



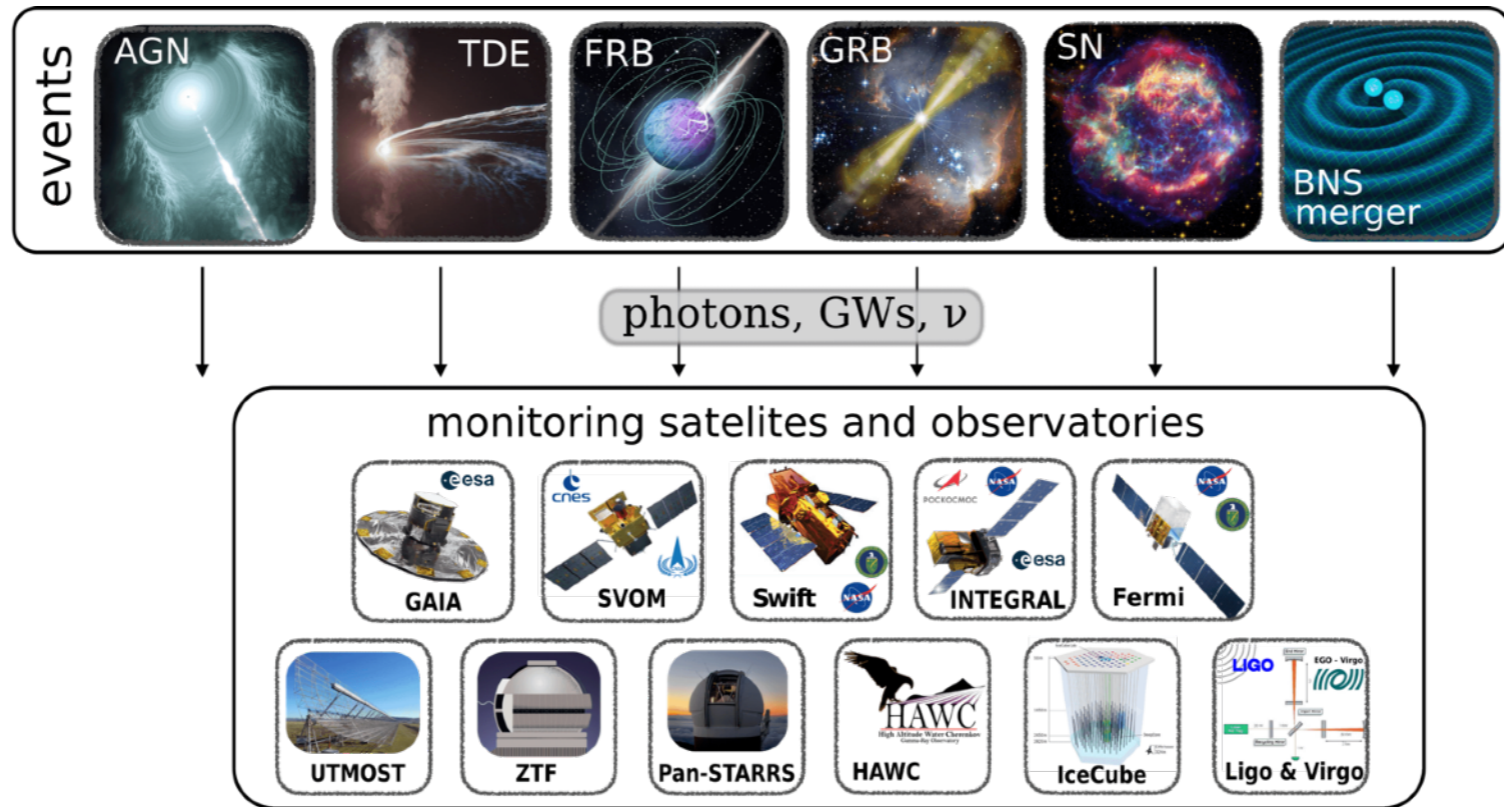
Astro-COLIBRI

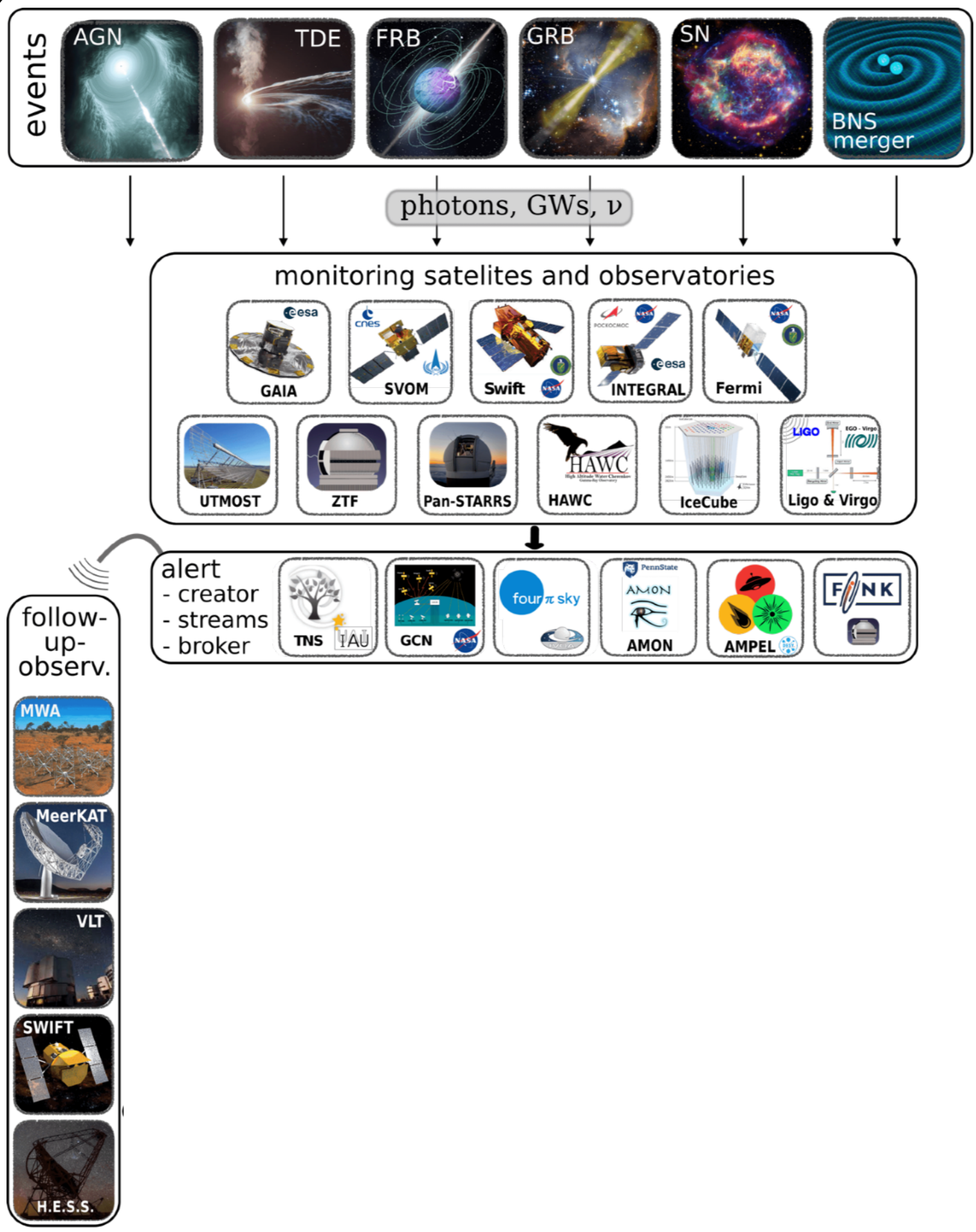
COincidence **LIB**rary for **R**eal-time **I**nquiry for multi-messenger astrophysics

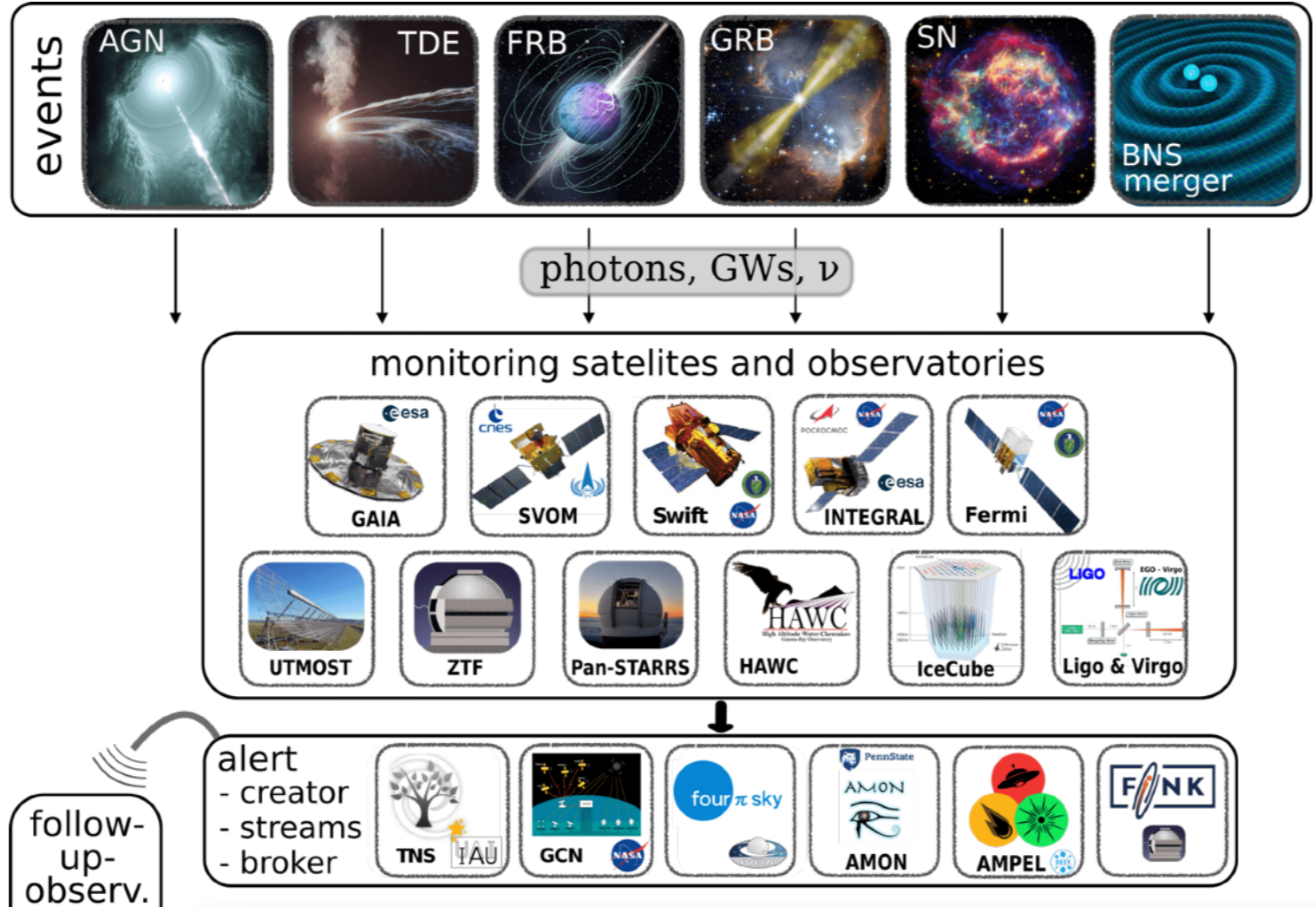
Fabian Schüssler (IRFU, CEA Paris-Saclay)

on behalf of the Astro-COLIBRI team









follow-up-observ.



The following new classification/s were reported on:

```

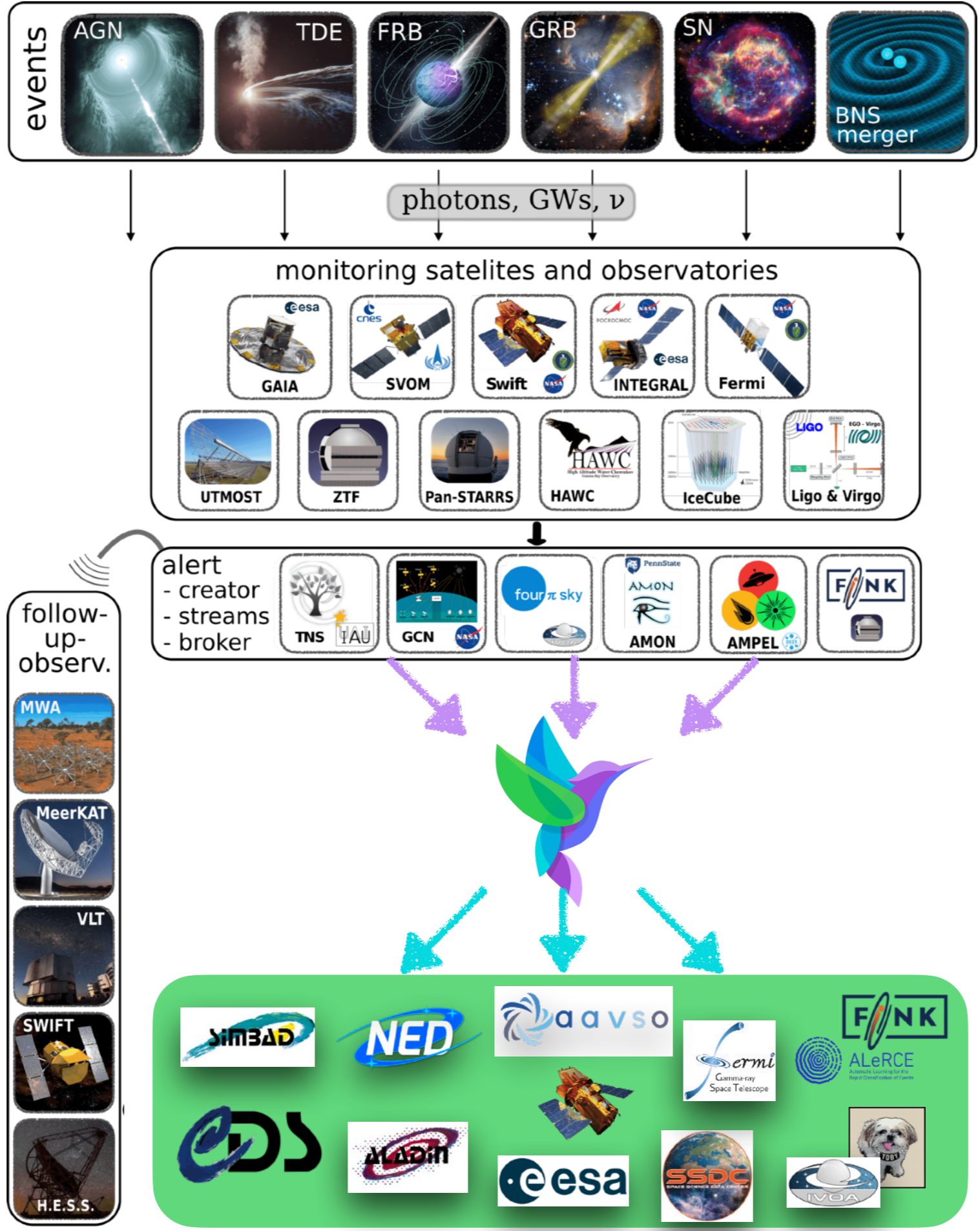
2021agrk RA=16:31:36.210, DEC=+13:38:14.93, Classification=SN II, Redshift=0.026, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
2022dkw RA=14:35:50.295, DEC=+24:40:58.20, Classification=SN IIln, Redshift=0.036, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
2022dlf RA=13:24:06.914, DEC=-00:41:34.50, Classification=SN Ia-91T-like, Redshift=0.092, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
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2022efq RA=16:40:08.257, DEC=+29:32:21.32, Classification=SN Ia, Redshift=0.072, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
2022ehu RA=20:17:04.032, DEC=-47:46:21.15, Classification=SN Ia, Redshift=0.072, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
2022eml RA=10:28:26.131, DEC=-34:28:22.63, Classification=SN Ia, Redshift=0.072, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+
2022enc RA=14:43:15.783, DEC=-38:23:54.71, Classification=SN Ia, Redshift=0.072, Time received: 2022-03-23 18:56:17, Classifier: T. Moore, S. Srivastav, K. W. Smith, M. Fulton, O. Yaron on behalf of ePESSTO+, Source group: ePESSTO+

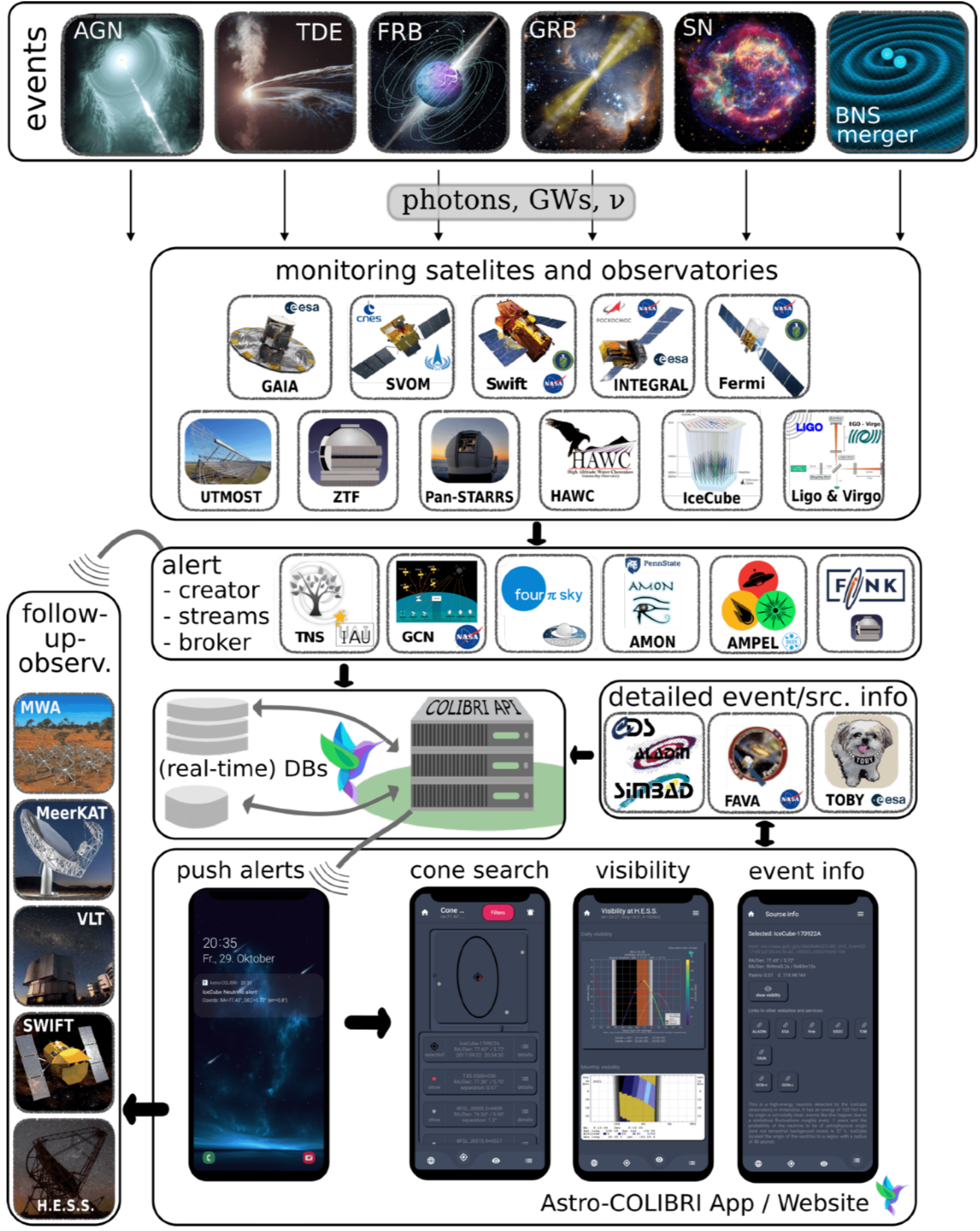
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    <Author>
      <shortName>VO-GCN/</shortName>
      <contactName>Scott Barthelmy/</contactName>
      <contactPhone>+1-301-286-3106/</contactPhone>
      <contactEmail>scott.barthelmy@nasa.gov/</contactEmail>
    </Author>
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  </What>
</voe:VOEvent>

```







Interface web

Astro-COLIBRI | Select action: Latest transients | Cone search | Personalize | Status: logged out | Infos: v2.4.2

Observatories: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other
Event type: FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat

Timeline: 2023-03-01 to 2023-04-07

GRB 230405B

Gamma-ray burst

RA/Dec: 276.86°/-50.27° (± 1.58°)
2023-04-05 19:58:03

SN 2023eod

Supernovae (optical)

RA/Dec: 74.10°/-46.03°
2023-04-05 18:06:46

GRB 230405A

Gamma-ray burst

RA/Dec: 341.94°/76.97° (± 5.62°)
2023-04-05 15:03:04

IceCube-230405A

Neutrino

RA/Dec: 120.85°/9.75° (± 2.97°)
2023-04-05 13:20:20

SN 2023eoa

Supernovae (optical)

IceCube-230405A

Neutrino

Custom cone search
RA / Dec: 120.85° 9.75°
source: IceCube-230405A
radius: 2.97°

Cone search

Detailed info about selected source: science mode

VoEvent : XML | VoEvent : JSON | History: #0 #1

name: IceCube-230405A
Detection time: 2023-04-05 13:20:20

Localisation:
RA [deg] : 120.85 | Dec [deg] : 9.75
RA : 8h3m23.98s | Dec : 9d45m0s
error [deg] : 2.9700

observatory: IceCube
notice: Bronze
FAR: 2.84/yr | P_astro: 0.30 | E: 110.43 TeV

[Search for ATels!](#)

This is a high-energy neutrino detected by the IceCube observatory in Antarctica. It has an energy of 110 TeV but its origin is not totally clear: events like this happen due to statistical fluctuations roughly every 0.4 years and the probability of the neutrino to be of astrophysical origin (and not terrestrial background noise) is 30 %. IceCube located the origin of the neutrino to a region with a radius of 178 arcmin within the Cancer constellation.

Learn more about IceCube: [link](#)

Discuss this event on Twitter: [@AstroColibri](#)

Links for further details: auto scroll

- [ALADIN](#): Displays event in an interactive sky atlas
- [ESASky](#): Displays event in an interactive sky atlas
- [Fink](#): Broker providing real-time transient classification
- [ASAS-SN](#): Photometric lightcurves from ASAS-SN
- [AAVSO](#): Lightcurve collected by amateur astronomers
- [Spectroscopic distribution](#): Spectroscopic distribution of the event



Les derniers transitoires

Astro-COLIBRI interface showing a list of transients and a detailed view of IceCube-230405A Neutrino.

Observatories: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLapLUC, LVC, other

Event type: FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat

Timeline: 2023-03-01 to 2023-04-07

Selected Source: IceCube-230405A Neutrino

Custom cone search: RA / Dec: 120.85° 9.75°
source: IceCube-230405A
radius: 2.97°

Detailed info about selected source:

name: IceCube-230405A
Detection time: 2023-04-05 13:20:20

Localisation:
RA [deg]: 120.85 Dec [deg]: 9.75
RA : 8h3m23.98s Dec : 9d45m0s
error [deg]: 2.9700

observatory: IceCube
notice: Bronze
FAR: 2.84/yr P_astro: 0.30 E: 110.43 TeV

This is a high-energy neutrino detected by the IceCube observatory in Antarctica. It has an energy of 110 TeV but its origin is not totally clear: events like this happen due to statistical fluctuations roughly every 0.4 years and the probability of the neutrino to be of astrophysical origin (and not terrestrial background noise) is 30 %. IceCube located the origin of the neutrino to a region with a radius of 178 arcmin within the Cancer constellation.

Learn more about IceCube: [link](#)

Discuss this event on Twitter: [@AstroColibri](#)

Links for further details: ALADIN, ESASky, Fink, ASAS-SN, AAVSO



Timeline + Filters

The screenshot displays the Astro-COLIBRI web interface. At the top, there's a navigation bar with the logo, 'Astro-COLIBRI', and buttons for 'Select action', 'Latest transients', 'Cone search', 'Personalize', and user status 'logged out'. Below this is a filter bar with 'Observatories' (Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other) and 'Event type' (FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat). A timeline from 2023-03-01 to 2023-04-07 shows various event markers. The main content area is divided into three sections: a list of recent events on the left, a central sky map, and detailed information on the right. The list includes GRB 230405B, SN 2023eod, GRB 230405A, IceCube-230405A Neutrino, and SN 2023eoa. The sky map shows a cone search around the IceCube-230405A Neutrino event. The detailed view for IceCube-230405A Neutrino provides coordinates, detection time, localisation, and a description of the event.

Observatories: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other

Event type: FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat

Timeline: 2023-03-01 to 2023-04-07

Recent Events:

- GRB 230405B** Gamma-ray burst
RA/Dec: 276.86°/-50.27° (± 1.58°)
2023-04-05 19:58:03
- SN 2023eod** Supernovae (optical)
RA/Dec: 74.10°/-46.03°
2023-04-05 18:06:46
- GRB 230405A** Gamma-ray burst
RA/Dec: 341.94°/76.97° (± 5.62°)
2023-04-05 15:03:04
- IceCube-230405A** Neutrino
RA/Dec: 120.85°/9.75° (± 2.97°)
2023-04-05 13:20:20
- SN 2023eoa** Supernovae (optical)

IceCube-230405A Neutrino Details:

Custom cone search
RA / Dec: 120.85° 9.75°
source: IceCube-230405A
radius: 2.97°

Detailed info about selected source:
VoEvent : XML VoEvent : JSON History: #0 #1
name: IceCube-230405A
Detection time: 2023-04-05 13:20:20
Localisation:
RA [deg] : 120.85 Dec [deg] : 9.75
RA : 8h3m23.98s Dec : 9d45m0s
error [deg] : 2.9700
observatory: IceCube
notice: Bronze
FAR: 2.84/yr P_astro: 0.30 E: 110.43 TeV

This is a high-energy neutrino detected by the IceCube observatory in Antarctica. It has an energy of 110 TeV but its origin is not totally clear: events like this happen due to statistical fluctuations roughly every 0.4 years and the probability of the neutrino to be of astrophysical origin (and not terrestrial background noise) is 30 %. IceCube located the origin of the neutrino to a region with a radius of 178 arcmin within the Cancer constellation.

Learn more about IceCube: [link](#)

Discuss this event on Twitter: [@AstroColibri](#)

Links for further details:

- ALADIN**: Displays event in an interactive sky atlas
- ESASky**: Displays event in an interactive sky atlas
- Fink**: Broker providing real-time transient classification
- ASAS-SN**: Photometric lightcurves from ASAS-SN
- AAVSO**: Lightcurve collected by amateur astronomers
- Spei**: Spectroscopic data



Informations détaillées

Astro-COLIBRI interface showing detailed information for the IceCube-230405A Neutrino event. The interface includes a top navigation bar with "Select action", "Latest transients", "Cone search", "Personalize", and "Status: logged out". Below this is a filter bar for "Observatories" (Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other) and "Event type" (FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat). A timeline at the top shows the date range from 2023-03-01 to 2023-04-07.

The main content area is divided into several sections:

- Left sidebar:** Lists recent events including GRB 230405B (Gamma-ray burst), SN 2023eod (Supernovae (optical)), GRB 230405A (Gamma-ray burst), IceCube-230405A (Neutrino), and SN 2023eoa (Supernovae (optical)).
- Center:** A sky map showing the location of the IceCube-230405A Neutrino event. The map includes a "Cone search" button and a "Custom cone search" panel with RA/Dec: 120.85° / 9.75°, source: IceCube-230405A, and radius: 2.97°.
- Right panel:** "Detailed info about selected source:" section, which is highlighted with a yellow border. It includes a "science mode" toggle, event details (name: IceCube-230405A, detection time: 2023-04-05 13:20:20), localisation (RA [deg]: 120.85, Dec [deg]: 9.75, RA: 8h3m23.98s, Dec: 9d45m0s, error [deg]: 2.9700), observatory (IceCube), notice (Bronze), FAR: 2.84/yr, P_astro: 0.30, and E: 110.43 TeV. It also includes a "Search for ATels!" link and a paragraph explaining the event: "This is a high-energy neutrino detected by the IceCube observatory in Antarctica. It has an energy of 110 TeV but its origin is not totally clear: events like this happen due to statistical fluctuations roughly every 0.4 years and the probability of the neutrino to be of astrophysical origin (and not terrestrial background noise) is 30 %. IceCube located the origin of the neutrino to a region with a radius of 178 arcmin within the Cancer constellation." Below this is a link to "Learn more about IceCube" and a Twitter link "@AstroColibri".
- Bottom right:** "Links for further details" section with buttons for ALADIN, ESASky, Fink, ASAS-SN, and AAVSO.



Mode "Science"

Astro-COLIBRI

Select action Latest transients Cone search Personalize Status: logged out Infos: v2.4.2

Observatories: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other

Event type: FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat

2023-03-01 2023-04-07

GRB 230405B
Gamma-ray burst
RA/Dec: 276.86°/-50.27° (± 1.58°)
2023-04-05 19:58:03

SN 2023eod
Supernovae (optical)
RA/Dec: 74.10°/-46.03°
2023-04-05 18:06:46

GRB 230405A
Gamma-ray burst
RA/Dec: 341.94°/76.97° (± 5.62°)
2023-04-05 15:03:04

IceCube-230405A
Neutrino
RA/Dec: 120.85°/9.75° (± 2.97°)
2023-04-05 13:20:20

SN 2023eoa
Supernovae (optical)

IceCube-230405A
Neutrino
Cone search

Custom cone search
RA / Dec: 120.85° 9.75°
source: IceCube-230405A
radius: 2.97°

Detailed info about selected source:
science mode

VoEvent : XML VoEvent : JSON History: #0 #1
name: IceCube-230405A
Detection time: 2023-04-05 13:20:20
Localisation:
RA [deg] : 120.85 Dec [deg] : 9.75
RA : 8h3m23.98s Dec : 9d45m0s
error [deg] : 2.9700
observatory: IceCube
notice: Bronze
FAR: 2.84/yr P_astro: 0.30 E: 110.43 TeV
Event display:
Search for ATels!

visibility: 2023-06-15
Daily

Visibility at H.E.S.S.
IceCube-230405A
(RA = 120.8°, DEC = 9.8°)
https://astro-colibri.com

Links for further details auto scroll

GCN Viewer Access to GCN notices and circulars
GCN-n GCN notices: rapid alert message
GCN-c GCN circulars: announcements of new transient events
ALADIN Displays event in an interactive sky atlas
ESASky Displays event in an interactive sky atlas
Brok time class



Plateformes externes





Recherches d'événements

Astro-COLIBRI interface showing event search results for IceCube-230405A Neutrino.

Navigation: Select action | Latest transients | Cone search | Personalize | Status: logged out | Infos: v2.4.2

Filters: Observatories: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other. Event type: FRB, OT, SN, GRB, burst, neutrino, nuem, GW, 4FGL, TeVCAT, SGR/AXP, IceCat.

Timeline: 2023-03-01 to 2023-04-07

Event Details: IceCube-230405A Neutrino. RA/Dec: 120.85°/9.75°. 2023-04-05 13:20:20.

Custom cone search: RA / Dec: 120.85° 9.75°. source: IceCube-230405A. radius: 2.97°.

Search Results:

- NVSS J080159+100535 (4FGL J0802.0+1006)
- PKS 0754+100 (4FGL J0757.1+0956)
- TXS 0755+117 (4FGL J0758.1+1134)
- 4FGL J0800.9+0733

Detailed info about selected source: name: IceCube-230405A. Detection time: 2023-04-05 13:20:20. Localisation: RA [deg]: 120.85, Dec [deg]: 9.75. error [deg]: 2.9700. observatory: IceCube. notice: Bronze. FAR: 2.84/yr. P_astro: 0.30. E: 110.43 TeV.

Visibility Graph: Visibility at H.E.S.S. IceCube-230405A (RA = 120.8°, DEC = 9.8°). Daily visibility for 2023-06-15.

Links for further details: GCN.Viewer, GCN-n, GCN-c, ALADIN, ESASky.



Configurations

Astro-COLIBRI interface showing various configuration options and data for the IceCube-230405A Neutrino event.

Navigation and Status: Select action, Latest transients, Cone search, Personalize (highlighted), Status: logged out, Infos: v2.3.0

Observatories and Event Type: Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other. Event type: FRB, OT, SN, GRB, burst, neutrino, GW, nuem, 4FGL, TeVCAT, SGR/AXP.

Timeline: 2023-03-01 to 2023-04-07

Event List:

- GRB 230405B Gamma-ray burst (RA/Dec: 271.44°/-47.07° (± $\pm 0.00^\circ$), 2023-04-05 20:03:23)
- GRB 230405B Gamma-ray burst (RA/Dec: 276.86°/-50.27° (± $\pm 1.58^\circ$), 2023-04-05 19:58:03)
- GRB 230405A Gamma-ray burst (RA/Dec: 341.94°/76.97° (± $\pm 5.62^\circ$), 2023-04-05 15:03:04)
- IceCube-230405A Neutrino (RA/Dec: 120.85°/9.75° (± $\pm 2.97^\circ$), 2023-04-05 13:20:20)
- PKS1127-14 GeV flare

IceCube-230405A Neutrino Details:






- Custom cone search: RA / Dec: 120.85° 9.75°, source: IceCube-230405A, radius: 2.97°
- Detailed info about selected source: name: IceCube-230405A, Detection time: 2023-04-05 13:20:20, Localisation: RA [deg]: 120.85, Dec [deg]: 9.75, RA: 8h3m23.98s, Dec: 9d45m0s, error [deg]: 2.9700, observatory: IceCube, notice: Bronze, FAR: 2.84/yr, P_astro: 0.30, E: 110.43 TeV
- Photometry: [Graph]
- Search for ATels!
- visibility: 2023-04-12
- Daily
- Visibility at H.E.S.S. Source location: (RA = 120.8°, DEC = 9.8°)

Links for further details: SSDC (Spectral energy distribution (SED) of the selected sky location), ASAS-SN (Photometric lightcurves from ASAS-SN), AAVSO (Lightcurve collected by amateur astronomers), LSXPS (Living Swift-XRT point source catalogue), FAVA (Photometric lightcurve of GeV photons recorded by Fermi-LAT)



Définition des observatoires

Astro-COLIBRI

Select action Latest transients Cone search Personalize     Status: logged out Infos:  v2.3.0

Location of observer

The observability is calculated for an observer at custom position: long = 2.15°, lat = 48.72°, height = 0m.

You can change the observer location by choosing one of the following observatories

Radio

ALMA ASKAP ATCA MWA Nançay Murriyang/Parkes


Optical

Jilin Keck Mount Wilson OHP Palomar SALT San Pedro Mártir VLT Paranal Victor M

High energy


HAWC H.E.S.S. LHAASO LST MAGIC VERITAS


My observatories :

saclay 



Detailed info about selected source:



VoEvent : XML VoEvent : JSON History: #0 #1


name: IceCube-230405A 


Detection time: 2023-04-05 13:20:20 


Localisation:




RA [deg] : 120.85  Dec [deg] : 9.75 

RA : 8h3m23.98s  Dec : 9d45m0s 

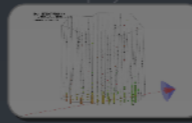
error [deg] : 2.9700 


observatory: IceCube 

notice: Bronze 

FAR: 2.84/yr  P_astro: 0.30  E: 110.3 TeV 

Event display:

Photometry: 




2023-04-07 

science mode

7.76749693	48.583331	142	0.1	75	1
longitude	latitude	altitude [m]	FoV [deg]	Zenith limit [deg]	max. moon ...

Strasbourg

name custom position

IceCube-230405A
Neutrino

RA/Dec: 120.85°/9.75° (± 2.97°)
2023-04-05 13:20:20

PKS1127-14
GeV flare



Observabilité

Astro-COLIBRI interface showing observatory filters (Swift, Fermi, HAWC, IceCube, AMON, Integral, GECAM, FLAapLUC, LVC, other) and event types (FRB, OT, SN, GRB, burst, neutrino, GW, nuem, 4FGL, TeVCAT, SGR/AXP).

Navigation: Select action, Latest transients, Cone search, Personalize, Location, Globe, Info. Status: logged out, Infos: v2.3.0

Timeline: 2023-03-01 to 2023-04-06. Science mode toggle.

Source details: 230405A, 2023-04-05 13:20:20, Dec [deg]: 9.75, 9d45m0s, P_astro: 0.30, E: 110.43 TeV.

Visibility at H.E.S.S. Source location: (RA = 120.8°, DEC = 9.8°)

Graph showing altitude [deg] vs hours from UTC midnight for Sun, Moon, and source. Includes dark time and moonlight indicators.

Note: Grey levels correspond to civil, naval, and astronomical twilight, respectively.

Zenith < 45°: 17:50 UTC - 19:40 UTC
Zenith < 60°: 17:50 UTC - 20:59 UTC

ASAS-SN: Photometric lightcurves from ASAS-SN
AAVSO: Lightcurve collected by amateur astronomers
LSXPS: Living Swift-XRT point source catalogue
FAVA: Photometric lightcurve of GeV photons recorded by Fermi-LAT



Ondes gravitationnelles

Astro-COLIBRI Select action Latest transients Cone search Personalize Status: logged out Infos: v2.4.2

Observatories: Swift Fermi HAWC IceCube AMON Integral GECAM FLaapLUC LVC other

Event type: FRB OT SN GRB burst neutrino nuem GW 4FGL TeV CAT SGR/AXP IceCat

2023-05-31 05-31 06-01 06-02 06-03 06-04 06-05 06-06 06-07 06-08 06-09 06-10 06-11 06-12 06-13 06-14 06-15 2023-06-15

- S230615an** Gravitational wave
RA/Dec: 170.02°/-46.96°
2023-06-15 13:35:22
- S230615ak** Gravitational wave
RA/Dec: 272.29°/3.28°
2023-06-15 13:25:23
- S230615af** Gravitational wave
RA/Dec: 317.71°/52.99°
2023-06-15 12:54:10
- S230615t** Gravitational wave
RA/Dec: 156.97°/-20.42°
2023-06-15 10:21:29
- S230615k** Gravitational wave



Detailed info about selected source: science mode

VoEvent: [XML](#) [JSON](#) History: [#0](#) [#1](#) [#2](#) [#3](#)

name: S230601bf
Detection time: 2023-06-01 22:41:34
RA [deg]: 307.97 Dec [deg]: -40.82
RA : 20h31m52.5s Dec : -40d49m1.38s
observatory: LVC instrument: H1,L1 discovery name: S230601bf
notice: Update pipeline: spsir
classification: BBH: 1.00
FAR: 5.41e-8/yr → significant event
distance: 3565 ± 1260 Mpc
50% area: 907 deg² 90% area: 2497 deg²

[Search for ATels!](#)

Schedule

visibility: 2023-06-15

Daily Monthly

Links for further details auto scroll

- [GraceDB](#) Information on the gravitational wave event
- [TreasureMap](#) Follow-ups of GW events
- [GCN Viewer](#) Access to GCN notices and circulars
- [GCN-n](#) GCN notices: rapid alert message
- [ALADIN](#) Displays event in an interactive sky atlas



Informations détaillées

Astro-COLIBRI

Select action Latest transients Cone search Personalize Status: logged out Infos: v2.4.2

Detailed info about selected source:

VoEvent : [XML](#) VoEvent : [JSON](#) History: [#0](#) [#1](#) [#2](#) [#3](#)

name: S230601bf

Detection time: 2023-06-01 22:41:34

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distance: 3565 ± 1260 Mpc

50% area: 907 deg² 90% area: 2497 deg²

[Search for ATels!](#)

Schedule

S230615k Gravitational wave

Information on the gravitational wave event

Follow-ups events

GraceDB Information on the gravitational wave event

TreasureMap Follow-ups of GW events

Visibility at H.E.S.S. S230601bf (RA = 308.0°, DEC = -40.8°)

<https://astro-colibri.com>



Plan d'observation

Astro-COLIBRI Select action Latest transients Cone search Personalize Status: logged out Infos: v2.4.2

Observatories: Swift Fermi HAWC IceCube AMON Integral GECAM FLaapLUC LVC other

Event type: FRB OT SN GRB burst neutrino nuem GW 4FGL TeV CAT SGR/AXP IceCat

2023-05-31 05-31 06-01 06-02 06-03 06-04 06-05 06-06 06-07 06-08 06-09 06-10 06-11 06-12 06-13 06-14 06-15 2023-06-15

S230615an
Gravitational wave
RA/Dec: 170.02°/-46.96°
2023-06-15 13:35:22

S230615ak
Gravitational wave
RA/Dec: 272.29°/3.28°
2023-06-15 13:25:23

S230615af
Gravitational wave
RA/Dec: 317.71°/52.99°
2023-06-15 12:54:10

S230615t
Gravitational wave
RA/Dec: 156.97°/-20.42°
2023-06-15 10:21:29

S230615k
Gravitational wave

S230601bf
Gravitational wave
[Cone search](#)

Custom cone search
RA / Dec: 307.97° -40.82°
source: S230601bf
radius: 1°

Detailed info about selected source: science mode

VoEvent: [XML](#) [JSON](#) History: [#0](#) [#1](#) [#2](#) [#3](#)

name: S230601bf
Detection time: 2023-06-01 22:41:34
RA [deg]: 307.97 Dec [deg]: -40.82
RA : 20h31m52.5s Dec : -40d49m1.38s
observatory: LVC instrument: H1,L1 discovery name: S230601bf
notice: Update pipeline: spiir
classification: BBH: 1.00
FAR: 5.41e-8/yr → significant event
distance: 3565 ± 1260 Mpc
50% area: 907 deg² 90% area: 2497 deg²

[Search for ATels!](#)

[Schedule](#)

visibility: 2023-06-15

[Daily](#) [Monthly](#)

Links for further details auto scroll

[GraceDB](#) Information on the gravitational wave event

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Plan d'observation

Astro-COLIBRI Select action Latest transients Cone search Personalize Status: logged out Infos: v2.4.2

Observatories: Swift Fermi HAWC IceCube AMON Integral GECAM FLaapLUC LVC other

Event type: FRB OT SN GRB burst neutrino nuem GW 4FGL TeV CAT SGR/AXP IceCat

2023-05-31 05-31 06-01 06-02 06-03 06-04 06-05 06-06 06-07 06-08 06-09 06-10 06-11 06-12 06-13 06-14 06-15 2023-06-15

S230601bf_tile_015 tilepy △
RA/Dec: 22.37°/-58.35° (± 2.00°)
2023-06-16 03:36:11

S230601bf_tile_014 tilepy △
RA/Dec: 337.13°/-56.06° (± 2.00°)
2023-06-16 03:06:11

S230601bf_tile_013 tilepy △
RA/Dec: 300.59°/-33.33° (± 2.00°)
2023-06-16 02:36:11

S230601bf_tile_012 tilepy △
RA/Dec: 14.91°/-59.30° (± 2.00°)
2023-06-16 02:06:11

S230601bf_tile_011 tilepy △



Detailed info about selected source: science mode

VoEvent: [XML](#) [JSON](#) History: [#0](#) [#1](#) [#2](#) [#3](#)

name: S230601bf
Detection time: 2023-06-01 22:41:34
RA [deg]: 307.97 Dec [deg]: -40.82
RA : 20h31m52.5s Dec : -40d49m1.38s
observatory: LVC instrument: H1,L1 discovery name: S230601bf
notice: Update pipeline: spsir
classification: BBH: 1.00
FAR: 5.41e-8/yr → significant event
distance: 3565 ± 1260 Mpc
50% area: 907 deg² 90% area: 2497 deg²

[Search for ATels!](#)

The following observation schedule is proposed by tilepy. It covers 11.8% of the GW localisation uncertainty region.

Schedule Full details: [JSON](#)

visibility	ID	coverage [%]	RA [deg ²]	Dec [deg]
2023-06-15	S230601bf_tile_000	0.14	285.82	-17.74
	S230601bf_tile_001	0.64	288.81	-8.69

Daily Monthly

Links for further details auto scroll

[GraceDB](#) Information on the gravitational wave event

[TreasureMap](#) Follow-ups of GW events

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[GCN-n](#) GCN notices: rapid alert message

[ALADIN](#) Displays event in an interactive sky atlas



Android + iOS

The image displays four smartphone screens showcasing the Astro-COLIBRI application interface. The first screen shows a star map with a red cone search area. The second screen displays a list of astronomical objects with details for MS230110g, SN 2022bf, GRB 220103A, and HAWC-220103A. The third screen shows the 'Visibility at H.E.S.S.' page with a daily visibility graph and a monthly visibility heatmap. The fourth screen shows the 'Notifications' settings page with a list of alert types to subscribe to.

Notifications

Subscribe to alert notifications

- GRB alerts
- Neutrino alerts
- GW alerts
- Significant GW alerts
- NS/NSBH GW alerts
- Burst alerts
- Optical transients: SNe
- Optical transients: other
- Bright optical transients (mag < 18)
- FlaapLUC (Fermi-LAT alerts)
- Astro-COLIBRI announcements

Notifications en temps réel



Astro-COLIBRI

- Astro-COLIBRI: plateforme automatique et gratuite pour accéder aux détections de phénomènes transitoires
 - supernovae, sursauts gamma, sursauts radio, neutrinos de haute énergie, **ondes gravitationnelles**, ...
 - interfaces: <https://astro-colibri.com> + Android + iOS
 - une API centrale et publique: <https://astro-colibri.science>
- References
 - P. Reichherzer et al., ApJS 256 5, 2021 ([link](#)) + Galaxies 11(1), 2022 ([link](#))
- 2nd Astro-COLIBRI Multi-Messenger Workshop: November 20-24, 2023
 - Institut Pascal, Université Paris-Saclay



Astro-COLIBRI

Contact: astro.colibri@gmail.com

- Central webpage: [**https://astro-colibri.science**](https://astro-colibri.science)

Android Play Store



Apple iOS App Store



Introductions/tutorials on YouTube



Twitter: [**@AstroColibri**](https://twitter.com/AstroColibri)

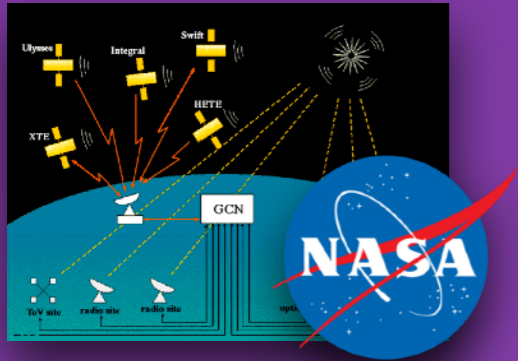


Gamma-Catcher

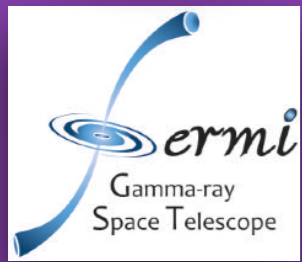
- Arcade game with a high-energy + time domain astrophysics background
- www.gamma-catcher.com + Android PlayStore



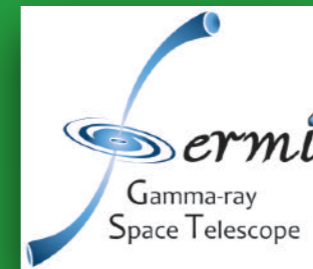
Main idea



TRANSIENT NAME SERVER



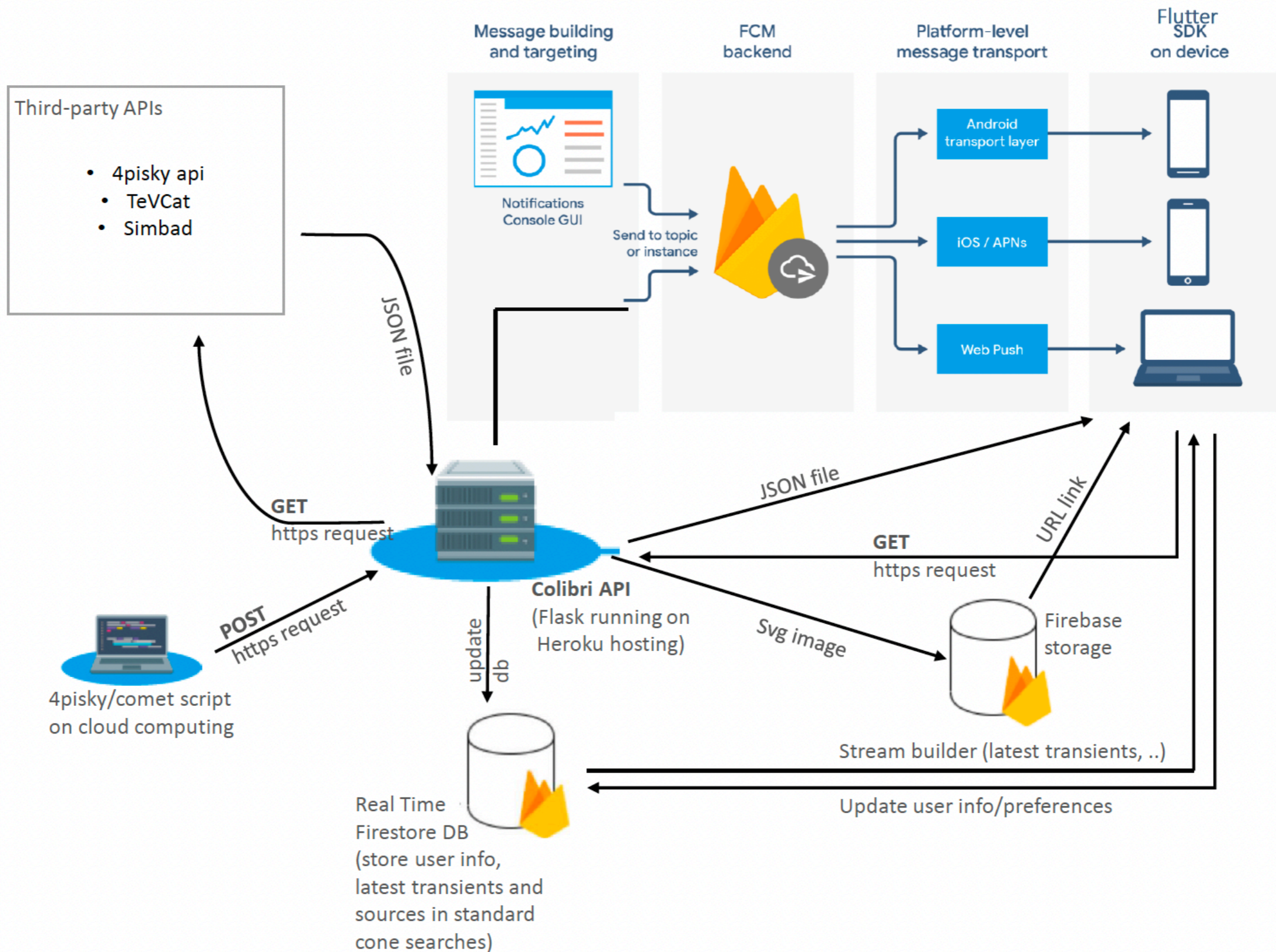
...



...



Architecture



Astronomie des phénomènes transitoires

Les phénomènes les plus violents de l'univers

- Supernovae + sursauts gamma
- Novae + CV + TDE + ...
- Sursauts radio rapides
- Étoiles à neutrons, magnetars, ...
- **Phénomènes multi-messagers**

