Collaborative Sun-Earth Connector

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Hurlburt November 05
Coordinated Observations

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

### Virtual Observatories

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<thead>
<tr>
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<th>Get</th>
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<tbody>
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<td>EIS</td>
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<td>Plastic/Impact</td>
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Solar B

STEREO
## Coordinated Data Services

- Generalized Services + orchestration

### CoSEC

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**Solar B**
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

CoSEC

Powered by Ptolemy II

http://cosec.lmsal.com/ModelSpace

Hurlburt November 05
# Contributed Workflows

## Description:

<table>
<thead>
<tr>
<th>Document Number</th>
<th>Rev.</th>
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<th>Note</th>
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<td>Potential Field Model Composite Service</td>
<td>Uses LMSAL PFSS model to generate field line extrapolations.</td>
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<td>Hurlburt, N.</td>
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<td>CSC00056</td>
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<td>EGSO SEC Demonstrator</td>
<td>Queries the EGSO Solar Event Catalog</td>
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<tr>
<td>CSC00071</td>
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<td>This is an example of a composite actor that can be run on the server. Results are posted to the CoSEC results page.</td>
<td>Hurlburt, N.</td>
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*Hurlburt November 05*
Flare Finder

Hurlburt November 05

CoSEC
### Result List

<table>
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<th>model</th>
<th>start time</th>
<th>stop time</th>
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</thead>
</table>
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?

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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

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Mission Services

- How do we coordinate observation between missions?

<table>
<thead>
<tr>
<th>Virtual Science Operations</th>
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<tbody>
<tr>
<td>Alert</td>
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<td>SOT</td>
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Solar B
Great Observatory?
How to use CoSEC

1. Download & install beta client
   •  Requires: Java 1.4.2
   •  Platforms: Linux, Solaris, Windows, OSX

2. Download examples

3. Register in Results Center
   •  [http://cosec.lmsal.com/ResultSpace](http://cosec.lmsal.com/ResultSpace)

4. Launch CoSEC and load examples