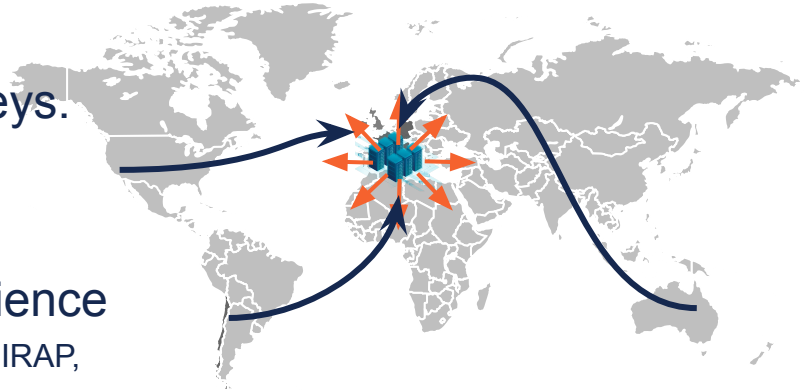
Retrospective 2023
Prospective 2024

Julien @ IJCLab

LSST-France 2023 @ CC-IN2P3

Fink in a nutshell

Brokers are software serving the scientific community by **ingesting**, classifying, filtering, and **redistributing** alerts from telescopes and surveys.



60+ members, 15+ scientific topics covered

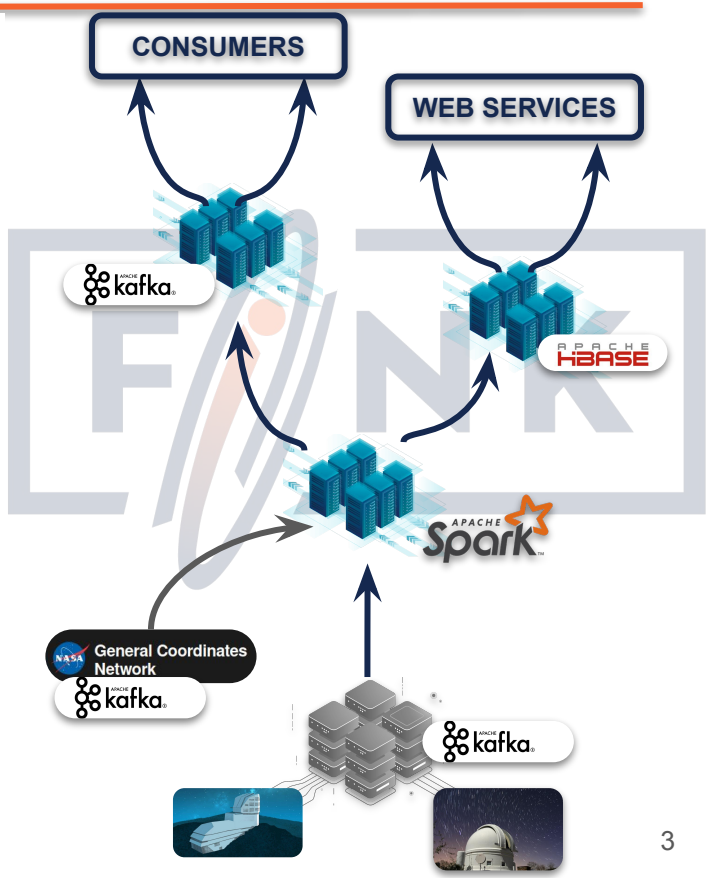
- Solar system, galactic and extragalactic science
  - France: 1 postdoc (LPC Clermont), 5 PhD (APC, IJCLab, IRAP, LPC, LPSC), 6 summer students in 2023

Services deployed on large OpenStack clouds (UPSaclay & CC-IN2P3)

Operating 24/7 since 2019, serving 100+ unique users per day (scientists, follow-up facilities & amateurs*)

e.g. In GRANDMA

600+ observing nights!

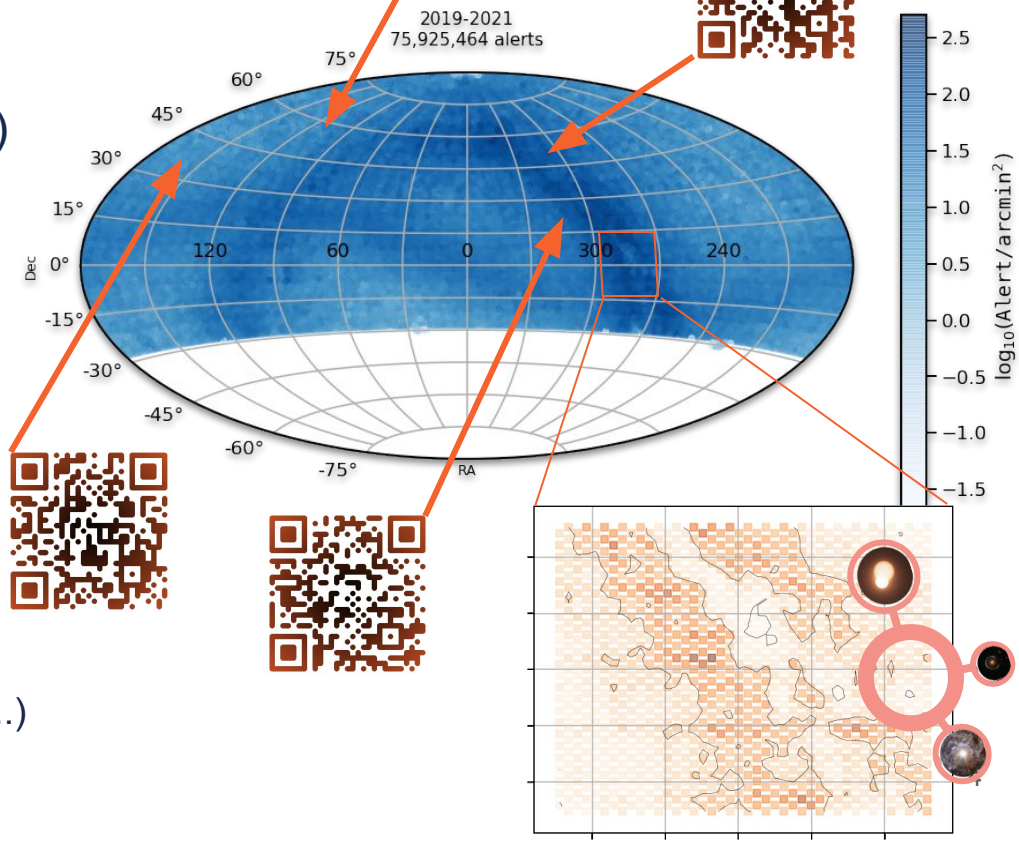


ZTF/Fink statistics

210 million alerts received, 143 million processed (https://fink-portal.org/stats)

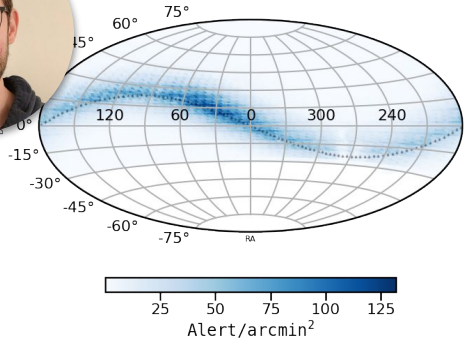
Typical nightly rates (200,000 alerts):

- ~75,000 known variable stars
- ~25,000 known SSO
- ~100 new SSO candidates
- ~100 new supernovae & core-collapse candidates
- ~50 (known+new) AGN
- ~10 (un)identified satellite glints
- ~5 new SN Ia candidates
- ~1 fast transient candidate (KN, GRB, CV ...)
- ~1 new microlensing candidate
- ~1 anomaly

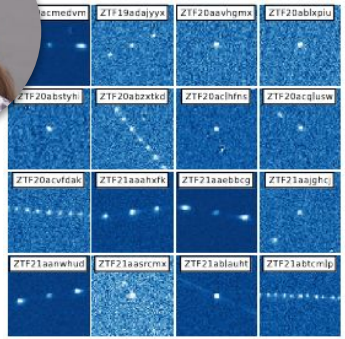


2023: paper highlights

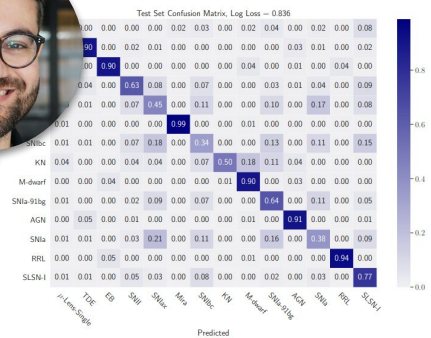
Enabling discovery of S… System objects in large alert data streams



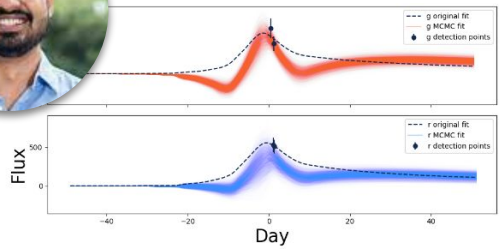
The rate of satellite glints in ZTF and LSST sky surveys



Low-latency High-throughput Classification of Astronomical Transients using Deep Model Compression



Bayesian multi-band fitting of alerts for kilonovae detection



All papers at: https://fink-broker.org/papers

Transient session on Friday

14:00	**Prospect for spectroscopic observations of Rubin detected counterparts of gravitational wave events from next generat…** *Sofia Bisero*	
	Anomaly detection in Fink *Amphithéâtre, Centre de Calcul de l'IN2P3*	*Maria Pruzhinskaya* 14:20 - 14:40
	Search for orphan GRB afterglows in Rubin LSST data with FINK *Amphithéâtre, Centre de Calcul de l'IN2P3*	*Marina Masson* 14:40 - 15:00
15:00	**Multi messenger astronomy: latest results from the Fink broker** *Amphithéâtre, Centre de Calcul de l'IN2P3*	*Roman Le Montagner* 15:00 - 15:20

Australia HQ

Spectra ANU 2.3m: *real-time active learning loop for the 1st time!*

- **Finished** “Optimizing spectroscopic follow-up for SNe Ia classification with Fink” (Möller, Soon, Peloton, Ishida)
  - 2 CV, 16 Ia, 1 Ib, 2 Ibn, 1 Ic, 5 II, and others low SNR
- **Submitted** “Follow-up of transients identified by Fink” (Möller, Soon, Ishida, Peloton, Dobie, Pruzhinskaya, Zubareva) waiting for response

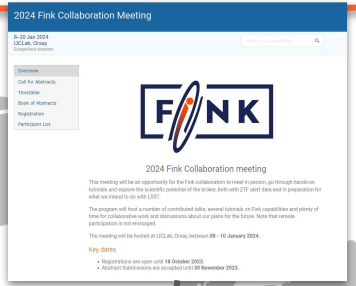
Siding Spring Observatory

- Robotic network project advancing (Ray, Shibli, Alice)

Extra Fink nodes at OzSTAR cloud (Swinburne, Melbourne), and load balancing for services (with high availability)

Collaboration meetings

https://indico.in2p3.fr/event/30789



https://www.ozgrav.org/ozfink-workshop-2023.html

https://indico.in2p3.fr/event/31068

Open science prize

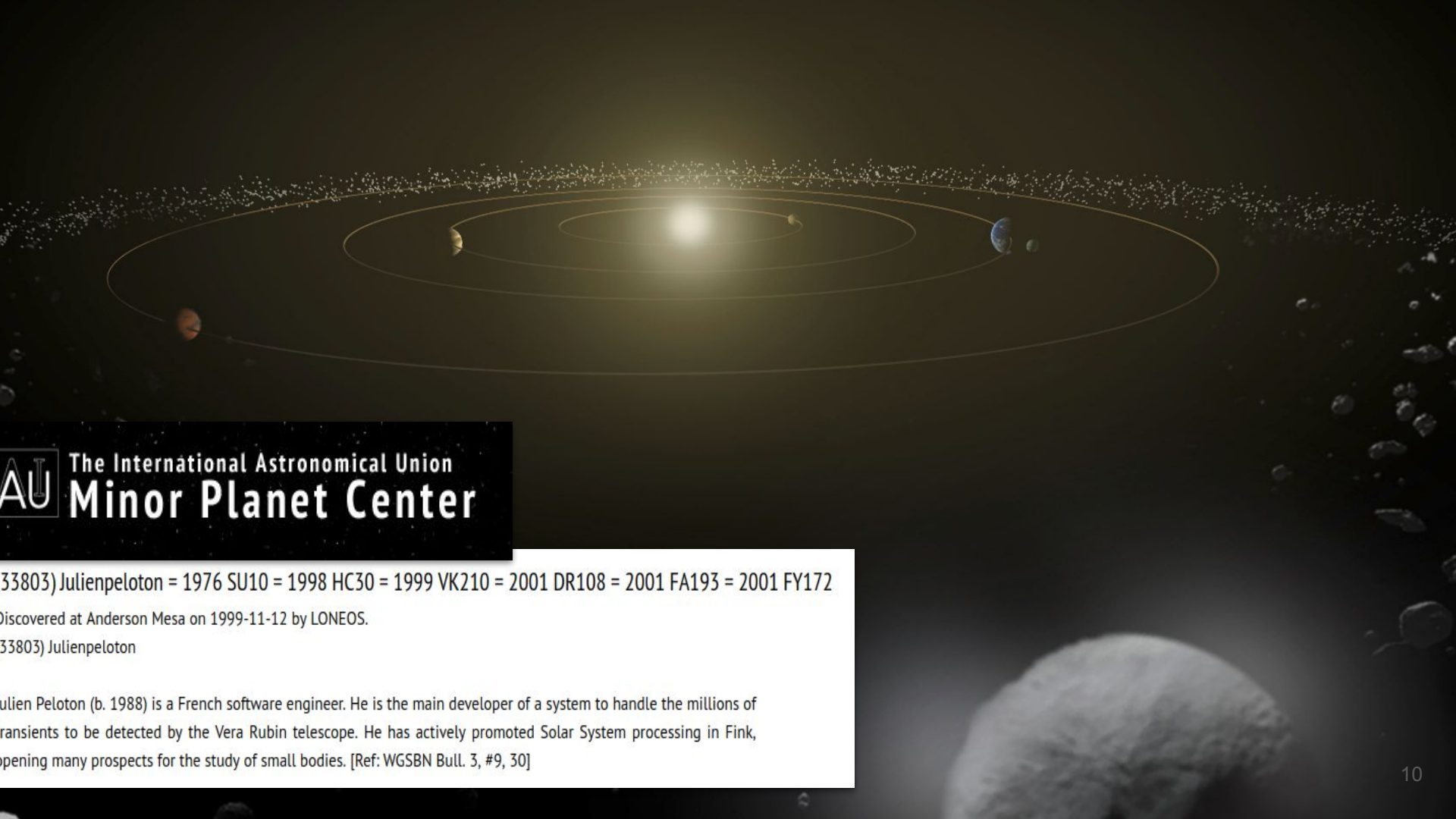
Fink has been awarded the open science prize for Free Software in research 2023 by the French Ministry of Research

*“The award recognizes projects and research teams [...] contributing to the construction of a crucial **common good**.”*

“They highlight exceptional or highly promising achievements, which can inspire both the scientific community and society as a whole.”

Credits: D. Longieras, IJCLab

Press release: link



The International Astronomical Union
Minor Planet Center

33803) Julienpeloton = 1976 SU10 = 1998 HC30 = 1999 VK210 = 2001 DR108 = 2001 FA193 = 2001 FY172

Discovered at Anderson Mesa on 1999-11-12 by LONEOS.

33803) Julienpeloton

ulien Peloton (b. 1988) is a French software engineer. He is the main developer of a system to handle the millions of ransients to be detected by the Vera Rubin telescope. He has actively promoted Solar System processing in Fink, pening many prospects for the study of small bodies. [Ref: WGSBN Bull. 3, #9, 30]

https://fink-broker.org
https://fink-portal.org