

VO Activities

@ Space Science Data Center

M. Giardino

C. Leto

Italian Space Agency



ASTERICS European Data Provider Forum and Training Event 2018



ASI - Italian Space Agency

The Space Science Data Center is a Research Infrastructure of the Italian Space Agency

MAIN GOAL

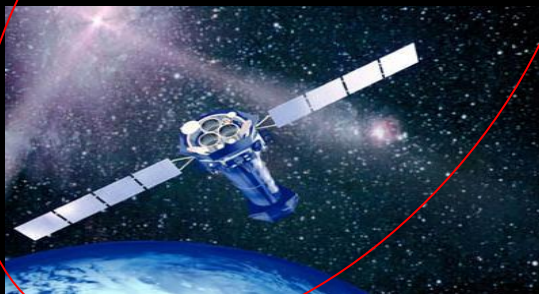
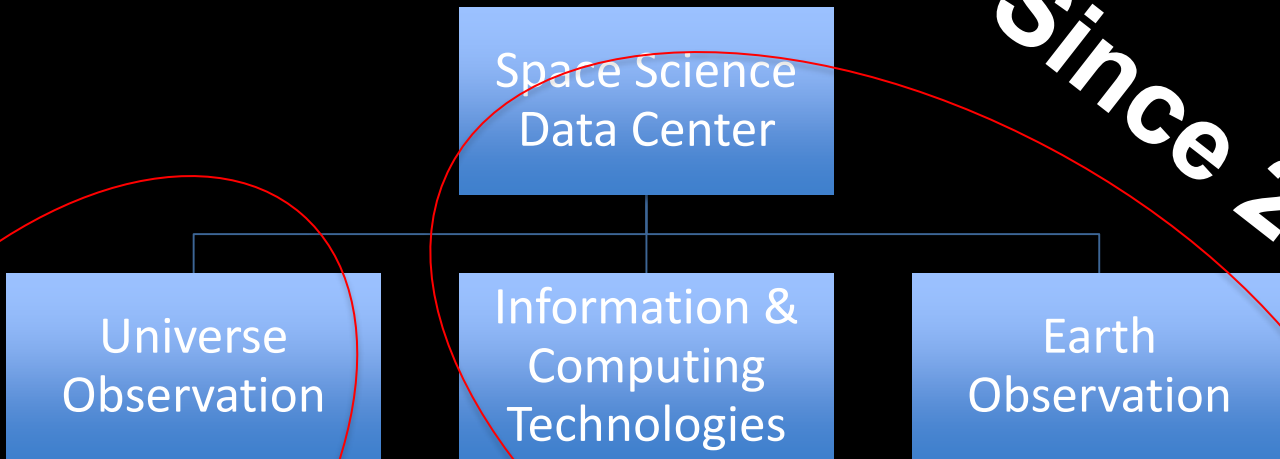
acquire, manage, process and distribute data from (mainly) space based mission adopting the FAIR (Findable, Accessible, Interoperable, Reusable) principles.

SSDC adopts international standards ensuring both the long term preservation of archives and the interoperability with other data centers.

ASI - Italian Space Agency

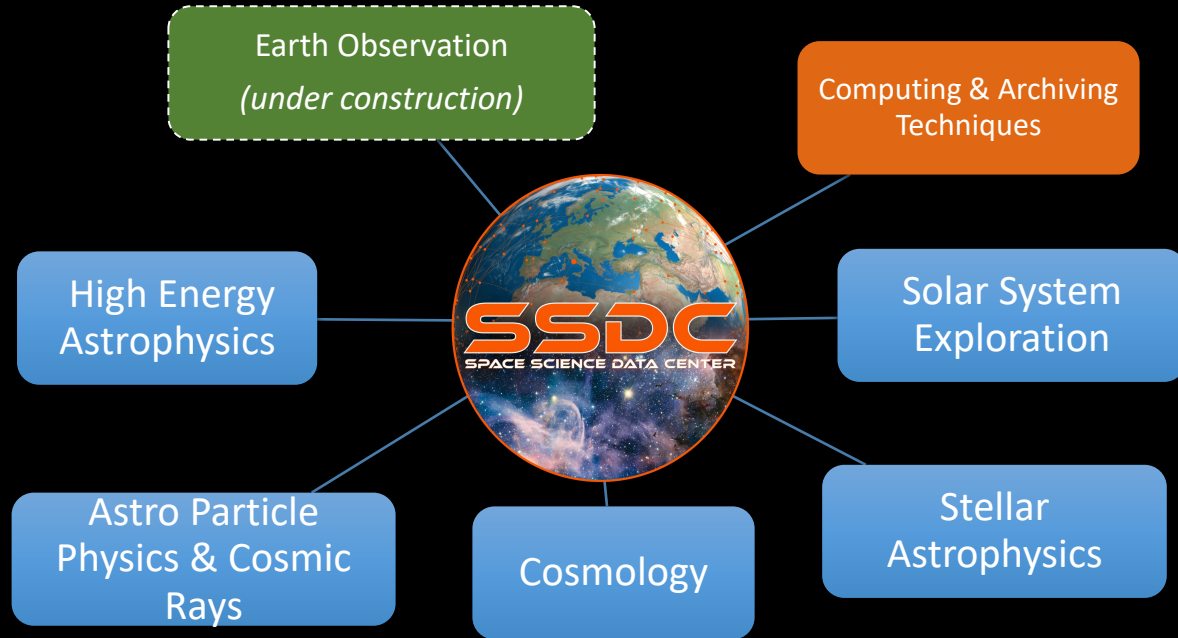
Since 2017

ex - ASDC



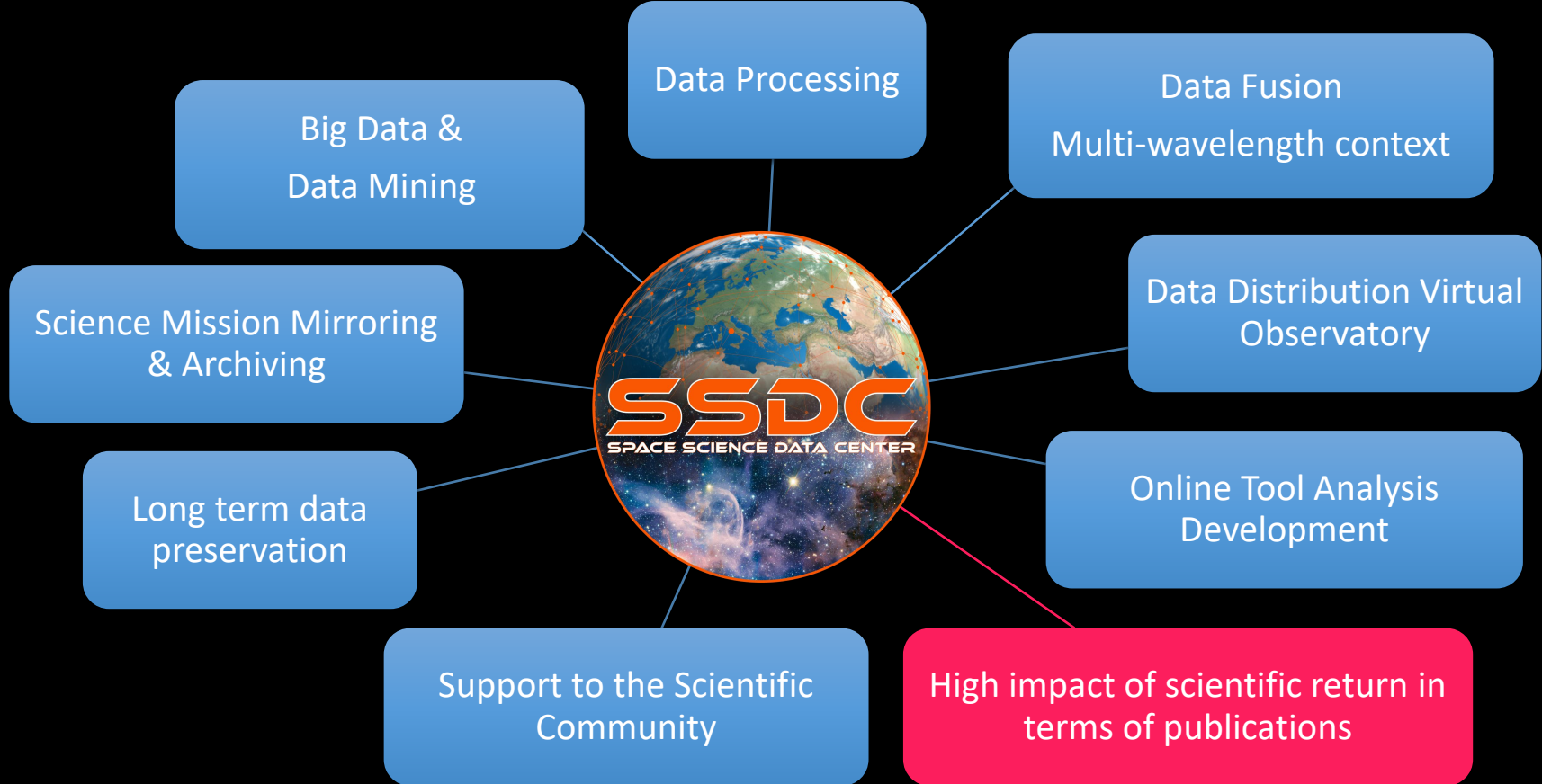
SSDC Scientific Expertise

At present, SSDC team involves around 40 people: **scientists** from ASI, INAF, INFN and SW **engineers** from Telespazio & SERCO, experts in different fields.



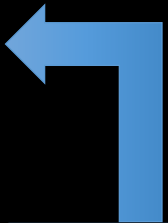
Effective approach: Developers and Users belong to same communities.

SSDC Experience




The screenshot shows the homepage of the Space Science Data Center. At the top left is the SSDC logo with a globe. The main title 'Space Science Data Center' is in large orange letters. To the right is the ASI logo 'agenzia spaziale italiana'. Below the title is a navigation menu with links: Home, About SSDC, Public Outreach, Quick Look, Missions, Multimission Archive, Catalogs, Tools, Links, Bibliographic services, Helpdesk, and Privacy. The main content area features a large image of a satellite in the foreground and a colorful astronomical data visualization in the background. To the right of this image is a grid of 18 mission icons, each with a name: AGILE, SWIFT, FERMI, XMM-NEWTON, AMS-02, PLANCK, SOLAR SYSTEM, PAMELA, GAIA, HERSCHEL, BEppo, SAK, SIMONS X, CHEOPS, EUCLID, and FLATO. At the bottom of the page are several categories of links: MEDIA (SED BUILDER, SKY EXPLORER, MATISSE), TOP NEWS (GAIA PORTAL, COSMIC RAY DATABASE, MULTIMISSION ARCHIVE FOR SPACE SCIENCE), and EVENTS (SSDC CATALOGS, BIBLIOGRAPHY TOOL, NEWSLETTER).

Science Tools allow the on-line access to data within a multifrequency environment




On-line Access to Space Missions Data Archives

The Multi-Mission Interactive Archive



Space Science Data Center



agenzia spaziale italiana

[Home](#) [About SSDC](#) [Public Outreach](#) [Quick Look](#) [Missions](#) [Multimission Archive](#) [Catalogs](#) [Tools](#) [Links](#) [Bibliographic services](#) [Helpdesk](#)

[Privacy](#)

Multi-Mission Interactive Archive for Space Science Astrophysics/Cosmology

Astrophysics/Cosmology

all missions

Radio-Micro wave

- Planck

IR-Optic-UV

- Herschel
- Swift-UVOT

X ray

- ASCA
- BeppoSAX
- Einstein
- Exosat
- NuSTAR
- ROSAT
- Swift-XRT

Gamma ray

- Agile
- Agile-LV3
- Egret
- Fermi
- Swift-BAT

Exploration of the Solar System

all missions

- Rosetta
- Dawn
- Chang'E 1
- Chang'E 2
- Messenger

Particle Astrophysics Cosmic rays

all missions


- Pamela
- AMS-02
- AMS-01
- Fermi-LAT
- CREAM
- BESS-Polar I
- BESS-Polar II
- TS93
- Chang'E 1 (soon available)
- Chang'E 2 (soon available)

Atmospheric Physics TGF

all missions


- Agile

Spectral band (): from to

 [1.00e-8 keV -- 1.00e+9 keV]

Sensitivity (mCrab): [1.00e+3 mCrab]

Temporal range (Year): from to

 [1975 -- 2017]

Submit

Source name:

Name Resolver: SSDC Name Server SIMBAD NED

The Multi-Mission Interactive Archive

The screenshot shows the Space Science Data Center (SSDC) website interface. At the top, there is a navigation bar with links: Home, About SSDC, Public Outreach, Quick Look, Missions, Multimission Archive, Catalogs, Tools, Links, Bibliographic services, and Helpdesk. A Privacy link is also present. The main header features the SSDC logo, the text "Space Science Data Center", and the ASI logo (agenzia spaziale italiana). Below this is a banner for the "Multi-Mission Interactive Archive for Space Science Astrophysics/Cosmology".

The interface is divided into several sections for mission selection:

- Astrophysics/Cosmology** (Red header):
 - all missions**
 - Radio-Micro wave**
 - Planck
 - IR-Optic-UV**
 - Herschel
 - Swift-UVOT
 - X ray**
 - ASCA
 - BeppoSAX
 - Einstein
 - Exosat
 - NuSTAR
 - ROSAT
 - Swift-XRT
 - Gamma ray**
 - Agile
 - Agile-LV3
 - Egret
 - Fermi
 - Swift-BAT
- Exploration of the Solar System** (Blue header):
 - all missions**
 - Rosetta
 - Dawn
 - Chang'E 1
 - Chang'E 2
 - Messenger
- Particle Astrophysics Cosmic rays** (Blue header):
 - all missions**
 - Pamela
 - AMS-02
 - AMS-01
 - Fermi-LAT
 - CREAM
 - BESS-Polar I
 - BESS-Polar II
 - TS93
 - Chang'E 1 (soon available)
 - Chang'E 2 (soon available)
- Atmospheric Physics TGF** (Blue header):
 - all missions**
 - Agile

Below the mission selection, there are three horizontal sliders for search criteria:

- Spectral band** (Energy (keV)): from $1e-8$ to $1e9$. Range: $[1.00e-8 \text{ keV} -- 1.00e+9 \text{ keV}]$
- Sensitivity (mCrab)**: $1e3$. Range: $[1.00e+3 \text{ mCrab}]$
- Temporal range (Year)**: from 1975 to 2017. Range: $[1975 -- 2017]$

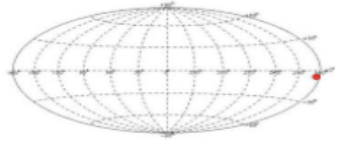
A "Submit" button is located to the right of the sliders.

At the bottom, there is a search field for "Source name" with a placeholder "Type name and wait for name resolver". To its right, there is a "Name Resolver" section with checked options for "SSDC Name Server", "SIMBAD", and "NED". A red arrow points to the "Source name" field, and a red circle highlights the "Name Resolver" section.

The Multi-Mission Interactive Archive

Multi-Mission Interactive Archive

Query results for: **CRAB**
RA = **83.6326** (deg); DEC = **22.014434** (deg); EQUINOX = 2000
Source name resolved by **ASDS**



Source Names

Bibliographic search

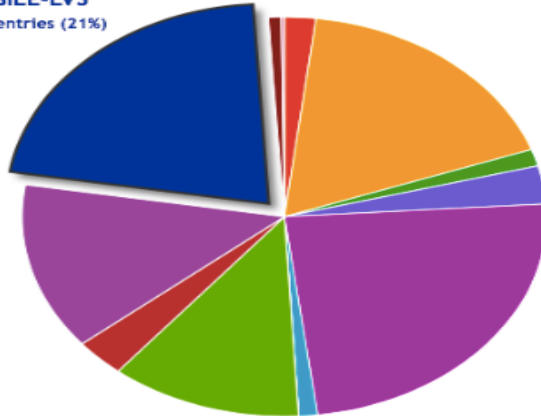
PKS0531+219

in time range between 1900 and 2017

By name via NEO

By coordinates via ADS

AGILE-LV3
111 entries (21%)

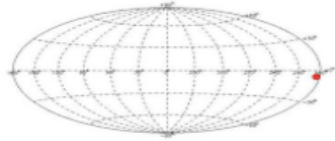


MISSION	ENTRIES
PLANCK	0
HERSCHEL	10
SWIFT	91
ASCA	7
BeppoSax NFI	16
BeppoSax WFC	124
EINSTEIN	6
EXOSAT	0
NUSTAR	61
ROSAT	16
AGILE	70
AGILE-LV3	111
EGRET	4
FERMI	1

The Multi-Mission Interactive Archive

Multi-Mission Interactive Archive

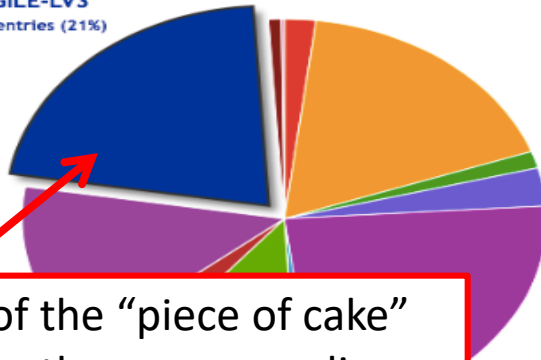
Query results for: CRA
RA = **83.632977** (deg); DEC = **22.014434**
Source name resolved by A



Source Names

Summary of the observations on the Crab position considering all the data available @ SSCC

AGILE-LV3
111 entries (21%)



Clicking on each of the “piece of cake” you have access to the corresponding data and the interactive data analysis

MISSION	ENTRIES
PLANCK	0
HERSCHEL	10
SWIFT	91
ASCA	7
BeppoSax NFI	16
BeppoSax WFC	124
EINSTEIN	6
EXOSAT	0
NUSTAR	61
ROSAT	16
AGILE	70
AGILE-LV3	111
EGRET	4
FERMI	1

The Multi-Mission Interactive Archive

AGILE-LV3 Data

Query results for: 83.632977, 22.014434 (in RA, DEC)

Details: query by **COORDINATE & TIME** with **RA** = 83.632977; **DEC** = 22.014434; **L** = 184.557455; **B** = -5.784478; **Lon** = 84.097402; **Lat** = -1.294493; **EQUINOX** = 2000; **RADIUS** = 30 degrees; **Start date** = 01-12-2007; **End date** = 03-11-2017; **Duration** = 28 day(s); **Min EXP** = 100 cm² s sr; sort by **START DATE**; max lines retrieved 5000;

[Modify AGILE-LV3 query parameters](#)

Make Light Curve:

Export Current view of Table in:

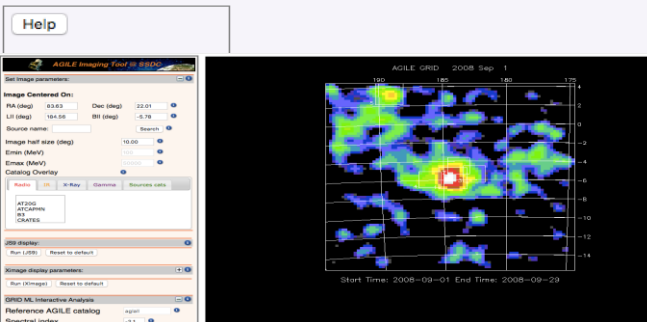
◀ [Previous Page](#) [Next Page](#) ▶ Page Size (# of lines)

Current view includes 111 entries

Entry number		GRID LV3 data retrieval	GRID Interactive Analysis	START DATE	STOP DATE	RA (J2000) hh mm ss.d	DEC (J2000) dd mm ss.d	MEAN EXP (cm ² s sr)	Dist. from searched position degrees	
Selection mode:										
<input type="button" value="Include"/>										
<input checked="" type="checkbox"/> All										
1	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-01-21 12:00:00	2008-02-18 12:00:00	04 36 06.62	+17 42 29.52	863.166	14.38
2	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-03-17 12:00:00	2008-04-14 12:00:00	04 36 06.62	+17 42 29.52	1773.82	14.38
3	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-06-09 12:00:00	2008-07-07 12:00:00	04 36 06.62	+17 42 29.52	163.635	14.38
4	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-07-07 12:00:00	2008-08-04 12:00:00	04 36 06.62	+17 42 29.52	1343.54	14.38

The Multi-Mission Interactive Archive

AGILE-LV3 Data



Query results for: **83.632977, 22.014434 (in RA, DEC)**
 with **RA = 83.632977; DEC = 22.014434; L = 184.557455; B = -5.784478; Lon = 84.097402; Lat = -1.294493; EQUINOX = 2000;**
Start date = 02-2007; End date = 03-11-2017; Duration = 28 day(s); Min EXP = 100 cm² s sr; sort by START DATE; max lines retrieved 5000;

[Modify AGILE-LV3 query parameters](#)

Make Light Curve:

Export Current view of Table in:

◀ [Previous Page](#) [Next Page](#) ▶ Page Size (# of lines)

Current view includes 111 entries

Entry number		GRID LV3 data retrieval	GRID Interactive Analysis	START DATE	STOP DATE	RA (J2000) hh mm ss.d	DEC (J2000) dd mm ss.d	MEAN EXP (cm ² s sr)	Dist. from searched position degrees
Selection mode: <input type="button" value="Include"/> <input checked="" type="checkbox"/> All									
	<input type="checkbox"/>		<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="Stats"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>
1	<input checked="" type="checkbox"/> Select	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-01-21 12:00:00 2008-02-18 12:00:00	04 36 06.62	+17 42 29.52	863.166	14.38
2	<input checked="" type="checkbox"/> Select	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-03-17 12:00:00 2008-04-14 12:00:00	04 36 06.62	+17 42 29.52	1773.82	14.38
3	<input checked="" type="checkbox"/> Select	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-06-09 12:00:00 2008-07-07 12:00:00	04 36 06.62	+17 42 29.52	163.635	14.38
4	<input checked="" type="checkbox"/> Select	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-07-07 12:00:00 2008-08-04 12:00:00	04 36 06.62	+17 42 29.52	1343.54	14.38

The Multi-Mission Interactive Archive

AGILE-LV3 Data

Help

AGILE Imaging View in SSDC

Set image parameters:

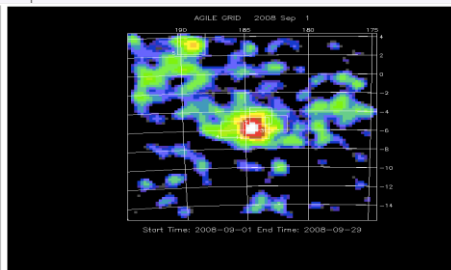
Image Centered On:
 RA (deg) 83.63 Dec (deg) 22.01
 L1 (deg) 184.56 B1 (deg) -5.78
 Source name: Search
 Image half size (deg) 10.00
 Error (MaxV)
 Error (Mean)
 Catalog Overlay

AT200
 03-11-2007
 03-11-2017

Grid display:
 Run (1/25) Reset to default

Image display parameters:
 Run (1/Images) Reset to default

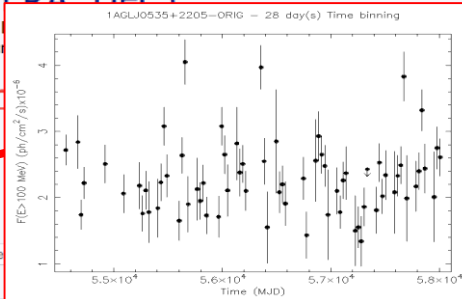
GRID ML Interactive Analysis
 Reference AGILE catalog
 Spectral Index



Query results for: 83.632977, 22.014434 (in RA, DEC)
 with RA = 83.632977; DEC = 22.014434; L = 184.557455; B = -5.784478;
 Start date = 02-20-2007; End date = 03-11-2017; Duration = 28 day(s); Min EXP = 100 c

Modify AGILE-LV3 query parameter

Make Light Curve: LC likelihood



Export Current view of Table in:

◀ Previous Page Next Page ▶ Page Size (# of lines) 200 ◯ Reset all filters Show all entries

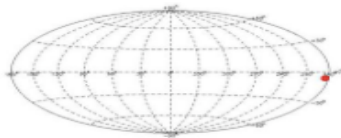
Current view includes 111 entries

Entry number		GRID LV3 data retrieval	GRID Interactive Analysis	START DATE	STOP DATE	RA (J2000) hh mm ss.d	DEC (J2000) dd mm ss.d	MEAN EXP (cm ² s sr)	Dist. from searched position degrees
Selection mode: <input type="button" value="Include"/> <input checked="" type="checkbox"/> All									
	<input type="checkbox"/>		<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/>	<input type="button" value="↑"/> <input type="button" value="↓"/> Stats	<input type="button" value="↑"/> <input type="button" value="↓"/>
1	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-01-21 12:00:00 2008-02-18 12:00:00	04 36 06.62	+17 42 29.52	863.166	14.38
2	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-03-17 12:00:00 2008-04-14 12:00:00	04 36 06.62	+17 42 29.52	1773.82	14.38
3	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-06-09 12:00:00 2008-07-07 12:00:00	04 36 06.62	+17 42 29.52	163.635	14.38
4	<input checked="" type="checkbox"/> <input type="button" value="Select"/>	<input type="button" value="SSDC Data Explorer"/>	<input type="button" value="Data Access"/>	<input type="button" value="Interactive Analysis"/>	2008-07-07 12:00:00 2008-08-04 12:00:00	04 36 06.62	+17 42 29.52	1343.54	14.38

The Multi-Mission Interactive Archive

Multi-Mission Interactive Archive

Query results for: **CRAB**
RA = **83.632977** (deg); DEC = **22.014434** (deg); EQUINOX = **2000**
Source name resolved by **ASDC**



[Source Names](#)

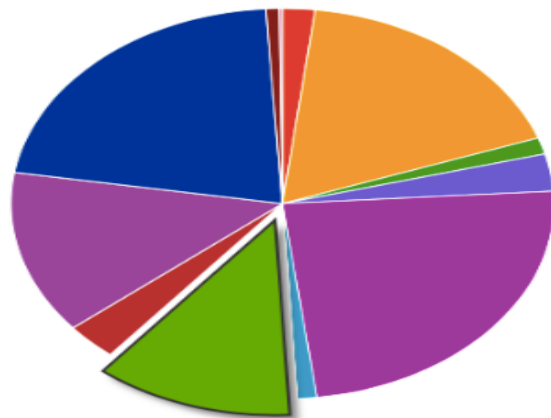
Bibliographic search [?](#)

PKSB0531+219 [?](#)

in time range between 1900 and 2017

[By name via NED](#)

[By coordinates via ADS](#)



NUSTAR
61 entries (12%)

MISSION	ENTRIES
PLANCK	0
HERSCHEL	10
SWIFT	91
ASCA	7
BeppoSax NFI	16
BeppoSax WFC	124
EINSTEIN	6
EXOSAT	0
NUSTAR	61
ROSAT	16
AGILE	70
AGILE-LV3	111
EGRET	4
FERMI	1

The Multi-Mission Interactive Archive



Query results for: **83.632977, 22.014434 (in RA, DEC)**

Details: query by **COORDINATE** with **RA** = 83.632977; **DEC** = 22.014434; **EQUINOX** = 2000; **RADIUS** = 10 arcmin; sort by **RA**; max lines retrieved: 5000 (on BROWSE catalog **numaster**)

Export Current view of Table in: [Latex format](#) [FITS format](#) [Raw text format](#) [CSV text format](#) [Browse table](#)

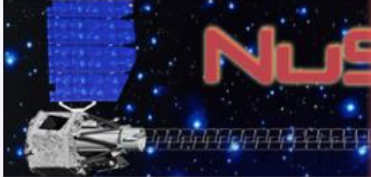
◀ Previous Page Next Page ▶ Page Size (# of lines) [Reset all filters](#) [Show all entries](#)

view includes 61 entries

Entry number	Archive	Interactive Analysis	Target Name	obsid	RA (J2000) hh mm ss.d	Dec (J2000) dd mm ss.d	time	public_date	exposure_a	exposure_b	status	Dist. from searched position arcmin	
1	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL15	10013035002	05 34 07.39	+22 03 48.24	Feb 15, 2013 05:11:00	Sep 23, 2014 00:00:00	9401.2191	9919.6823	ARCHIVED	6.3
2	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08	10013028002	05 34 10.36	+22 00 42.12	Sep 28, 2012 00:21:00	Sep 23, 2014 00:00:00	1601.8016	1564.5691	ARCHIVED	4.9
3	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA04	10013004002	05 34 10.89	+22 01 14.52	Jul 24, 2012 17:06:00	Sep 23, 2014 00:00:00	308.8379	298.59	ARCHIVED	4.8
4	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08	10013028004	05 34 11.85	+22 00 51.47	Sep 28, 2012 05:11:00	Sep 23, 2014 00:00:00	1254.35	1225.3015	ARCHIVED	4.6
5	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07	10013027004	05 34 14.06	+22 01 10.92	Sep 27, 2012 09:51:00	Sep 23, 2014 00:00:00	1105.0882	1090.9042	ARCHIVED	4.1
6	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07	10013027002	05 34 14.59	+22 01 14.88	Sep 27, 2012 04:56:00	Sep 23, 2014 00:00:00	1182.0179	1166.5398	ARCHIVED	4
7	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA10	10013010001	05 34 17.01	+22 02 10.68	Jul 25, 2012 15:26:00	Sep 23, 2014 00:00:00	282.832	280.6575	ARCHIVED	3.6
8	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL13	10013033002	05 34 17.28	+21 59 13.56	Dec 19, 2012 22:46:00	Sep 23, 2014 00:00:00	1383.0562	1410.8179	ARCHIVED	3.7
9	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL04	10013024002	05 34 18.72	+22 00 04.32	Sep 20, 2012 11:16:00	Sep 23, 2014 00:00:00	2258.5909	2246.7719	ARCHIVED	3.1

The Multi-Mission Interactive Archive

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



Query results for
Details: query by **COORDINATE** with **RA** = 83.632977; **DEC** = 22.0207

Export Current view of Table in: L

◀ Previous Page Next Page ▶

view includes 61 entries

Entry number	Archive	Interactive Analysis	Target Name	obsid	RA (J2000)
1	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL15	10013035002
2	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08	10013028002
3	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA04	10013004002
4	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08	10013028004
5	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07	10013027004
6	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07	10013027002
7	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA10	10013010001
8	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL13	10013033002
9	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL04	10013024002

NuSTAR Imaging Tool @ SSDC

Set Image parameters:

Image Centered On:

RA (deg) 83.5454 Dec (deg) 22.0207
LII (deg) 184.5 BII (deg) -5.85

Source name: Search

Image half size (pixel) 300
Emin (keV) 3
Emax (keV) 79

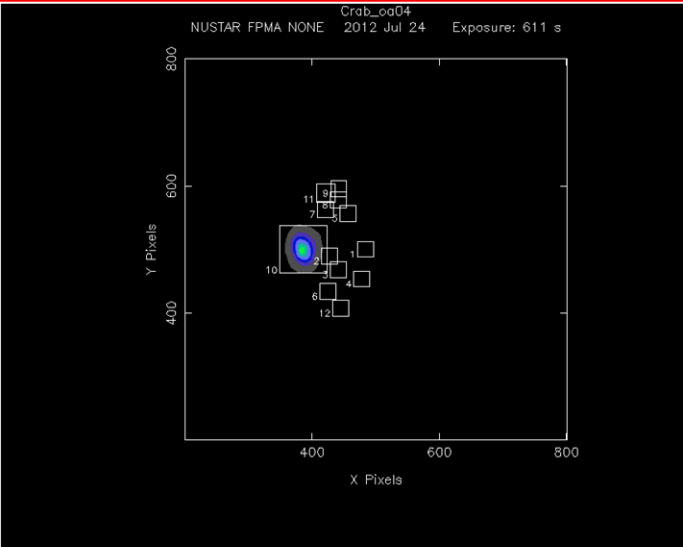
Catalog Overlay

Radio IR X-Ray Gamma Sources cats

AT20G
ATCAPM1
B3
CRATES

JS9 display:
Run (JS9) Reset to default

Ximage display parameters:
Color blubase
Color scaling histo
Minimum level displayed 0.000
Maximum level displayed 7.000
Skygrid Off
Smoothing filter wave
sigma 5
background level 1



Crab_oa04
NUSTAR FPMA NONE 2012 Jul 24 Exposure: 611 s

Y Pixels
800
600
400

X Pixels
400 600 800

+22 02 10.68 Jul 25, 2012 15:26:00 Sep 23, 2014 00:00:00 282.832 280.6575 ARCHIVED 3.6
+21 59 13.56 Dec 19, 2012 22:46:00 Sep 23, 2014 00:00:00 1383.0562 1410.8179 ARCHIVED 3.7
+22 00 04.32 Sep 20, 2012 11:16:00 Sep 23, 2014 00:00:00 2258.5909 2246.7719 ARCHIVED 3.1

The Multi-Mission Interactive Archive

Help

Show/hide columns

Advanced filtering

Print current view of table

Print complete table



Query res

Details: query by COORDINATE with RA = 83.632977; DEC

Support Current view of Ta

Previous Page Next

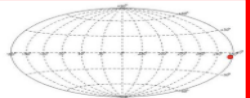
Direct access to the
SSDC Data Explorer tool

view includes 61 entries

Entry number	Archive	Interactive Analysis	Target Name	obsid
1	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL15 10013035002
2	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08 10013028002
3	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA04 10013004002
4	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL08 10013028004
5	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07 10013027004
6	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL07 10013027002 05 34 14.59 +22 01 14.88 Sep 27, 2012 04:56:00 Sep 23, 2014 00:00:00 1182.0179 1166.5398 ARCHIVED 4
7	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_OA10 10013010001 05 34 17.01 +22 02 10.68 Jul 25, 2012 15:26:00 Sep 23, 2014 00:00:00 282.832 280.6575 ARCHIVED 3.6
8	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL13 10013033002 05 34 17.28 +21 59 13.56 Dec 19, 2012 22:46:00 Sep 23, 2014 00:00:00 1383.0562 1410.8179 ARCHIVED 3.7
9	SSDC Data Explorer	Data Access	Interactive Analysis	CRAB_CAL04 10013024002 05 34 18.72 +22 00 04.32 Sep 20, 2012 11:16:00 Sep 23, 2014 00:00:00 2258.5909 2246.7719 ARCHIVED 3.1

SSDC Multi-Mission Interactive Archive

Entry CRAB
 R.A. (J2000) = 05 34 29.54 (83.6231 deg) l=184.54
 Dec (J2000) = +22 01 09.48 (22.0193 deg) b=-5.79
 Galactic nH = 3.26E+21 (cm⁻²) [Source Names](#)



Error circle EXPLORER | Source Details

TUTORIAL HELP

Default catalogs (always selected)
 Selectable catalogs:
 Default selection []
 Radio [select]
 Infrared [select]
 Optical [select]
 X-Ray [select]
 Gamma [select]
 Source Catalogs [select]
 [Selected catalog List >>]
 size (arcmin) [5] [v]

Position selected for the analysis:
 R.A.=05 34 29.54 (83.6231 deg) l=184.54
 Dec=+22 01 09.48 (22.0193 deg) b=-5.79
 [SED Builder](#) [Source Names](#)
 Galactic nH= 3.26E+21 (cm⁻²)

Additional Services - [?]

SSDC-resident astronomical catalogs [?]
 Group of Catalogs Selected Catalogs
 Radio IR Optical X-ray Gamma
 QORG AGN BZCAT ZCAT NGC ZWICKY

Search radius [0.2] arcmin

Search Other Services [?]
 VIZIER(X-R-G) VIZIER(O-IR) NED
 SIMBAD HEASARC(X-R-G) GSC2 STSCI MAST 2MASS SDSS USNO-B1.0 NVO

Search radius [0.2] arcmin

Bibliography search [?]

 in time range between [1900] and [2017]
 By name via NED
 By coordinates via ADS [?]

Access to Public Data Archives -

The Multi-Mission Interactive Archive

Help

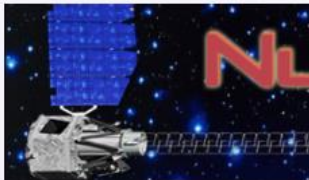
Show/hide columns

Advanced filtering

Print current view of table

Print complete table

Reset all filters



Query results

Details: query by **COORDINATE** with RA = 83.632977; DEC = 184.54

Export Current view of Table

Previous Page Next Page

view includes 61 entries

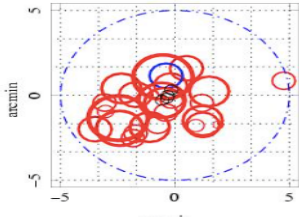
Entry number	Archive	Interactive Analysis	Target Name	obsid
1	SSDC Data Explorer	Data Access	CRAB_CAL15	10013035002
2	SSDC Data Explorer	Data Access	CRAB_CAL08	10013028002
3	SSDC Data Explorer	Data Access	CRAB_OA04	10013004002
4	SSDC Data Explorer	Data Access	CRAB_CAL08	10013028004
5	SSDC Data Explorer	Data Access	CRAB_CAL07	10013027004
6	SSDC Data Explorer	Data Access	CRAB_CAL07	10013027002
7	SSDC Data Explorer	Data Access	CRAB_OA10	10013010001
8	SSDC Data Explorer	Data Access	CRAB_CAL13	10013033002
9	SSDC Data Explorer	Data Access	CRAB_CAL04	10013024002

SSDC

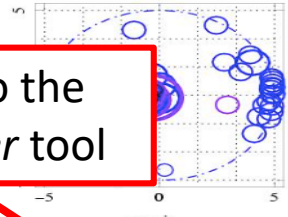
Entry CRAB

R.A. (J2000) = 05 34 29.54 (83.6231 deg) l=184.54
 Dec (J2000) = +22 01 09.48 (22.0193 deg) b=-5.79
 Galactic nH = 3.26E+21 (cm⁻²) [Source Names](#)

Error circle EXPLORER | **Source Details**



arcmin
show sources list
download image in ps format



arcmin
show sources list
download image in ps format

Access to the SEDBuilder tool

Position selected for the analysis: R.A.=05 34 29.54 (83.6231 deg) l=184.54
 Dec=+22 01 09.48 (22.0193 deg) b=-5.79 [SED Builder](#) [Source Names](#)
 Galactic nH= 3.26E+21 (cm⁻²)

Additional Services -

SSDC-resident astronomical catalogs

Group of Catalogs Selected Catalogs

Radio IR Optical X-ray Gamma QORG AGN BZCAT ZCAT NGC ZWICKY

Search radius 0.2 arcmin

Search Other Services

VIZIER(X-R-G) VIZIER(O-IR) NED SIMBAD HEASARC(X-R-G) GSC2 STSCI MAST 2MASS SDSS USNO-B1.0 NVO

Search radius 0.2 arcmin

Bibliography search

NGC1952

In time range between 1900 and 2017

By name via NED

By coordinates via ADS

Access to Public Data Archives -

Entry number	Archive	Interactive Analysis	Target Name	obsid	RA	Dec	Galactic nH	l	b	Status	Value
1	SSDC Data Explorer	Data Access	CRAB_CAL15	10013035002	05 34 29.54	+22 01 09.48	3.26E+21	184.54	-5.79	ARCHIVED	4
2	SSDC Data Explorer	Data Access	CRAB_CAL08	10013028002	05 34 17.01	+22 02 10.68	3.26E+21	184.54	-5.79	ARCHIVED	3.6
3	SSDC Data Explorer	Data Access	CRAB_OA04	10013004002	05 34 17.28	+21 59 13.56	3.26E+21	184.54	-5.79	ARCHIVED	3.7
4	SSDC Data Explorer	Data Access	CRAB_CAL08	10013028004	05 34 18.72	+22 00 04.32	3.26E+21	184.54	-5.79	ARCHIVED	3.1

The Multi-Mission Interactive Archive

Help

Show/hide columns

Advanced filtering

Print current view of table

Print complete table

Reset all filters



Query results

Details: query by **COORDINATE** with RA = 83.632977; DEC = 22.019300

Export Current view of Table

SSDC

Entry CRAB

R.A. (J2000) = 05 34 29.54 (83.6231 deg) l=184.54
 Dec (J2000) = +22 01 09.48 (22.0193 deg) b=-5.79
 Galactic nH = 3.26E+21 (cm⁻²) [Source Names](#)

Error circle EXPLORER Source Details

TUTORIAL HELP

Default catalogs

arcmin

Access to the SEDBuilder tool

Source Catalogs [select] (Selected catalog List >>)

arcmin (5)

arcmin (83.6231 deg) l=184.54 (22.0193 deg) b=-5.79

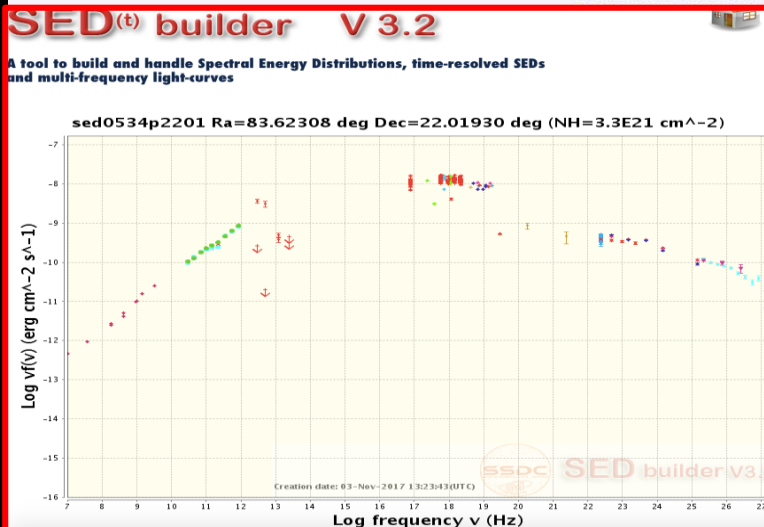
SED Builder Source Names

Search Other Services

Bibliography search

IR (X-R-G) VIZIER(O-IR) NED
 HEASARC(X-R-G)
 STS MAST 2MASS
 USNO-B1.0 NVO

Search radius 0.2 arcmin



SSDC

tutorial User Data Existing SEDs Current SED Search and build new SEDs Show source names

Load Data Show Data Save Duplicate Sed

Bibliographic search

Redshift: 0.0 Frame: Observed

X Axis: Frequency (Hz) Y Axis: nuFnu (erg/cm2/s)

Plot Type: Default

Update Plot

Input Data Time Filtering Energy Filtering Models Fit Functions Templates Instr Sensitivity Plot options Existing SEDs Export VO Tools

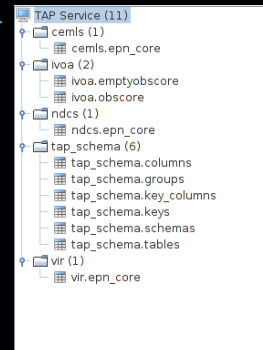
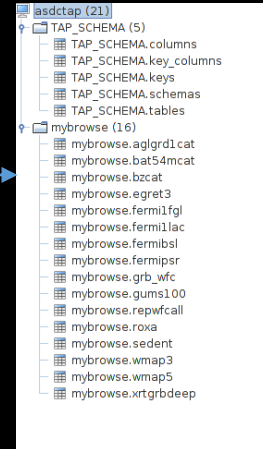
SSDC-resident Catalogs Expand all Collapse all

Energy Band / Catalog Name	Options	Hide
Radio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Infrared	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AKARI/FIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
AKARI/SIRC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
DENIS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HATLASDR1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HERSCHEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
IRAS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
WISE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Optical UV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Soft X Ray	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hard X Ray	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gamma Ray	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
VHE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

RA	Dec	Galactic l	Galactic b	Status	Distance
14 00:00:00	1182.0179	1166.5398	ARCHIVED	4	
14 00:00:00	282.832	280.6575	ARCHIVED	3.6	
14 00:00:00	1383.0562	1410.8179	ARCHIVED	3.7	
14 00:00:00	2258.5909	2246.7719	ARCHIVED	3.1	

TAP Services @SSDC

- ASDC TAP service is **online**
- SAMP link from catalogs, VOTable export **online**
- Collaboration with INAF-IAPS and INAF-OAT for the EPN-TAP service (Europlanet 2020) for planetary data **online**
- Development of GAIA service **in progress**
- New catalogs are **missing**

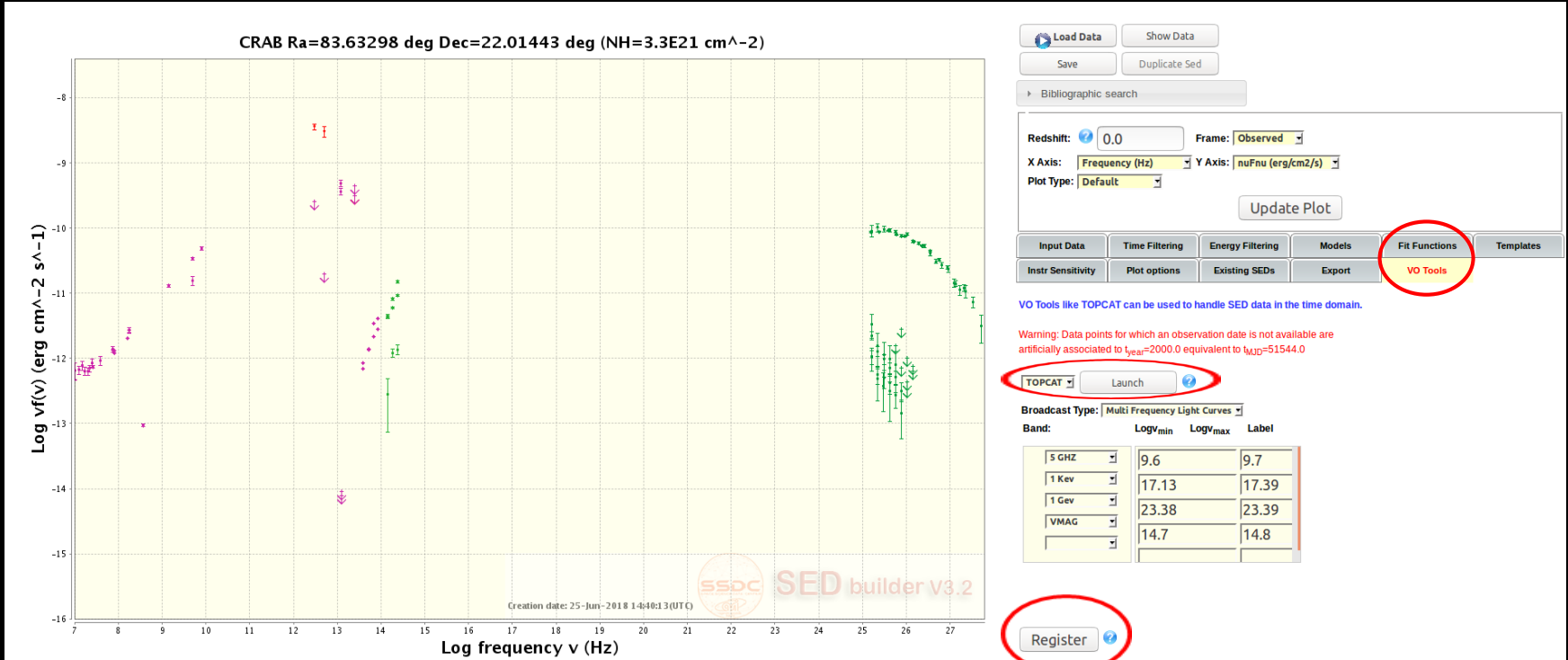


ASDC TAP Service catalogs

Currently hosting 15 catalogs , multidisciplinary and multifrequency

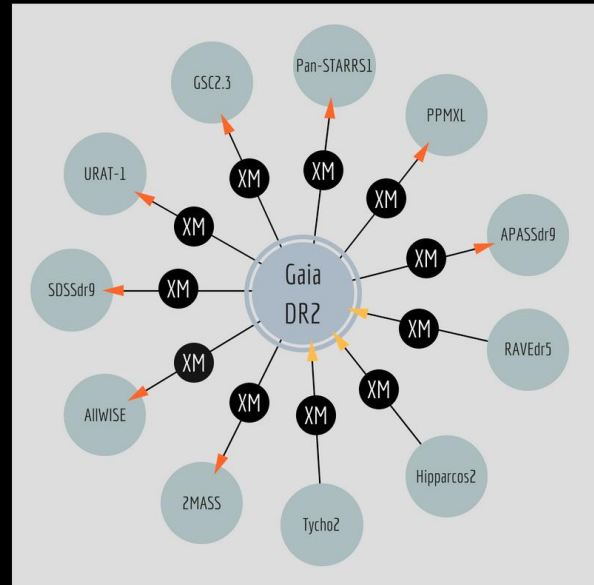
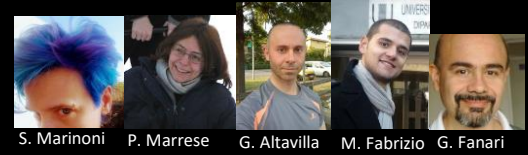
- Bzcat (4°) : Multi-frequency blazars
- Agilegrid1 : Agile Grid 1 AGLR gamma ray
- Bat54mcat : Palermo Swift-BAT Hard x-ray
- Xrtgrbdeep : Swift serendipitous XRT (GRB) x-ray
- Egret3 : EGRET Source gamma
- Fermi: 1LAC (AGN) ,FGL (sources), BSL (bright sources), PSR(pulsar) gamma
- BeppoSAX : Wide field cameras GRB X-ray catalog, wide field cameras sources X-ray
- Roxa : Multifrequency (Radio+Optical+X-ray) blazars
- Sedent : Multifrequency extreme high energy peaked BL Lac (AGN)
- Wmap3, Wmap5 : Radio microwave point sources (3 years and 5 years)
- many more to come ...

An example of SAMP integration



GAIA

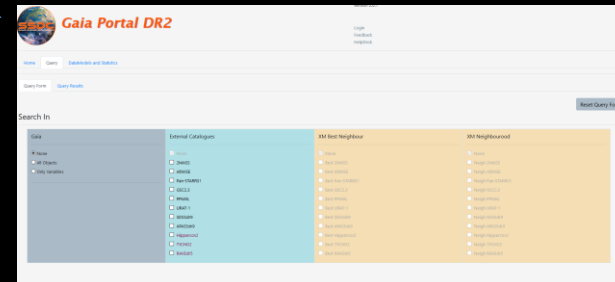
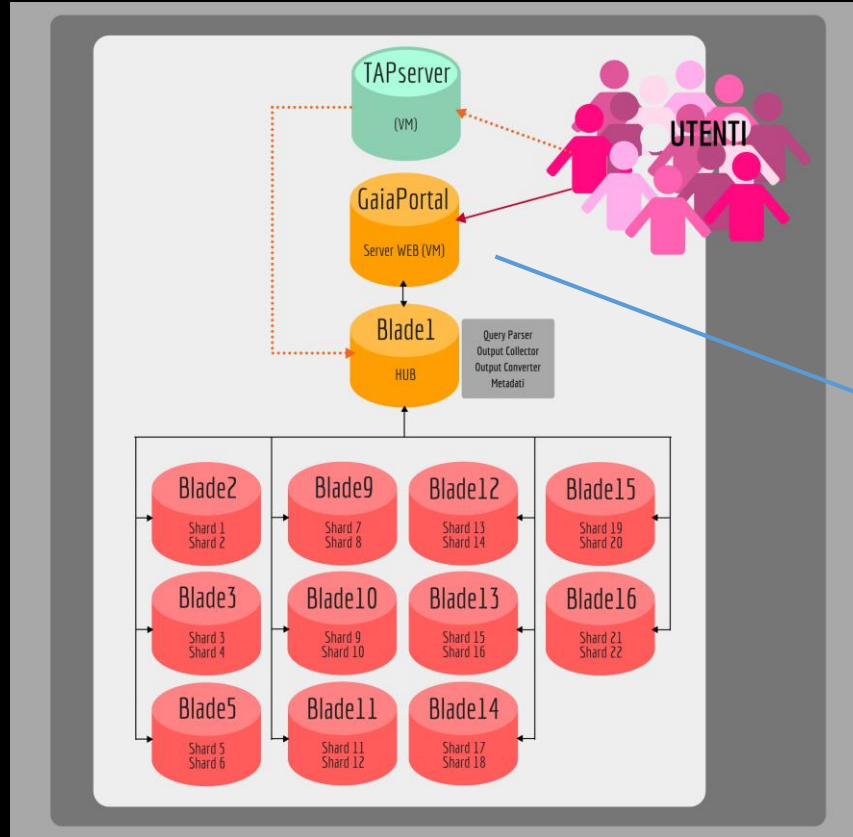
An ambitious mission to chart a 3D map of our Galaxy, in the process revealing the composition, formation and evolution of the Galaxy



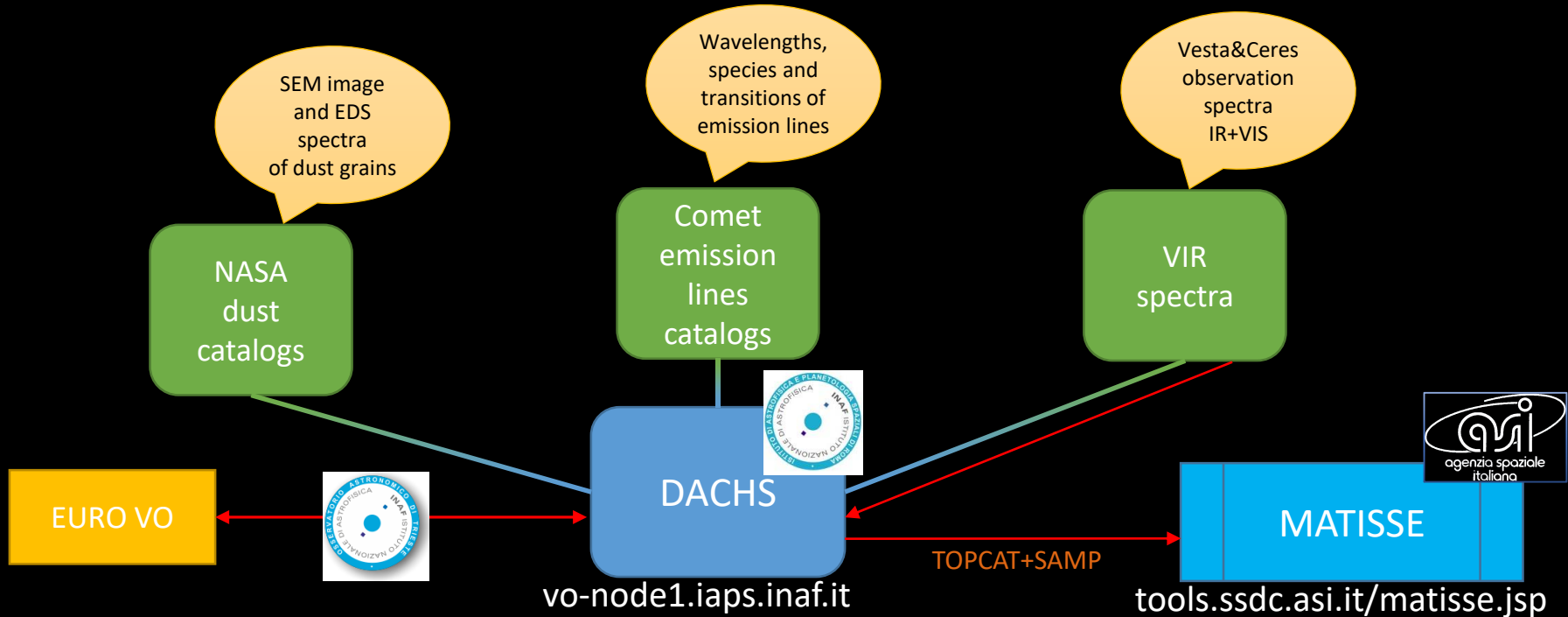
GAIA TAP service

- ❖ Requirements on Sept. 2016:
 - A VO-compliant service
 - Able to query a MySQL DB
 - Able to manage multiple connections
- ❖ Starting point: TAPLib 2.0 (AUG 2016 - G. Mantelet) based on PostgreSQL
- ❖ Inclusion of a **MySQL** translator task
 - *Mathematical and trigonometric functions*
 - *JOIN and subqueries*
 - *Search conditions (WHERE, HAVING, ORDER BY, GROUP BY)*
- ❖ Two phase selection
 - Geometrical functions based on **MySQL_SPHERE** (A. Partl)
 - Geometrical functions based on *dynamic index facility (dif)* a tool able to see both HTM and HEALPix pixelization schemas and it allows a faster query execution on big table (Calderone and Nicastro)
- ❖ Management of **multiple connections** by using the same DB structure of GaiaPortal (<http://gaiaportal.ssd.cnr.it>): "sharding"
 - Tables (catalogs and auxiliary) are divided in consistent declination strips
 - A given strip, for all tables, is stored in the same independent server: **shard** (N=22)
 - Queries and tables joins are ran on each shard in parallel execution and without hardware sharing. No joins between shards are required.
 - The outputs are redirected on a single DB table
 - The output table have to be converted in the final user desired format

GAIA TAP service



EPN-TAP service @IAPS



MATISSE

The image shows a screenshot of the MATISSE web interface in a browser window. The browser address bar shows the URL `https://toolsdev.asdc.asi.it/matisse.jsp`. The page header includes the SSDC logo, the title "MATISSE Multi-purpose Advanced Tool for Instruments for the Solar System Exploration", and the version "Version 1.21". There are links for "Login" and "Feedback". A yellow banner contains contact information for Angelo Zinzi. Below this is a "Search Params" section with a "Target" dropdown set to "21 Lutetia", a "Missions" section with "Rosetta" checked, and an "Instrument" section with checkboxes for OSIRIS/NAC, OSIRIS/WAC, VIRTIS-M IR, and VIRTIS-M VIS. There are also input fields for "Longitude: min range 0-360", "Acquisition time: min yyyy-mm-dd hh:mm:ss", and "Emergence angle: min". A "Reset" and "Search" button are at the bottom of the search section. A "TOPCAT" window is overlaid on the bottom left, showing a "Table List" and "Current Table Properties" section. A blue callout box contains the text "TAP URL = http://vo-node1.iaps.inaf.it/tap". A large orange arrow points from the "SAMP" label to the MATISSE interface.

SAMP

TAP URL = `http://vo-node1.iaps.inaf.it/tap`

MATISSE



MATISSE



Version 1.21

[Login](#)
[Feedback](#)

Multi-purpose Advanced Tool for Instruments for the Solar System Exploration

(Version 1.3) [Download manual PDF](#)

[MATISSE-VESPA User Manual](#)

For support and info please contact [Angelo Zinzi](#)

Please cite MATISSE as "MATISSE: A novel tool to access, visualize and analyse data from planetary exploration missions. Zinzi et al., Astronomy and Computing, 2016, <http://dx.doi.org/10.1016/j.ascom.2016.02.006>"

Search Params:

Target:

Missions: Rosetta

Instrument:
 OSIRIS/NAC
 OSIRIS/WAC
 VIRTIS-M IR
 VIRTIS-M VIS

Latitude: min
Range to target: min
Incidence angle: min
Phase angle: min
No Data:

max
max
max
max

Longitude: min
Acquisition time: min
Emergence angle: min

max
max
max

Observation:

WaveLength (nm):

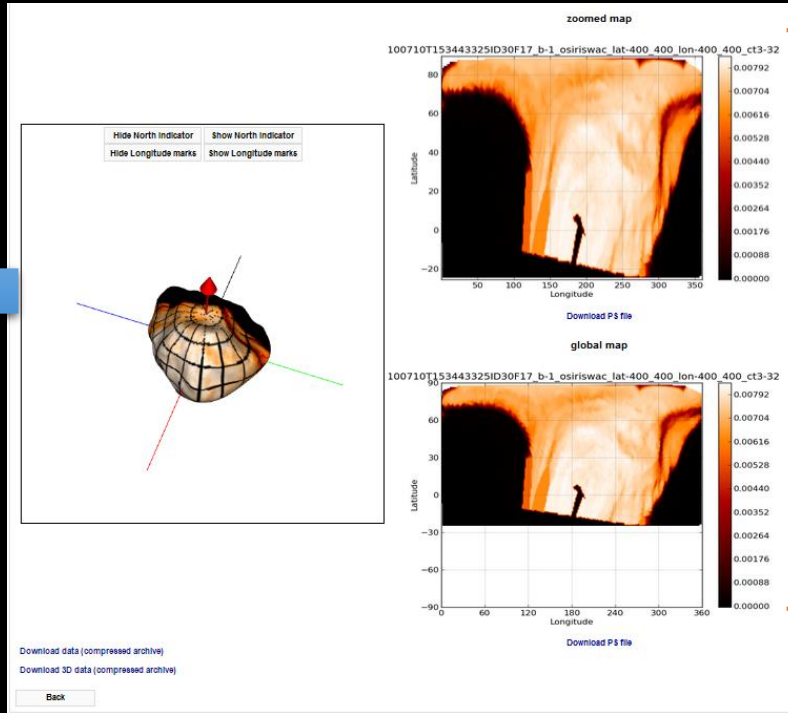
Palette:

Color Step (default 32):

[Color Tables](#)

MATISSE

3D
interactive
shape
model



2D
projected
maps

Next steps

- Update TAP service with new version of catalogs (i.e. Fermi, AGILE) and new catalogs
- Publish GAIA TAP service
- Add original geometry data to EPN-TAP service (datalink)
- Space Weather Data Center @ ASI (assessment) : INAF+INFN+ASI
 - AMS (INFN)
 - Limadou/HEPD (INFN)
 - BepiColombo/SERENA(INAF)

Data heterogeneity, multidisciplinary approach



SSDC
SPACE SCIENCE DATA CENTER