



Astro-Colibri

Idea: to include optical data for interesting sources

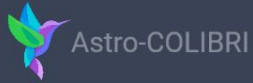
Workshop

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What is the current status?

- Supernova and unclassified optical transients with photometric information of detection datapoint
- Read in TNS datastream, manual adding of GCN circulars
- No further information (distance, classification, brightness)
- No history information on photometry, astrometry or object type
- No association of optical counterpart candidates to GW/neutrino/GRB

Improvement suggestions



Select action

Latest transients

Cone search

Personalize



FlaapLUC and other have the same color

Enhanced user settings

Observatories



add ZTF

Event types



2022-09-14



Update displayed information (add list of attributes - can some of them be private? what happens if we have multiple sources of information?)

GRB 220927A
Gamma ray burst
RA/Dec: 96.91° / -27.49° (± 1.14°)
2022-09-27 05:36:20

SN 2022iuv
Supernovae (optical)
Cone search

Custom cone search
RA / Dec: 132.15° 30.7°
source: SN 2022iuv
radius: < < 1° > >

Detailed info about selected source: science mode

name: SN 2022iuv
Detection time: 2022-09-17 12:03:06

Localisation:
RA [deg]: 132.15 Dec [deg]: 30.70
RA : 8h48m35.17s Dec : 30d42m4.02s

observatory: ZTF discovery name: ZTF22abgbfy
classification: SN Ia redshift: 0.027
brightness: 18.64 mag
comment: host: SDSS J084834.99+304203.0 (z=0.0268)

Search for ATels!

visibility: 2022-09-29

Daily

what type of redshift?

This is brightness at detection, update to the recent one

Adding a dropdown menu with user-specified cuts (SN classification?, distance?)

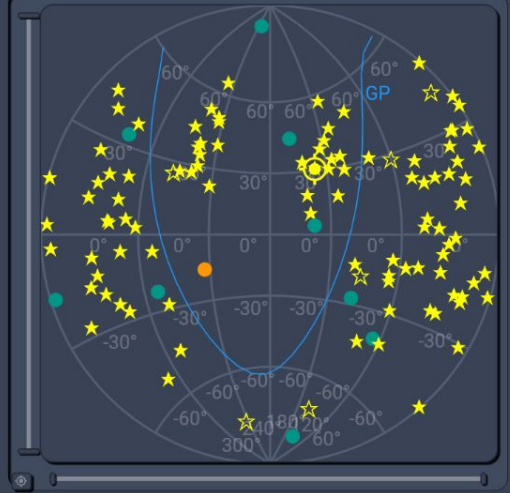
RA/Dec: 245.00° / -16.04° (± 0.001°)
2022-09-26 09:25:04

SN 2022yve
Supernovae (optical)

RA/Dec: 357.08° / 2.34°
2022-09-26 08:37:55

SN 2022vxj
Supernovae (optical)

RA/Dec: 11.54° / 29.44° (± 0.000°)
2022-09-26 07:36:28



Links for further details

auto scroll

Pan-STARRS
Archival reference images of the Northern sky

Fink
Broker providing real-time transient classification

SSCD
Spectral energy distribution (SED) of the

ASAS-SN
Photometric lightcurves from ASAS-SN

AAVSO
Lightcurve collected by amateur astronomers

LIGO
LIGO

XRT
XRT

SOFIA
SOFIA

What to do in the near future?

- Provide the most current brightness + date (+ filter) (not only the value at detection) for optical transients
- Do we want to have light curves? Maybe display small figures?
- Add attributes/tags to optical transients (“nearby”, “associated with neutrino”...)
- User selection of objects with certain tasks, also “negative” filtering
- We have some source classes that need special handling, e.g.
 - TDEs: Cross-match high energy sources that are within a small time-window around neutrino detection point, but display optical counterpart detections with longer history
 - Neutrinos: Show only optical counterparts that are selected for further follow-up, but also show if there are no possible counterparts

Implementation

- Set up Ampel data stream and push to the development Astro-COLIBRI page for testing
- Information pushed through API and events identified through TNS ID
- Sample POST json payload from AMPEL:
 - `{'tnsid': 123, 'attributes': ['nearby/ampel', 'FBOT/ampel'], 'photometry': {'first': {'mag': 20.2, 'band': 'ZTFR', 'jd': 3}, 'peak': {'mag': 18.3, 'band': 'ZTFg', 'jd': 6}, 'last': {'mag': 20.7, 'band': 'ZTFg', 'jd': 207.1}, 'names': ['ZTF23abc']}`
- Will also need either a DEL for removing attributes, or consistent overwriting updates.



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