

# ECLAIRs PIPELINE: Proposal GP ECPI for DC1



**Proposal for the GP ECLAIRs pipeline test of the FSGS Data Challenge 1 - 1**

**Scenario: High-Energy observation of the Crab Nebula during part of an orbit, with surrounding sources (not visible for this exposure), flat bkg, without FoV Earth occultation/albedo, no GRB**

## **Observing Conditions:**

- Part of 1 Orbit without Earth in the ECLAIRs FoV
- Pointing: Crab nebula (target ID)
- Exposure: 30 min (without interruptions and deadtimes)
- Environment: flat CXB (Moretti spectrum), no SAA, no solar flares
- Source parameters from Catalog: SWIFT/Bat ( $E > 20$  keV)

## **ECPI components involved ([]=not formally ECPI components):**

- [SIMU] : simulation of data from sources and bkg in the FoV => delivery to IRFU for L1
- **DPCO** : reading L1 data, prepare input files for BUBE
- **BUBE** : selection, binning in detector UBC images (no uniformity, no bkg, no Earth corrections)
- **IMAG** : full processing of data with IT3 IMAG version (fully tested)

# ECLAIRs PIPELINE: Proposal GP ECPI for DC1



## Proposal for the GP ECLAIRs pipeline test of the FSGS Data Challenge 1 - 2

### FSC Interfaces:

- FSC: start and control of ECPI running
- SDB / CalDB : L1 data, AUX files
- Pre-Processing: L1 SDP from PP **ECL-EVT-SEC, SVO-ATT-CNV** (possibly SVO-ORB-CNV)
- EIC: Auxiliary files **ECL-RSP-ENE, ECL-RSP-IRF**, (possibly ECL-INP-CNF)

### Processing:

- Read L1 DP produced by PP: ECL-EVT-SEC, SVO-ATT-CNV (SVO-ORB-CNV ?)
- Read AUX-ECL files (from EIC)
- Simulate and Process data of the Crab and surrounded sources in few high energy bands provide data products
- Internal input files : ECPI parameters, bkg spectrum, (possibly ECL-INP-CNF)

### Data Products and Output:

- DPCO: **ECL-EVT-CAL**, log
- BUBE SDP: **ECL-UBC-IMA** (for 2-4 energy bands between 20-150 keV), log
- IMAG: **ECL-SKY-IMA, ECL-SOP-IMA**, log

Minimal proposal: more functionalities or I/F can be introduced if ready for DC1

E.G.: non flat bkg, weaker targets, more sources, GRB in the FoV (CP !) etc.

# GP ECLAIRs PIPELINE DC1: I/O



## Input SDB (L1):

- **SVO-ATT-CNV**
- **ECL-EVT-SEC**
- **SVO-ORB-CNV**

## Input CalDB :

- **ECL-RSP-ENE**
- **ECL-RSP-IRF**
- ECL-INP-CNF (?)

## Output SDB:

- **ECL-EVT-CAL**
- **ECL-UBC-IMA**
- **ECL-SKY-IMA**
- **ECL-SOP-IMA**

## Pipeline Internal Input / Output

- ECPI parameters: OBSID, tstart, tstop, energy bands (2-4 energy bands between 20-150 keV) ...
- Bkg model (CXB Moretti spectrum, Flat shape, no particle/activation bkg, no SAA, no solar flares)
- SWIFT/BAT Catalogue
- Log, Results in some readable form (TBD)