



# Collaborative Sun-Earth Connector

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# Coordinated Observations



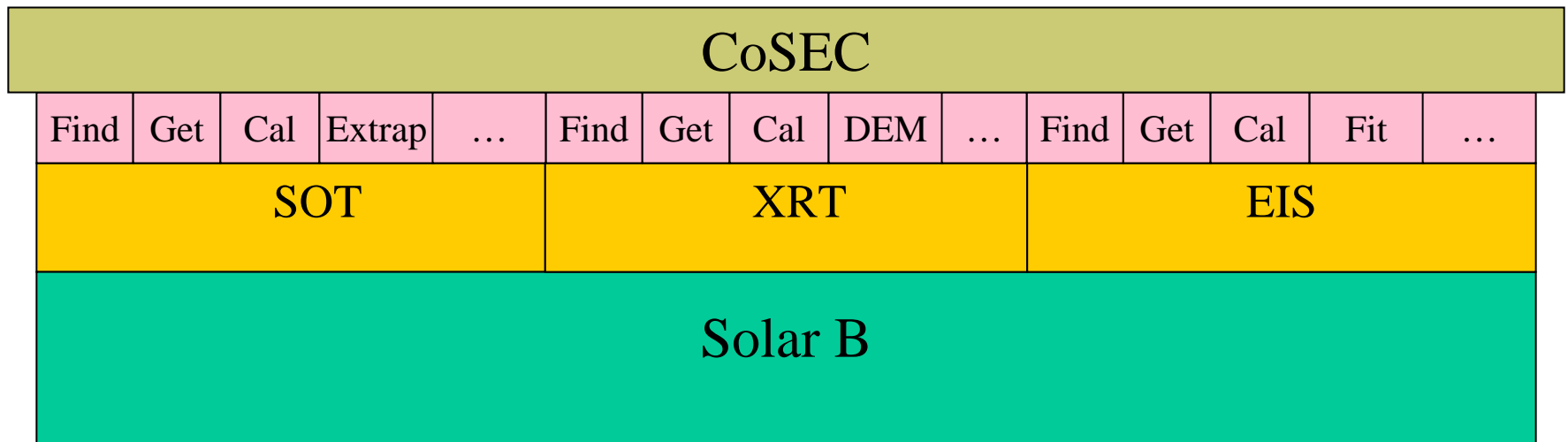
- How do we share data and coordinate observation between missions?

Virtual Observatories											
Find	Get	Find	Get	Find	Get	Find	Get	Find	Get	Find	Get
SOT		XRT		EIS		EUVI		SWAVES		Plastic/Impact	
Solar B						STEREO					

# Coordinated Data Services



- Generalized Services + orchestration



# Coordinated Analysis



- Distributed data analysis system using
  - Scientific workflow systems
  - Semantic composition & integration
  - Existing SolarSoft services & tools
- Focused on solar and space physics service
- Collaborative environment for sharing data, software and higher-level products
- Complements existing efforts in Virtual Observatories



# CoSEC Client





# Contributed Workflows

http://cosec.lmsal.com/doc?cmd=submit...Rows=0&output=html&request-type=public

File View Help

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+online +category="MODEL MAP"  latest rev only

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8 matches

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<a href="#">Document Number</a>	<a href="#">Rev</a>	<a href="#">Online</a>	<a href="#">Description</a>	<a href="#">Note</a>	<a href="#">Originator</a>
<a href="#">CSC00048</a>		Y	Composite Service to find Flares		Hurlburt, N.
<a href="#">CSC00049</a>		Y	Composite Service to plot ACE measurements	Uses realtime data from NGDC	Hurlburt, N.
<a href="#">CSC00050</a>		Y	Potential Field Model Composite Service	Uses LMSAL PFSS model to generate field line extrapolations.	Hurlburt, N.
<a href="#">CSC00055</a>		Y	VSO Demonstrator	CoSEC map to search VSO directory service for specified time and wavelength.	Hurlburt, N.
<a href="#">CSC00056</a>		Y	EGSO SEC Demonstrator	Queries the EGSO Solar Event Catalog	Hurlburt, N.
<a href="#">CSC00071</a>		Y	Remote Flare Locator Service	This is an example of a composite actor that can be run on the server. Results are posted to the CoSEC results page.	Hurlburt, N.
<a href="#">CSC00072</a>		Y	Example of looping for reading lines		Hurlburt, Neal
<a href="#">CSC00073</a>		Y	Example of ramping for reading lines		Hurlburt, Neal

http://cosec.lmsal.com/



# Flare finder result



file:/Applications/CoSEC/FlareFinder.xml

File View Debug Help

Go Pause Resume Stop

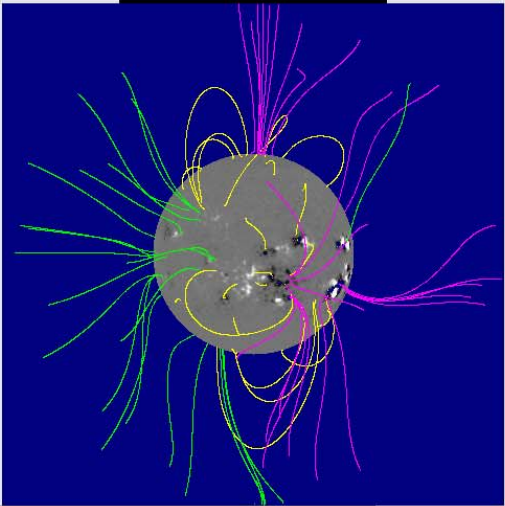
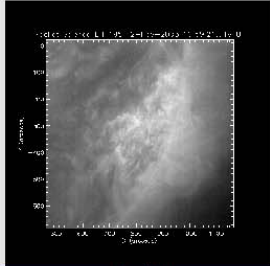
Model parameters:

Parameter:	""
StartTime:	"17-Oct-2003"
StopTime:	"25-Nov-2003"
Wavelength:	"EIT195"

Director parameters:

allowDisconnectedGraphs:	<input type="radio"/>
allowRateChanges:	<input type="radio"/>
iterations:	0
vectorizationFactor:	1

```
http://umbra.nascom.nasa.gov/eit_lz/2003/11/efz20031102.174811
http://umbra.nascom.nasa.gov/eit_lz/2003/11/efz20031102.170010
http://www.lmsal.com/solarsoft/ssw_client/data/ssw1_efz20031102.170010
http://www.lmsal.com/solarsoft/ssw_client/data/ssw1_efz20031102.174811
S18W62
2-Nov-2003 17:47:25
```



executing



# Draft ResultSpace



Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://java1.lmsal.com/result\_list.jsp?sortby=model

Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

FedEx Kinko's Custom Online Orderi... http://java1.l...p?sortby=model

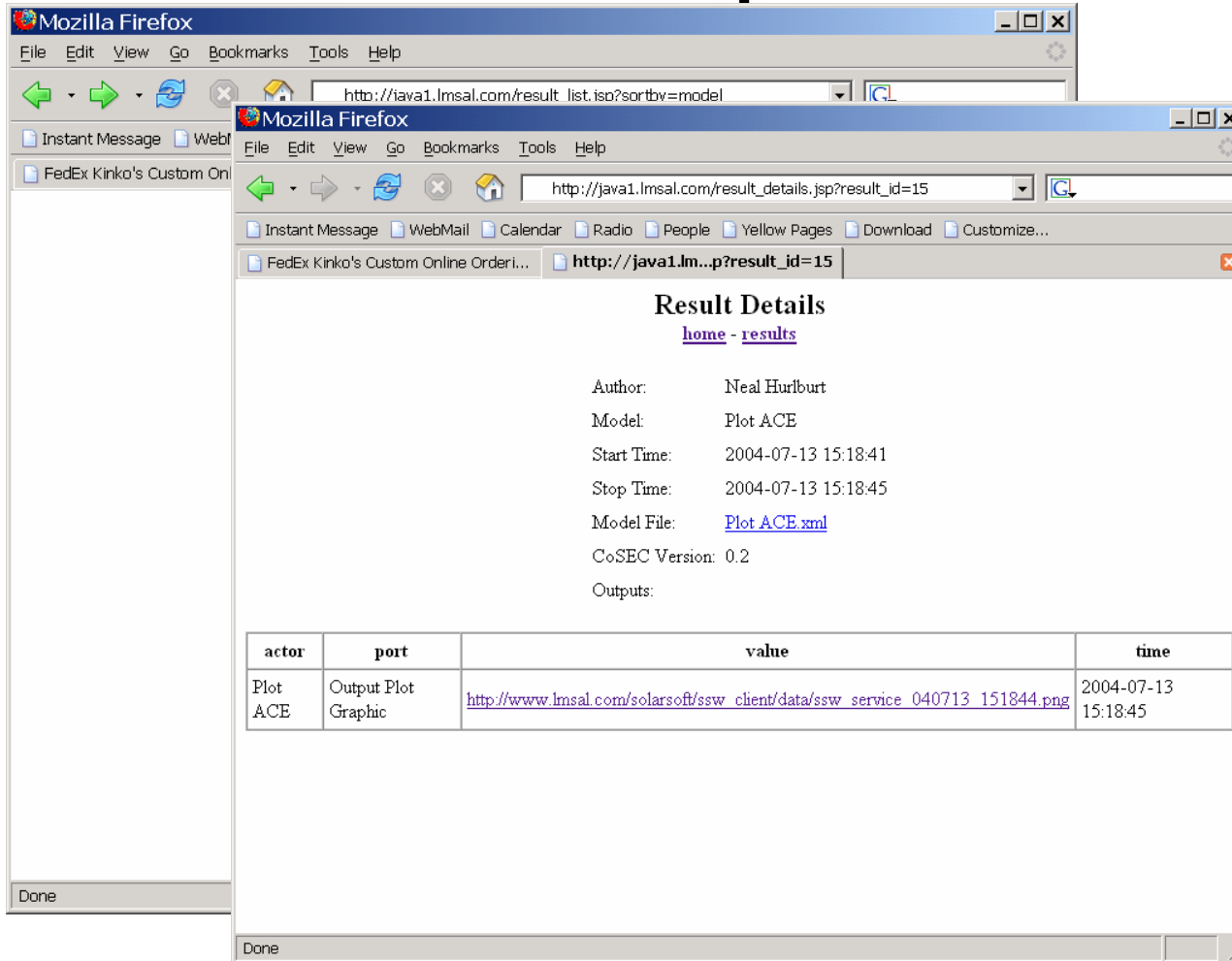
### Result List

[home](#)

<u>model</u>	<u>start time</u>	<u>stop time</u>	
<a href="#">EchoCLAWS</a>	2004-07-13 15:55:41	2004-07-13 15:55:41	<a href="#">x</a>
<a href="#">Plot ACE</a>	2004-07-13 15:14:56	2004-07-13 15:15:00	<a href="#">x</a>
<a href="#">Plot ACE</a>	2004-07-13 15:18:41	2004-07-13 15:18:45	<a href="#">x</a>

Done

# Draft ResultSpace



Result Details

[home](#) - [results](#)

Author: Neal Hurlburt  
Model: Plot ACE  
Start Time: 2004-07-13 15:18:41  
Stop Time: 2004-07-13 15:18:45  
Model File: [Plot ACE.xml](#)  
CoSEC Version: 0.2  
Outputs:

actor	port	value	time
Plot ACE	Output Plot Graphic	<a href="http://www.lmsal.com/solarsoft/ssw_client/data/ssw_service_040713_151844.png">http://www.lmsal.com/solarsoft/ssw_client/data/ssw_service_040713_151844.png</a>	2004-07-13 15:18:45





# Disparate Data

- How do non-experts know who to trust?
  - Multiple sources
  - Varying processing levels
- What happens if data is invalidated?
  - Single data thread: headers & versions
  - Multiple, interacting threads?
- How do downstream users correct or annotate upstream sources?



# Current CoSEC Sources

- TRACE Movies
- SXT
- MDI magnetograms
- EIT
- SXI
- GOES
- ACE
- Wind



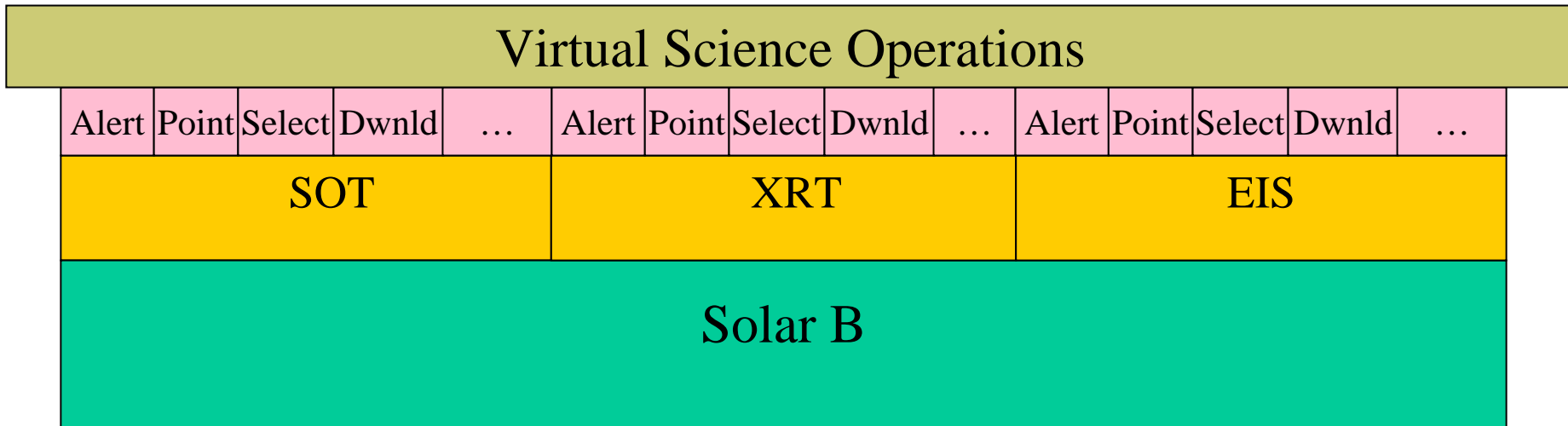
# Current CoSEC Services

- SolarSoft
  - Rebin/window
  - Calibration
  - Time/wavelength search
  - Chianti model
  - Event Location
  - Potential Fields
  - CME Lists
- Space Physics
  - File conversion
  - Coordinate Transform
  - Satellite Locator
- Virtual Obs
  - VHO support
  - VSO support
  - EGSO SEC

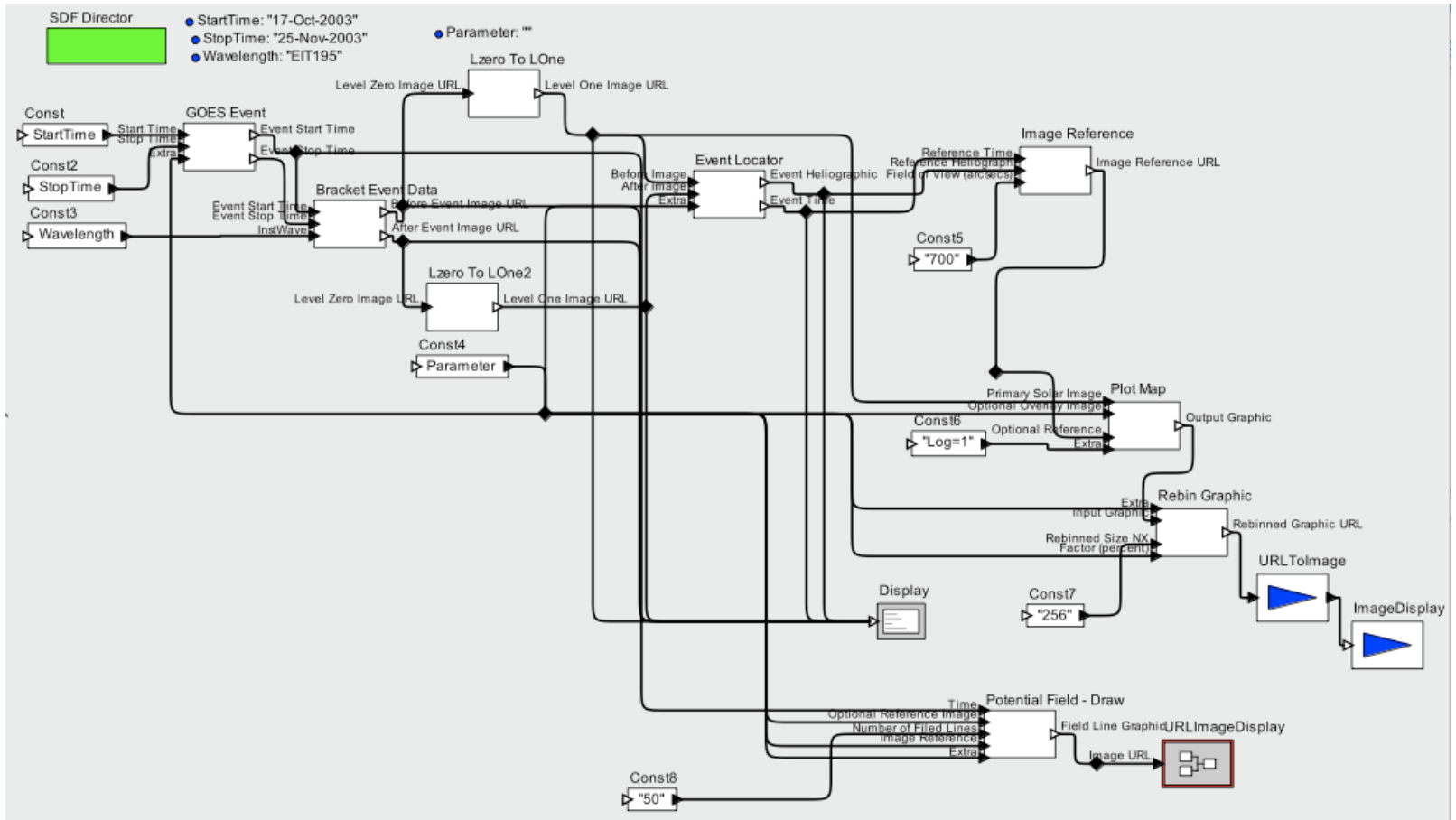


# Mission Services

- How do we coordinate observation between missions?



# Great Observatory?







# How to use CoSEC

## 1. Download & install beta client

- <http://cosec.imsal.com/Downloads>
- Requires: Java 1.4.2
- Platforms: Linux, Solaris, Windows, OSX

## 2. Download examples

## 3. Register in Results Center

- <http://cosec.imsal.com/ResultSpace>

## 4. Launch CoSEC and load examples

