

WXT source population

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Orbit

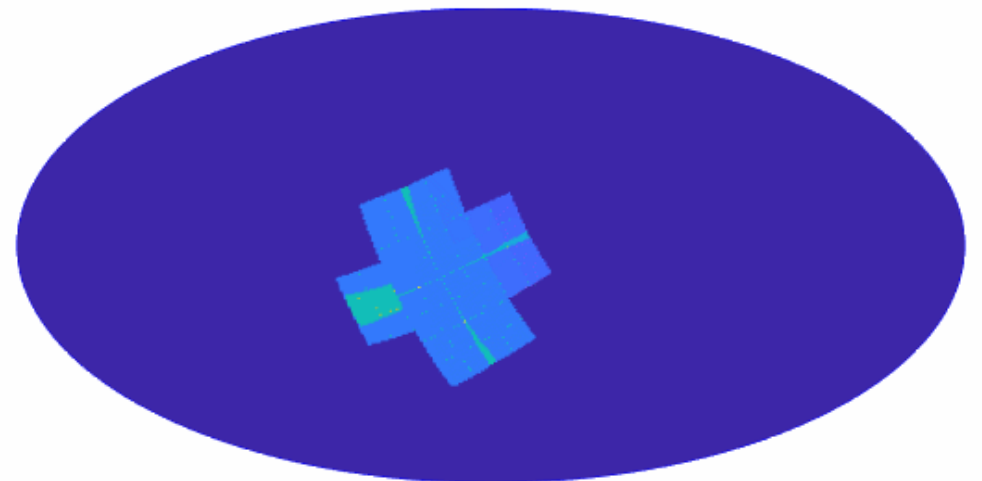
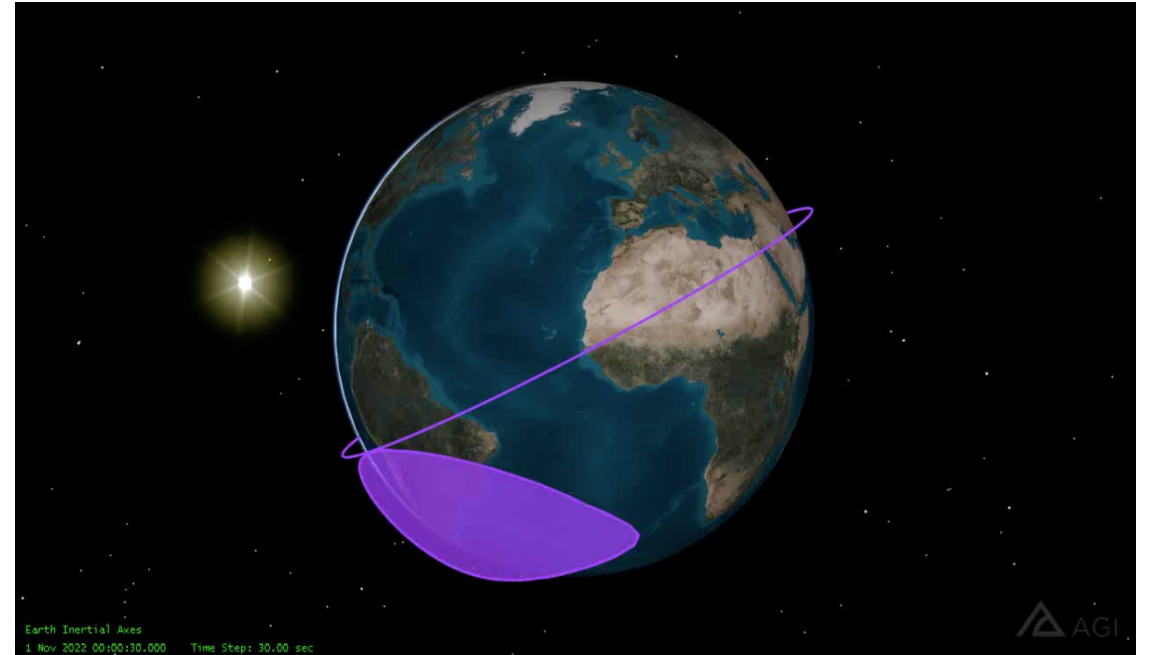
- ★ Circular ~ 600 km (96min)
- ★ incl. 29 deg

Observation modes

- ★ Survey (WXT)
- ★ Autonomous follow-up (FXT)
- ★ ToO (FXT, WXT)
- ★ Calibration

WXT survey mode

- ★ Pointing to night sky
- ★ 3 pointings/orbit, ~20min each
- ★ ~ 1/2 sky covered in 3 orbits (~ 5 hr)
- ★ ~ 45 snapshots/day
- ★ Whole sky coverage in 1/2 year



Source identification

TA quick tool

Candidate List Export CSV										
▲	Source ID ▲	Obs Time (UTC) ▼	Type ▲	Tags ▲	Category ▲	Classification ▲	Common Name ▲	Submit	Image	LC
			All							
1	ep0850000081wxt7s1	2024-04-24 10:41:06	source	known_source	AGN	Seyfert 1	HE 1029-1401			
2	ep0850000081wxt8s1	2024-04-24 10:41:06	source	known_source	AGN	BL Lac	QSO J1103-2329			
3	ep0850000081wxt8s2	2024-04-24 10:41:06	source	known_source	Cluster of Galaxies	Cluster of Galaxies	Hydra I Cluster			
4	ep0850000081wxt12s1	2024-04-24 10:41:06	source	stellar_flare	Star	High Proper Motion Star	LP 674-78			
5	ep0850000081wxt14s1	2024-04-24 10:41:06	no_match							
6	ep0850000081wxt16s1	2024-04-24 10:41:06	no_match							
7	ep0850000081wxt19s1	2024-04-24 10:41:06	source	known_source	Star	RS CVn Variable	TY Pyx			
8	ep0850000081wxt20s1	2024-04-24 10:41:06	source	known_source	AGN	Seyfert 1	3C 206			
9	ep0850000081wxt21s1	2024-04-24 10:41:06	ref							
10	ep0850000081wxt23s1	2024-04-24 10:41:06	source	known_source	Cluster of Galaxies	Cluster of Galaxies	ACO 754			
11	ep0850000081wxt28s1	2024-04-24 10:41:06	source	known_source	Pulsar	Pulsar	PSR J1124-5916			
12	ep0850000081wxt28s2	2024-04-24 10:41:06	source	known_sour...	Star	RS CVn Variable	12 Mus			
13	ep0850000081wxt28s3	2024-04-24 10:41:06	source	known_source	SNR	SNR	G296.1-0.5			

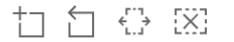
Known Source category:

1. AGN
2. Cluster of Galaxies
3. Galaxy
4. XRB
5. CV
6. SNR
7. Star
8. Star Cluster
9. Pulsar
10. Unclassified
11. Unverified

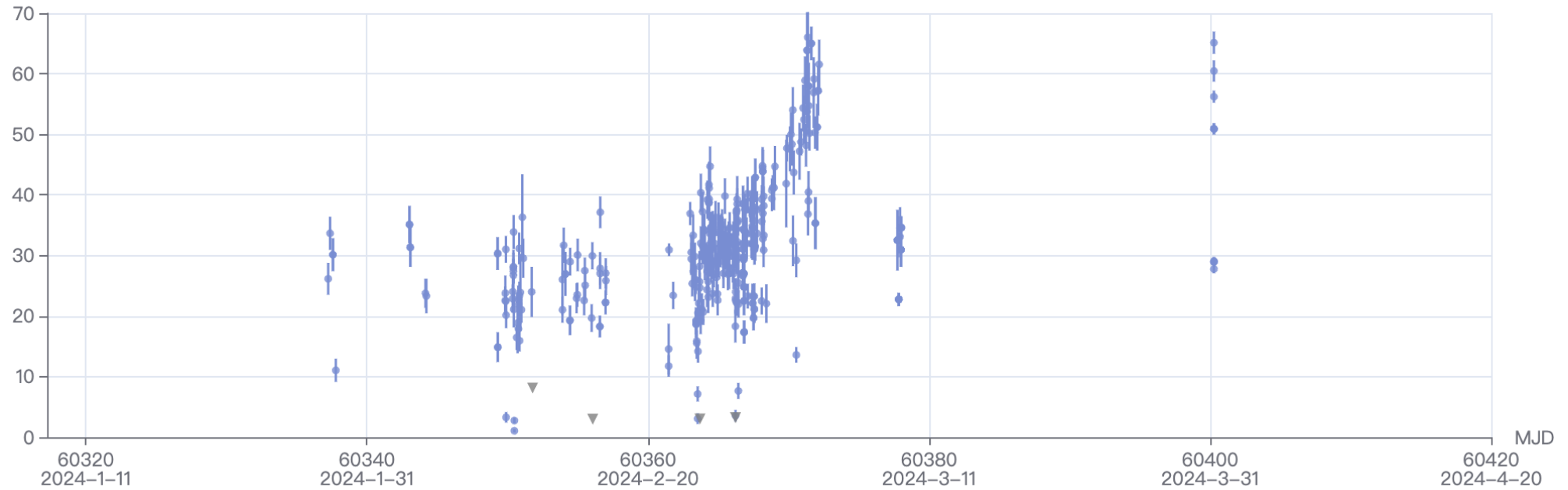
.....

EP-WXT long-term light curve

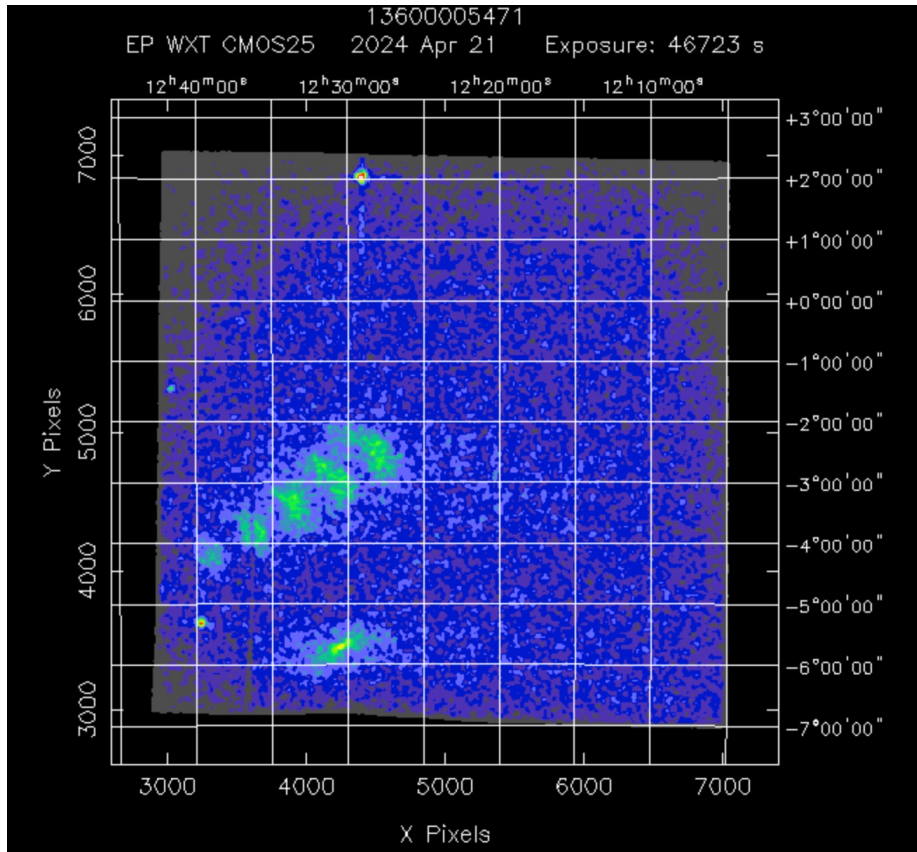
Light Curve (0.5–4 keV) AT 2019wey



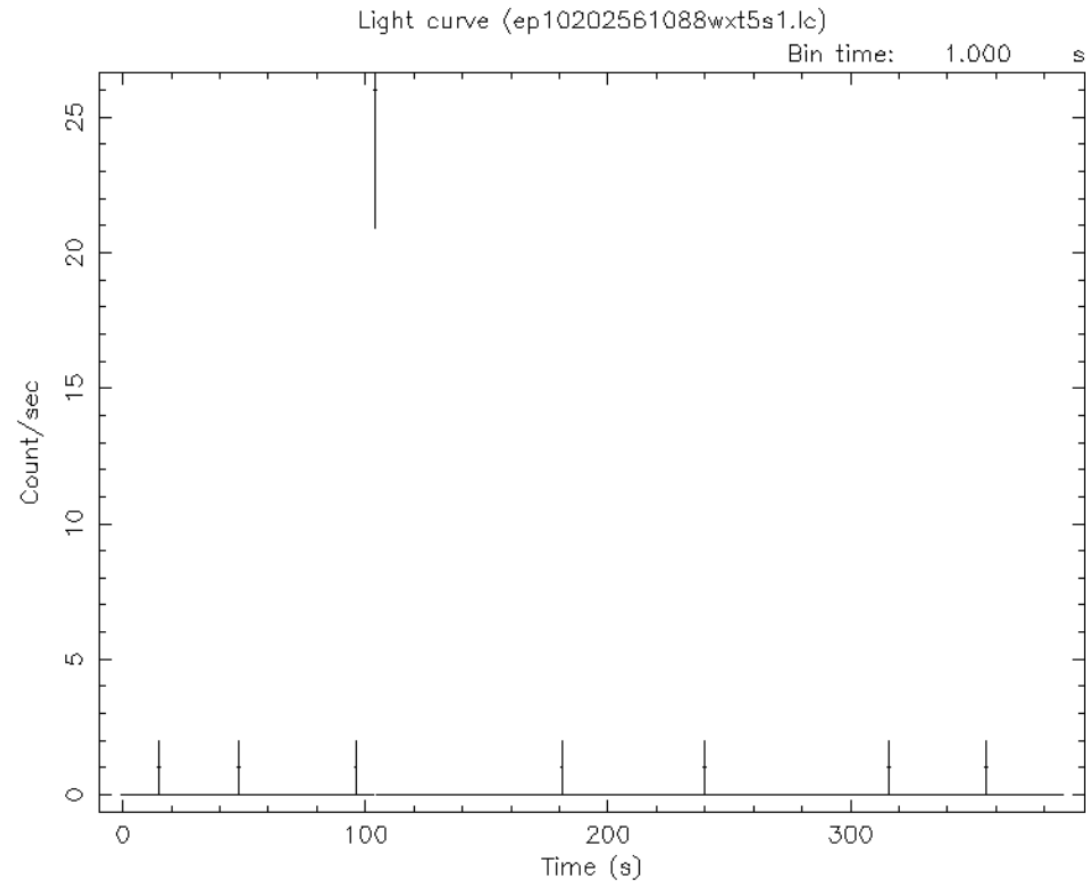
Flux 10^{-11} erg/s/cm²



Other types



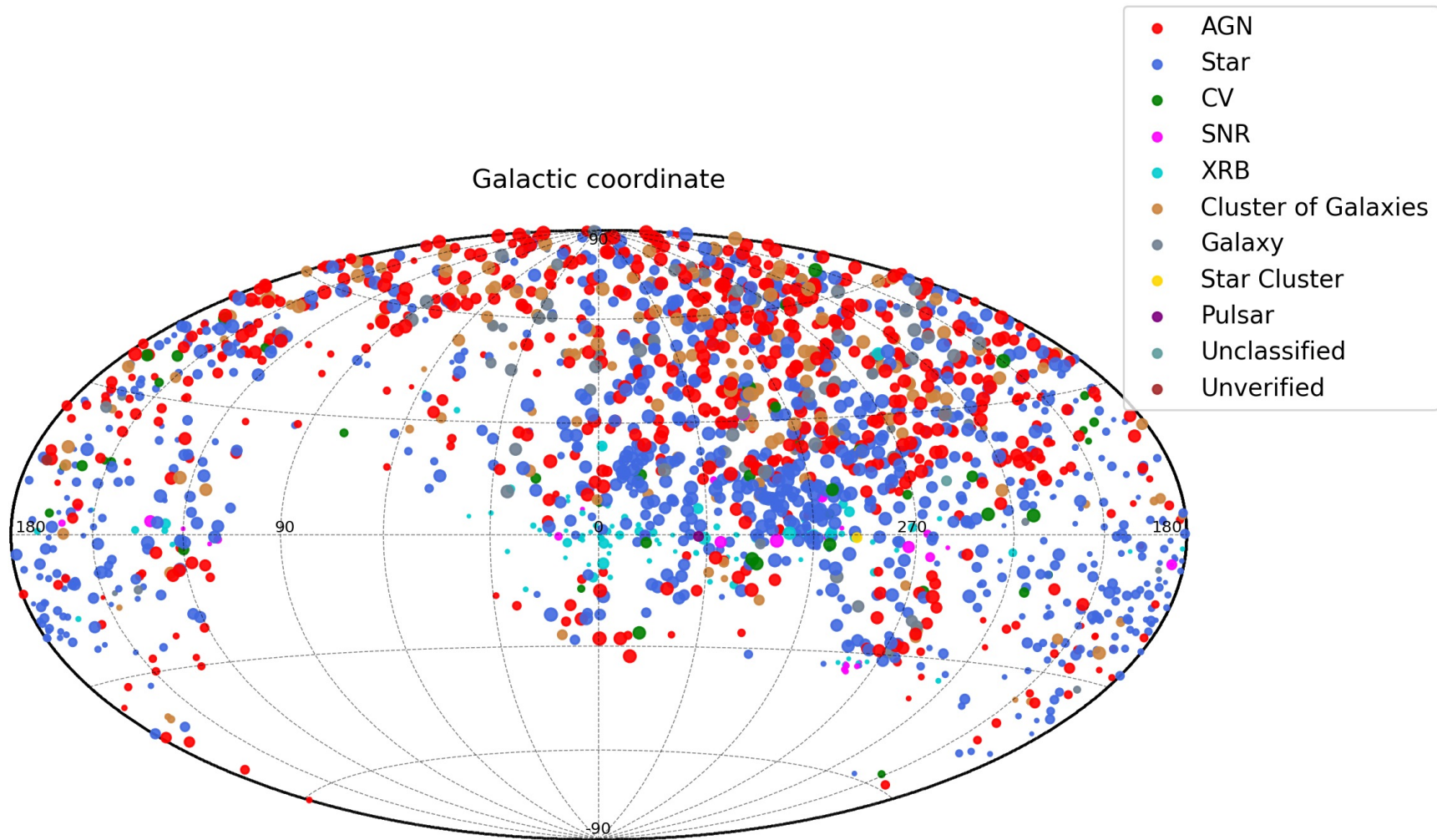
moon



Start Time 20424 7:54:44:584 Stop Time 20424 8:01:11:584

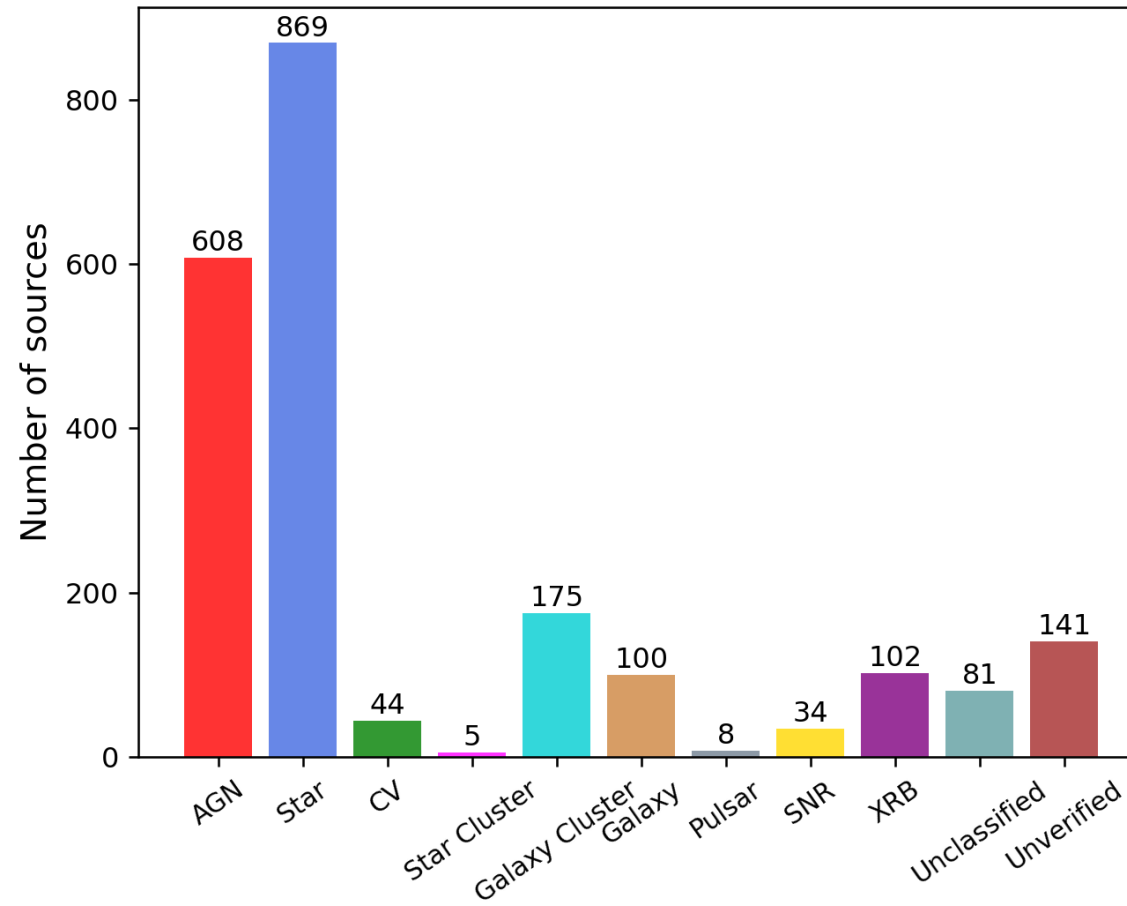
cosmic ray: <10% of the total observations

EP-WXT source population



EP-WXT all-sky survey

sources: 2179



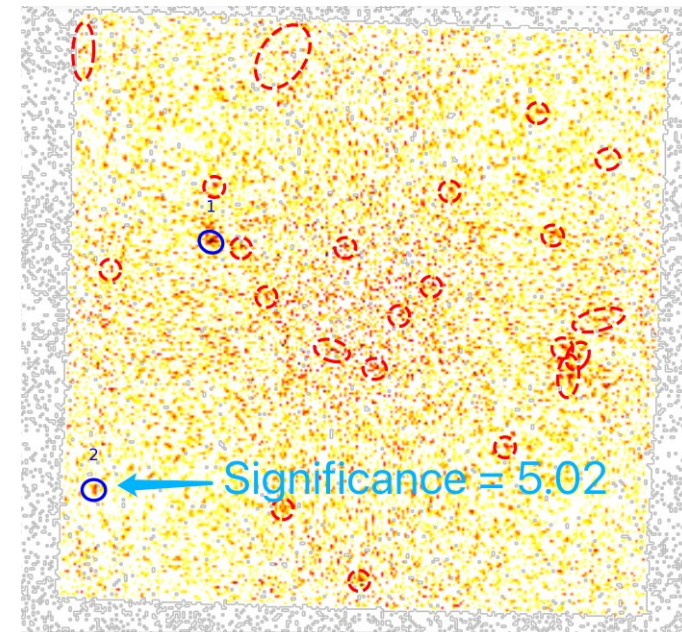
Unclassified & unverified sources

unclassified: X-ray source
(No detailed source type)



unclassified: ~ 81 sources

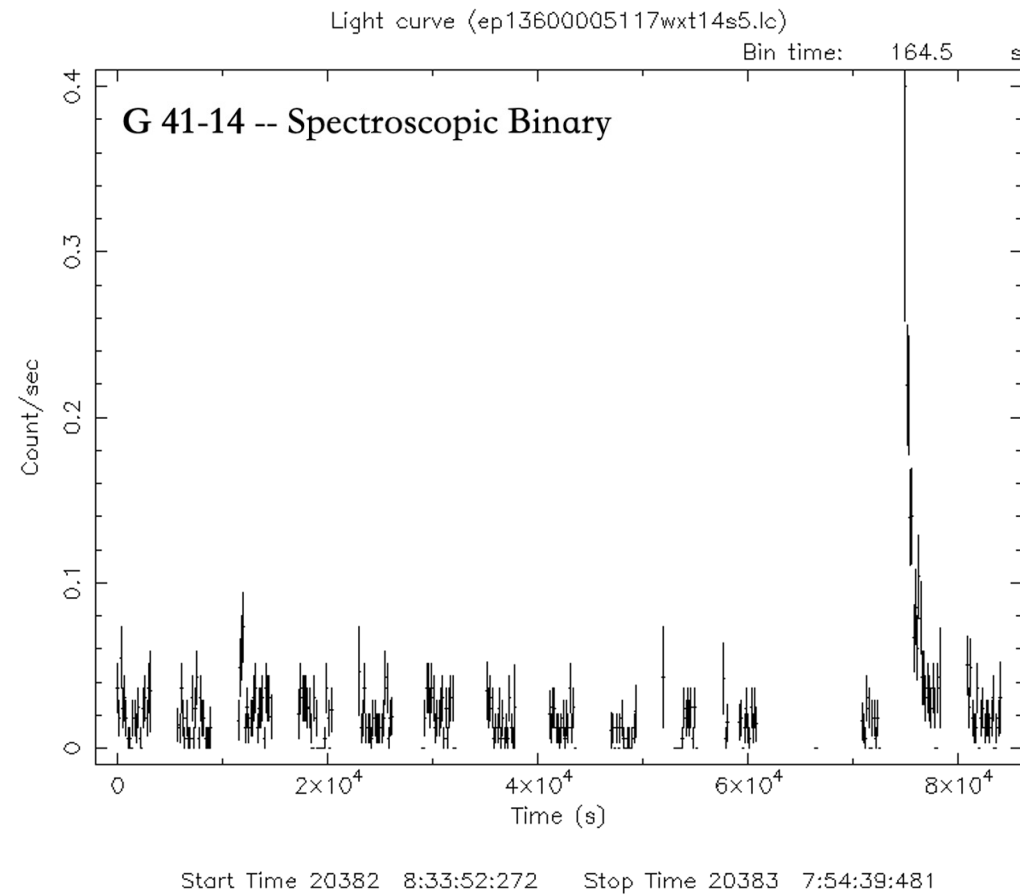
unverified: Low significance source
(may be fake source)



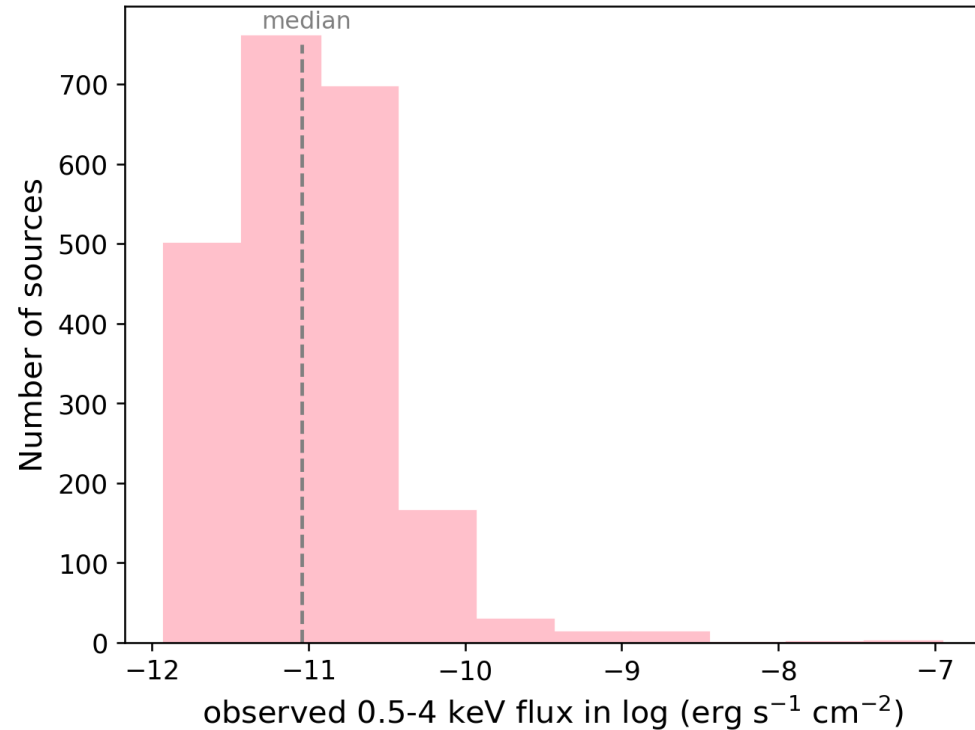
unverified : ~ 141 sources

Stellar flare

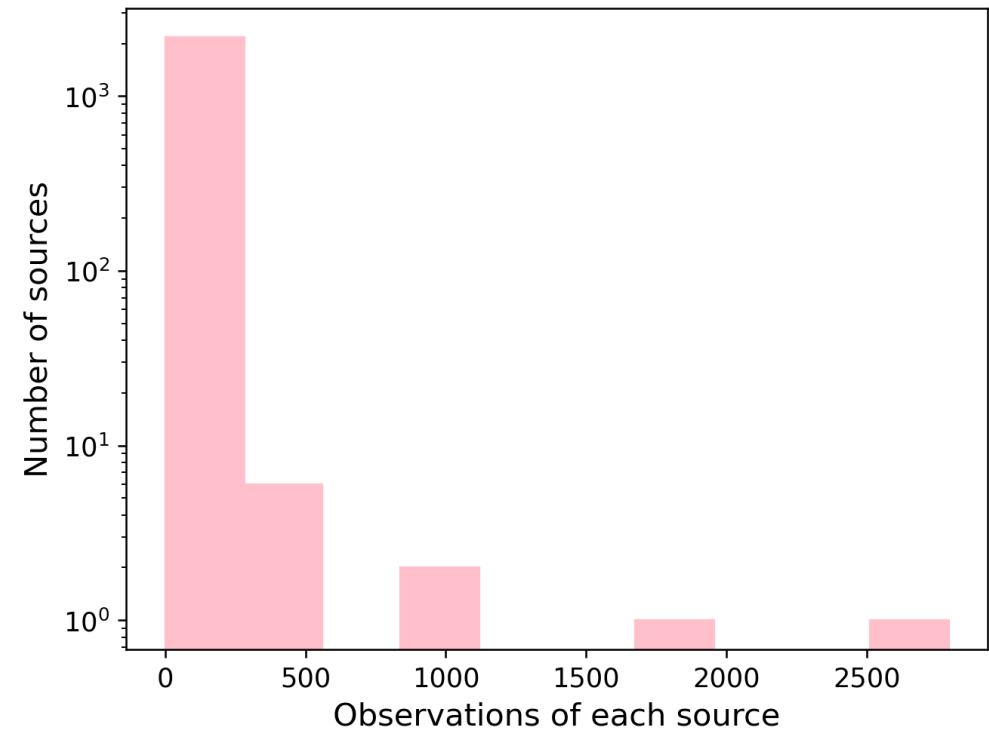
stellar flare: 168



EP-WXT Preliminary statistical analysis



flux > 1e-11 erg/s/cm²: 47% (1023 sources)



Detected observations > 1: 54% (1184 sources)
Detected observations > 3: 33% (721 sources)

Summary

Einstein Probe: a promising X-ray mission for time-domain astronomy

WXT source population:

known source list: ~ 2179

Stellar flare: 168

Unclassified sources: 81

Unverified sources: 141

Thank you

