

HESPE Meeting Graz

October 2, 2012

WP Technology (status and progress)

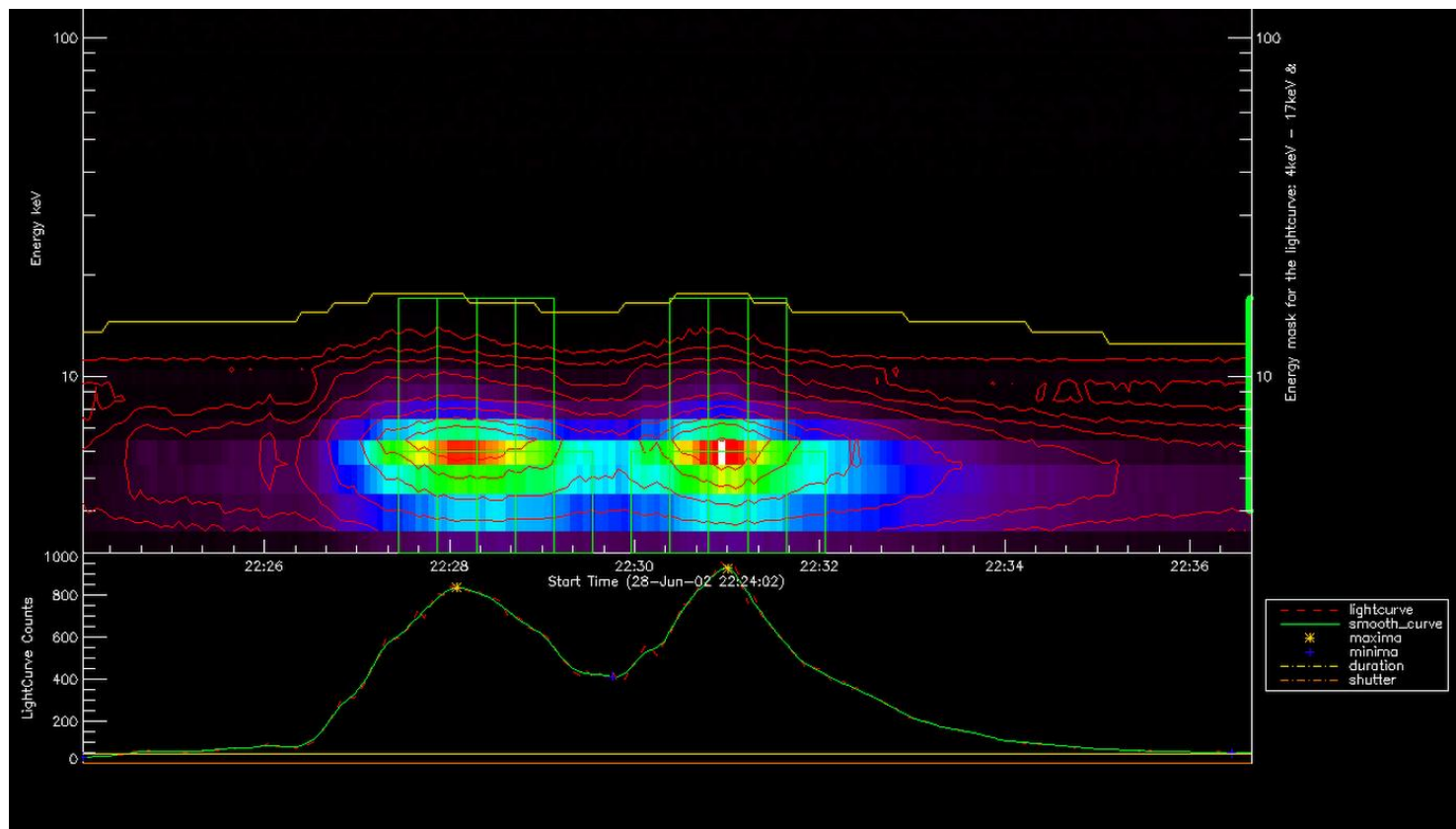
WP Technology

Provide the technological framework necessary to put the algorithms delivered by WP3 into production, and deliver the science ready data products. Provide methods necessary for the community to access and use these products. Provide the interfaces to integrate the products and tools into the existing EU Infrastructures.

Deliverable 2011

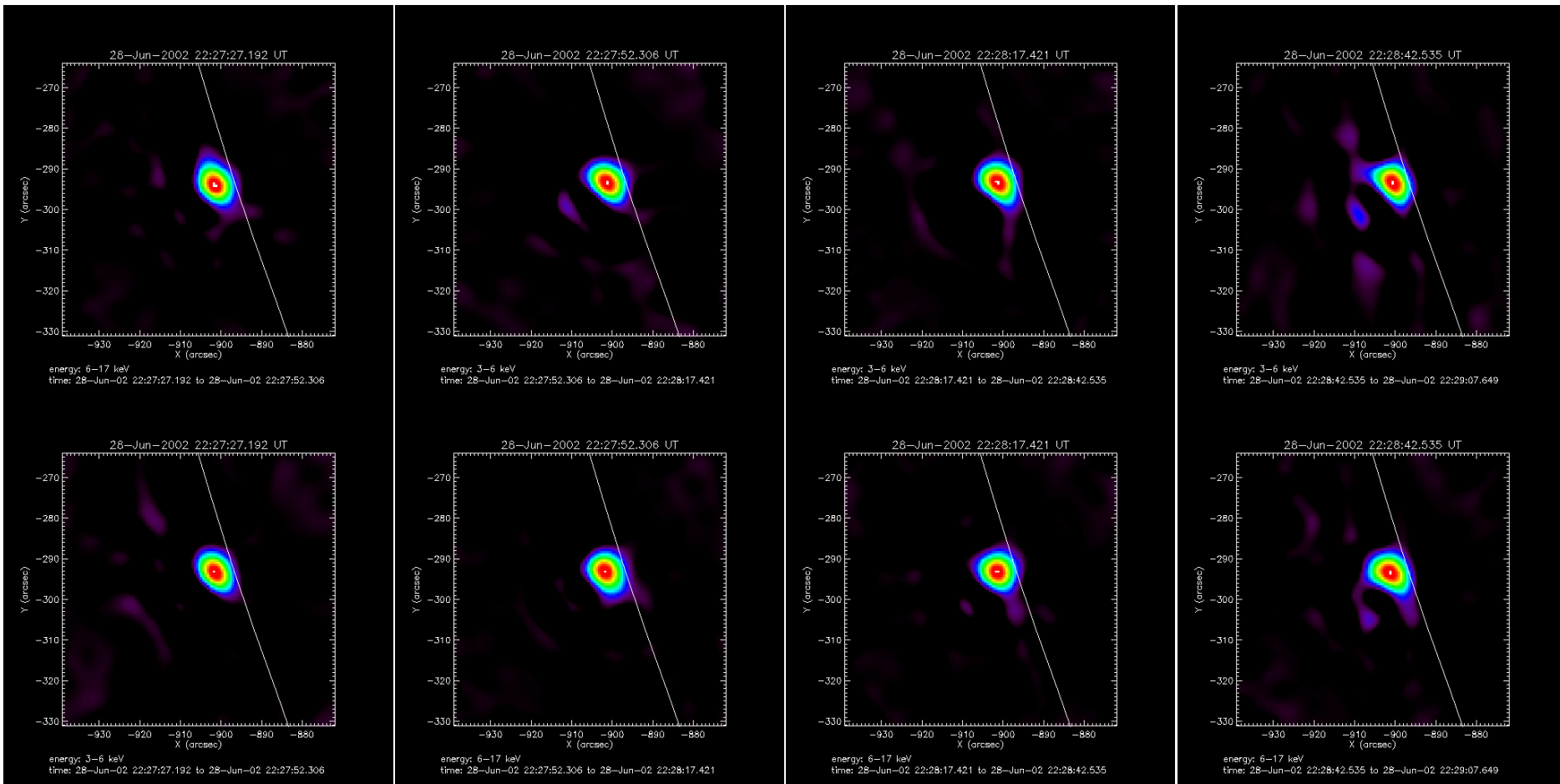
- Specification of interval selection algorithm (Month 12)
- From RHESSI data to visibilities
 - Robust
 - Automatic
 - Configurable

Interval Selection Algorithm



Flare: 2062805 (B6.8)

Reconstructed images from intervals



Algorithm: uv_smooth (detectors 2,3,4,5,6,7,8)

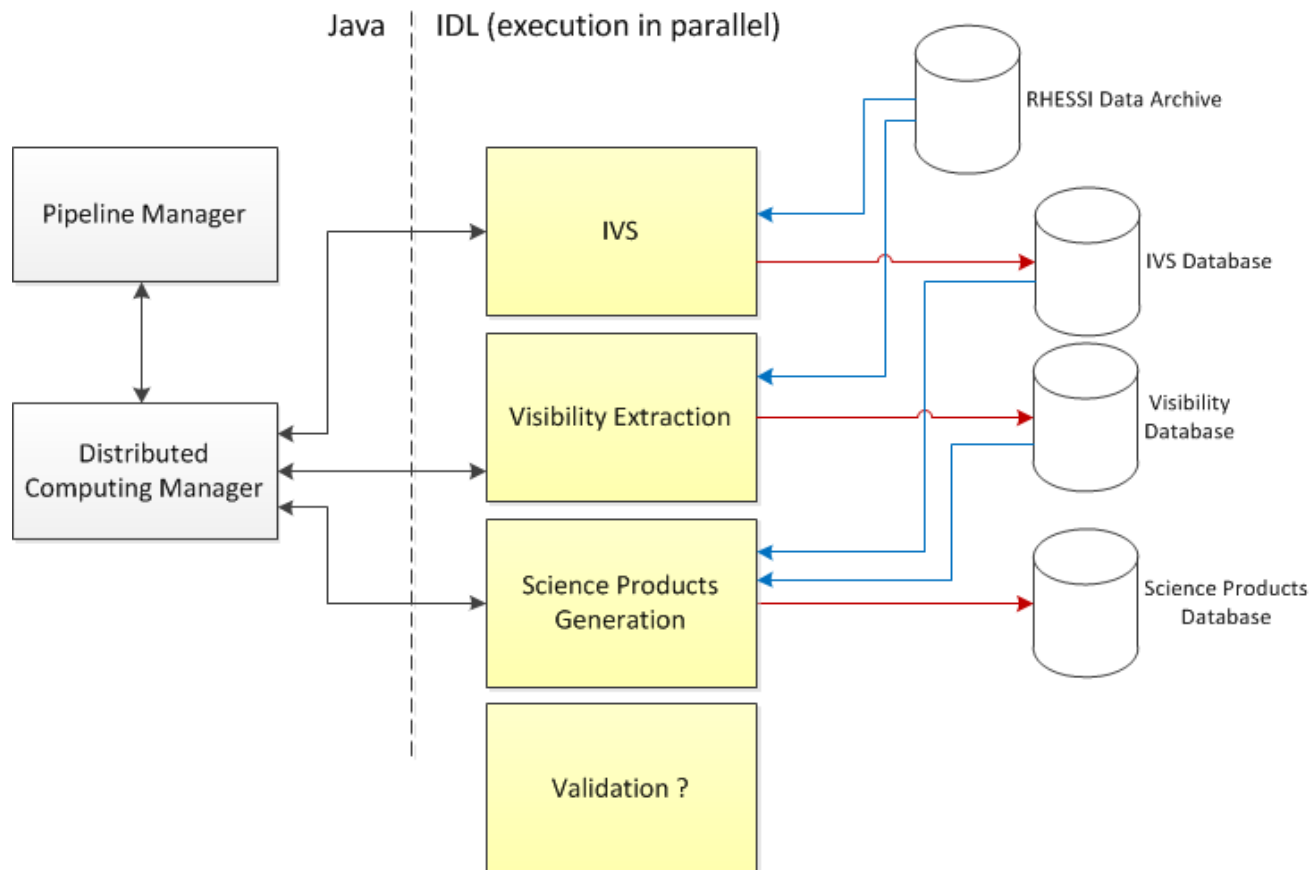
Deliverable 2012

- Publication of the visibility database (Month 24)

Status: Tasks for 2012

- Distributed and autonomous processing
 - Basic processing framework
 - Parallel data processing
- SSW RHESSI analysis software interface
- Science database creation and publication (foremost: visibilities)
- Basic data access interface

Distributed and autonomous processing



SSW RHESSI analysis software interface

- Framework can be configured using configuration files
- Data analysis process is configurable (e.g. select interval selection strategy or image reconstruction algorithm)

Science database creation and publication

- Visibility database can be created
 - Time-energy intervals based on interval selection algorithm
 - Other “resolutions” to be discussed
 - Small (B) flares < 15 minutes
 - Big (M) flares < 1 – 2 hrs
- Quicklook images are generated as well
- Visibility data export as FITS

Basic data access

- Web interface prototype (demo)
- Rework of web interface after meeting (requirements defined)
- Other interfaces to be discussed (direct idl access)

Demo

Discussion

Visibility Database

- Metadata?
 - `hsi_calib_eventlist`
- Different visibility databases (various time-energy resolutions, hierarchical approach)
- Flare-specific configurations (strategies for A, B, C, M, X flares)
- How to handle Attenuator changes?

Science Products

- Visibility database
- Science product database
 - What data?
 - Which data format (export)?
 - How to access data (web, idl, vo, other?)
 - Data product validation

Use Cases

- Interaction with data
- Research topics
- Multi-instrument analysis
- Impact on data, processing and tools

General

- Distributed computing
 - Increase available computation power
- Database maintenance (long-term support)
- How to handle recalculation of databases

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WP Technology (3rd yr perspectives)

Deliverable 2013

- Publication of the database of science ready products (Month 36)

Tasks for 2013

- Interface the data products to the European Infrastructure
 - Create metadata services for the virtual observatories: Generate a schema describing the data products and their relationships, implement the schema into a database and ingest the metadata describing the products
 - Integrate services into EU e-Infrastructures, by making the access HELIO compatible
 - Deploy database queries as web services for easy integration in any VxOs
 - Implement data mining algorithms to support flare predictions