

AGILE Data Center @ ASDC

**9th and 10th AGILE
Workshops**
ASDC, 16-18 April, 2012

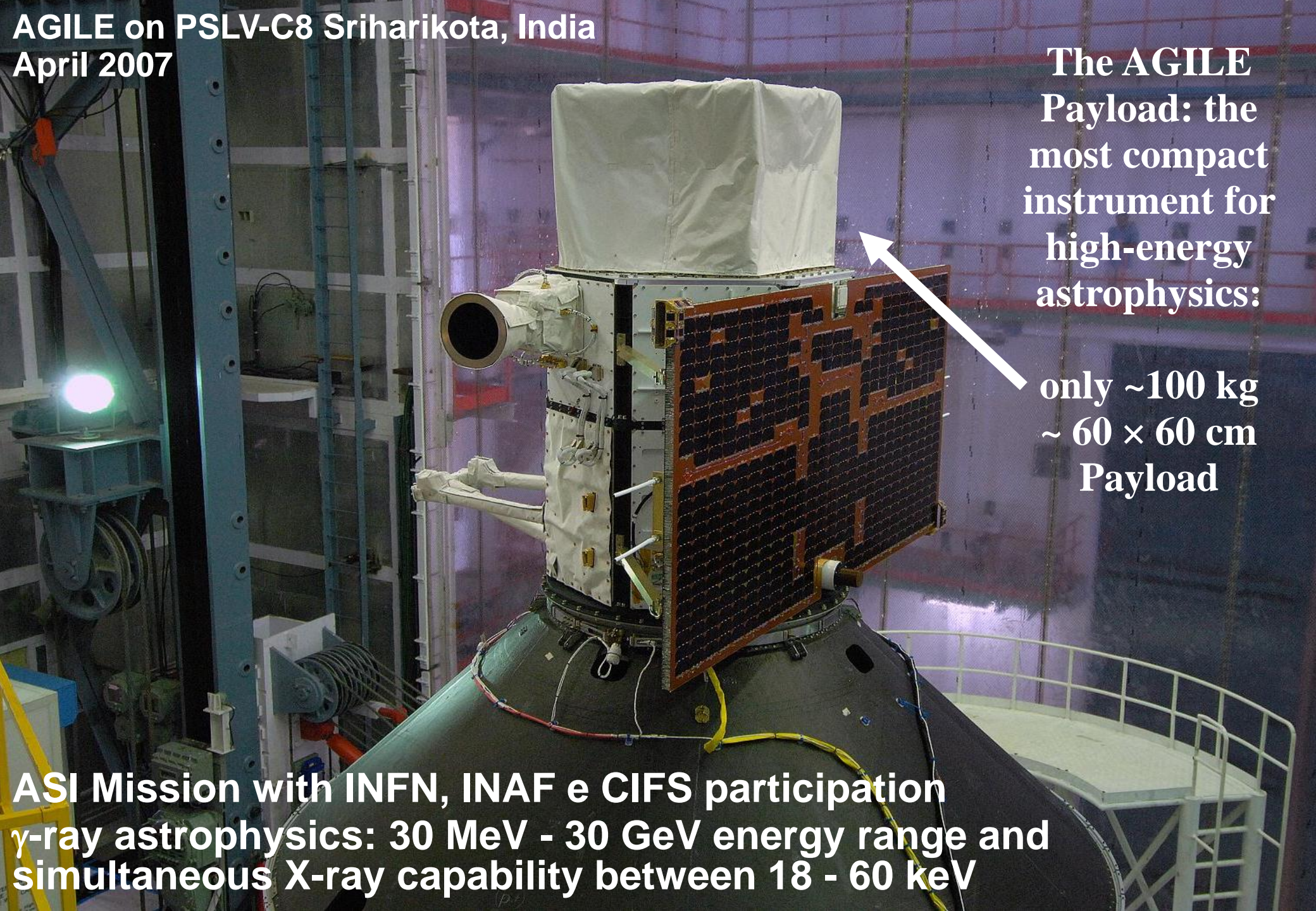
**Carlotta Pittori,
on behalf of the AGILE Data Center**

**AGILE on PSLV-C8 Sriharikota, India
April 2007**

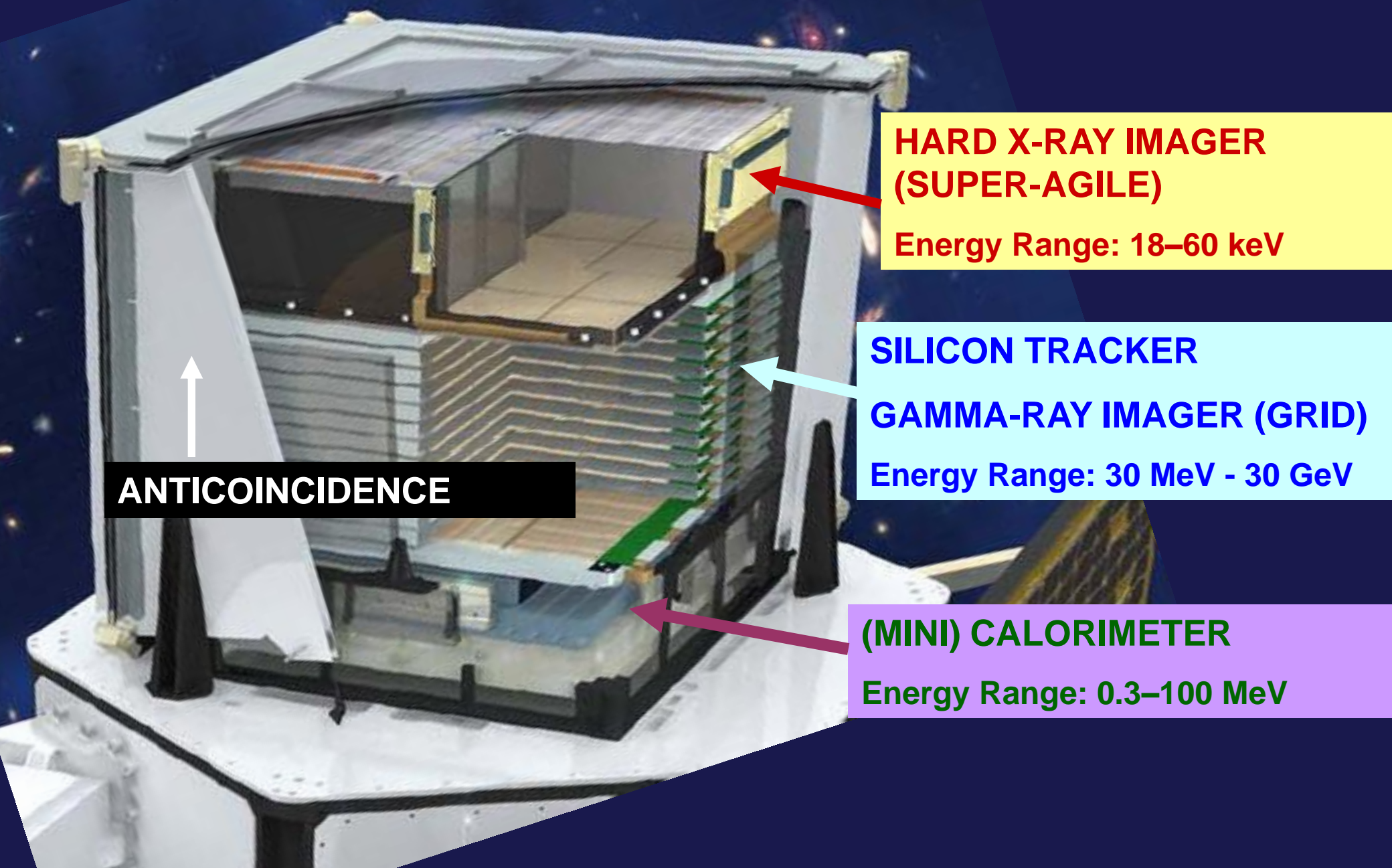
**The AGILE
Payload: the
most compact
instrument for
high-energy
astrophysics:**

**only ~100 kg
~ 60 × 60 cm
Payload**

**ASI Mission with INFN, INAF e CIFS participation
γ-ray astrophysics: 30 MeV - 30 GeV energy range and
simultaneous X-ray capability between 18 - 60 keV**



AGILE: inside the cube...



**HARD X-RAY IMAGER
(SUPER-AGILE)**
Energy Range: 18–60 keV

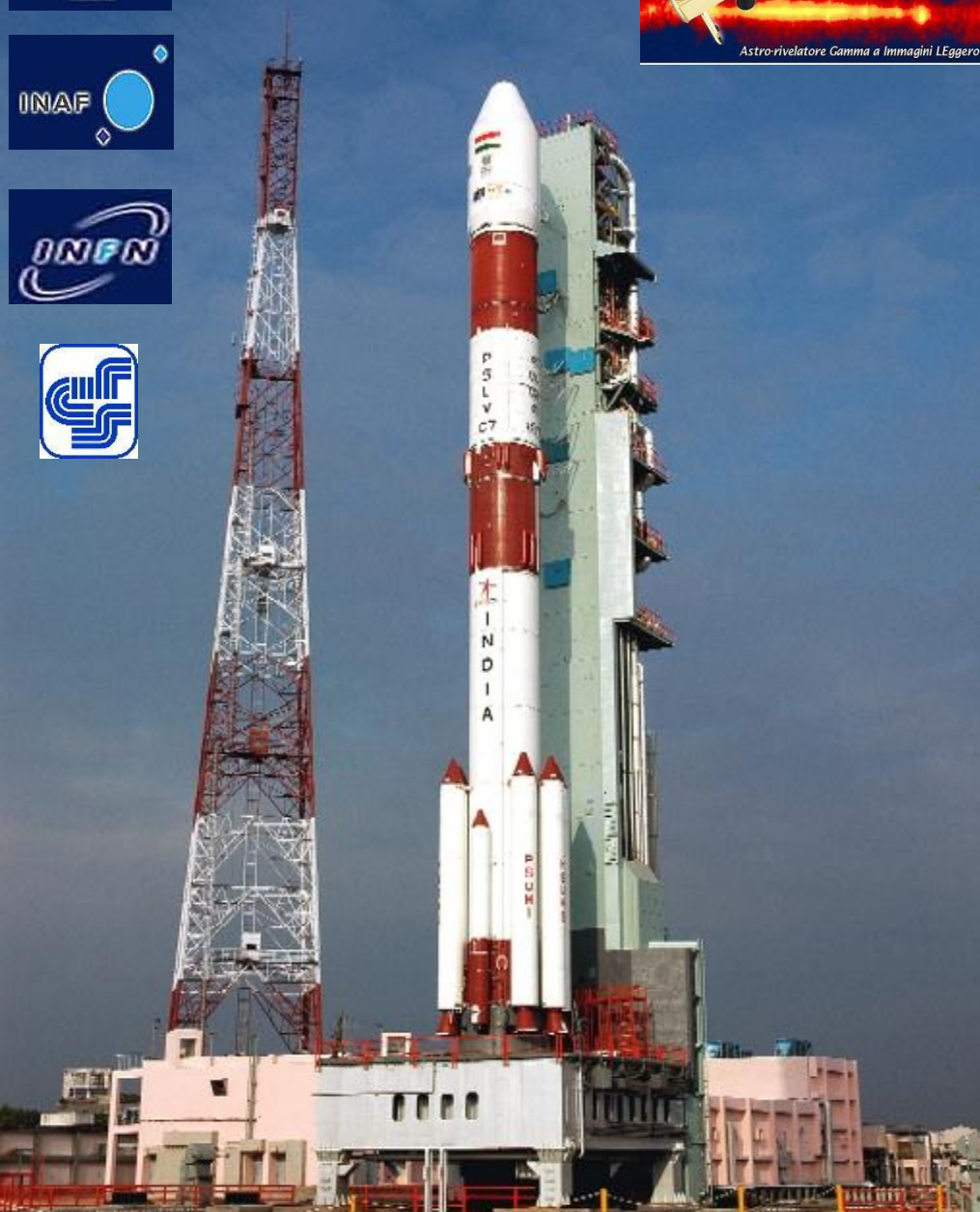
**SILICON TRACKER
GAMMA-RAY IMAGER (GRID)**
Energy Range: 30 MeV - 30 GeV

(MINI) CALORIMETER
Energy Range: 0.3–100 MeV

ANTICOINCIDENCE



April 23, 2007: Launch!



Equatorial orbit: 550 Km, $< 3^\circ$ inclination angle

AGILE orbital parameters

Baseline equatorial orbit: 550 Km, 3° inclination

Semi-major axis: 6922.5 km (± 0.1 km)

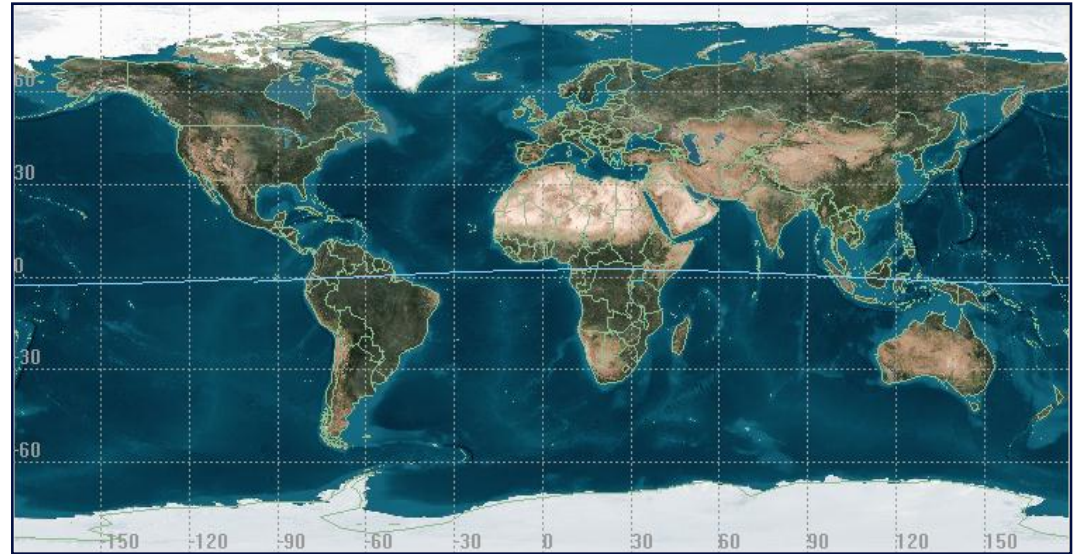
Requirement: 6928.0 \pm 10 km

Inclination angle: 2.48° ($\pm 0.04^\circ$)

Requirement: $< 3^\circ$

Eccentricity: 0.002 (± 0.0015)

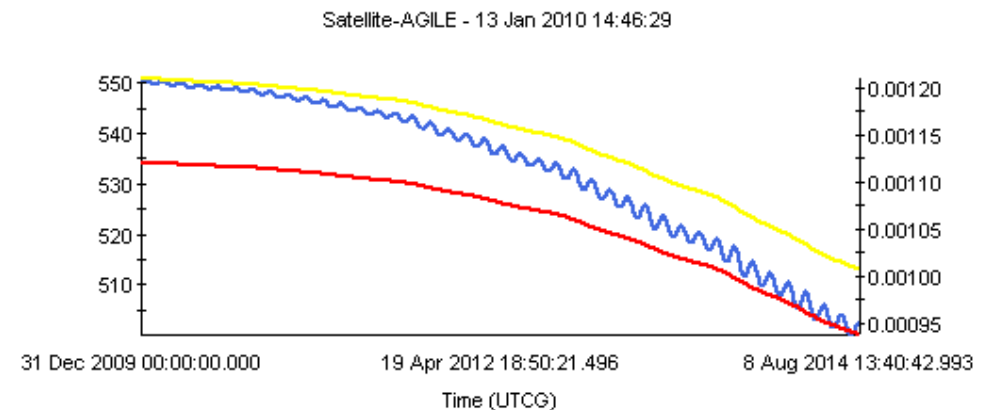
Requirement: $< 0.1^\circ$



TPZ orbital decay estimate:

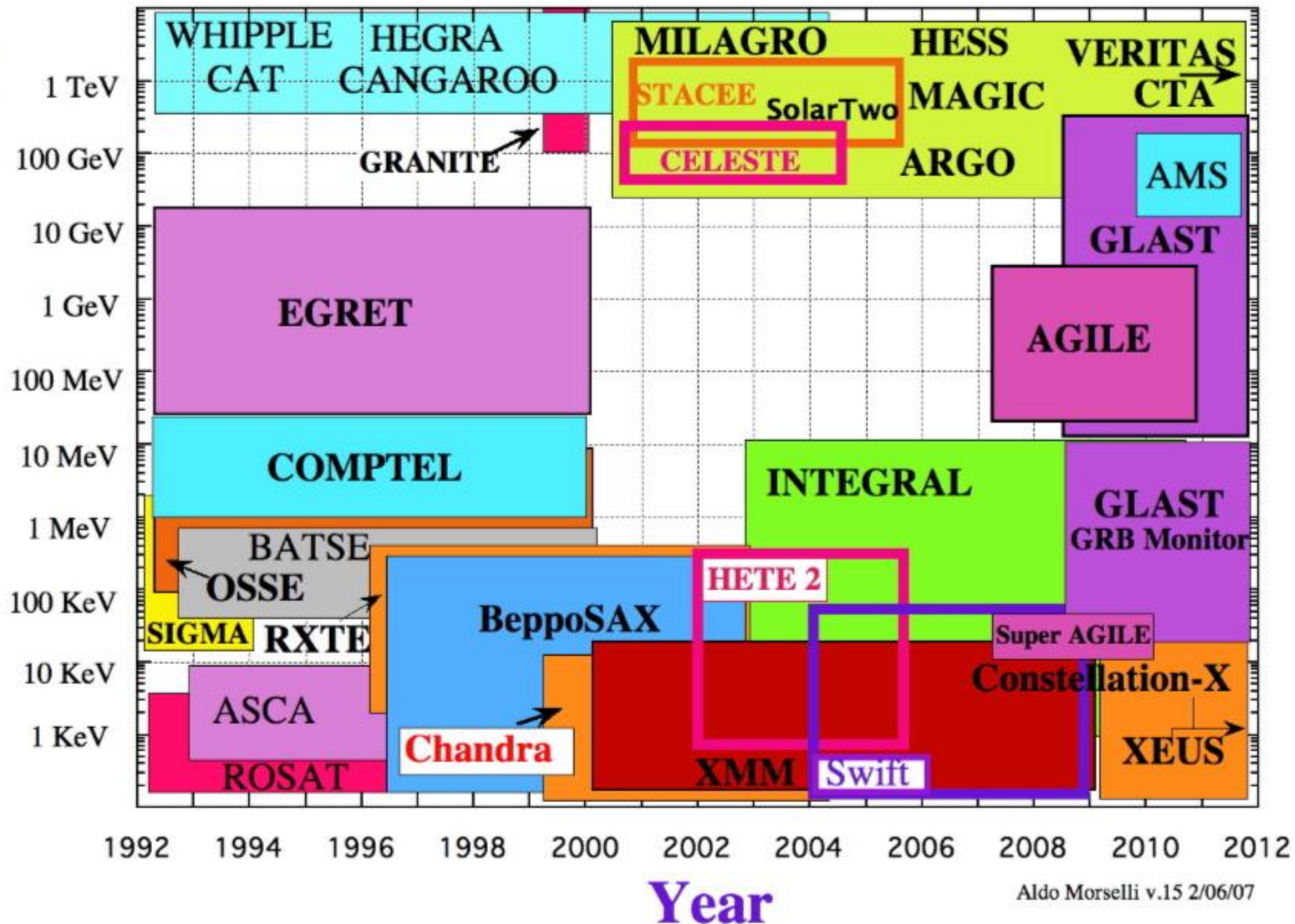
Height < 500 Km **08 Agosto 2014**

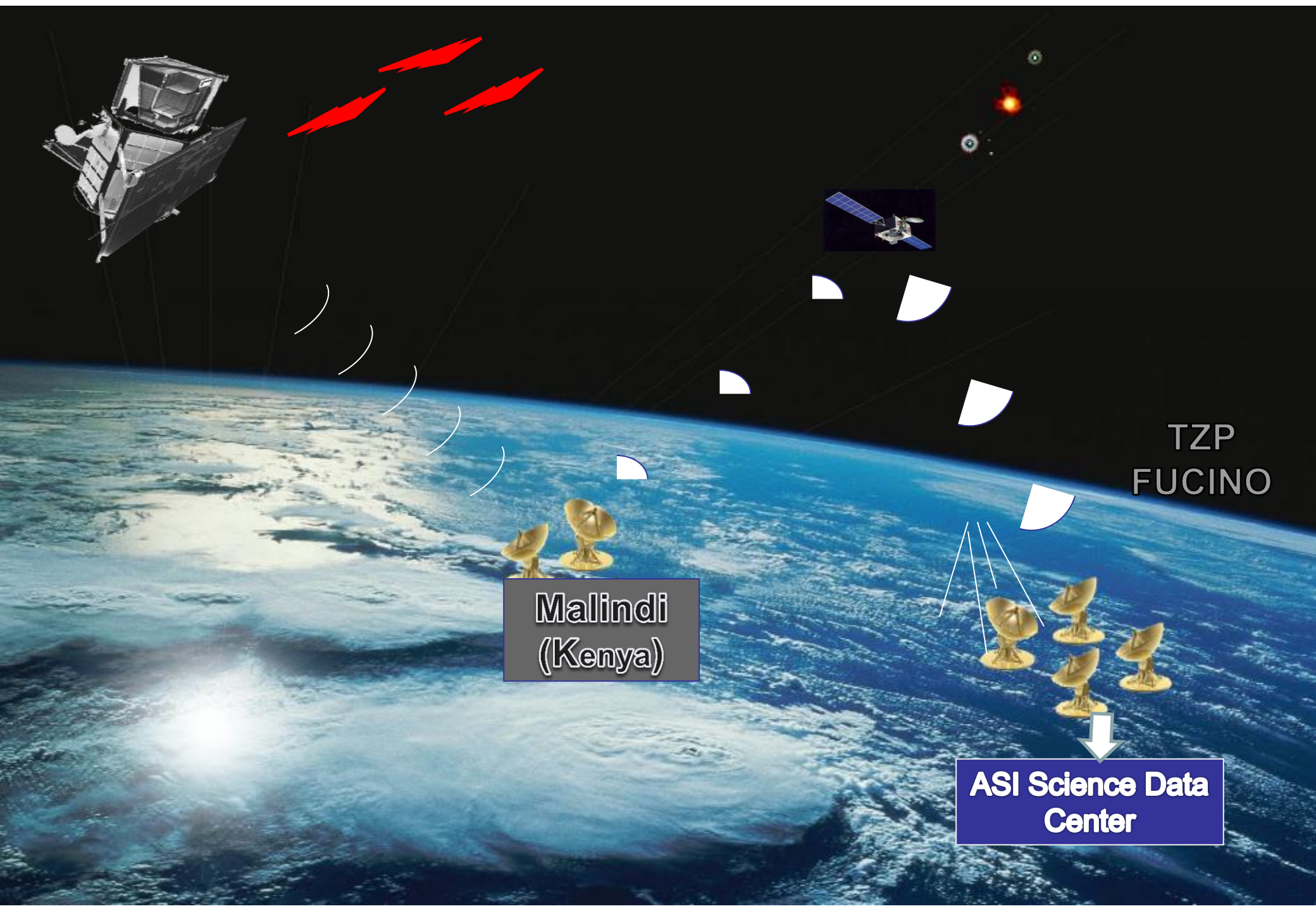
(Jan 13, 2010 estimate, using solar flux “Schatten” forecasts + 2σ)



— Height of Apogee (km)
— Height of Perigee (km)
— Eccentricity

Energy



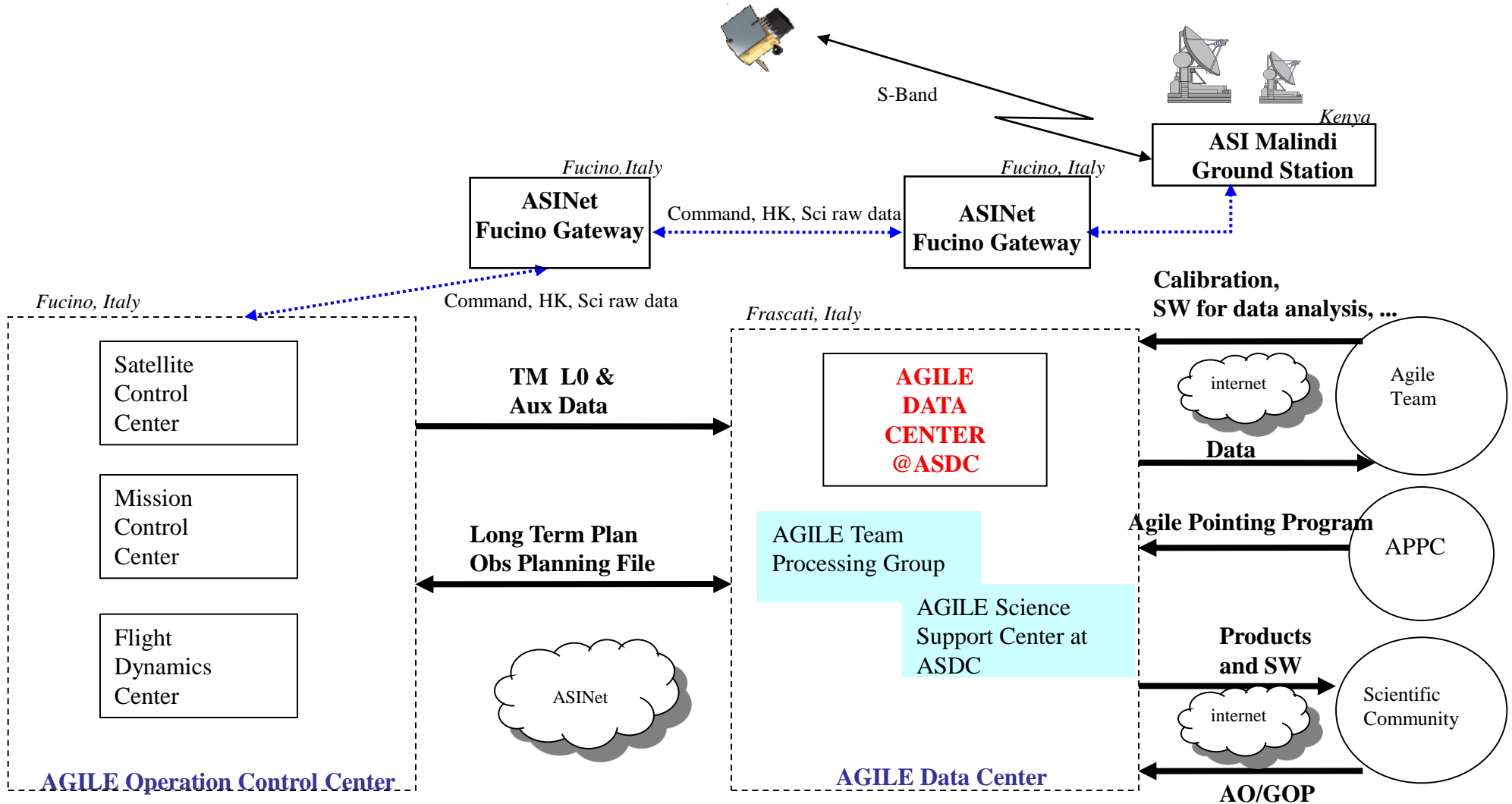


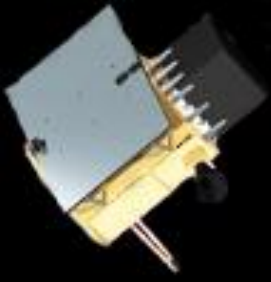
TZP
FUCINO

Malindi
(Kenya)

ASI Science Data
Center

AGILE GS Architecture





AGILE

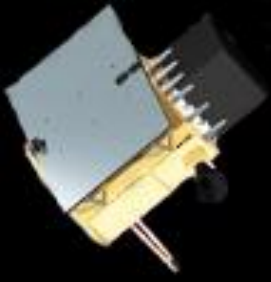
Science Data Center



AGILE Telemetry raw data (Level-0) are down-linked every ☒ 100 min to the ASI Malindi ground station in Kenya and transmitted first to the Telespazio Mission Control Center at Fucino, and then to the AGILE Data Center (ADC). Raw data are routinely received at ADC **within ☒ 5 min after the end of each contact.**

ADC main tasks are:

- data processing (real-time and reprocessing) and production of the data archives (from raw data to scientific level data through calibration level data),
- **preliminary data analysis (Quick Look Analysis),**
- **management of the Guest Observer Program and of the AOs**
- **management of the Mission Planning (Long Term Plan preparation and emission),**
- data and software distribution to the scientific community



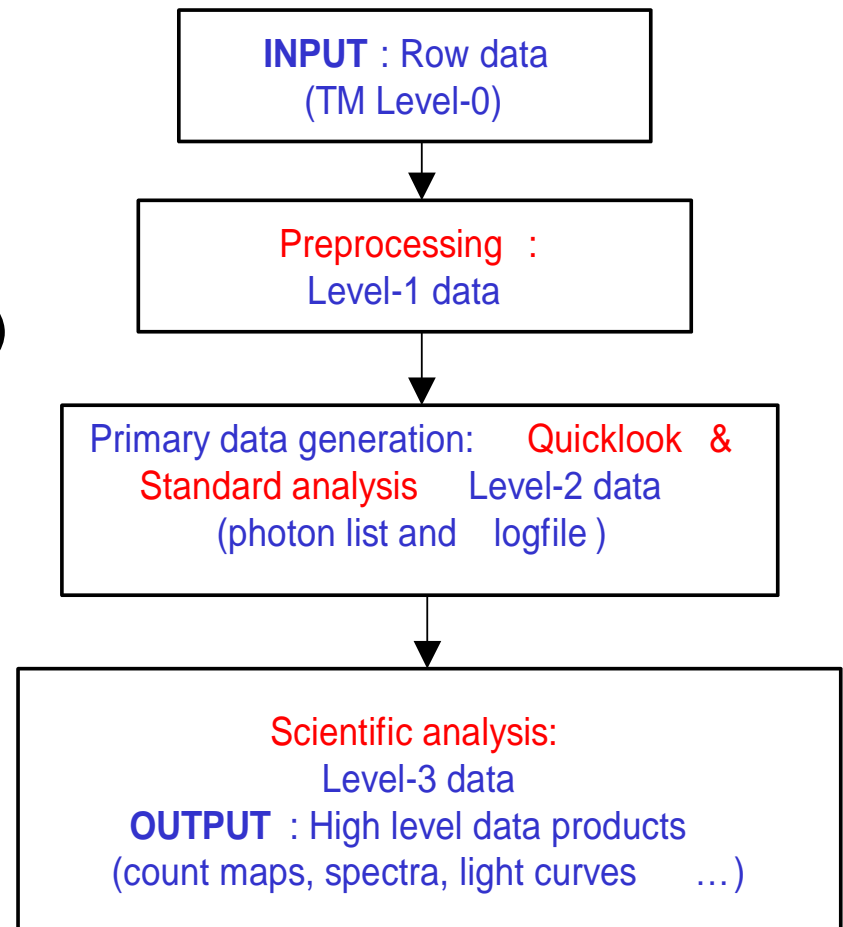
AGILE

Science Data Center

- The ADC, based at ASDC-ESRIN, is in charge of **all the scientific oriented activities related to the analysis and archiving** of AGILE data:

From scientific telemetry (TM) Level-0:

- ✓ Preprocessing → Level-1 data
- ✓ Quick-Look Analysis (transient detection)
- ✓ Standard analysis → Level-2 data (photon list)
- ✓ Scientific analysis (source detection, diffuse gamma-ray background)
- ✓ Archiving and distributing **all scientific AGILE data**



AGILE Data Center at ASDC today:

Carlotta Pittori coordinator (INAF), Patrizia Santolamazza e Francesco Verrecchia (INAF) + Fabrizio Lucarelli (INAF, since dec 2009), G. Fanari and S. Stellato (Telespazio)



Paolo Giommi
ASDC Director



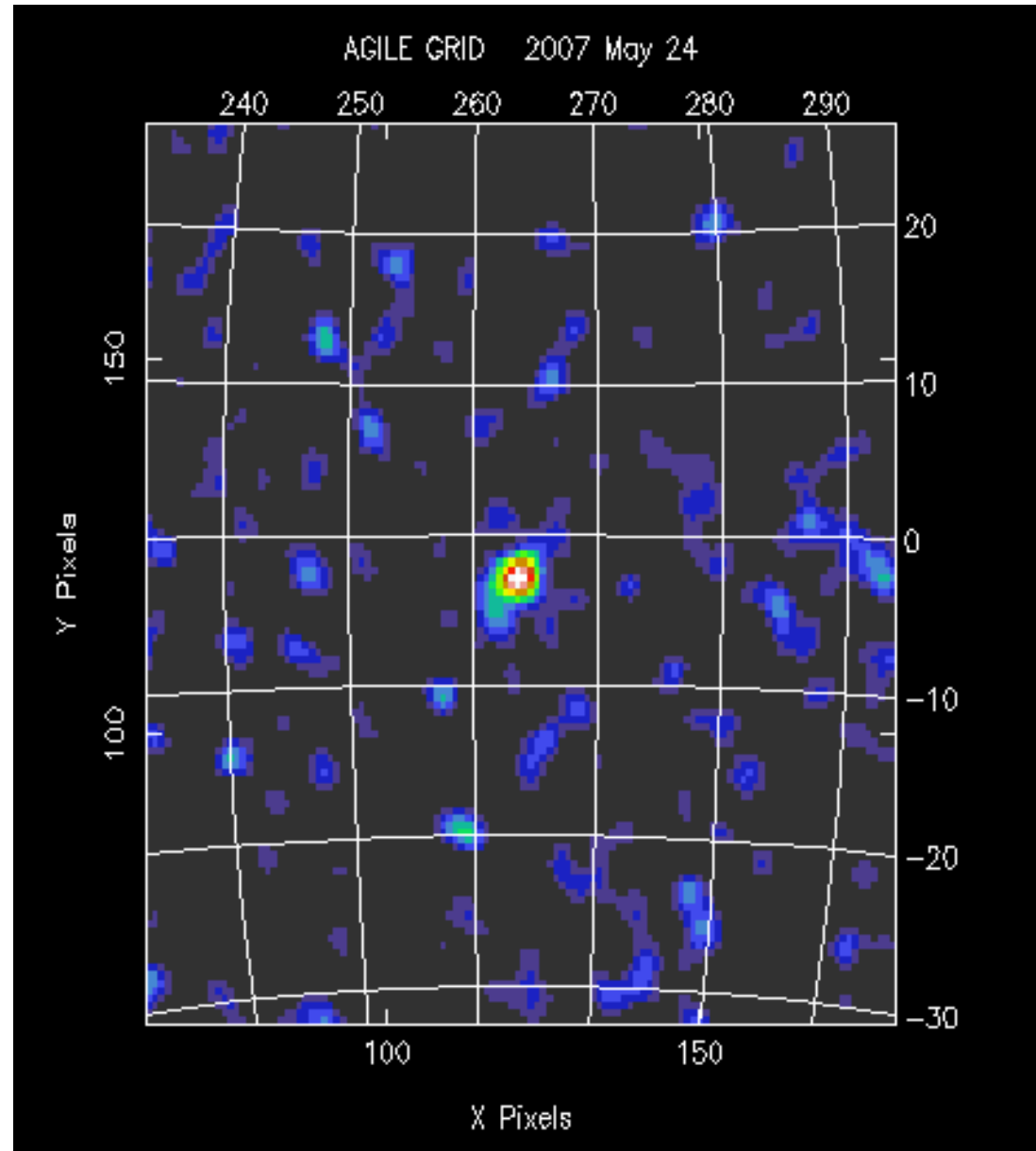
F. Tamburelli

(AGILE in calibrazione @ LNF)

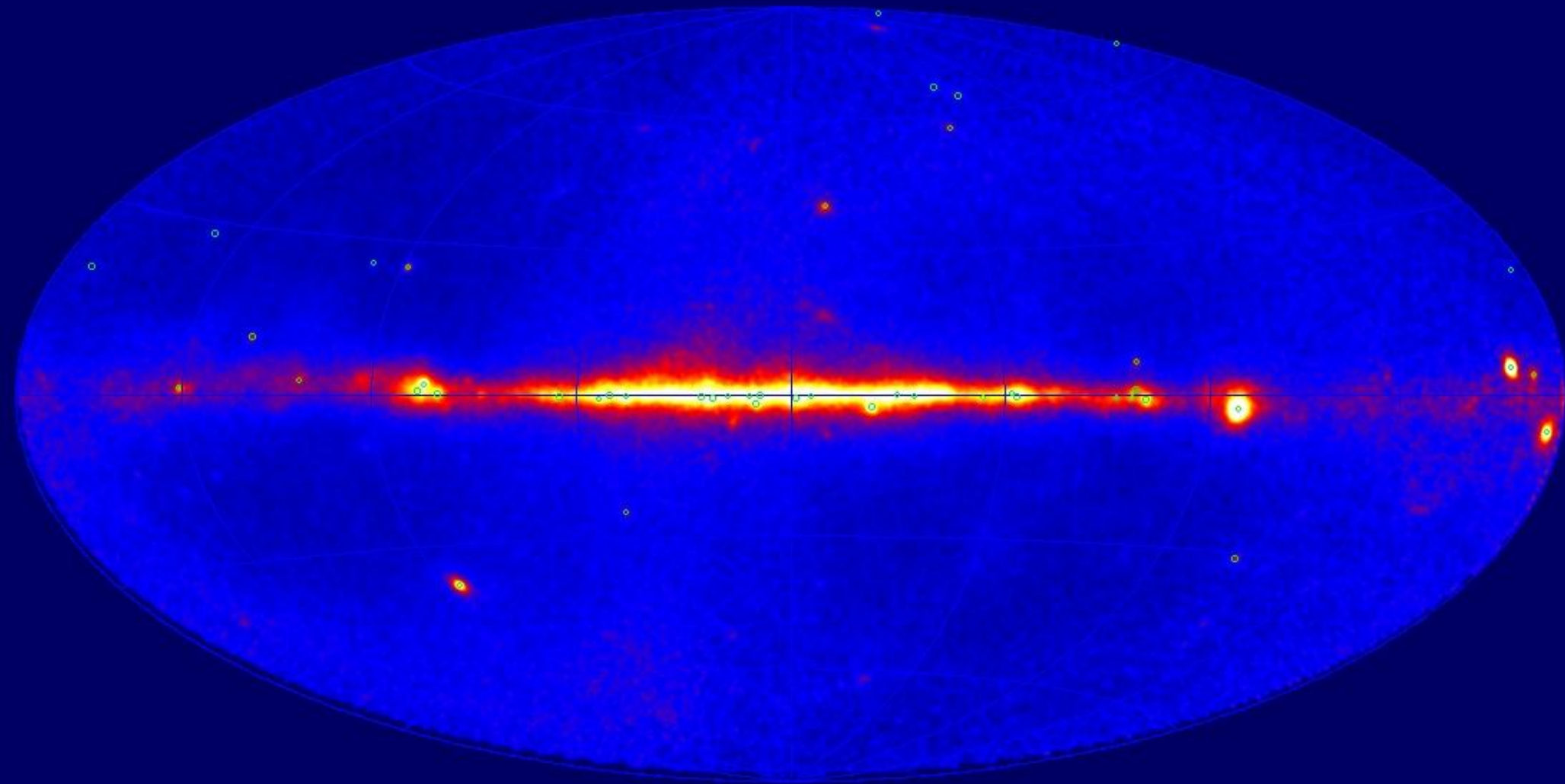
First AGILE GRID light
ADC 24/5/2007

Commissioning Phase:
AGILE Vela PSR Count Map

(~ 20000 s)



AGILE Total Intensity Map ($E > 100$ MeV):
Pointing + Spinning (up to July 30, 2011)



“The First AGILE-GRID Catalog of High Confidence Gamma-Ray Sources”
C. Pittori et al., A&A 506, 2009 (green circles, first year of operations)

The First AGILE GRID Catalogue of γ -ray Sources

Period July 2007 -- June 2008

Pulsars

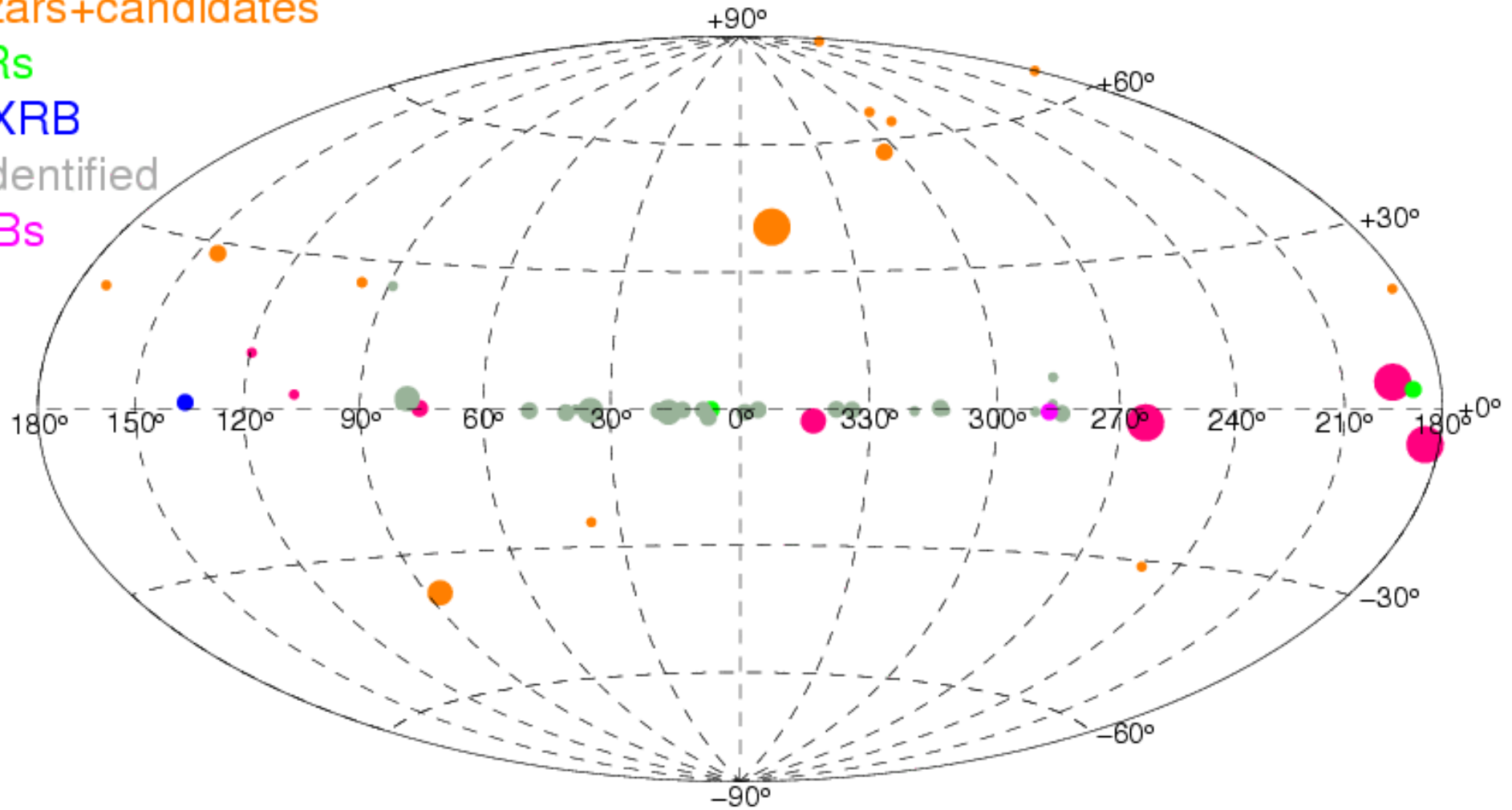
Blazars+candidates

SNRs

HMXRB

Unidentified

CWBs



Flux > 200 $\times 10^{-8} \text{ phcm}^{-2} \text{ s}^{-1}$



80 < Flux < 200



50 < Flux < 80



Flux < 50

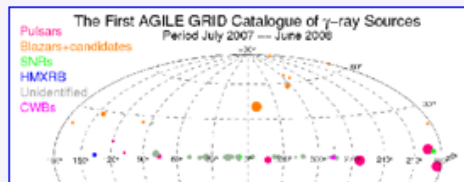
The First AGILE-GRID Catalog of High Confidence Gamma-Ray Sources

C. Pittori, F. Verrecchia, A. Chen, A. Bulgarelli, A. Pellizzoni, A. Giuliani, S. Vercellone, F. Longo, M. Tavani, P. Giommi et al.
A&A 506, 1563-1574 (2009)

Revised version - July 30, 2009.

The First AGILE Catalog includes sources detected by using AGILE-GRID data from July 9, 2007, end of the Satellite Commissioning phase, to June 30, 2008. Users can also download the First AGILE Catalog in FITS format here.
Refined analysis of complex regions of the Galactic plane yielded a new list of 47 high-confidence sources, compared to the 40 sources of the first version. Previous preliminary versions were published on this webpage to allow AGILE AD2 guest observers to benefit of the Catalog in the preparation of their proposals.

If the AGILE Catalog data are used in publications, please acknowledge the AGILE Collaboration efforts by the following sentence:
"We acknowledge the use of The First AGILE Catalog of High Confidence Gamma-ray Sources, C. Pittori et al. 2009, A&A 506, 1563-1574 (2009), and on-line version available from the ADC web pages at ASDC."



asdc ASI Science Data Center VO Tools

VO mode: off (turn on) Help

Cone Search
Source Name:
Resolve name

RA, Dec, L, B Clean

radius: 60 arcmin
Search
Reset filter

Help


Show/hide columns

Advanced filtering

Print current view of table

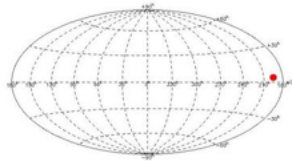
Print complete table

Reset all filters



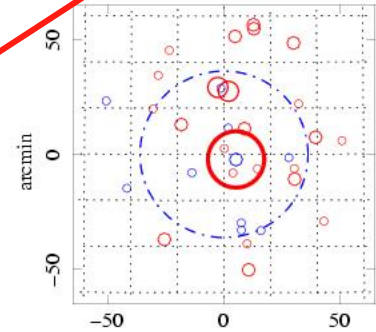
Entry 1AGL J0634+1748 --- GEMINGA

R.A.(J2000) = 06 34 15.9 (98.5662 deg) l=195.14
Dec (J2000) = +17 48 27.8 (17.8077 deg) b=4.36
Galactic nH = 3.50E+21 (cm⁻²)



Error circle EXPLORER

Source Details



arcmin
sources list

TUTORIAL HELP

Default catalogs (always selected)

Selectable catalogs:

Default selection [i]

Radio [select]

Infrared [select]

Optical [select]

X-Ray [select]

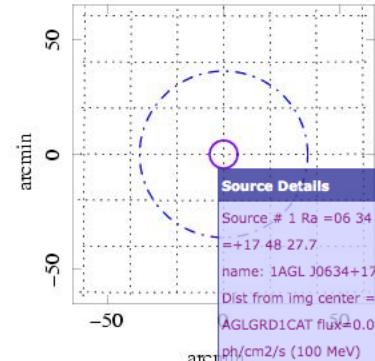
Gamma [select]

Source Catalogs [select]

[Selected catalog List >>]

size (arcmin) 60

Create new image



Source Details

Source # 1 Ra = 06 34 16.0 Dec = +17 48 27.7

name: 1AGL J0634+1748

Dist from img center = 1.2 arcsecs

AGLGRD1CAT flux = 0.0000032 ph/cm²/s (100 MeV)

arcmin
sources list

Position selected for the analysis: R.A.=06 34 15.9 (98.5662 deg) l=195.14
Dec=+17 48 27.8 (17.8077 deg) b=4.36 SED Builder

Galactic nH= 3.50E+21 (cm⁻²)

[Reset Position](#)

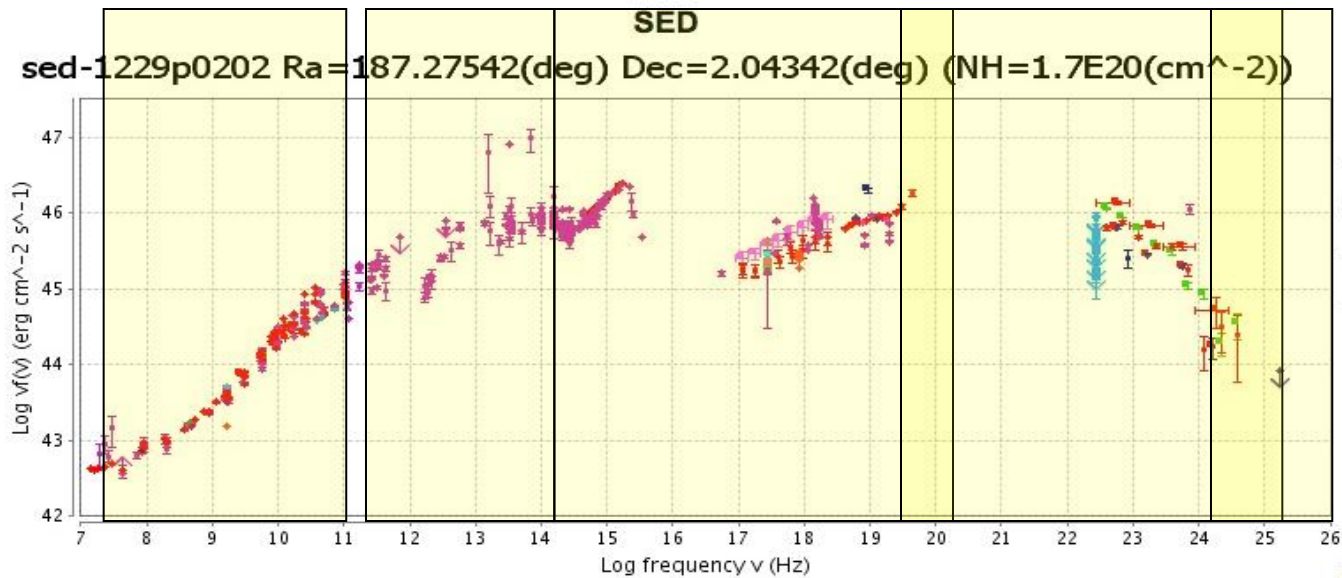
Source Name	RA	Dec	Other
Pulsar	CTA1	---	---
RB	LSI+61303	---	---
ar	Crab	---	---
BLlac	PKS0537-441	BZBJ0538-4405	---
R	IC443	---	---
ar	GEMINGA	---	---
ar	---	BZUJ0654+4514	---
ar	---	BZUJ0719+3307	---
BLlac	S50716+714	BZBJ0721+7120	---
ar	VelaPSR	---	---
ified	---	---	---
B	---	---	---

ASDC interactive catalogs webpages

The ASDC SED Builder

Radiotelescopes and Planck Swift

AGILE and Fermi/CTA



- KUEHR • PKSCAT90 • DIXON • GB6 • NVSS • FIRST • VLSS • CRATES • PMN • NORTH20CM (flux 20 cm)
- NORTH20CM (flux 6 cm) • NORTH20CM (flux 80 cm) • Ned • WMAP3 (Freq. 23e9) • WMAP3 (Freq. 33e9)
- WMAP3 (Freq. 41e9) • WMAP3 (Freq. 61e9) • WMAP3 (Freq. 94e9) • WMAP5 (Freq. 23e9) • WMAP5 (Freq. 33e9)
- WMAP5 (Freq. 41e9) • WMAP5 (Freq. 61e9) • WMAP5 (Freq. 94e9) • IPCSLEW • IPC • RASS • WGACAT2 • WFCCAT
- XRTSRC • EGRET3 • BAT39MCAT (15-30keV) • BAT39MCAT (14-150keV) • Fermi1FGL (200 Mev) • Fermi1FGL (600 Mev)
- Fermi1FGL (2Gev) • Fermi1FGL (6Gev) • Fermi1FGL (60Gev) • IBISSG4CAT (20-40 keV) • IBISSG4CAT (40-100 keV)
- 3C273_simultaneous • 3C273_BATAjello • 3C273_AGILE • 3C273_simul2 • 3C273_GASP • 3C273_SAGILE • GTLIKE_P6v3
- RATAN • OVRO_MAX_MIN • 3C273_Claudia_Unfolding_18M • swift_obs00035017300 • Fermi_1yr

Redshift:
 Frequencies:

Y Axis:

Local Catalogs

<input type="checkbox"/>	Type
<input checked="" type="checkbox"/>	Radio
<input checked="" type="checkbox"/>	X Ray
<input checked="" type="checkbox"/>	Gamma
<input checked="" type="checkbox"/>	Infrared

External Catalogs

<input checked="" type="checkbox"/>	Name	Search	Options
<input type="checkbox"/>	2Mass		U
<input type="checkbox"/>	USNO B1		U
<input type="checkbox"/>	SDSS7		U
<input checked="" type="checkbox"/>	Ned	<input type="text" value="3c273"/>	V S U
<input type="checkbox"/>	USNO A2.0		U

User Catalogs

<input checked="" type="checkbox"/>	Name	Options

Virtual Observatory Standards (*in progress*) and Tool for OPerations on Catalogues And Tables (**Topcat**)

The image displays the Topcat web interface, which is used for managing astronomical data. The interface is divided into several sections:

- Table List:** Shows a list of tables, with '1: aglgrd1cat' selected.
- Current Table Properties:** Displays details for the selected table, including its location, name, number of rows (47) and columns (11), and sort order.
- Spherical Plot:** A 3D visualization of the data points on a sphere, showing a cluster of red dots.
- Status Panel:** A yellow box on the right side of the interface, containing status information for various tools and services. It includes a red circle around the 'VO mode: on (turn off)' button, a 'Broadcast catalog' link, and status for 'Aladin: stopped (start)' and 'Topcat: started'.
- Cone Search:** A search tool on the right side of the interface, allowing users to search for sources within a specific cone. It includes fields for source name, radius (set to 60 arcmin), and a search button.
- Main Panel:** A central panel for data management, showing the current table ('1: aglgrd1cat'), longitude and latitude axes (ra and dec), and row subsets (All).

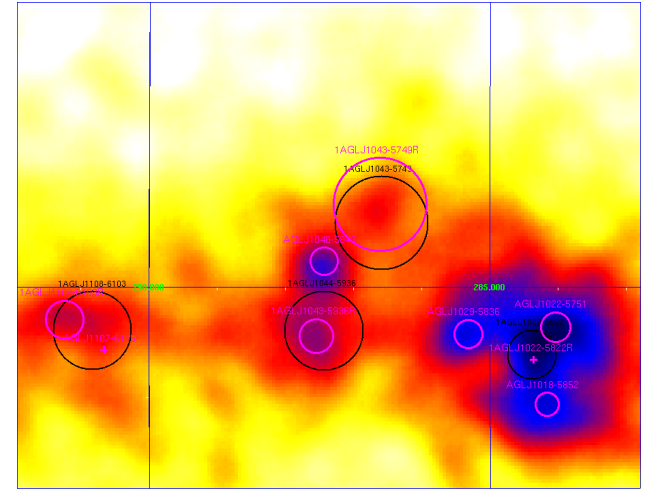
At the bottom of the interface, the status is shown as: Potential: 47 Included: 47 Visible: 47.

WORK IN PROGRESS:

- **The AGILE Pointed Variability Catalog (F. Verrecchia et al.)**

Variability study of an improved 1AGL source list (55 sources) on the timescale of the AGILE pointed observations (Observation Blocks)

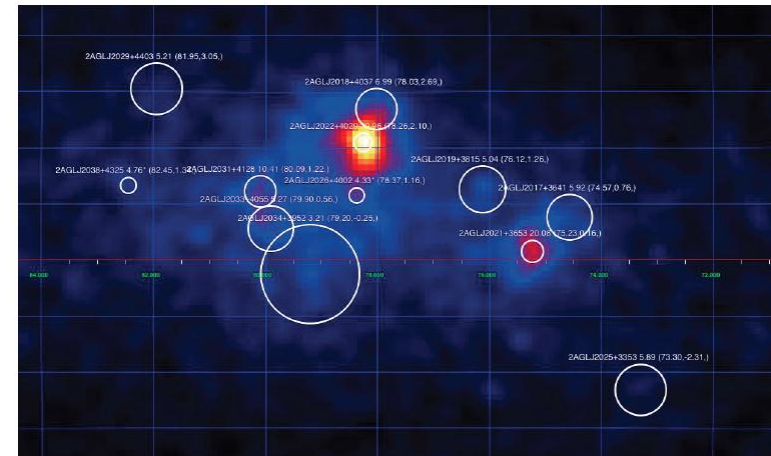
Refined positioning of some 1AGL sources: the Carina region →



- **The second AGILE Catalog (A. Bulgarelli et al.)**

New AGILE-GRID source catalog over the whole period of AGILE pointed observations (2.3 years), with improved event filter and updated calibrations.

More than 180 sources on the galactic plane only: the Cygnus region →

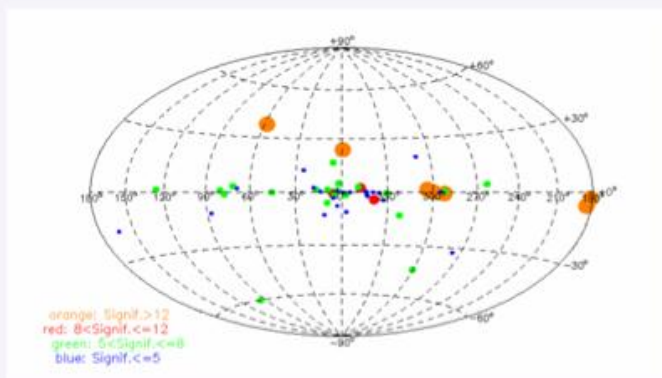


The X-ray imager SuperAGILE: public source list from interactive pages at ADC:

SuperAGILE Source Catalog: POINTING + SPINNING

NOTICE: This page contains the light curves of a set of X-ray sources as measured by the SuperAGILE detector on-board the AGILE satellite both in "pointing observing mode" from July 2007 to October 2009, and in "spinning mode" from January 4, 2010 onward. In nominal pointing conditions, the fluxes were estimated with an exposure of about 3 ks while, in spinning mode, longer integration times are required to obtain equivalent exposures. **The light-curve time binning is of one satellite orbit (~ 100 minutes) in pointing mode and of one week in spinning mode, from MJD=55200.**

- Help
- Show/hide columns
- Advanced filtering
- Print current view of table
- Print complete table
- Reset all filters





Cone Search

Source Name

Resolve name

RA, Dec L, B

Ex.g. 00 00 04.6 -53 01 10.2 or 0.64417, 03.0106

radius: arcmin

SuperAGILE in the SPINNING OPERATIVE MODE: E. Del Monte et al., SPIE 7732 (2010), section 4.

Monitoring the hard X-ray sky with SuperAGILE M. Feroci et al., 2010, A&A 510,A9, arXiv:0910.4895

NOTE for the proper user of the pointing data contained on this Webpage

Export Current view of Table in:

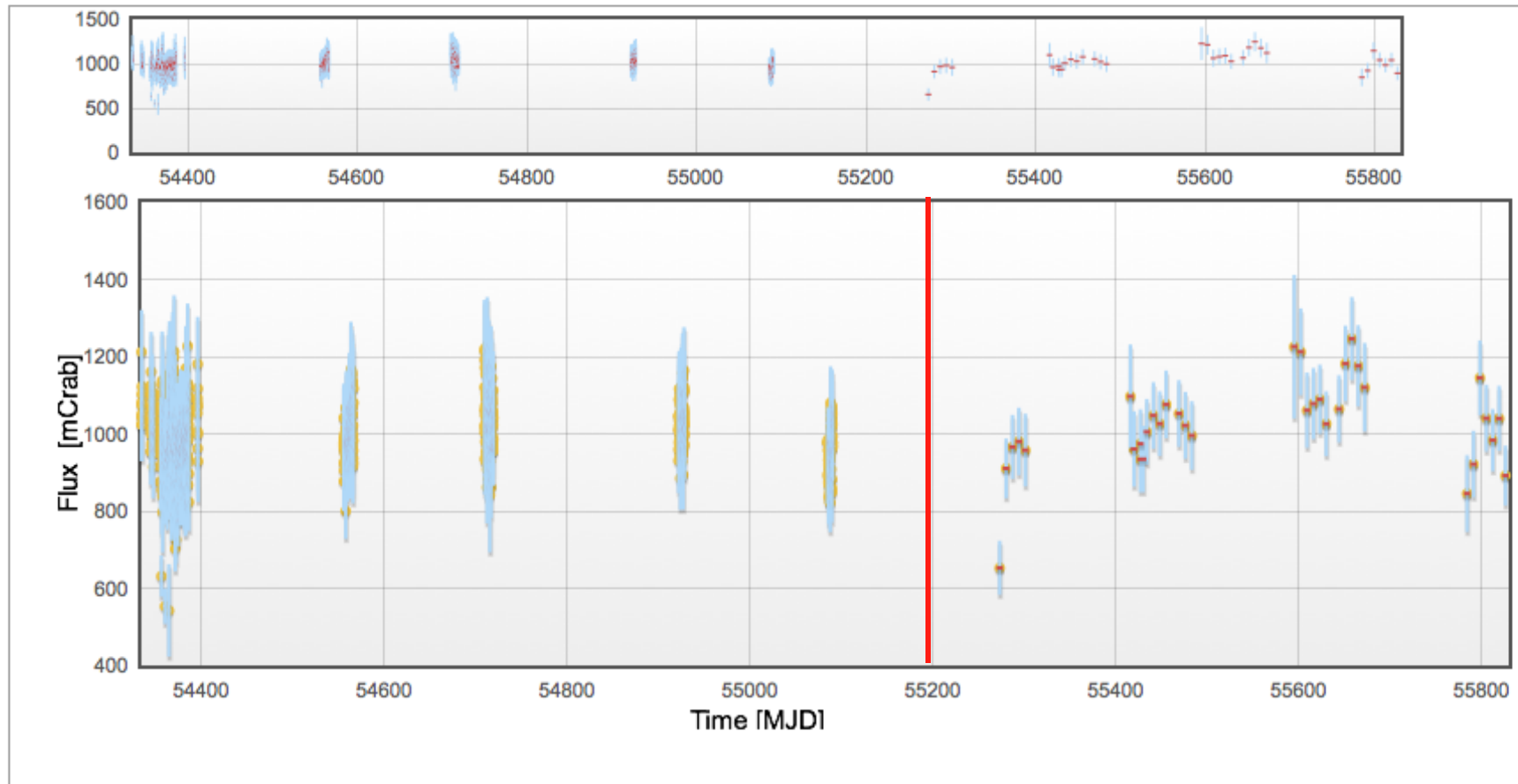
Previous Page Next Page Page Size (# of lines) 50 Refresh page Reset all filters Show all entries

Entry number	Light Curve	Target Name	RA (J2000) hh mm ss.s	Dec (J2000) dd mm ss.s	Latest Observation Time	Flux (cts cm ⁻² s ⁻¹)	Flux error (cts cm ⁻² s ⁻¹)	Detection Significance	Exposure (sec)	Orbit number
1	<input type="button" value="ASDC data Explorer"/> <input type="button" value="Show"/>	Sco X-1	16 19 55.2	-15 38 34.8	2011-09-18T10:00:03	0.155	0.0139	24.19	12872	022711
2	<input type="button" value="ASDC data Explorer"/> <input type="button" value="Show"/>	Crab	05 34 30.9	+22 01 04.8	2011-09-18T10:00:03	0.102	0.0088	29.67	16111	022711

50 X-ray (18-60 keV) validated sources, up to September 2011

SuperAGILE public light curves (pointing + spinning mode data)

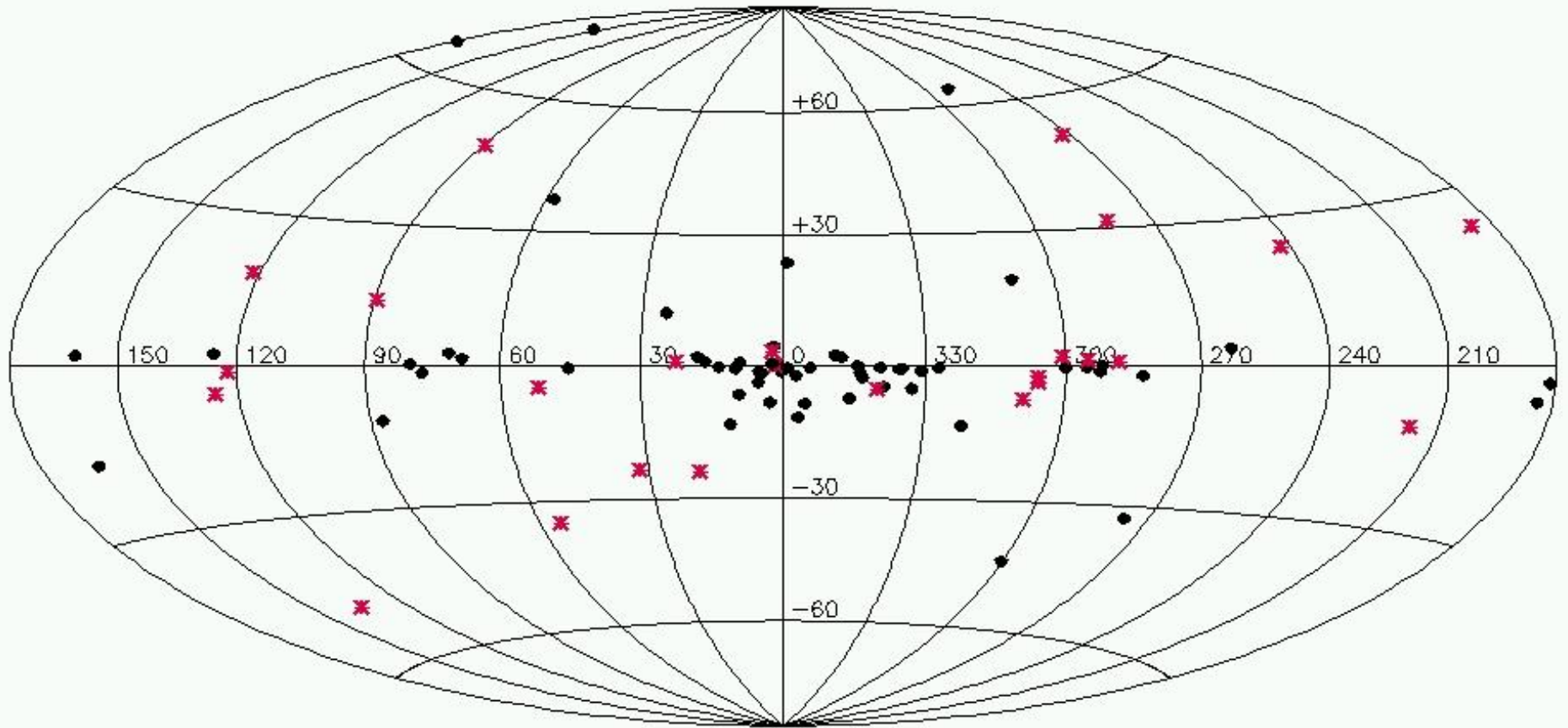
Crab

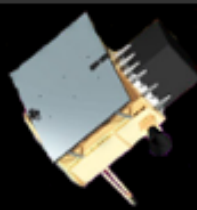


save LIGHT CURVE as: PNG TXT

SuperAGILE detected sources including spinning mode data

SuperAGILE OBSERVED SOURCES





AGILE AO-4



The Italian Space Agency (ASI) announces the release of the fourth Announcement of Opportunity to solicit proposals for the Guest Observer Program (GOP) of the AGILE mission.

This announcement solicits proposals for observations to be carried out during the observing time beginning on December 1st, 2010, and lasting twelve months.

Proposals may be submitted at any time during the period starting June 1, 2011 and ending June 30, 2011.

AGILE-GRID data for sources not reserved to the AGILE Team can be requested within the AGILE Guest Observer Program. AO4 Guest Observers can request data for:

- specific **1AGL**, **1FGL** and **3EG** catalogue sources;
- pulsars;
- Active Galactic Nuclei.

Top level documentation regarding the AO4 can be found here:

- [Agile AO4 Approved Targets](#)
- [Agile AO4 Policies and Procedures](#)
- [Agile AO4 Team Reserved Sources](#)

Proposals may be prepared and submitted using a set of dedicated ASDC GOP [on-line services \(Proposal Preparation\)](#).

Agile Services as pittori

AO1: Dec 1, 2007 - Nov 30, 2008

Status AGILE AO1: **completed/public**

Submitted proposals: 29

Approved/P. Approved: 24

Requested Targets: 122

Approved Targets: **100**

Pulsars: 39

AGN: 31

3EG sources: 30

AO2: Dec 1, 2008 - Nov 30, 2009

Status AGILE AO2: **completed/public**

Submitted/Approved proposals: 15

14 PI, 74 co-PI

Requested/Approved Targets: **93**

Pulsars: 21

AGN: 62

3EG sources: 10

AO3: Dec 1, 2009 - Nov 30, 2010

Status AGILE AO3: **completed/public**

Submitted/Approved proposals: 11

11 Proposals,

10 PI, 78 co-PI

Requested/Approved Targets: **67**

Pulsars: 13

AGN: 37

3EG sources: 7

1FGL Sources: 10

AO4: Dec 1, 2010 - Nov 30, 2011

Status AGILE AO4: **completed/proprietary**

Submitted/Approved proposals: 18

16 PI, 69 co-I

Requested/Approved Targets: **123**

Pulsars: 43

AGN: 50

3EG sources: 5

1FGL Sources: 24

1AGL Sources: 1

AGILE Public Data Distribution from the ASDC MMIA

- **First Cycle-1 public delivery (17 OBs): Jun 10, 2009 (data_release_note_v1)**
- **Second Cycle-1 public delivery (3 OBs): July 17, 2009**
- **Publication of a reprocessed Cycle-1 (20 OB) dataset: Oct 6, 2009 (data_release_note_v2)**
- **Complete Cycle-1 public data release (29 OB): Dec 22, 2009 (data_release_note_v3)**
- **Cycle-2 public delivery (22 OB) and reprocessed Cycle-1 dataset: Oct 6, 2010 (data_release_note_v4)**
- **Complete Cycle-1 and Cycle-2 reprocessed data release: Dec 21, 2010 (data_release_note_v5)**
- **Cycle-3 (spinning) public delivery (22 OB): Nov 9, 2011 (data_release_note_v6)**

New developed

AGILE Imaging Tool @ ASDC

Image parameters: ?

Source Name Search ?

RA Dec ?

LII BII ?

Image radius (deg) ?

Emin ?

Emax ?

Catalog Overlay ?

Radio Infrared X-Ray **Gamma**

NVSS
SUMSS
FIRST
GB6

Run Reset to default

Ximage smoothing parameters: ?

Smoothing filter ?

sigma ?

back ?

Ximage display parameters: ?

Color scaling ?

Minimum level displayed ?

Ximage detect parameters: ?

Probability threshold ?

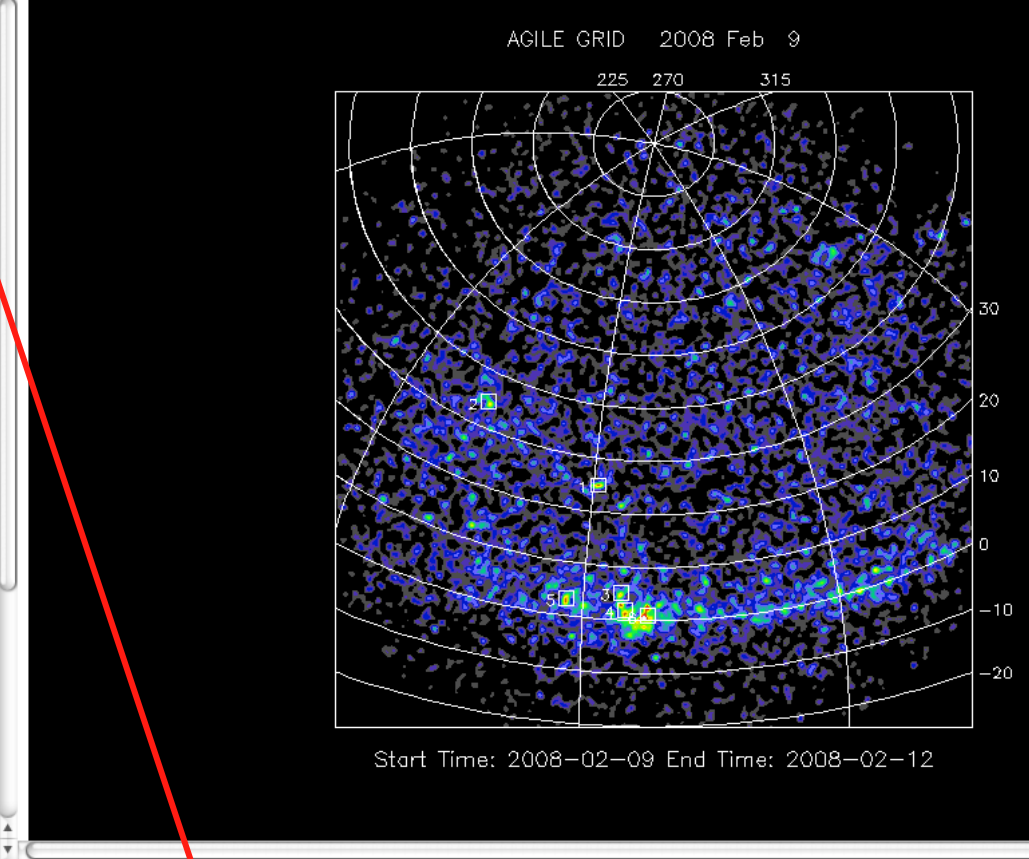
Available parameters

- OB Number OB Name RA_PNT ERR_RAP DEC_PNT ERR_DECP
- RA_SUN (degrees) ERR_RAS DEC_SUN (degrees) ERR_DECS GRID Data Retrieval GRID Interactive Archive OB start date OB end date Processing version Mean OB Exposure (cm² s) Related SuperAGILE Entries Notes

GO

Entry number		OB Number	OB Name
Selection mode:		↑ ↓ Stat	↑ ↓ Stat
<input type="text" value="Inclusive"/>			
1 <input type="button" value="Select"/>		4900	Cygnus Field 1
2 <input type="button" value="Select"/>		4910	Cygnus Field 1 b<0
3 <input type="button" value="Select"/>		4920	Cygnus Field 1 Extended

RA	Dec	RA_SUN	DEC_SUN	Mean Exposure	Processing Version	Start Date	End Date	Notes
21 54 00.0	+38 00 00.0	-	-	-	-	-	-	-
22 16 00.0	+37 54 00.0	-	-	-	-	-	-	-



Access	Analysis	Start Time	End Time	Count	Notes
Public access	On-line Analysis	2007-12-05 09:00:00	2007-12-15 12:00:00	18604859	Partial Repointing
Public access	On-line Analysis	2007-12-15 12:00:00	2007-12-16 12:00:00	1741245	ToO

Ximage sw package adapted to gamma-rays

Allows web users to have a **preview** of the AGILE public data fields and perform an interactive **preliminary analysis** around a chosen sky position.

Baseline
Baseline
Baseline
ToO
Baseline

New interface developed at the APO (public)

49	Select	ASDC Data Explorer	8000	SA Crab (15,6.3)	05 21 12.0	+06 24
50	Select	ASDC Data Explorer	8100	SA Crab (25,3.5)	05 33 36.0	-03 06
51	Select	ASDC Data Explorer	8200	Galactic Center 5	18 05 12.0	-23 30
52	Select	ASDC Data Explorer	8300	Aquila Field 3	19 05 12.0	-23 12
53	Select	ASDC Data Explorer	8400	Aquila Field 4	19 08 24.0	+28 48
54	Select	Data Explorer n/a	8600	Dummy 1_1	-	-

AGILE Imaging Tool @ ASDC

Image parameters:

Source Name Search ?

RA Dec ?

LII BII ?

Image radius (deg) ?

Emin ?

Emax ?

Catalog Overlay ?

Radio Infrared X-Ray Gamma

NVSS
SUMSS
FIRST
GB6

Run Reset to default

Ximage smoothing parameters:

Smoothing filter ?

sigma ?

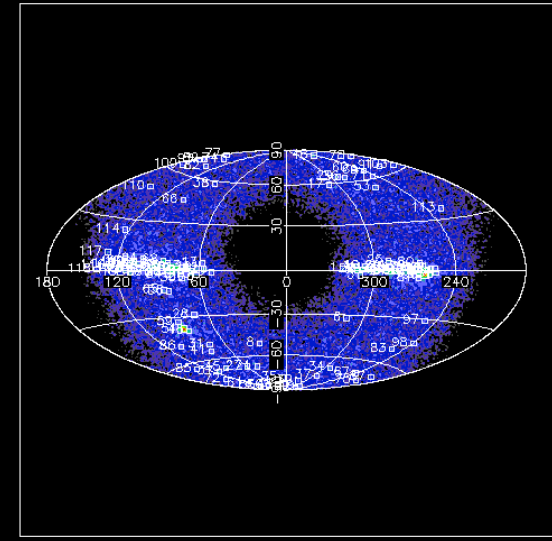
back ?

Ximage display parameters:

Color scaling ?

Minimum level displayed ?

Ximage detect parameters:



Start Time: 2009-11-30 End Time: 2009-12-20

AGILE Imaging Tool @ ASDC

Image parameters:

Source Name Search ?

RA Dec ?

LII BII ?

Image radius (deg) ?

Emin ?

Emax ?

Catalog Overlay ?

Radio Infrared X-Ray Gamma

NVSS
SUMSS
FIRST
GB6

EGRETS AGLGRD1CAT

Run Reset to default

Ximage smoothing parameters:

Smoothing filter ?

sigma ?

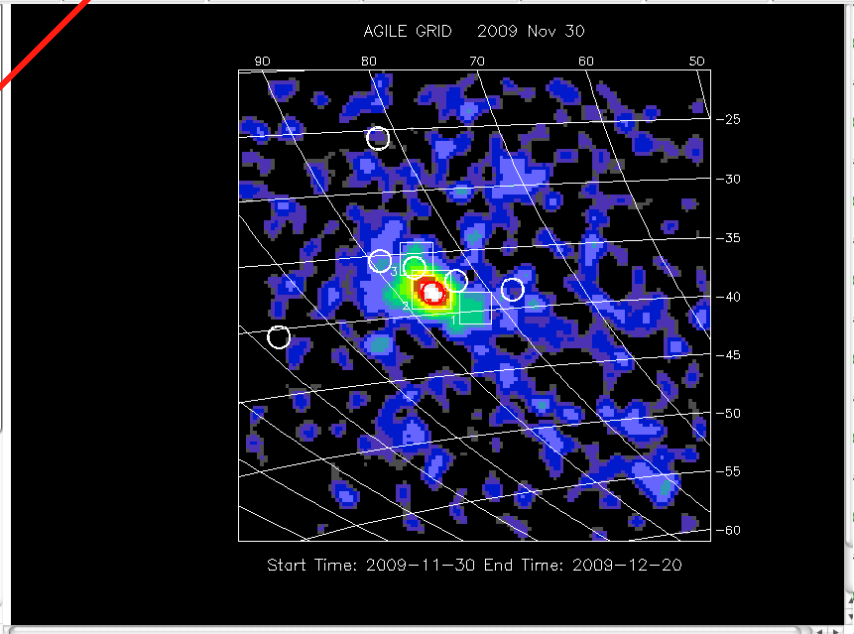
back ?

Ximage display parameters:

Color scaling ?

Minimum level displayed ?

Ximage detect parameters:



Public access	On-line Analysis	2009-11-30 12:00:00	2009-12-20 12:00:00	14782732	Spinning
Public access	On-line Analysis	2009-12-20 12:00:00	2010-01-15 12:00:00	17876769	
Public access	On-line Analysis	2010-01-15 12:00:00	2010-02-05 12:00:00	13806594	
Public access	On-line Analysis	2010-02-05 12:00:00	2010-02-28 12:00:00	15618616	
Public access	On-line Analysis	2010-02-28 12:00:00	2010-03-15 12:00:00	11062229	
Public access	On-line Analysis	2010-03-15 12:00:00	2010-03-31 12:00:00	12567574	
Public access	On-line Analysis	2010-03-31 12:00:00	2010-04-15 12:00:00	10529106	
Public access	On-line Analysis	2010-04-15 12:00:00	2010-04-30 12:00:00	9780278	
Public access	On-line Analysis	2010-04-30 12:00:00	2010-05-15 12:00:00	12120621	

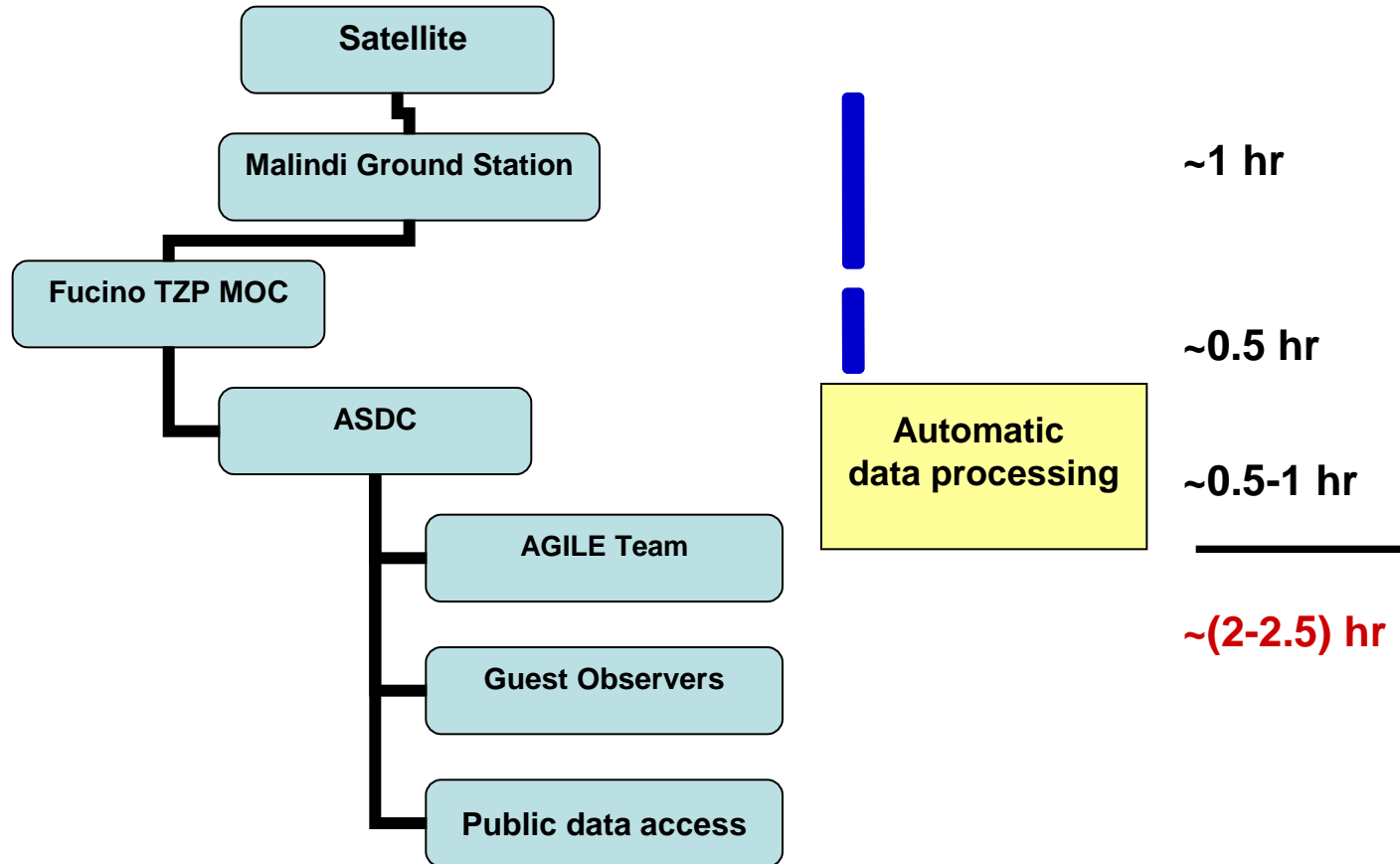
Warning: use imaging tool only as a preview of the AGILE γ -ray field.
To perform your own scientific analysis, please **download data**
and use the official public AGILE software available at:
<http://agile.asdc.asi.it/public/> following the AGILE Software User Manual

Index of /public/AGILE_SW_5.0_SourceCode

Icon	<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
[DIR]	<u>Parent Directory</u>		-	
[]	<u>AGILE-IFC-OP-009 Build-21.pdf</u>	22-Nov-2011 18:24	928K	
[]	<u>BUILD GRID 5.0.tgz</u>	22-Nov-2011 16:56	121M	
[TXT]	<u>SoftwareReleaseNote 5.0.txt</u>	25-Nov-2011 16:01	16K	
[TXT]	<u>readme 5.0.txt</u>	22-Nov-2011 16:57	5.2K	
[]	<u>test dataset 5.0.tgz</u>	22-Nov-2011 16:57	346M	

Apache Server at agile.asdc.asi.it Port 80

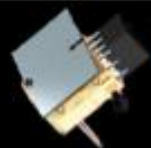
AGILE: “very fast” Ground Segment (with contained costs)



Record for a gamma-ray mission!

AGILE Science Alert System

- The system is distributed among the ADC @ ASDC and the AGILE Team Institutes (Trifoglio, Bulgarelli, Gianotti et al.)
- Automatic Alerts to the AGILE Team are generated within **$T_0 + 45$ min (SA) and $T_0 + 100$ min (GRID)**
- GRID Alerts are sent via email (and sms) both on a contact-by-contact basis and on a daily timescale
- Refined manual analysis on most interesting alerts performed every day (daily monitoring)
- **98 ATel** (42 in pointing + 56 in spinning) and **37 GCN** published up to March, 2012



AGILE

Science Data Center

Welcome to the AGILE Data Center Home Page at ASDC

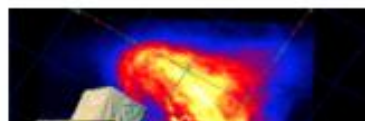
These pages provide updated information and services in support to the general scientific community for the mission AGILE, which is a small Scientific Mission of the Italian Space Agency (ASI) with participation of INFN, IASF/INAF and CIFS.

AGILE is devoted to gamma-ray astrophysics and it is a first and unique combination of a gamma-ray (AGILE-GRID) and a hard X-ray (SuperAGILE) instrument, for the simultaneous detection and imaging of photons in the 30 MeV - 50 GeV and in the 18 - 60 keV energy ranges.

The AGILE Mission Board (AMB) has executive power overseeing all the scientific matters of the AGILE Mission and is composed of:

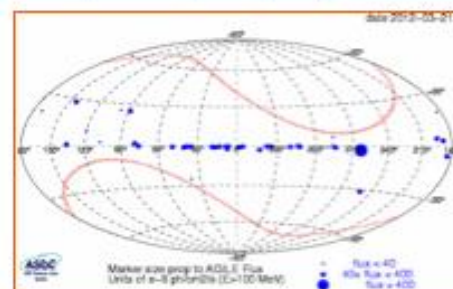
- AGILE Principal Investigator: Marco Tavani, INAF/IASF Rome (Chair)
- ASI Project Scientist: Paolo Giommi, ASDC
- ASI Mission Director: Giovanni Valentini, ASI
- Former ASI Mission Director: Luca Salotti, ASI (up to September 20, 2010)
- AGILE Co-Principal Investigator: Guido Barbiellini, INFN Trieste
- 1 ASI representative: Elisabetta Tommasi di Vignano
- Former ASI representative: Sergio Colafrancesco (up to June, 2010)

As specified in the [Announcement of Opportunity Cycle-4](#), it is not possible to propose for ToO observations in response to AGILE Announcement of Opportunity.



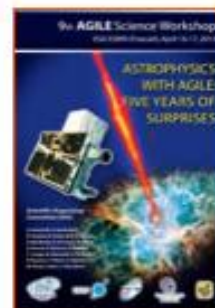
AGILE current spinning sky view

[\(Click here for previous pointing details\)](#)



[Click here to access to AGILE Spinning FOV plotter](#)

AGILE Events



ADC Quick-Look Interface

(from AGILE Services restricted area)

Agile Services

Logout Change Password, e-mail Change Password System Administration **Agile QL Cat** Data Management Pipe Mar

Legenda

Processamenti QL Scientific

[Back to last menu](#) Logout [Jump to page bottom](#)

Quick Access to QL Data Results

R.A. or Gal. Longitude:

Dec or Gal. Latitude:

Equinox: J2000 B1950

Coordinates: Celestial (RA-Dec) Galactic (ll-bll)

Declination and Galactic coordinates can be entered either as degrees and decimal fraction (format ddd.ddd), or as degrees, minutes, seconds (dd mm ss.ss format). Right ascension can be entered either as degrees and fraction (ddd.ddd), or as hours, minutes, seconds (hh mm ss.ss format).

Record List for AgileQLCat

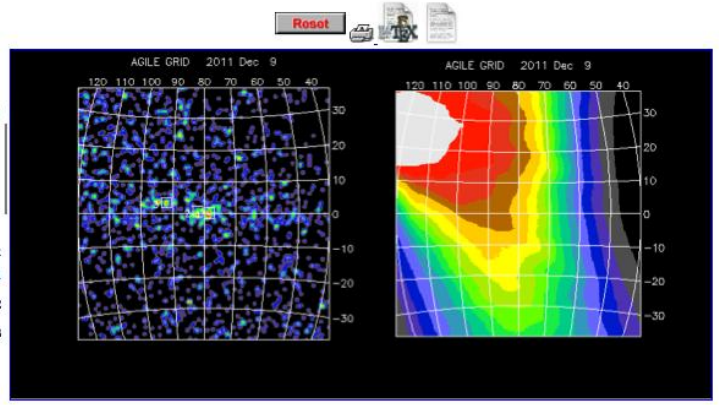
Config ID	Config Name	Duration	Run Status	Start	Stop	QL Image	QL Table	logFile	linkData	Status	Type	Filter Type	Start Processing	Stop Processing
337	Global_Ximage AM	2	Actual	2011-12-09 01:00:00	2011-12-11 01:00:00		TBD	File Log	Data File	OK	QL_V	FM	2011-12-11 05:30:49	2011-12-11 06:06:45
328	B19 QLV Spinning (80,0) Cygnus FM	2	Actual	2011-12-09 02:31:00	2011-12-11 02:31:00		QL Catalog Link	File Log	Data File	OK	QL_V	FM	2011-12-11 05:32:23	2011-12-11 05:38:06
304	B19 QL_V Spinning FM 2dd R29 - bis_1	2	Actual	2011-12-09 02:40:00	2011-12-11 02:40:00		QL Catalog Link	File Log	Data File	OK	QL_V	FM	2011-12-11 05:32:55	2011-12-11 05:38:58
310	B19 QL Variabilita' Spinning FT3ab TEST (190,0)	2	Actual	2011-12-09 02:46:00	2011-12-11 02:46:00		QL Catalog Link	File Log	Data File	OK	QL_V	FT3ab	2011-12-11 05:33:27	2011-12-11 05:38:59
311	B19 QL Variabilita' Spinning FM TEST (190,0)	2	Actual	2011-12-09 02:46:00	2011-12-11 02:46:00		QL Catalog Link	File Log	Data File	OK	QL_V	FM	2011-12-11 05:38:08	2011-12-11 05:44:17
307	B19 QL Variabilita' Spinning FT3ab TEST (290,-85)	2	Actual	2011-12-09 02:48:00	2011-12-11 02:48:00		QL Catalog Link	File Log	Data File	OK	QL_V	FT3ab	2011-12-11 05:38:59	2011-12-11 05:47:48
308	B19 QL Variabilita' Spinning FM TEST (290,-85)	2	Actual	2011-12-09 02:48:00	2011-12-11 02:48:00		QL Catalog Link	File Log	Data File	OK	QL_V	FM	2011-12-11 05:38:59	2011-12-11 05:47:48

AGILE Quick Look catalog (Test) at ASDC

Variability 11-12-09 02:31 11-12-11 02:31 FM

Available parameters

- Name
 - Ra # Dec
 - Gal # Iso
 - Cnts # Cnts
 - Err. #
 - Sqrt(TS)
 - XimageId #
 - Flux # Flux
 - Err. #
 - Distance from FOVCent.
 - Ximage SNR
 - Sp_Index
 - Err_sp_index
 - Other_name1
 - Other_name2
 - Other_name3
-



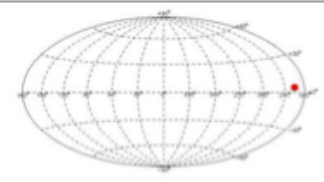
Entry number	AGILE name	RA (J2000.0)	Dec (J2000.0)	Gal	Iso	Cnts	Sqrt(TS)	Flux
1	AGL J2030+3929	20 30 02.4	+39 29 16.8	0.484	9.53	19.5	2.65	244
2	AGL J2039+4242	20 39 15.1	+42 42 25.2	0.975	0.744	4.08	0.59	50
3	AGL J2104+5207	21 04 39.4	+52 07 44.4	0.572	7.09	8.43	1.61	97

ASDC Data Explorer

Quick Look AGILE data

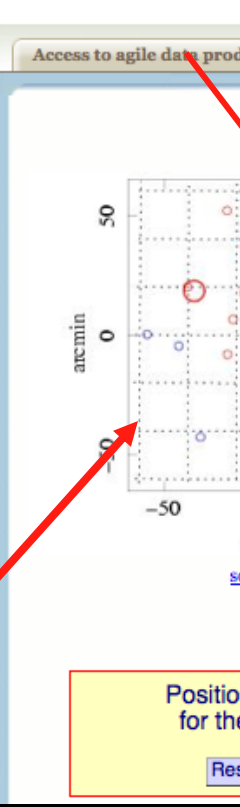
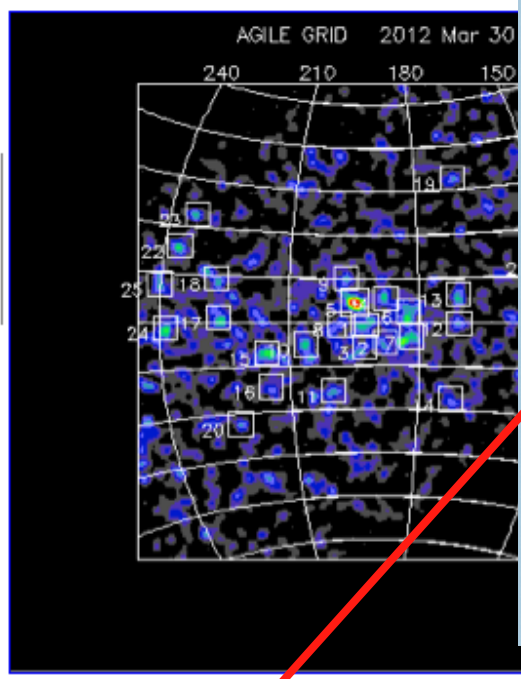


Entry ---
 R.A. (J2000) = 06 34 44.2 (98.6842 deg) l=194.77
 Dec (J2000) = +18 16 07.5 (18.2688 deg) b=4.67
 Galactic nH = 3.32E+21 (cm⁻²) [Source Names](#)



Available parameters

- Name
 - Ra Dec
 - Gal Iso
 - Cnts Cnts
 - Err.
 - Sqrt(TS)
 - XimageId
 - Flux Flux
 - Err
 - Distance from FOVCent.
 - Ximage SNR
 - Sp_Index
 - Err_sp_index
 - Other_name1
 - Other_name2
 - Other_name3
-



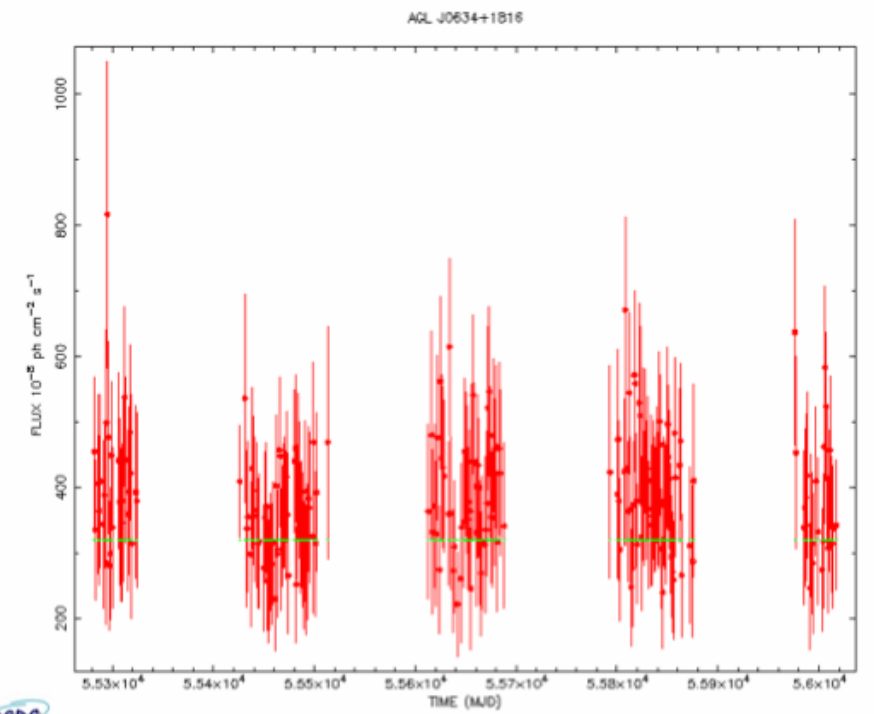
Access to agile data products Error circle EXPLORER Source Details

Access to agile grid data products Error circle EXPLORER Source Details

Catalog: Radius: Start Time: End Time: DATE MJD
(Select DATE to input time range in DD-MM-AAAA format or MJD to input time range in mjd format)

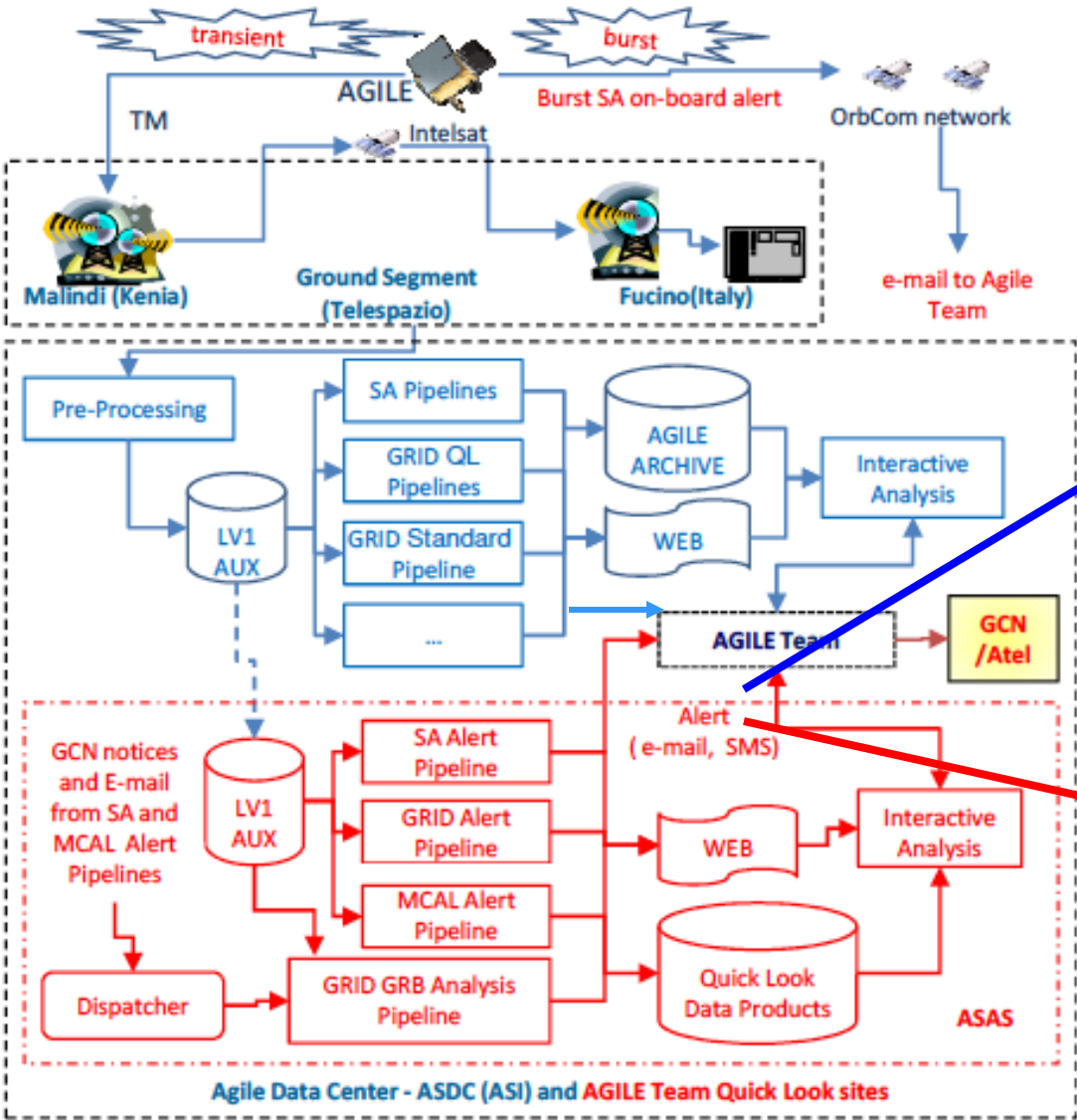
Duration (days): Filter: Sqrt(TS) > Additional Y plot:

['AGL J0634+1816' LC Data Table](#)
['AGL J0634+1816' LC Data qdp](#)



Entry number		AGILE name	RA (J2000.0)	Dec (J2000.0)
			LII	BII
Selection mode: <input type="button" value="Inclusive"/>				
1	<input type="button" value="Select"/>	ASDC Data Explorer	AGL J0634+1816	194.78 4.67
2	<input type="button" value="Select"/>	ASDC Data Explorer	AGL J1049+8055	128.53 34.83
3	<input type="button" value="Select"/>	ASDC Data Explorer	AGL J0832-1236	236.49 15.76

Selected **alerts** sent via email, sms



label:agile-daily-report

The label "AGILE Daily Report" has been removed from the conversation. [Learn more](#) [Undo](#)

Remove label	Spam	Delete	Move to	Labels	More	1-50 of 1931
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report 11/12/2011 (ok) - AGILE Daily Report 11/12/2011 (MJD:55906) ### FM Filter ...			10:12 am
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 11/12/2011 (ok) - AGILE Daily Report Global Proc. 11/12/2011 (MJD:559			9:49 am
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 10/12/2011 noon (ok) - AGILE Daily Report Multi2 Results 10/12/2011			Dec 10
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 10/12/2011 noon (ok) - AGILE Daily Report Global Proc. 10/12/2011 noon			Dec 10
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 10/12/2011 (ok) - AGILE Daily Report Multi2 Results 10/12/2011 (MJD:			Dec 10
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report 10/12/2011 (ok) - AGILE Daily Report 10/12/2011 (MJD:55905) ### FM Filter ...			Dec 10
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 10/12/2011 (ok) - AGILE Daily Report Global Proc. 10/12/2011 (MJD:555			Dec 10
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 09/12/2011 noon (ok) - AGILE Daily Report Global Proc. 09/12/2011 noon			Dec 9
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 09/12/2011 (ok) - AGILE Daily Report Multi2 Results 09/12/2011 (MJD:			Dec 9
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report 09/12/2011 (ok) - AGILE Daily Report 09/12/2011 (MJD:55904) ### FM Filter ...			Dec 9
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 09/12/2011 (ok) - AGILE Daily Report Global Proc. 09/12/2011 (MJD:555			Dec 9
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 08/12/2011 noon (ok) - AGILE Daily Report Multi2 Results 08/12/2011			Dec 8
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 08/12/2011 noon (ok) - AGILE Daily Report Global Proc. 08/12/2011 noon			Dec 8
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 08/12/2011 (ok) - AGILE Daily Report Multi2 Results 08/12/2011 (MJD:			Dec 8
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report 08/12/2011 (ok) - AGILE Daily Report 08/12/2011 (MJD:55903) ### FM Filter ...			Dec 8
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 08/12/2011 (ok) - AGILE Daily Report Global Proc. 08/12/2011 (MJD:555			Dec 8
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Global Proc. 07/12/2011 noon (ok) - AGILE Daily Report Global Proc. 07/12/2011 noon			Dec 7
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 07/12/2011 (ok) - AGILE Daily Report Multi2 Results 07/12/2011 (MJD:			Dec 7
no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report 07/12/2011 (ok) - AGILE Daily Report 07/12/2011 (MJD:55902) ### FM Filter ...			Dec 7
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no_reply	AGILE Daily Report	Inbox	[gridalert] AGILE Daily Report Multi2 Results 06/12/2011 (ok) - AGILE Daily Report Multi2 Results 06/12/2011 (MJD:			Dec 6

Daily time scale (twice a day)

Contact-by-contact time scale (~100 min)

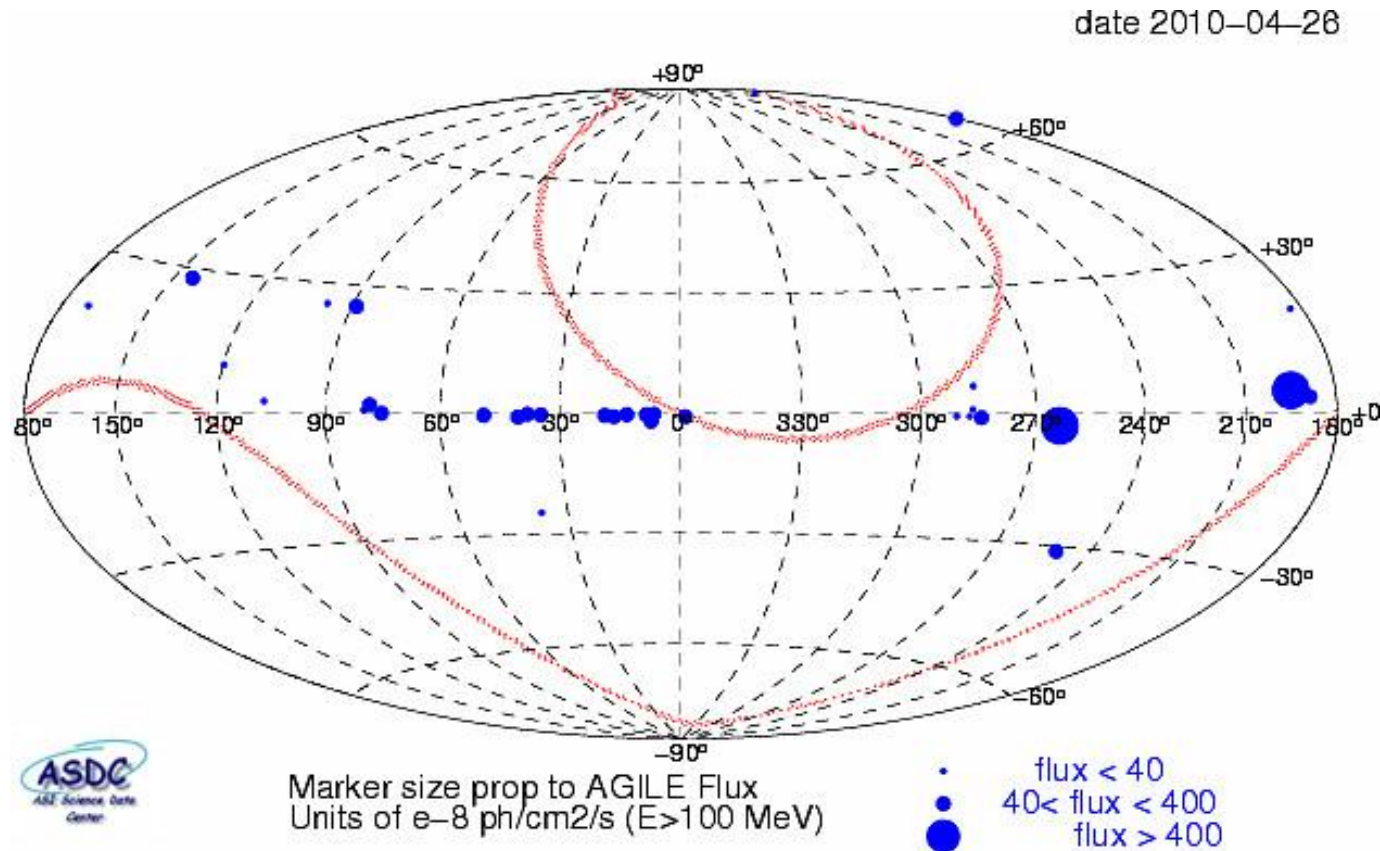
label:grid-alert

Gmail's getting a new look soon. [Learn more](#) [Dismiss](#)

Remove label	Spam	Delete	Move to	Labels	More	1-50 of 47035
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.08 185.7+79.5 (297.5, 19.9, 165) - 12 - FM3.119_2_SPOTS_100... - 4.08 297.517 19.9027 off axis				2:28 am
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.09 493.7+202.9 (151.7, -48.9, 60) - 34 - FM3.119_2_SPOTS_10... - 4.09 151.732 -48.9168 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.53 193.9+75.0 (71.2, 26.3, 178) - B2QJ1801+4404 - FM3.119_2... - 4.53 71.1847 26.2573 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.08 177.3+76.0 (223.7, -67.4, 150) - B2BJ0235-2938 - FM3.119... - 4.08 223.689 -67.3961 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.02 325.4+128.4 (124.7, -5.2, 124) - 29 - FM3.119_2_SPOTS_10... - 4.02 124.685 -5.2143 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.59 652.9+229.0 (137.9, -33.9, 63) - J0144.5+2709 - FM3.119... - 4.59 137.945 -33.8679 off axis 3				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.33 549.0+214.9 (151.7, -48.9, 59) - 34 - FM3.119_2_SPOTS_10... - 4.33 151.732 -48.9168 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.13 122.3+53.0 (79.0, 1.6, 230) - 1AGL_J2022+4032 - FM3.119_2... - 4.13 79.0172 1.57454 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.44 619.0+231.5 (151.8, -48.9, 59) - 33 - FM3.119_2_SPOTS_10... - 4.44 151.753 -48.9368 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.75 715.0+250.2 (137.8, -33.3, 61) - B2QJ0151+2744 - FM3.119_2... - 4.75 137.777 -33.3226 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.42 195.7+76.6 (71.2, 26.3, 175) - B2QJ1801+4404 - FM3.119_2... - 4.42 71.1797 26.2511 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.17 200.1+83.5 (223.6, -67.4, 149) - B2BJ0235-2938 - FM3.119_2... - 4.17 223.641 -67.4128 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.07 184.9+76.6 (71.4, 25.9, 490) - B2BJ1811+4416 - FM3.119_2... - 4.07 71.4071 25.8768 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.7 662.7+230.0 (137.8, -33.3, 67) - J0144.5+2709 - FM3.119_2... - 4.7 137.771 -33.3317 off axis 3				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.38 558.6+211.5 (151.8, -48.9, 64) - 33 - FM3.119_2_SPOTS_10... - 4.38 151.753 -48.9368 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.34 183.6+72.9 (71.2, 26.2, 188) - B2QJ1801+4404 - FM3.119_2... - 4.34 71.1877 26.2573 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.04 180.2+76.5 (223.6, -67.4, 164) - B2BJ0235-2938 - FM3.119... - 4.04 223.648 -67.4144 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.18 190.5+75.2 (71.5, 25.8, 549) - B2BJ1811+4416 - FM3.119_2... - 4.18 71.4615 25.7513 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.0 175.5+72.7 (71.3, 26.0, 527) - B2BJ1811+4416 - FM3.119_2... - 4.00 71.2924 25.9979 off axis 1				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.25 527.4+205.8 (151.7, -48.9, 64) - 32 - FM3.119_2_SPOTS_10... - 4.25 151.745 -48.9242 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.01 180.2+76.9 (223.6, -67.4, 163) - B2BJ0235-2938 - FM3.119... - 4.01 223.649 -67.4149 off axis				Dec 10
Utenne GRID1 BUILD17	GRID ALERT	[gridalert] ALERT LEVEL 4.14 502.0+200.2 (151.8, -48.9, 63) - 32 - FM3.119_2_SPOTS_10... - 4.14 151.751 -48.9267 off axis				Dec 10

(Figure adapted from M. Trifoglio et al.)

Since November 4, 2009, AGILE is operating in a **spinning observing mode** and it is now surveying a large fraction of the sky every day. **AGILE spinning sky view on a particular day:**



All ADC functionalities and data processing promptly adapted to the new spinning configuration at no extra costs!

On December 3-4, 2009 the AGILE satellite detected the strongest γ -ray flare ever observed ($E > 100$ MeV). The flaring γ -ray source is in the active galaxy 3C454.3 ($z=0.859$, $F_{\gamma} > 2 \times 10^{-5}$ ph cm $^{-2}$ s $^{-1}$, $L_{\text{iso}} = 6 \times 10^{49}$ erg s $^{-1}$)



AGILE: 5th year in orbit

- AGILE demonstrates for the first time the covering of $\sim 1/5$ of the entire gamma-ray sky (FoV ~ 2.5 sr) with excellent angular resolution and competitive sensitivity.
- AGILE shows for the first time an optimal performance of its gamma-ray and hard X-ray imagers.
- **> 25680 orbits, April 14, 2012, 21:40 UT**
- **Pointing observation** mode up to October 18, 2009 and **spinning observation mode** since October 2009.
- **Very good scientific performance, especially at ~ 100 MeV**
- **Guest Observer Program open to the scientific community:**
 - Cycle-1: completed, Dec. 1, 2007 – Nov 30, 2008**
 - Cycle-2: completed, Dec. 1, 2008 – Nov 30, 2009**
 - Cycle-3: completed, Dec. 1, 2009 – Nov 30, 2010**
 - Cycle-4: completed, Dec. 1, 2010 – Nov 30, 2011**
 - Cycle-5: on-going data taking**

LATEST UNEXPECTED NEWS FROM THE γ -RAY SKY:

**AGILE DISCOVERY OF THE CRAB
NEBULA VARIABILITY IN γ -RAYS**

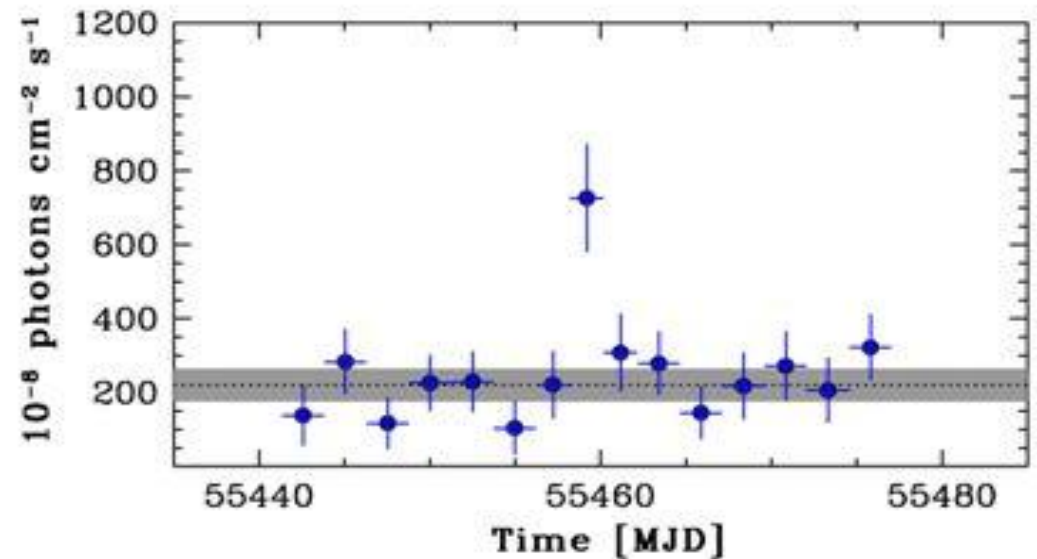
Tavani et al., Science, 331, 736 (2011)

Fermi confirmation:

Abdo et al., Science, 331, 739 (2011)

The variable Crab Nebula!

FIRST PUBLIC ANNOUNCEMENT
Sept. 22, 2010: AGILE issues the
Astronomer's Telegram n. 2855



***Science Express* (6 January 2011)**

First AGILE catalog of high-confidence gamma-ray sources

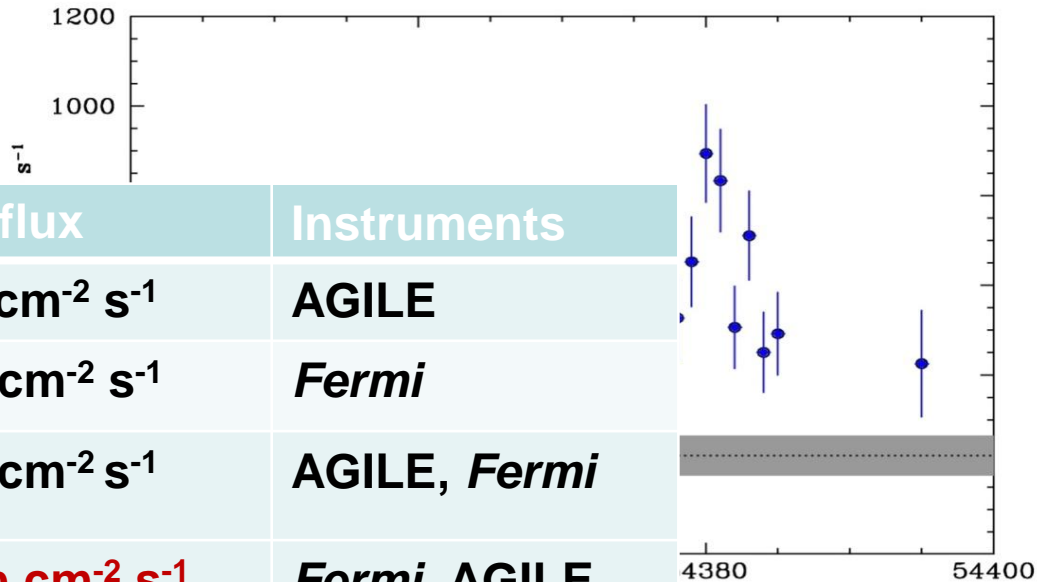
C. Pittori¹, F. Verrecchia¹, A. W. Chen^{2,3}, A. Bulgarelli⁴, A. Pellizzoni⁵, A. Giuliani^{2,3}, S. Vercellone⁶, F. Longo^{7,8}, M. Tavani^{9,10,11,3}, P. Giommi^{1,12}, G. Barbiellini^{7,8,3}, M. Trifoglio⁴, F. Gianotti⁴, A. Argan⁹, A. Antonelli¹³, F. Boffelli¹⁴, P. Caraveo², P. W. Cattaneo¹⁴, V. Cocco¹⁰, S. Colafrancesco^{1,12}, T. Contessi², E. Costa⁹, S. Cutini¹, F. D'Ammando^{9,10}, E. Del Monte⁹, G. De Paris⁹, G. Di Cocco⁴, G. Di Persio⁹, I. Donnarumma⁹, Y. Evangelista⁹, G. Fanari¹, M. Feroci⁹, A. Ferrari^{3,5}, M. Florini², F. Fomari², F. Fuschino⁹, T. Froysland^{3,11}, M. Frutti⁹, M. Galli¹⁶, D. Gasparri¹, C. Labanti⁴, I. Lapshov^{9,17}, F. Lazzarotti⁹, F. Liello⁹, P. Lipari^{18,19}, E. Mattioli², M. Marisaldi³, M. Mastropietro^{9,21}, A. Mauri⁴, F. Mauri¹⁴, S. Mereghetti², E. Morelli⁴, E. Moretti^{7,8}, A. Morselli¹¹, L. Pacciani⁹, F. Perotti², G. Piano^{9,10,11}, P. Picozza^{10,11}, M. Pilia^{22,23}, C. Pontoni^{3,8}, G. Porrovecchio⁹, B. Preger¹, M. Prest^{8,22}, R. Primavera¹, G. Pucella⁹, M. Rapisarda²⁰, A. Rappoldi¹⁴, E. Rossi⁴, A. Rubini⁹, S. Sabatini¹⁰, P. Santolamazza¹, E. Scalise⁹, P. Soffitta⁹, S. Stellato¹, E. Striani¹⁰, F. Tamburelli¹, A. Traci⁴, A. Trois⁹, E. Vallazza⁸, V. Vittorini^{9,3}, A. Zambra^{2,3}, D. Zanello^{18,19}, and L. Salotti¹²

AGILE first detection of a strong gamma-ray flare in Oct. 2007 reported in the First AGILE source catalog as possible short unexpected flux increase

Sect. 6.1
 Notes on individual sources:

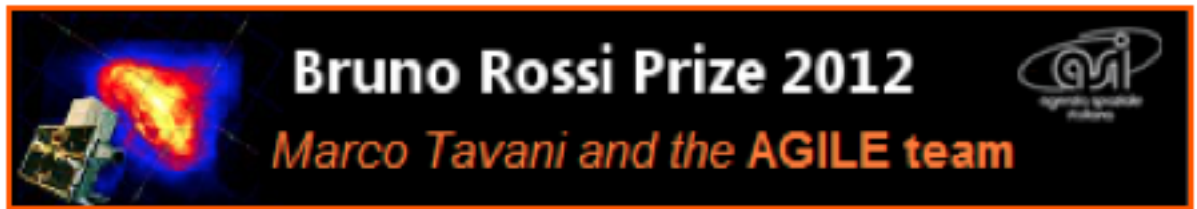
1AGL J0535+2205 and 1AGL J0634+1748 (Crab and Geminga). These two well known strong γ -ray pulsars, together with the Vela pulsar, were used for in-flight AGILE calibrations. We report the flux values obtained during calibration subperiods. These values agree with pulsed flux values reported in (Pellizzoni et al. 2009). We note, however, that we observed higher flux values, over 1σ from the reported mean flux, for both sources when merging all the data, including shorter (1 day) integration periods during 2007. This point is under investigation.

1AGL J0617+2236. This AGILE detection provides an im-



Flare date	Duration	Peak γ -ray flux	Instruments
October 2007	~ 15 days	~ $6 \cdot 10^{-6}$ ph cm ⁻² s ⁻¹	AGILE
February 2009	~ 15 days	~ $4 \cdot 10^{-6}$ ph cm ⁻² s ⁻¹	<i>Fermi</i>
September 2010	~ 4 days	~ $5 \cdot 10^{-6}$ ph cm ⁻² s ⁻¹	AGILE, <i>Fermi</i>
April 2011	~ 2 days	~ $30 \cdot 10^{-6}$ ph cm ⁻² s ⁻¹	<i>Fermi</i> , AGILE

• a big theoretical challenge: **the Crab Nebula is not a standard candle in gamma-rays!**



ENJOY!

9th **AGILE** Science Workshop

ESA-ESRIN (Frascati), April 16-17, 2012

ASTROPHYSICS WITH AGILE: FIVE YEARS OF SURPRISES



Scientific Organizing Committee (SOC)

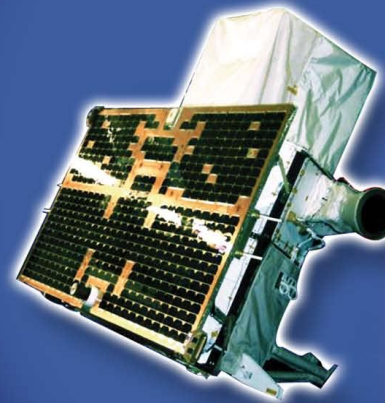
A. Antonelli, G. Barbiellini,
P. Caraveo, E. Costa, M.R. D'Antonio,
E. Del Monte, G. Di Cocco, M. Feroci,
A. Ferrari, P. Giommi, A. Giuliani,
F. Longo, M. Marisaldi, A. Pellizzoni,
P. Picozza, C. Pittori, S. Sabatini,
M. Tavani (chair), S. Vercellone.



10th **AGILE** Science Workshop

ESA-ESRIN (Frascati), April 18, 2012

Lightning, Terrestrial Gamma-Ray Flashes, and Meteorology



Scientific Organizing Committee (SOC)

G. Barbiellini (INFN), P. Benvenuti (Univ. Padova)
S. Dietrich (CNR, co-chair), E. Flamini (ASI), P. Giommi (ASDC)
M. Tavani (INAF and Univ. Tor Vergata, co-chair)

