Prepared by:
Michele Doro michele.doro@unipd.it,
Elisa Prandini (UniPD), Andrea Tramacere (UniGE)

* **PADOVA MAGIC group:** Alessandro de Angelis, Mose' Mariotti, Elisa Bernardini, Giovanni Busetto, Ruben Lopez Coto, Elisa Prandini, Manuela Mallamaci, Cedric Perennes, Luca Foffano, Alessia Spolon
* Alberto Franceschini

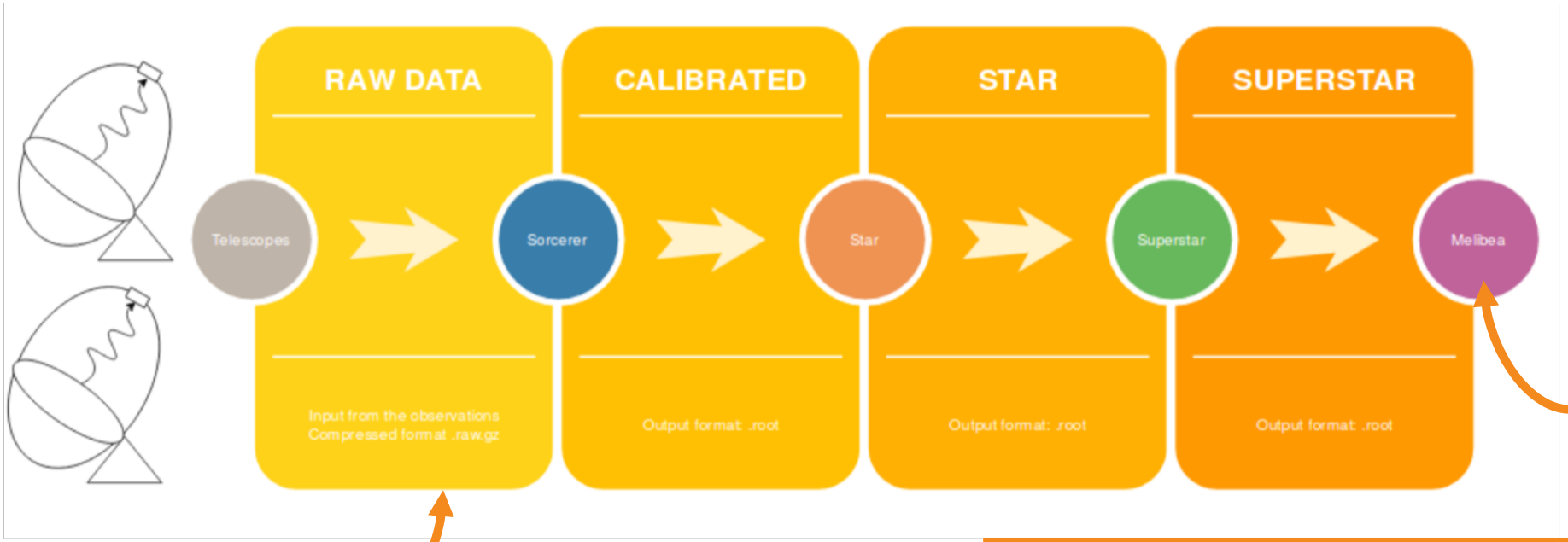
.

This talk is not given on behalf of MAGIC collaboration.
Ideas here will be only proposed

Status of MAGIC data release


MAGIC Datacenter
HOME
PUBLIC DATA
MEMBERS AREA
DATA CENTER RESOURCES
EXTERNAL LINKS
CONTACT US
Virtual Observatory
High-level FITS files
Low-level open data
the MAGIC data center
MAGIC Telescopes
Data Management and Preservation Plan
Version 1. Draft 0.8 9/11/2018
O. Blanch, M. Delfino, J.Delgado, M. Doro, D. Elsaesser,
D.Paneque, J. Rico, J. Sitarek and A. Spolo
Universitat Autònoma de Barcelona

Data Management



2 TB/night

Events that can be translated to DL3 files. Need IRFs for interpretation

See Kosack's slide Wed on CTA

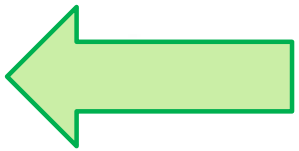
Data Level	Short Name	Definition
R0	Raw Internal	On-site streamed raw data, not normally preserved long-term in this form. R0 content and format is internal to each device / controllable system, such as raw data transmitted from the physical device / system to its respective server in the on-site Data Centre.
R1	Raw Common	On-site stream raw data meeting common standards, transmitted on-site from a Camera or other on-site system to the OES. This is the first level of data seen by the OES, that will typically need some pre-processing from the R0 data format. Exceptionally, some R1 data may be stored for engineering purposes.
DL0	Raw Archived	All archival data from the data acquisition hardware/software, transmitted from the OES to the DPPS. This is the lowest level of data that are intended for long-term storage in the bulk archive. This includes both camera event data and technical data from other sub-systems, such as non-camera devices or software.
DL1	Processed	Processed DL0 data that may include telescope-level (TEL) data and parameters derived from them. Typical contents include calibrated image charge, Hillas parameters, and a usable telescope pattern. DL1 data is not normally stored long-term.
DL2	Recon-structed	Reconstructed shower parameters such as energy, direction, particle ID, and related signal discrimination parameters. Does not include telescope-level (TEL) information. For each event this information may be repeated for multiple reconstruction and discrimination methods. DL2 data is not normally stored long-term.
DL3	Reduced	Sets of selected events with a single final set of reconstruction and discrimination parameters, along with associated instrumental response characterizations and any technical data needed for science analysis.
DL4	Binned	Data product produced by binning of DL3 data, including data cubes and maps which are suitable for combination/summation to produce DL5 products.
DL5	Science	Data product produced by combination of DL4 products an extraction target specific region(s) of interest. Includes for example light-curves and spectra, along with associated data such as source models and fit results.

Tel

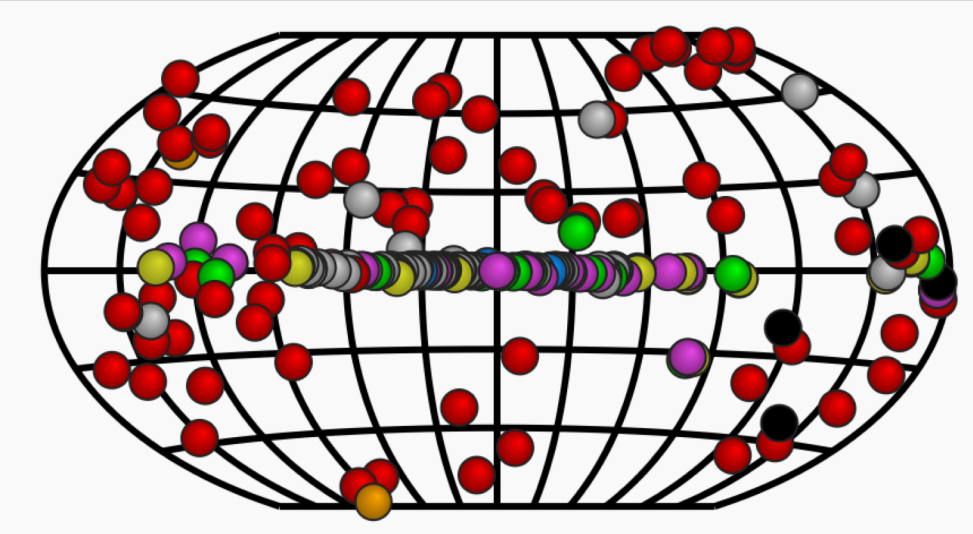
OES

DPPS

SUSS

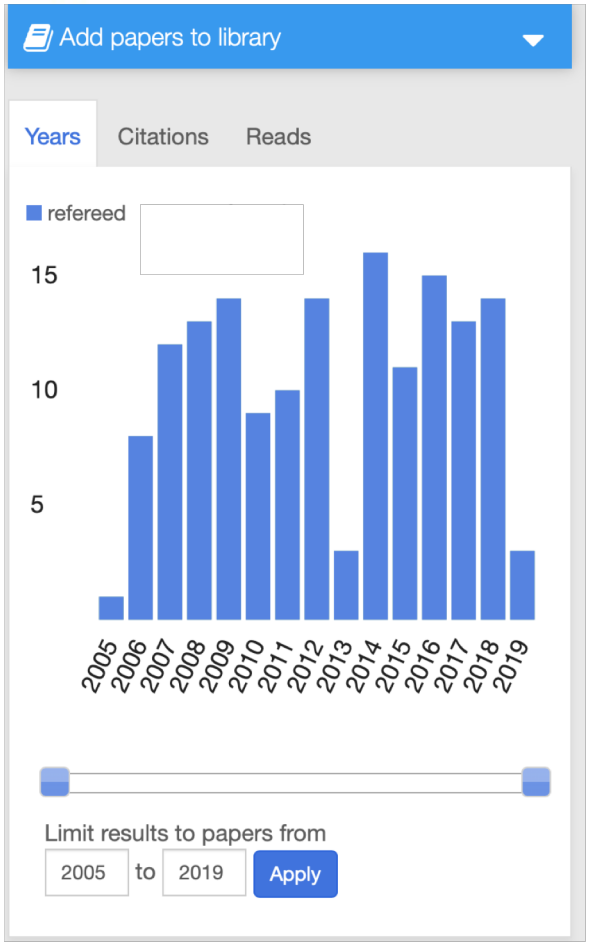


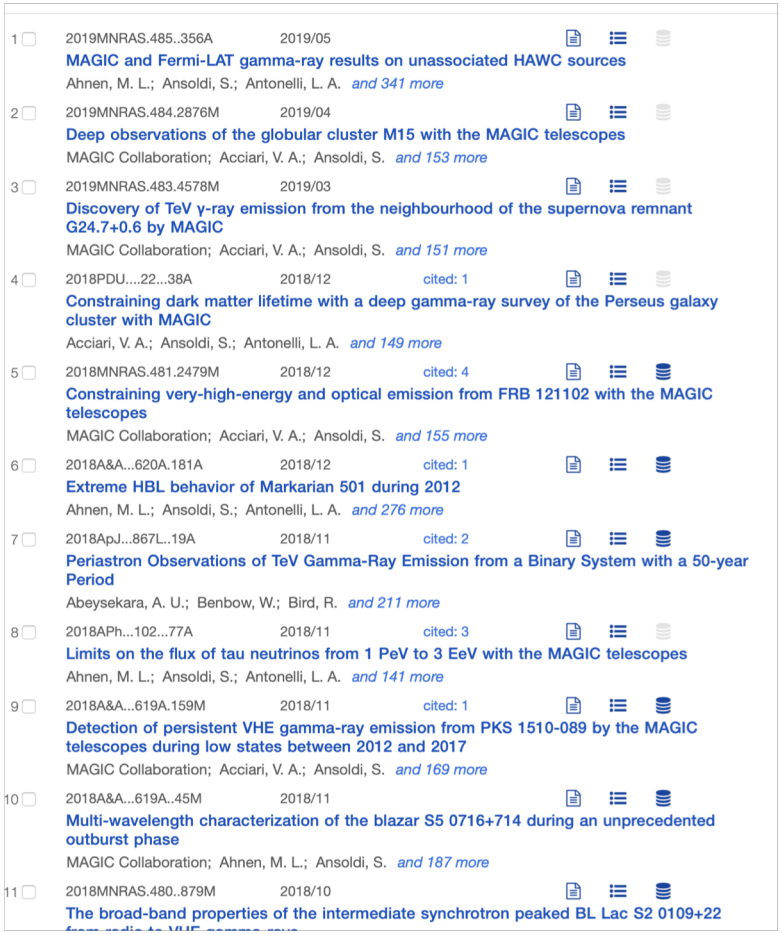
Product list versus astronomical catalog



- **Current IACTs cannot provide astronomical catalog** because each published target is the result of a specific analysis
- **Automatic pipelines are possible** but cannot be maximally efficient on all targets

Working with the paper list





Products:

- Detection plots
- Skymaps
- Spectra
- SED data points
- Lightcurves
- (Phaseograms)
- (other products)

https://opendata.magic.pic.es/backend/publications/articles

MAGIC Open Data Repository

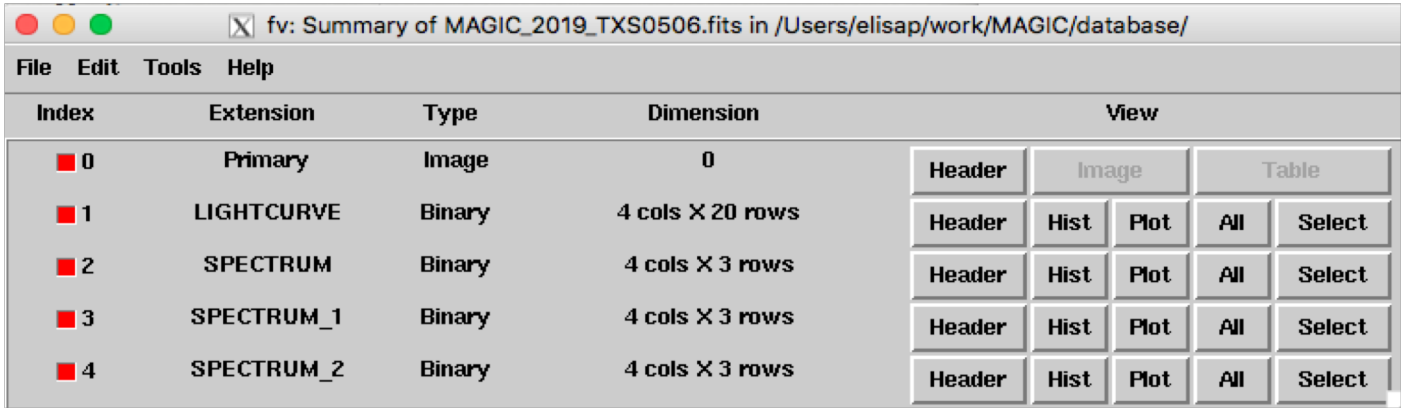
This is the repository for MAGIC low level (event lists and corresponding IRFs) data. Find below links to access data relative to different observational projects, identified by the respective observed source(s). Each dataset is accompanied by a description of the data format.

Publication	Description	Release date
MAGIC_TXS0506+056	Data from the observations of the blazar TXS 0506+056 carried out by the MAGIC telescopes between September 24 and October 04, 2017, and reported by the IceCube Collaboration et al. [Science 361, eaat1378 (2018). DOI: 10.1126/science.aat1378].	2018-07-12

MAGIC Fits repository: http://vobs.magic.pic.es/fits/

Source	Article	Year	Reference	Download
TXS0506+056	The blazar TXS 0506+056 associated with a high-energy neutrino: insights into extragalactic jets and cosmic ray acceleration	2019	(S. Ansoldi et al., ApJL 863,L10)	FITS
M15	Deep observations of the globular cluster M15 with the MAGIC telescopes	2019	(2019MNRAS.484.2876M)	FITS
PKS 1510-089	Detection of persistent VHE gamma-ray emission from PKS 1510-089 by the MAGIC telescopes during low states between 2012 and 2017	2018	(2018arXiv180605367M)	FITS
S5 0716+714	Multi-wavelength characterization of the blazar S5~0716+714 during an unprecedented outburst phase	2018	(2018arXiv180700413M)	FITS
S2 0109+22	The broad-band properties of the intermediate synchrotron peaked BL Lac S2 0109+22 from radio to VHE gamma rays	2018	(S. Ansoldi et al., MNRAS 480, 879)	FITS
NGC 1275	Gamma-ray flaring activity of NGC 1275 in 2016-2017 measured by MAGIC	2018	(2018arXiv180601559M)	FITS
S4 0954+65	The detection of the blazar S4 0954+65 at very-high-energy with the MAGIC telescopes during an exceptionally high optical state	2018	(2018arXiv180104138M)	FITS
PKS1510-089	MAGIC gamma-ray and multi-frequency observations of flat spectrum radio quasar PKS 1510-089 in early 2012	2012	(J. Aleksic et al., A&A 569, A46)	FITS
Cygnus X-1	Search for very-high-energy gamma-ray emission from the microquasar Cygnus X-1 with the MAGIC telescopes	2017	(M. L. Ahnen et al., MNRAS 472, 3474)	FITS
V404 Cygni	MAGIC observations of the microquasar V404 Cygni during the 2015 outburst	2017	(M. L. Ahnen et al., MNRAS 471, 1688)	FITS
Cassiopeia A	A cut-off in the TeV gamma-ray spectrum of the SNR Cassiopeia A	2017	(M. L. Ahnen et al., MNRAS 472, 2954)	FITS
IC 310	First multi-wavelength campaign on the gamma-ray-loud active galaxy IC 310	2017	(M. L. Ahnen et al., A&A, 603, A25)	FITS
Sagittarius A*	Observations of Sagittarius A* during the pericenter passage of the G2 object with MAGIC	2017	(M. L. Ahnen et al., A&A, 601, A33)	FITS
B1957+20	Observation of the Black Widow B1957+20 millisecond pulsar binary system with the MAGIC telescopes	2017	(M. L. Ahnen et al., MNRAS, 470, 4608)	FITS
SN 2014J	Very-high-energy gamma-ray observations of the Type Ia Supernova SN 2014J with the MAGIC telescopes	2017	(M. L. Ahnen et al., A&A, 602, A98)	FITS

Fits files for MAGIC

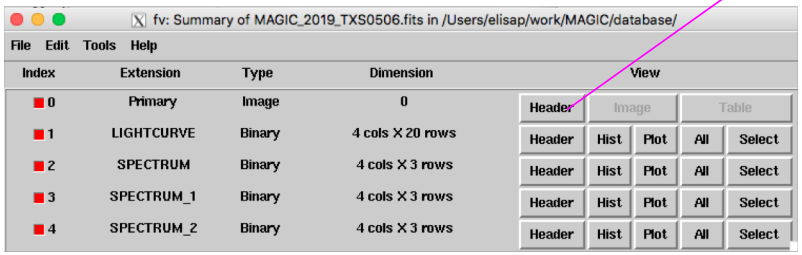


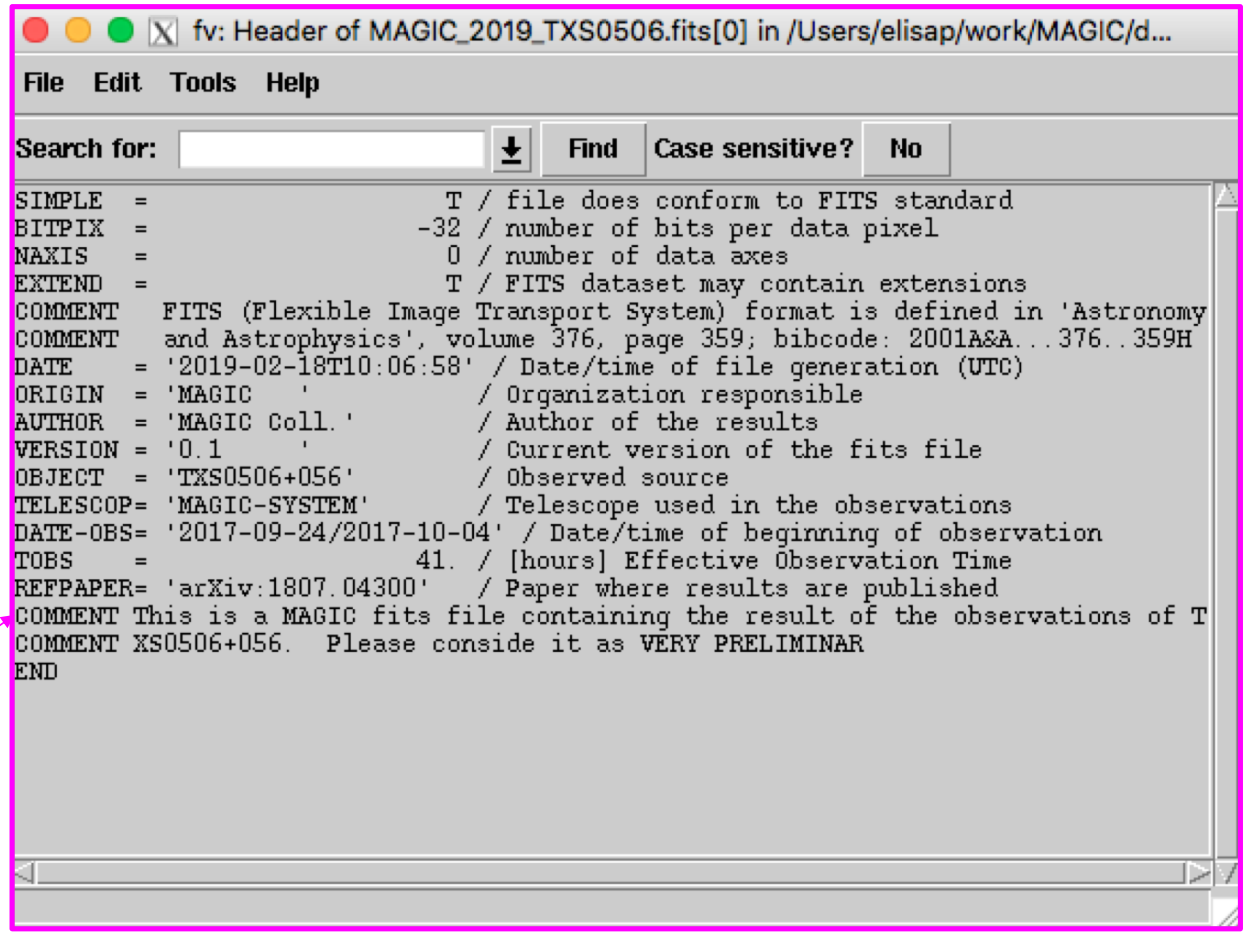
- The fits format is explained here: http://vobs.magic.pic.es/fits/mfits/tdas/tdas-fits.pdf
- One FITS file for each published MAGIC paper that includes:
  - detection plot/s (alpha or theta^2)
  - intrinsic Spectrum/a
  - LC/s
  - Skymap/s

Primary Header and Data Units

PHDU includes info on observations.

However, not that many





e.g. Lightcurve

fv: Summary of MAGIC_2019_TXS0506.fits in /Users/elisap/wor

File Edit Tools Help

Index	Extension	Type	Dimension	
0	Primary	Image	0	Hea
1	LIGHTCURVE	Binary	4 cols X 20 rows	Hea
2	SPECTRUM	Binary	4 cols X 3 rows	Hea
3	SPECTRUM_1	Binary	4 cols X 3 rows	Hea
4	SPECTRUM_2	Binary	4 cols X 3 rows	Hea

File Edit Tools Help

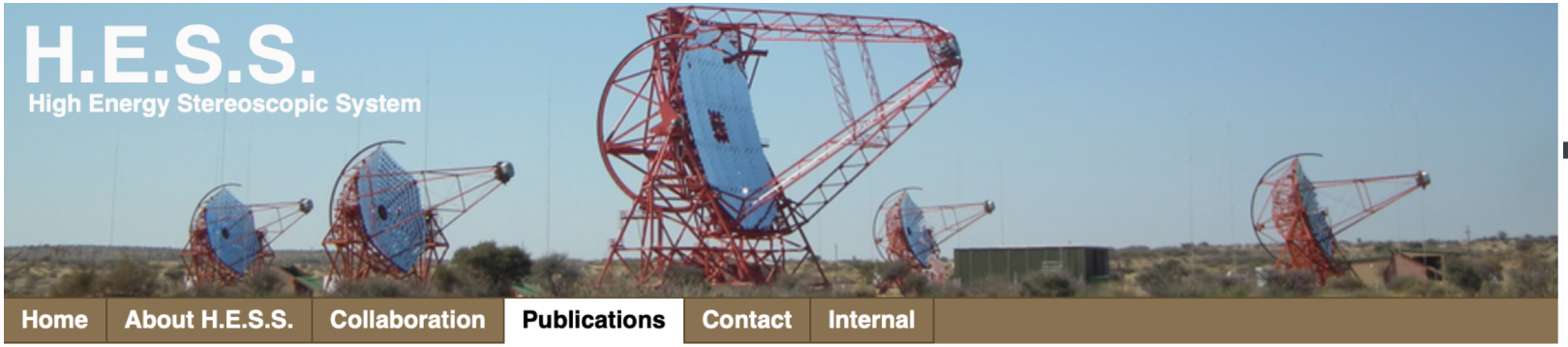
Search for: Find Case sensitive? No

```
XTENSION= 'BINTABLE'           / binary table extension
BITPIX  =                    8 / 8-bit bytes
NAXIS   =                    2 / 2-dimensional binary table
NAXIS1  =                   32 / width of table in bytes
NAXIS2  =                   20 / number of rows in table
PCOUNT  =                    0 / size of special data area
GCOUNT  =                    1 / one data group (required keyword)
TFIELDS =                    4 / number of fields in each row
TTYPE1  = 'MJD     '           / label for field   1
TFORM1  = '1D      '           / data format of field: 8-byte DOUBLE
TUNIT1  = 'days    '           / physical unit of field
TTYPE2  = 'flux    '           / label for field   2
TFORM2  = '1D      '           / data format of field: 8-byte DOUBLE
TUNIT2  = 'ph cm-2 s-1'        / physical unit of field
TTYPE3  = 'Dtime   '           / label for field   3
TFORM3  = '1D      '           / data format of field: 8-byte DOUBLE
TUNIT3  = 'days    '           / physical unit of field
TTYPE4  = 'Dflux   '           / label for field   4
TFORM4  = '1D      '           / data format of field: 8-byte DOUBLE
TUNIT4  = 'ph cm-2 s-1'        / physical unit of field
EXTNAME = 'LIGHTCURVE'         / name of this binary table extension
ISINTEGR= 'T       '           / Fluxes are integral (ph cm-2 s-1)
EMIN    =                  90. / [GeV] lower energy cut
COMMENT Light Curve above 90 GeV from 41 hr of TXS0506+056 observations, between
COMMENT  2017 September and October.
END
```

File Edit Tools Help

	energy	flux	Denergy	Dflux
Select	1D	1D	1D	1D
All	GeV	ph TeV cm-2 s-1	GeV	ph TeV cm-2 s-1
Invert	Modify	Modify	Modify	Modify
1	7.913049000000E+01	1.796363000000E-11	3.839892000000E+01	5.130328000000E-12
2	1.762203000000E+02	4.090480000000E-12	8.551280000000E+01	1.710723000000E-12
3	3.924353000000E+02	1.153766000000E-12	1.904335000000E+02	8.987378000000E-13

What HESS/Veritas do



Home | About H.E.S.S. | Collaboration | **Publications** | Contact | Internal

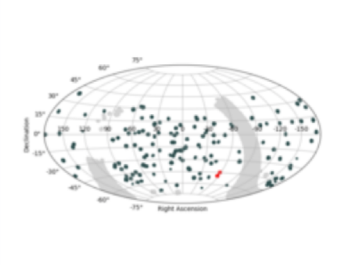
Publications and conference contributions 2019

Most recent contributions first

The 2014 TeV Gamma-ray Flare of Mrk 501 Seen with H.E.S.S.: Temporal and Spectral Constraints on Lorentz Invariance Violation
H.E.S.S. Collaboration, H. Abdalla et al.
accepted for publication in ApJ

Particle Transport within the Pulsar Wind Nebula HESS J1825-137
H.E.S.S. Collaboration, H. Abdalla et al.
Astron. Astrophys. 621 (2019) A116, auxiliary information

Source of the Month



The H.E.S.S. I legacy extragalactic survey

More Info | All Sources

Options for External Proposals for H.E.S.S. Observations

Requests for Follow-up Observations of TOOs

The HESS Source Catalog

- Auxiliary materials for papers
- Content depends on papers

Example: Auxiliary information on AA621

Auxiliary Information

Online material related to the H.E.S.S. data published in

H.E.S.S. Collaboration, Particle Transport within the Pulsar Wind Nebula HESS J1825-13

Figure 1: HESS J1825-137 excess map:
analysis A [FITS] [PNG] [PDF]
analysis B [FITS] [PNG] [PDF]

Figure 2: HESS J1825-137 Spectra:
Left panel: [PNG] [PDF]
Right panel: [PNG] [PDF]
Spectral information for 0.8 degree region:

- analysis A analysisA_full_spectralinfo.ecsv
- analysis B analysisB_full_spectralinfo.ecsv

Spectral information for 0.4 degree region:

- analysis A analysisA_core_spectralinfo.ecsv

```
# %ECSV 0.9
# ---
# datatype:
# - {name: e_ref, unit: TeV, datatype: float32, format: '%.2f'}
# - {name: dnde, unit: 1 / (cm2 TeV s), datatype: float32, format: '%2.4g'}
# - {name: dnde_errp, unit: 1 / (cm2 TeV s), datatype: float32, format: '%2.4g'}
# - {name: dnde_errn, unit: 1 / (cm2 TeV s), datatype: float32, format: '%2.4g'}
# - {name: dnde_ul, unit: 1 / (cm2 TeV s), datatype: float32, format: '%2.4g'}
# - {name: is_ul, datatype: bool'}
# meta: !!omap
# - {SED_TYPE: dnde}
# - {UL_CONF: 0.95}
# schema: astropy-2.0
e_ref dnde dnde_errp dnde_errn dnde_ul is_ul
0.21 8.038e-10 9.423e-11 9.404e-11 nan False
0.27 3.111e-10 1.438e-11 1.436e-11 nan False
0.39 1.674e-10 5.288e-12 5.281e-12 nan False
0.56 6.286e-11 2.021e-12 2.019e-12 nan False
0.82 3.004e-11 8.375e-13 8.36e-13 nan False
1.21 1.23e-11 3.764e-13 3.756e-13 nan False
1.77 5.108e-12 1.749e-13 1.745e-13 nan False
2.59 2.263e-12 8.698e-14 8.669e-14 nan False
3.80 8.3e-13 4.466e-14 4.448e-14 nan False
5.58 3.121e-13 2.172e-14 2.161e-14 nan False
8.20 1.453e-13 1.041e-14 1.033e-14 nan False
12.03 5.466e-14 5.171e-15 5.122e-15 nan False
17.65 1.368e-14 2.437e-15 2.41e-15 nan False
25.89 3.797e-15 1.213e-15 1.197e-15 nan False
37.94 9.975e-16 5.905e-16 5.802e-16 nan False
54.16 3.954e-16 3.765e-16 3.678e-16 nan False
80.57 nan nan nan  1.141e-15 True
```

VERITAS

Very Energetic Radiation Imaging Telescope Array System

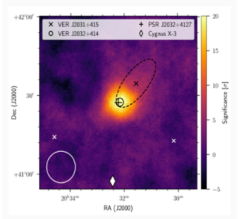
Periastron Observations of TeV Gamma-Ray Emission from a Binary System with a 50-year Period

Reference: A.U. Abeysekara et al. (The VERITAS and MAGIC Collaborations), ApJ Letters 867: L19, 2018

Full text version

ArXiv: ArXiV:1810.05271

Contacts: Ralph Bird



Significance sky map around the region of PSR J2032+4127 / MT91. For details, see Figure 2 below.

PSR J2032+4127 / MT91 213 is a 50 year period pulsar / Be star binary system

- Multiple fits files for papers

FITS files: Significance map (VERITAS); Significance map (MAGIC); VERITAS spectral points; MAGIC spectral points

Figures from paper (click to get full size image):

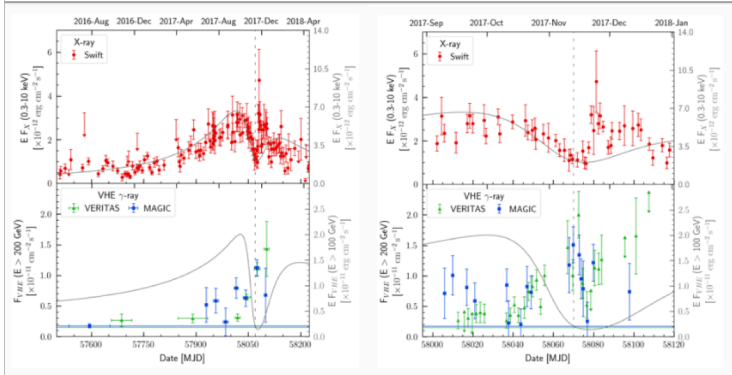


Figure 1: Upper panels (left axes) show the 0.3–10.0 keV background-subtracted Swift-XRT energy-flux light curve (red circles) of PSR J2032+4127 / MT91 213. For clarity, observations with exposures less than 1.4 ks are excluded from the plot. Lower panels show the > 200 GeV photon-flux light curves from VERITAS (green triangles) and MAGIC (blue squares). The left plot shows the full light curve, while the right plot shows only the months around periastron. The horizontal solid lines indicate the average flux prior to 2017 for the respective experiments. The solid gray lines (right axes) are the energy-flux light curve predictions from Li et al. (2018) for X-rays and updated predictions from Takata et al. (2017) using the parameters from Li et al. (2018) (Takata, private communication) for VHE gamma rays. Both models assume an inclination angle of 60°. The vertical gray dashed line indicates periastron.

γcat

A **Python** package for
gamma-ray results

https://gamma-cat.readthedocs.io

gamma-cat
latest

Search docs

DATA
Overview
Source catalog
Data Collection
Stats
Changes
USER DOCUMENTATION
Overview
Terms of use
Contributors
Acknowledgements
Related resources
Example
CONTRIBUTOR DOCUMENTATION
Introduction

Docs » gamma-cat

Edit on GitHub

gamma-cat

gamma-cat is an open data collection and source catalog for very-high-energy gamma-ray astronomy.

- Data and Docs (this site): https://gamma-cat.readthedocs.io
- Repository: https://github.com/gammapy/gamma-cat
- Explore *gamma-cat* and other gamma-ray data at gamma-sky.net
- Access and analyse *gamma-cat* and other gamma-ray data from Python: gammapy.catalog

Data

- Overview
- Source catalog
- Data Collection
- Stats
- Changes

User documentation

Source catalog

The source catalog is available as a single table in a single file. It contains only part of the data available in gamma-cat.

- gammacat.fits.gz – Main version of the source catalog (in FITS format)
- gammacat.ecsv – Partial source catalog (in ECSV format)
- gammacat.yaml – Partial source catalog (in YAML format)

Why multiple formats?

- FITS is the main format for the catalog we release. It supports vector columns, which we use for spectral points.
- The ECSV and YAML variant are more for us working on gamma-cat, to have a text-based, version control friendly format where it's easy to see which changes occurred from one versio to the next. … and they are astro-py compatible

Data Collection

Here you can access the whole data collection.

At the moment we provide two “views”, either by source or by reference.

- Data by source
- Data by reference

- Sources have ‘tev-jargon’ names…
- A paper is catalogued with its NASA bibitex tag

Docs » Data Collection » Data by source

Data by source

List of sources in gamma-cat:

- PKS 0447-439 (ID: 21)
- Vela Junior (ID: 39)
- LMC N132D (ID: 24)
- HESS J1503-582 (ID: 75)
- HESS J1804-216 (ID: 113)
- PKS 1441+25 (ID: 167)
- 3C 58 (ID: 9)
- HESS J1834-087 (ID: 123)
- Geminga (ID: 31)
- W 49B (ID: 133)
- HESS J1858+020 (ID: 131)
- Gamma Cygni (ID: 144)
- 1ES 2344+514 (ID: 154)
- PKS 1424+240 (ID: 67)
- RBS 0723 (ID: 38)
- SNR G327.1-1.1 (ID: 81)
- HESS J1843-033 (ID: 126)
- 1ES 1215+303 (ID: 53)

Docs » Data Collection » Data by reference

Data by reference

List of references in gamma-cat:

- 1996ApJ...472L...9B
- 1999A&A...342...69A
- 1999A&A...350..757A
- 1999ApJ...526L..81M
- 2000AIPC..515..113P
- 2000PhDT.....6P
- 2001A&A...366...62A
- 2001ApJ...546..898A
- 2002A&A...393...89A
- 2003A&A...403..523A
- 2003A&A...406L...9A
- 2003ApJ...583L...9H
- 2003ApJ...598..242A
- 2003ICRC....5.2615T
- 2004A&A...425L..13A
- 2004Natur.432...75A
- 2005A&A...430..865A
- 2005A&A...432L..25A
- 2005A&A...435L..17A
- 2005A&A...437...95A
- 2005A&A...437L...7A
- 2005A&A...439.1013

Docs » Source: Markarian 421 (ID: 49)

Source: Markarian 421 (ID: 49)

Basic source info

- Edit on Github: input/sources/tev-000049.yaml
- Source on gamma-sky.net: http://gamma-sky.net/#/cat/tev/49
- Source on TeVCat: http://tevcat.uchicago.edu/?mode=1;id=75

Part of the available information rendered on this HTML page:

- common_name: **Markarian 421**
- source_id: **49**
- classes: **['hbl']**

Literature

A list of papers of interest related to this source on ADS.

- 1996ApJ...460..644S
- 1996ApJ...472L...9B
- 1999A&A...350..757A
- 1999ApJ...526L..81M
- 2000PhDT.....6P
- 2000AIPC..515..113P
- 2002A&A...393...89A
- 2003ApJ...598..242A
- 2005A&A...437...95A
- 2006ApJ...641..740R
- 2007ApJ...663..125A
- 2009ApJ...691L..13D
- 2010A&A...519A..32A
- 2010JPhG...37l5201C
- 2011ApJ...734..110B
- 2011ApJ...738...25A
- 2012JPhG...39d5201C
- 2015NIMPA.770...42S
- 2017ApJ...834....2A

Resources

- **reference_id: 1996ApJ...472L...9B , type: lightcurve , file_id: -1**
  - input/data/1996/1996ApJ...472L...9B/tev-000049-lc.ecsv
  - output/data/1996/1996ApJ...472L...9B/tev-000049-lc.ecsv
  - Download file
- **reference_id: 1999A&A...350..757A , type: ds , file_id: -1**
  - input/data/1999/1999A%2526A...350..757A/tev-000049.yaml
  - output/data/1999/1999A%2526A...350..757A/tev-000049.yaml
  - Download file
- **reference_id: 1999A&A...350..757A , type: lightcurve , file_id: -1**
  - input/data/1999/1999A%2526A...350..757A/tev-000049-lc.ecsv
  - output/data/1999/1999A%2526A...350..757A/tev-000049-lc.ecsv
  - Download file
- **reference_id: 1999ApJ...526L..81M , type: lightcurve , file_id: -1**
  - input/data/1999/1999ApJ...526L..81M/tev-000049-lc.ecsv
  - output/data/1999/1999ApJ...526L..81M/tev-000049-lc.ecsv
  - Download file
- **reference_id: 2000AIPC..515..113P , type: sed , file_id: -1**
  - input/data/2000/2000AIPC..515..113P/tev-000049-sed.ecsv
  - output/data/2000/2000AIPC..515..113P/tev-000049-sed.ecsv
  - Download file
- **reference_id: 2017ApJ...834....2A , type: ds , file_id: 1**
  - input/data/2017/2017ApJ...834....2A/tev-000049-1.yaml
  - output/data/2017/2017ApJ...834....2A/tev-000049-1.yaml
  - Download file
- **reference_id: 2017ApJ...834....2A , type: lightcurve , file_id: 1**
  - input/data/2017/2017ApJ...834....2A/tev-000049-lc-1.ecsv
  - output/data/2017/2017ApJ...834....2A/tev-000049-lc-1.ecsv
  - Download file
- **reference_id: 2017ApJ...834....2A , type: sed , file_id: 1**
  - input/data/2017/2017ApJ...834....2A/tev-000049-sed-1.ecsv
  - output/data/2017/2017ApJ...834....2A/tev-000049-sed-1.ecsv
  - Download file
- **reference_id: 2017ApJ...834....2A , type: ds , file_id: 2**
  - input/data/2017/2017ApJ...834....2A/tev-000049-2.yaml
  - output/data/2017/2017ApJ...834....2A/tev-000049-2.yaml
  - Download file
- **reference_id: 2017ApJ...834....2A , type: lightcurve , file_id: 2**
  - input/data/2017/2017ApJ...834....2A/tev-000049-lc-2.ecsv
  - output/data/2017/2017ApJ...834....2A/tev-000049-lc-2.ecsv
  - Download file
- **reference_id: 2017ApJ...834....2A , type: sed , file_id: 2**
  - input/data/2017/2017ApJ...834....2A/tev-000049-sed-2.ecsv
  - output/data/2017/2017ApJ...834....2A/tev-000049-sed-2.ecsv
  - Download file

Branch: master ▾ gamma-cat / input / data / 2017 / 2017ApJ...834....2A / tev-000049-2.yaml Find file Copy path

GernotMaier VTS Mrk 421 2017: added spectral model; fixed energy ranges c26e64c on Apr 14, 2018

1 contributor

26 lines (23 sloc) 609 Bytes Raw Blame History

```yaml
source_id: 49
reference_id: 2017ApJ...834....2A
file_id: 2
telescope: veritas

data:
    livetime: 2.18h
    significance: 74.3
    n_on: 1443
    n_off: 315
    alpha: 0.1

# Spectrum for 2014-05-03
# Note: not explicitely mentioned in paper
# (from internal notes)
spec:
  erange: {min: 0.2, max: 4.4, unit: TeV}
  mjd: {max: 56780.25, min: 56780.14 }
  model:
    type: ecpl
    parameters:
      norm: {val: 7.01, err: 1.45, err_sys: 1.4, scale: 1e-7, unit: m-2 s-1 TeV-1}
      index: {val: 2.36, err: 0.13, err_sys: 0.15 }
      e_cut: {val: 1.80, err: 0.61, unit: TeV}
      e_ref: {val: 1, unit: TeV}
```

Input/output files

Branch: master ▾ **gamma-cat** / input / data / 2017 / 2017ApJ...834....2A / **tev-000049-lc-2.ecsv**

cdeil Fix input/data/2017/2017ApJ...834....2A/tev-000049-lc-2.ecsv

1 contributor

61 lines (60 sloc) | 3.94 KB | Raw | Blame

```
# %ECSV 0.9
# ---
# datatype:
# - {name: e_min, unit: TeV, datatype: float64}
# - {name: time, unit: MJD, datatype: float64}
# - {name: flux, unit: m-2 s-1, datatype: float64}
# - {name: flux_err, unit: m-2 s-1, datatype: float64}
# - {name: index, datatype: float64}
# - {name: index_err, datatype: float64}
# meta: !!omap
# - data_type: lc
# - source_id: 49
# - reference_id: 2017ApJ...834....2A
# - file_id: 2
# - telescope: veritas
# - {SED_TYPE: flux}
# - comments: 10 min
e_min time flux flux_err index index_err
0.560  56776.14200646 6.729860768905e-07 1.245413603883e-07 2.43033e+00 1.72793e-01
0.560  56776.1489509 5.315961915063e-07 1.108072697819e-07 2.68795e+00 2.24772e-01
0.560  56776.15589535 5.069332803087e-07 1.083817021002e-07 2.35540e+00 2.19267e-01
0.560  56776.16283979 6.602039544721e-07 1.284871293093e-07 2.65669e+00 2.18511e-01
0.560  56776.16978423 4.688837801528e-07 1.060380850785e-07 2.99154e+00 2.52447e-01
0.560  56776.17672868 5.909984155996e-07 1.205822150695e-07 2.67978e+00 2.26292e-01
```

Branch: master ▾ **gamma-cat** / output / data / 2017 / 2017ApJ...834....2A / **tev-000049-lc-2.ecsv**

cdeil Update output/data (same folder / filename as in input)

1 contributor

62 lines (61 sloc) | 3.6 KB

```
# %ECSV 0.9
# ---
# datatype:
# - {name: e_min, unit: TeV, datatype: float64}
# - {name: time, unit: MJD, datatype: float64}
# - {name: flux, unit: 1 / (m2 s), datatype: float64}
# - {name: flux_err, unit: 1 / (m2 s), datatype: float64}
# - {name: index, datatype: float64}
# - {name: index_err, datatype: float64}
# meta: !!omap
# - {data_type: lc}
# - {source_id: 49}
# - {reference_id: 2017ApJ...834....2A}
# - {file_id: 2}
# - {telescope: veritas}
# - {SED_TYPE: flux}
# - {comments: 10 min}
# schema: astropy-2.0
e_min time flux flux_err index index_err
0.56 56776.14200646 6.729860768905e-07 1.245413603883e-07 2.43033 0.172793
0.56 56776.1489509 5.315961915063e-07 1.108072697819e-07 2.68795 0.224772
0.56 56776.15589535 5.069332803087e-07 1.083817021002e-07 2.3554 0.219267
0.56 56776.16283979 6.602039544721e-07 1.284871293093e-07 2.65669 0.218511
0.56 56776.16978423 4.688837801528e-07 1.060380850785e-07 2.99154 0.252447
0.56 56776.17672868 5.909984155996e-07 1.205822150695e-07 2.67978 0.226292
```

gamma-sky.net

Markarian 421

See source on map

Basic Info

- Common name: Markarian 421
- Gamma names: HESS J1104+382
- Fermi names:
- Other names: Markarian 421, Mrk 421, 1ES 1101+384, 1H 1104+382, H 1105+38
- Location: egal
- Class: hbl

- TeVCat name: TeV J1104+382 (TeVCat ID: 75, TeVCat2 ID: cIB7Uf)
- TGeVCat name: TeV J1104+3811 (ID: 49)

- Discoverer: whipple
- Discovery date: 1992-08
- Seen by: whipple, veritas, hess, magic, hawc
- Reference:

Position Info

SIMBAD

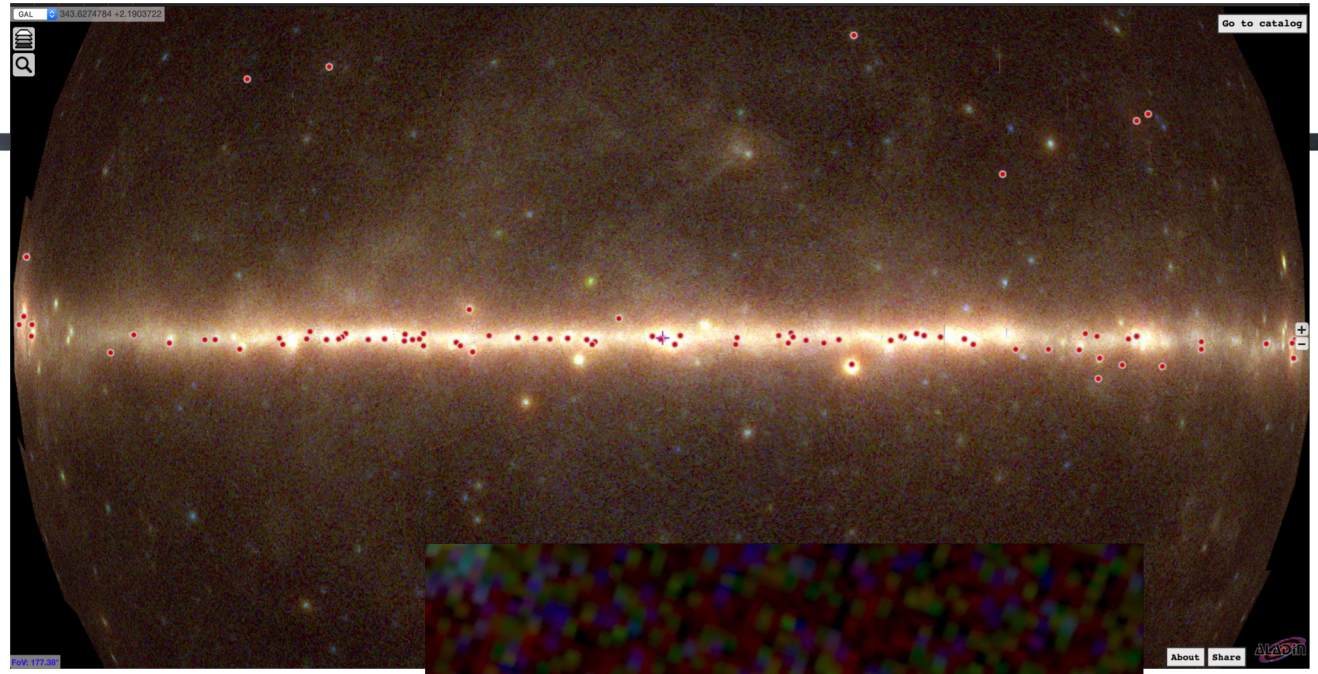
- RA: 166.114 deg
- DEC: 38.209 deg
- GLON: 179.832 deg
- GLAT: 65.031 deg

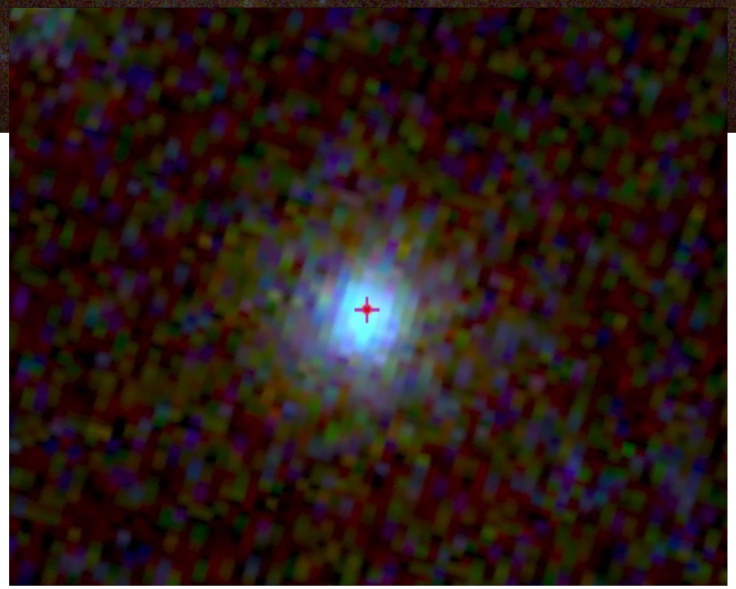
Measurement

- RA: No data
- DEC: No data
- GLON: No data
- GLAT: No data
- Position error: No data

gammasky.net

"A portal to the gamma-ray sky"





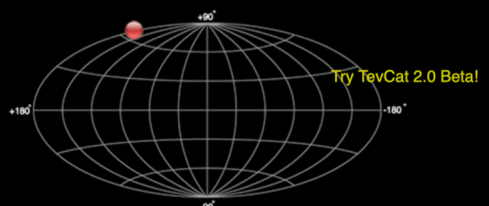
Some ‘Collectors of TeV results’

http://tevcat(2).uchicago.edu

Back to Main Page

Markarian 421

Canonical Name:	Markarian 421
TeVCat Name:	TeV J1104+382
	PG 1101+385
	B3 1101+384
	RBS 0939
	RGB J1104+382
Other Names:	1ES 1101+384
	1H 1104+382
	H 1105+38
	3FGL J1104.4+3812
	2HWC J1104+381
Source Type:	HBL
R.A.:	11 04 19 (hh mm ss)
Dec.:	+38 11 41 (dd mm ss)
Gal Long:	179.88 (deg)
Gal Lat:	65.01 (deg)
Distance:	z=0.031
Flux:	0.3 (Crab Units)
Energy Threshold:	500 GeV
Spectral Index:	2.2
Extended:	No
Discovery Date:	1992-08
Discovered By:	Whipple
TeVCat SubCat:	Default Catalog
Source Notes:	



Observation Date (UT) 12-3-2019 | Observation Lat ARGO-YBJ (30.11)

Vis-Plot this Source! | Vis-Plot Full Year

Source position and its uncertainty:
From Albert et al. (2007):
- R.A. (J2000): 11 04 19
- Dec. (J2000): +38 11 41
- syst. uncertainty: 2'
- this is consistent with the source position provided by NED

The flux from Markarian 421 is highly variable.
From Ahnen et al. (2016):
Commenting on observations taken with MAGIC between March 2007 and June 2009:
- "The flux above 400 GeV spans from the minimum nightly value of 1.3 +/- 0.4 10e-11 cm-2 s-1 to the maximum flux, that is about 24 times higher, at 3.1 +/- 0.1 10e-10 cm-2 s-1"

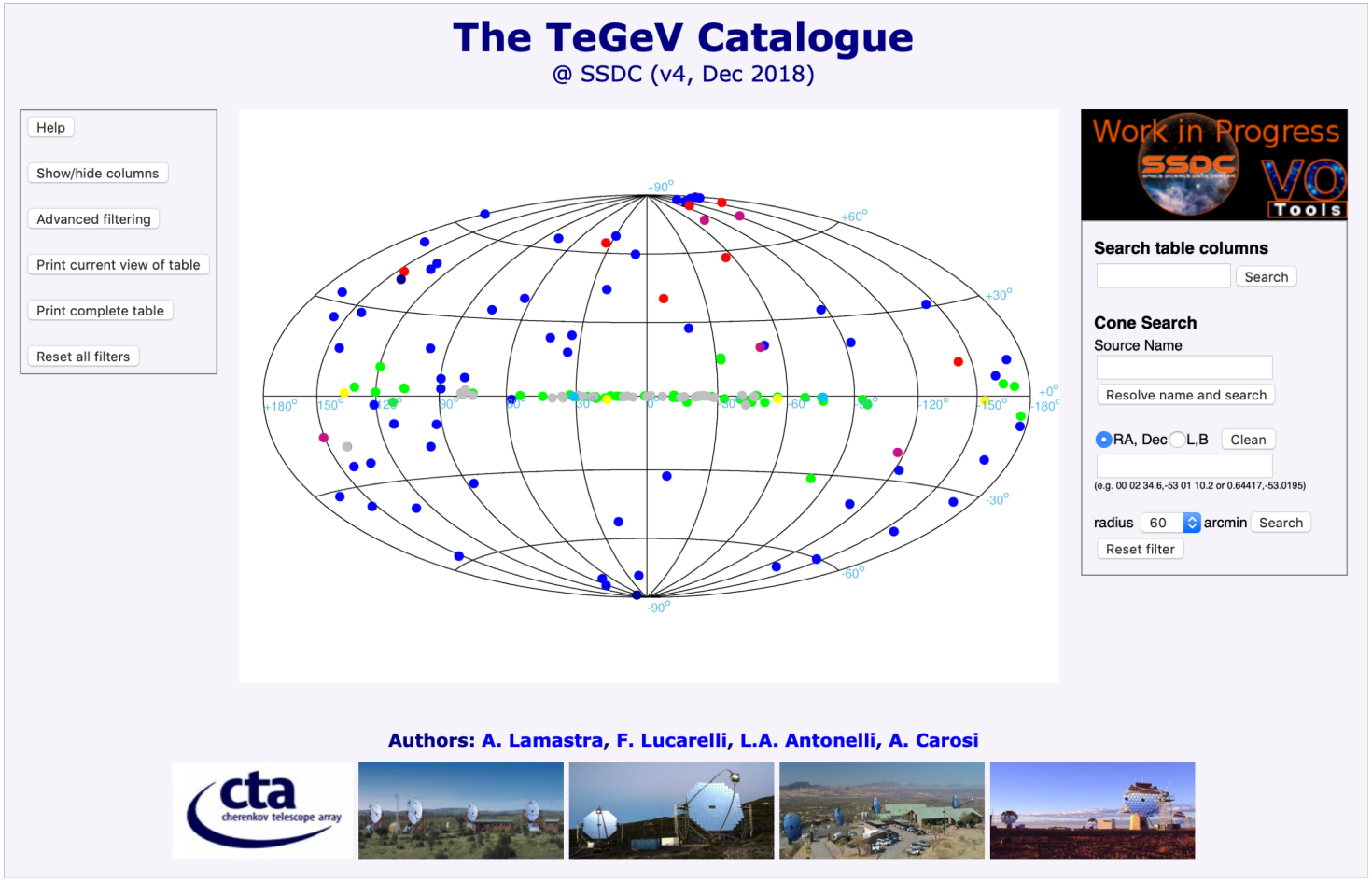
Spectral Index:
The spectral index has been found to vary.
From Albert et al. (2007):
- 2.20 +/- 0.08
- the spectrum shows evidence for an exponential cutoff (independent of EBL absorption)

Information on the jet:
From Lister et al. (2019):
- "All three innermost jet features of this nearby BL Lac object show inward motion."

Seen by: Whipple, HEGRA, CAT, H.E.S.S., MAGIC, Milagro, Telescope Array, CANGAROO, TACTIC, ARGO-YBJ, HAGAR, FA

- Reconcilement of VHE gamma-ray/X-ray correlation studies in Mrk 421 and break-down at high fluxes
  Gonzalez, M.M. et al., arXiv e-prints p (2019) [LINK]
- Multi-TeV flares from the nearest Blazar Markarian 421 and their origin
  Sahu, S. et al., ArXiv e-prints p (2018) [LINK]
- Exceptional Flare of Mrk 421 at TeV energies
  Biland, A. et al., The Astronomer's Telegram 11184 p1 (2018) [LINK]
- HAWC observation of Mrk421 reaching peak TeV flux in month-long enhanced activity
  Garcia-Gonzalez, J.A. et al., The Astronomer's Telegram 11194 p1 (2018) [LINK]
- Swift/BAT finds hard X-Ray flaring activity correlated with an ongoing TeV flare of Mrk421
  Kadler, M. and Krimm, H., The Astronomer's Telegram 11195 p1 (2018) [LINK]
- TACTIC detection of a strong TeV flare from Mrk 421
  Rannot, R.C., The Astronomer's Telegram 11199 p1 (2018) [LINK]
- Possible Accretion Disk Origin of the Emission Variability of a Blazar Jet
  Chatterjee, R. et al., ArXiv e-prints p (2018) [LINK]
- Blazar Spectra with Hard-sphere-like Acceleration of Electrons
  Asano, K. and Hayashida, M., ArXiv e-prints p (2018) [LINK]
- Multi-color optical monitoring of ten blazars from 2005 to 2011
  Meng, N. et al., ArXiv e-prints p (2018) [LINK]
- X-ray spectral variability of blazars using principal component analysis
  Gallant, D. et al., ArXiv e-prints p (2018) [LINK]
- The flux distribution of individual blazars as a key to understand the dynamics of particle acceleration
  Sinha, A. et al., ArXiv e-prints p (2018) [LINK]
- Influence of Energy-Dependent Particle Diffusion on the X-ray spectral curvature of MKN 421
  Goswami, P. et al., ArXiv e-prints p (2018) [LINK]
- X-ray intraday variability of the TeV blazar Mrk 421 with Chandra
  Aggrawal, V. et al., MNRAS 480 p4873-4883 (2018) [LINK]
- Statistical analysis on XMM-Newton X-ray flares of Mrk 421: distributions of peak flux and flaring time duration
  Yan, D. et al., ArXiv e-prints p (2018) [LINK]
- Study of short term enhanced TeV gamma-ray emission from Mrk 421 observed with TACTIC on December 28, 2014
  Singh, K.K. et al., Astroparticle Physics 103 p122-130 (2018) [LINK]
- Search for high-energy neutrino emission from Mrk 421 and Mrk 501 with the ANTARES neutrino telescope
  Organokov, M. and Pradier, T., ArXiv e-prints p (2018) [LINK]
- Systematic investigation of X-ray spectral variability of TeV blazars during flares in the RXTE era
  Wang, Y. et al., ArXiv e-prints p (2018) [LINK]
- Long-term optical monitoring of TeV emitting Blazars
  Nilsson, K. et al., ArXiv e-prints p (2018) [LINK]
- Probing the Jets of Blazars Using the Temporal Symmetry of Their Multi-Wavelength Outbursts
  Roy, N. et al., ArXiv e-prints p (2018) [LINK]

https://www.ssdc.asi.it/tgevcat/



- Hosted at and interfaced with SSDC
- Not maintained now

HBL IBL LBL FSRQs AGN STARBURST FRI SNR/PWN XRB WR UNID ALL

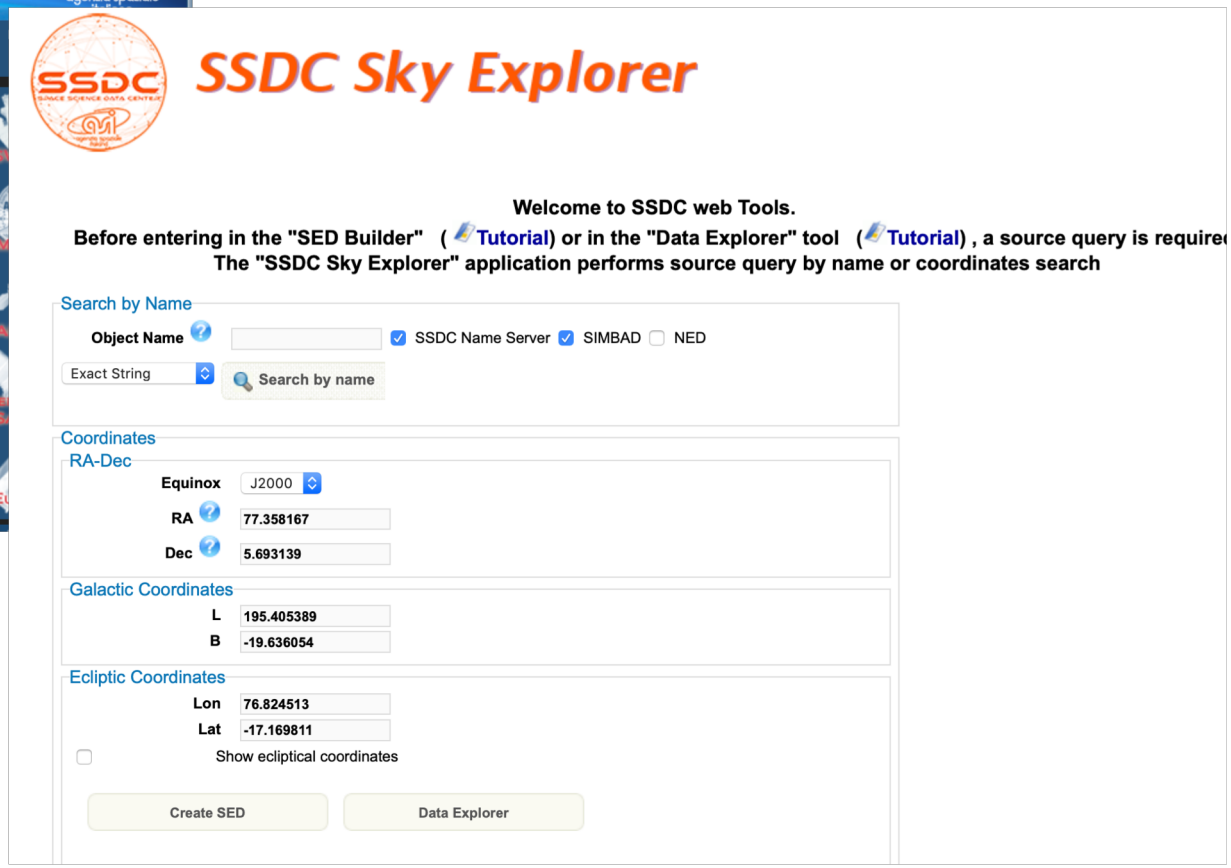
Export Current view of Table in: Latex format | FITS format | Raw text format | CSV text format | Browse table

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

This view includes 208 entries

Entry number Selection mode: Include / All		MMC	LIGHT CURVE	TEV NAME	# OBS.	OTHER NAMES	TYPE	RA (J2000) hh mm ss	Dec (J2000) dd mm ss	INTEGRAL FLUX ph/cm^2/s Stats	THR ENERGY [GeV] Stats	Distance z Stats	Observatory	ST mj
1 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0006+7259	1	CTA 1/ G 119.5+10.2	PWN/SNR	00 06 26	+72 59 01	-	-	-	VERITAS	
2 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0013-1853	1	SHBL J001355.9-185406	HBL	00 13 52.0	-18 53 29	0.83e-12	310	0.095	HESS	
3 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0025+6410	1	Tycho SNR	SNR	00 25 27.0	+64 10 50	0.187e-12	1000	-	VERITAS	
4 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0033-1921	1	KUV 00311-1938/RBS 0076/1RXS J003334.6-192130	HBL	00 33 34.2	-19 21 33.3	-	-	0.61	HESS	
5 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0035+5947	1	1ES 0033+595	HBL	00 35 16.8	+59 47 24.0	7.1e-12	150	-	MAGIC	
6 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0047-2517	2	NGC 253	Starburst	00 47 34.3	-25 17 22.6	0.56e-12	190	0.000811	HESS	
7 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0136+3905	1	RGB J0136+391/B3 0133+388/1RXS J013632.9+390556	HBL	01 36 32.5	+39 05 59.6	-	-	-	MAGIC	
8 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0152+0146	1	RGB J0152+017/RXJ0152.6+0147	HBL	01 52 33.5	+01 46 40.3	2.7e-12	300	0.08	HESS	
9 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0205+6451	1	3C 58	PWN	02 05 31	+64 51 00	0.14e-12	1000	-	MAGIC	
10 Select	SSDC Data Explorer	Cross-search SSDC catalogs	-	TeV J0221+3556	1	S3 0218+35/ B2 0218+35	Blazar	02 21 05.5	+35 56 13.7	-	100	0.944	MAGIC	

https://www.ssdc.asi.it




SED(t) builder V 3.2
A tool to build and handle Spectral Energy Distributions, time-resolved SEDs and multi-frequency light-curves
Version 3.2.6
Login
Feedback
Tutorial
DATA EXPLORER
User Data
Existing SEDs
Current SED
Search and build new SEDs
Show source names
SSDC
Data citation policy - please read
TXS0506+056 Ra=77.35817 deg Dec=5.69314 deg (NH=1.1E21 cm^-2)
Log vf(v) (erg cm^-2 s^-1)
Log frequency ν (Hz)
Creation date: 12-Mar-2019 14:00:26(UTC)
SED builder V3.2
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
Help
Radio
Infrared
Optical UV
Soft X Ray
Hard X Ray
Gamma Ray
VHE
Data from external services and catalogs
Name
Credits
Search
Options
BSDC-MAGIC
BSDC-Veritas
Catalina RTS
NED
TXS0506+056
VizieR photometry

One file for all data: all instruments, all time

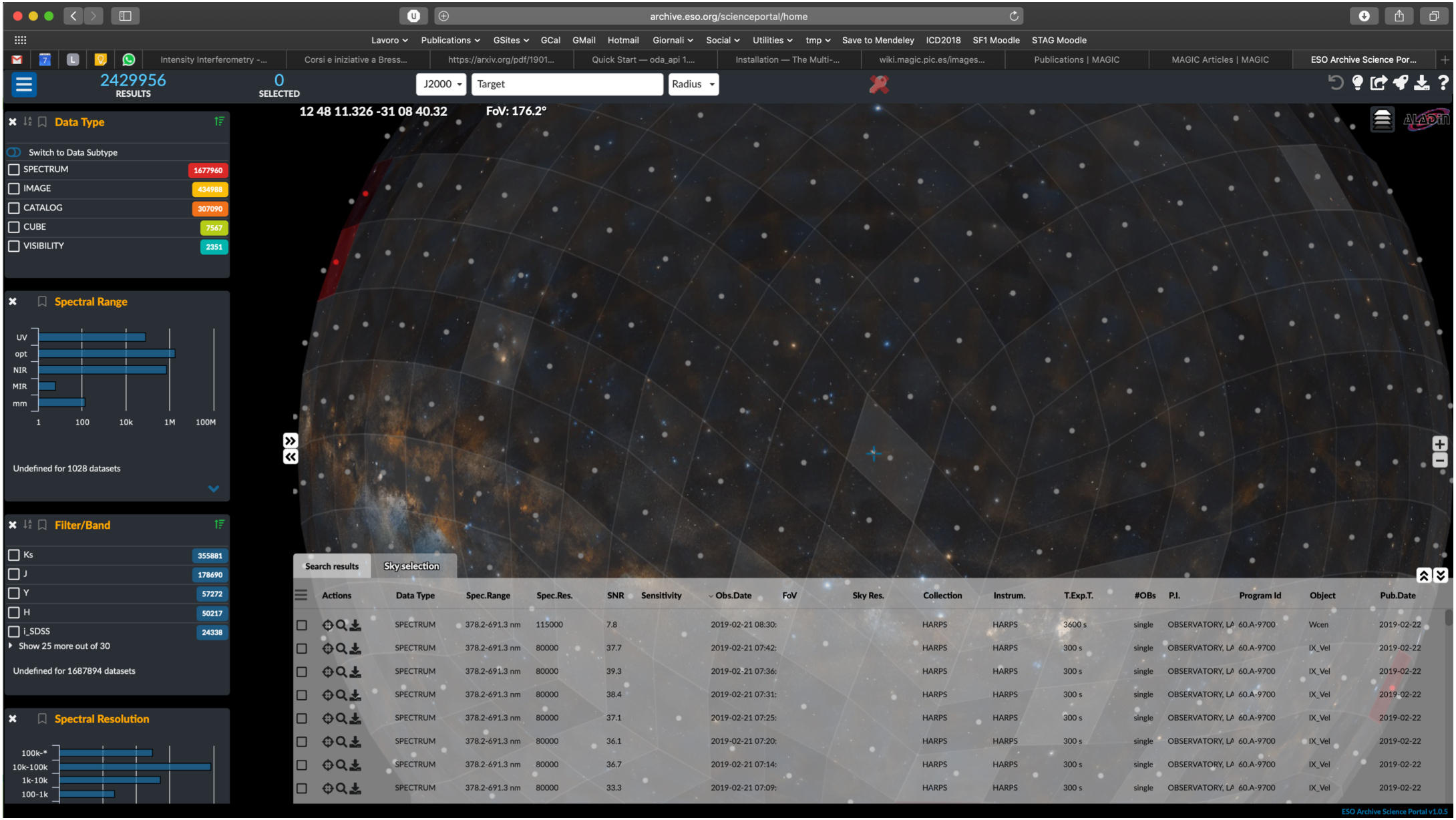
TXS0506056.txt

```
# RA = 05 09 25.96(77.358167)
# Dec = +05 41 35.30(5.693139)
# Redshift = 0.0
# NH = 1.11E21
# ARGO2LAC (id = 69)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
26.383456 0.0 -11.694649   0.000000    54405.0    56323.0 ; UPPER LIMIT
# Fermi3FGL (6Gev) (id = 68)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
24.161967     0.000000    -10.944740   0.031306    54682.65486    56139.94861
# Fermi3FGL (60Gev) (id = 67)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
25.161967     0.000000    -11.104492   0.061542    54682.65486    56139.94861
# Fermi3FGL (600 Mev) (id = 66)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
23.161967     0.000000    -10.950397   0.023960    54682.65486    56139.94861
# Fermi3FGL (2Gev) (id = 65)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
23.684845     0.000000    -10.988555   0.024712    54682.65486    56139.94861
# Fermi3FGL (200 Mev) (id = 64)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
22.684845     0.000000    -10.997988   0.059291    54682.65486    56139.94861
# Fermi2FglLC (id = 63)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
23.383815     0.000000    -11.135147   0.141023    54682.7     54713.0
23.383815     0.000000    -11.038589   0.098065    54713.0     54743.4
23.383815     0.000000    -11.142238   0.130701    54743.4     54773.8
23.383815     0.000000    -10.973356   0.078371    54773.8     54804.1
23.383815     0.000000    -11.457806   0.201889    54804.1     54834.5
23.383815     0.000000    -11.222493   0.133007    54864.9     54895.2
```

Columns: Logν/bin/ νf_ν / $\nu f_{\nu_{err}}$/tstart/tstop

TXS0506056.txt — Edited

```
# RXS2CAT (id = 49)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.383815     0.000000    -12.378102   0.144725    48104.0    48499.0
# RASS (id = 48)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.383815     0.000000    -12.297034   0.126291    47892.5    48257.5
# 1SXPS(2-10 keV) (id = 47)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
18.033826     0.000000    -12.469421   0.075513    54882.387743    55771.353287
# 1SXPS(1-2keV) (id = 46)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.533899     0.000000    -12.217434   0.046371    54882.387743    55771.353287
# 1SXPS(0.3-10 keV) (id = 45)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.622007     0.000000    -12.227671   0.029483    54882.387743    55771.353287
# 1SXPS(0.3-1keV) (id = 44)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.122216     0.000000    -12.117105   0.045372    54882.387743    55771.353287
# 1SWXRT (2-10 keV) (id = 43)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
18.033826     0.000000    -12.357834   0.141803    55538.3825    55538.394398
18.033826     0.000000    -12.553906   0.092389    55037.343299    55037.679132
18.033826     0.000000    -12.080343   0.124413    55663.381852    55663.390243
# 1SWXRT (0.1-2.4 keV) (id = 42)
# Log   frequency \gn (Hz)    Bin   Nufnu (erg cm^-2 s^-1)  Nufnu (erg cm^-2 s^-1)_error    TStart    TStop
17.383456     0.000000    -11.380040   0.051165    55538.3825    55538.394398
17.383456     0.000000    -12.226021   0.092981    55771.019676    55771.353449
17.383456     0.000000    -12.499392   0.097715    54882.387778    54882.465926
17.383456     0.000000    -12.185065   0.047470    55037.343299    55037.679132
17.383456     0.000000    -11.070039   0.040368    55663.381852    55663.390243
```


archive.eso.org/scienceportal/home
Lavoro
Publications
GSites
GCal
GMail
Hotmail
Giornali
Social
Utilities
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Save to Mendeley
ICD2018
SF1 Moodle
STAG Moodle
Intensity Interferometry -...
Corsi e iniziative a Bress...
https://arxiv.org/pdf/1901...
Quick Start — oda_api 1....
Installation — The Multi-...
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Publications | MAGIC
MAGIC Articles | MAGIC
ESO Archive Science Por...
2429956
RESULTS
0
SELECTED
J2000
Target
Radius
12 48 11.326 -31 08 40.32
FoV: 176.2°
Data Type
Switch to Data Subtype
SPECTRUM 1677960
IMAGE 434988
CATALOG 307090
CUBE 7567
VISIBILITY 2351
Spectral Range
UV
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NIR
MIR
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100
10k
1M
100M
Undefined for 1028 datasets
Filter/Band
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J 178690
Y 57272
H 50217
i_SDSS 24338
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Undefined for 1687894 datasets
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10k-100k
1k-10k
100-1k
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Sky selection
Actions
Data Type
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#OBs
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Program Id
Object
Pub.Date
SPECTRUM 378.2-691.3 nm 115000 7.8 2019-02-21 08:30: HARPS HARPS 3600 s single OBSERVATORY, LA 60.A-9700 Wcen 2019-02-22
SPECTRUM 378.2-691.3 nm 80000 37.7 2019-02-21 07:42: HARPS HARPS 300 s single OBSERVATORY, LA 60.A-9700 IX_Vel 2019-02-22
SPECTRUM 378.2-691.3 nm 80000 39.3 2019-02-21 07:36: HARPS HARPS 300 s single OBSERVATORY, LA 60.A-9700 IX_Vel 2019-02-22
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SPECTRUM 378.2-691.3 nm 80000 36.7 2019-02-21 07:14: HARPS HARPS 300 s single OBSERVATORY, LA 60.A-9700 IX_Vel 2019-02-22
SPECTRUM 378.2-691.3 nm 80000 33.3 2019-02-21 07:09: HARPS HARPS 300 s single OBSERVATORY, LA 60.A-9700 IX_Vel 2019-02-22
ESO Archive Science Portal v1.0.5

Conclusions so far

- Data dissemination from current IACT quite primitive
  - Few DL3 files available
  - Scattered DL5 files: html pages, clicks and links
  - Info on DL5 files partial
  - Do they know us?
- Facts
  - Legacy is mandatory
  - Gamma-cat trying to make a change
  - Mostly relevant for AGNs and easier for AGNs
  - Astronomers want it easy, let's do ascii files with clear info
  - Not so fun to maintain: «do when need» basis. However can be useful to us

Discussion will start here

Gamma-astro-data-formats

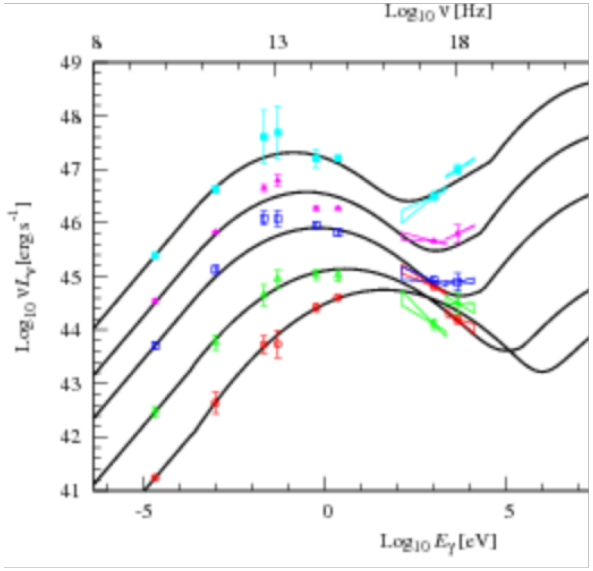
"A place to propose and share data format descriptions for gamma-ray astronomy."

What do we wish to do?

«DL5» format

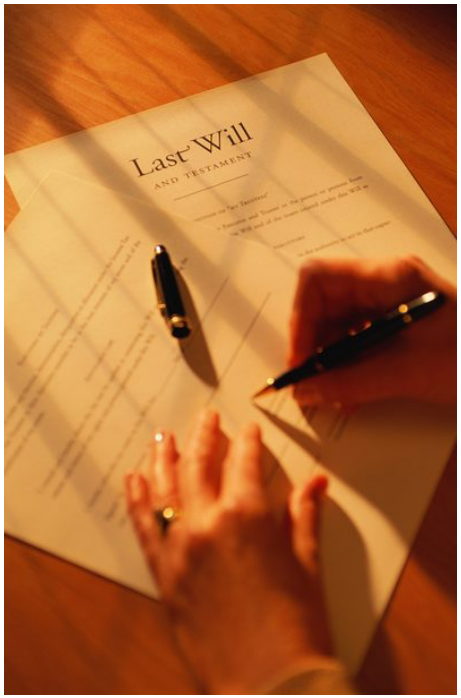
1. Reach out to wider TeV and $\neg TeV$ communities
2. Legacy of IACT data: DL5 shall survive after collaborations are dissolved
3. Allow fast comparison / population study
4. Easy access to paper data: DL5 must have practical format
5. All info from paper: DL5 must contain multi-w information included
6. Common effort, DL5 must be easily updated

1. Reach out to wide TeV and $\neg TeV$ communities



- Many astronomers use
  - Private analysis of public data
  - .fits file mostly in SSDC/EDC
  - astropy is gaining pace, and people more often use interfaces: e.g. SSDC
- We will propose to MAGIC extended-format
  - NEW: YAML/ECSV (Padova)
  - .fits (managed by PIC)
  - Very similiar to gamma-cat, but not the same
  - If needed we manage simple export script e.g to gamma-cat,…

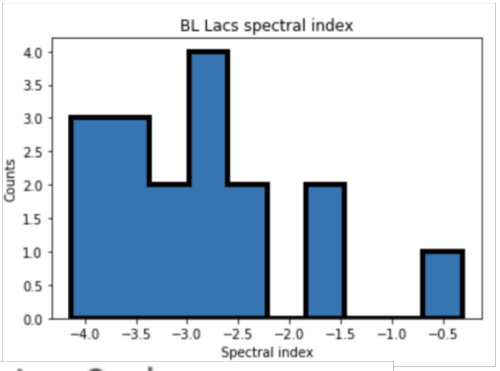
2. Legacy of IACT data

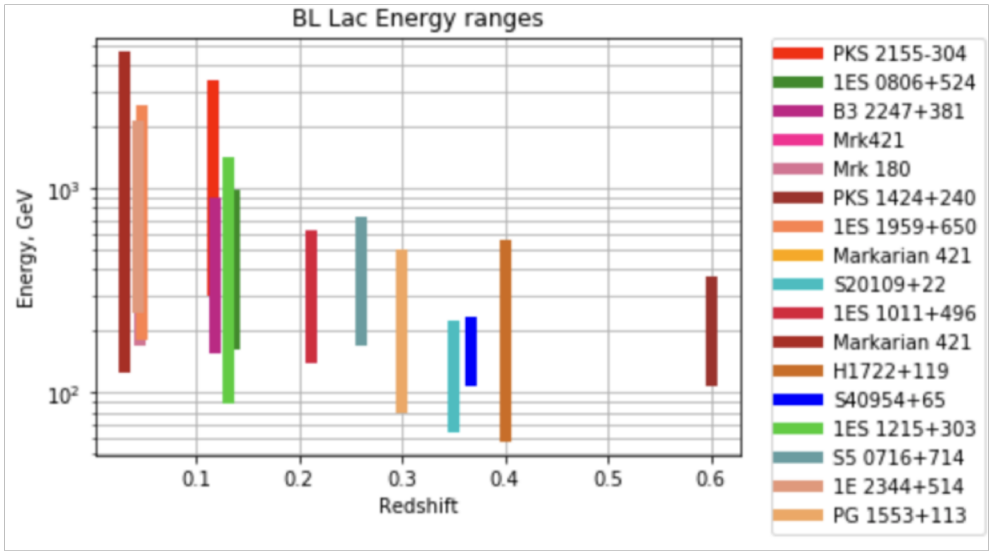


- Whatever format should be agreed among all players: HESS/MAGIC/VERITAS/FACT/CTA?,HAWC?
- Where? One, two, many portals
  - Each collaboration has a portal?
  - A portal for all collaborations?
- We propose a github solution for MAGIC
  - works only for DL5 data, not DL3
  - we want a table for export of multiple files

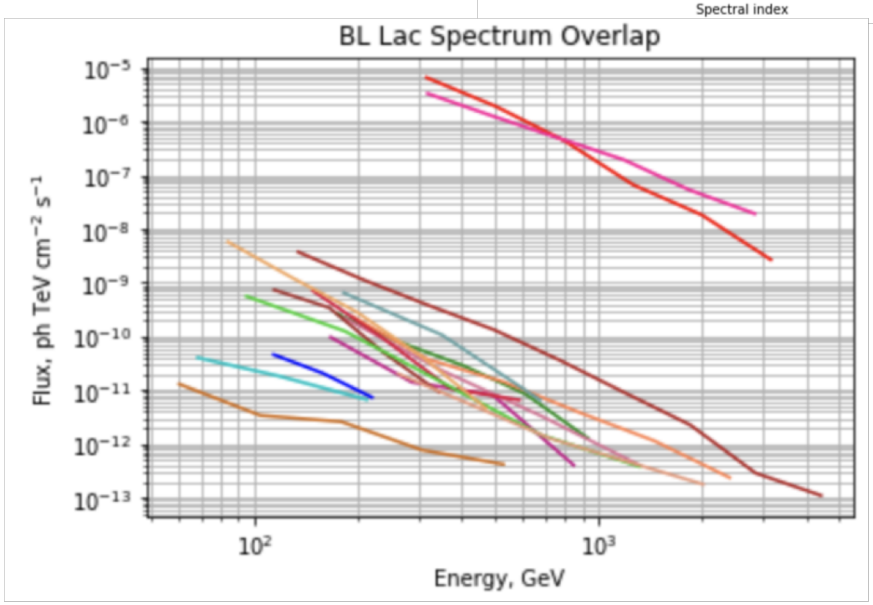
3. Allow fast comparison / population study

- Considering it is a not a catalog but a list comparisons must all be done with grain of salts,
- but they start to be appealing

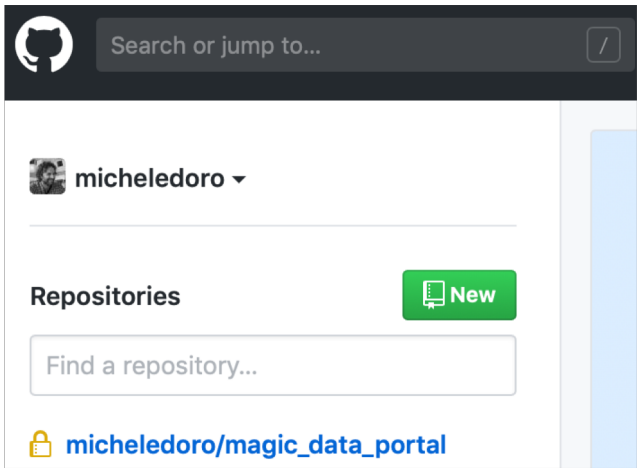




Moras, MD, Franceschini (thesis)

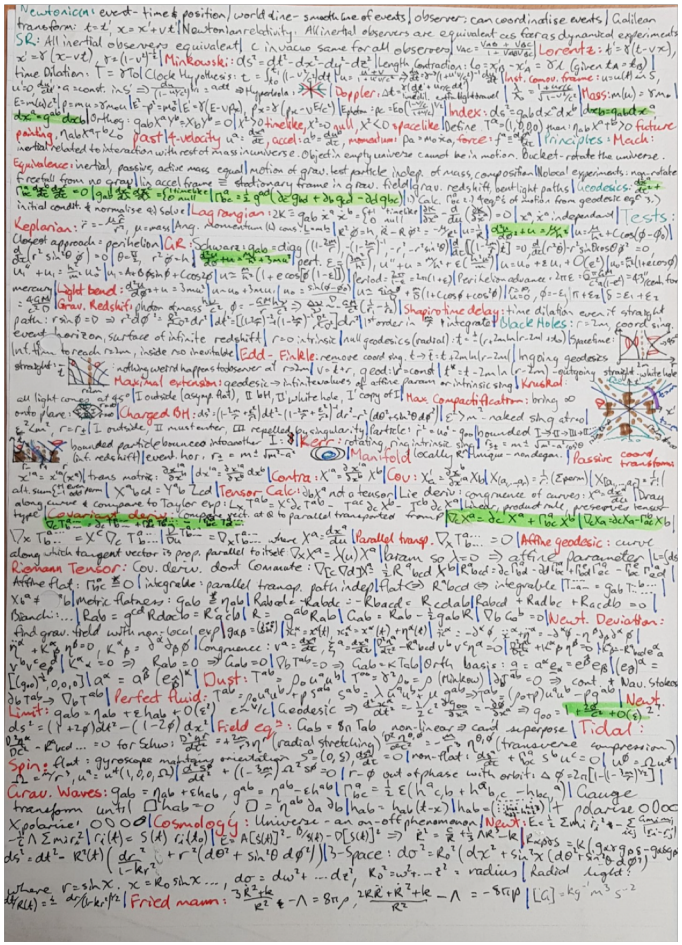


4. D5 must have practical format



- We use the YAML/ECSV format of gamma-py
  - Easily viewable/greppable from terminal
  - Easily formattable to astropy
  - Easily updatable
- It will not be a copy of gamma-cat, because it must be decoupled with possibly different feautures

5. All info for paper



- In the MAGIC github we aim at providing «as many» pieces of information as possible
- Besides those already in Gamma-cat:
  1. More info on contact persons/analysis details
  2. Multi-wavelength information
  3. (on demand) EBL corrected data
  4. (on demand) models used
  5. Tables if needed (e.g EBL models)
- When exporting to other format, a down-selection can be done

A concrete proposal

1. Start test for EGAL MAGIC sources
2. Later on extend to GAL/others

Files Header (YAML)

- As for gamma-cat, with in addition:
- File:
  - Generation_file_date
  - Generation_file_version
  - Generation_file_author_contact
  - Mail reference: magic_sapo@mpp.mpg.de
  - Link to repository
- Corresponding paper:
  - Paper references link:
  - Paper arXiv link:
  - Paper_collaborations:
  - Paper_contact_authors
  - Paper ADS bibtex
  - Paper Inspire bibitex
- Targets in file
  - Objects_tev_names
  - Astronomical name?
- Multi-wavelength content
- Comments:
  - Additional info available on demand?
  - Model?
- File list

Files lists

Details on MW data in the comments section in the header

Spectrum

- Tev_00401_spectrum_magic_1_fig1.ecsv
- Tev_00401_ spectrum_magic_2_fig1.ecsv
- Tev_00401_ spectrum_lat_1_fig1.ecsv

SED for model

- Tev_00401_sed_magic_1_fig1.ecsv
- Tev_00401_sed_magic_2_fig1.ecsv
- Tev_00401_sed_uvot_1_fig1.ecsv
- Tev_00401_sed_xrt_1_fig1.ecsv

LC

- Tev_00401_lc_magic_1_fig1.ecsv
- Tev_00401_lc_magic_2_fig1.ecsv
- Tev_00401_lc_uvot_1_fig1.ecsv
- Tev_00401_lc_xrt_1_fig1.ecsv

Additional files

SED no fits (on demand)

- Tev_00401_sednomodel_all_fig.ecsv
- TeV_00401_magic_ebl_unfolded_fig3.ecsv

Models

- Curves for e.g. SED 'interpolation'
- Spectral fit with LP/LPEC/etc
- EBL models

Skymap

- For galactic objects…to be discussed

Phaseogram

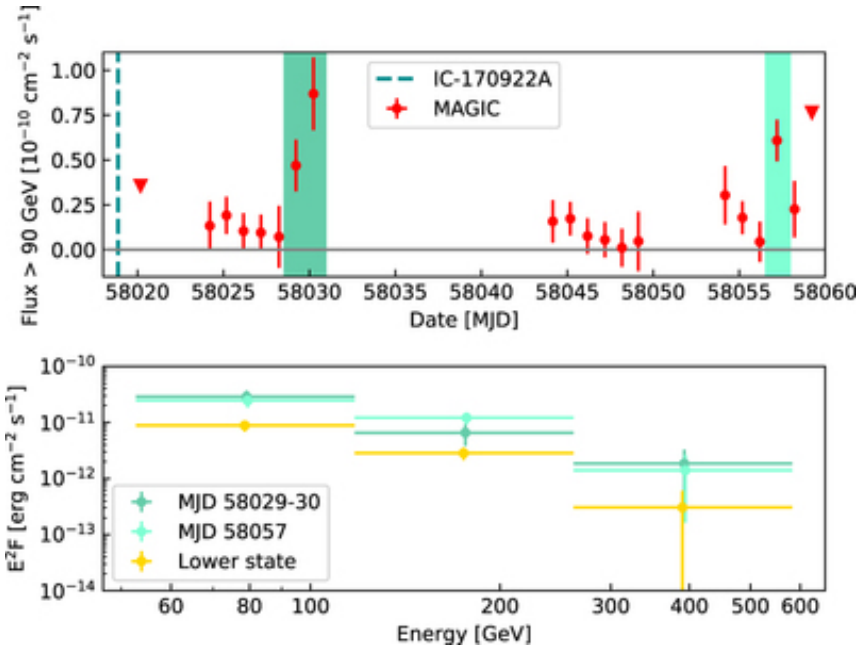
- For GAL objects, 2nd phase

Example: TXS0506+506

magic_201811.yaml

```
File_info:
    Fdate = 20190315
    Fvers = 1
    Fgen  = Michele Doro, michele.doro@unipd.it
    Fmail = magic_sapo@mpp.mpg.de
    Flink = https://github.com/micheledoro/magic_data_portal/tree/master/data/2018/2018ApJ...863L..10A
Paper_info:
    Pref: "The Astrophysical Journal Letters, Volume 863, Issue 1, article id. L10, 10 pp. (2018)»
    Pdoi: https://doi.org/10.3847/2041-8213/aad083
    Parxiv: https://arxiv.org/pdf/1807.04300.pdf
    Pcoll: magic
    Pcauthor: Elisa Bernardini, Wrijupan Bhattacharyya, Susumu Inoue, Konstancja Satalecka, Fabrizio Tavecchio
    Pads: 2018ApJ...863L..10A
    Pinspire: Ahnen:2018mvi
Targets in file
    Tpname: TXS 0506+056
    Taname: WISE J050925.96+054135.3
Multi-wavelength content
    lc-lat; sed-lat; sed-nustar; sed-xrt; sed-kva; sed-uvot
Comments:
    * Historical data and non-modelled data in SED available upon request
    * SED interpolating curve available upon request
File list
```

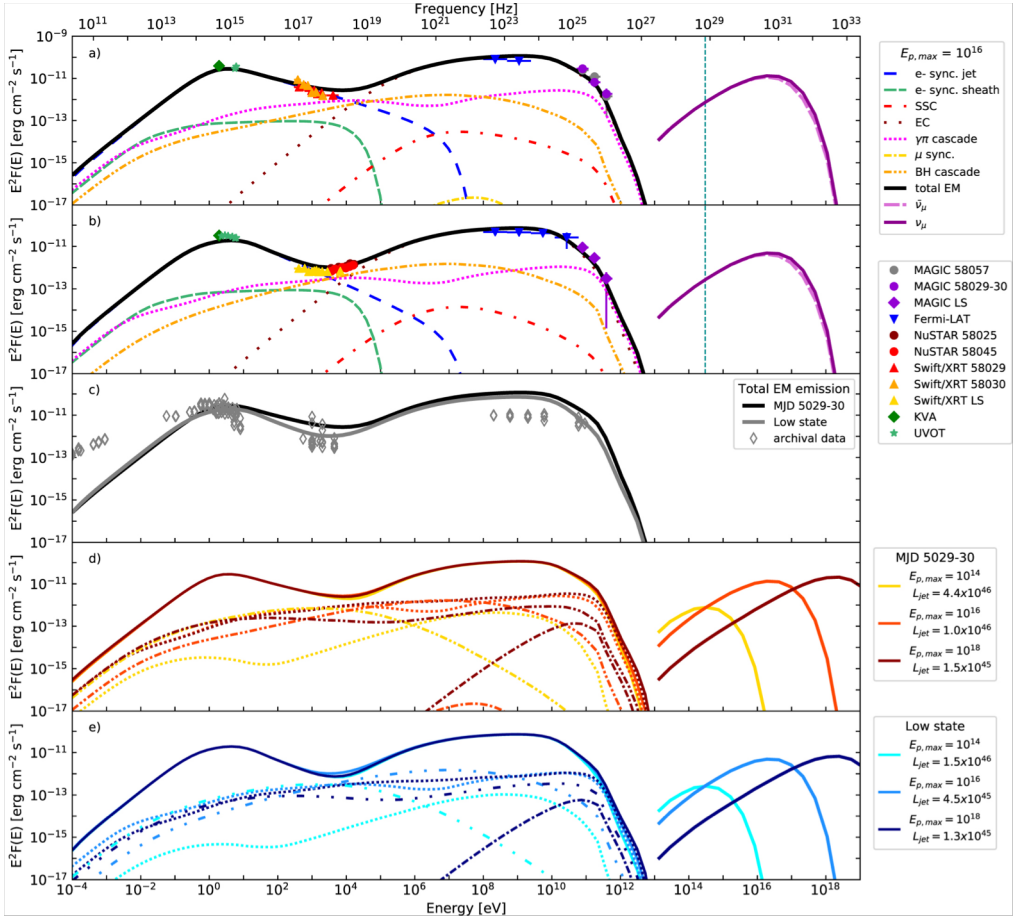
magic_18c.yaml



File list

* magic_18c_lc1_fig1.ecsv
* magic_18c_lc1_fig1_ic.ecsv
* magic_18c_sed1_fig1.ecsv
* magic_18c_sed2_fig1.ecsv
* magic_18c_sed3_fig1.ecsv

magic_18c.yaml



File list

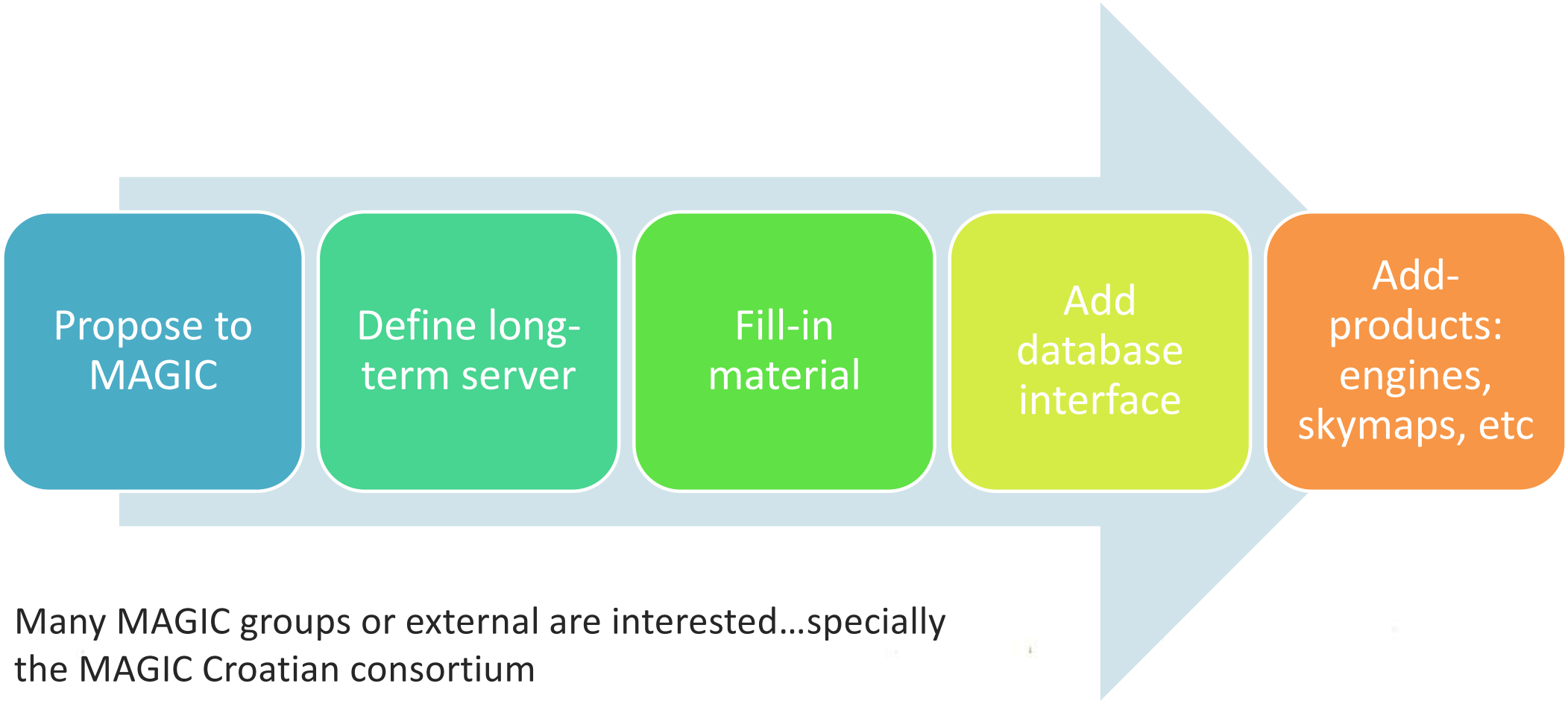
* magic_18c_sed1_fig2_lat.ecsv
* magic_18c_sed2_fig2_nustar.ecsv
* magic_18c_sed3_fig2_xrt.ecsv
* magic_18c_sed4_fig2_uvot.ecsv
* magic_18c_sed5_fig2_kva.ecsv

Add on demands

* magic_18c_sed1_fig2_eblmodels.ecsv
* magic_18c_sed1_fig2_all_nomodel.ecsv
* magic_18c_sed2_fig2_line1.ecsv
* magic_18c_sed2_fig2_line2.ecsv
* magic_18c_sed2_fig2_line3.ecsv
* magic_18c_sed2_fig2_line4.ecsv
* magic_18c_sed2_fig2_line5.ecsv

Further advances

Possible further steps



Many MAGIC groups or external are interested…specially the MAGIC Croatian consortium

Thanks!