



Space Science Data Center

A research infrastructure of the Italian Space Agency

Gianluca Polenta

IVOA May 2023 InterOp Meeting



Agenzia Spaziale Italiana

SSDC – Space Science Data Centre



ASI - Italian Space Agency

BeppoSAX SDC
BeppoSAX

2000

ASI Science Data Center
Multi-mission - astrophysics

2017

Space Science Data Center
+ EO, ICT, Space weather,
NEO, Multi-messenger



Contents

- Latest News
- Documentation
- BeppoSAX reentry
- Mission Outline
- SDC Overview
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- Software
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- Catalogue Browser
- NFI Archive
- WFC Archive
- GRBH Archive
- Data Simulator
- Selected Results
- BeppoSAX Publications
- BeppoSAX Pictures
- Tools
- ASI links and more...

ASDC Multi-Mission Interactive Archive

Mission Selected: **AGILE**

Search Type: **Coordinates**

Enter source name or coordinates: RA, DEC, L, B
(e.g. CYG-1 or 19 58 21.7, +35 12 05.8 or 299.590333, 35.201611 or 71.334960, 3.064917)

Radius: 30 (degrees) Output sorted by: RA, DEC

Max lines retrieved: 300 Equinox: 2000, 1950

Space Science Data Center

Home About SSDC News and Communication Quick Look Missions Multimission Archive Catalogs Tools Links Bibliographic services

Helpdesk Privacy

AGILE SWIFT FERMI HERSCHEL BeppoSAX JUICE

ASDC Multi-Mission Interactive Archive

ASDC Multi-Mission Archive from Space Science

SSDC CATALOGS

BIBLIOGRAPHY TOOL

ASDC VIS Data analysis

SED'S BUILDER SKY EXPLORER MATISSE PORTAL COSMIC RAY DATABASE

MEDIA TOP NEWS EVENTS

ASI - Italian Space Agency

BeppoSAX SDC

2000

ASI Science Data Center

2017

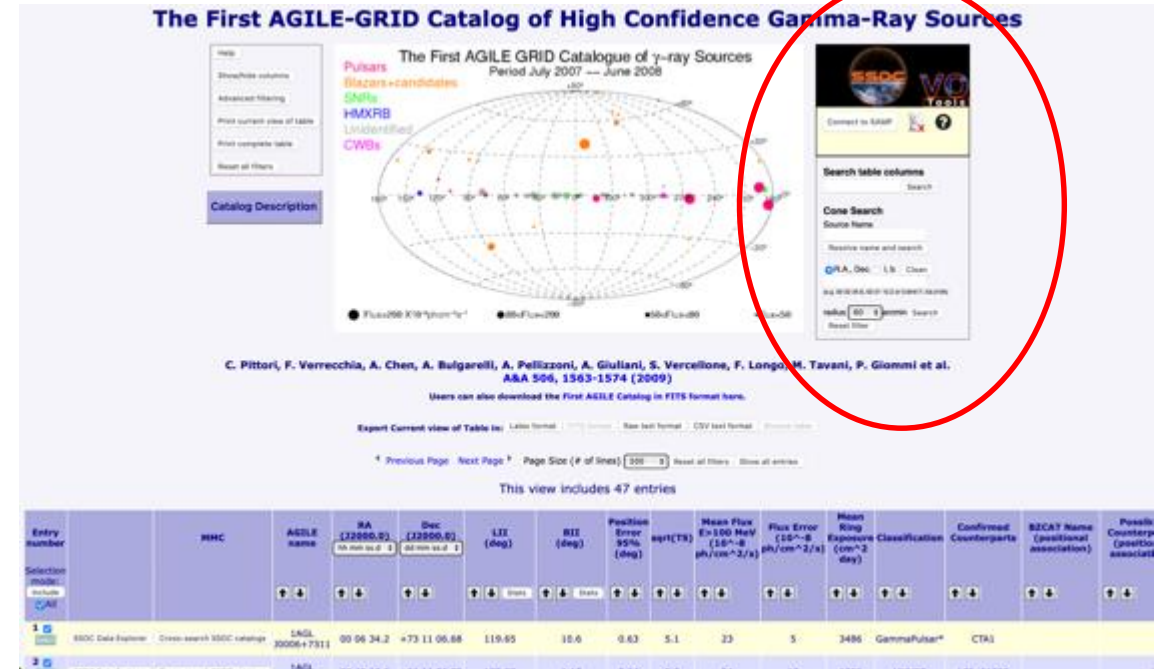
Space Science Data Center



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	AGILE Name	RA (J2000)	Dec (J2000)	Position Error 95% (deg)	sp1(TR)	Mean Flux $E > 100$ MeV (10^{-8} ph/cm ² /s)	Mean Ring Exposure (cm ² day)	Classification	Confirmed Counterparts	BZCAT Name (positional association)	Possible Counterparts (positional association)
1	AGILE J0006+7311	00 06 34.2	+73 11 06.6	0.63	5.1	23 ± 5	3486	GammaPulsar*	CTA1	---	*
2	AGILE J0242+0111	02 42 13.6	+01 11 08.7	0.64	5.3	34 ± 12	1398	HMXRB	LSI+303	---	*
3	AGILE J0305+0203	03 05 05.9	+02 05 41.7	0.58	47.2	470 ± 18	3229	Pulsar	Crab	---	*
4	AGILE J0338+4434	03 38 29.6	+44 34 17.8	0.5	5.9	43 ± 10	804	BZcat-GR	PK0337-441	SZJ0338+443	*
5	AGILE J0817+2230	08 17 21.7	+22 30 14.2	0.37	9.9	68 ± 9	3229	Unclassified	---	IC443 PSR J0817+2230	*
6	AGILE J0834+1748	08 34 15.6	+17 48 27.7	0.65	6.0	570 ± 18	3229	Pulsar	GEMINGA	---	*
7	AGILE J0851+4534	08 51 29.2	+45 54 14.9	0.38	5.8	31 ± 6	2298	Star*	---	BZJ0851+4514 S4090+49	*
8	AGILE J0714+3340	07 14 29.4	+33 40 37.3	0.85	4.2	18 ± 5	2978	Star*	---	BZJ0719+3307 GRS1716-332	*
9	AGILE J0722+7120	07 22 22.9	+71 25 31.1	0.37	15.8	88 ± 9	1814	BZcat-GR	S0716+714	---	*
10	AGILE J0835+4538	08 35 13.3	+45 08 09.0	0.58	41.7	790 ± 32	933	Pulsar	VelaPSR	---	*
11	AGILE J1022+0832	10 22 08.8	+08 22 17.8	0.36	10.1	59 ± 7	5616	Unclassified	---	PSR J1022-0832	*
12	AGILE J1044+5859	10 44 30.0	+58 59 28.7	0.74	6.8	37 ± 6	5616	Unclassified	---	PSR J1044-5832	*
13	AGILE J1104+3734	11 04 38.6	+37 34 33.6	0.86	4.7	42 ± 13	549	BZcat-GR	Mon421	BZJ1104+3813	*
14	AGILE J1109+6103	11 09 43.6	+61 03 54.3	0.57	6.1	30 ± 6	5616	Unclassified	---	PSR J1109-6127	*
15	AGILE J1222+0851	12 22 36.7	+08 51 00.3	0.74	4.7	38 ± 11	580	BZcat-GR	WComae J04+2311	BZJ1221+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 prominently displayed in the center. 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 crystalline structure and a 3D map of a celestial body. The right section is a grid of satellite icons with labels: AGILE, SWIFT, ROSAT, XMM-Newton, FERMI, AMS-02, PAMELA, CREAM, GAIA, PLATO, CHEOPS, SOLAR SYSTEM, EUCLID, HERSCHEL, PLANCK, and BEPO SAX. At the bottom, there are three categories: MEDIA (with icons for SED BUILDER, SKY EXPLORER, MATISSE, and GAIA PORTAL), TOP NEWS (with icons for COSMIC RAY DATABASE and SSDC MULTIMISSION ARCHIVE FOR SPACE SCIENCE), and EVENTS (with icons for SSDC CATALOGS, BIBLIOGRAPHY TOOL, and 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

AMS-01
 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]

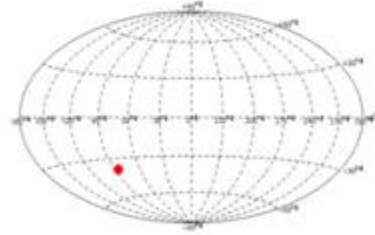
Temporal range (Year): from to

[1975 -- 2023]

Submit

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

Name Resolver: SSDC Name Server SIMBAD NED



Source Names

Bibliographic search ?

3C454.3

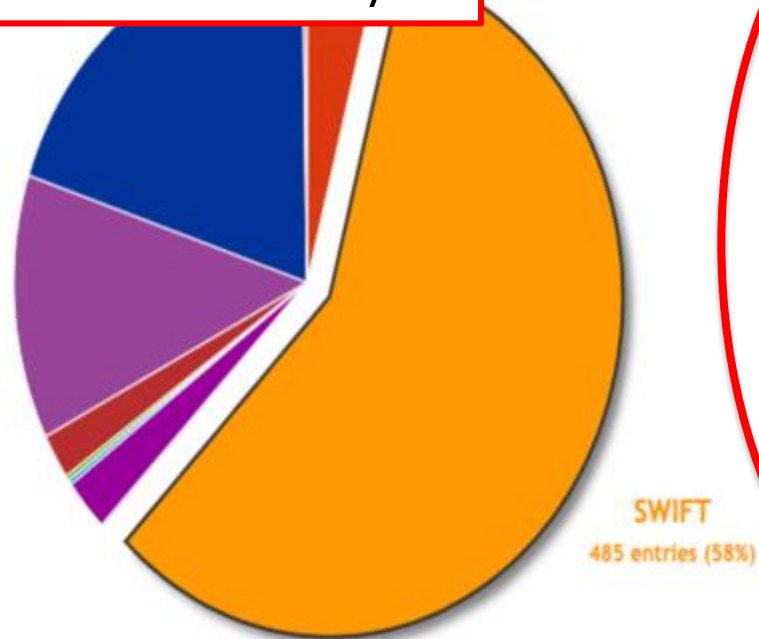
in time range between 1900 and 2023

By name via NED

By coordinates via ADS

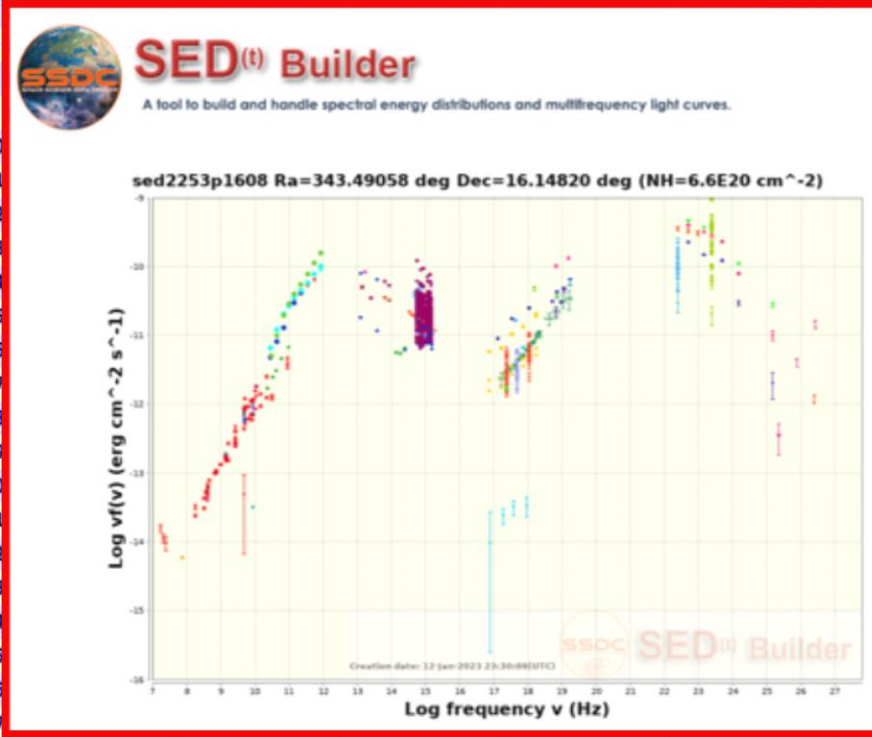
Summary of the observations on the 3C454.3 position considering all the data available @ SSDC

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

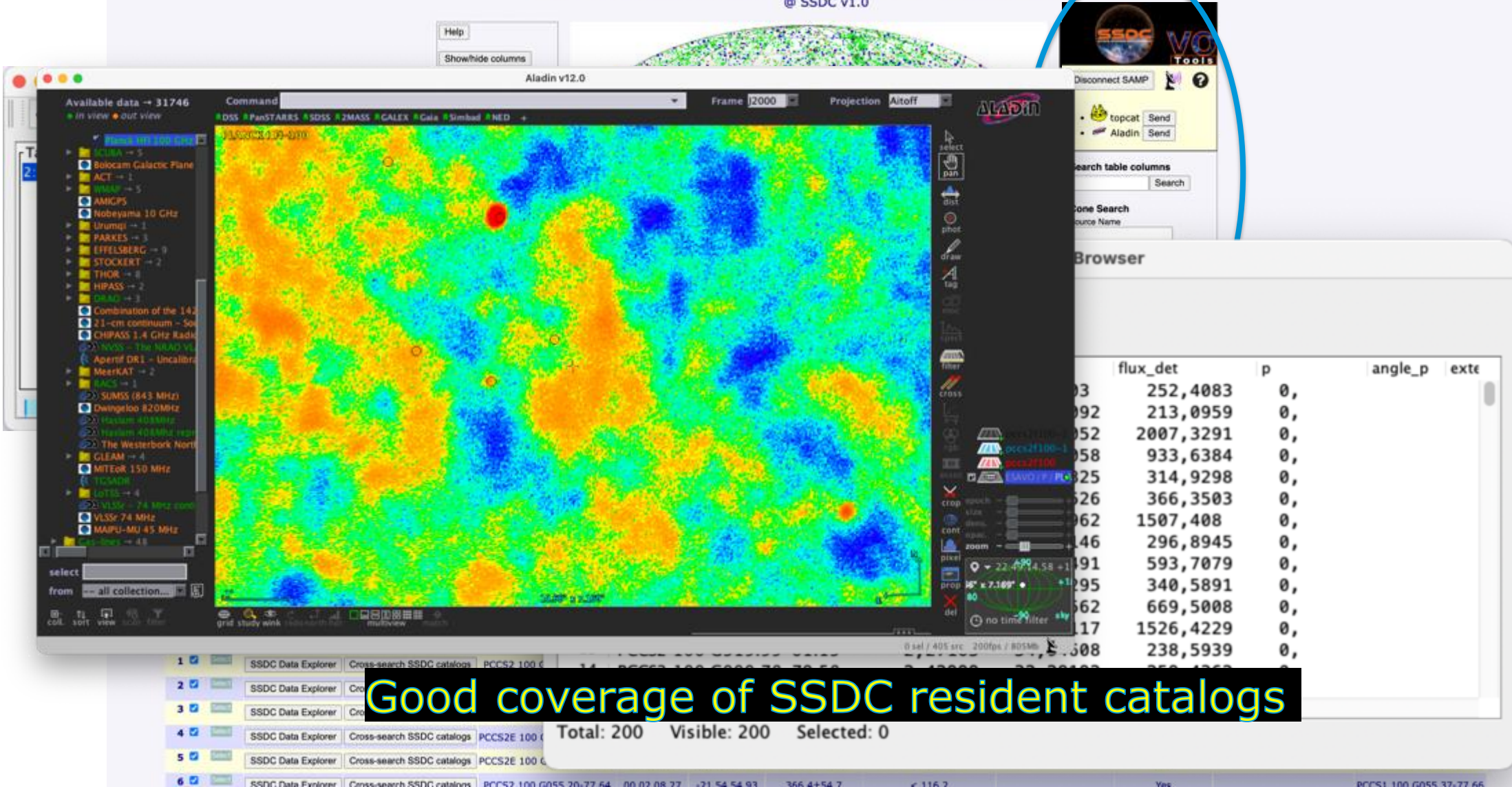
Entry number	Interactive Analysis		Archive	Target Name	obsid	RA (J2000)	Dec (J2000)	start_time	processing_date	xrt_exposure	uvot_exposure	bat_exposure	archive_date	Dist. from searched position			
	XRT	UVOT				hh mm ss.d	dd mm ss.d							arcmin			
1	<input checked="" type="checkbox"/>	Select	SSDC Data 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	Aug 19, 2016	Aug 19, 2016	939.454	913.018	872	Dec 21, 2010	0.1
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	Dec 10, 2010 04:26:00	Aug 19, 2016	939.454	913.018	872	Dec 21, 2010	0.1
6																	
7																	
8																	
9																	
10																	
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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	Dec 10, 2010 04:26:00	Aug 19, 2016	939.454	913.018	872	Dec 21, 2010	0.1
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	Nov 25, 2010 07:51:00	Aug 19, 2016	1334.618	1307.236	1350	Dec 6, 2010	0.1
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	Apr 26, 2005 22:54:00	Oct 18, 2014	52.709	0	68	May 7, 2005	0.1
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	Aug 19, 2016	Aug 19, 2016	939.454	913.018	872	Dec 21, 2010	0.1
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	Nov 25, 2010 07:51:00	Aug 19, 2016	1334.618	1307.236	1350	Dec 6, 2010	0.1
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	Apr 26, 2005 22:54:00	Oct 18, 2014	52.709	0	68	May 7, 2005	0.1
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



Interoperability and VO tools: SAMP

Second Planck Catalogue of Compact Sources

@ SSDC v1.0



Aladin v12.0

Available data → 31746
in view out view

Command [2000] Projection Aitoff

Layers: Planck, PanSTARRS, SDSS, 2MASS, GALEX, Gaia, SIMBAD, NED

Browser

flux_det	p	angle_p	exte
252,4083	0,		
213,0959	0,		
2007,3291	0,		
933,6384	0,		
314,9298	0,		
366,3503	0,		
1507,408	0,		
296,8945	0,		
593,7079	0,		
340,5891	0,		
669,5008	0,		
1526,4229	0,		
238,5939	0,		

Total: 200 Visible: 200 Selected: 0

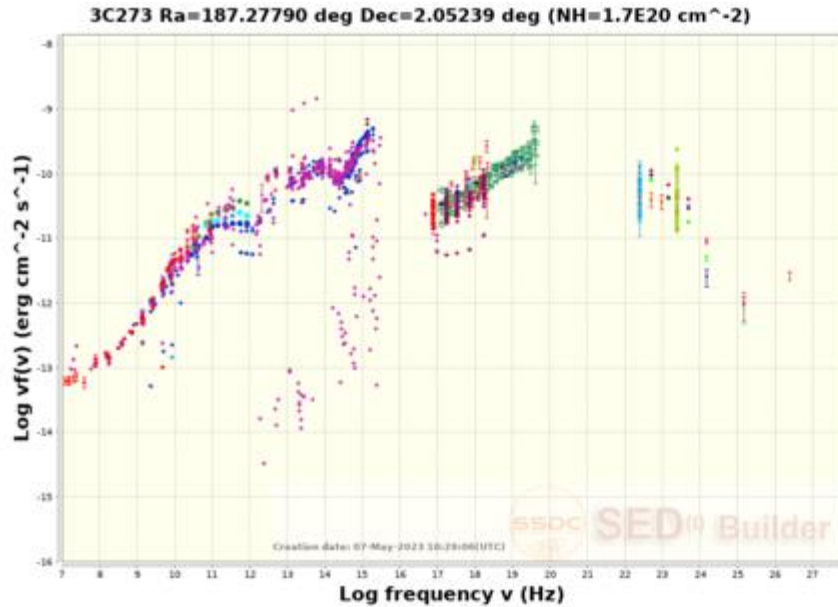
Good coverage of SSDC resident catalogs

Interoperability and VO tools: SAMP



SED^(t) 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: $\nu f(\nu)$ (erg/cm²/s)
Plot Type: Default Update Plot

Time Filtering Energy Filtering Mod
Templates **VO Tools** Existing

SSDC resident catalogs

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

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

Observatory	Data type	Paper reference
BeppoSAX	Spectra	2002bbs.conf..51G

Register

Registered Clients

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

TOPCAT Launch

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

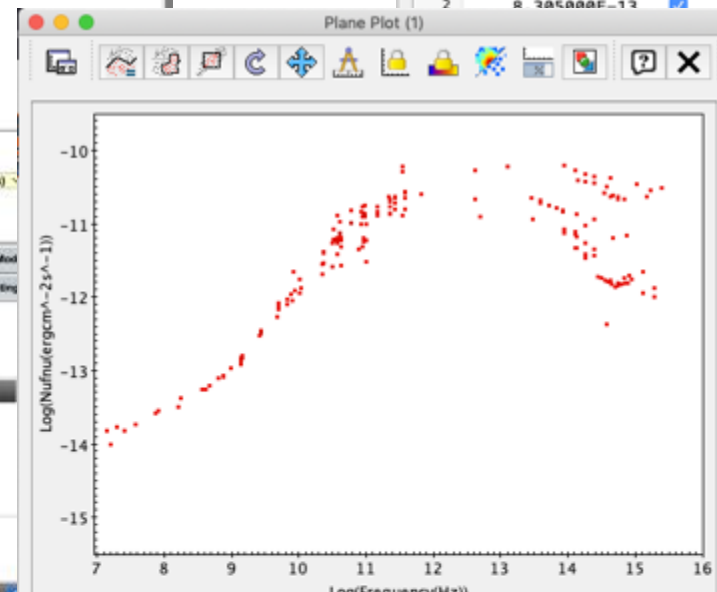
5 GHz	9.6	9.7	5 GHz
1 Kev	17.13	17.39	1 Kev
1 Gev	23.38	23.39	1 Gev
VMAG	14.7	14.8	VMAG

TOPCAT(3): Table Browser

Table Browser for 3: temp_3C279_10651415049481286353.vot

	Nufnu(ergcm ⁻² s ⁻¹)	SGHZ	VMAG	1Kev	User
1	6.695000E-13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	R 3A2A00E-13	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Plane Plot (1)



Log(Nufnu(ergcm⁻²s⁻¹))

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

Under testing – coming soon

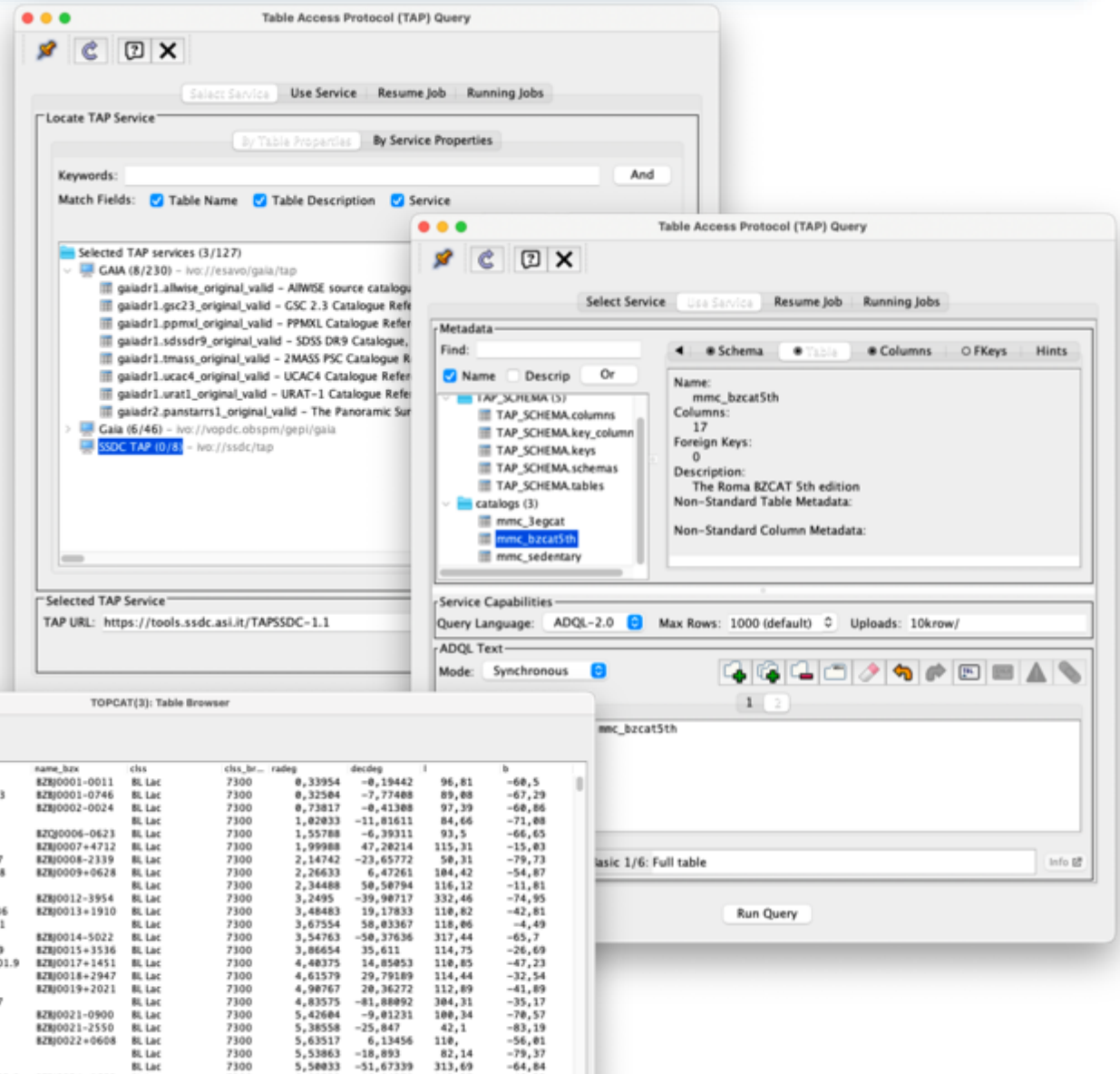
Service based on TAP library by CADC

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 (0/8)' 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 details for the selected service, including the table name `mmc_bzcat5th` and its description: 'The Roma BZCAT 5th edition'. It also displays service capabilities such as 'Query Language: ADQL-2.0', 'Max Rows: 1000 (default)', and 'Uploads: 10krow'.

The 'TOPCAT(3): Table Browser' window shows a table with columns: `name`, `name_lit`, `name_bzx`, `clss`, `clss_br`, `radeg`, `decdeg`, `l`, and `b`. The table contains 23 rows of data, including entries for various astronomical objects like SDSS00013-0011, CRATES000117-074633, and SHR001527.9+353639.

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

Zinzi et al., 2016, A&C

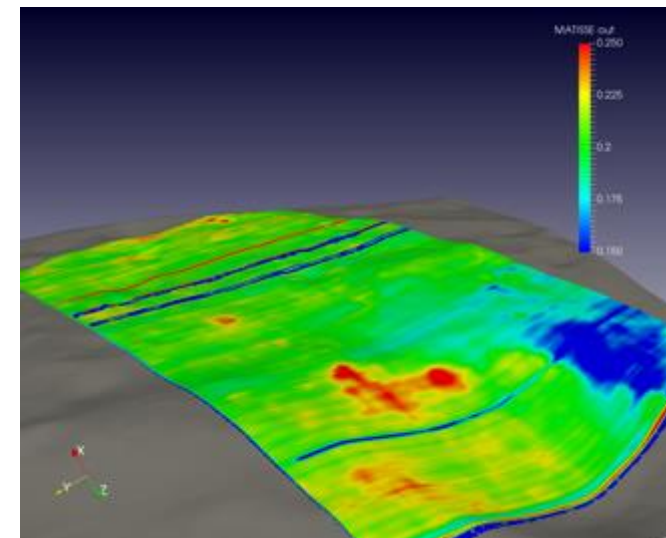
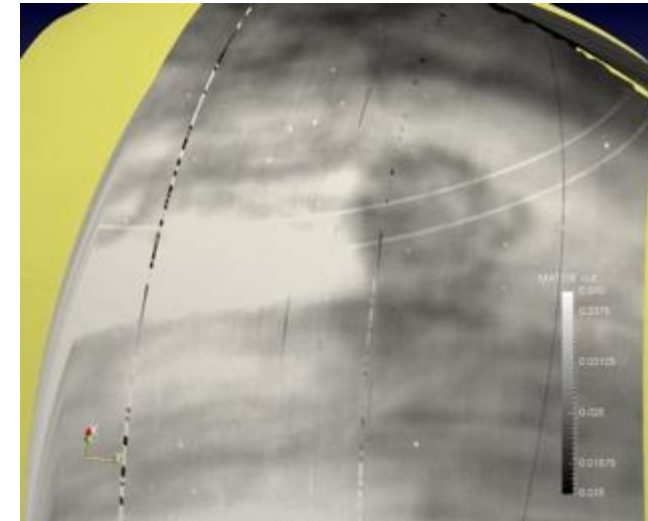


Nature Astronomy
July 2019 cover!

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)



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

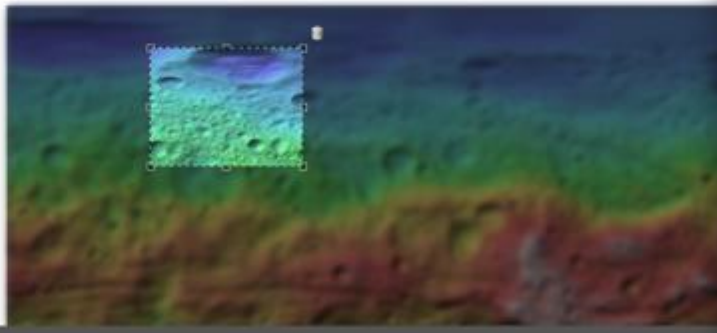
Select Target: 4 Vesta Missions: Dawn Instruments: [empty]

Query Name (Optional): [input field]

Search on Map Search Criteria

Draw an area on map or search an object

Search: [input field]



Version 2.0.3268

Search Query Results Visualization

300002709606

Query: [Target: vesta] [Instrument: VIRI] [Observation: VIR_IR_18_1_366626964_2] [Channel: 21] [Coordinates: minLon: -130.43 maxLon: -76.99, minLat: 34.3 maxLat: 75.78]

2D Download FITS

3D Download VTF

300002709606

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_366626964_2	1207.35	-130.66791	-70.74672	26.342646	44.08406		
VIRI	VIR_IR_18_1_366624556_2	[Select...]	-85.75223	-25.938538	25.57943	43.51647		
VIRI	VIR_IR_18_1_366626755_2	[Select...]	-158.69563	-104.6172	16.393135	34.445972		
VIRI	VIR_IR_18_1_366631756_2	[Select...]	-209.99364	149.99588	22.88556	44.624935		
VIRI	VIR_IR_18_1_366629356_2	[Select...]	-174.87044	-115.35071	23.670754	43.249805		
VIRI	VIR_IR_18_1_372820519_2	[Select...]	-97.901566	-77.92047	43.52967	45.7539		
VIRI	VIR_IR_18_1_372688083_2	[Select...]	-139.04739	-120.56826	42.530155	44.95482		
VIRI	VIR_IR_18_1_372556271_2	[Select...]	-180.77181	-161.98116	41.36069	44.077477		
VIRI	VIR_IR_18_1_367862545_2	[Select...]	-209.84857	149.99966	18.916376	36.037033		
VIRI	VIR_IR_18_1_367857745_2	[Select...]	-127.932686	-72.458176	19.302818	37.765416		

Showing 1 to 10 of 11 entries 1 row selected

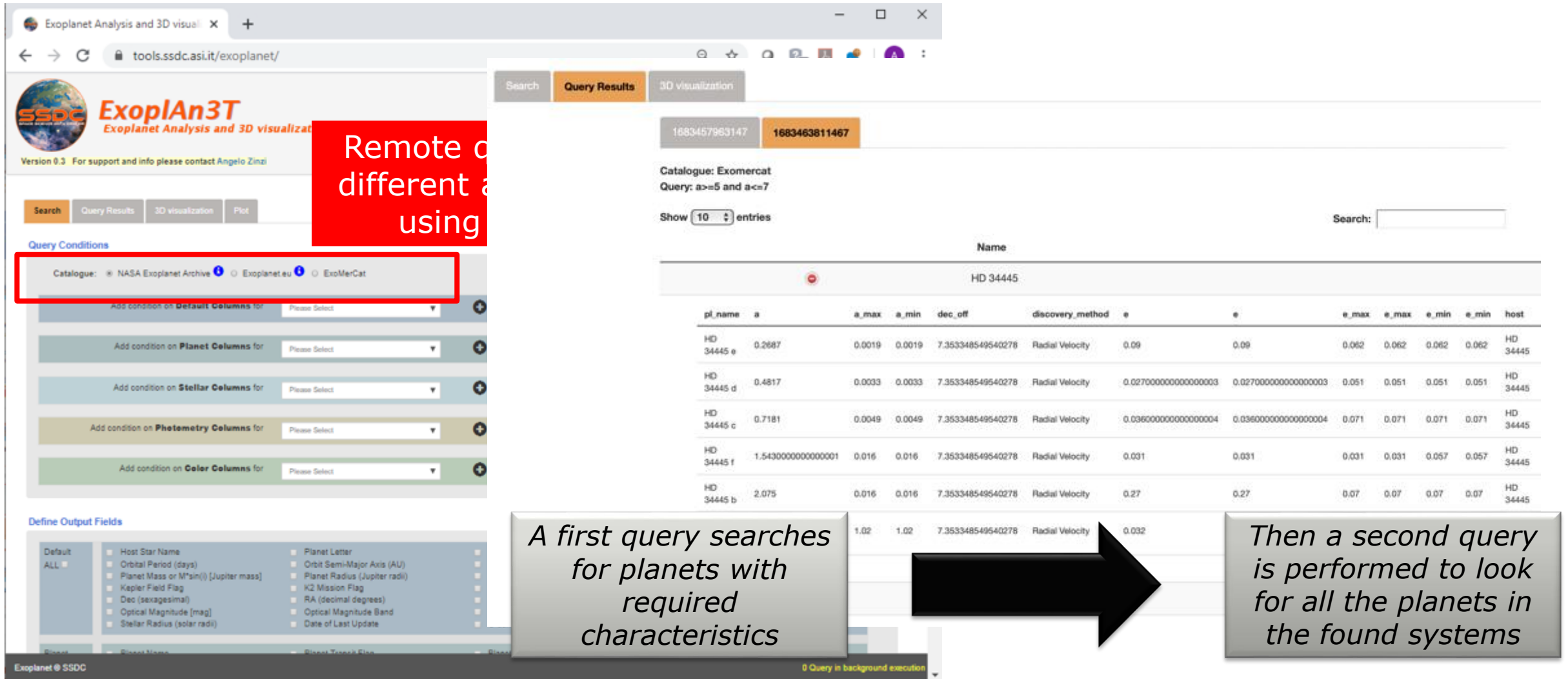
Visualize Selected Asynchronous Request

Visualization Name (Optional): [input field]

First Previous 1 2 Next Last

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

A. Zinzi et al



Remote of different a using

Catalogue: NASA Exoplanet Archive Exoplanet.eu ExoMerCat

Query Conditions

Define Output Fields

Query Results

1683457963147 1683463811467

Catalogue: Exomercat
Query: $a \geq 5$ and $a \leq 7$
Show 10 entries

Search:

Name												
HD 34445												
pl_name	a	a_max	a_min	dec_off	discovery_method	e	e	e_max	e_max	e_min	e_min	host
HD 34445 e	0.2687	0.0019	0.0019	7.353348549540278	Radial Velocity	0.09	0.09	0.062	0.062	0.062	0.062	HD 34445
HD 34445 d	0.4817	0.0033	0.0033	7.353348549540278	Radial Velocity	0.027000000000000003	0.027000000000000003	0.051	0.051	0.051	0.051	HD 34445
HD 34445 c	0.7181	0.0049	0.0049	7.353348549540278	Radial Velocity	0.036000000000000004	0.036000000000000004	0.071	0.071	0.071	0.071	HD 34445
HD 34445 f	1.5430000000000001	0.016	0.016	7.353348549540278	Radial Velocity	0.031	0.031	0.031	0.031	0.057	0.057	HD 34445
HD 34445 b	2.075	0.016	0.016	7.353348549540278	Radial Velocity	0.27	0.27	0.07	0.07	0.07	0.07	HD 34445
		1.02	1.02	7.353348549540278	Radial Velocity	0.032						

A first query searches for planets with required characteristics

Then a second query is performed to look for all the planets in the found systems

NEOROCKS (or "My FAIR Planetary Defense")

To date, only
because physics
The key issue, v
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It appears
NEO p
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the ma



Welcome Observations Status Physical Properties Priority List Physical Properties Database Accessibility Plots Objects Subscription
NEODyS services Help & About

Search...

Sign In

Name/Designation

Search

Search

Advanced search

Parameter display criteria Last inserted [One record] ▾

General

Numbered State Numbered Unnumbered
Object Group NEAs NECs
Object Class Atens Amors Apollos Atira PHA

> Orbital Properties

> Physical Properties

> Observations

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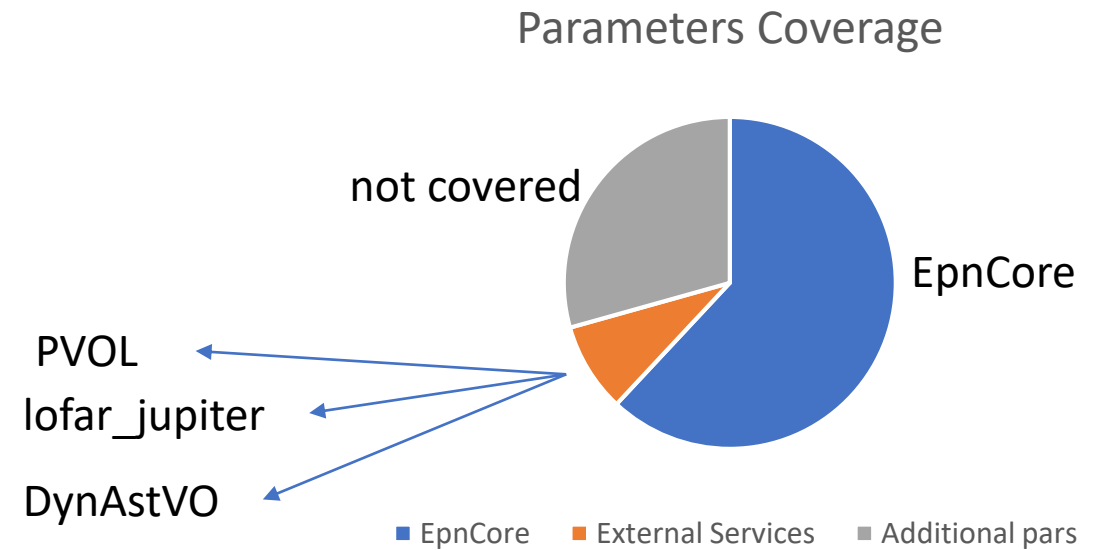
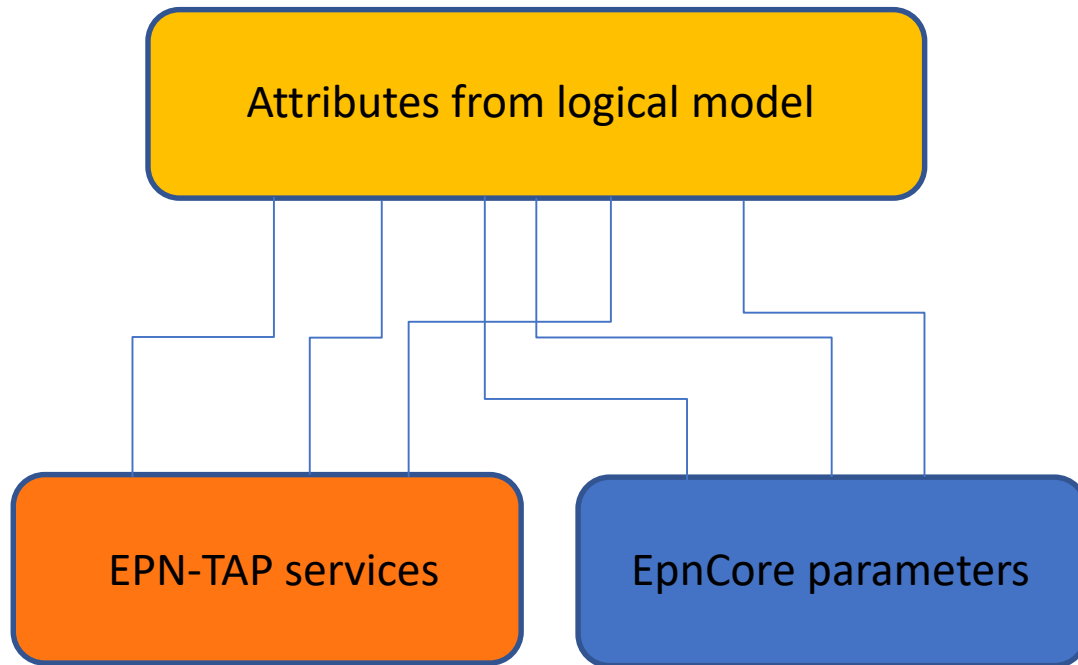
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See A. Zinzi's talk on SSIG splinter



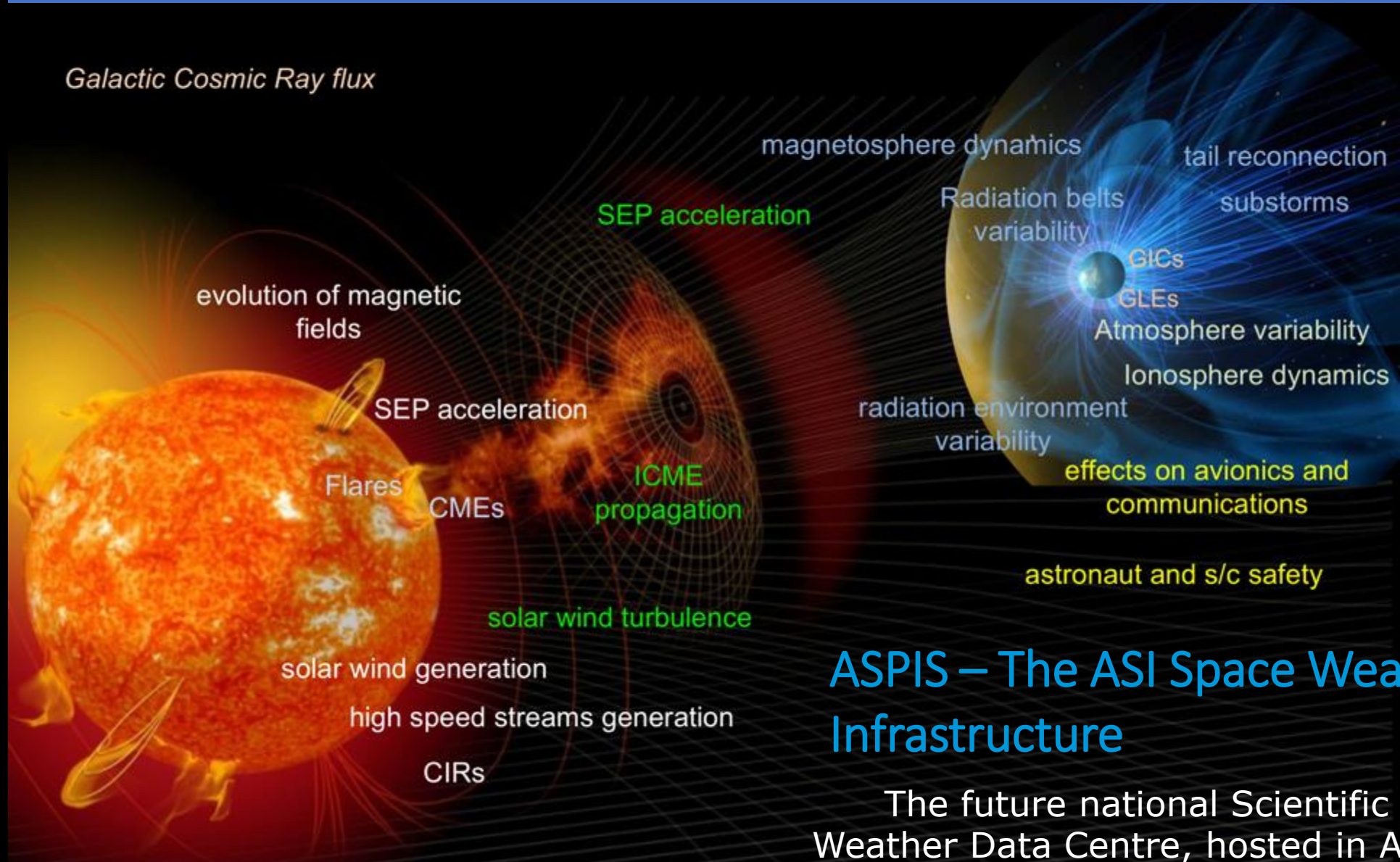
NEOROCKS - Data Model definition and EpnCore

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.NODE.2000](#)

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

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 Magnafico

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.

Challenges

Multi/Inter/trans-
disciplinary

Models Evaluation

Standardized metrics

Data harmonization

Coordination

Synergies

Services
and
Operations

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:

- 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.ssdsc.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



Agenzia Spaziale Italiana