STEREO and the VSO

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What’s all this VSO stuff, anyway?

- VSO history
- VSO design
- VSO status
- VSO and STEREO
  - SSC data service
  - relationship to other discipline virtual observatories (“VxO’s”)
- So what and who cares?
History

- Motivated by “nighttime” astronomy virtual observatory (VO) organizational efforts in mid-1990’s
- “Whole Sun Catalog” (European-US) effort unfunded
- “Birds of a Feather” (BoF) session at 2000 Solar Physics Division meeting
- NSF IR, NASA LWS proposals - shot down
- 2001 Senior Review
- Study (1 year), followed by two years of development (2003 June - 2005 May)
- Consortium of “the willing” (National Solar Observatory, Stanford, Montana State, Solar Data Analysis Center)
1. Access through a browser or an API
2. “Small box” uses registry of XML data service schema to construct appropriate queries for each relevant data service
3. API or browser can refine queries
4. Final data transfer is direct to requestor (no middleman)
VSO status (I)

- First beta release at 2003 Fall AGU
- Version 0.5 beta released at 2004 Spring AAS/SPD meeting
- Version 1.0 released this week at 2004 Fall AGU
  - Variety of user interfaces, API
  - Faster search engine
  - Thumbnail images for some data
  - “Nickname” as well as physical observable-, instrument-oriented searches
VSO status (II)

- Current data services: Stanford (MDI, MWO), MSU, NSO Digital Library, OVRO, H alpha network (HANET), Meudon, HAO MLSO (coronagraph, prominence monitors), SDAC (SOHO)
- Metadata providers: flare and CME lists
- Working on adding new data services:
  - TRACE (on a per-image basis)
  - RHESSI
- Will include SDO
VSO and STEREO

- The VSO is one of the ways we plan to offer access to STEREO data at the SSC
  - Poster last Tuesday: Hourclé et al., “STEREO in the Virtual Solar Observatory Context” (SH21B-0413)
- Interactive or API
- The VSO is also capable of acting as a data service (through its API) for other VxO’s, e.g. the VHO, VSPO, or CoSEC (N. Hurlburt and colleagues at Lockheed)
- Similarly, the VSO is capable of accessing other VxO’s as data services
• Possible to search on multiple spacecraft/instruments/data services
<table>
<thead>
<tr>
<th>Physical Observable</th>
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<tbody>
<tr>
<td>LOS_velocity</td>
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<tr>
<td>thermal_velocity</td>
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<td>composition</td>
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**Start Date/Time:** 2004 Nov 12 / 22:00

**End Date/Time:** 2004 Nov 13 / 01:59

* Observations are as of 2004 December 18.

* Time ranges of instrumentation provide the minimum and maximum ranges of data known to be available. We are still receiving new information, but some archives may be a week or more behind the present.
• .... or by
  "nickname"
• ... and can use thumbnail images to help downselect from the search results.
So what and who cares?

• Whether directly or through another VxO, probably the easiest way for non-solar physicists to get solar data
  • nicknames

• Increase the uptake of STEREO data, simply by making it easier to access
  • Good for science
  • Good for STEREO in Senior Reviews

• Should enable science that would otherwise be too tedious for even a graduate student