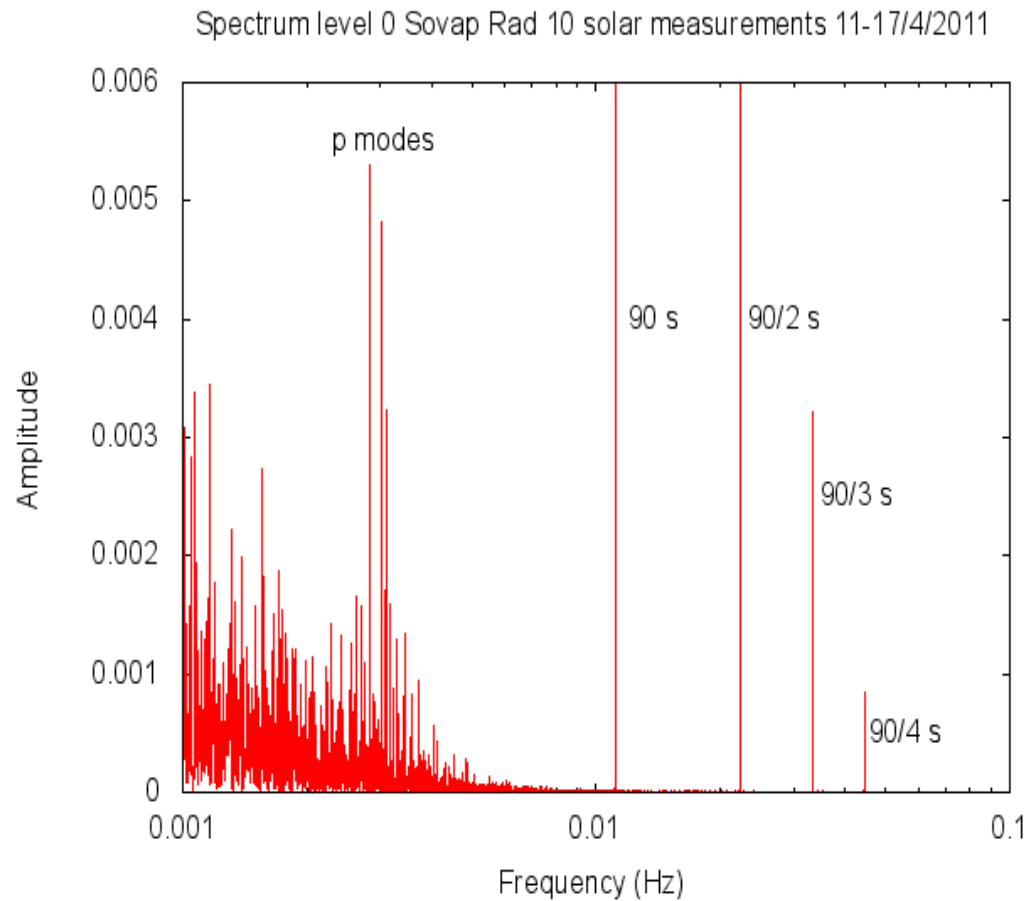
18/11/2010



Time resolution
improved from 3
minutes to 10
seconds.

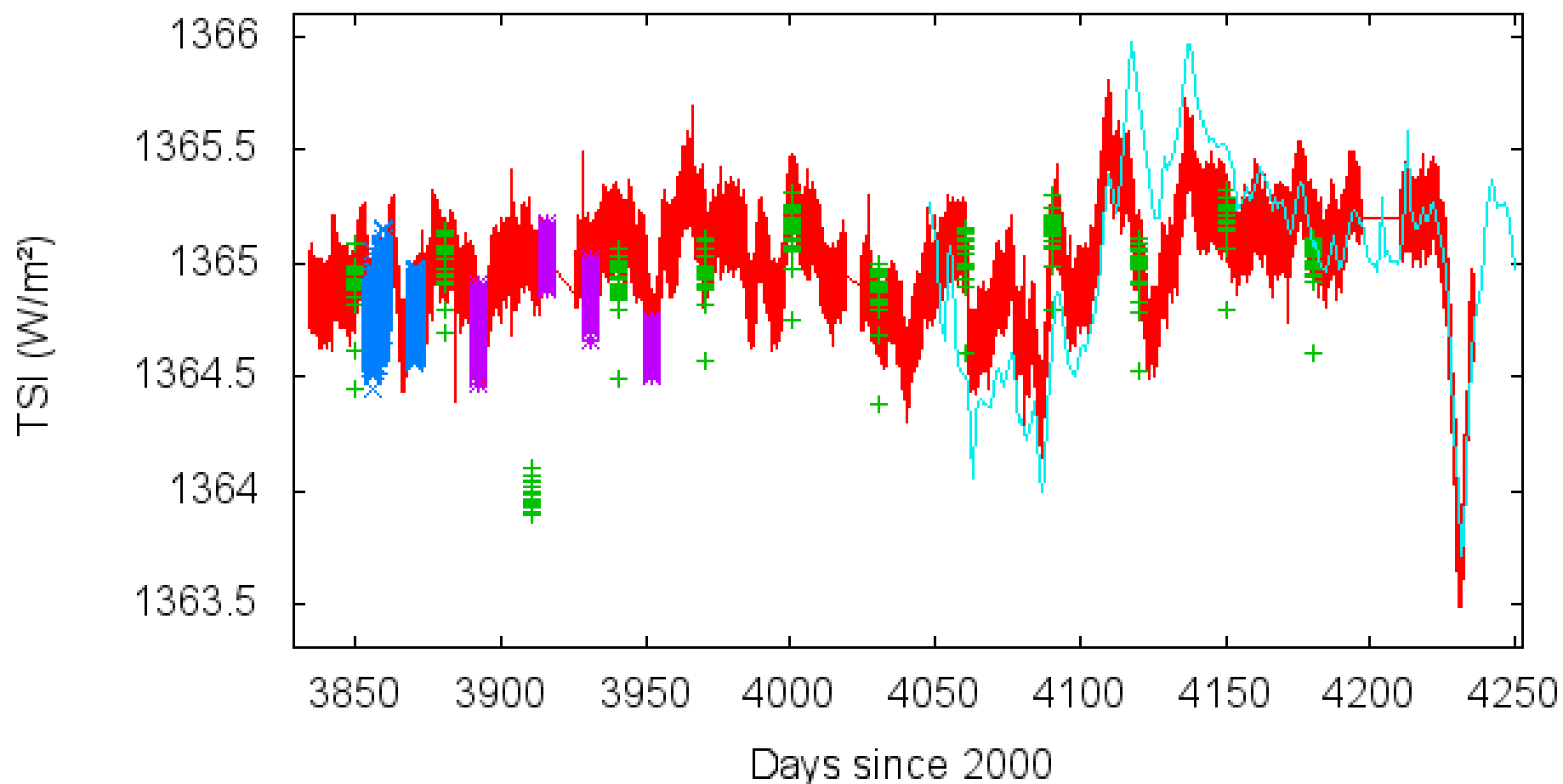
We can measure p
modes.

Sovap spectrum 11-17/4/2011

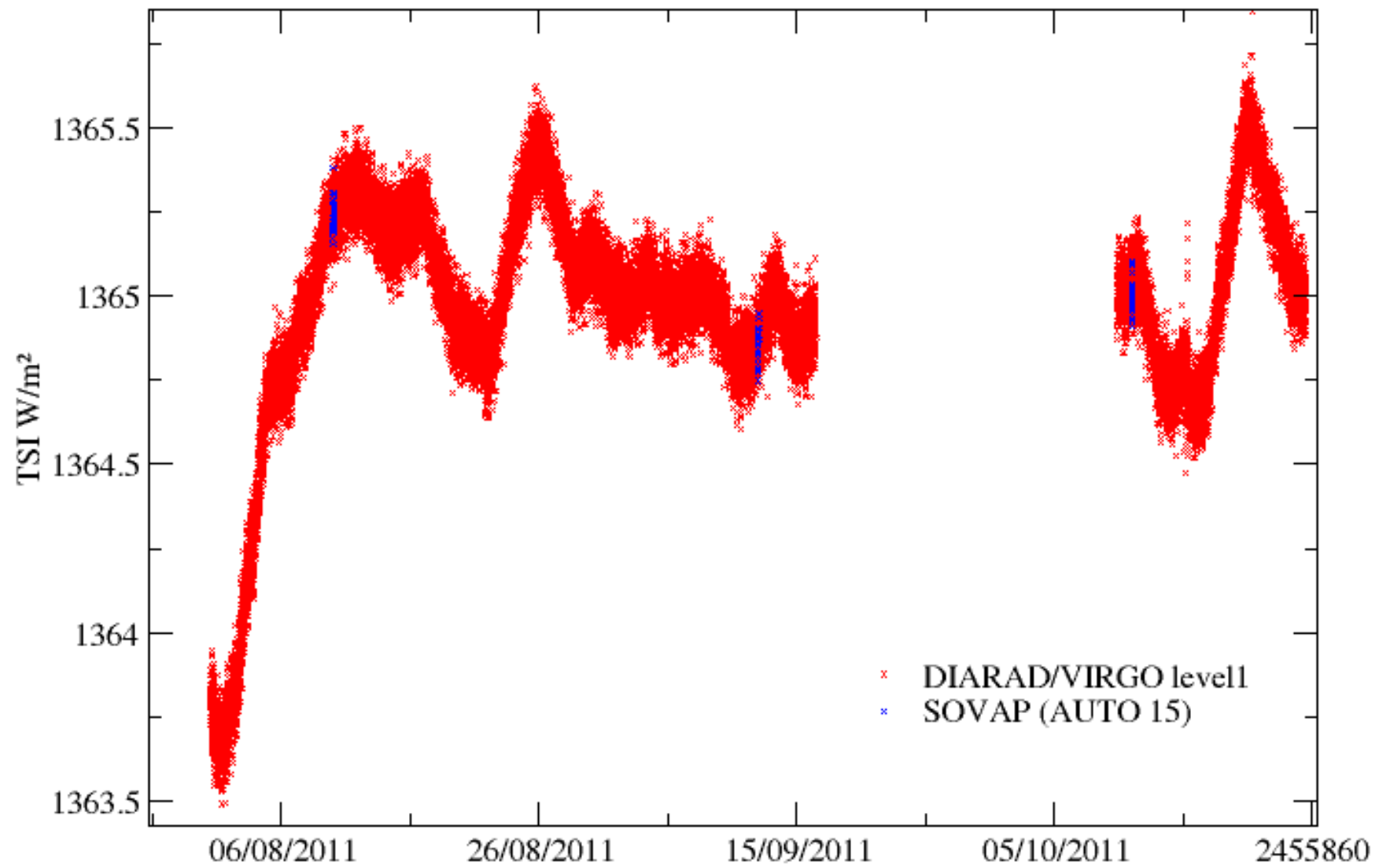


Picard science committee, Paris, 28/11/2011

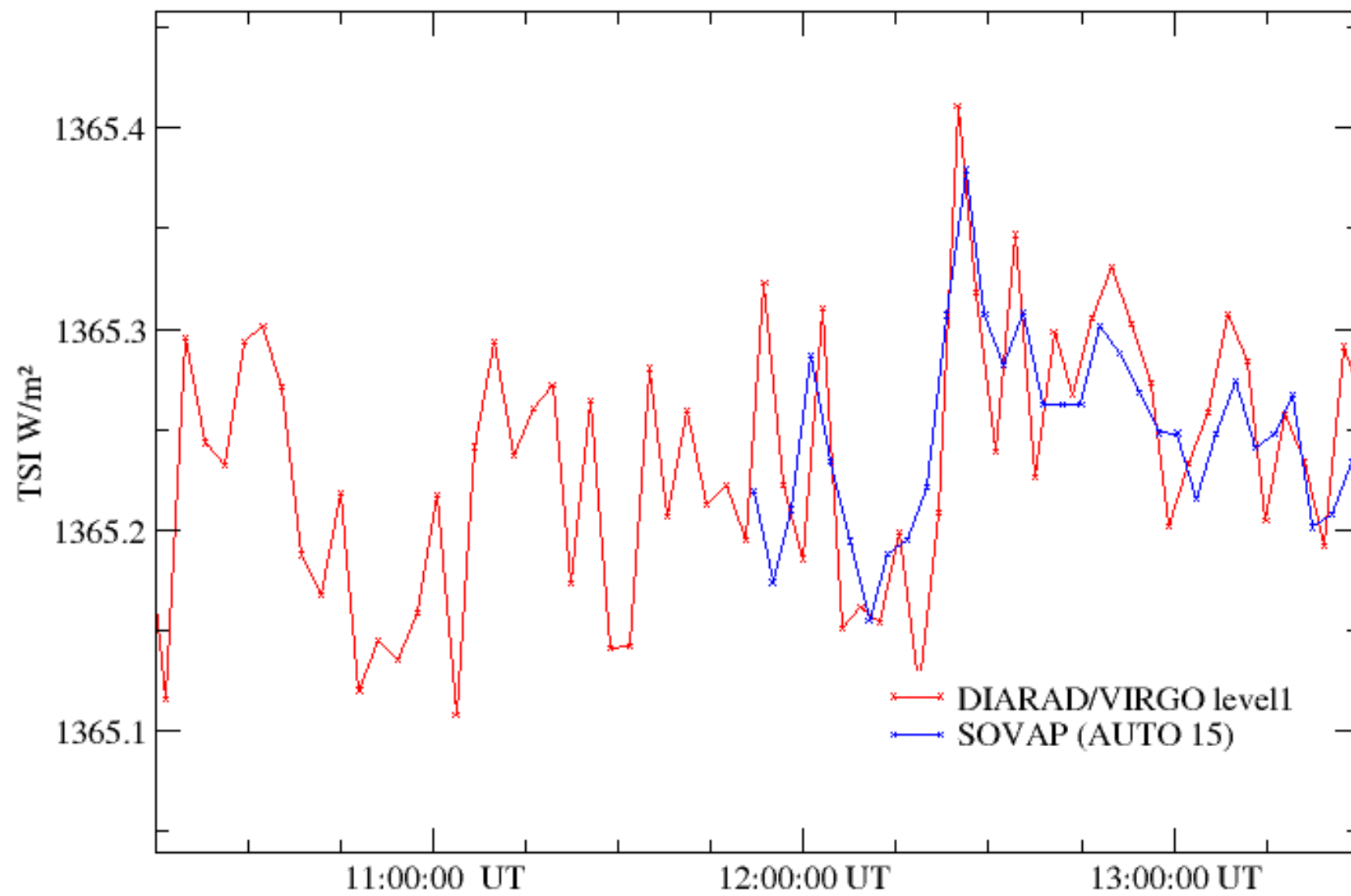
All absolute levels adjusted to Diarad/Virgo Left



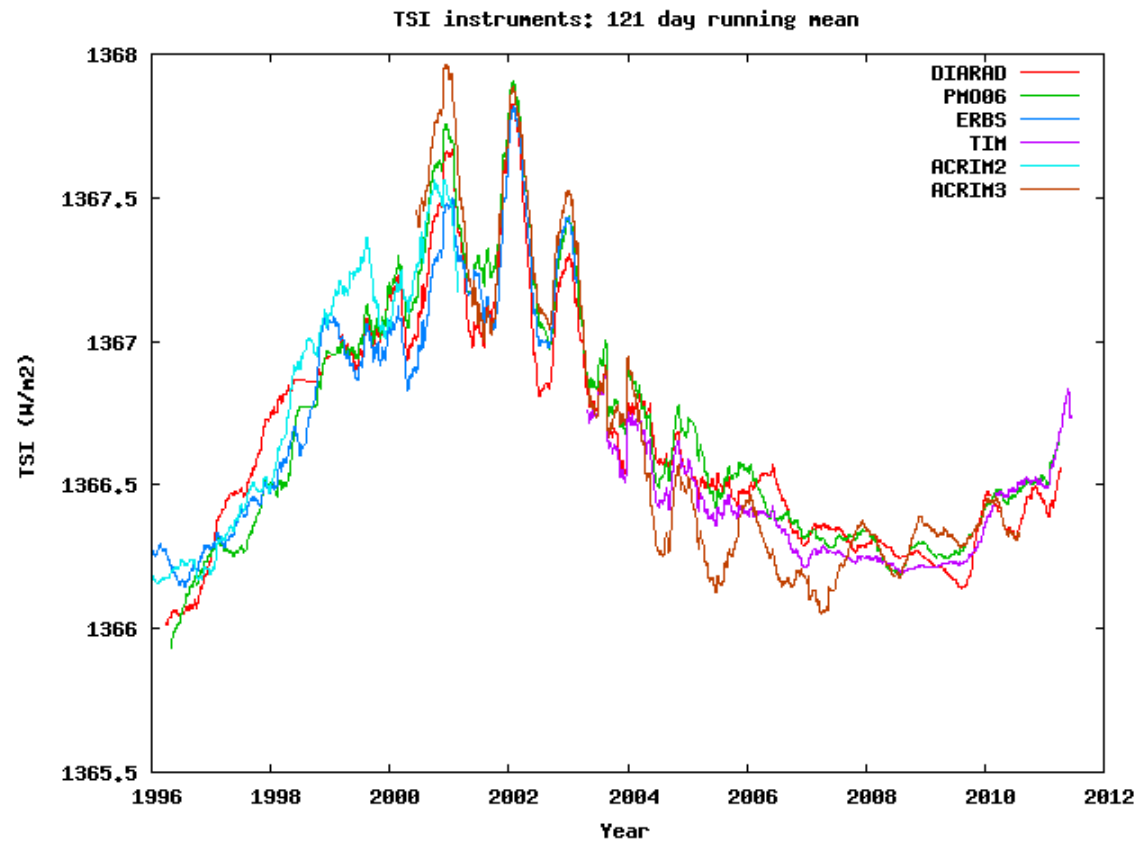
- Diarad/Virgo Left —
- Diarad/Virgo Right +
- Nominal Sovap Right x
- Nominal Sovap Left *
- Preliminary continuous Sovap right (daily mean) —



10 August 2011

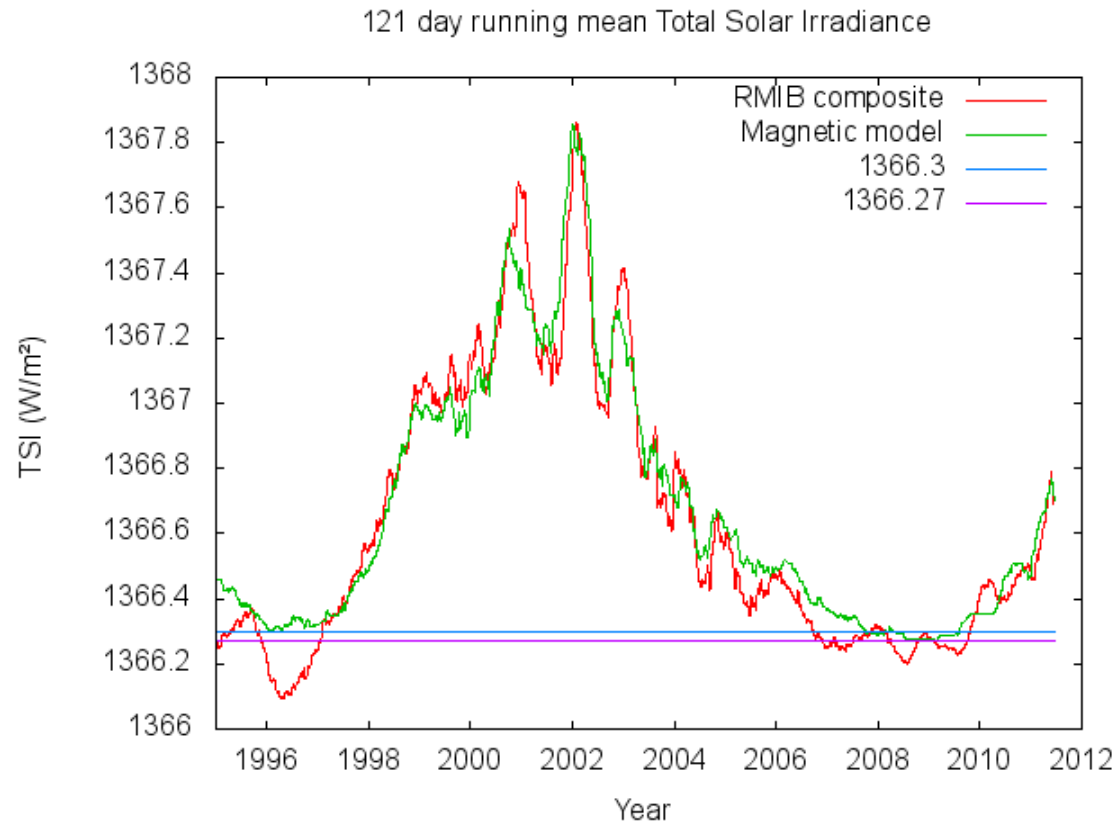


Update on cycle 23 TSI variations



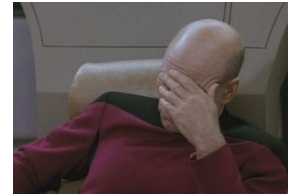
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TSI change after long minimum



Picard science committee, Paris, 28/11/2011

BOS observations



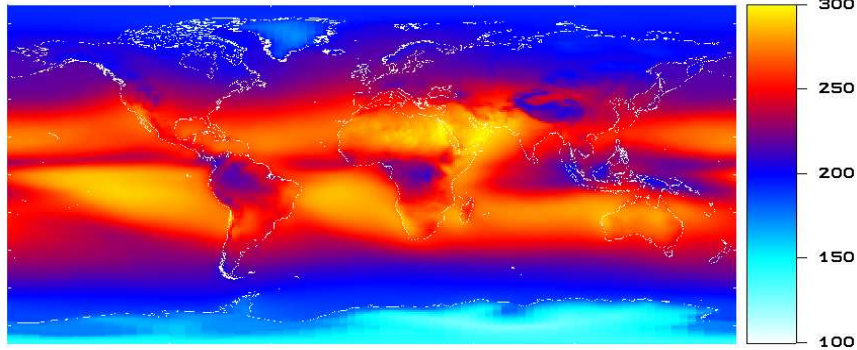
The earth is in the field of view.



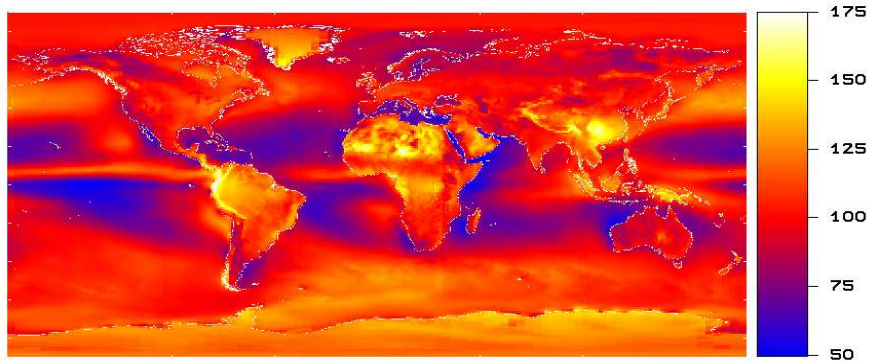
Let's use this to calibrate the earth with the sun.

W/m²

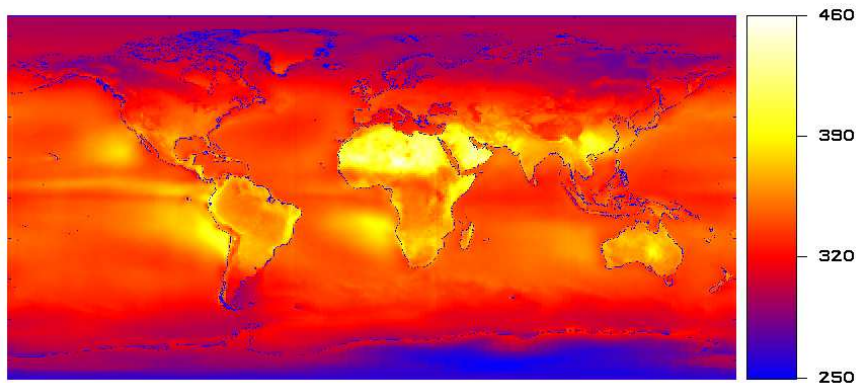
Earth radiation
(annual mean)



Emitted thermal



Reflected solar

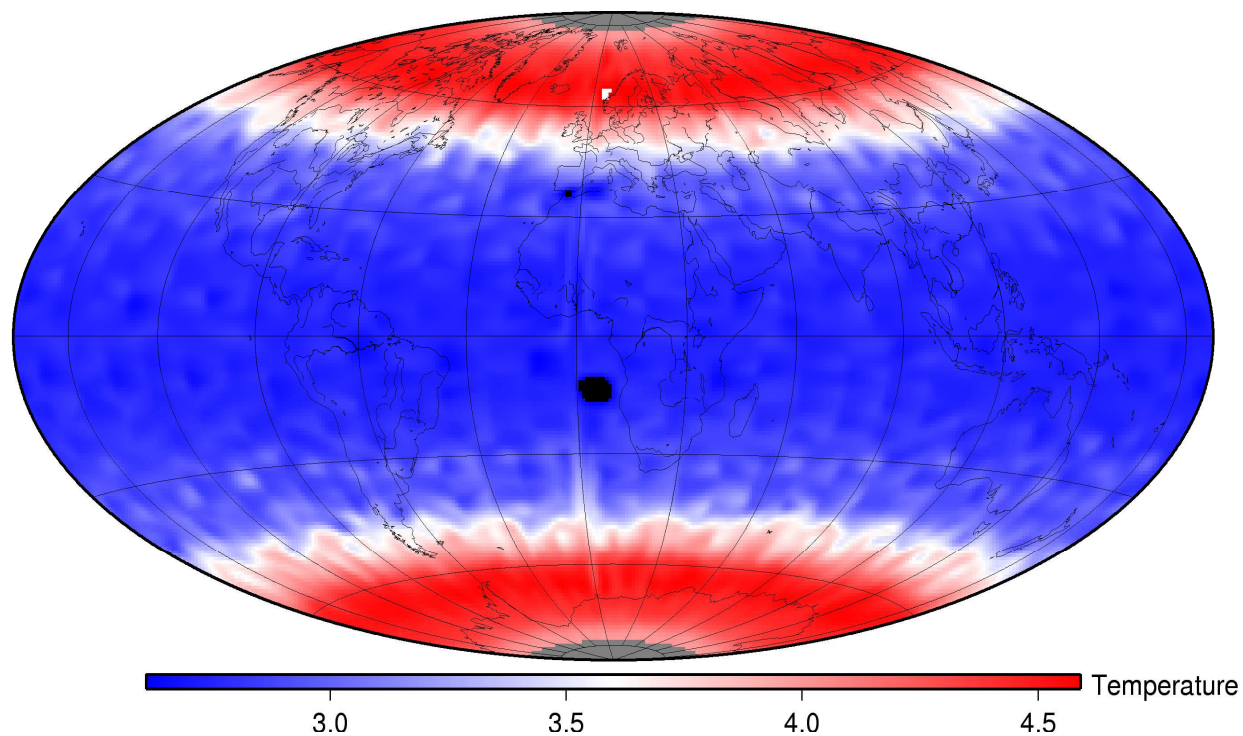


Total outgoing

28/11/2011

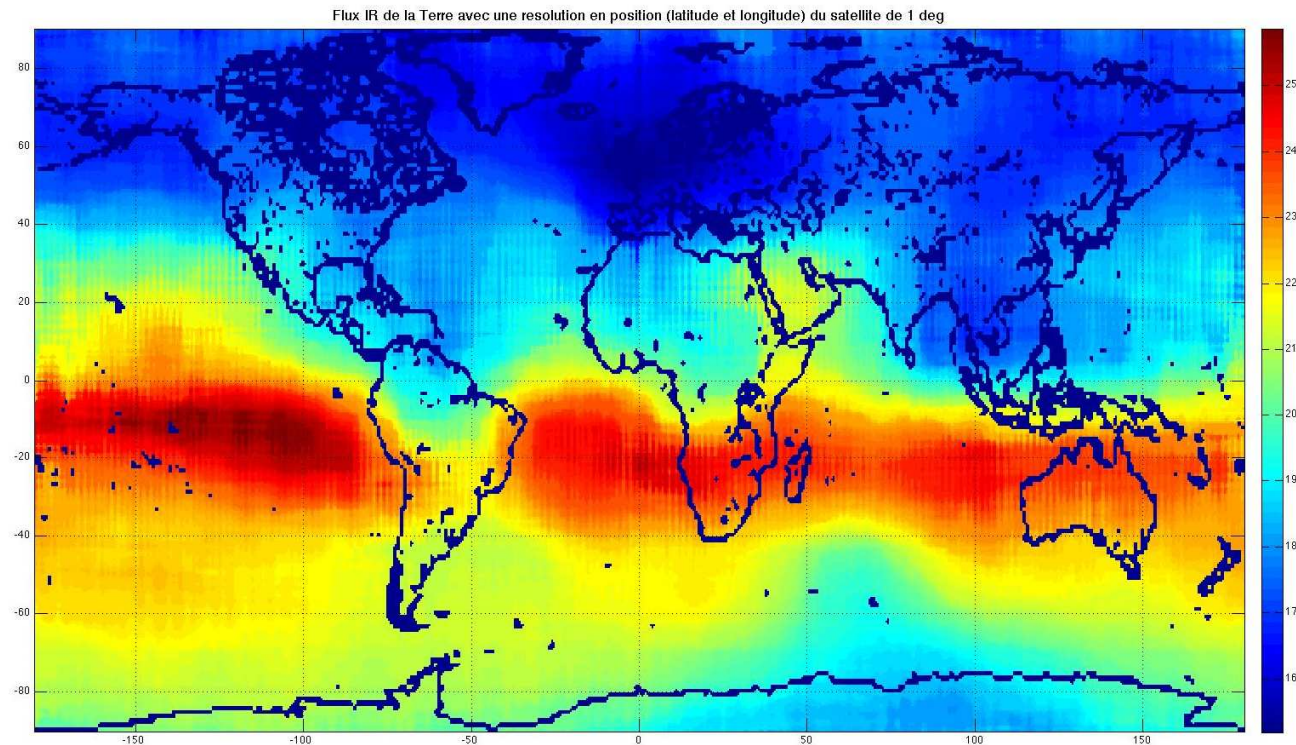
BOS measurements

Tblack-Twhite Feb. 2011



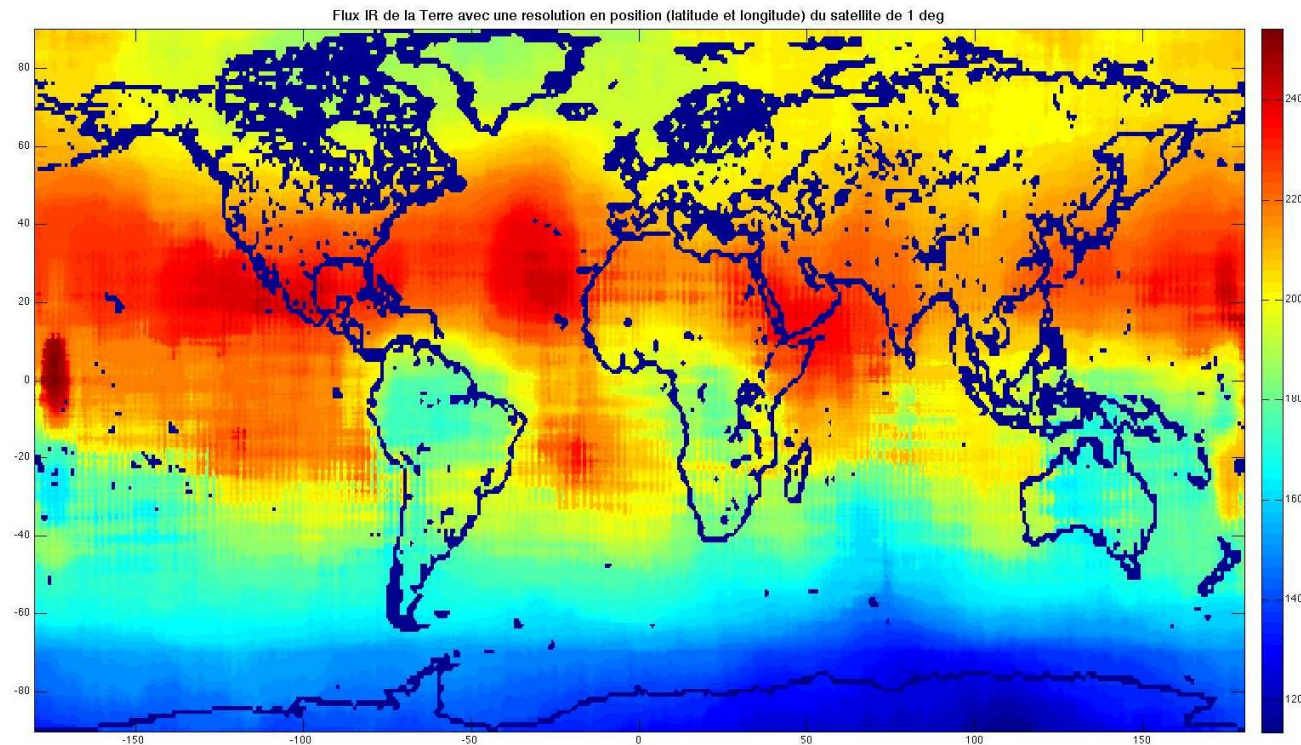
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Map with SODISM earth sensors (NH winter)




Picard science committee, Paris, 28/11/2011

Map with SODISM earth sensors (NH summer)



Picard science committee, Paris, 28/11/2011



This is not the end, it is the beginning.