

bhtom2

visual manual

2024 December 14



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Warsaw University Astronomical Observatory



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(staff)



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(postdoc)



Monika Sitek
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(staff)



Zofia Kaczmarek
(PhD student)

collaborators

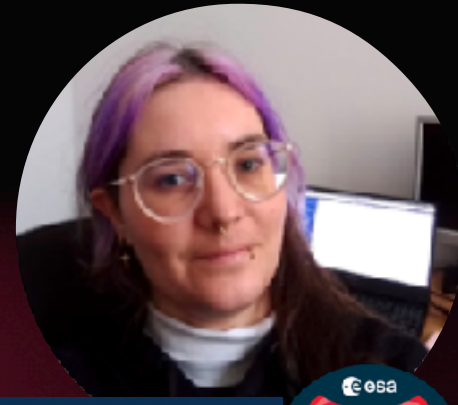
UMK Toruń



students, former students:



Kris A. Rybicki
(postdoc)



Katarzyna Kruszyńska
(postdoc)



Nada Ihanec
(PhD student)



Mauritz Wicker
(PhD student)



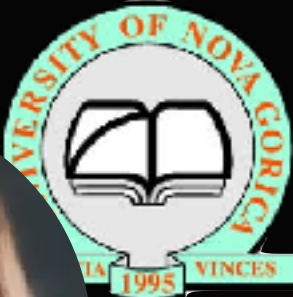
Kornel Howil
(BSc student)



Uliana Pylypenko
(MSc student)

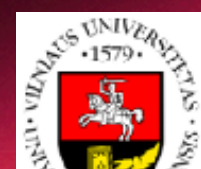


Marius Maskoliūnas
and his group



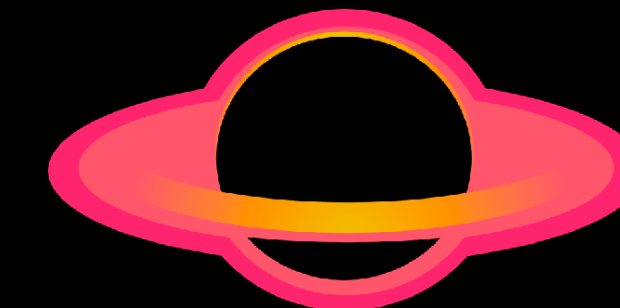
Andreja Gomboc
and her group

Former contributors: Maja Jabłońska, Piotr Trzcionkowski, Kacper Raciborski, Monika Sitek



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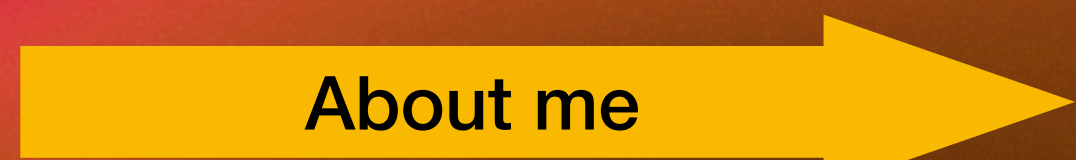
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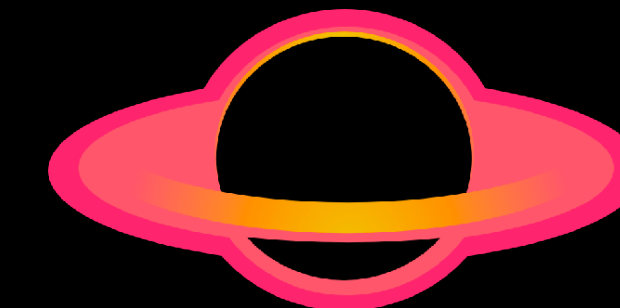
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Astronomy & Astrophysics manuscript no. pap16aye
October 30, 2019

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Full orbital solution for the binary system in the northern Galactic disc microlensing event Gaia16aye*

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(Affiliations can be found after the references)

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Professor of Astronomy, Inventor and coordinator of BHTOM

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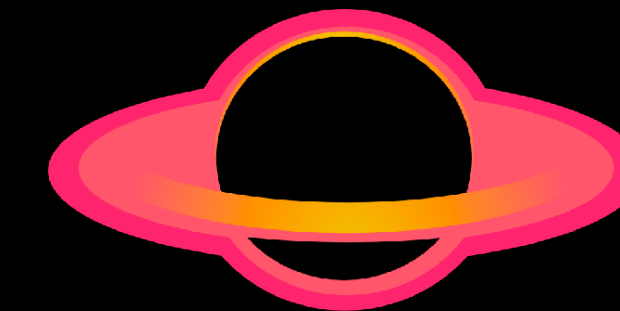
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Astronomy & Astrophysics manuscript no. pap16aye
October 30, 2019

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Full orbital solution for the binary system in the northern Galactic disc microlensing event Gaia16aye*

Łukasz Wyrzykowski^{1, **}, P. Mróz¹, K. A. Rybicki¹, M. Gromadzki¹, Z. Kołaczekowski^{45, 79, ***}, M. Zieliński¹, P. Zieliński¹, N. Britavskiy^{4, 5}, A. Gomboc³⁵, K. Sokolovsky^{19, 3, 66}, S.T. Hodgkin⁶, L. Abe⁸⁹, G.F. Aldi^{20, 80}, A. AlMannaï^{62, 100}, G. Altavilla^{72, 7}, A. Al Qasim^{62, 100}, G.C. Anupama⁸, S. Awiphan⁹, E. Bachelet⁶³, V. Bakış¹⁰, S. Baker¹⁰⁰, S. Bartlett⁵⁰, P. Bendjoya¹¹, K. Benson¹⁰⁰, I.F. Bikmaev^{76, 87}, G. Birenbaum¹², N. Blagorodnova²⁴, S. Blanco-Cuaresma^{15, 74}, S. Boeva¹⁶, A.Z. Bonanos¹⁹, V. Bozza^{20, 80}, D.M. Bramich⁶², I. Bruni²⁵, R.A. Burenin^{84, 85}, U. Burgaz²¹, T. Butterley²², H. E. Caines³⁴, D. B. Caton⁹³, S. Calchi Novati⁸³, J.M. Carrasco²³, A. Cassan²⁹, V. Čepas⁵⁶, M. Cropper¹⁰⁰, M. Chruślińska^{1, 24}, G. Clementini²⁵, A. Clerici³⁵, D. Conti⁹¹, M. Conti⁴⁸, S. Cross⁶³, F. Cusano²⁵, G. Damjanovic²⁶, A. Dapergolas¹⁹, G. D'Agostino⁸¹, J. H. J. de Bruijne²⁷, M. Dennefeld²⁹, V. S. Dhillon^{30, 4}, M. Dominik³¹, J. Dziedzic¹, O. Erece³², M. V. Eiselevich⁸⁶, H. Esenoglu³³, L. Eyser⁷⁴, R. Figuera Jaimes^{31, 53}, S. J. Fossey³⁴, A. I. Galeev^{76, 87}, S. A. Grebenev⁸⁴, A. C. Gupta⁹⁹, A. G. Gutaev⁷⁶, N. Hallakoun¹², A. Hamanowicz^{1, 36}, C. Han², B. Handzlik³⁷, J. B. Haislip⁹⁴, L. Hanlon¹⁰², L. K. Hardy³⁰, D. L. Harrison^{6, 88}, H.J. van Heerden¹⁰³, V. L. Hoette⁹⁵, K. Horne³¹, R. Hudec^{39, 76, 40}, M. Hundertmark⁴¹, N. Ihanec³⁵, E. N. Irtuganov^{76, 87}, R. Itoh⁴³, P. Iwanek¹, M.D.Jovanovic²⁶, R. Janulis⁵⁶, M. Jelínek³⁹, E. Jensen⁹², Z. Kaczmarek¹, D. Katz¹⁰¹, I.M. Khamitov^{44, 76}, Y.Kilic³², J. Klencki^{1, 24}, U. Kolb⁴⁷, G. Kopacki⁴⁵, V. V. Kouprianov⁹⁴, K. Kruszyńska¹, S. Kurowski³⁷, G. Latev¹⁶, C-H. Lee^{17, 18}, S. Leonini⁴⁸, G. Leto⁴⁹, F. Lewis^{50, 59}, Z. Li⁶³, A. Liakos¹⁹, S. P. Littlefair³⁰, J. Lu⁵¹, C.J. Manser⁵², S. Mao⁵³, D. Maoz¹², A.Martin-Carrillo¹⁰², J. P. Marais¹⁰³, M. Maskoliūnas⁵⁶, J. R. Maund³⁰, P. J. Meintjes¹⁰³, S. S. Melnikov^{76, 87}, K. Ment⁴¹, P. Mikołajczyk⁴⁵, M. Morrell⁴⁷, N. Mowlavi⁷⁴, D. Moździerski⁴⁵, D. Murphy¹⁰², S. Nazarov⁹⁰, H. Netzel^{1, 79}, R. Nesci⁶⁷, C.-C. Ngeow⁵⁴, A. J. Norton⁴⁷, E. O. Ofek⁵⁵, E. Pakštienė⁵⁶, L. Palaversa^{6, 74}, A. Pandey⁹⁹, E. Paraskeva^{19, 78}, M. Pawlak^{1, 65}, M. T. Penny⁵⁷, B. E. Penprase⁵⁸, A. Piascik⁵⁹, J. L. Prieto^{96, 97}, J. K. T. Qvam⁹⁸, C. Ranc⁷⁰, A. Rebassa-Mansergas^{60, 71}, D. E. Reichart⁹⁴, P. Reig^{61, 75}, L. Rhodes³⁰, J.-P. Rivet⁸⁹, G. Rixon⁶, D. Roberts⁴⁷, P. Rosi⁴⁸, D.M. Russell⁶², R. Zanmar Sanchez⁴⁹, G. Scarpetta^{20, 82}, G. Seabroke¹⁰⁰, B. J. Shappee⁶⁹, R. Schmidt⁴¹, Y. Shvartzvald^{13, 14}, M. Sitek¹, J. Skowron¹, M. Śniegowska^{1, 77, 79}, C. Snodgrass⁴⁶, P. S. Soares³⁴, B. van Soelen¹⁰³, Z. T. Spetsier^{19, 78}, A. Stankevičiūtė¹, I. A. Steele⁵⁹, R. A. Street⁶³, J. Strobl³⁹, E. Strubbe⁹⁵, H. Szegedi¹⁰³, L. M. Tinjaca Ramirez⁴⁸, L. Tomasella⁶⁴, Y. Tsapras⁴¹, D. Vernet¹¹, S. Villanueva Jr.⁵⁷, O. Vince²⁶, J. Wambsganss^{41, 42}, I. P. van der Westhuizen¹⁰³, K. Wiersema^{52, 68}, D. Wium¹⁰³, R. W. Wilson²², A. Yoldas⁶, R.Ya. Zhuchkov^{76, 87}, D. G. Zhukov⁷⁶, J. Zdanavičius⁵⁶, S. Zola^{37, 38}, and A. Zubareva^{73, 3}

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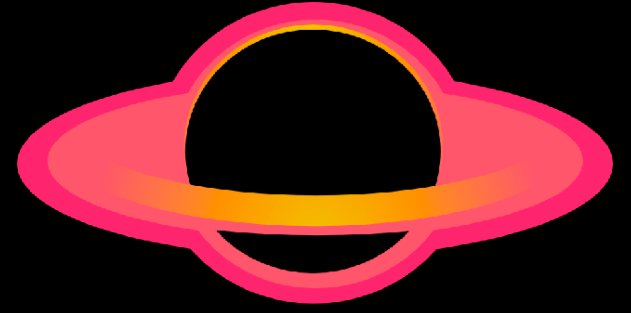
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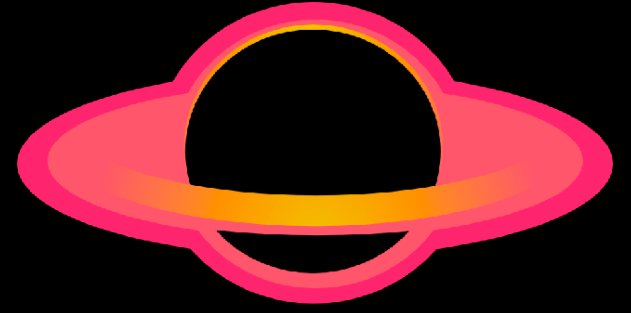
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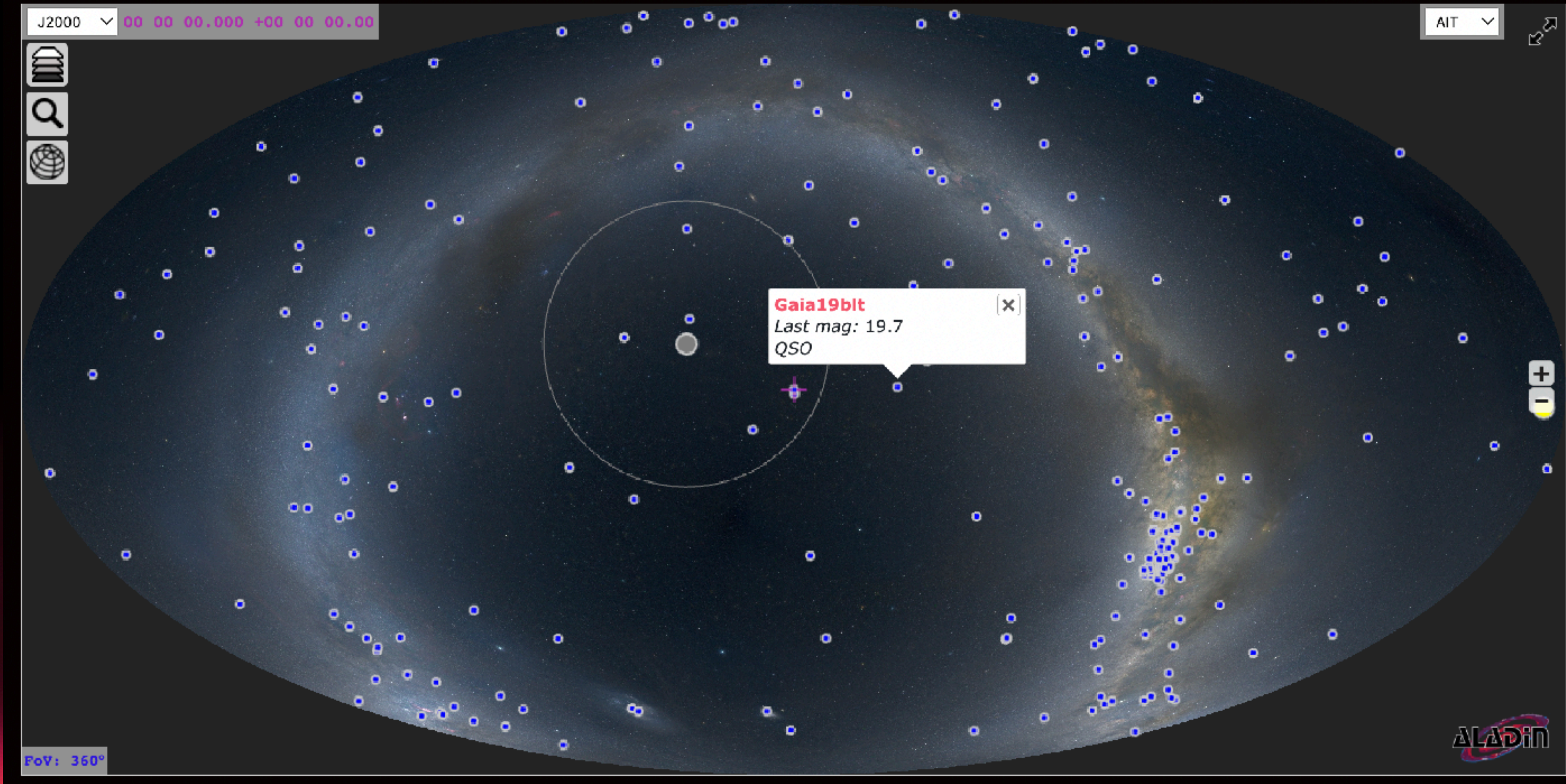
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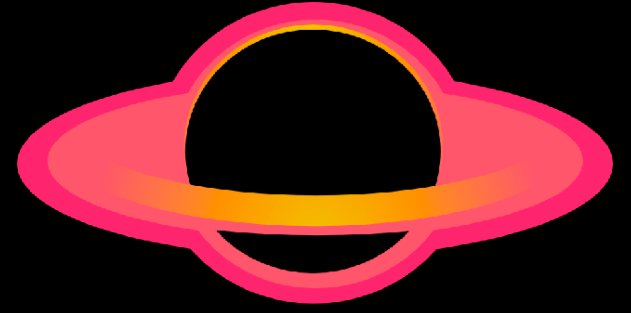


target lists

- Aladin map
- default: Mellinger
- equatorial-galactic
- interactive
- Moon
- Sun
- other wavelengths
- grid

Warning: Default filter applied. Showing targets with Importance>0 only

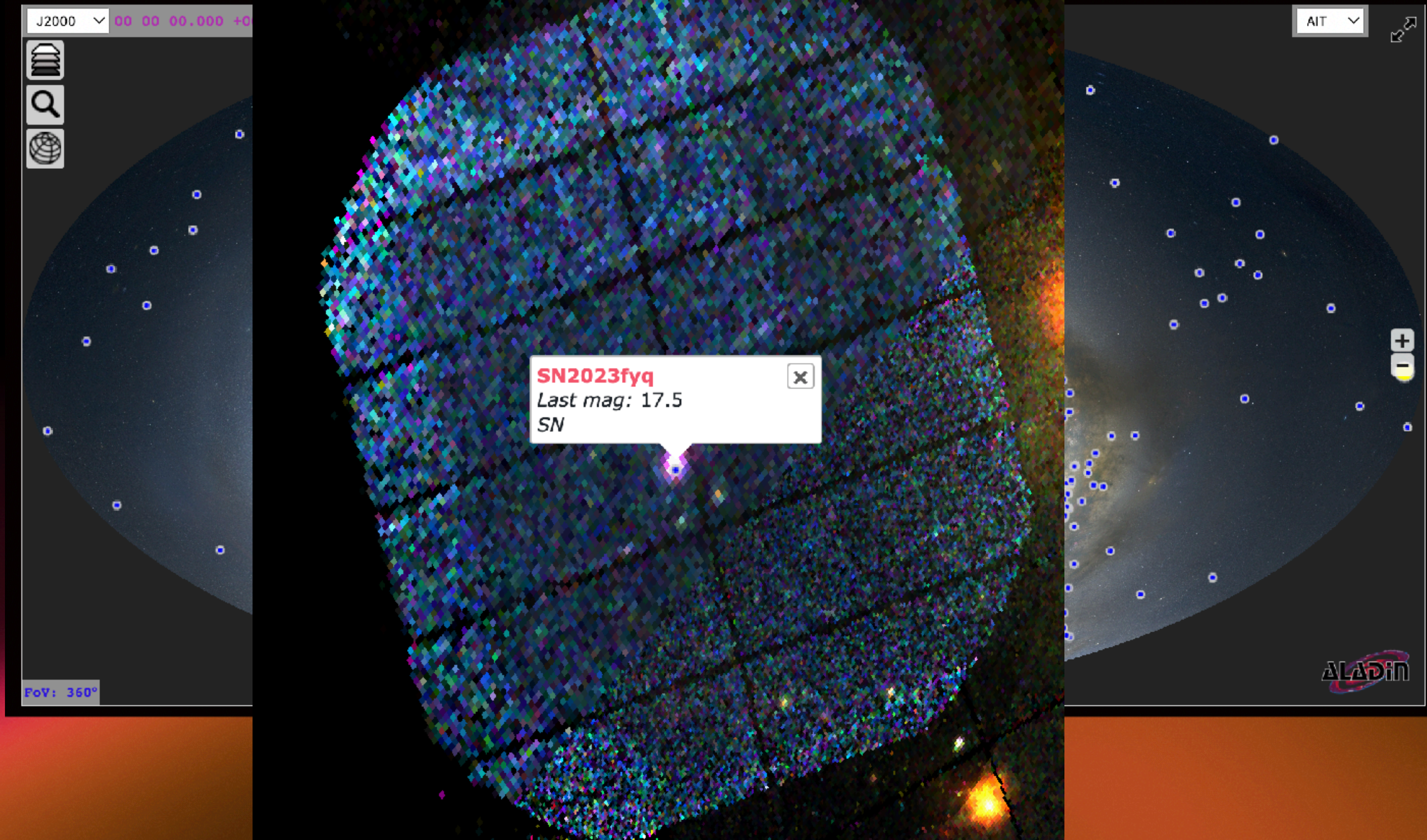


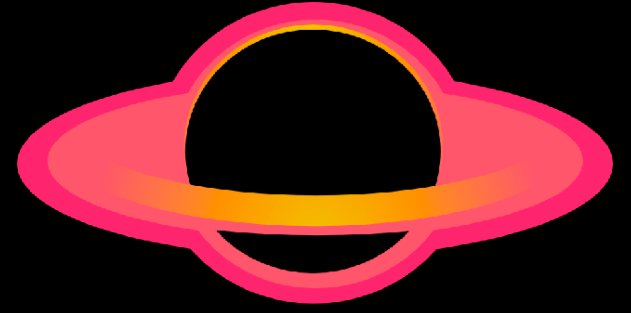


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target lists

Add/Remove from grouping

Add

Move

Remove

Show entries

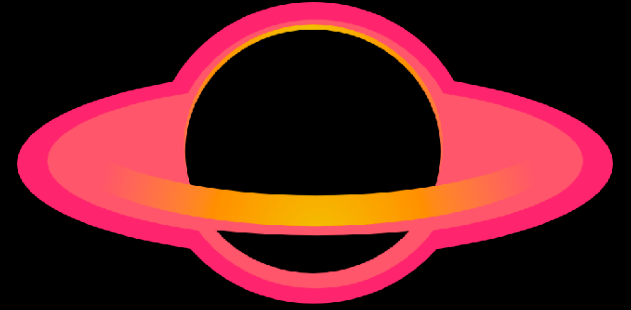
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<input type="checkbox"/>	Gaia22bpl	10:38:42.425	-61:15:49.680	903	12.7	Gaia/r	9.99	2023-10-01 06:10:13	336.7	62	Microlensing Event
<input type="checkbox"/>	Gaia23cpd	19:10:08.822	-04:43:14.736	1810	15.1	Gaia/r	9.99	2023-10-01 18:10:29	91.6	100	Unknown
<input type="checkbox"/>	Gaia23bay	19:49:42.996	+10:43:41.448	1953	13.8	Gaia/r	9.99	2023-10-01 19:10:47	46.8	110	Unknown
<input type="checkbox"/>	Gaia22bra	19:50:00.876	+26:29:07.908	2150	15.7	Gaia/r	9.99	2023-10-01 17:10:22	23.6	109	Unknown
<input type="checkbox"/>	Gaia23cnu	18:56:25.440	-18:04:50.880	1364	15.4	Gaia/r	9.99	2023-10-01 18:10:28	121.6	95	Unknown
<input type="checkbox"/>	Gaia21fkl	07:46:28.378	-21:52:32.016	1380	15.8	Gaia/r	9.99	2023-10-01 08:10:18	32.6	71	Unknown
<input type="checkbox"/>	Gaia22dkv	10:07:04.555	-66:10:51.204	1304	13.2	Gaia/r	9.99	2023-10-01 09:10:52	335.3	68	Unknown
<input type="checkbox"/>	Gaia23cnw	18:29:59.232	-14:02:27.564	265	17.7	Gaia/r	9.99	2023-10-01 18:10:28	126.6	89	Unknown
<input type="checkbox"/>	Gaia23cqh	19:08:36.578	+11:08:30.552	1406	17.0	Gaia/r	9.99	2023-10-01 18:10:29	66.5	100	Unknown

Showing 1 to 9 of 9 entries

Previous

1

Next



target lists

target groupings

Add/Remove from grouping

Add Move Remove

Show 10 entries

sortable columns

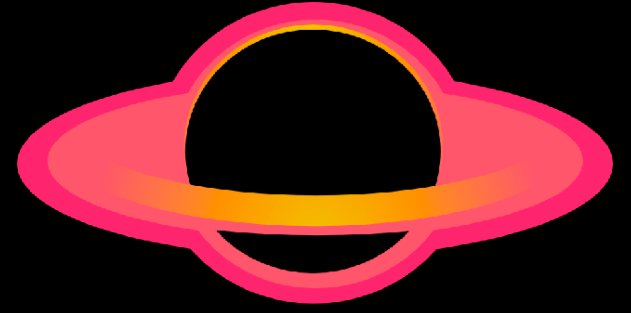
Names	RA	Dec	Nobs	Last Gmag	Last Filter	Importance	Created	Priority	Sun	Class
Gaia22bpl	10:38:42.425	-61:15:49.680	903	12.7	Gaia/r	9.99				Microensing Event
Gaia23cpd	19:10:08.822	-04:43:14.736	1810	15.1	Gaia/r	9.99	2023-10-01 18:10:29	91.6	100	Unknown
Gaia23bay	19:49:42.996	+10:43:41.448	1953	13.8	Gaia/r	9.99	2023-10-01 19:10:47	46.8	110	Unknown
Gaia22bra	19:50:00.876	+26:29:07.908	2150	15.7	Gaia/r	9.99	2023-10-01 17:10:22	23.6	109	Unknown
Gaia23cnu	18:56:25.440	-18:04:50.880	1364	15.4	Gaia/r	9.99	2023-10-01 18:10:28	121.6	95	Unknown
Gaia21fkl	07:46:28.378	-21:52:32.016	1380	15.8	Gaia/r	9.99	2023-10-01 08:10:18	32.6	71	Unknown
Gaia22dkv	10:07:04.555	-66:10:51.204	1304	13.2	Gaia/r	9.99	2023-10-01 09:10:52	335.3	68	Unknown
Gaia23cqn	19:08:30.378	+11:08:30.352	1306	17.7	Gaia/r	9.99	2023-10-01 18:10:28	126.6	89	Unknown
Gaia23cqn	19:08:30.378	+11:08:30.352	1306	17.0	Gaia/r	9.99	2023-10-01 18:10:29	66.5	100	Unknown

class as enum

last magnitude calibrated roughly to Gaia even if no Gaia G available (uses all but WISE bands)

Showing 1 to 9 of 9 entries

Previous 1 Next



target lists - filtering example

RA (0,360)

min	RA (0,360)
max	RA (0,360)

Dec (-90,90)

min	0
max	Dec (-90,90)

← North only

Importance (0,10)

min	4
max	Importance (0,10)

← Importance > 4

Sun separation (0,360)

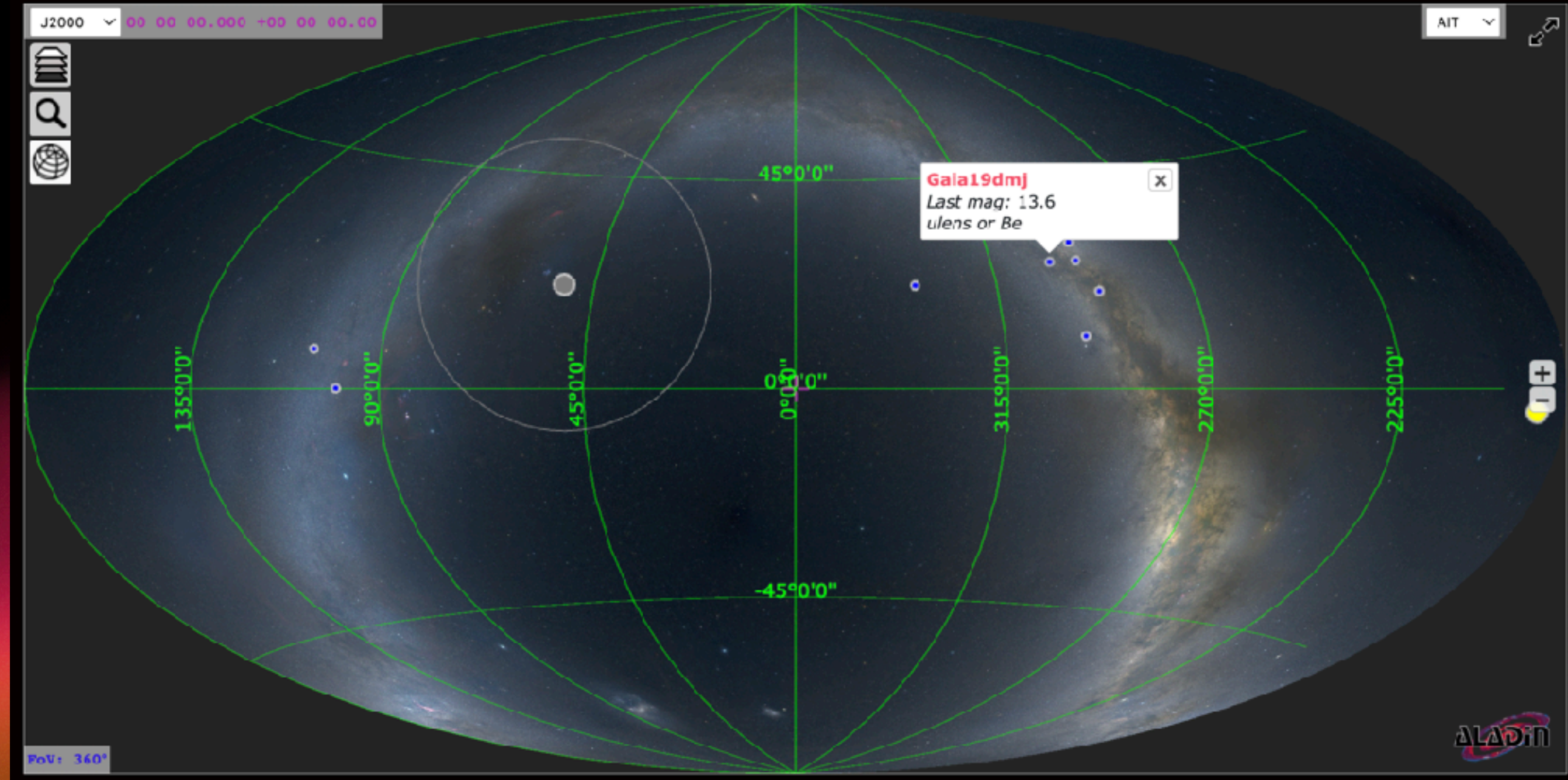
min	60
max	Sun separation (0,360)

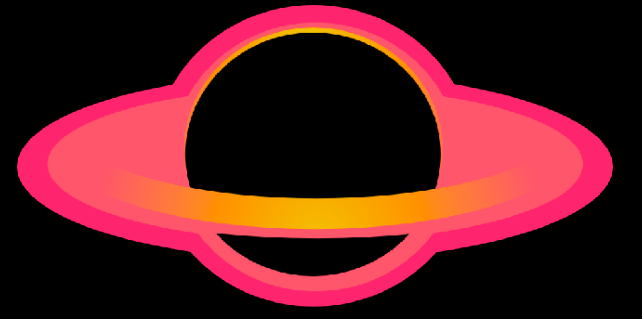
← visible now

Last G magnitude

min	Last G magnitude
max	18

← not fainter than 18 mag





target visual list

define your filter first

Name

Key

Value

Cone Search

RA, Dec, Search Radius (degrees)

Target Grouping

Cone Search (Target)

Target Name, Search Radius (degrees)

RA

min	RA
max	RA

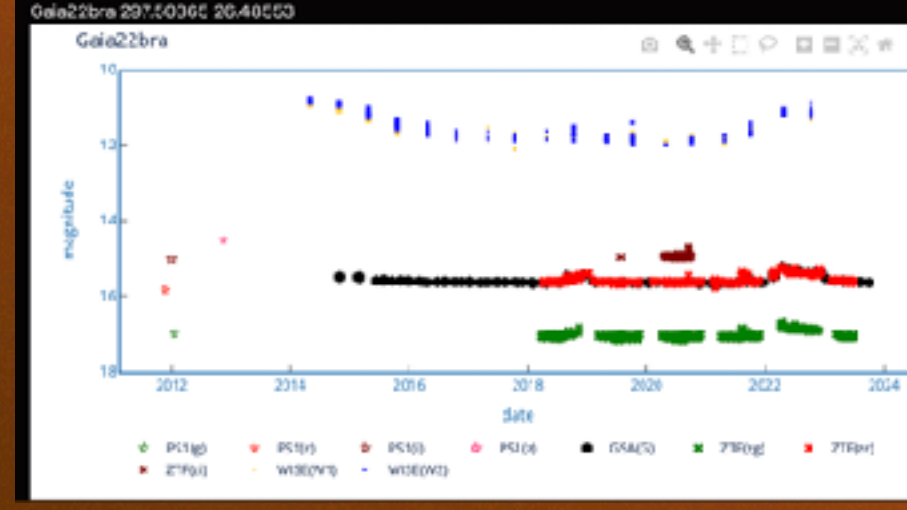
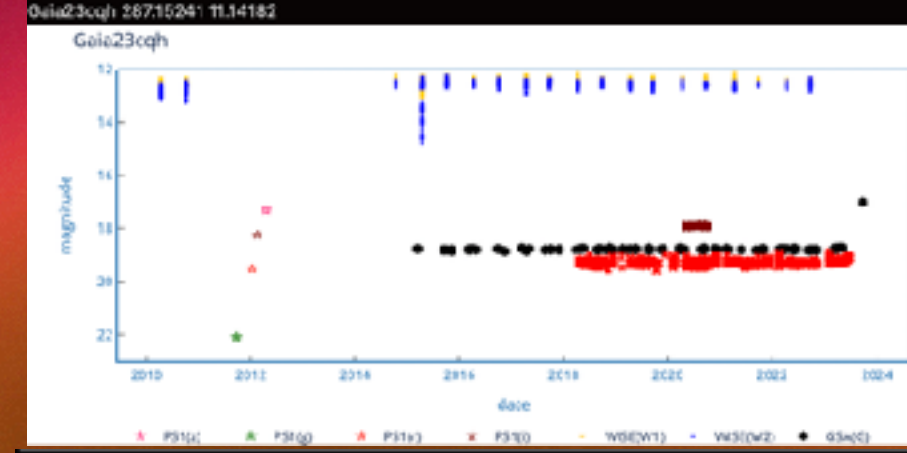
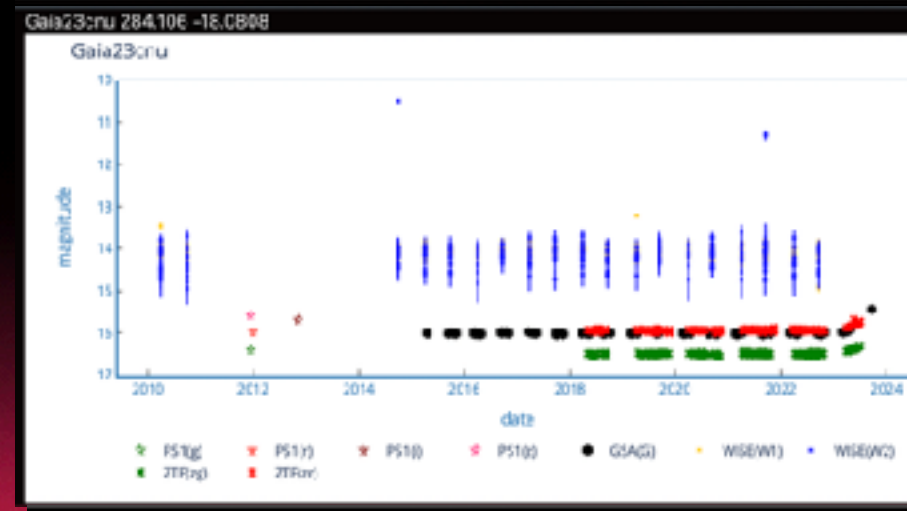
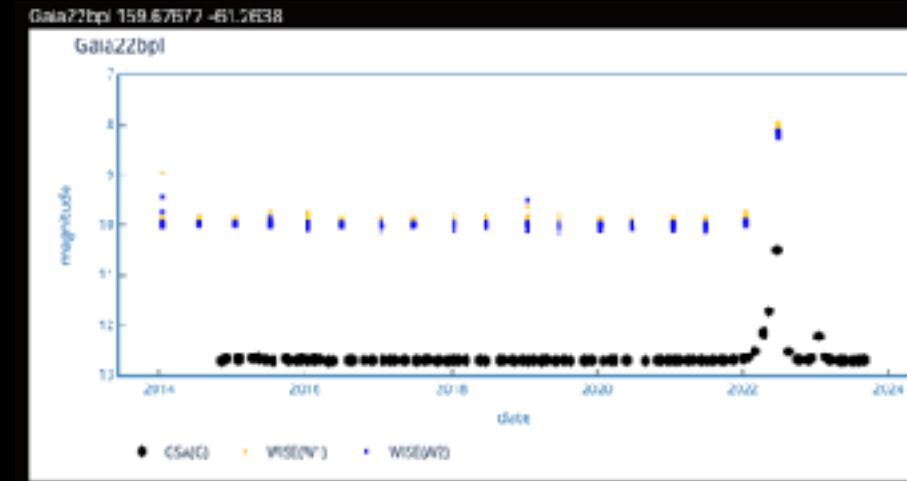
Dec

min	Dec
max	Dec

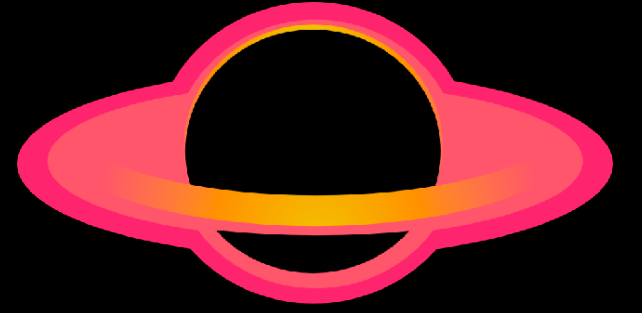
Filter Reset

BHTOM About Us Targets Target Grouping

- List
- Visual list
- Create
- Import
- Catalog Search

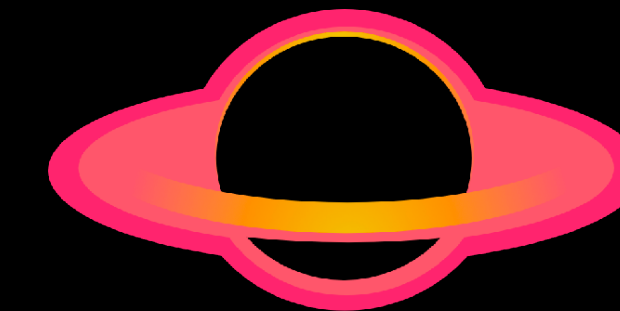


interactive plots
click links to detail



target create

- Create manually
- Import
- Catalog search



target create

- Create manually
- Import
- Catalog search

BHTOM About Us Targets Target Grouping Data Observatory Lukasz Wyrzykowski (wyrzykow) Logout

Create a Target

Sidereal Non-sidereal

Name

The name of this target e.g. Barnard's star.

Right Ascension

Right Ascension, in decimal degrees or sexagesimal hours. See <https://docs.astropy.org/en/stable/api/astropy.coordinates.Angle.html> for supported sexagesimal inputs.

Declination

Declination, in decimal or sexagesimal degrees. See <https://docs.astropy.org/en/stable/api/astropy.coordinates.Angle.html> for supported sexagesimal inputs.

Epoch

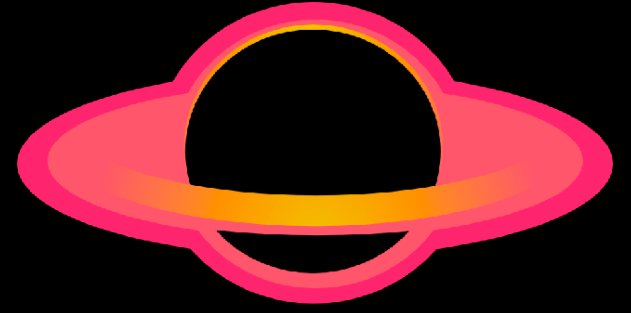
Julian Years. Max 2100.

Classification

Description

classification types

- ✓ Unknown
- Be-star outburst
- Active Galactic Nucleus(AGN)
- BL Lac
- Cataclysmic Variable(CV)
- Cepheid Variable(CEPH)
- Eclipsing Binary(EB)
- Galaxy
- Long Period Variable(LPV)
- Luminous Blue Variable(LBV)
- M-dwarf flare
- Microlensing Event
- Nova
- Peculiar Supernova
- Quasar(QSO)
- R CrB Variable
- RR Lyrae Variable
- Solar System Object(SSO)
- Star
- Supernova(SN)
- Supernova imposter
- Symbiotic star
- Tidal Disruption Event(TDE)
- Variable star-other
- X-Ray Binary(XRB)
- Young Stellar Object(YSO)



target create

- Create manually
- Import
- Catalog search

Discovery date

Discovery date

Date of the discovery, YYYY-MM-DDTHH:MM:SS, or leave blank

Importance

0

relative importance to other targets (0-10)

Target importance as an integer 0-10 (10 is the highest)

Cadence

0

optimal observing cadence in days

Requested cadence (0-100 days)

Groups

Public

Aliases

Source Name

Alias

names of the target in various surveys (photometry data will be collected if available)

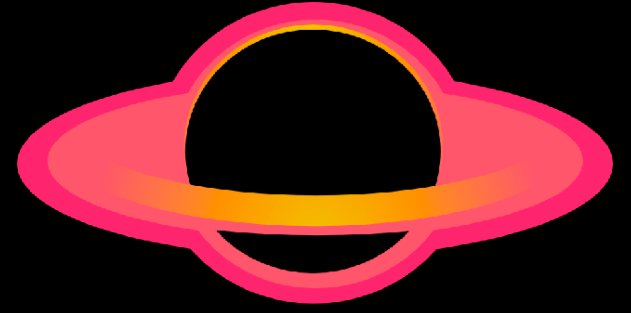
will be checked automatically for Ra,Dec so leave it blank first and see what we find

you can also provide an url to the data

Add new alias

Submit

- ✓ -----
- GAIA_ALERTS name
- CPCS name
- ASASSN name
- OGLE_EWS name
- ZTF name
- ATLAS name
- AAVSO name
- TNS name
- ANTARES name
- ZTF_DR8 name
- SDSS name
- NEOWISE name
- ALLWISE name
- CRTS name
- LINEAR name
- FIRST name
- PS1 name
- DECAPS name
- GAIA_DR3 name
- GAIA_DR2 name
- KMT_NET name



target create — import

- powerful tool!
- use with caution!
- important: correct headers in CSV files (case sensitive!)
- special case for Gaia Alerts

all targets from this import will be added to this group

Import Targets

If you want to add all imported targets to a new group, please fill in the "Group name" field (optional).

Upload a .csv to import targets in bulk.

Allowed field names:

name, ra, dec, epoch, parallax, pm_ra, pm_dec, distance, distance_err, classification, description, discovery_date, importance, cadence, phot_class, description, epoch_of_elements, mean_anomaly, arg_of_perihelion, eccentricity, lng_asc_node, inclination, mean_daily_motion, semimajor_axis, epoch_of_perihelion, ephemeris_period, ephemeris_period_err, ephemeris_epoch, ephemeris_epoch_err, perihdist

List of available classifications:

Be-star outburst, AGN, BL Lac, CV, CEPH, EB, Galaxy, LPV, LBV, M-dwarf flare, Microlensing Event, Nova, Peculiar Supernova, QSO, RCrB, RR Lyrae Variable, SSO, Star, SN, Supernova imposter, Symbiotic star, TDE, Variable star-other, XRB, YSO

CSV file format examples:

```
name, type, ra, dec, redshift, distance, classification, description
mytarget, SIDERAL, 123.12, -12.34, 2.35, 1.0, Star, nice supernova
```

```
name, ra, dec, importance, cadence
mytarget, 123.12, -12.34, 5, 1
```

```
name, GAIA_ALERTS_name
mytarget, Gaia20dup
```

```
name, GAIA_ALERTS_name, cadence
mytarget, Gaia20dup, 3
```

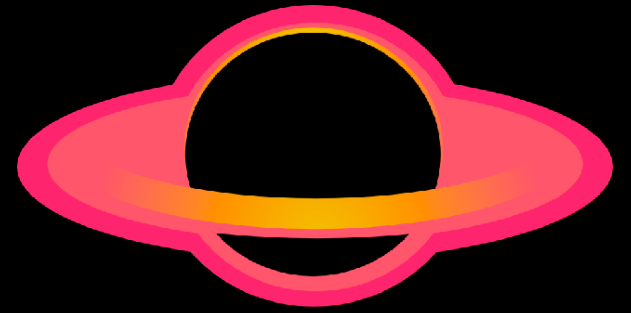
In these special cases, the Gaia Alerts harvester will gather all information from Gaia Alerts, but any extra columns in the CSV file with corresponding fields will replace those read from Gaia Alerts.

You can upload max 500 targets.

Group Name (optional):

Choose file No file chosen

Upload



target create — catalog search

Search Catalogs for a Target

Term

Gaia19axp

Service

- Gaia Alerts
- ANTARES
- OGLE EWS
- TNS
- NED
- Simbad

Search Catalogs for a Target

Term

SN2023ixf

Service

TNS

search

Create a Target

Sidereal Non-sidereal

Name

Gaia19axp

The name of this target e.g. Barnard's star.

Right Ascension

216.94333

Right Ascension, in decimal degrees or sexagesimal hours. See <https://docs.astropy.org/en/stable/api/astropy.coordinates.Angle.html> for supported sexagesimal inputs.

pre-filled fields

Declination

29.51063

Declination, in decimal or sexagesimal degrees. See <https://docs.astropy.org/en/stable/api/astropy.coordinates.Angle.html> for supported sexagesimal inputs.

pre-filled fields

Epoch

2000

Julian Years. Max 2100.

Classification

Quasar(QSO)

pre-filled fields

Description

QSO with little prior variability in Gaia brightens by 1 mag. SDSS spectrum.

pre-filled fields

Discovery date

2019-03-10 14:27:41

Date of the discovery, YYYY-MM-DDTHH:MM:SS, or leave blank

pre-filled fields

Importance

9,99

Target importance as an integer 0-10 (10 is the highest)

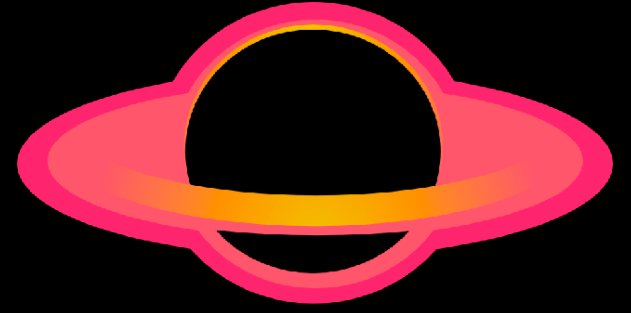
importance set to 9.99, but should be edited

Cadence

1,0

Requested cadence (0-100 days)

cadence set to 1, but should be edited



target create

Target created, grabbing all the data for it. Please wait and refresh in about a minute... ✕

Gaia22bpl

[Update Target](#) [Delete Target](#)

Name Gaia22bpl

Right Ascension 159.67677
10:38:42.425

Declination -61.2638
-61:15:49.680

Epoch 2000.0

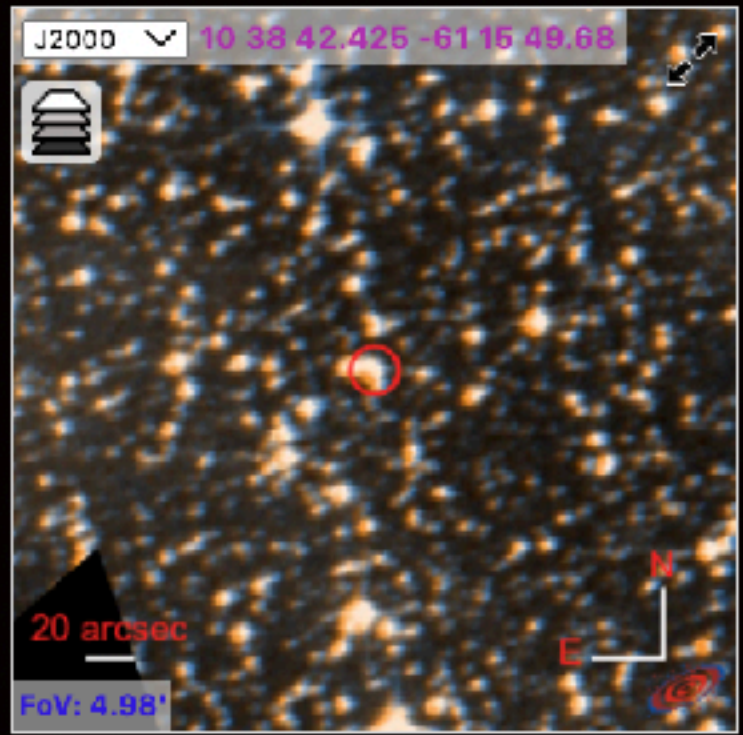
Discovered 2022-04-14
01:04:50

Class Unknown

Target importance (0-10) 9.99

Cadence requested (d) 1.0

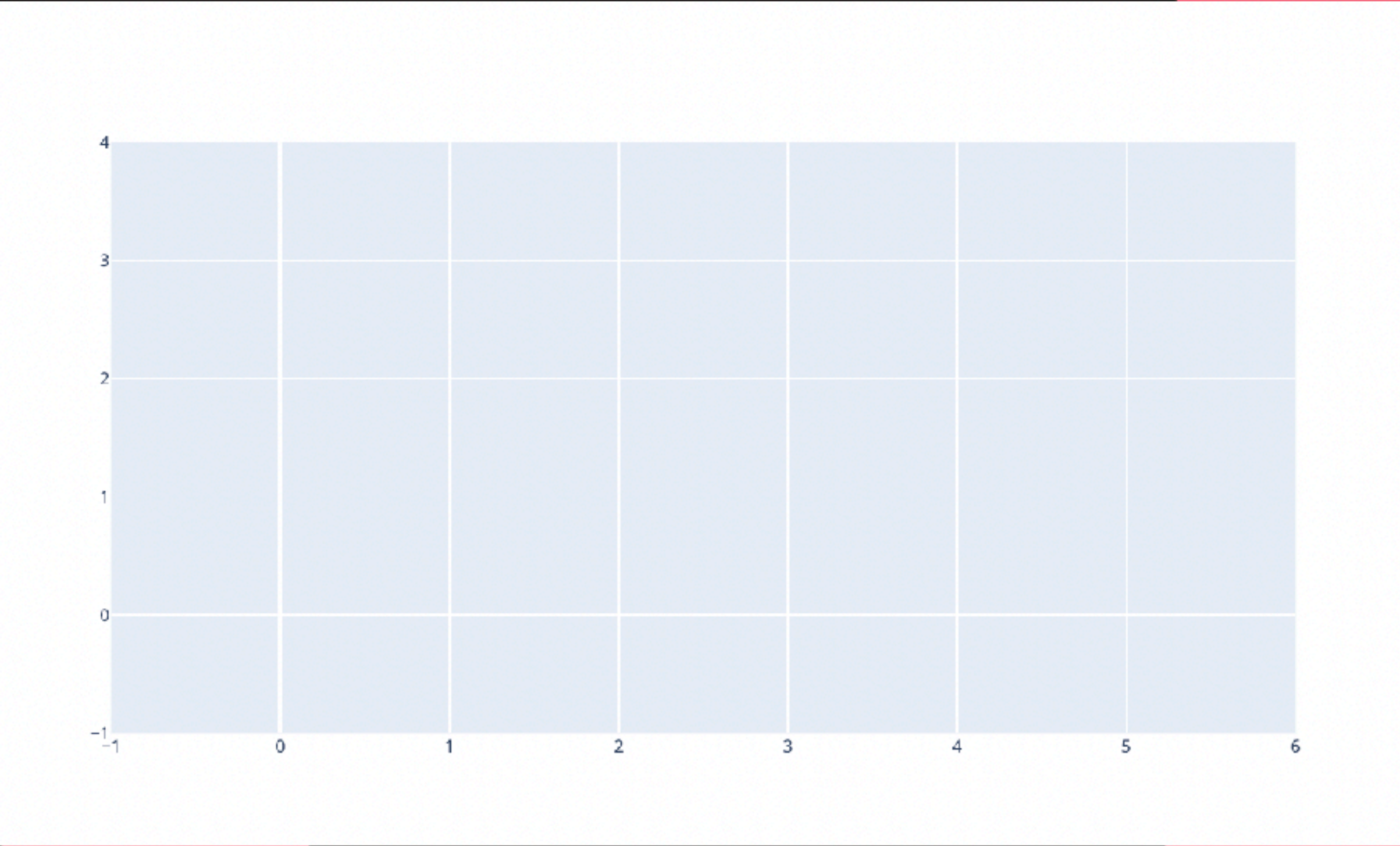
Other names:



[Photometry](#) [Models](#) [Spectroscopy](#) [Observe](#) [Observations](#) [Publication](#) [Manage Data](#) [Manage Groups](#)

Photometry

[Check for new data](#)



[Download photometry data](#) [Download radio data](#)

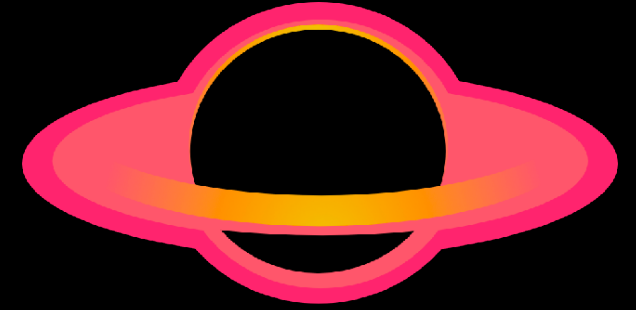
Recent Photometry

Timestamp	Magnitude	Filter	Facility
No recent photometry data			

target create

DIRECT ACCESS via name: <https://bh-tom2.astrolabs.pl/targets/Gaia22bpl/>

BHTOM2



Gaia22bpl

Update Target

Delete Target

Name Gaia22bpl
Right Ascension 159.67677
 10:38:42.425
Declination -61.2638
 -61:15:49.680
Epoch 2000.0
Galactic Longitude 287.662164
Galactic Latitude -2.390806
Constellation Carina
Discovered 2022-04-14
 01:04:50
Class Microlensing Event
Phot.Class Ulens Candidate
 100.0%
Last MJD 60184.56631
Last G Mag 12.7
Target Importance (0-10) 9.99
Cadence requested (d) 1.0
Observing priority 330.0
Sun Separation (deg) 62.0

Other names:

GAIA_ALERTS

Gaia22bpl

GAIA_DR3

5254100872645875968

NEOWISE

NEOWISE+J159.67677_-61.2638

CRTS

CRTS+J159.67677_-61.2638

Photometry

Models

Spectroscopy

Observe

Observations

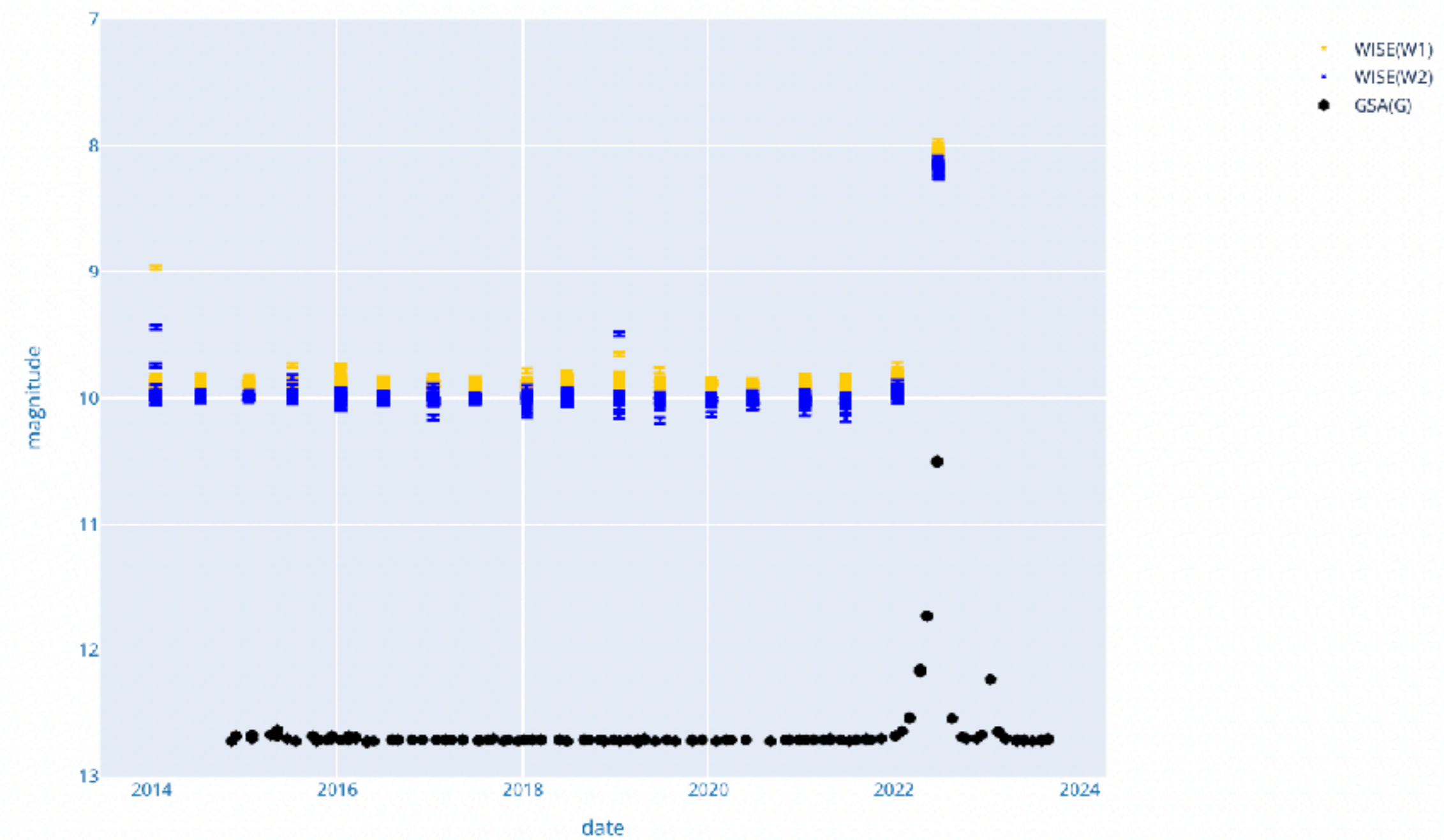
Publication

Manage Data

Manage Groups

Photometry

Check for new data

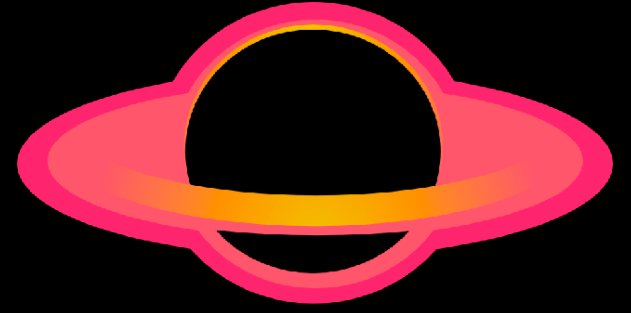


Download photometry data

Download radio data

Recent Photometry

Timestamp	Magnitude	Filter	Facility
2023-08-28 13:08:29	12.7100	GSA(G)	Gaia Alerts
2023-08-28 11:08:54	12.7000	GSA(G)	Gaia Alerts
2023-08-05 13:08:59	12.7200	GSA(G)	Gaia Alerts
2023-08-05 11:08:24	12.7100	GSA(G)	Gaia Alerts
2023-07-01 00:07:48	12.7200	GSA(G)	Gaia Alerts



target detail

Gaia22bpl

[Update Target](#) [Delete Target](#)

Name Gaia22bpl
Right Ascension 159.67677
 10:38:42.425
Declination -61.2638
 -61:15:49.680
Epoch 2000.0
Galactic Longitude 287.662164
Galactic Latitude -2.390806

Constellation Carina
Discovered 2022-04-14
 01:04:50
Class Microlensing Event
Phot.Class Ulens Candidate
 100.0%
Last MJD 60184.56631
Last G Mag 12.7
Target Importance (0-10) 9.99
Cadence requested (d) 1.0
Observing priority 330.0
Sun Separation (deg) 62.0

Other names:

GAIA_ALERTS
[Gaia22bpl](#)

GAIA_DR3
[5254100872645875968](#)

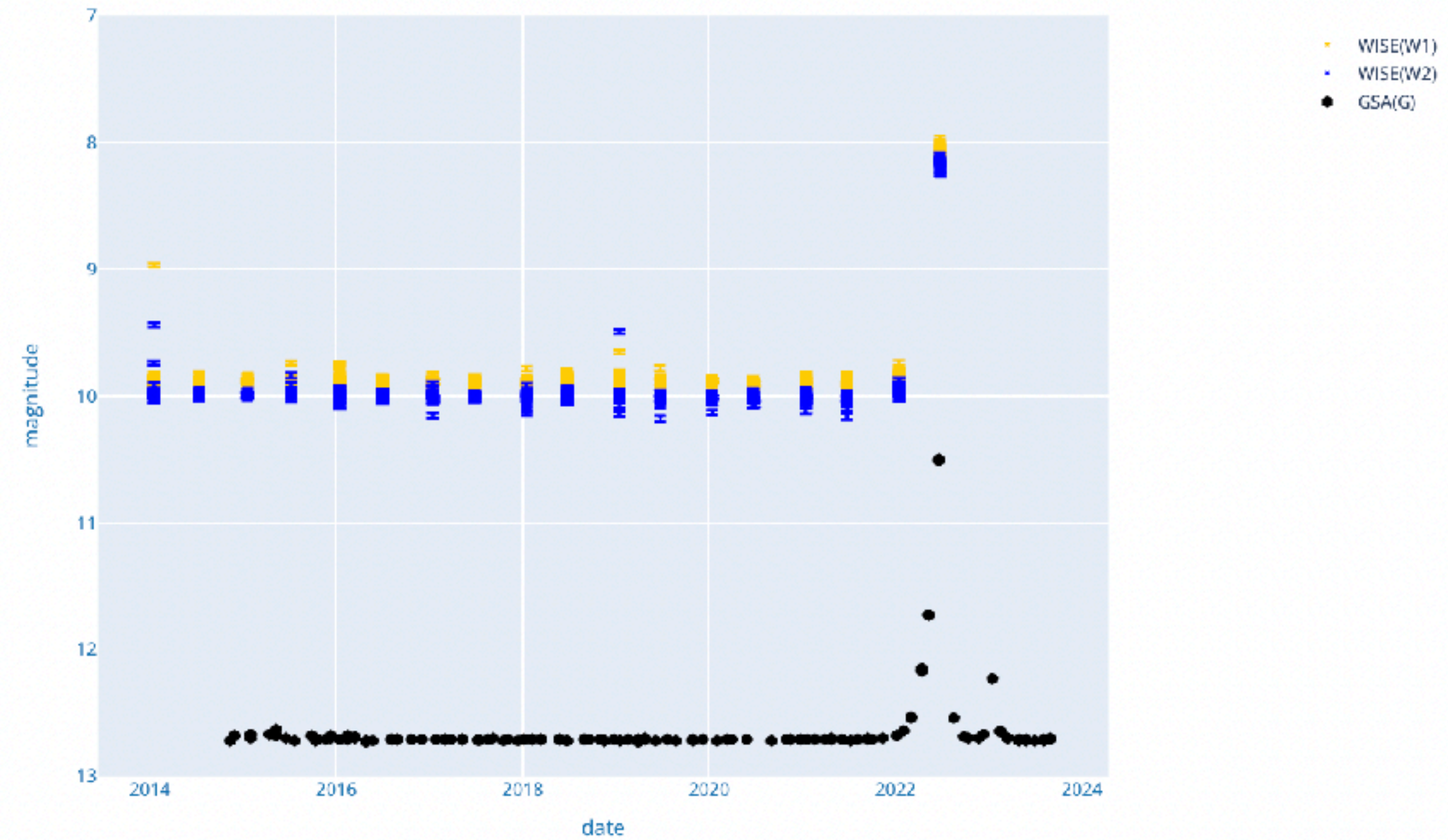
NEOWISE
 NEOWISE+J159.67677_-61.2638

CRTS
 CRTS+J159.67677_-61.2638

[Photometry](#) [Models](#) [Spectroscopy](#) [Observe](#) [Observations](#) [Publication](#) [Manage Data](#) [Manage Groups](#)

Photometry

[Check for new data](#)



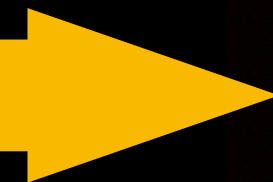
[Download photometry data](#)

[Download radio data](#)

Recent Photometry

Timestamp	Magnitude	Filter	Facility
2023-08-28 13:08:29	12.7100	GSA(G)	Gaia Alerts
2023-08-28 11:08:54	12.7000	GSA(G)	Gaia Alerts
2023-08-05 13:08:59	12.7200	GSA(G)	Gaia Alerts
2023-08-05 11:08:24	12.7100	GSA(G)	Gaia Alerts
2023-07-01 00:07:48	12.7200	GSA(G)	Gaia Alerts

constellation



automatic classification

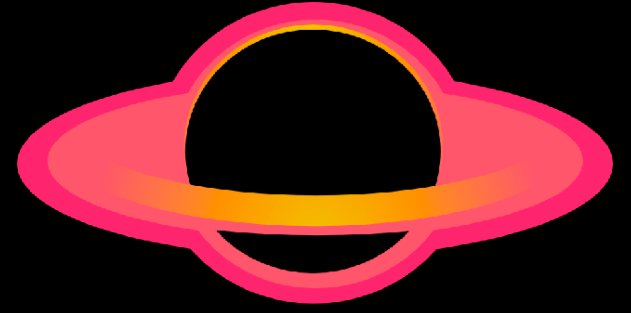


external links



external links





target detail

Gaia22bpl

Update Target

Delete Target

Name Gaia22bpl
Right Ascension 159.67677
 10:38:42.425
Declination -61.2638
 -61:15:49.680
Epoch 2000.0
Galactic Longitude 287.662164
Galactic Latitude -2.390806
Constellation Carina
Discovered 2022-04-14
 01:04:50
Class Microlensing Event
Phot.Class Ulens Candidate
 100.0%
Last MJD 60184.56631
Last G Mag 12.7
Target Importance (0-10) 9.99
Cadence requested 1.0

data download

Sun Separation (deg) 62.0

Other names:

GAIA_ALERTS

Gaia22bpl

GAIA_DR3

5254100872645875968

NEOWISE

NEOWISE+J159.67677_-61.2638

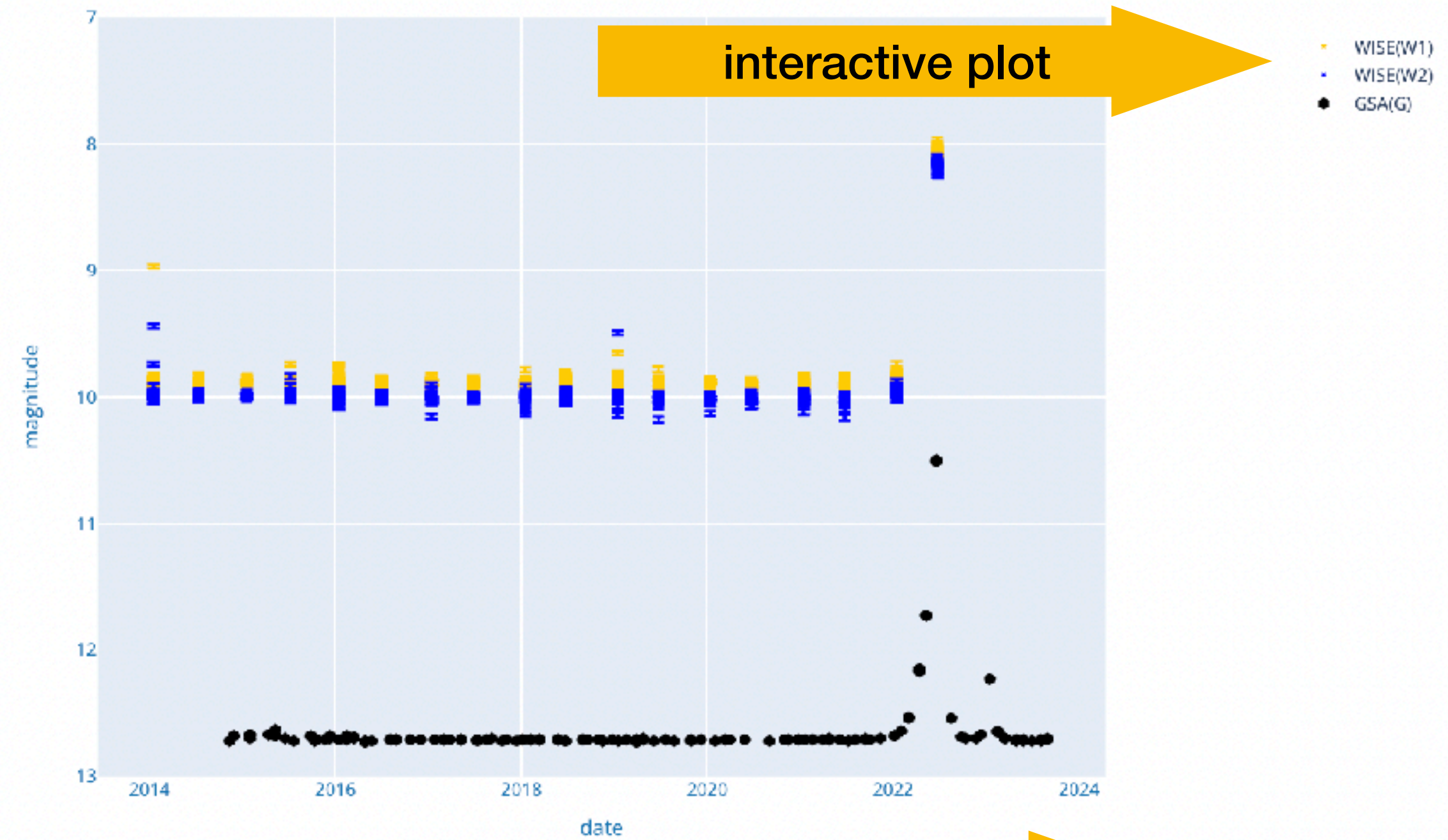
CRTS

CRTS+J159.67677_-61.2638

Photometry Models Spectroscopy Observe Observations Publication Manage Data Manage Groups

Photometry

Check for new data



Download photometry data

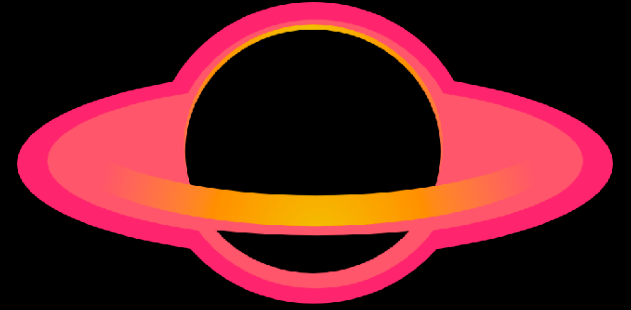
radio data download(if exists)

Download radio data

Recent Photometry

Timestamp	Magnitude	Filter	Facility
2023-08-28 13:08:29	12.7100	GSA(G)	Gaia Alerts
2023-08-28 11:08:54	12.7000	GSA(G)	Gaia Alerts
2023-08-05 13:08:59	12.7200	GSA(G)	Gaia Alerts
2023-08-05 11:08:24	12.7100	GSA(G)	Gaia Alerts
2023-07-01 00:07:48	12.7200	GSA(G)	Gaia Alerts











most recent photometry



target detail - comments

Comments

created automatically

-  Lukasz Wyrzykowski on 2024-03-20
Target created by Lukasz Wyrzykowski(wyrzykow) on 2024-03-20 11:01:11.914539+00:00 
-  Lukasz Wyrzykowski on 2024-03-20
It seems the increase in WISE (NIR) happens way before the one in the optical (Gaia). Weird! It might be a sign this is not microlensing, as in microlensing we would expect all bands rising simultaneously (unless there is strong blending in the optical and not so severe in NIR). Curious! Let's observe this one and we will see. 
-  siegfried Vanaverbeke on 2024-03-25
it is therefore still worth observing. 
-  Lukasz Wyrzykowski on 2024-05-06
A spectrum from the North would be useful. LT/INT? 
-  Lukasz Wyrzykowski on 2024-11-15
LT/SPRAT submitted for window 15/11/2024 - 15/12/2024, blue grating, 1x20s. 

Comment

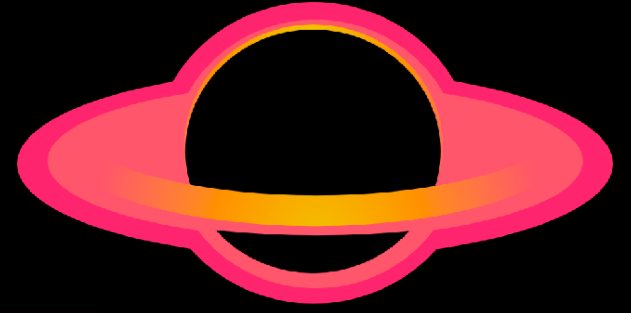
Comment

Post

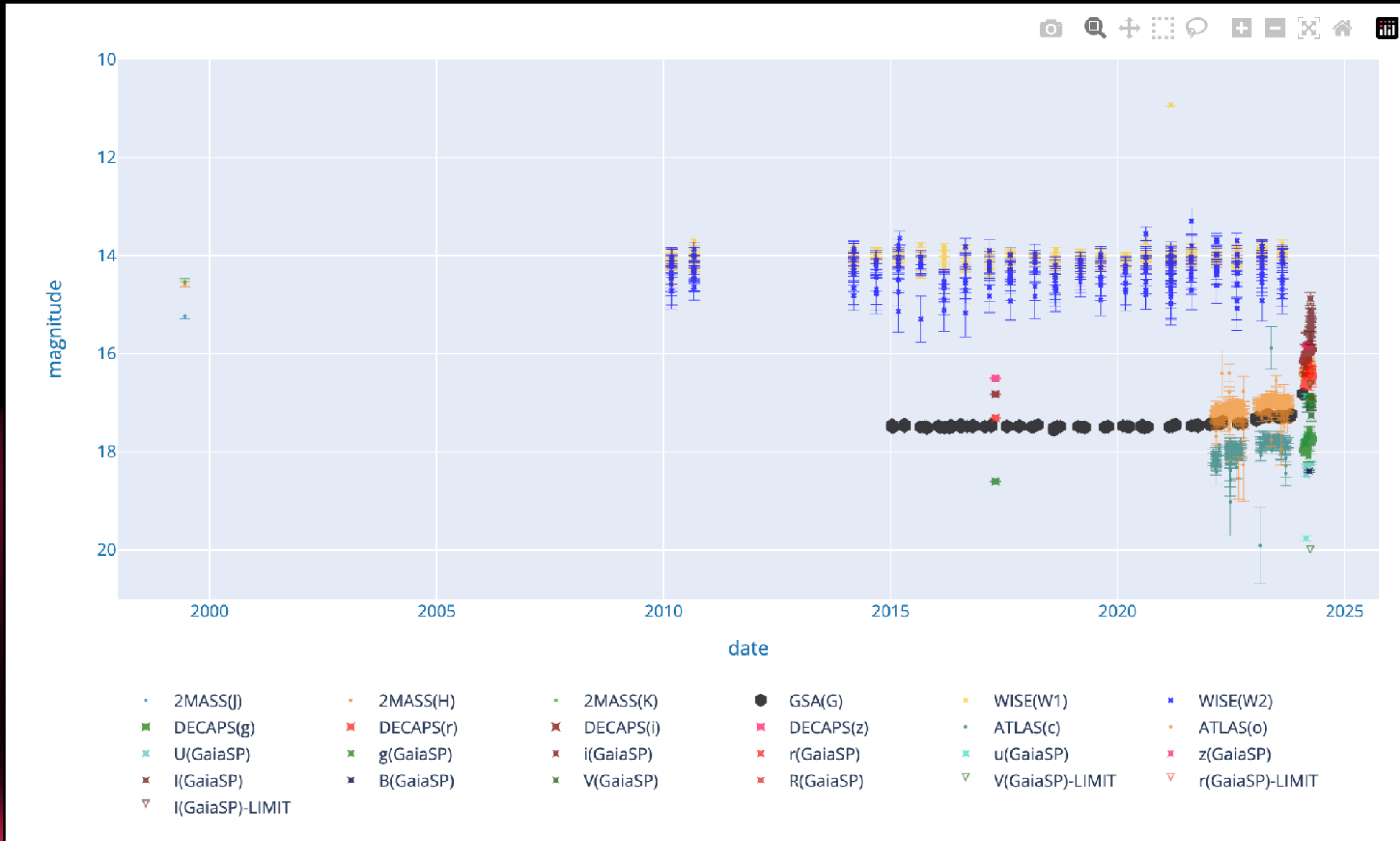
add info how do you want your target to be observed

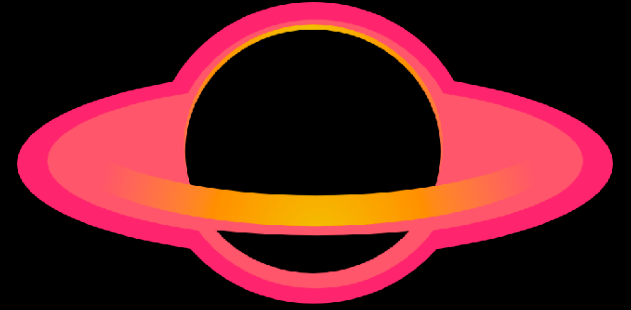
add any references to existing data or papers

discuss with others, request spectra, etc.

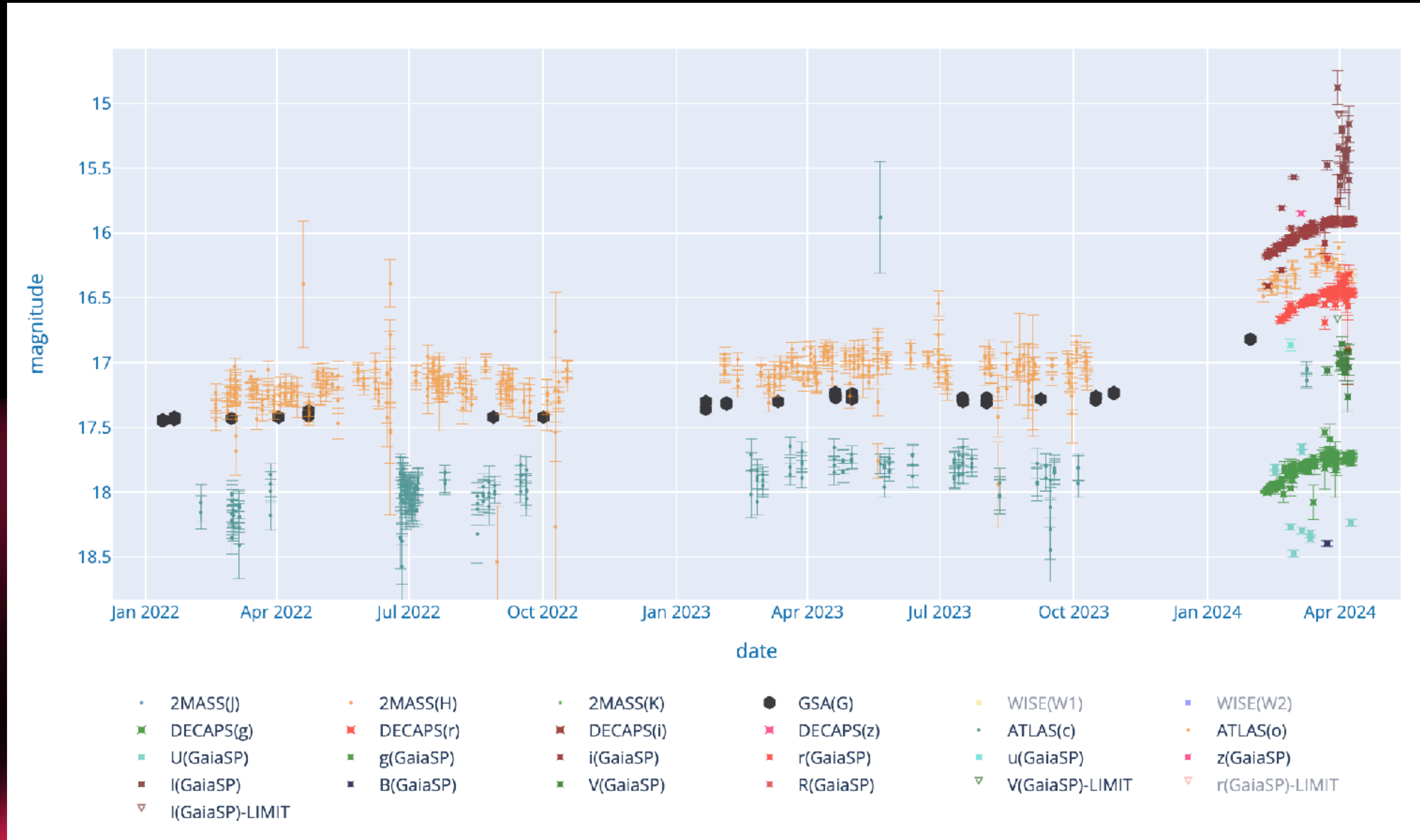


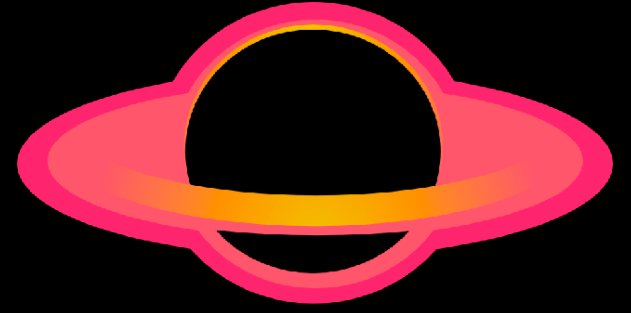
target light curve - per filter



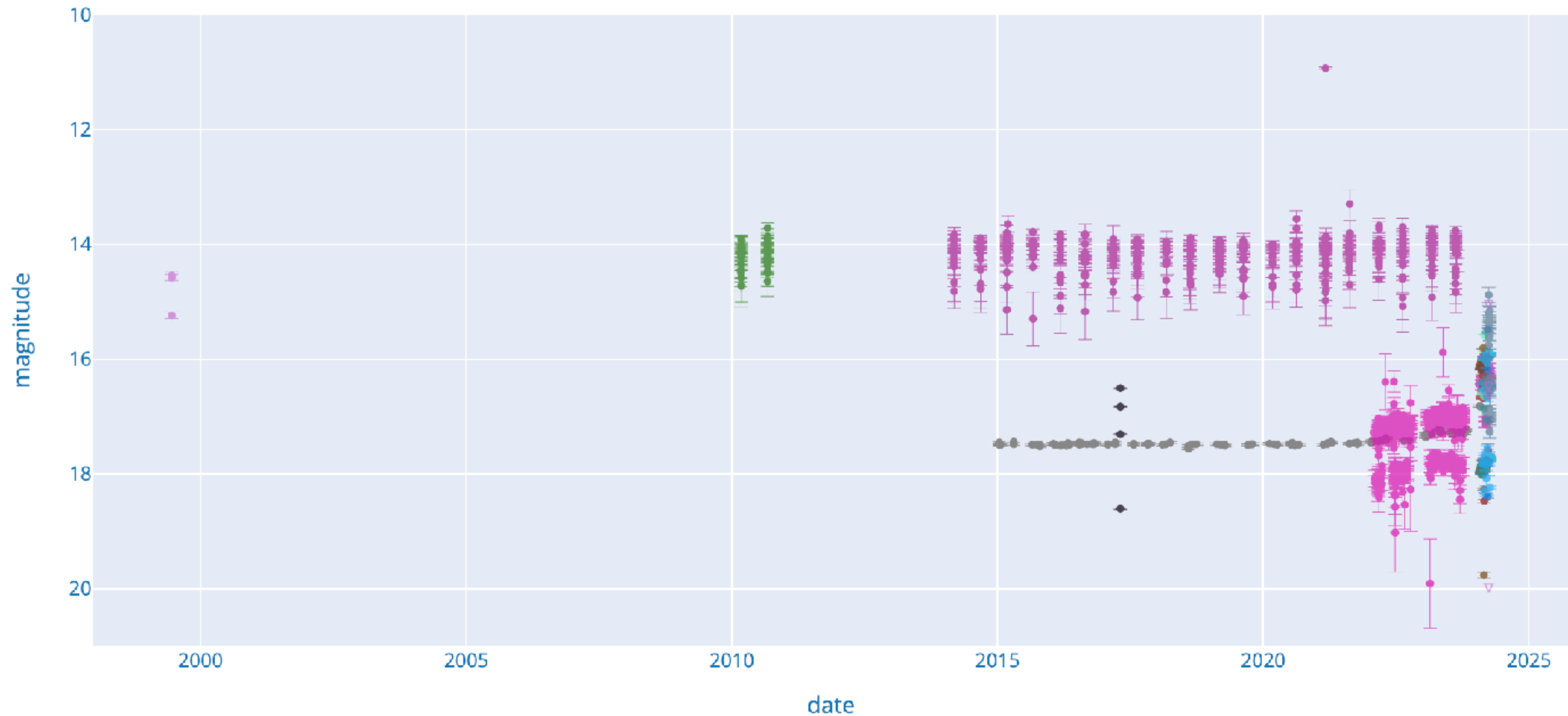


target light curve - per filter

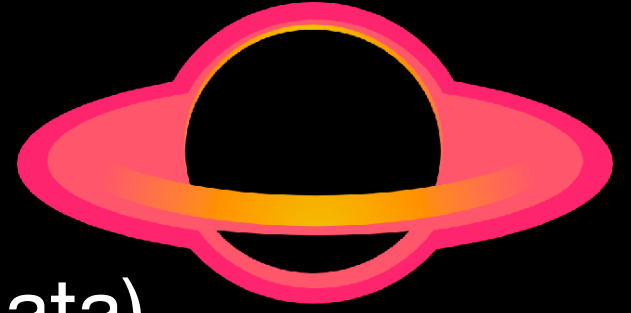




target light curve - per facility



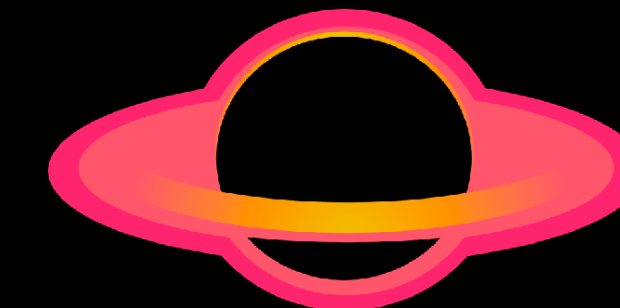
- | | | |
|--------------------------------------|--------------------------------------|--|
| ● 2MASS, 2MASS | ● Gaia Alerts, Gaia Alerts | ● NEOWISE, NEOWISE |
| ● ALLWISE, ALLWISE | ● DECAPS, DECAPS | ● ATLAS, ATLAS |
| ● Uliana Pylypenko, LCOGT-SAAO-1m_4K | ● Uliana Pylypenko, LCOGT-CTIO-1m_4K | ● Rachel Street, LCOGT-SS-1m_4K |
| ● Rachel Street, LCOGT-SAAO-1m_4K | ● Rachel Street, LCOGT-CTIO-1m_4K | ● Uliana Pylypenko, LCOGT-SS-1m_4K |
| ● Jaroslav Merc, DANISH_DFOSC-FASU | ● Franz-Josef Hamsch, ROAD_QHY600M | ▽ Franz-Josef Hamsch, ROAD_QHY600M-LIMIT |



target light curve - per facility

random colours per facility - they change everytime there is a need to re-generate the plot (new data)





models

Gaia22bpl

[Update Target](#) [Delete Target](#)

Name	Gaia22bpl
Right Ascension	159.67677
	10:38:42.425
Declination	-61.2638
	-61:15:49.680
Epoch	2000.0
Galactic Longitude	287.662164
Galactic Latitude	-2.390806
Constellation	Carina
Discovered	2022-04-14 01:04:50
Class	Microlensing Event
Phot.Class	Ulens Candidate 100.0%
Last MJD	60184.56631
Last G Mag	12.7
Target importance (0-10)	9.99
Cadence requested (d)	1.0
Observing priority	336.7
Sun Separation (deg)	62.0

Other names:

[Photometry](#) [Models](#) [Spec](#) [Classification](#) [Manage Data](#) [Manage Groups](#)

models

[Microlensing model standard](#) The simplest microlensing model, single lens, single source, no parallax

[Microlensing model parallax](#) Microlensing model, single lens, single source, with parallax

your model can be added here!

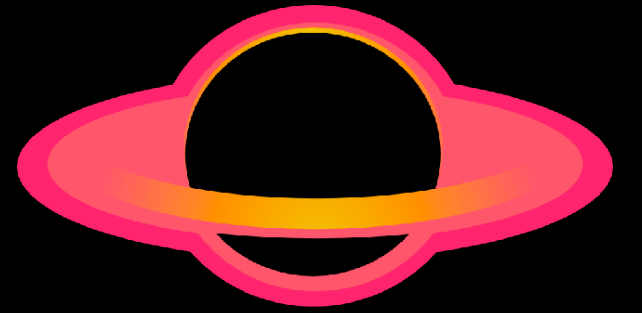
Comments

No comments yet.

Comment

Comment

[Post](#)



models – separate interactive window

Microlensing model for Gaia22bpl

Gravitational microlensing model using MulensModel (Poleski&Yee 2018)

Fit initial values:

RA: 2459749.048410 u0: 0.129032 tE: 60.00000 logu0: fixblending: auto_init:

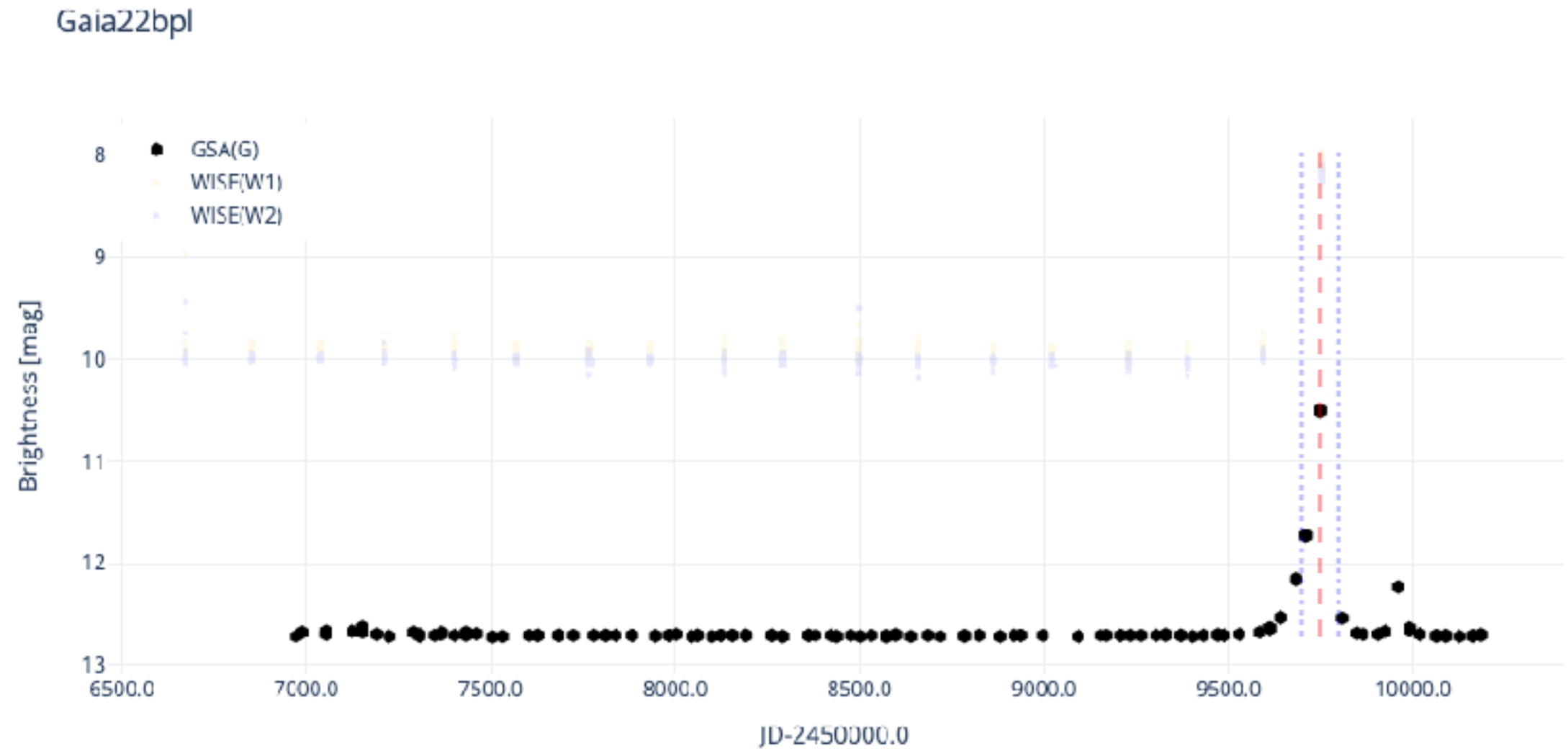
parameter init

Available filters and number of datapoints:

-
- GSA(G) 129
- WISE(W1) 387
- WISE(W2) 387

interactive data selection

MODEL



models

Location Manage Data Manage Groups

microlensing model, single lens, single source, no parallax

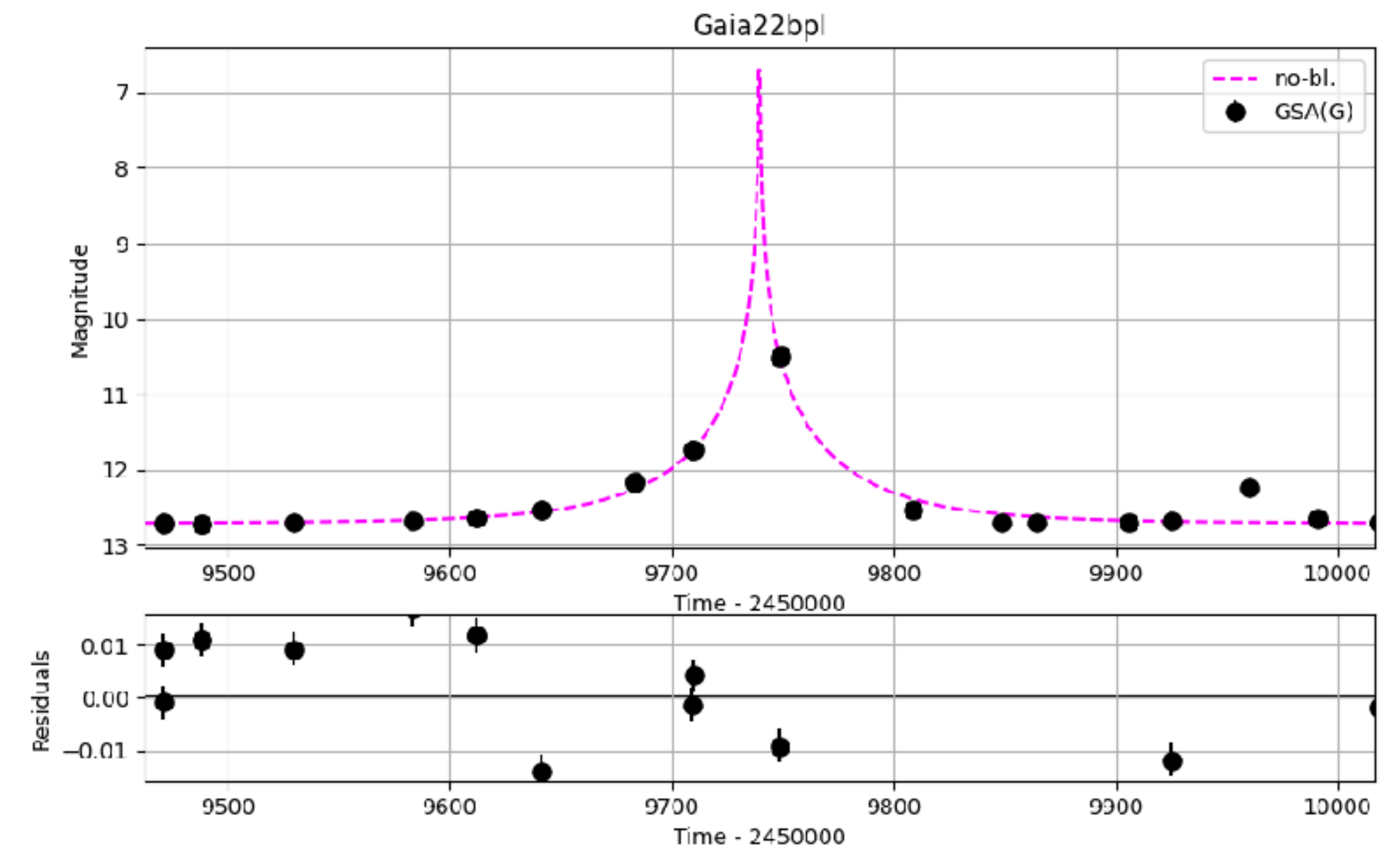
Fitted parameters

Best Fit: $t_0 = 2459739.69022$, $u_0 = 0.00000$, $t_E = 69.268$
Chi2 = 23120.64 Chi2/ndof = 183.50

model results

Filter	Mag0	FS
GSA(G)	12.708	1.0

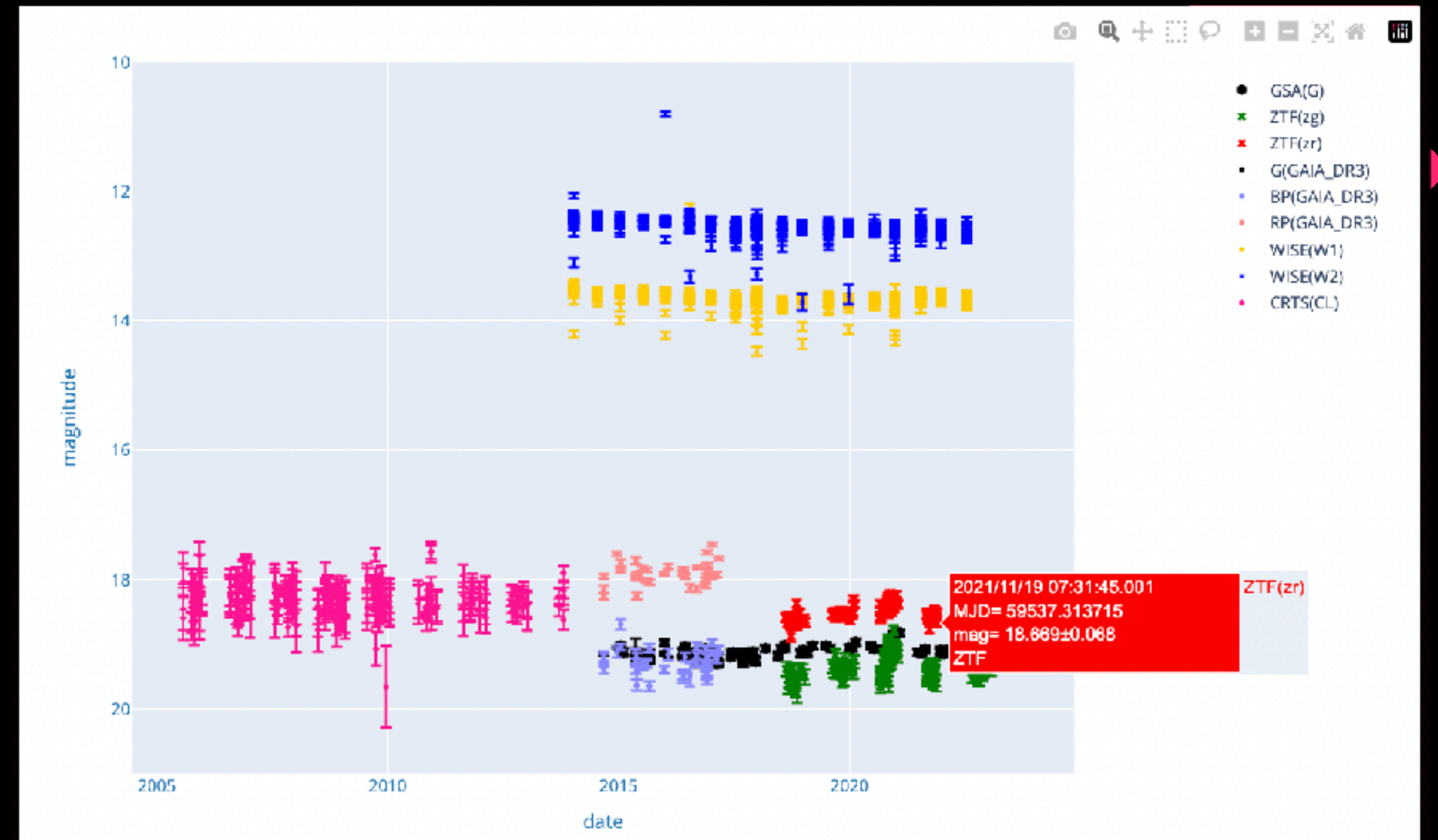
Fitted light curve

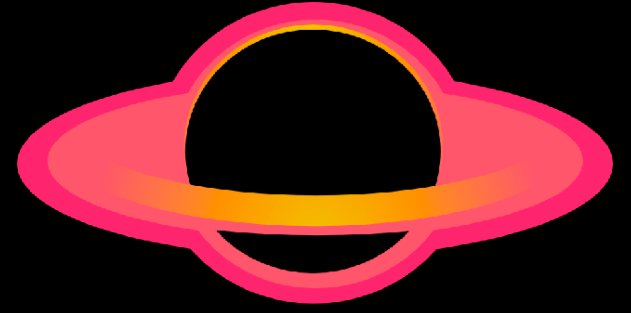


Time of fitting execution: 0.112 seconds

archives (via brokers)

- Gaia Science Alerts (2014+)
- Gaia DR3 variables (2014-2017)
- ZTF Data Release and alerts (2018+) through ANTARES and Alerce
- Catalina Real-Time Survey, CRTS (2005-2014)
- LINEAR (2003-2008)
- SDSS + Stripe82
- PS1, DECAPS
- IR: 2MASS, ALLWISE + NEOWISE (2010+)
- FIRST and LOFAR (radio)
- ATLAS (South+North)
- OGLE EWS
- will be added:
 - + OGLE variable stars
 - + DASH Harvard photographic plates (<1900)





publication

Gaia19axp

[Update Target](#)
[Delete Target](#)

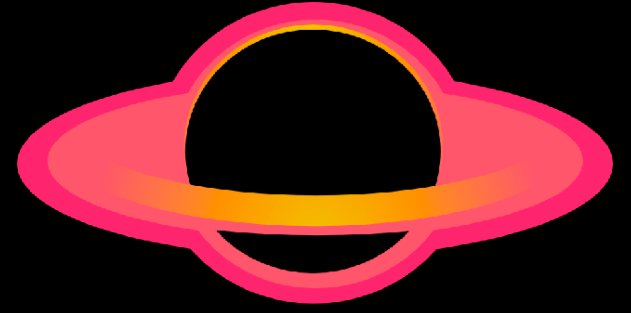
Name	Gaia19axp
Right Ascension	216.94333 14:27:46.399
Declination	29.51063 +29:30:38.268
Epoch	2000.0
Galactic Longitude	45.028655
Galactic Latitude	68.703383
Constellation	Boötes
Discovered	2019-03-10 14:03:41
Class	Quasar(QSO)
Phot.Class	Not Ulens 78.0%
Last MJD	-10000.0
Last G Mag	100.0

[Photometry](#)
[Models](#)
[Spectroscopy](#)
[Observe](#)
[Observations](#)
[Publication](#)
[Manage Data](#)
[Manage Groups](#)
[Generate LaTeX target description](#)

Photometry Stats

Facility	Filters	Number	Min MJD	Max MJD
ALLWISE	WISE(W1), WISE(W2)	177	55210.69	55574.43
CRTS	CRTS(CL)	235	53470.35	56464.28
Gaia Alerts	GSA(G)	139	57037.46	60202.07
NEOWISE	WISE(W1), WISE(W2)	591	56670.95	59752.75
SDSS	SDSS(u), SDSS(g), SDSS(r), SDSS(i), SDSS(z)	37	52821.22	53117.36
ZTF	ZTF(zg), ZTF(zr), ZTF(zi)	1134	58202.38	60124.24

[Download photometry stats as LaTeX table](#)



upload

[Photometry](#) [Models](#) [Spectroscopy](#) [Observe](#) [Observations](#) [Publication](#) **Manage Data** [Manage Groups](#)

Upload a data product

Here you can upload your photometric and spectroscopic observations for this target. Please refer to the BHTOM manual for details. Example CSV formats for [photometry](#) and [spectroscopy](#). Note, we require MJD (Modified Julian Date = JD-240000.5) in the photometry file!

SExtractor format is required for instrumental photometry. FITS is not supported for spectra yet.

Non-detections are marked with error ≥ 99.0 (e.g. 99.0, 99.9 etc.)

For photometric FITS processing choose the observatory from the list. You can add a new observatory [here](#).

You can upload up to 5 files at once.

You can also use a python script for external fits upload, [see the BHTOM's API documentation](#)

Choose a Files

No file chosen

Data product type

Photometry - SExtractor format

Photometry - CSV

FITS File

Spectroscopy

Dry Run (no data will be stored in the database)

MJD OBS *

MJD OBS *

Dry Run (no data will be stored in the database)

Observer's Name *

Lukasz Wyrzykowski

Observatory

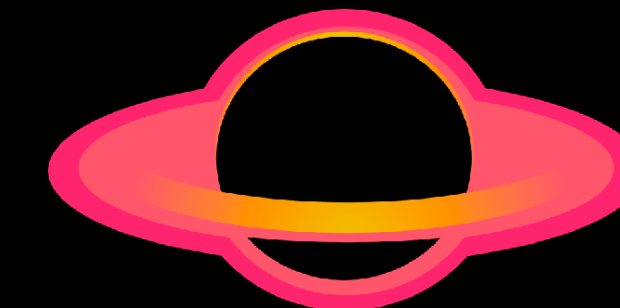
Force filter

GaiaSP/any

Comment

Comment

Upload



observatory — adding existing observatory to your list

List of observatories

List of your registered observatories/instruments you can use for uploading the data for processing. You should register an observatory in your account if you want a datapoint to be I Here you can add a new observatory to your list if you are planning to upload images or instrumental photometry for it. You can choose one from the list of already registered observa one. Note that different instrument (e.g. CCD) on the same telescope counts as a different observatory.

Favorite Observatories

Observatories

Add new observatory

click to add to your list

Observatory Name	Lon	Lat	Prefix	Comment	Only Instrumental photometry file	Details
Adiyaman 60 / Andor iKon-M 934	321.77459	37.751703	Adyu60_Andor-934	PlaneWave 24" CDK on ASA DM16...	False	Details
Adonis observatory / Moravian G2 1600 camera	357.074618	50.91524	Adonis_G2-1600	Sky-watcher quattro F4 250 mm...	False	Details
Aristarchos telescope / TEK2K camera	337.803889	37.984444	ARISTARCHOS_TEK2K	Aristarchos 2.3 m telescope, ...	False	Details
Astrolab IRIS Observatory / SBIG camera	357.087333	50.817222	Astrolab-IRIS_SBIG	68-cm NMPT telescope. Public ...	False	Details
ASV 1.4 m Milankovic Telescope / Andor iKon-L CCD camera	338.45	43.15	ASV1.4_Andor	The Astronomical Station Vido...	False	Details
ATA50 with Apogee Alta U230	318.75611111	39.904752	ATA50_AltaU230	51 cm RC telescope on ASA Dir...	False	Details

Add a new Observatory to your list.

Here you can add a new observatory to your list in two ways. You can choose an observatory from the list of already registered ones. If your observatory is not yet registered you can create a new entry.

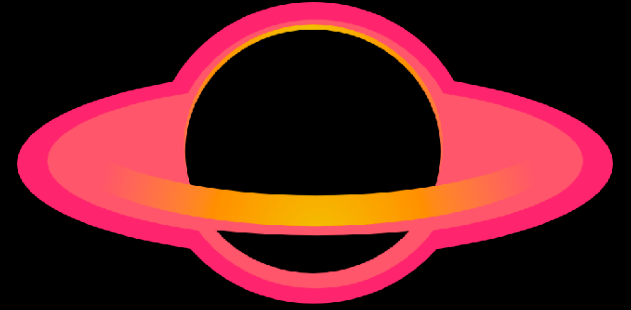
Observatory

Comment

Comment

Add to my list

Create new Observatory



observatory — creating observation no yet in our db

Create a new Observatory.

Please fill the form below, check BHTOM manual for details. Your entry has to be then activated by the Administrator.

The sample fits file is necessary for new observatories for verification of the automatic photometric processing. Please refer to the BHTOM Manual or get in touch.

Observatory name

Longitude (West is positive) [deg]

Latitude (North is positive) [deg]

Only instrumental photometry file

longer table if fits will be processed

only SExtractor instrumental data will be uploaded

this will require human acceptance

Only instrumental photometry file

Sample fits*

No file chosen

Provide one sample fits per filter, clearly labelled.

Gain* [electrons/ADU]

Readout noise* [electrons]

Binning*

Saturation level* [ADU]

Pixel scale* [arcsec/pixel]

Readout speed [ms/pixel] (if not known, pass 9999)*

Pixel size [um]

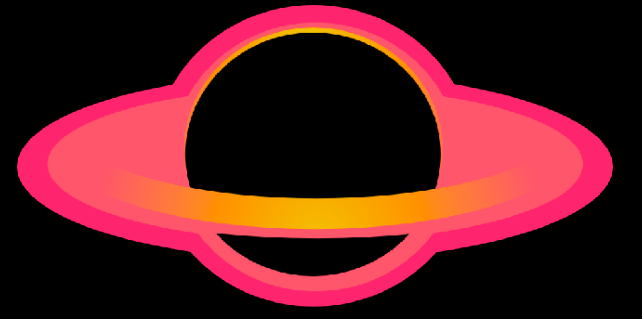
Approx. limit magnitude in V band* [mag]

Filters*

Altitude [m]*

Comments (e.g. hyperlink to the observatory website, camera specifications, telescope info)

Comments (e.g. hyperlink to the observatory website, camera specifications, telescope info)



observatory - adding new camera

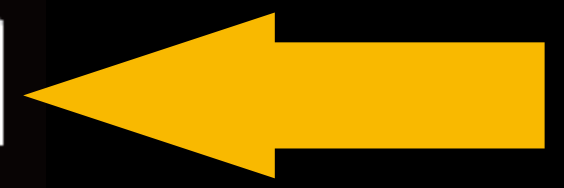
- Observatory has to be activated
- Go to Observatory/List all observatories
- Find your observatory
- Click Edit
- At the very bottom: Click Add New Camera
- Fill all the details, attach example fits files
- Wait for the approval
- Your new camera will have new ONAME

List of observatories

List of your registered observatories/instrument
Here you can add a new observatory to your list
different instrument (e.g. CCD) on the same tele

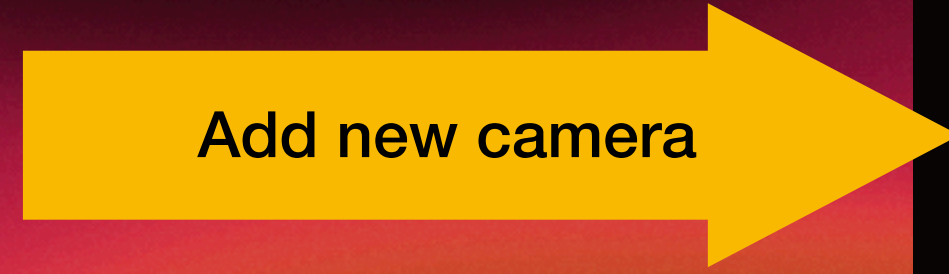
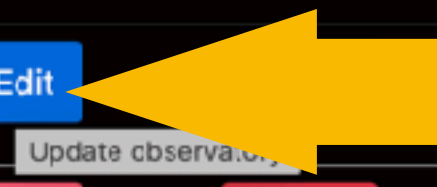
Favorite Observatories

Observatories



Add new observatory

Auger FRAM 30-cm	-69.449755	-35.496138	FRAM_G4	FRAM (F/Photometric Robotic A...	False	Details	Edit	Delete
Białków 60-cm Cassegrain Telescope	16.657822	51.47425	BIALKOW_ANDOR-DW432	Białków station, Wrocław Univ...	False	Details	Edit	Delete
CAHA 1.23-m Telescope	-2.5468	37.2208	CAHA1.23_ASI461MM	Observatory website: https://...	False	Details	Edit	Delete
CASLEO HSH 60-cm	-69.306638	-31.7873	HSH_SBIG-STL1001E	Complejo Astronomico El Leonc...	False	Details	Edit	Delete



Readout Speed [microseconds/pixel]

Add Camera

Update

Cameras

Observatory(ONAME): REM_ROS2

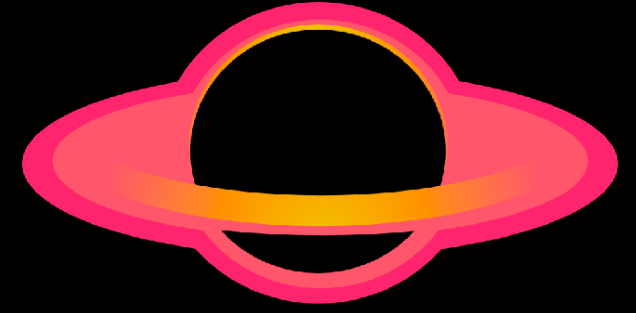
Camera Name: ROS2 instrument
Gain: 1.0
Pixel Scale: 0.581

Example File: IMG2
Readout Noise: 4.5
Pixel Size: 13.5

Observatory(ONAME): REM_REMIR

Camera Name: REMIR instrument
Gain: 5.0
Pixel Scale: 1.221

Example File: Gaia2
Readout Noise: 100
Pixel Size: 18.5



upload — uploading fits images

pre-requisites:

- bias/dark/flat corrected fits only
- your observatory registered and activated

Gaia24ayd

Name	Gaia24ayd
Ra,Dec	300.82509 30.65126 20:03:18.022 +30:39:04.536
Galactic (l,b)	68.012377 -0.211674
Constellation	Cygnus
Discovered	2024-03-12 13:39:39
Class	Unknown

Photometry

Models

Spectroscopy

in target page, find Manage Data

Manage Data

Manage Groups

Upload a data product

Here you can upload your photometric and spectroscopic observations for this target. Please refer to the BHTOM manual for details. Example CSV formats for [photometry](#) and [spectroscopy](#). Note, we require MJD (Modified Julian Date = JD-2400000.5) in the photometry file!

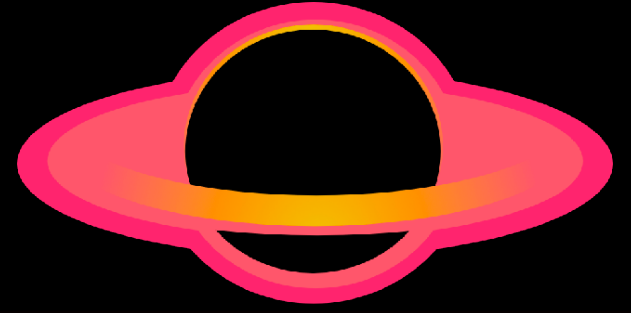
SExtractor format is required for instrumental photometry. FITS is not supported for spectra yet.

Non-detections are marked with error ≥ 99.0 (e.g. 99.0, 99.9 etc.)

For photometric FITS processing choose the observatory from the list. You can add a new observatory [here](#).

You can upload up to 5 files at once.

You can also use a python script for external fits upload, [see the BHTOM's API documentation](#)



upload — uploading fits images

- in GUI only 5 files can be uploaded at once
- use scripts!

select this

modify if needed

select your telescope

select your camera

leave GaiaSP/any*

any additional comments,
e.g. on the conditions, weather,
etc.

Choose a Files

Choose files No file chosen

Data product type

Photometry - SExtractor format

Photometry - CSV

FITS File

Spectroscopy

Dry Run (no data will be stored in the database)

Observer's Name *

Lukasz Wyrzykowski

Observatory*

REM 60-cm Telescope

Camera*

ROS2 instrument

Force filter

GaiaSP/any

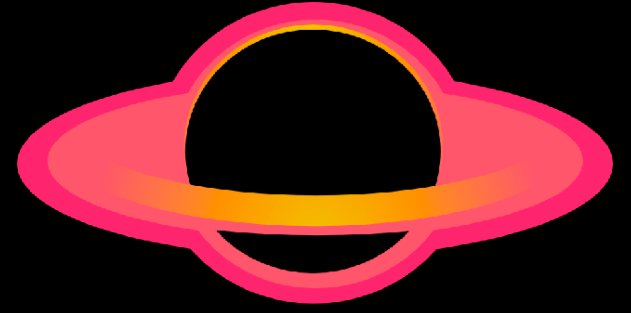
Comment

Comment

Upload

Note on filters for standardisation:

- * GaiaSP/any is best for most filters, either Johnson-Cousins or Sloan
- * if you use only Sloan, select GaiaSP/ugriz
- * if you use only J-C, select GaiaSP/UBVRI
- * if you use Gaia filters, select GaiaDR3/any
- * if you observe in IR, select 2MASS/any
- * if you are not sure, select Auto



upload — uploading SExtractor photometry

- in GUI only 5 files can be uploaded at once
- use scripts!

select this

obligatory!

modify if needed

select your telescope

select your camera

leave GaiaSP/any*

any additional comments,
e.g. on the conditions, weather,
etc.

Choose a Files

Choose files No file chosen

Data product type

- Photometry - SExtractor format
- Photometry - CSV
- FITS File
- Spectroscopy

Dry Run (no data will be stored in the database)

MJD OBS *

MJD OBS *

Observer's Name *

Lukasz Wyrzykowski

Observatory*

REM 60-cm Telescope

Camera*

ROS2 instrument

Force filter

GaiaSP/any

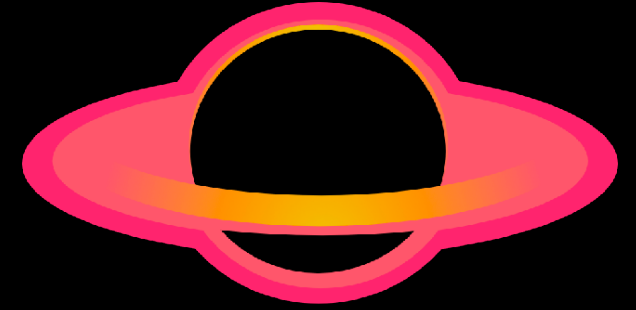
Comment

Comment

Upload

Note on filters for standardisation:

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- * if you use only Sloan, select GaiaSP/ugriz
- * if you use only J-C, select GaiaSP/UBVRI
- * if you use Gaia filters, select GaiaDR3/any
- * if you observe in IR, select 2MASS/any
- * if you are not sure, select Auto



API

docs.bhtom.space

- all functionalities of BHTOM available programmatically!
- upload (fits, dat, spec)
- target list and filtering
- data download
- standardisation results

BHTOM2 API Documentation [↗](#)

Introduction [↗](#)

This is a simple guide for BHTOM's REST API. It lets you use BHTOM webpage features in your own programs. You can get a list of targets, add observations, download data and more. Let's get started!

Remember! To use API you should get your own TOKEN first!

Copy Token to Clipboard

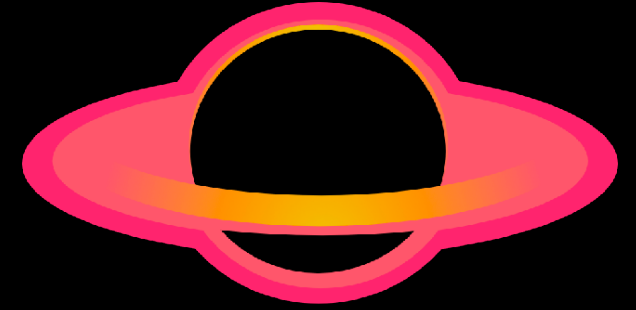
User name*

wyrzykow

First name*

Lukasz

Token now can be copied from your profile page



API

docs.bhtom.space

- all functionalities of BHTOM available programmatically!
- upload (fits, dat, spec)
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Copy Token to Clipboard

User name*

wyrzykow

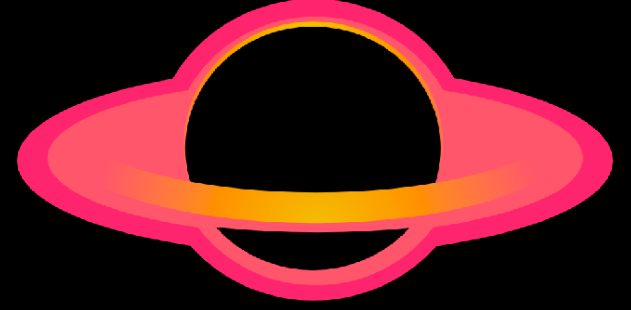
First name*

Lukasz

Token now can be copied from your profile page

BHTOM API Example Notebooks:

<https://drive.google.com/drive/folders/1A9Oe1rApyl7> orazo [1oUNVqdzhE-w4M?usp=sharing](https://drive.google.com/drive/folders/1oUNVqdzhE-w4M?usp=sharing)



BHTOM Newsletter

<https://groups.google.com/g/bhtomtargets>

BHTOM Targets for 08 April, 2024 0 views



Lukasz Wyrzykowski <wyrzykow@gmail.com>

8 Apr 2024, 16:12:21 (5 days ago)



to bhtomtargets@googlegroups.com

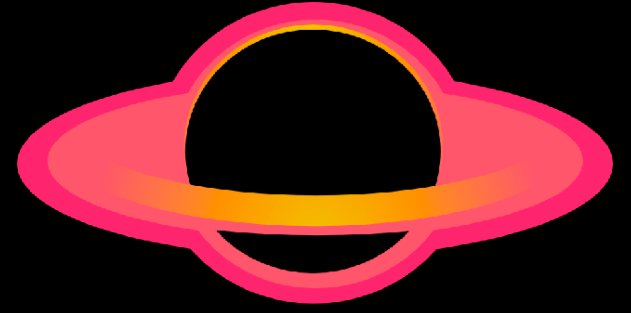
Hello,

Greetings from the BHTOM Automated Newsletter!

As of 2024-04-08 14:09:01.478552+00:00, these are the new targets added in the last week with importance greater than 1, sorted by magnitude:

name	ra	dec	mag_last	sun_separation	classification	description
Gaia24bbw	81.371630	39.506760	14.2	65.0	Unknown	candidate microlensing event
Gaia24bbs	270.968180	-28.183980	16.2	108.0	Unknown	bulge candidate microlensing event
Gaia24bau	266.011980	-25.859980	16.7	112.0	Unknown	candidate microlensing event
Gaia24bay	262.530760	-27.944750	17.0	115.0	Unknown	candidate microlensing event
Gaia24adu	205.400100	43.413980	17.3	129.0	Unknown	~1 mag rise in Gaia source coincident with galaxy
Gaia24bbt	264.611000	-33.329870	17.5	113.0	Unknown	bulge candidate microlensing event
Gaia23dkq	183.716870	-19.030480	17.8	162.0	Unknown	Brightening in Gaia source coincident with galaxy 6dFGS gJ121452.1-190150
Gaia23dgk	228.359390	27.081950	18.1	134.0	Unknown	Brightening in Gaia source coincident with galaxy
Gaia23bat	242.658540	-35.559640	18.2	130.0	Unknown	candidate microlensing event
Gaia24bcm	253.619790	-50.373170	18.9	NaN	Unknown	candidate microlensing event
AT 2024fkm	208.285587	35.720493	20.2	136.0	Unknown	Astro-COLIBRI target

In addition, here are some older targets that are currently visible and requested for observations. These targets have an importance greater than 4, a sun separation greater than 70, and a magnitude less than 18. They are also sorted by magnitude.



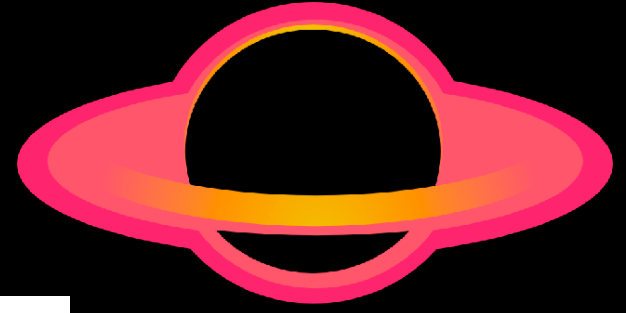
BHTOM Newsletter

<https://groups.google.com/g/bhtomtargets>

In addition, here are some older targets that are currently visible and requested for observations. These targets have an importance greater than 4, a sun separation greater than 70, and a magnitude less than 18. They are also sorted by magnitude.

North (dec>0):

name	ra	dec	mag_last	sun_separation	classification	description
TCrB	239.875676	25.920170	12.3	127.0	Nova	recurent nova predicted to explode 2024/2025
8C0716_714	110.472701	71.343434	14.0	84.0	QSO	high cadence variability suspected
Gaia24ayd	300.825090	30.651260	14.7	74.0	Unknown	bright candidate for microlensing event
Gaia18bwz	174.611270	3.368310	15.3	155.0	CV	Known dwarf nova QZ Vir in outburst
Gaia24azc	296.202220	23.630800	15.4	79.0	Unknown	bright gal.plane source candidate microlensing event or Be-type outburst
NGC5683-Seyfert	218.718578	48.661870	15.5	121.0	AGN	active nucleus of a nearby galaxy for frequent monitoring
SN2024gy	183.963708	13.115589	15.7	156.0	SN	classified SN Ia at 5Mpc
ZTF18aarippg	217.566838	23.062372	16.1	144.0	QSO	Tick-Tok possibly merging Super Massive Black Hole binary
SN2023ixf	210.910654	54.311674	16.8	117.0	SN	Bright supernova in M101
Gaia23dfy	281.922640	9.043970	16.8	94.0	Unknown	red gal.plane source candidate microlensing event rises by 0.7 mag
SN 2024elf	264.113343	39.965370	16.8	102.0	SN	Astro-COLIBRI target
SN 2024eib	200.350801	23.861445	17.0	149.0	SN	Astro-COLIBRI target
Gaia23dgt	204.096070	25.538710	17.1	147.0	QSO	Brightening in Gaia source coincident with Seyfert I galaxy
Gaia24acn	298.644780	30.361130	17.2	76.0	Unknown	Candidate microlensing event
SDSSJ094533.99+100950.1	146.391622	10.163917	17.8	127.0	QSO	Long term variable quasar for monitoring

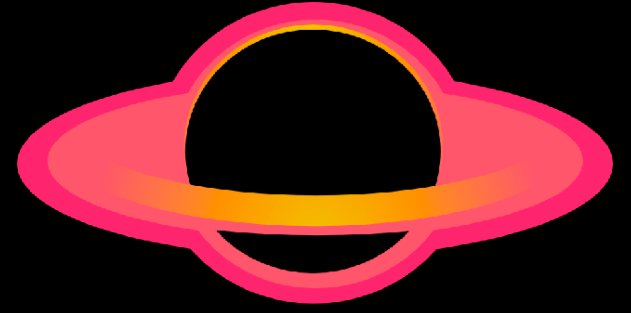


BHTOM Newsletter

<https://groups.google.com/g/bhtomtargets>

South (dec<0):

name	ra	dec	mag_last	sun_separation	classification	description
Gaia23ckh	266.770410	-35.991370	13.0	111.0	Symbiotic star	Mira brightens by 0.8 mag, previous event seen
Gaia23cpd	287.536760	-4.720760	13.8	90.0	Microlensing Event	potential long and bright microlensing event
Gaia19dbf	178.699417	-64.491850	14.2	121.0	Unknown	Possibly a YSO
Gaia23dpn	220.154710	-57.762400	14.4	126.0	Microlensing Event	bright red gal.plane source candidate microlensing event rises by 0.8 mag
V4370 Oph	264.987833	-26.461647	15.1	113.0	Nova	Astro-COLIBRI target
Gaia23cyl	266.467690	-42.760060	15.5	110.0	Microlensing Event	microlensing event in the bulge
Gaia23bsf	276.583080	-14.036970	15.8	102.0	Unknown	unknown
AT2024eff	87.924542	-19.218400	16.1	75.0	Unknown	possible nuclear transient, TDE candidate
Gaia23bzg	195.332390	-14.415280	16.3	173.0	QSO	Brightening in known QSO
Gaia24amo	249.148921	-53.749919	16.4	118.0	Unknown	candidate microlensing event, possibly now on the rise
PMNJ0730-6602	112.706495	-66.038578	16.5	99.0	AGN	IAUZ Target
CTS_C30.10	71.833281	-45.627319	16.8	72.0	QSO	Long term variable quasar for monitoring
Gaia23bsd	273.561870	-22.319870	17.0	105.0	Unknown	very slowly rising object, candidate microlensing or Be or YSO
Gaia23cmf	266.551870	-21.014000	17.1	112.0	Microlensing Event	candidate microlensing event
Gaia23cxu	235.890310	-55.429890	17.1	123.0	Microlensing Event	candidate disk microlensing event
AT2024bgz	146.019850	-4.201358	17.1	129.0	TDE	New TDE, now is approaching the LC peak
SN2013bw	161.718208	-1.390811	17.3	144.0	SN	close to SN2024hw
Gaia24ata	188.027640	-48.157800	17.4	138.0	Unknown	candidate long microlensing event far from the Gal Plane
Gaia23dpi	222.600550	-66.066000	17.6	119.0	Microlensing Event	candidate long microlensing event or Be star
Gaia21cbi	122.889030	-80.519340	17.6	100.0	Unknown	~0.5 mag rise in Gaia, WISE and GALEX source
Gaia23cnm	285.322920	-18.717130	17.6	94.0	Unknown	slow and long rise, possible microlensing or YSO
Gaia23dgg	120.642180	-2.372900	17.8	104.0	TDE	~0.3 mag rise in Gaia source

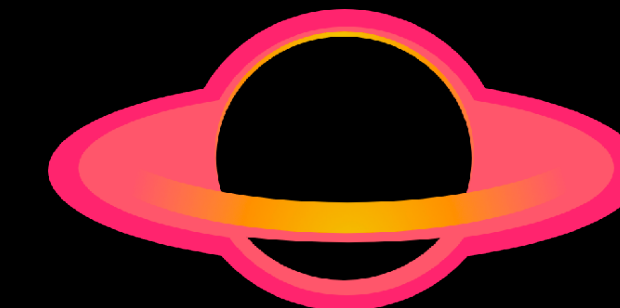


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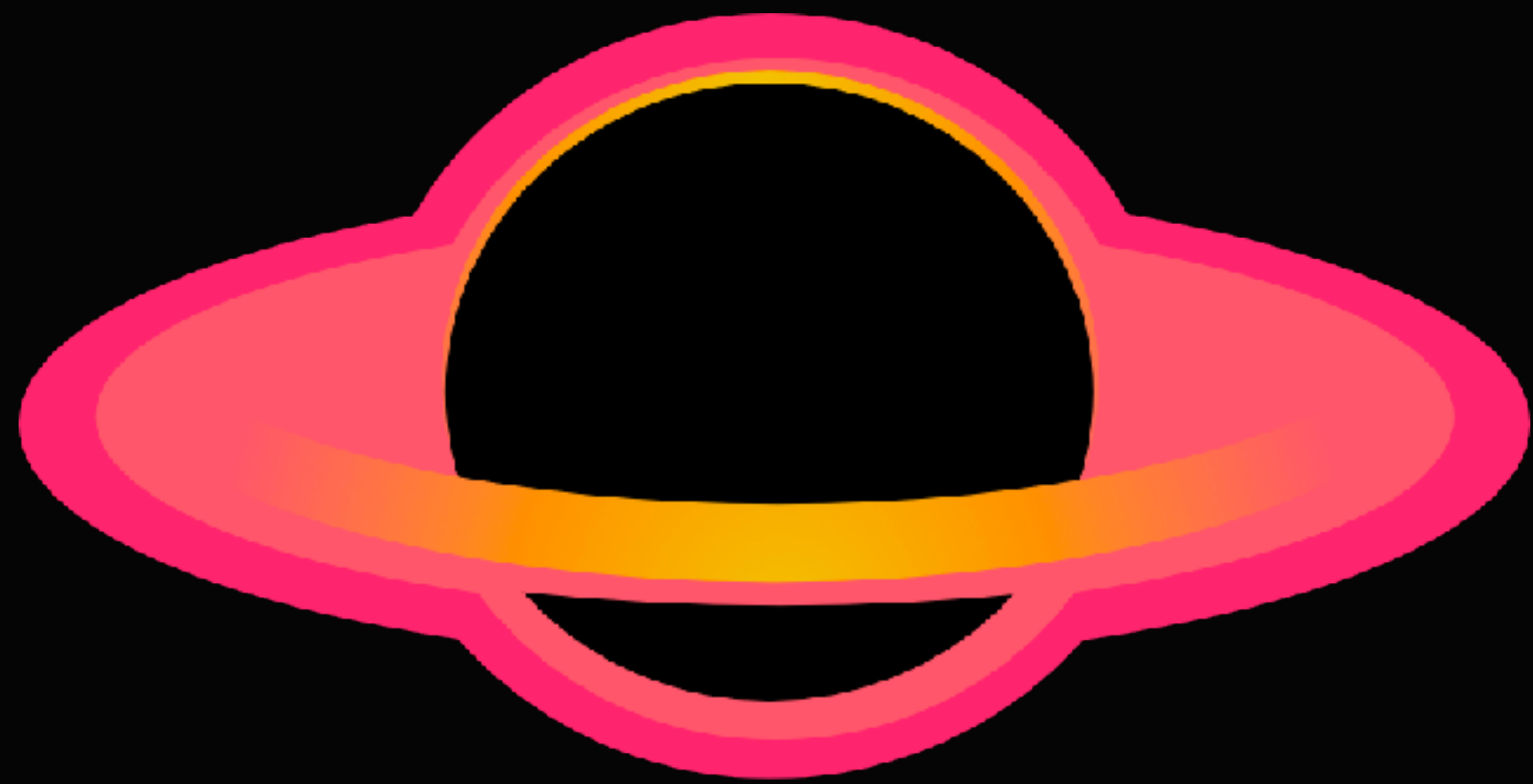
Last week's targets observed:

camera	target_names
ASV60_FLI	3C454.3
AsiagoAO-0.67_G4-16000	AT2023zgo, Gaia19bzp
Flarestar-MPC171_G2-1600	Gaia24ayd, TCrB, Gaia23cpd
GeoNAO_SXVR-H36	Gaia23dnp, Gaia23dqt, SN2024gy, Gaia23dau, Gaia24alm
HAO68_G2-1600	Gaia24ayd, SN 2024eib, NGC5683-Seyfert, 8C0716_714, TCrB, Gaia24acn, ZTF18aarippg, Gaia24aup, Gaia23dau, SN2023ixf
Kryoneri-1.2_Andor-Zyla	TCrB, SN2024gy, Gaia18bwz, SN2023ixf
LCOGT-CTIO-1m_4K	Gaia24ata, Gaia24alk, Gaia23cbf, Gaia23cvm, Gaia24ams, Gaia23cvq, Gaia24amf, Gaia23cme, Gaia23cnu, SN2023utm, Gaia23cuq, Gaia23cpd, Gaia18dif, Gaia23dpi, Gaia23cvi, Gaia23dpd, Gaia23dnp, Gaia23cvx, Gaia24aom, Gaia23dta, Gaia23cxu, Gaia24amo, Gaia24asr, Gaia24amk
LCOGT-MCD-1m_4K	Gaia23cua, Gaia23cri, Gaia23dau, Gaia23dgt
LCOGT-MCD-40cm_SBIG6303	SN2024gy
LCOGT-SAAO-1m_4K	Gaia23dpd, Gaia24ata, Gaia23cuq, Gaia23dnp, Gaia23dta, Gaia23cnu, Gaia24amo, Gaia23cbf, Gaia23cxu, Gaia23dfy, Gaia23dpi, Gaia24asr, Gaia24amk
LCOGT-SS-1m_4K	Gaia23cuq, Gaia23dnp, Gaia23cvx, Gaia23dta, Gaia23cvm, Gaia24asr
LCOGT-Teide-1m_4K	Gaia23cvq, Gaia23dgt, Gaia23cnu, Gaia23cua, Gaia23cri, Gaia23dau, Gaia23dfy
LCOGT-Teide-40cm_SBIG6303	SN2024gy
OAUJ-CDK500_U47	TCrB
ROAD_QHY600M	Gaia22bpl, Gaia23dnp, Gaia23dnm, Gaia23cpd, Gaia20fnr, Gaia23dit, Gaia24aeh, Gaia24amo, Gaia21ccu, Gaia24ach
RRRT_SBIG-STX16803	TCrB
ZAO_G2-1600	TCrB, Gaia24ayd, SN2024gy, 8C0716_714



Last week's fits uploads score (sorted by count)

	observatory-user	count
Franz-Josef Hamsch (ROAD_QHY600M)		879
Charles Galdies (ZAO_G2-1600)		168
Uliana Pylypenko (LCOGT-SAAO-1m_4K)		103
Nada Ihanec (LCOGT-CTIO-1m_4K)		89
Uliana Pylypenko (LCOGT-CTIO-1m_4K)		87
Nada Ihanec (LCOGT-SAAO-1m_4K)		58
Staszek Zola (OAUJ-CDK500_U47)		47
Alexios Liakos (Kryoneri-1.2_Andor-Zyla)		40
Jan Kåre Trandem Qvam (HAO68_G2-1600)		37
Nada Ihanec (LCOGT-Teide-1m_4K)		35
Nada Ihanec (LCOGT-SS-1m_4K)		32
Teimuraz Kvernadze (GeoNAO_SXVR-H36)		28
Uliana Pylypenko (LCOGT-Teide-1m_4K)		26
Stephen M. Brincat (Flarestar-MPC171_G2-1600)		22
Staszek Zola (RRRT_SBIG-STX16803)		15
Tom Killestein (LCOGT-Teide-40cm_SBIG6303)		15
Uliana Pylypenko (LCOGT-MCD-1m_4K)		13
Nada Ihanec (LCOGT-MCD-1m_4K)		6
Rachel Street (LCOGT-SAAO-1m_4K)		6
Rachel Street (LCOGT-Teide-1m_4K)		5
Rachel Street (LCOGT-CTIO-1m_4K)		5
Tom Killestein (LCOGT-MCD-40cm_SBIG6303)		3
Andrea Reguitti (AsiagoAO-0.67_G4-16000)		2
Uliana Pylypenko (LCOGT-SS-1m_4K)		2
Rachel Street (LCOGT-MCD-1m_4K)		1
Przemyslaw J. Mikołajczyk (ASV60_FLI)		1



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