Collaborative Sun-Earth Connector

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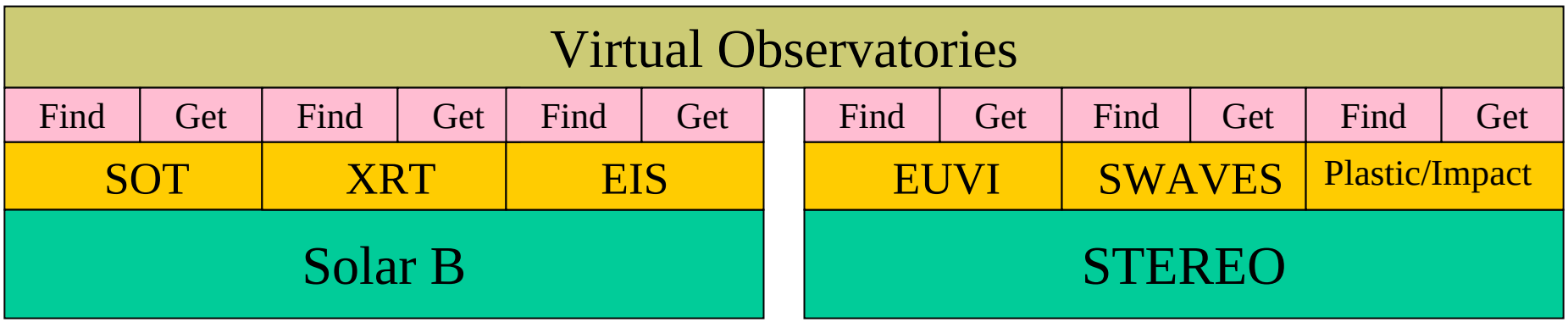
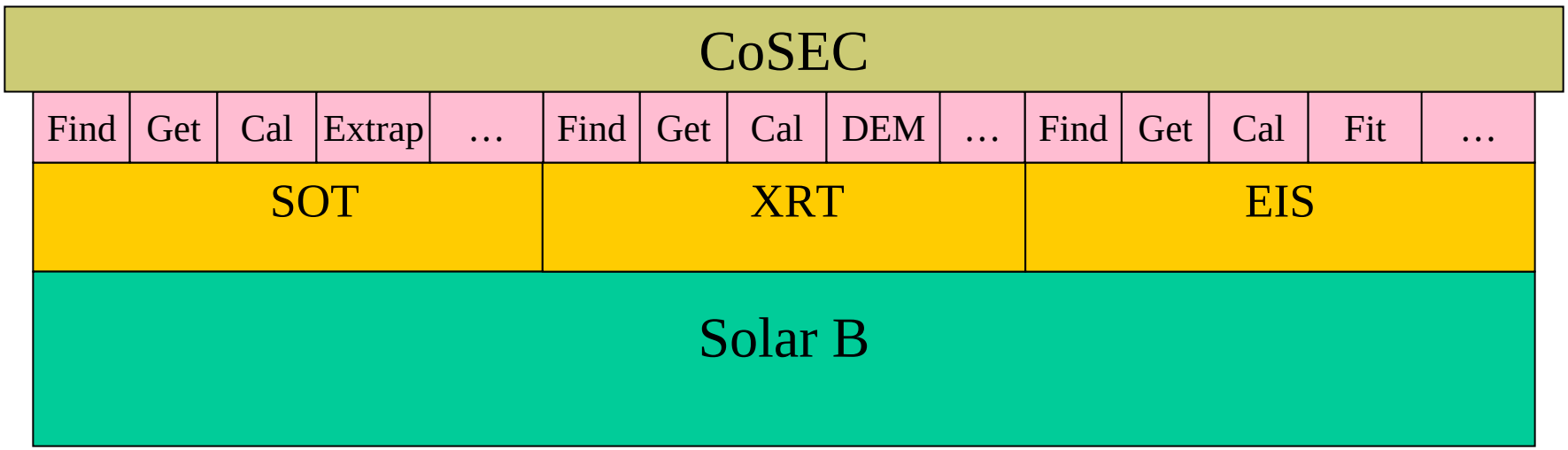
Coordinated Observations

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



Coordinated Data Services

- Generalized Services + orchestration

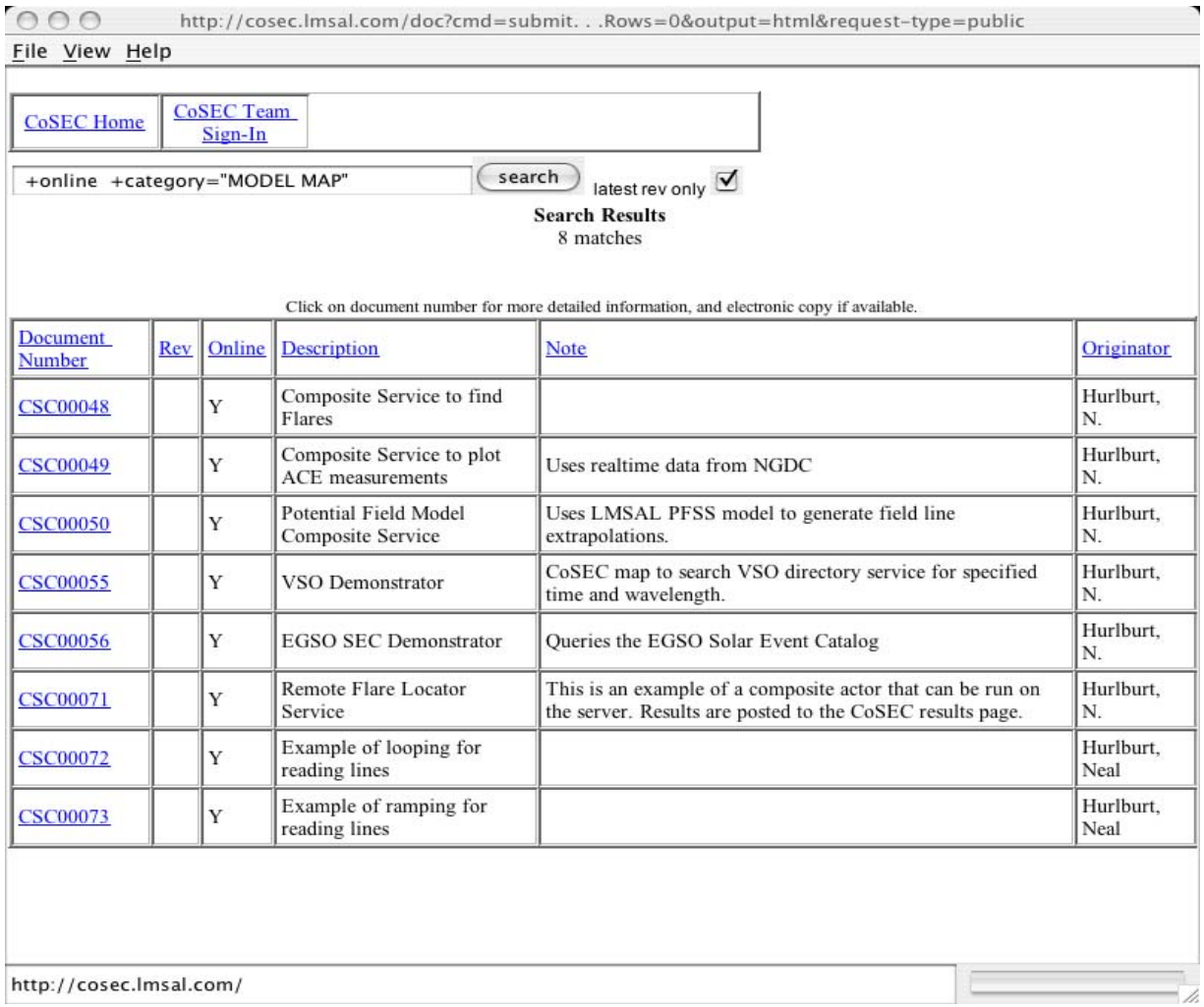


Coordinated Analysis

- 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

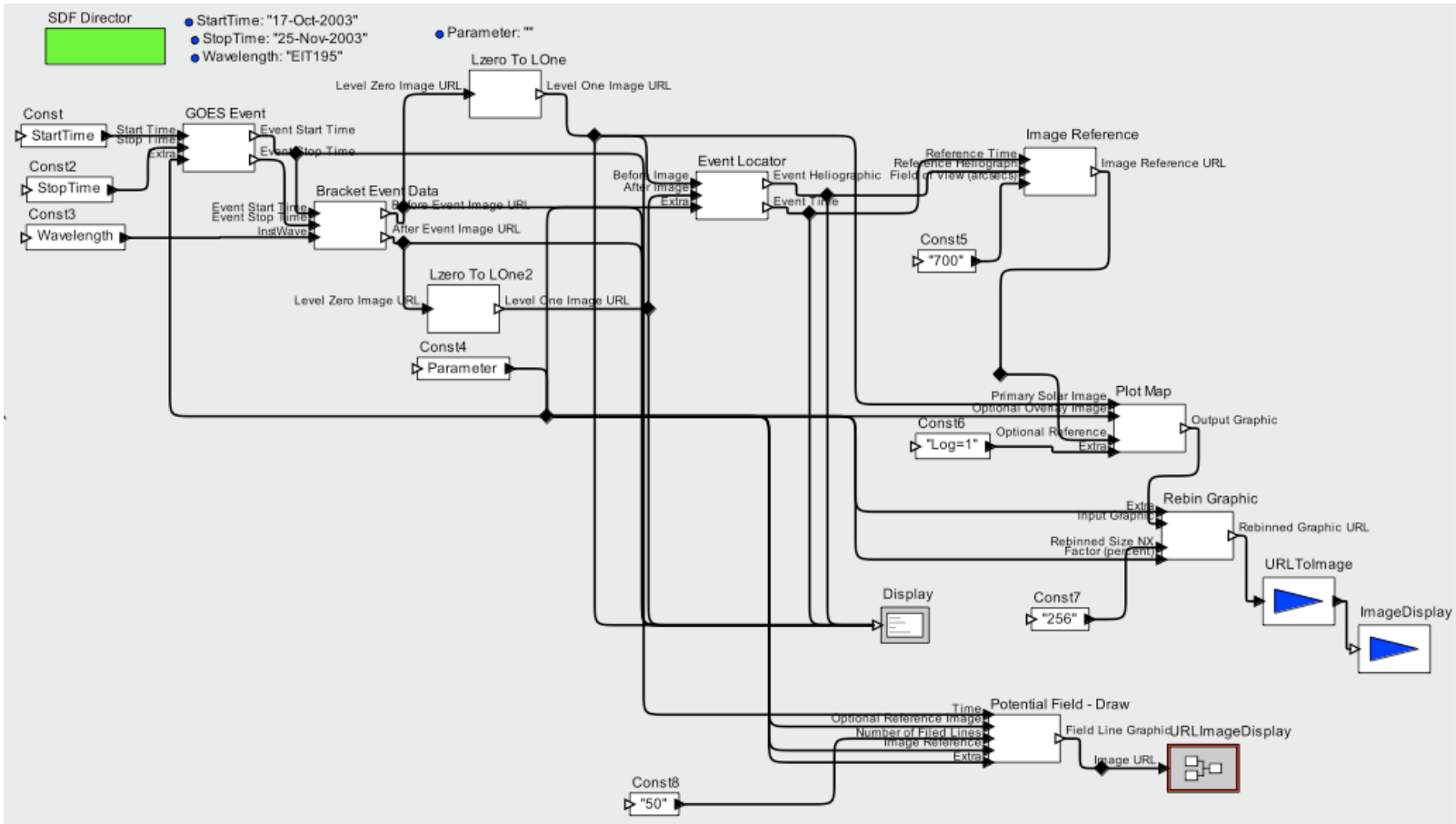
CoSEC Client

Contributed Workflows

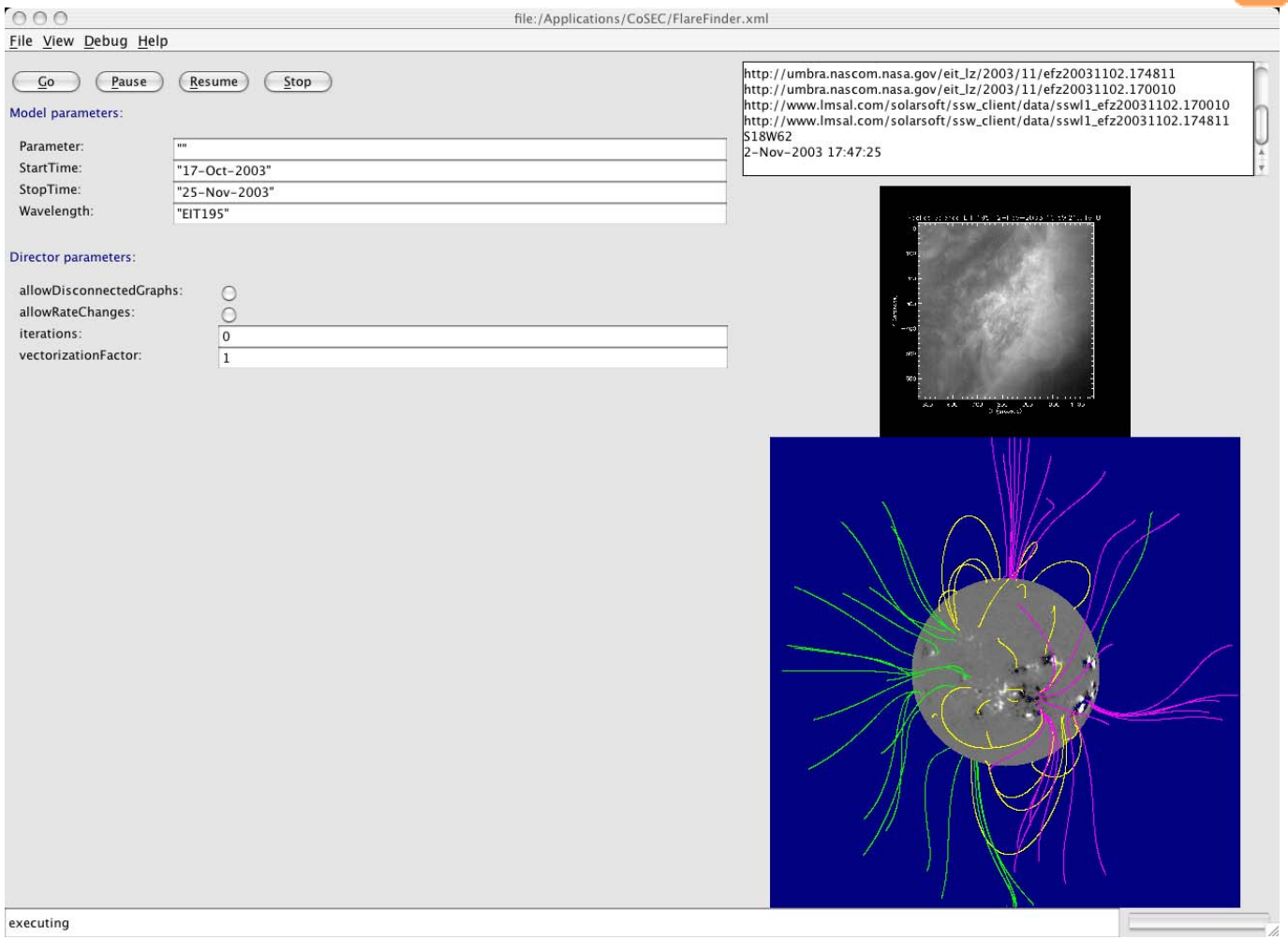


Document Number	Rev	Online	Description	Note	Originator
CSC00048		Y	Composite Service to find Flares		Hurlburt, N.
CSC00049		Y	Composite Service to plot ACE measurements	Uses realtime data from NGDC	Hurlburt, N.
CSC00050		Y	Potential Field Model Composite Service	Uses LMSAL PFSS model to generate field line extrapolations.	Hurlburt, N.
CSC00055		Y	VSO Demonstrator	CoSEC map to search VSO directory service for specified time and wavelength.	Hurlburt, N.
CSC00056		Y	EGSO SEC Demonstrator	Queries the EGSO Solar Event Catalog	Hurlburt, N.
CSC00071		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.
CSC00072		Y	Example of looping for reading lines		Hurlburt, Neal
CSC00073		Y	Example of ramping for reading lines		Hurlburt, Neal

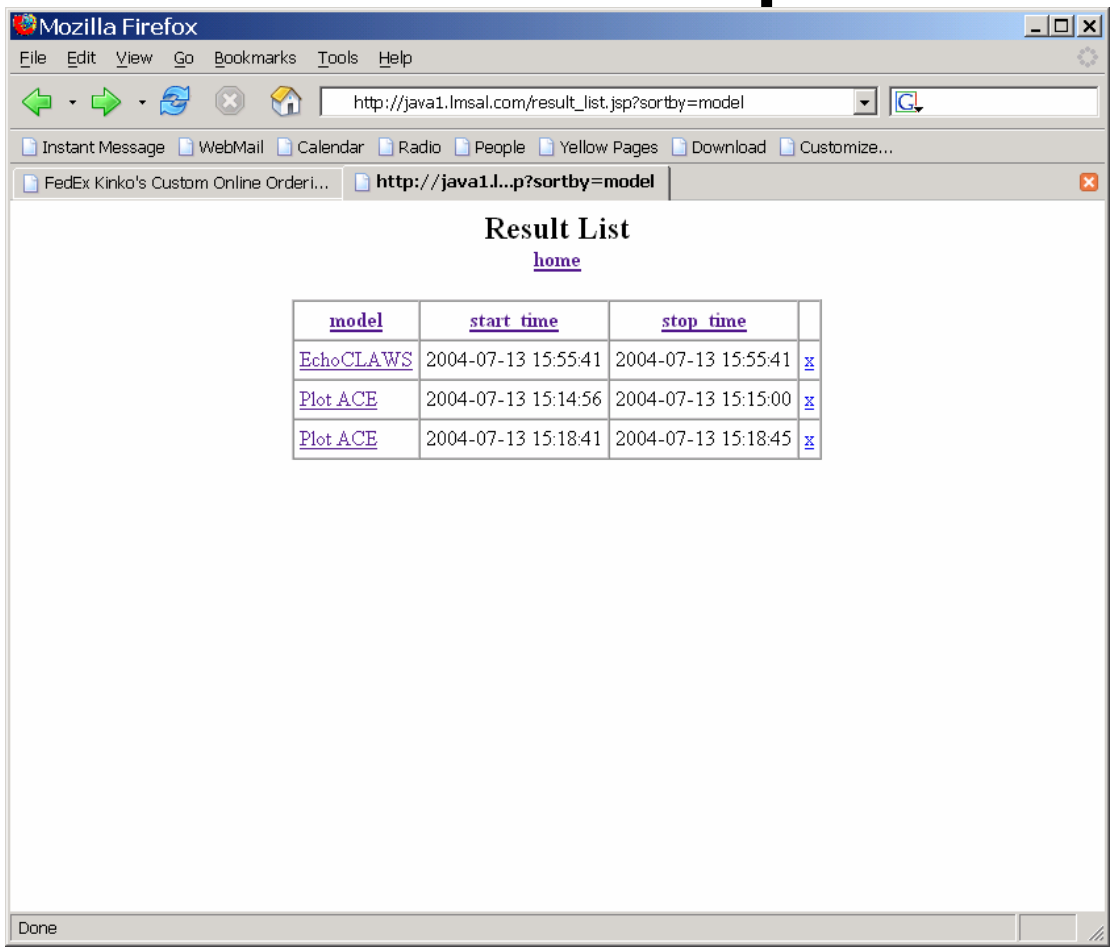
Flare Finder



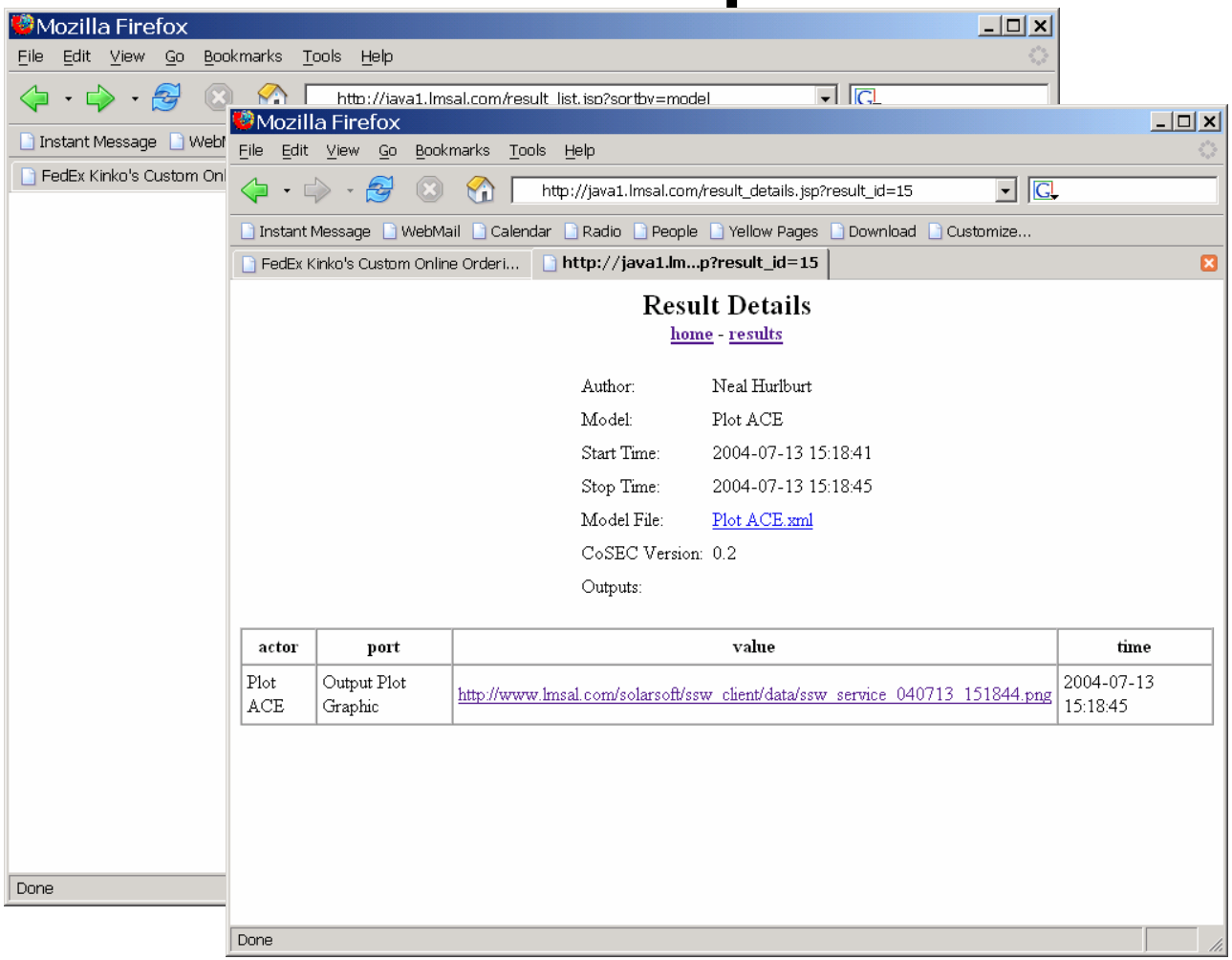
Flare finder result



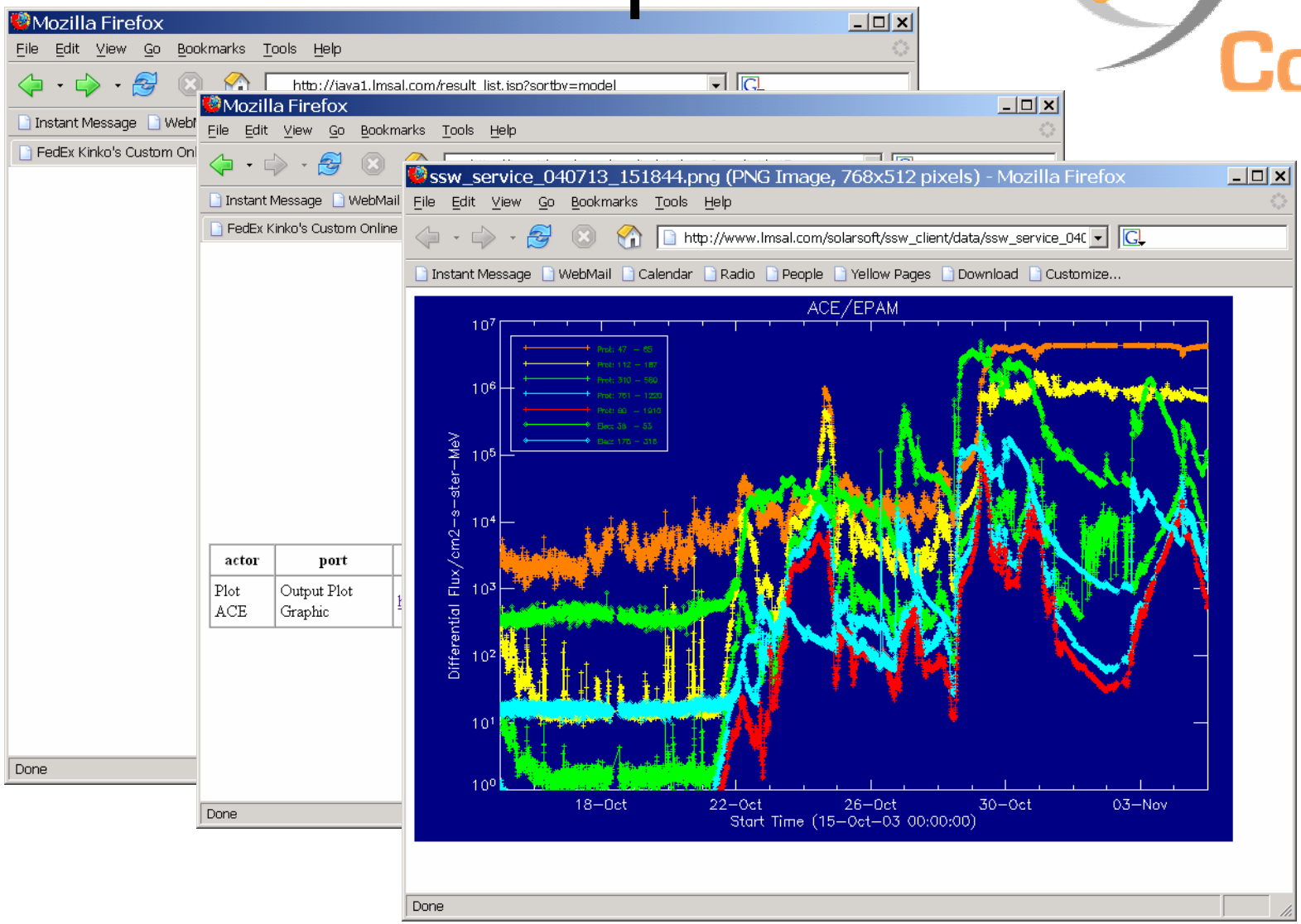
Draft ResultSpace



Draft ResultSpace



Draft ResultSpace



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

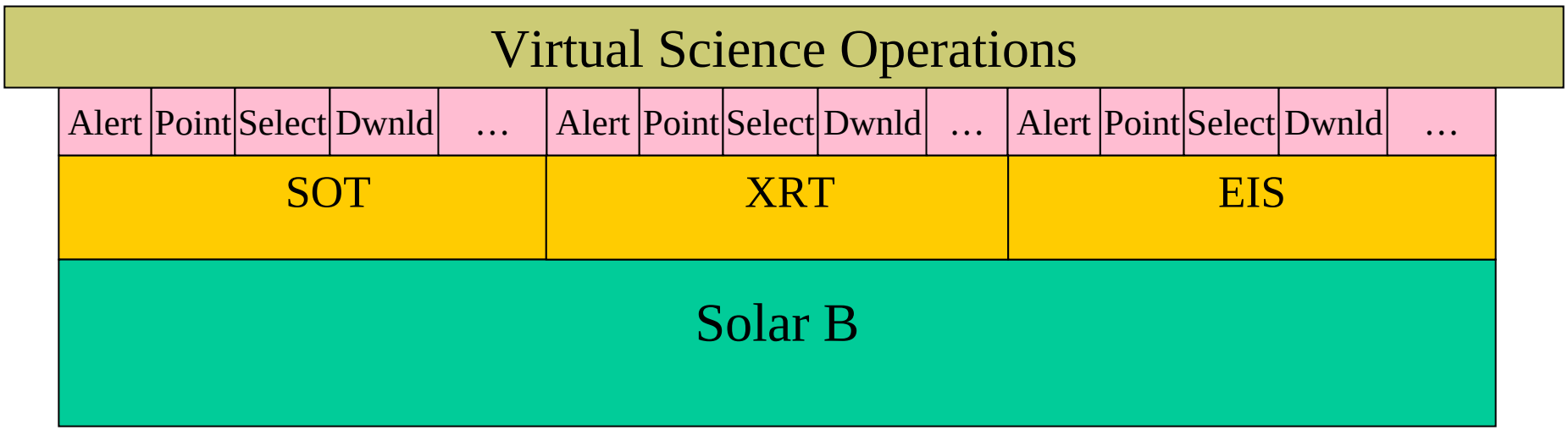
- TRACE Movies
- SXT
- MDI magnetograms
- EIT
- SXI
- GOES
- ACE
- Wind

Current CoSEC Services

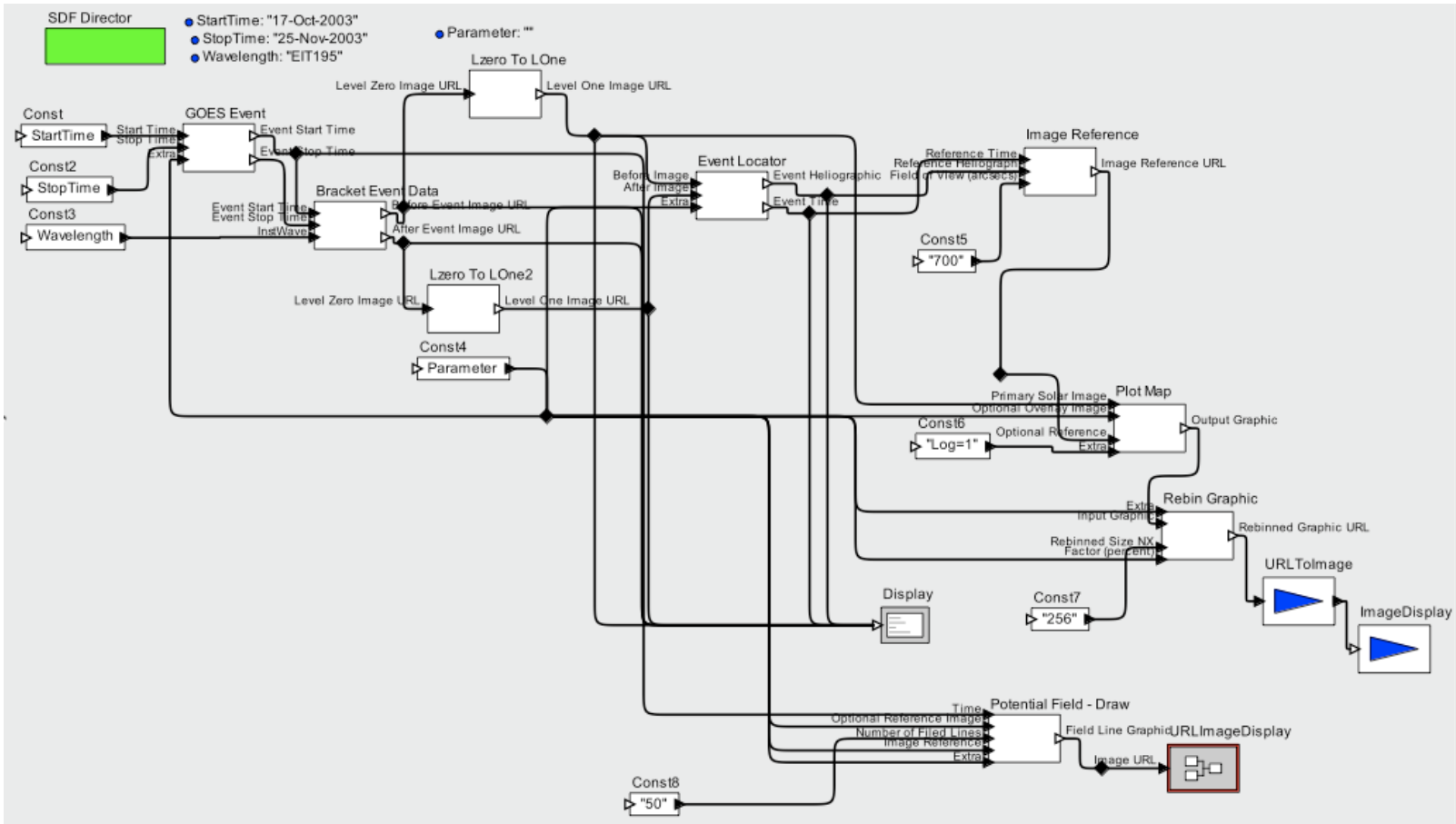
- SolarSoft
  - Rebin/window
  - Calibration
  - Time/wavelength search
  - Chianti model
  - Event Location
  - Potential Fields
  - CME Lists
- Space Physics
  - File conversion
  - Coordinate Transform
  - Satellite Locator
- Virtual Obs
  - VHO support
  - VSO support
  - EGSO SEC

Mission Services

- How do we coordinate observation between missions?



Great Observatory?



How to use CoSEC

1. Download & install beta client
   - http://cosec.lmsal.com/Downloads
   - Requires: Java 1.4.2
   - Platforms: Linux, Solaris, Windows, OSX
2. Download examples
3. Register in Results Center
   - http://cosec.lmsal.com/ResultSpace
4. Launch CoSEC and load examples

CoSEC