



# Space Science Data Center

A research infrastructure of the Italian Space Agency

Gianluca Polenta

## IVOA May 2023 InterOp Meeting



Agenzia Spaziale Italiana



ASI - Italian Space Agency

BeppoSAX SDC

2000

ASI Science Data Center

2017

Space Science Data Center

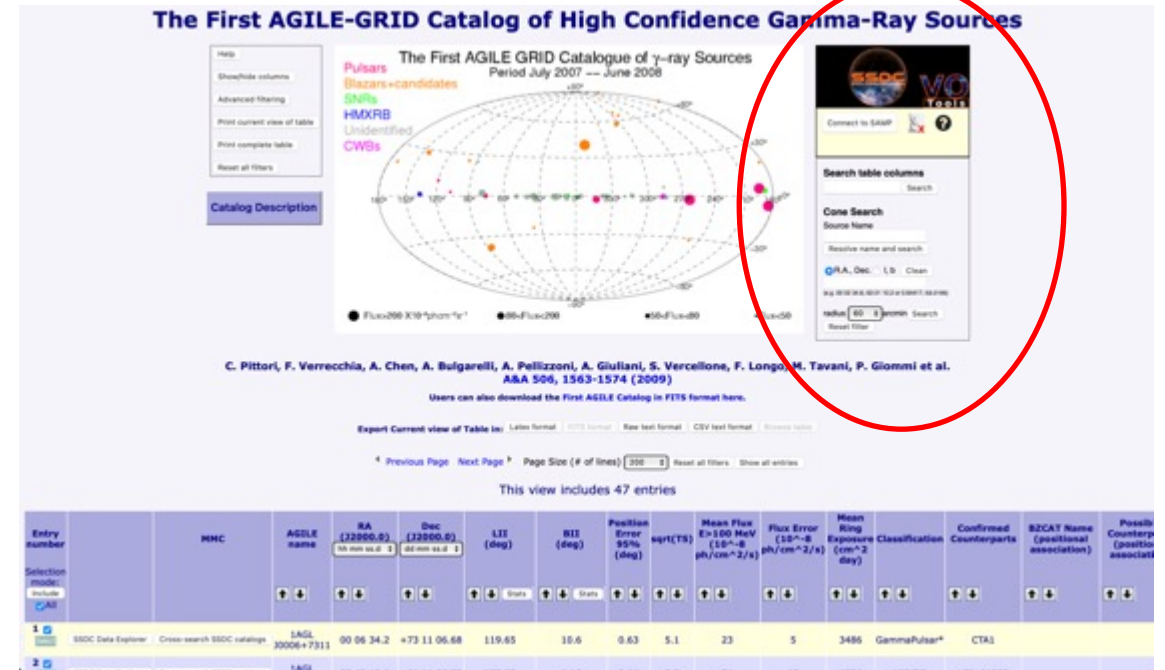


## The First AGILE-GRID Catalog of High Confidence Gamma-Ray Sources

C. Pittori (1), F. Verrecchia (1), A. Chen (2), A. Bulgarelli (3), A. Pellizzoni (3,4), A. Giuliani (2), S. Vercellone (2), F. Longo (5), M. Tavani (6), P. Giommi (1) et al.

Entry number	MHC	AGILE Name	RA (J2000)	Dec (J2000)	Position Error 95% (deg)	sp(1TS)	Mean Flux E>100MeV (10 <sup>-8</sup> ph/cm <sup>2</sup> /s)	Mean Ring Exposure (cm <sup>2</sup> day)	Classification	Confirmed Counterparts	BZCAT Name (positional association)	Possible Counterparts (positional association)
1	ASDC Data Explorer	AGL J0006+7311	00 06 34.2	+73 11 06.6	0.63	5.1	23 ± 5	3486	GammaPulsar*	CTA1	---	*
2	ASDC Data Explorer	AGL J0242+6111	02 42 13.6	+61 11 06.7	0.64	5.3	34 ± 12	1366	HMXRB	LSI+61303	---	*
3	ASDC Data Explorer	AGL J0535+2205	05 35 05.9	+22 05 41.7	0.09	47.2	470 ± 16	3229	Pulsar	Crab	---	*
4	ASDC Data Explorer	AGL J0538+4424	05 38 29.6	+44 24 17.8	0.5	5.9	43 ± 10	804	Bazar-BLLac	PK06037-441	BZLJ0538+4405	*
5	ASDC Data Explorer	AGL J0817+2236	08 17 21.7	+22 36 14.2	0.27	9.9	69 ± 9	3229	Unclassified	---	IC443 PSRJ0817+2239	*
6	ASDC Data Explorer	AGL J0834+1748	08 34 15.6	+17 48 27.7	0.05	60	570 ± 16	3229	Pulsar	GEMINGA	---	*
7	ASDC Data Explorer	AGL J0851+4554	08 57 29.2	+45 54 14.5	0.55	5.8	31 ± 6	2388	Bazar*	---	BZLJ0854+4514	S4090+45
8	ASDC Data Explorer	AGL J0714+3240	07 14 29.4	+32 40 37.3	0.85	4.2	18 ± 5	2978	Bazar*	---	BZLJ0719+3307	GRS2716-332
9	ASDC Data Explorer	AGL J0722+7125	07 22 22.9	+71 25 31.1	0.37	10.9	68 ± 9	1614	Bazar-BLLac	S02716+714	---	*
10	ASDC Data Explorer	AGL J0835+4508	08 35 13.3	+45 08 08.0	0.09	41.7	780 ± 32	933	Pulsar	VelaPSR	---	*
11	ASDC Data Explorer	AGL J1022+6832	10 22 08.8	+68 22 17.0	0.36	10.1	59 ± 7	5616	Unclassified	---	PSRJ1016-6857	*
12	ASDC Data Explorer	AGL J1044+5859	10 44 30.0	+58 59 28.7	0.74	6.8	37 ± 6	5616	Unclassified	---	PSRJ1048-5832	*
13	ASDC Data Explorer	AGL J1104+3734	11 04 36.5	+37 34 33.6	0.66	4.7	42 ± 13	589	Bazar-BLLac	Mrk421	BZLJ1134+3812	*
14	ASDC Data Explorer	AGL J1108+6103	11 08 43.6	+61 03 54.3	0.57	6.1	30 ± 6	5616	Unclassified	---	PSRJ1119-6127	*
15	ASDC Data Explorer	AGL J1222+0811	12 22 39.7	+08 11 02.3	0.74	4.7	36 ± 11	580	Bazar-BLLac	WComae (J04+231)	BZLJ1221+2813	*

Standard data formats and resident data



Targeting Interoperability

ASI - Italian Space Agency



## MAIN GOAL

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

SSDC adopts and proposes international standards to ensure both the long term preservation of the archives, and the interoperability with other data centers.

FAIR data is now part of SSDC mandate

SSDC organization includes:

**ASI** – Italian Space Agency

**INAF** – National Institute for Astrophysics

**INFN** – National Institute for Nuclear Physics

Industries are involved for ICT support.

At present, SSDC team involves ~40 people that are expert on different fields:  
**scientists** from ASI, INAF, INFN and SW  
**engineers** from Telespazio & SERCO

**Science oriented approach:**

Developers and Users/Researchers working together

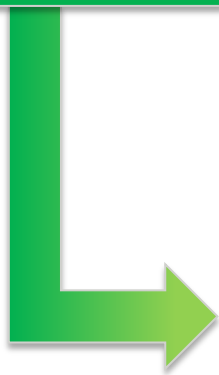






The screenshot shows the homepage of the Space Science Data Center. At the top left is the SSDC logo, and at the top right is the ASI logo. The main title "Space Science Data Center" is centered in large orange letters. Below the title is a navigation menu with links: Home, About SSDC, News and Communication, Quick Look, Missions, Multimission Archive, Catalogs, Tools, Links, Bibliographic services, Helpdesk, and Privacy. Social media icons for Facebook and Twitter are also present. The main content area is divided into two sections. The left section features a large image of a purple and blue 3D model of a celestial body and a grayscale image of a cratered surface. The right section is a grid of 16 satellite icons, each labeled with its name: AGILE, SWIFT, NuSTAR, IXPE, FERMI, AMS-02, PAMELA, CSES LIMADON, GAIA, PLATO, CHEOPS, SOLAR SYSTEM, EUCLID, HERSCHEL, PLANCK, and BEppo SAX. At the bottom of the page, there are three categories of resources: MEDIA (SED BUILDER, SKY EXPLORER, MATISSE), TOP NEWS (GAIA PORTAL, COSMIC RAY DATABASE, SSDC MULTIMISSION ARCHIVE FOR SPACE SCIENCE), and EVENTS (SSDC CATALOGS, BIBLIOGRAPHY TOOL, AGILE-LV3 data analysts).

Science Tools  
to allow on-  
line access to  
multimission  
DA resources



On-line access  
to mission-  
specific  
resources



## Multi-Mission Interactive Archive for Space Science Astrophysics/Cosmology

### Astrophysics/Cosmology

### Exploration of the Solar System

### Particle Astrophysics Cosmic rays

### Atmospheric Physics TGF

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

#### Target

- 1 Ceres
- 4 Vesta
- Mars
- Mercury
- Venus

Natural Glass Spectra

all missions

- AMS01
- AMS-02
- BESS-Polar I
- BESS-Polar II
- CALET
- CREAM
- Fermi-LAT
- Pamela
- TS93
- Chang'E 1 (soon available)
- Chang'E 2 (soon available)

all missions

- Agile

Spectral band (  ): from  to

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

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

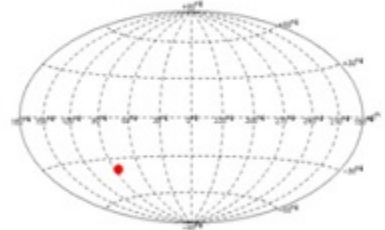
Temporal range (Year): from  to   [1975 -- 2023]

Submit

Source name:  (e.g. CYGX-1)

Name Resolver:  SSDC Name Server  SIMBAD  NED





Source Names

Bibliographic search ?

3C454.3 ?

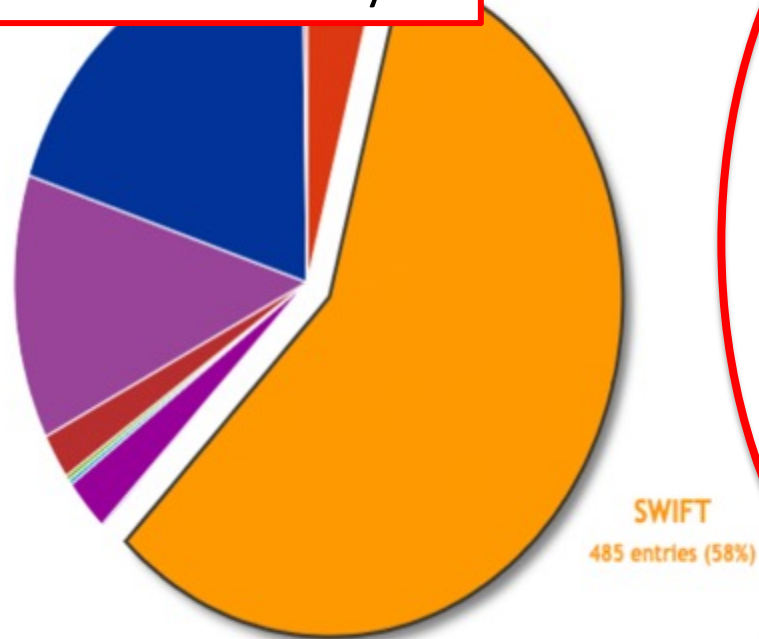
in time range between 1900 and 2023

By name via NED

By coordinates via ADS

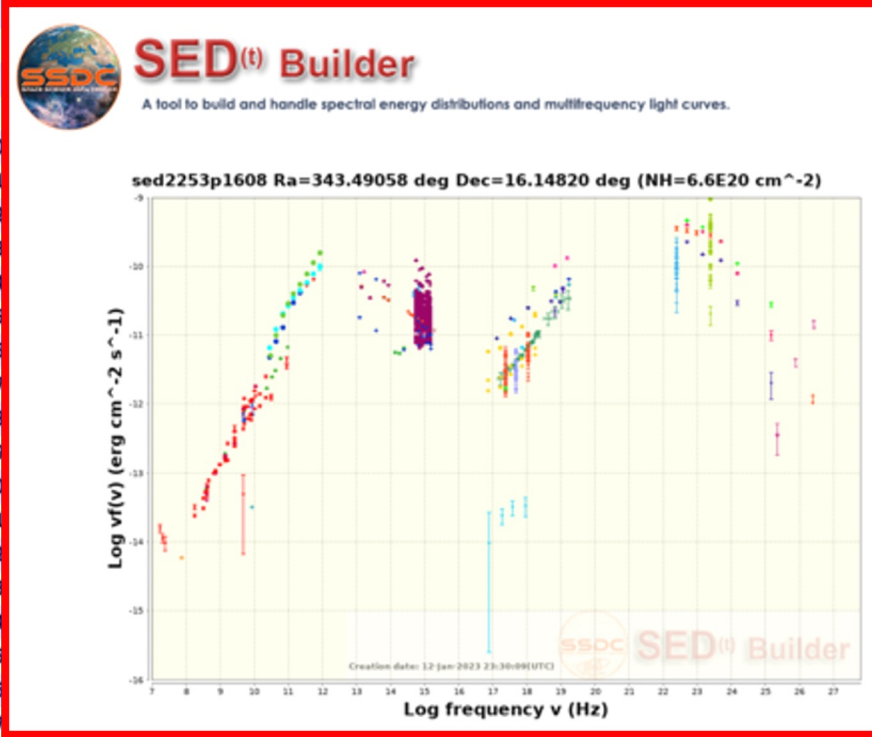
Summary of the observations on the 3C454.3 position considering all the data available @ SSDC

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



MIS	Count
PLANCK	0
HERSCHEL	34
SWIFT	485
ASCA	0
BeppoSax NFI	1
BeppoSax WFC	21
EINSTEIN	2
EXOSAT	0
NUSTAR	2
ROSAT	18
AGILE	105
AGILE-LV3	164
EGRET	1
PERMI	1

Entry number	Interactive Analysis			Archive	Target Name	obsid	RA (J2000)	Dec (J2000)	start_time	processing_date	xrt_exposure	uvot_exposure	bat_exposure	archive_date	Dist. from searched position		
	XRT	UVOT	hh mm ss.d				dd mm ss.d	arcmin									
1	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030165	22 53 57.21	+16 08 55.64	Dec 10, 2010 04:26:00	Aug 19, 2016	939.454	913.018	872	Dec 21, 2010	0.1
2	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030148	22 53 57.95	+16 09 00.28	Nov 25, 2010 07:51:00	Aug 19, 2016	1334.618	1307.236	1350	Dec 6, 2010	0.1
3	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030002	22 53 58.34	+16 08 57.73	Apr 26, 2005 22:54:00	Oct 18, 2014	52.709	0	68	May 7, 2005	0.1
4	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00032872011	22 53 56.8	+16 08 53.26							
5	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00031216053	22 53 57.29	+16 08 37.89							
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	
26																	
27																	
28	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00032872007	22 53 58.46	+16 08 18.77							
29	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030006	22 53 58.52	+16 08 21.62							
30	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030166	22 53 59.13	+16 08 24.39							
31	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	SAA-COLD-115-18	00067147002	22 53 59.18	+16 09 17.85							
32	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00031018004	22 53 54.92	+16 08 59.89							
33	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00031216048	22 53 55.03	+16 08 50.06							
34	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00096562006	22 53 55.13	+16 08 53.84	May 31, 2022 15:24:00	Jun 10, 2022	846.929	822.349	854	Jun 11, 2022	0.6
35	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00031216006	22 53 55.27	+16 08 38.72	Jun 4, 2008 18:51:00	Oct 3, 2015	1995.271	1972.289	2012	Jun 15, 2008	0.6
36	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030031	22 53 55.45	+16 09 09.54	Jan 21, 2009 17:05:00	Dec 23, 2015	1436.44	1389.94	1472	Feb 1, 2009	0.6
37	<input checked="" type="checkbox"/>	Select	SSDC Data Explorer	XRT Interactive Analysis	UVOT Interactive Analysis	Data Access	3C454.3	00035030114	22 53 55.48	+16 09 10.69	Nov 3, 2010 17:08:00	Aug 18, 2016	995.927	994.143	1012	Nov 14, 2010	0.6



Version 4.0 Tutorial Feedback  
 Login User Data User SEDs  
 Sky Explorer Current SED  
 Show source names

Data citation policy - please read

Load Data Show Data  
 Save Duplicate Sed

Bibliographic search

Redshift: 0.0 Frame: Observed  
 X Axis: Frequency (Hz) Y Axis: nuFnu (erg/cm^2/s)  
 Plot Type: Default

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

SSDC-resident Catalogs Expand Catalogs at

Energy Band / Catalog Name	Selected	Options	Help
Radio	<input checked="" type="checkbox"/>		
Infrared	<input checked="" type="checkbox"/>		
Optical UV	<input checked="" type="checkbox"/>		
Soft X Ray	<input checked="" type="checkbox"/>		
Hard X Ray	<input checked="" type="checkbox"/>		
Gamma Ray	<input checked="" type="checkbox"/>		
VHE	<input checked="" type="checkbox"/>		

SSDC-resident data from published papers  
 Data citation policy - please read

Observatory	Data type	Used	Options
BeppoSAX	Spectra	<input checked="" type="checkbox"/>	V U

ssdc.asi.it

Entry 3C454.3  
 R.A. (J2000) = 22 53 57.95 (343.4915 deg) l = 86.11 deg  
 Dec (J2000) = +16 09 00.28 (16.1501 deg) b = -38.19 deg  
 Galactic n<sub>H</sub> = 6.79 × 10<sup>20</sup> cm<sup>-2</sup>

Source Names

Feedback

TUTORIAL HELP

Default catalogs (always selected)  
 Selectable catalogs:  
 Default selection [i]   
 Radio [select]

arcmin  
 show sources list  
 load image in ps format

Selected analysis: R.A. = 22 53 57.74 (343.4906 deg) l = 86.11 deg  
 Dec = +16 08 53.51 (16.1482 deg) b = -38.19 deg  
 Galactic n<sub>H</sub> = 6.78 × 10<sup>20</sup> cm<sup>-2</sup>

SED Builder Source Names

Click to open a new SSDC Data Explorer window

Access to the SEDBuilder tool

Additional Services -

SSDC-resident astronomical catalogs Search Other Services Bibliographic search

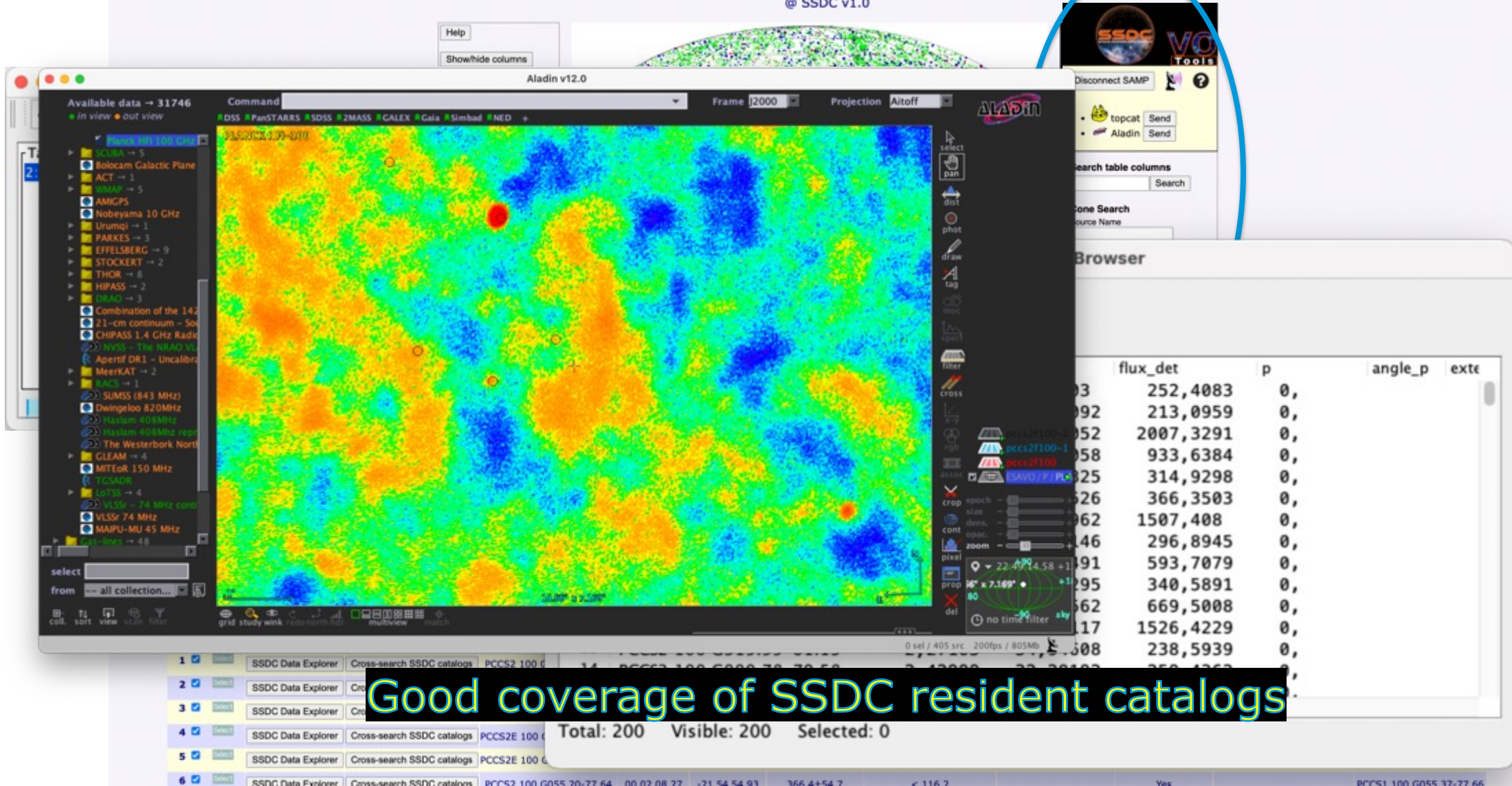
VizieR (R-X-G) VizieR (IR-Opt) NED SIMBAD HEASARC (R-X-G) STSCI MAST SDSS NVO

3C454.3 in time range between

# Interoperability and VO tools: SAMP

## Second Planck Catalogue of Compact Sources

@ SSDC v1.0



The screenshot displays the Aladin v12.0 interface. The main window shows a multi-wavelength astronomical map with a color scale from blue (low flux) to red (high flux). A sidebar on the left lists available data sources, including SCUBA, ACT, WMAP, AMIGPS, and various radio and infrared surveys. A table in the bottom right corner shows search results with columns for flux density, position, and other parameters.

	flux_det	p	angle_p	exte
03	252,4083	0,		
092	213,0959	0,		
052	2007,3291	0,		
058	933,6384	0,		
025	314,9298	0,		
026	366,3503	0,		
062	1507,408	0,		
046	296,8945	0,		
091	593,7079	0,		
095	340,5891	0,		
062	669,5008	0,		
17	1526,4229	0,		
008	238,5939	0,		

At the bottom of the interface, a status bar shows: Total: 200 Visible: 200 Selected: 0. Below this, a table lists search results from the SSDC Data Explorer, showing columns for catalog name, coordinates, and other parameters.

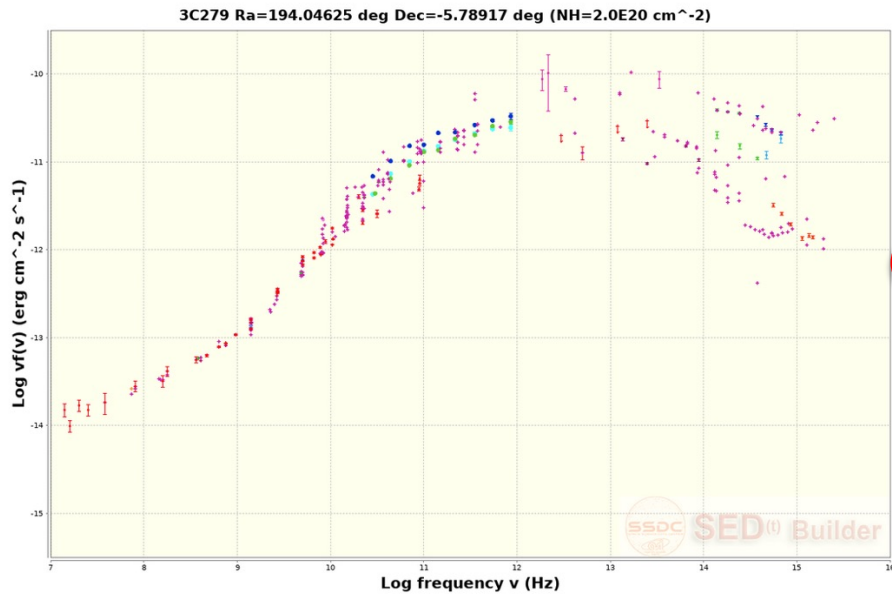
Good coverage of SSDC resident catalogs

# Interoperability and VO tools: SAMP



## SED<sup>(t)</sup> Builder

A tool to build and handle spectral energy distributions and multifrequency light curves.



Version 4.0 Tutorial Feedback  
Login User Data User SEDs  
Sky Explorer Current SED  
Show source names

Data citation policy - please read

Load Data Show Data  
Save Duplicate Sed

Bibliographic search  
Redshift: 0.0 Frame: Observed  
X Axis: Frequency (Hz) Y Axis: nuFnu (erg/cm<sup>2</sup>/s)  
Plot Type: Default Update Plot

Time Filtering Energy Filtering Mod  
Templates Inconsistency Plot options Existing  
VO Tools

SSDC resident catalogs  
Expand all Collapse all  
Energy Band / Catalog Name  
Radio Infrared Optical UV Soft X Ray Hard X Ray Gamma Ray VHE

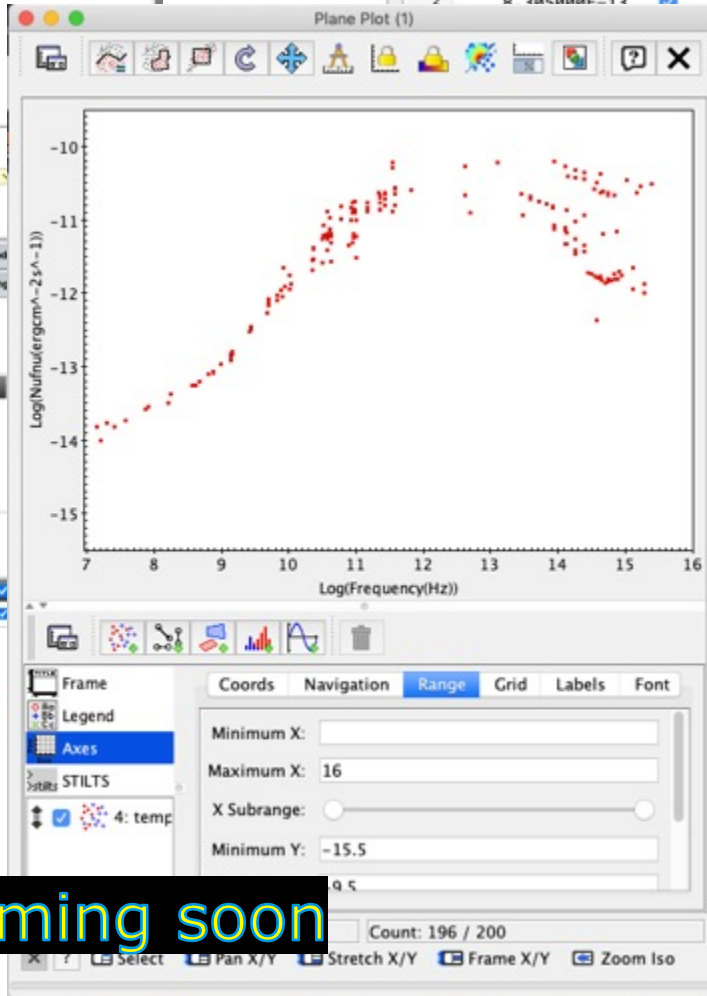
SSDC-resident data from published papers  
Data citation policy - please read  
Observatory Data type Paper references  
BeppoSAX Spectra 2M2hebs.conf\_630

TOPCAT(3): Table Browser

Table Browser for 3: temp\_3C279\_10651415049481286353.vot

	Nufnu(ergcm <sup>-2</sup> s <sup>-1</sup> )	SGHZ	VMAG	1Kev	User
1	6.695000E-13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	R 3A3A00E-13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Plane Plot (1)



Log(NuFnu(ergcm<sup>-2</sup>s<sup>-1</sup>))

Log(Frequency(Hz))

Frame Legend Axes STILTS 4: temp

Coords Navigation Range Grid Labels Font

Minimum X: Maximum X: 16 X Subrange: Minimum Y: -15.5

Count: 196 / 200

Register

Registered Clients

- Hub (meta+) (subs+)
- topcat (meta+) (subs+) Send

TOPCAT Launch

Broadcast Type  Multi Frequency Light Curves  
Band: SED 3D Label

5 GHz	9.6	9.7	5 GHz
1 Kev	17.13	17.39	1 Kev
1 Gev	23.38	23.39	1 Gev
VMAG	14.7	14.8	VMAG

Under testing – coming soon

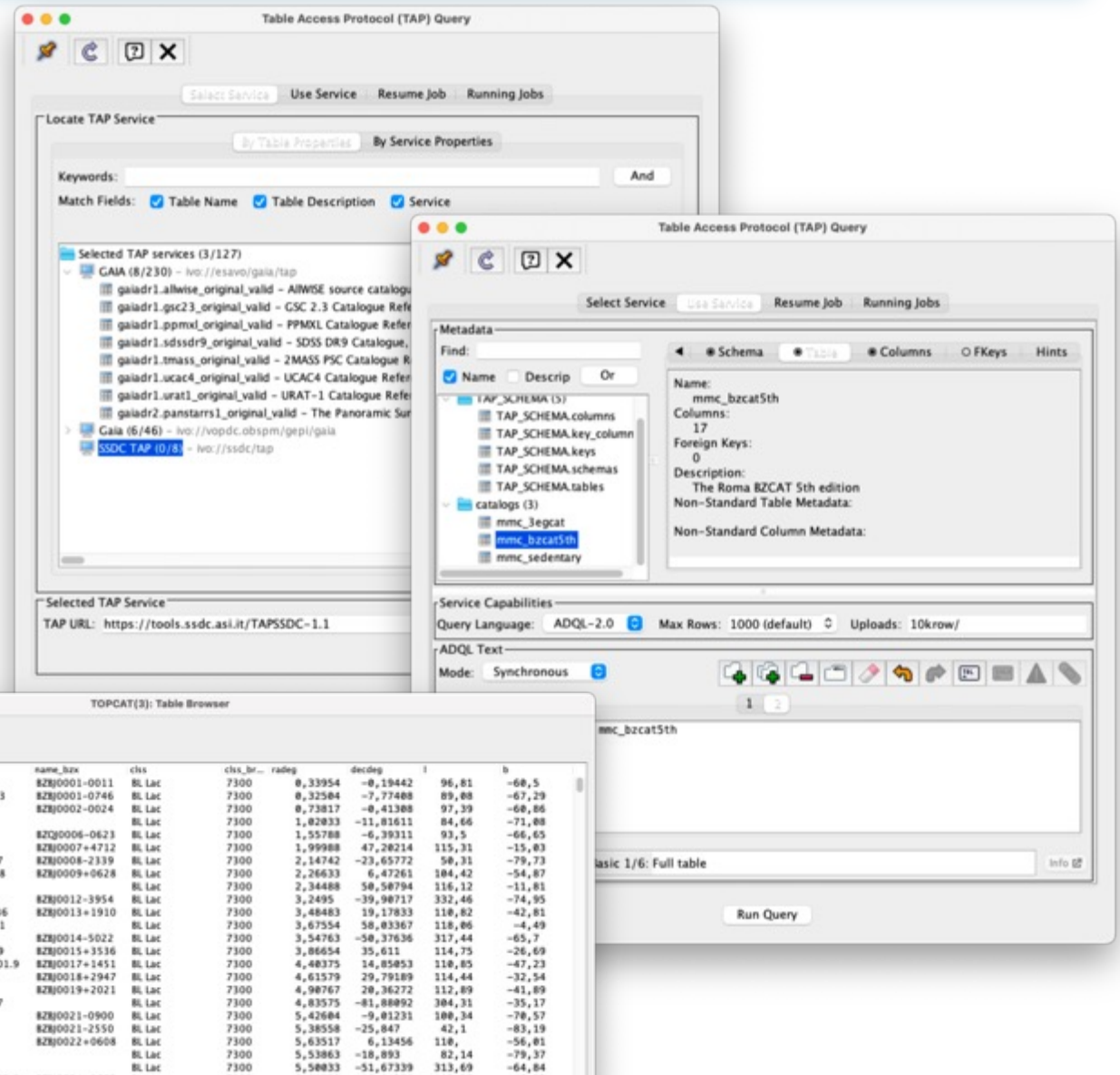
Service based on TAP library by CADC

Latest TAP version used **1.1** (Replacing previous ASDC TAP 1.0 service)

New authority created **ivo://ssdc**  
Euro-VO Registry **ivo://ssdc/tap**

Using TASMAN by IA2 for schema management

Only a few test cases, starting from SSDC owned catalogs



The screenshot displays the Table Access Protocol (TAP) Query interface. It shows a search for TAP services, with 'SSDC TAP 1.0/1.1' selected. The interface includes a 'Locate TAP Service' section with search criteria and a 'Selected TAP Service' section showing the URL: `https://tools.ssdc.asi.it/TAPSSDC-1.1`. The 'Metadata' section shows the schema 'TAP\_SCHEMA (S)' with columns like 'TAP\_SCHEMA.columns', 'TAP\_SCHEMA.key\_column', 'TAP\_SCHEMA.keys', 'TAP\_SCHEMA.schemas', and 'TAP\_SCHEMA.tables'. The 'Service Capabilities' section shows 'Query Language: ADQL-2.0', 'Max Rows: 1000 (default)', and 'Uploads: 10krow/'. The 'ADQL Text' section shows 'Mode: Synchronous'. The 'Table Browser' section shows a table with columns: name, name\_lit, name\_bzx, clis, clis\_br, radeg, decldeg, l, b. The table contains 23 rows of data.

name	name_lit	name_bzx	clis	clis_br	radeg	decldeg	l	b
1	58ZJ0001-0011	SDSS00013-0011	BL Lac	7300	0,33954	-0,19442	96,81	-60,5
2	58ZJ0001-0746	CRATES000117-074633	BL Lac	7300	0,32584	-7,77488	89,08	-67,29
3	58ZJ0002-0024	PKS0000-006	BL Lac	7300	0,73817	-0,41388	97,39	-60,86
4	58ZJ0004-1148	CGRARS0004-1148	BL Lac	7300	1,02033	-11,81611	84,66	-71,88
5	58ZJ0006-0623	PKS0003-066	BL Lac	7300	1,55788	-6,39311	93,5	-66,65
6	58ZJ0007+4712	RXJ00079+4712	BL Lac	7300	1,99988	47,28214	115,31	-15,83
7	58ZJ0008-2339	1RXS000835.4-233917	BL Lac	7300	2,14742	-23,65772	98,31	-79,73
8	58ZJ0009+0628	1RXS000904.4+062828	BL Lac	7300	2,26633	6,47261	104,42	-54,87
9	58ZJ0009+5030	2FGJ0009.1+5030	BL Lac	7300	2,34488	58,58794	116,12	-11,81
10	58ZJ0012-3954	PKS0010-401	BL Lac	7300	3,2495	-39,98717	332,46	-74,95
11	58ZJ0013+1910	CRATES001356+191036	BL Lac	7300	3,48483	19,17833	118,82	-42,81
12	58ZJ0014+5802	1RXS001442.2+580201	BL Lac	7300	3,67554	58,03367	118,86	-4,49
13	58ZJ0014-5022	RZJ0014-5022	BL Lac	7300	3,54763	-58,37636	317,44	-65,7
14	58ZJ0015+3536	SHR001527.9+353639	BL Lac	7300	3,86654	35,611	114,75	-26,69
15	58ZJ0017+1451	SDSS001736.90+145101.9	BL Lac	7300	4,48375	14,85853	118,85	-47,23
16	58ZJ0018+2947	RXJ00184+2947	BL Lac	7300	4,61579	29,79189	114,44	-32,54
17	58ZJ0019+2021	PKS0017+200	BL Lac	7300	4,98767	20,36272	112,89	-41,89
18	58ZJ0019-8152	1RXS001928.1-815247	BL Lac	7300	4,83575	-81,88092	304,31	-35,17
19	58ZJ0021-0900	SDSS00217-0900	BL Lac	7300	5,42684	-9,01231	100,34	-70,57
20	58ZJ0021-2550	RZJ0021-2550	BL Lac	7300	5,38558	-25,847	42,1	-83,19
21	58ZJ0022+0608	PKS 0019+058	BL Lac	7300	5,63517	6,13456	118,	-56,81
22	58ZJ0022-1853	1FGLJ0022.2-1850	BL Lac	7300	5,53863	-18,893	82,14	-79,37
23	58ZJ0022-5140	2FGJ0022.3-5141	BL Lac	7300	5,58833	-51,67339	313,69	-64,84

Zinzi et al., 2016, A&C

<https://tools.ssdsc.asi.it/Matisse>

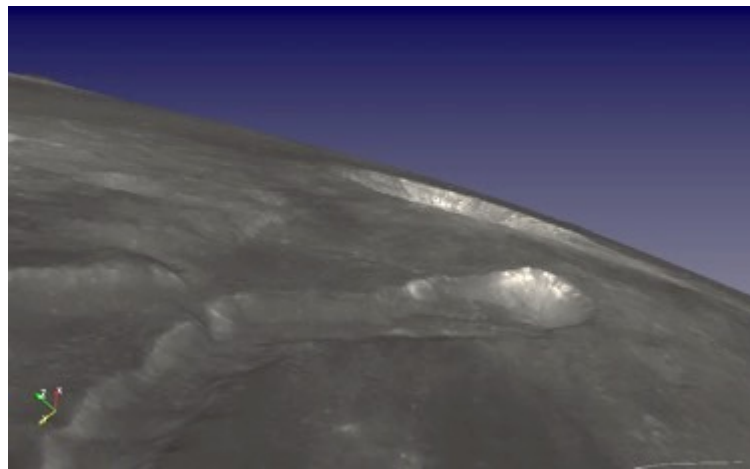
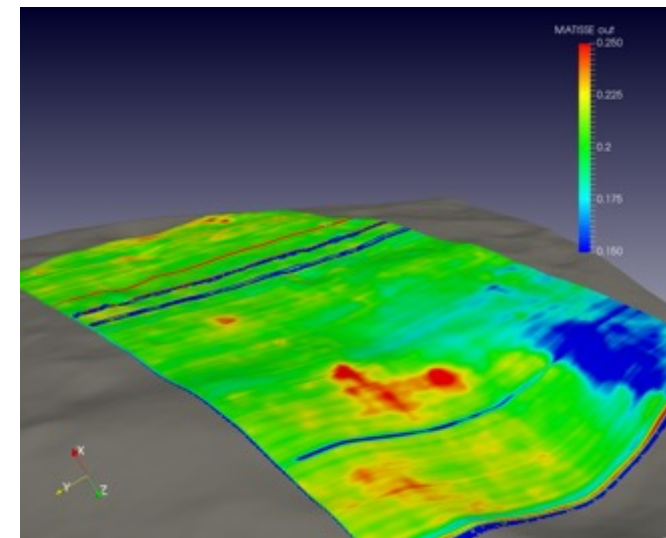
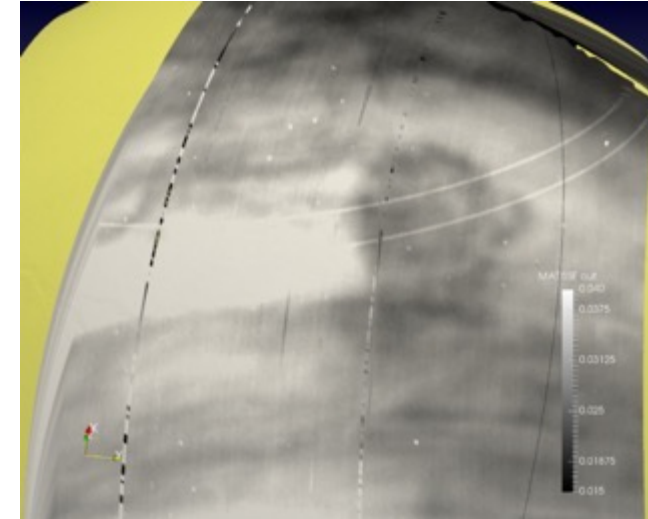
1. 2013: First MATISSE release
2. 2016/17: Open data (VESPA)
3. 2019: MATISSE 2.0: Python 3, New DBMS, Servlet based
4. 2020-22: +Thermophysical model, Geological maps

- VIR Vesta
- VIR Ceres
- CRISM Mars (via PlanetServer)
- VIRTIS Venus (via EPN-TAP)
- Airless bodies thermophysical model
- MARSIS (restricted access)
- MESSENGER MDIS-NAC (via NASA ODER ETS)

MARSIS public observations ready to be published (via EPN-TAP)



**Nature Astronomy**  
**July 2019 cover!**





# MATISSE 2.0

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

This version of MATISSE is considered for beta testing and therefore its capabilities are limited respect to the old version. To use the old version of MATISSE (1.5, working but no more maintained) click [here](#). For any issue or information please contact [Angelo Zinzi](#). Thank you

Search Query Results Visualization

### Search parameters

Select Target

4 Vesta

Missions

Down

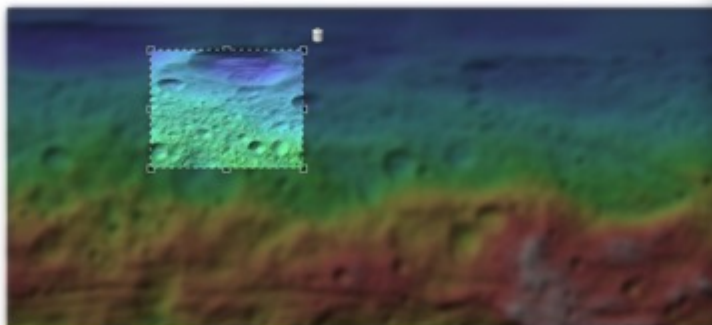
Instruments

Query Name (Optional)

Search on Map Search Criteria

Draw an area on map or search an object

Search:



Version 2.0.3268

Search Query Results Visualization

3000027000000

Query: [Target: vesta] [Instrument: VIRI] [Observation: VIR\_IR\_18\_1\_366620964\_2] [Channel: 21] [Coordinates: minLon: -130.43 maxLon: -76.99, minLat: 34.3 maxLat: 76.18]

2D Download FITS

3D Download VTF

3000027000000

Query: [Target: 4 Vesta] [Missions: Dawn] [Coordinates: minLon: -130.43 maxLon: -76.99]

Show 11 entries

Visualize Selected Show Hide Columns Export to CSV

Instrument	Name	Wave Length	C1min	C1max	C2min	C2max	C3min	C3max
VIRI	VIR_IR_18_1_366620964_2	120735	-130.64791	-70.74672	26.342646	44.08406		
VIRI	VIR_IR_18_1_366624556_2	[Select...]	-85.78223	-25.938538	26.57943	43.51647		
VIRI	VIR_IR_18_1_366626755_2	[Select...]	-158.69563	-104.4172	16.303156	34.445972		
VIRI	VIR_IR_18_1_366631756_2	[Select...]	-209.99364	149.99588	22.885556	44.624935		
VIRI	VIR_IR_18_1_366629356_2	[Select...]	-174.97044	-115.35071	23.670794	43.249805		
VIRI	VIR_IR_18_1_372820519_2	[Select...]	-97.901566	-77.92047	43.52967	46.7539		
VIRI	VIR_IR_18_1_372688083_2	[Select...]	-130.94739	-120.56826	42.530155	44.95482		
VIRI	VIR_IR_18_1_372555627_2	[Select...]	-180.77181	-161.98116	41.36069	44.077477		
VIRI	VIR_IR_18_1_367862545_2	[Select...]	-209.94857	149.99966	18.919376	36.037033		
VIRI	VIR_IR_18_1_367857745_2	[Select...]	-127.932686	-72.458176	19.302818	37.765476		

Showing 1 to 10 of 11 entries 1 row selected

Visualize Selected Asynchronous Request

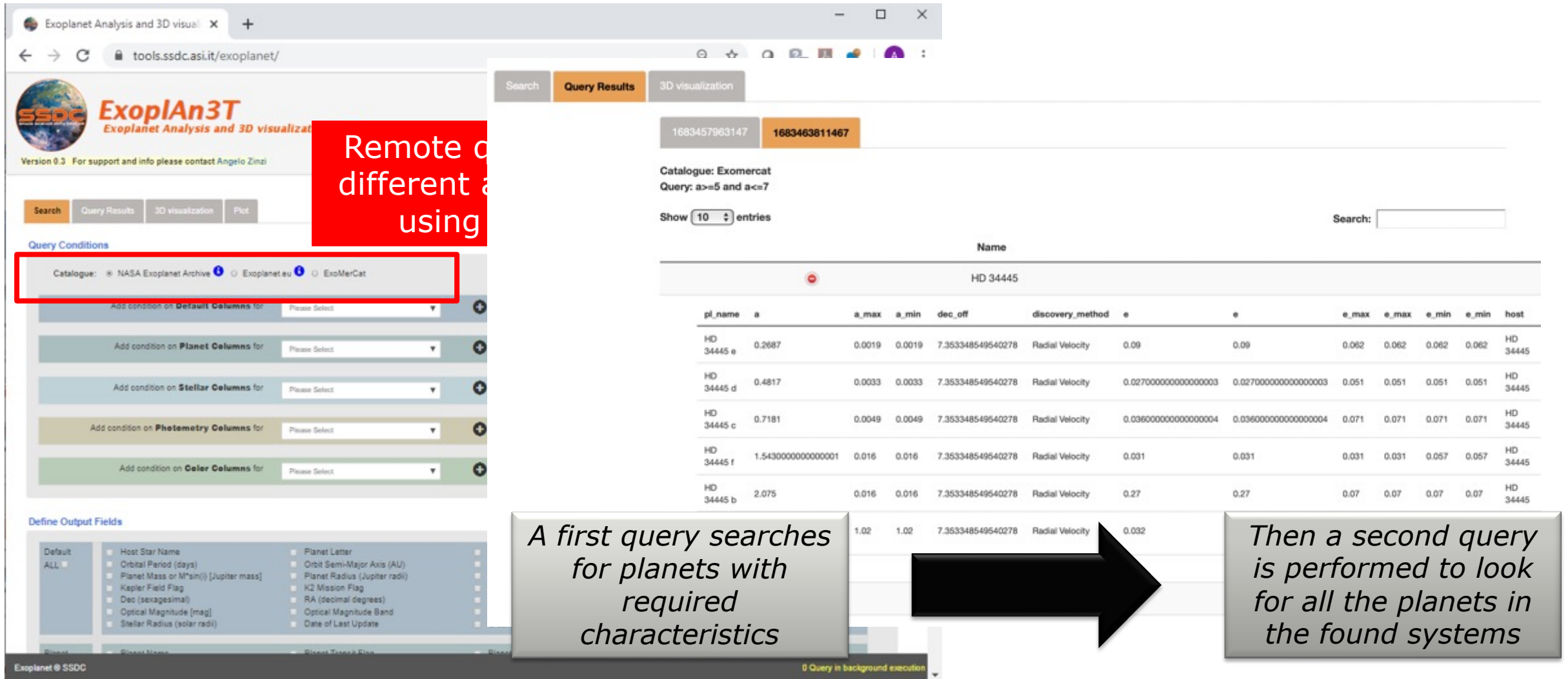
Visualization Name (Optional)

First Previous 1 2 Next Last



<https://tools.ssdc.asi.it/exoplanet>

A. Zinzi et al



The screenshot shows the Exoplan3T web interface. On the left, the 'Query Conditions' section is highlighted with a red box, showing the 'Catalogue' dropdown menu with options: NASA Exoplanet Archive, Exoplanet.eu, and ExoMerCat. A red text box over this area says 'Remote of different a using'. The main interface has tabs for 'Search', 'Query Results', and '3D visualization'. The 'Query Results' tab is active, showing a search for '1683457963147' and '1683463811467' in the 'Exomercat' catalogue. The query is 'a>=5 and a<=7'. Below this, a table of search results is shown for 'HD 34445'. The table has columns: pl\_name, a, a\_max, a\_min, dec\_off, discovery\_method, e, e\_max, e\_min, host. The results are as follows:

pl_name	a	a_max	a_min	dec_off	discovery_method	e	e_max	e_min	host
HD 34445 e	0.2687	0.0019	0.0019	7.353348549540278	Radial Velocity	0.09	0.062	0.062	HD 34445
HD 34445 d	0.4817	0.0033	0.0033	7.353348549540278	Radial Velocity	0.027000000000000003	0.051	0.051	HD 34445
HD 34445 c	0.7181	0.0049	0.0049	7.353348549540278	Radial Velocity	0.036000000000000004	0.071	0.071	HD 34445
HD 34445 f	1.5430000000000001	0.016	0.016	7.353348549540278	Radial Velocity	0.031	0.031	0.057	HD 34445
HD 34445 b	2.075	0.016	0.016	7.353348549540278	Radial Velocity	0.27	0.07	0.07	HD 34445

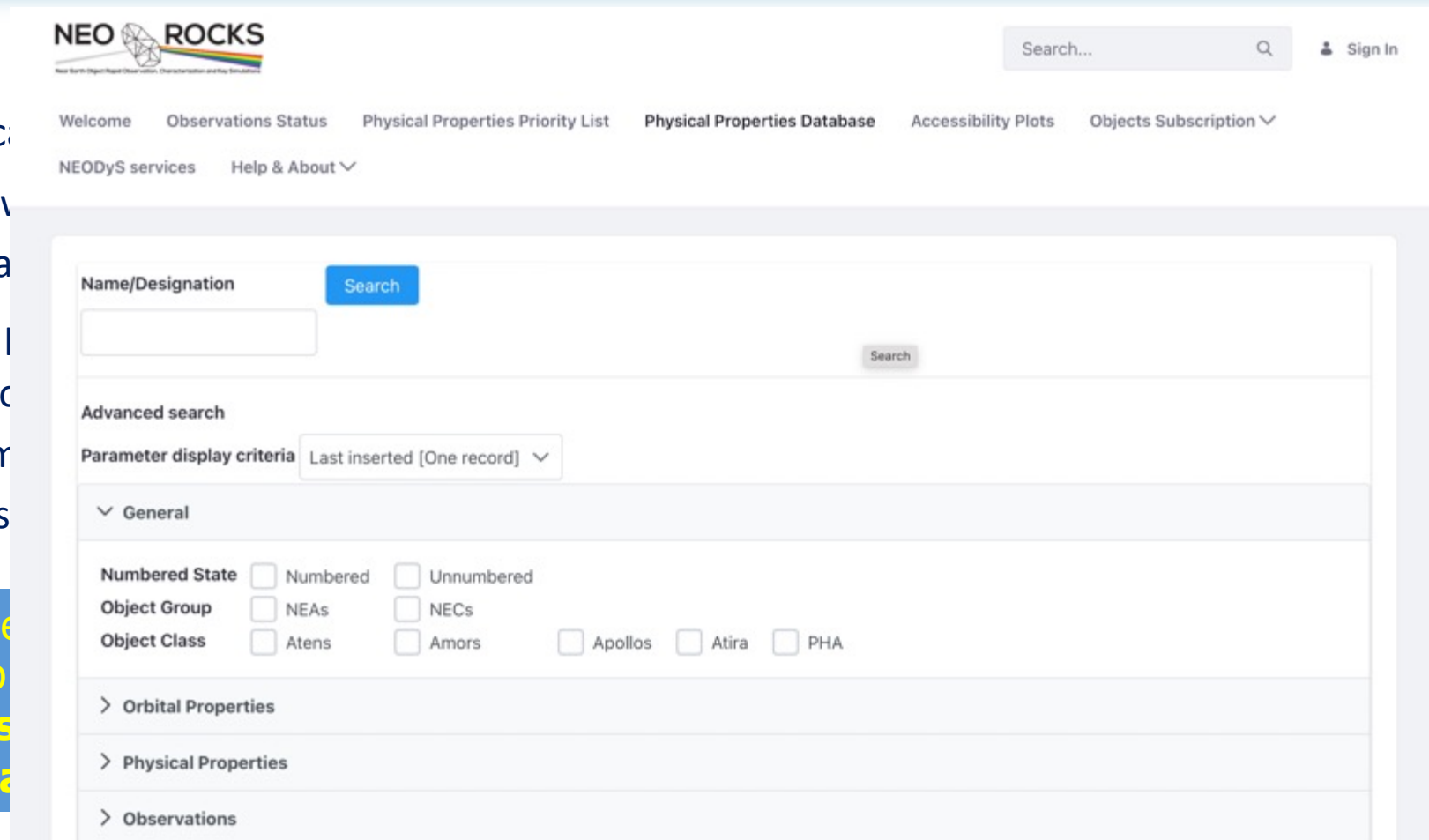
At the bottom, a grey box contains the text: 'A first query searches for planets with required characteristics'. A large black arrow points from this box to another grey box on the right containing the text: 'Then a second query is performed to look for all the planets in the found systems'. The bottom status bar shows 'Exoplanet @ SSDC' and '0 Query in background execution'.



# NEOROCKS (or "My FAIR Planetary Defense")

To date, only  
because physics  
The key issue, v  
between orbita  
The proposed p  
attention as po  
orbit improvem  
attempt an obs

It appears  
NEO p  
access  
the ma



The screenshot shows the NEO ROCKS website interface. At the top, there is a search bar and a 'Sign In' button. Below the navigation menu, there is a search section with a 'Name/Designation' input field and a 'Search' button. An 'Advanced search' section includes a 'Parameter display criteria' dropdown menu set to 'Last inserted [One record]'. Under the 'General' section, there are checkboxes for 'Numbered State' (Numbered, Unnumbered), 'Object Group' (NEAs, NECs), and 'Object Class' (Atens, Amors, Apollos, Atira, PHA). There are also expandable sections for 'Orbital Properties', 'Physical Properties', and 'Observations'.

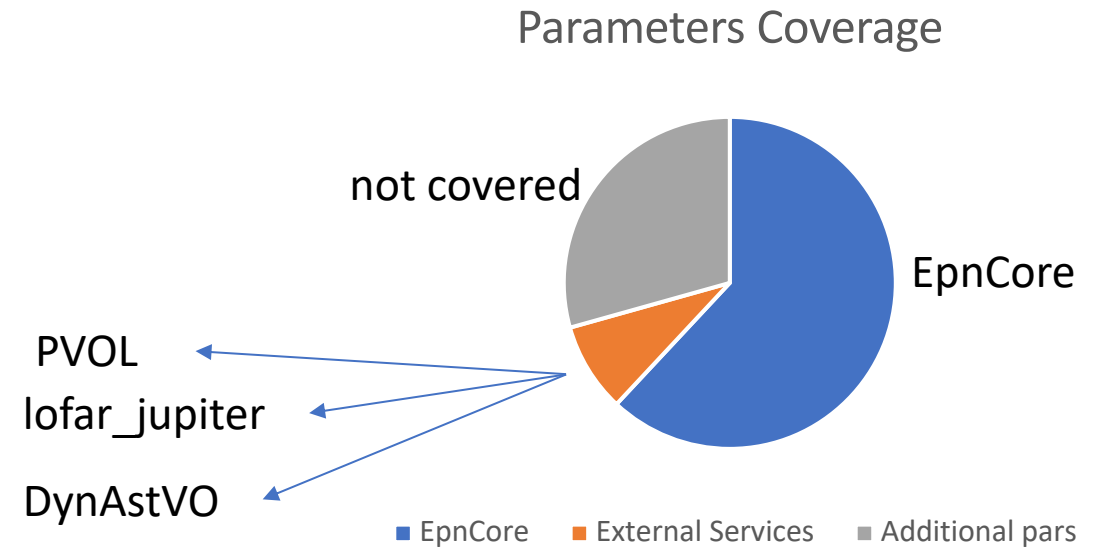
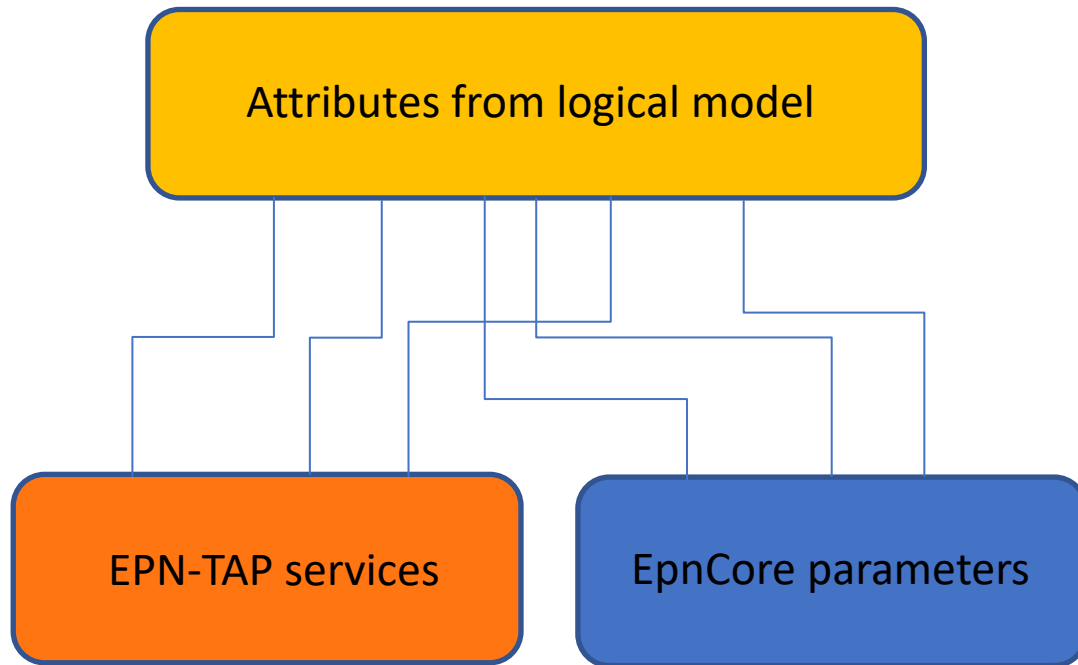
l properties,  
f a direct link  
which deserve  
e associated  
o successfully

ta on  
alized  
nsure  
ucts

See A. Zinzi's talk on SSIG splinter

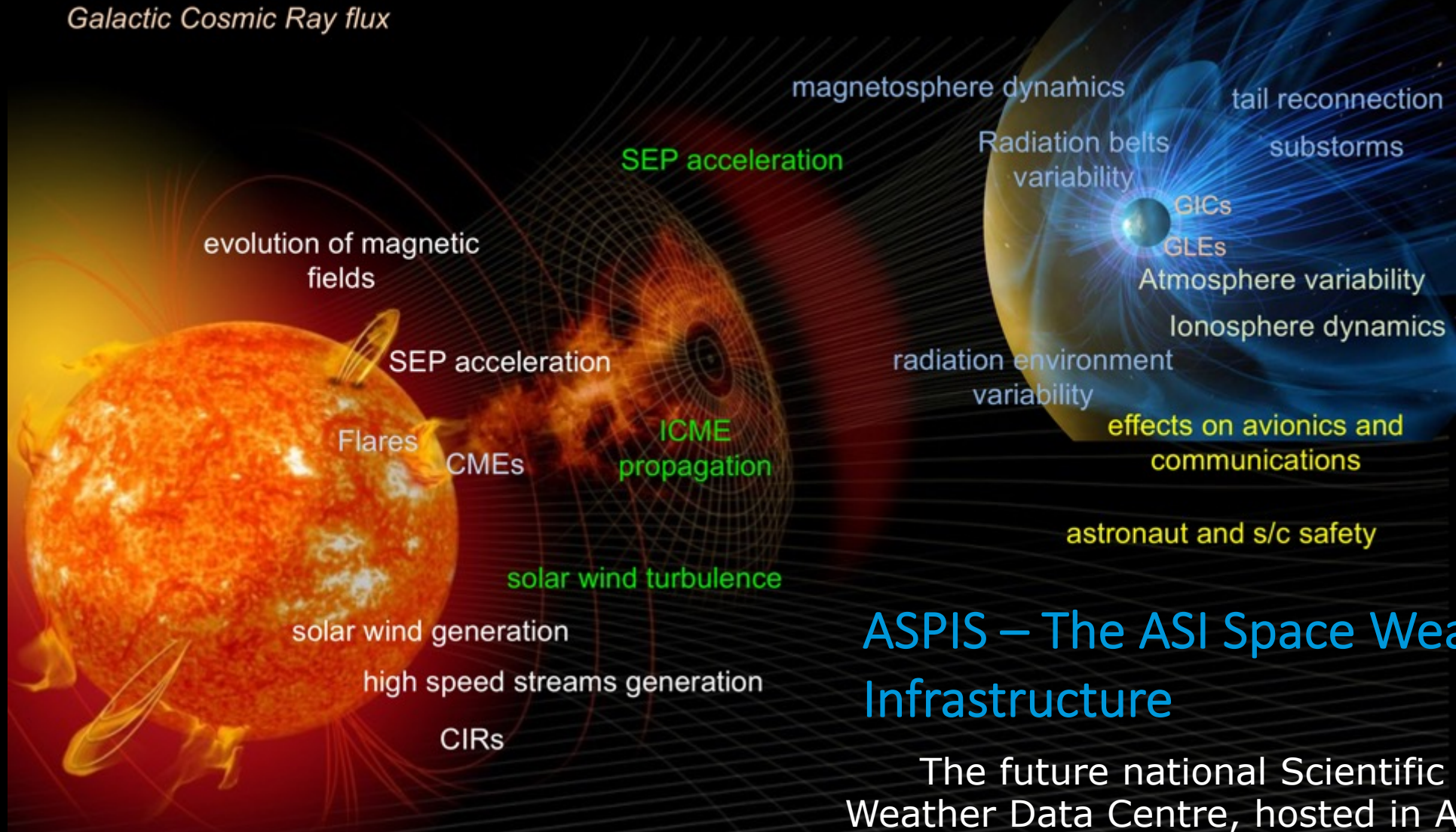
# NEOROCKS - Data Model definition and EpnCore

Matching parameters used by the NEO community to the EpnCore, finding a nice correspondence. Picking also from thematic extensions, 70% coverage of total parameters coming out from NEOROCKS community.



See A. Zinzi's talk on SSIG splinter

# Space Weather phenomena resulting from Sun-Earth connection and/or its interplay with the GCRs



## ASPIS – The ASI Space Weather Infrastructure

The future national Scientific Space Weather Data Centre, hosted in ASI's SSDC

## ProSpecT

CAESAR - Product Specification Template



Weather system



Welcome to the ASPIS/CAESAR metadata template form.  
Please fill the form with all the relevant information regarding your products.

For instructions and help on this form, consider reading the [ProSpecT instructions document](#) viewing the [video tutorial\(s\)](#).  
[Full template explanation](#) with data collection use case [Variant for software](#) or numerical model use case(s) or (if the above don't work) contacting [CAESAR.NQDE.2000](#)

PRODUCT	CURATION	CONTENT & POLICY	DATA DESCRIPTION	FUNCTIONALITIES
Title*	TSST H-alpha Full Disk Images			
Short name*	TSST-halphi	Type*	data	
Unique identifier	aspis://unitov/halphi	Alternate identifiers	+	

## CAESAR WP2310 - Product Specifications Definition

### PROSPECT REPOSITORY TEMPLATE

## INSTRUCTIONS TO FILL IN THE PRODUCT TEMPLATE FORM

Version 0.91, 14 April 2022

Author(s): Marco Molinaro, Dario Del Moro

Contributor(s): Monica Laurenza, Rossana De Marco, Valerio Formato, Carmelo Magnifico

### Introduction

A metadata schema has been defined to help standardise the description of the various products that will be included in the CAESAR ASPIS archive prototype. Those metadata need to be filled in by the science working groups. As a help in doing so, a web-based form solution has been prepared, named **ProSpecT** as **Product Specification Template**. This document provides a quick overview of the web form and its usage and a guide to help filling in the required metadata elements.



The whole scheme is intended in the frame of a collaborative environment

JniToV)

ata

Material for this presentation has been made possible thanks to the work of several SSDC members (incomplete list, apologies!):

- Current MF and VO team: A. Maselli, V. D'Elia, M. Giardino, A. Giunta, C. Pittori, F. Verrecchia, M. Vicinanza
- Other teams: A. Zinzi, I. Di Pietro, M. Fabrizio, +all SSDC teams and SW eng  
[https://www.ssdc.asi.it/ssdc\\_staff.php](https://www.ssdc.asi.it/ssdc_staff.php)
- Former SSDC staff: P. Giommi, M. Capalbi, B. Gendre, C. Leto, G. Stratta, + ...
- Mixture of scientific+technical expertise not easy to find:
  - Too technical for researchers: very often this work is not properly evaluated in career recruitment/advance procedures
  - Data scientist needed everywhere, with much better career opportunities outside academic research

# Conclusions

---

ASDC->SSDC is also a transition from local data in standard formats to full interoperability

- Easier to implement for new projects, harder to convert 20+ yrs of work, keeping at the same time all services available, operations, etc.
  - Catalogs: SAMP good coverage; TAP: few test cases - small catalogs
  - Images: coming next, some HIPS attempts for Swift XRT@OpenUniverse
  - developing guidelines to explain all SSDC teams (scientists, not VO expert) how to make interoperable their fits/pds4 compliant data
- Newest tools (NEOROCKS, MATISSE, Exoplan3T, ASPIS) are more VO oriented:
  - Heterogenous data: Astro+CR, TGF, space weather, planetary, exoplanets
  - Significant efforts on Data Modelling
- HR issue: technological activities in Italy not rewarding for career advancements



# Space Science Data Center

A research infrastructure of the Italian Space Agency

[www.ssdc.asi.it](http://www.ssdc.asi.it)



Agenzia Spaziale Italiana