



SPIRE Spectrometer Data Products

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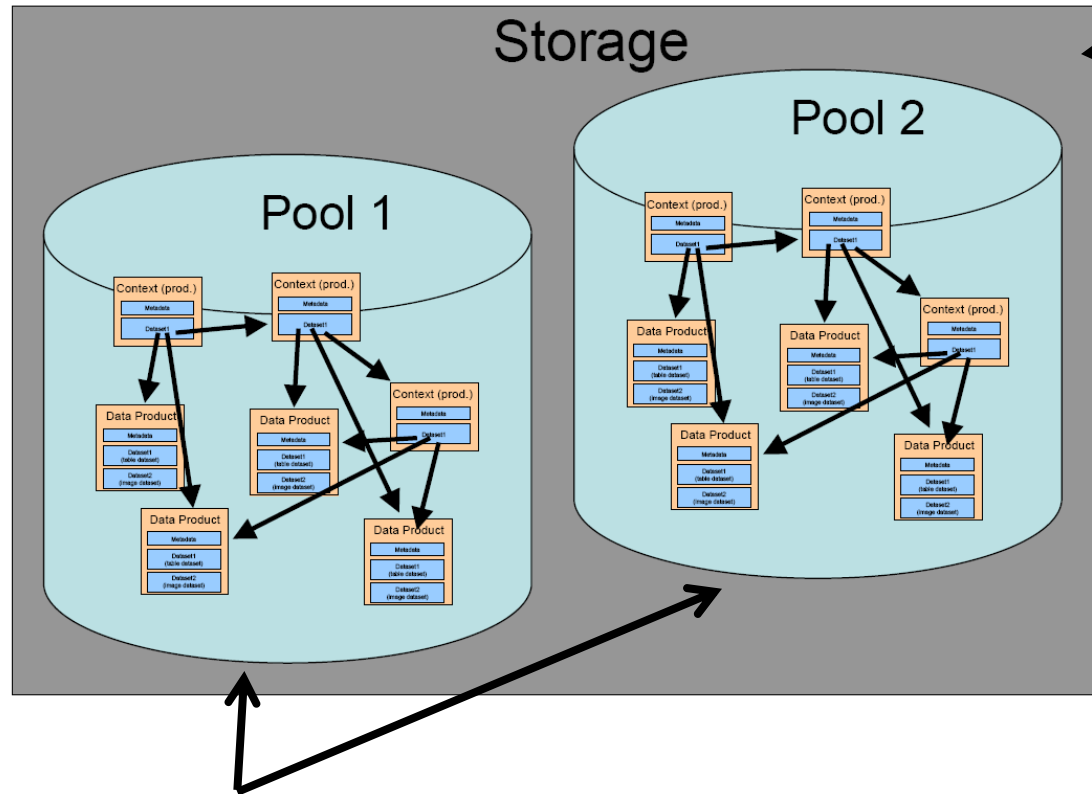


What to expect when running the pipeline on SPIRE Spectrometer data...

- When you get the data, you download to a "pool" on your local machine containing one "Observation Context" per observation
- The Observation Context contains all the data that you need:
 - Auxiliary (pointing) data
 - Calibration data
 - Level 0 (raw) data
 - Level 0.5 (engineering) data
 - Level 1 and Level 2 data

Standard pipeline products, ready to analyze!

Pools and Storage



← The storage location on the local disk

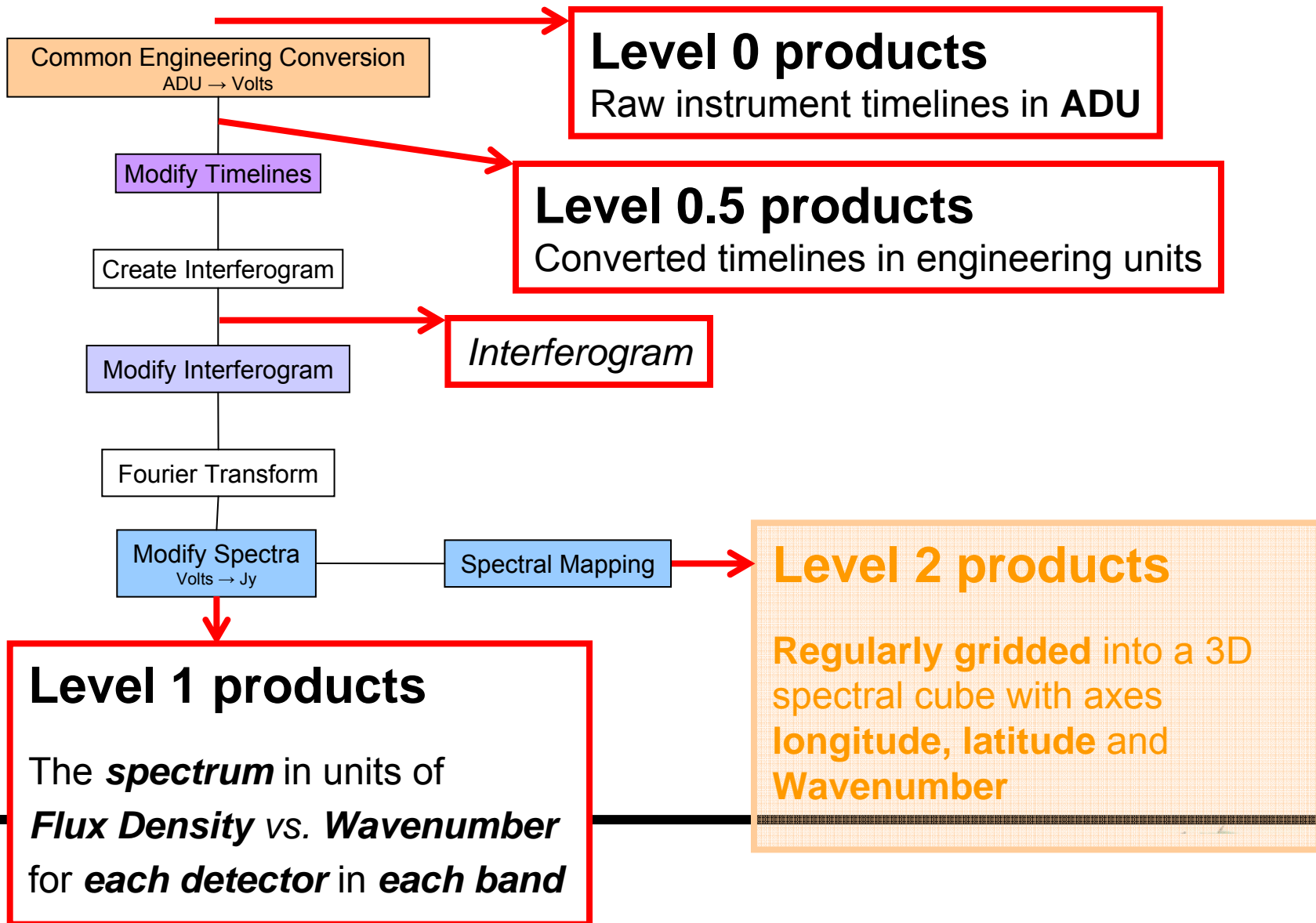
Each pool contains a collection of contexts and products contained inside the "Observation Context" → ***the Onion***

Several "pools" stored
e.g. the 3 demo pools for SPIRE named:

- demo-spire-spec-0x300117FE
- demo-spire-spec-0x30011800
- demo-spire-spec-0x30011802



Reminder: Data Product Levels





Load the Observation Context

HIPE - Herschel Interactive Processing Environment

File Edit Run Window Help

Editor x

New-1 x

```
# Open a storage
storage = ProductStorage("demo-spire-spec-0x300117FE")

# Query it for Observation Contexts
results = storage.select(Query("type=='OBS'"))

# Select the first result
observation = results[0].product
```

Console x

```
HIPE> storage = ProductStorage("demo-spire-spec-0x300117FE")
HIPE> results = storage.select(Query("type=='OBS'"))
HIPE> observation = results[0].product
HIPE>
```

Variables x

- observation
- results
- storage

appears in
"Variables" window

Variables x

- Open Enter
- Open With ▶ Product Viewer
- Send to ▶ Context Viewer
- Delete Delete
- Help Selection F1

Observation Viewer



Observation Context in the Context Viewer

Context Viewer tab

name	value	unit	description
type	OBS		Product Type Identification
creator	AUTO		Generator of this product
creationDate	2009-01-20T16:50:55Z		Creation date of this product
description	Unknown		Name of this product
instrument	SPIRE		Instrument attached to this product
modelName	PFM4		Model name attached to this product
startDate	2006-12-08T18:43:16Z		Start date of this product
endDate	2006-12-08T18:50:41Z		End date of this product
obsState	LEVEL1_PROCESSED		
obsid	805378046		
odNumber	-1		

Level 1 data
right click and open in
Context Viewer

Named Products

- level0
- level0_5
- level1
- auxiliary
- quality
- calibration
- logObsContext

Associated Products

- level0
- level0_5
- level1
 - class: herchel.spire.ia.dataset.context.Level1 Context
 - urn:demo-spire-spec-0x300117FE:herchel.spire.ia.dataset.context.Level1 Context:0
 - meta (load)
 - product
- auxiliary
- quality
- calibration
- logObsContext

Open With

- Product Viewer
- Context Viewer



Level 1 Data: *Interferograms & Final Spectra*

Editor x

observation observati...].product observati...].product x observati...].product

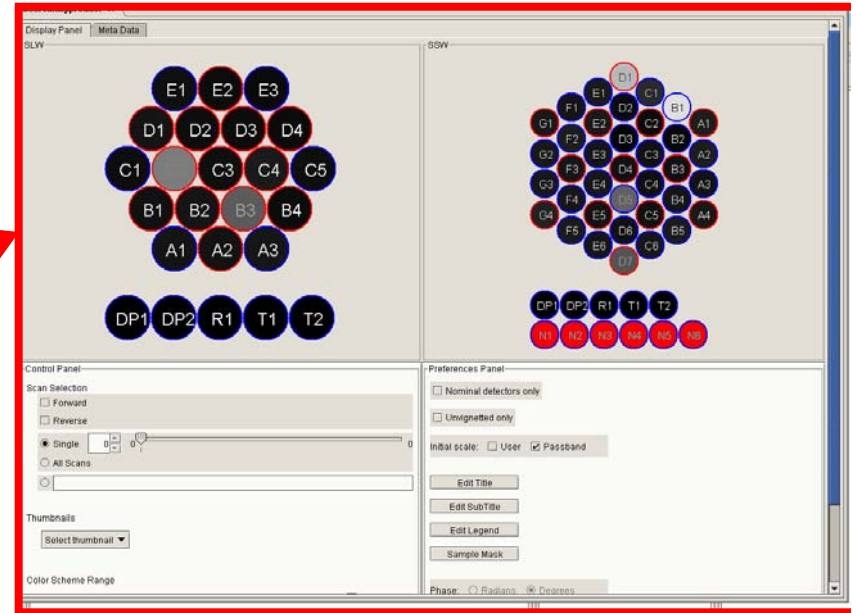
name	value	unit	description
type	Level1 Context		Product Type Identification
creator	\$Id: Level1 Context.java,v ...		Generator of this product
creationDate	2009-01-20T17:51:16Z		Creation date of this product
description	Context for SPIRE Level ...		Name of this product
instrument	SPIRE		Instrument attached to this product
modelName	PFM4		Model name attached to this product
startDate	2009-01-20T17:51:16Z		Start date of this product
endDate	2009-01-20T17:51:16Z		End date of this product
obsid	805378046		Observation Identifier

Data Sets
None

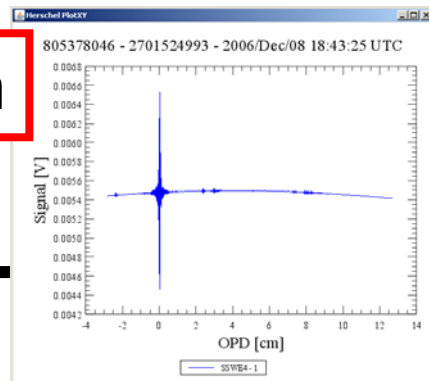
Associated Products

Indexed Products

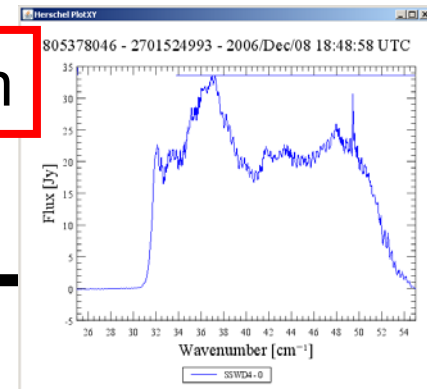
- 0
 - class: herchel.spire.ia.dataset.SpectrometerDetectorInterferogram
 - urn:demo-spire-spec-0x300117FE:herchel.spire.ia.dataset.SpectrometerDetectorInterferogram:0
 - meta (load)
 - product (load)
- 1
 - class: herchel.spire.ia.dataset.SpectrometerDetectorSpectrum
 - urn:demo-spire-spec-0x300117FE:herchel.spire.ia.dataset.SpectrometerDetectorSpectrum:0
 - meta (load)
 - product (load)



interferogram



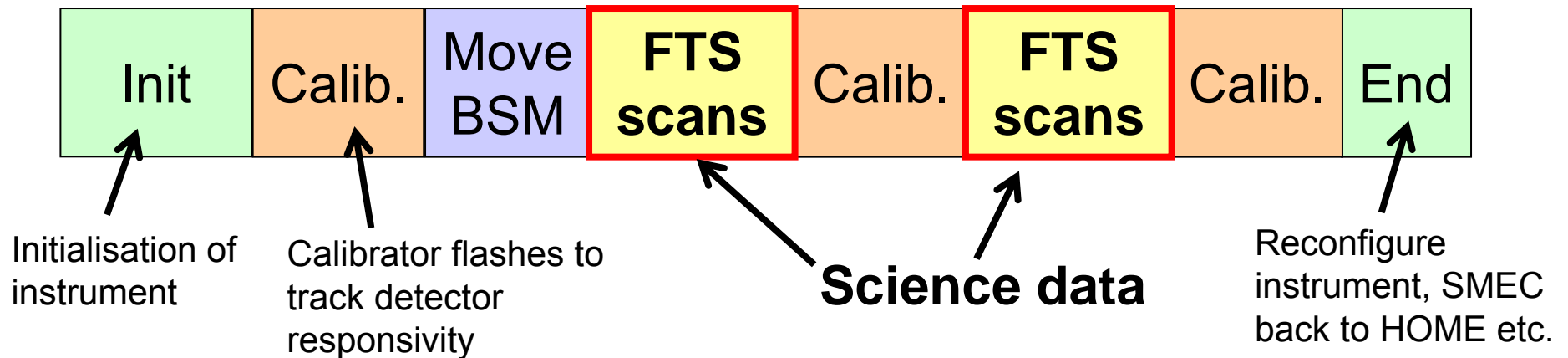
spectrum





Level 0.5 Data: *Building Blocks*

- SPIRE observations are divided into *Building Blocks*:

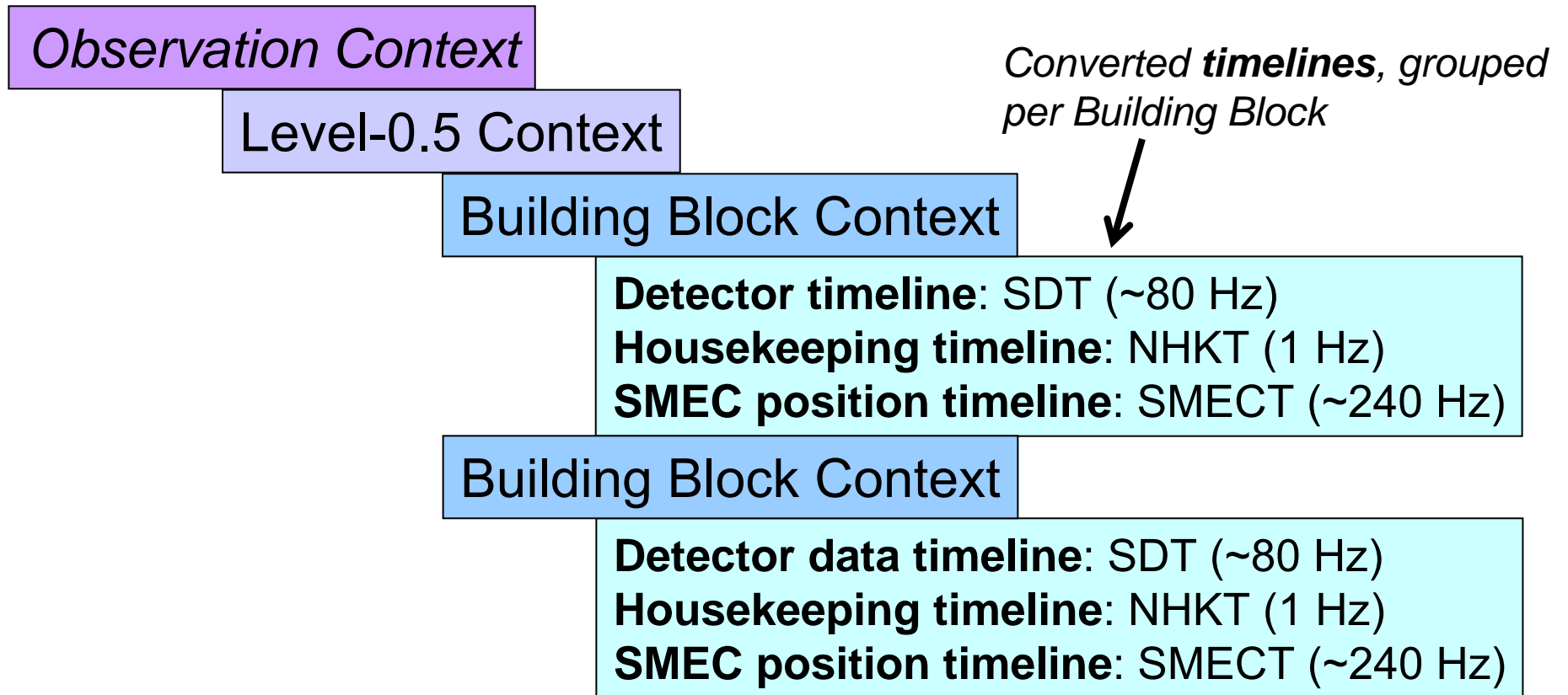


- Each **basic instrument operation** is contained in a separate building block
- The Level 0.5 **data** that you get are also divided per building block.



Level 0.5 Data

- The data you get reflect the observation structure:





Level 0.5 Context

Context containing EDP output products

name	value	unit	description
type	EdpContext		Product Type Identification
creator	\$Id: SpireListContext.java...		Generator of this product
creationDate	2009-01-20T17:46:26Z		Creation date of this product
description	Context containing EDP ...		Name of this product
instrument	SPIRE		Instrument attached to this product
modelName	Unknown		Model name attached to this product
startDate	2009-01-20T17:46:26Z		Start date of this product
endDate	2009-01-20T17:46:26Z		End date of this product

None

Associated Products

- Indexed Products
 - 0
 - 1
 - 2
 - 3
 - class: herschel.spire.ia.dataset.context.EdpBlockContext
 - urn:demo-spire-spec-0x300117FE:herschel.spire.ia.dataset.context.EdpBlockContext:3
 - meta (load)
 - prod
 - 4
 - 5
 - 6
 - 7

Context menu options: Open, Open With, Help Selection, Product Viewer, Context Viewer

Building blocks that make up the level 0.5 context. Each one contains several timeline products

open one Building Block



One Building Block

MapContext for SPIRE products

name	value	unit	description
type	EdpBlockContext		Product Type Identification
creator	\$Id: SpireMapContext.jav...		Generator of this product
creationDate	2009-01-20T17:46:34Z		Creation date of this product
description	MapContext for SPIRE pr...		Name of this product
instrument	SPIRE		Instrument attached to this product
modelName	PFM4		Model name attached to this product
startDate	2006-12-08T18:43:06Z		Start date of this product
endDate	2006-12-08T18:43:29Z		End date of this product
obsid	805378046		
bbid	2818637825		Building Block Identifier
fileName	EdpBlockContext_30011...		file name for export

Associated Products

- SDT
 - class: herschel.spire.ia.dataset.DetectorTimeline
 - urn:demo-spire-spec-0x300117FE:herschel.spire.ia.dataset.DetectorTimeline:1
 - meta (load)
- CHKT
- NHKT
- SCUT

Context menu for SDT: Open, Open With (Product Viewer, Detector Timeline Viewer), Help Selection (F1)

3 tables of data

offsetApp	true
slwBiasAmpl	0.031132395
sswBiasA...	0.03112677
rcRollApp	true
jiggld	0
pointNum	0

Data Sets

- Datasets
 - voltage
 - resistance
 - mask
 - quality
 - temperature

Console

Detector Timeline Viewer

Plot for SSWD4
 Short Data Fri Dec 08 18:43:25 GMT 2006

Y-axis: voltage [V]
 X-axis: sampleTime[null]

Control Panel: Current index 0 of 24173, Select time scale (Relative, Absolute), Select color scale (Gray, Heat)

Spectrometer Detector Timeline (SDT)