

# HelioViewer@



Frédéric Baudin  
Éric Buchlin  
Pablo Alingery  
and the MEDOC team

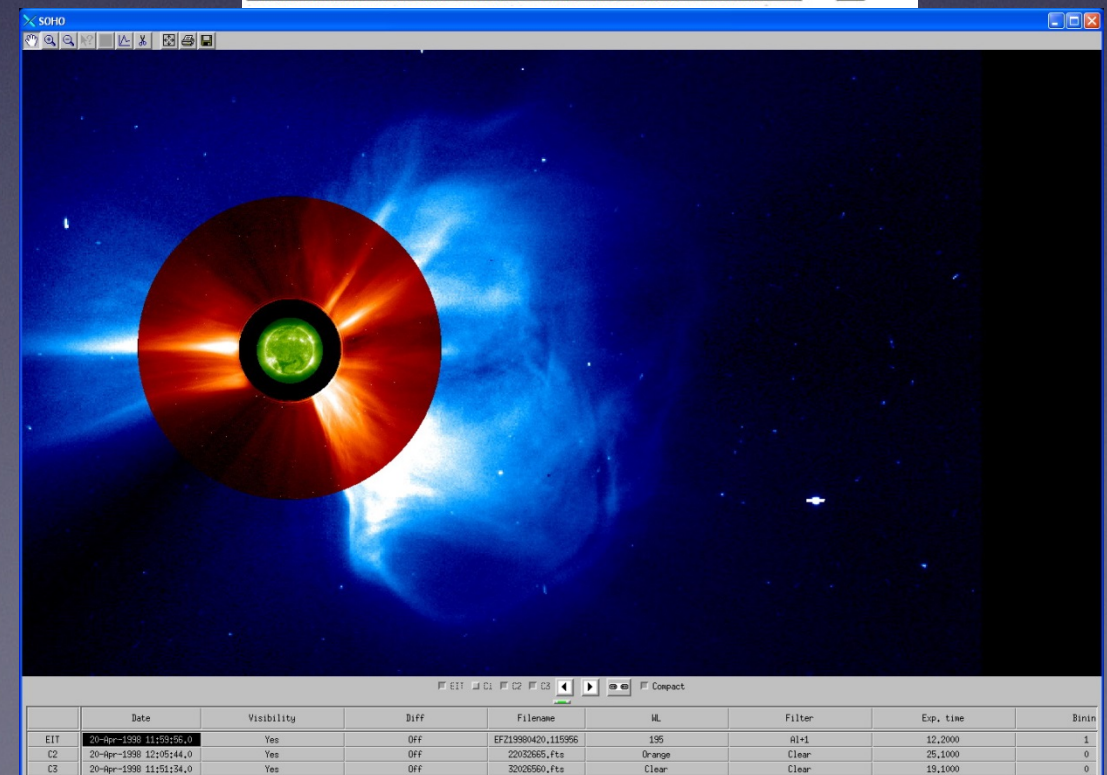
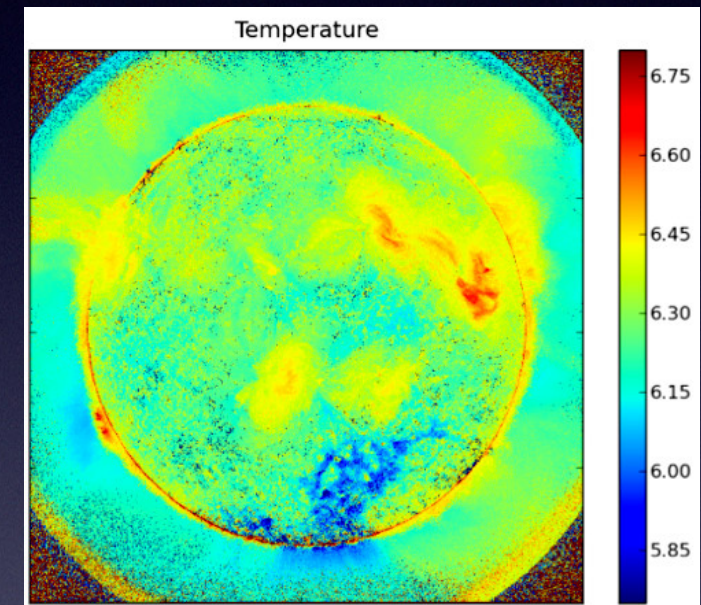
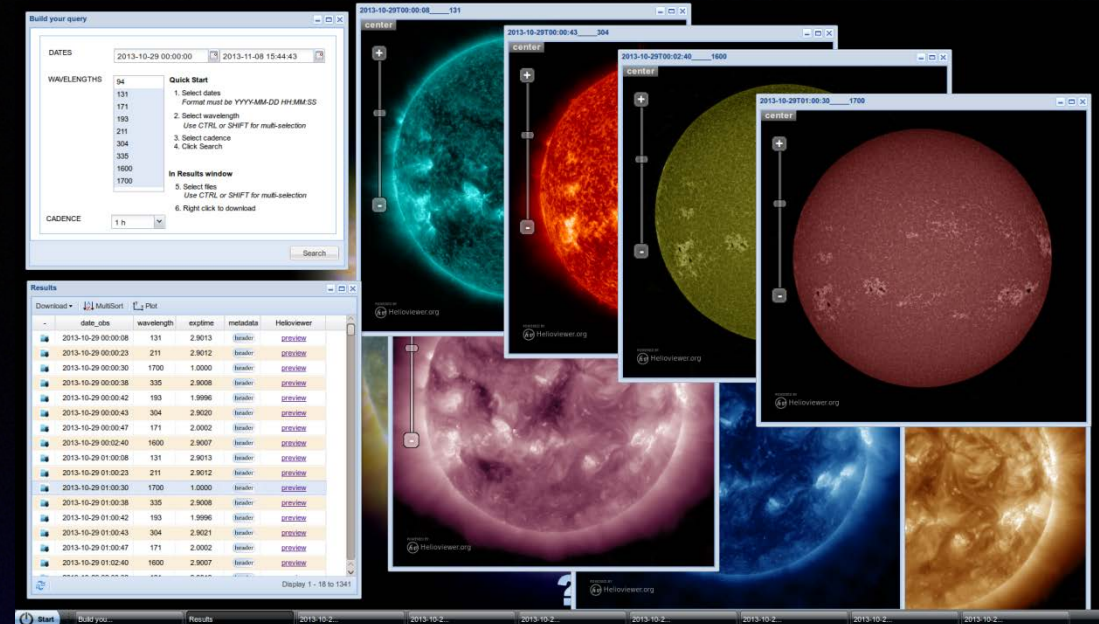




# MEDOC (IAS, Orsay)

Created in 1996 for SoHO, now the French national thematic centre for space solar physics (CNES, CNRS, Univ. Paris-Sud)

- **Data** archive and redistribution: SoHO, STEREO/SECCHI, TRACE, SDO/AIA...
- **Processed** / value-added data
- **Tools** for analysis and interpretation
- **Science operations** for in-flight instruments





# Helioviewer now at MEDOC

The screenshot displays the Helioviewer.org web interface. The browser address bar shows [helioviewer.ias.u-psud.fr/helioviewer/#](http://helioviewer.ias.u-psud.fr/helioviewer/#). The page features a navigation menu with categories like Astro, Labos, Conf, Enseignement, Info, Politique, Sport Meca, Web, Culture, Pratique, Divers, and Tmp. The main content area is titled "center" and shows a large, bright yellow-orange image of the Sun's corona. To the left of the image is a vertical zoom slider. Below the image is an "Earth Scale" indicator. On the left side of the interface, there are several control panels: "Time" with fields for Date (2014/07/01), Time (16:39:24), and Time-step (1 Day); "Images" with a list of available images (AIA 171) and settings for Opacity, Observatory (SDO), Instrument (AIA), Detector (AIA), and Measurement (171); and "Solar Features & Events" with a list of features like Active Regions, Coronal Caves, and Filaments. On the right side, there is a "News" section with three articles and a "YouTube Recently Shared" section.

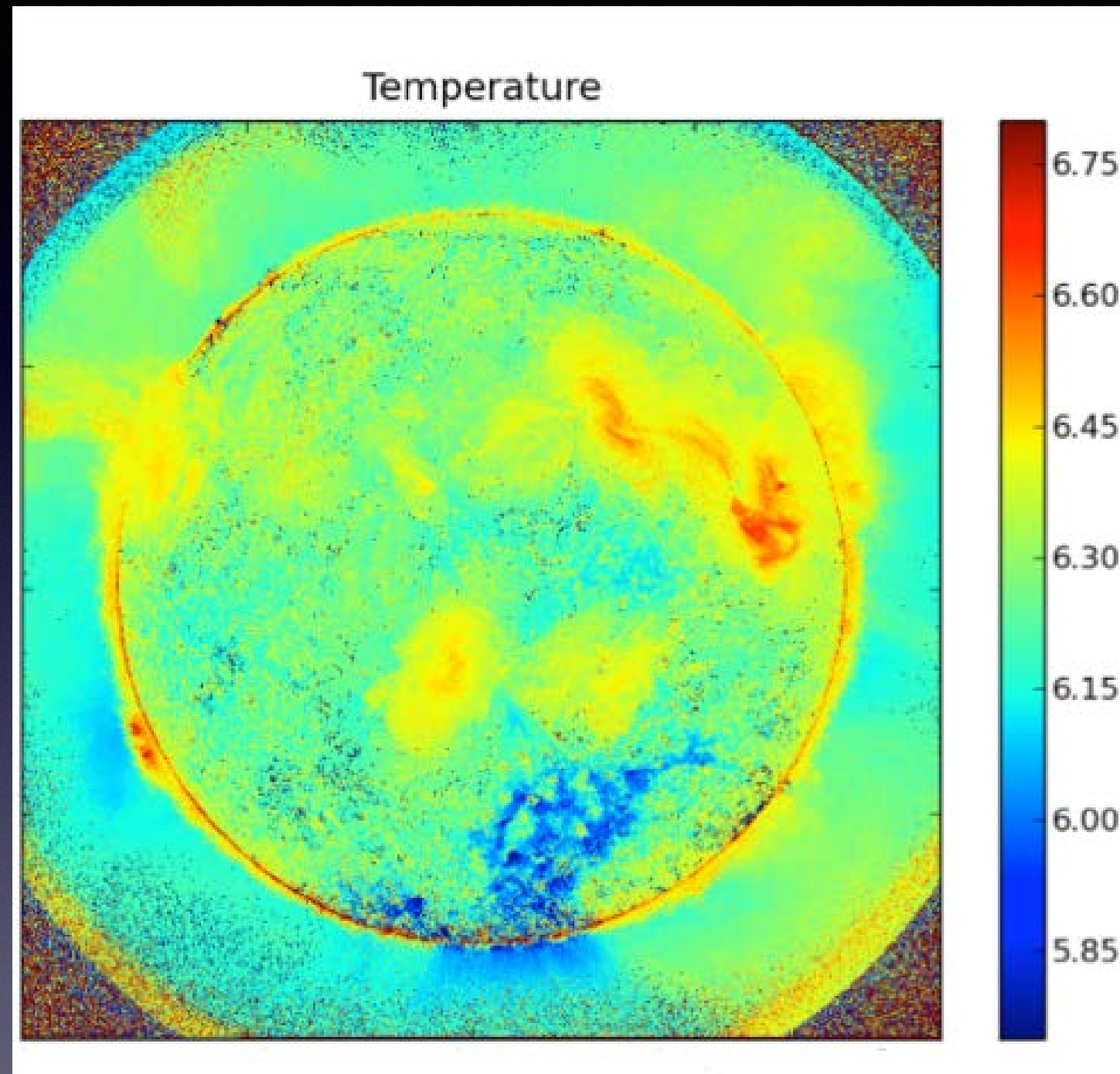
All data available (32TB) and kept updated

JPIP server: [jipip://helioviewer.ias.u-psud.fr:8080](http://jipip://helioviewer.ias.u-psud.fr:8080)

Web interface: <http://helioviewer.ias.u-psud.fr>



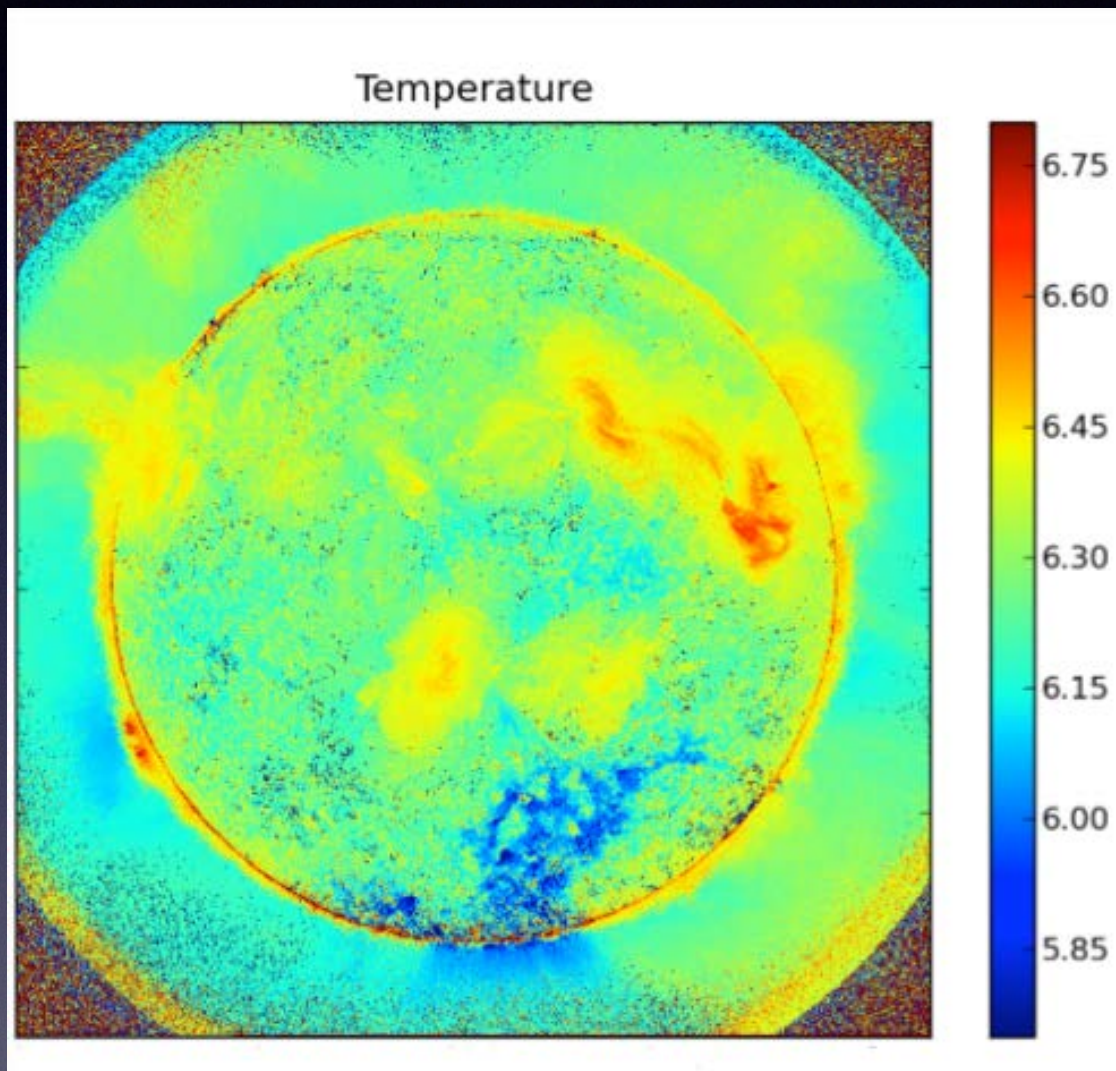
# Adding new data to HelioViewer: DEM maps



Temperature and EM (density) maps produced at MEDOC from SDO/AIA and now available from dedicated interface.



# Handling new data sets



- Need for easy addition of new data sets.
- Impose full synchronization between servers?  
Otherwise choice of server based on data availability:
  - automated
  - manual (coverage maps?)



# Taking advantage of the several HV servers

Having several servers can be useful: better user experience, distributed data storage and computing power, fault (or local funding issues) tolerance...

How should JHV choose the server?

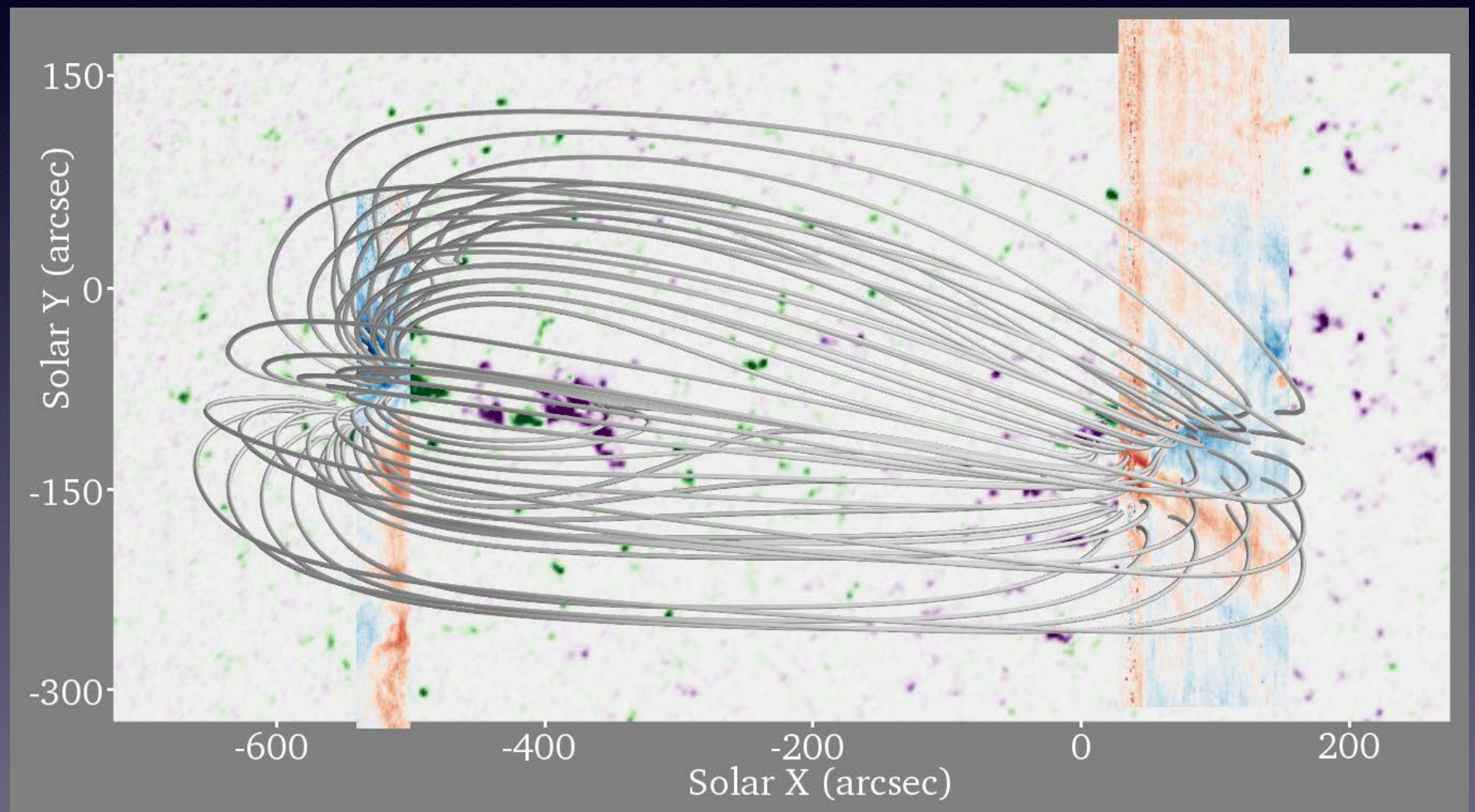
- Configuration file or manual choice in a list
- Automated choice is much better:  
load balancing (network, server load)
- Has to be combined with automated choice based on data availability



# Using a future HV as a tool for Solar Orbiter?

Tool for visualization, could combine remote-sensing and in-situ data (cf. SWHV).  
Could also be used for preparing SO planning?

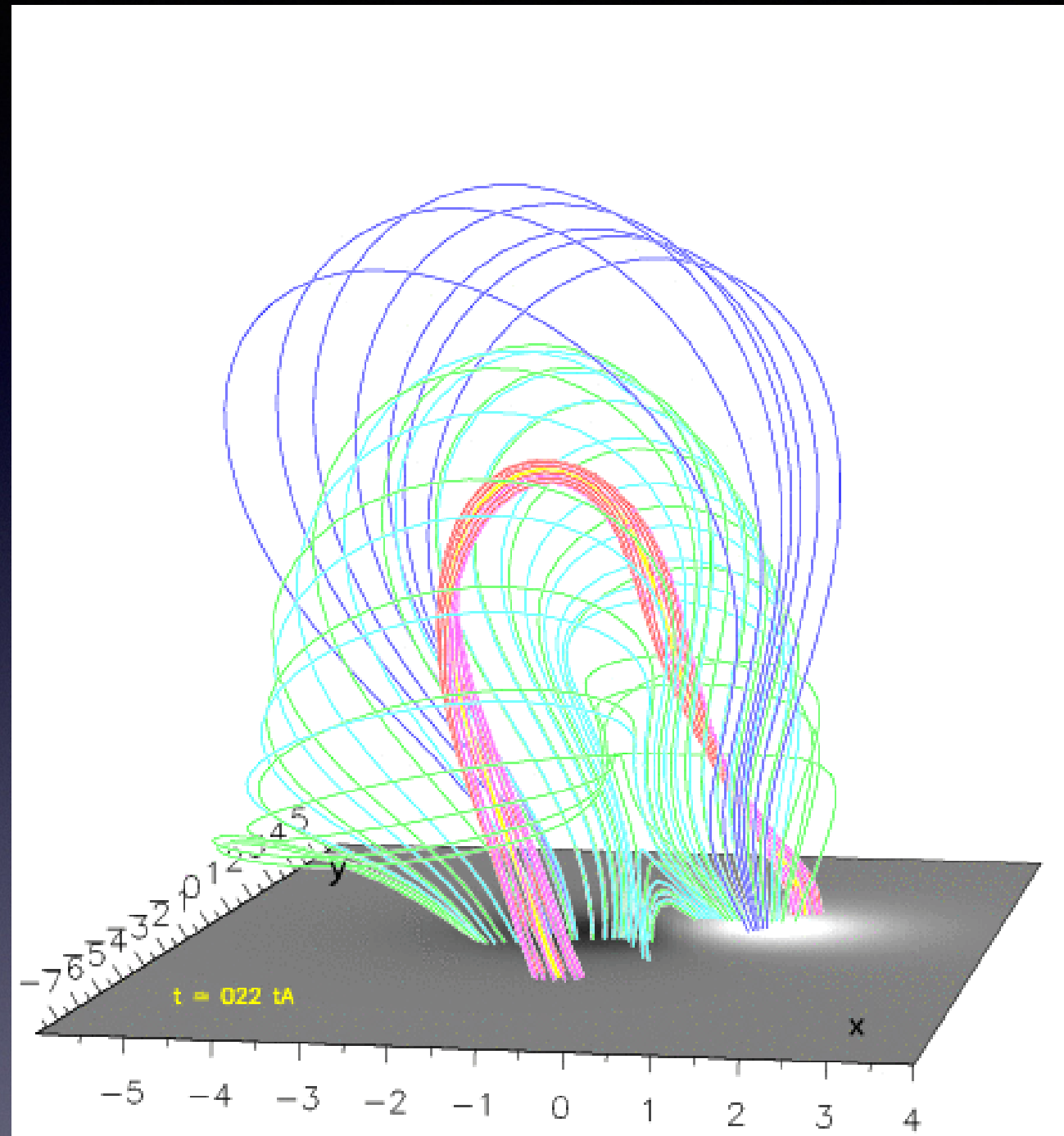
MDI+EIS  
+extrapolation  
Boutry et al 2012



IAS is co-(P)I of EU, PHI, and SPICE.



# HV as tool for SO: relevant MEDOC experience

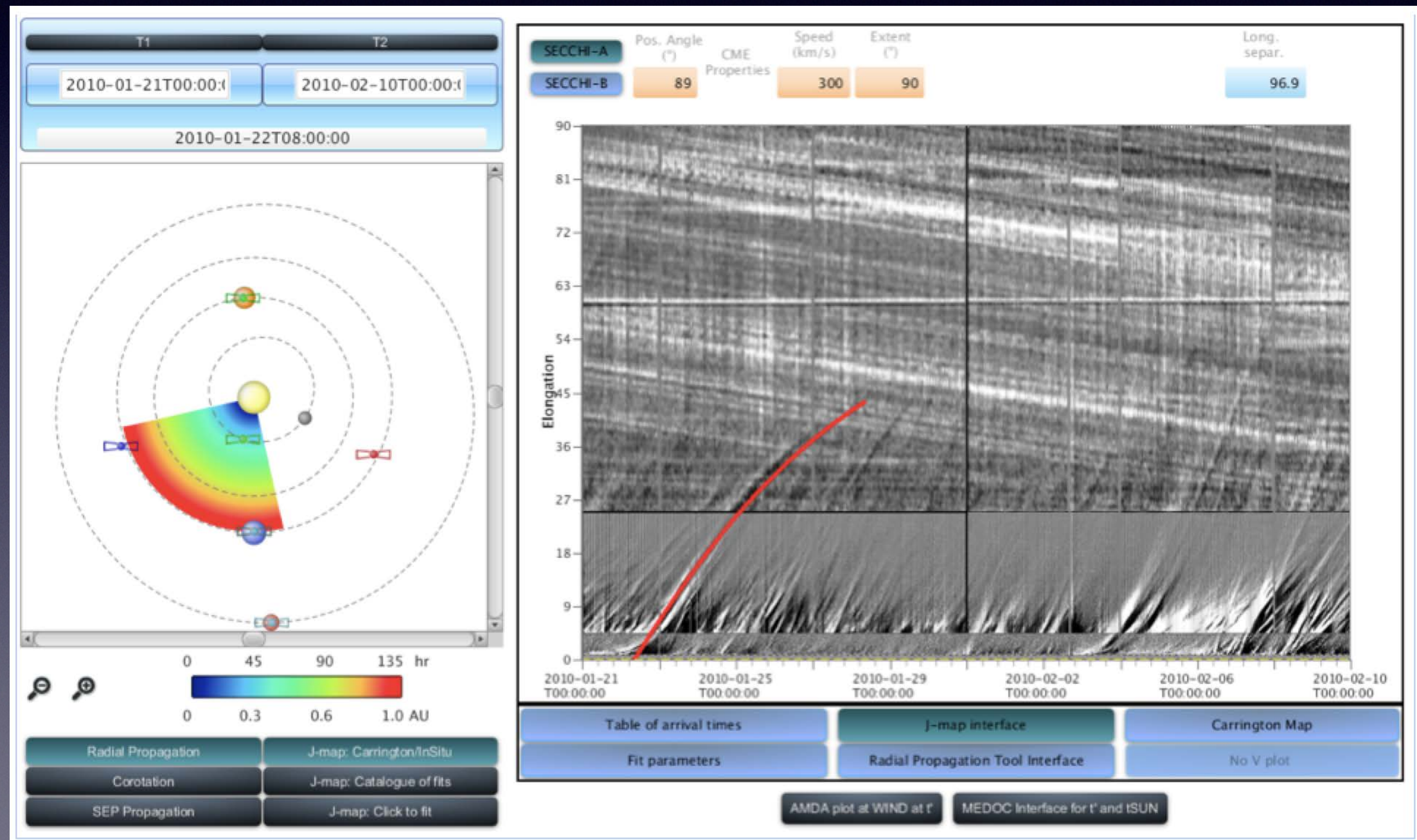


Simulations/extrapolation of B  
(collaboration with Obs. Paris/LESIA)



# HV as tool for SO: relevant MEDOC experience

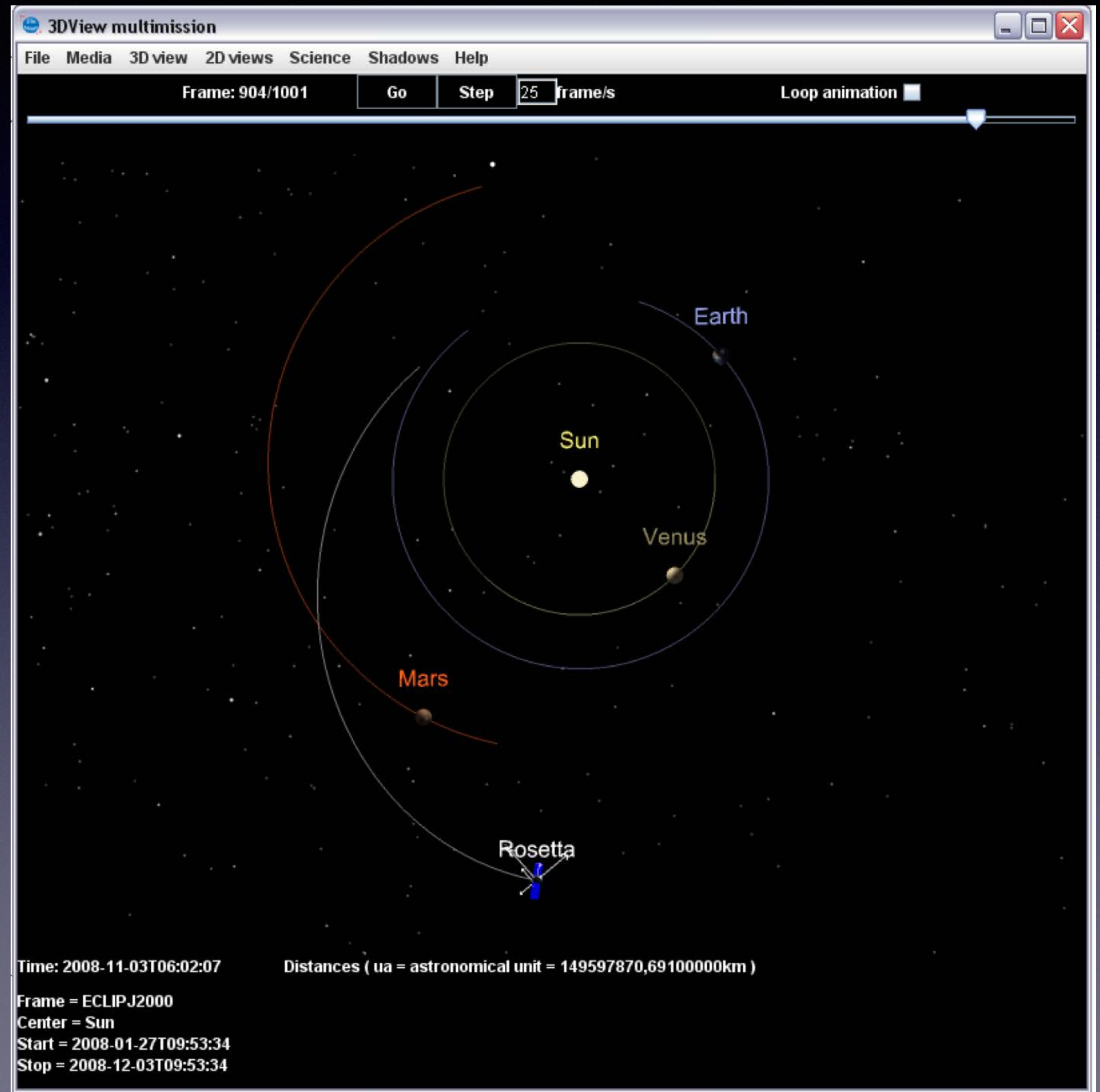
## Partnership with CDPP (Plasma Physics Data Center): Propagation Tool





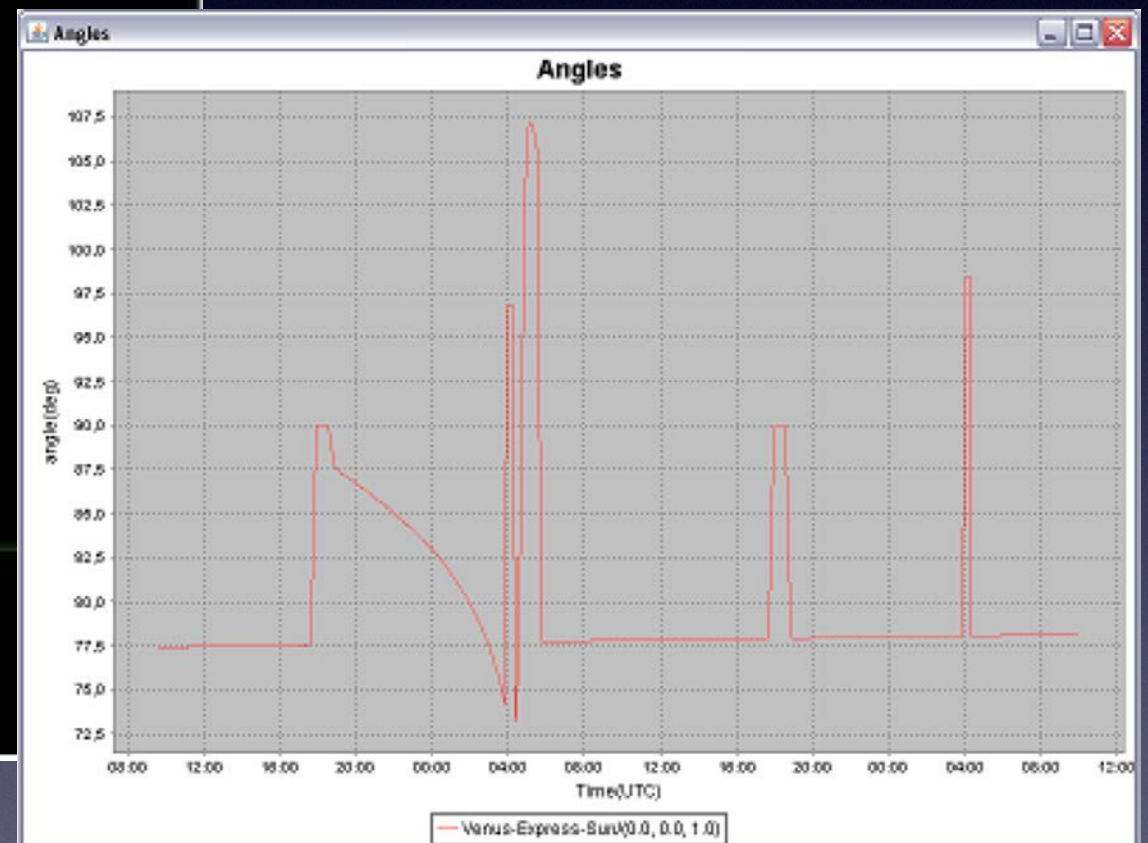
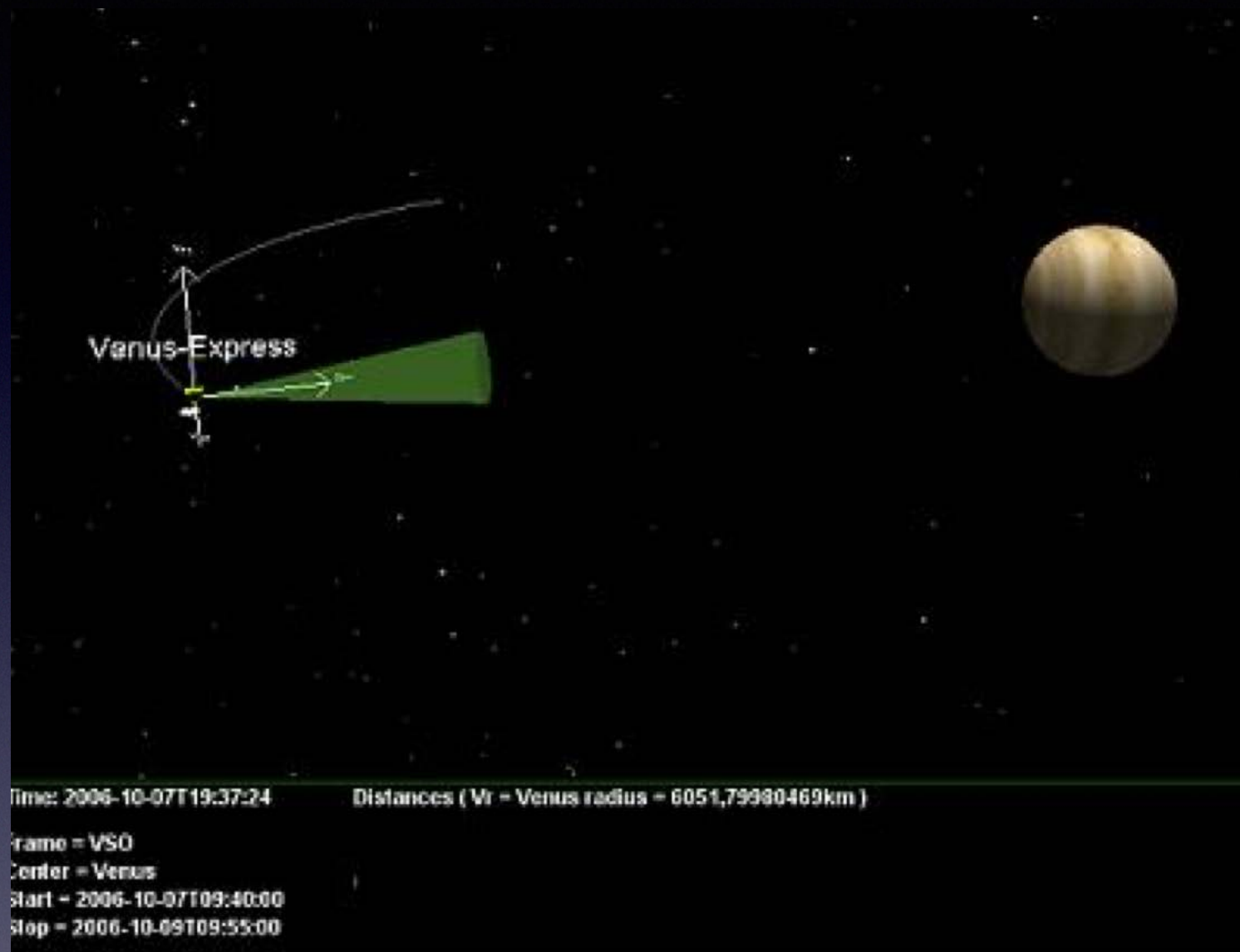
# HV as tool for SO: relevant MEDOC experience

Partnership with  
CDPP (Plasma  
Physics Data  
Center): 3DView





# HV as tool for SO: relevant MEDOC experience



3DView => 1D series for HV plug-in



# Possible developments for using HV as tool for SO

- Magnetic extrapolation
- + Propagation Tool
- + 3D view
- + a lot of (scientific & technical) work

---

**= link photosphere/spacecraft**

French workshop dedicated to SO tools  
on 4-6 November in Toulouse