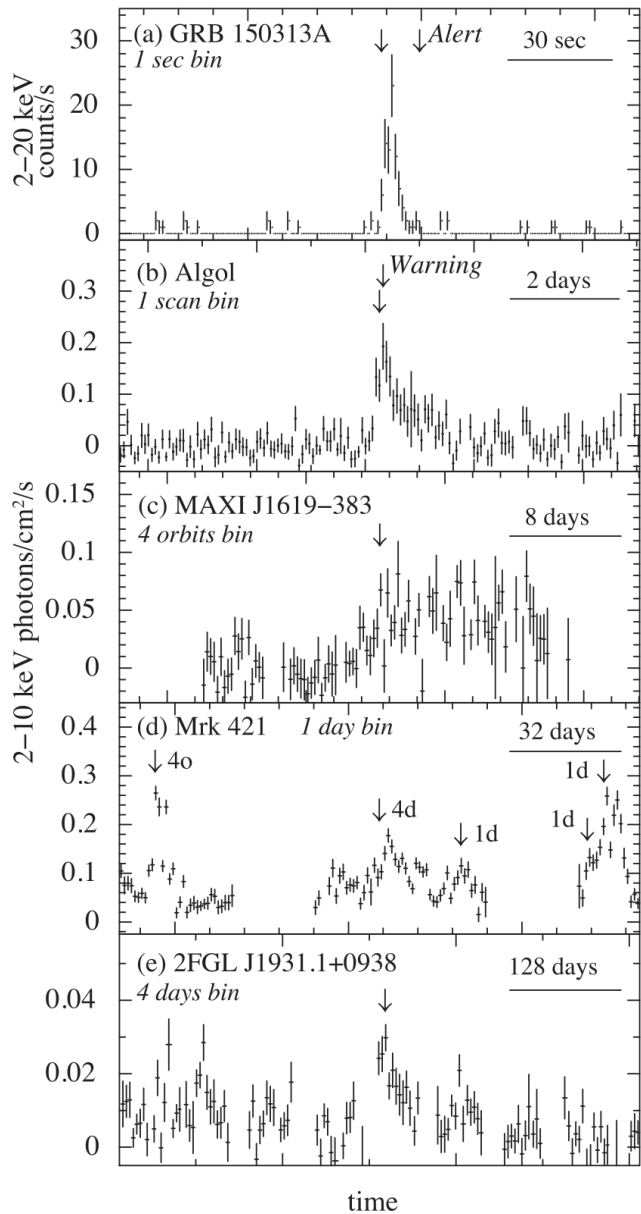


MAXI transients in 15 years

Hitoshi Negoro

Nihon University

MAXI has watched various transient events in 15 yrs



X-ray bursts ~ a few a week

long X-ray bursts → Iwakiri-san's talk 10th PM (NICER)

Gamma-ray bursts ~ every month

→ Hiramatsu-san's talk 12th PM

→ Jamie for GRB 221009A "the BOAT"

Stellar Flares ~ one or two a month

→ Tsuboi-san's talk 10th PM

X-ray novae ~ 35 newly discovered X-ray novae

and a few a month for known sources

HMXB → Sugizaki-san's talk on 11th AM

LMXB → Shidatsu-san's talk 11th PM

AGN Flares

→ Noda-san's talk 12th AM

→ Tidal Disruption Events Swift J164449.3-573451

No GW and neutrino counterparts → Sugita-san's talk 12th AM

MAXI/GSC Nova-Alert System (Negoro+ 2016)

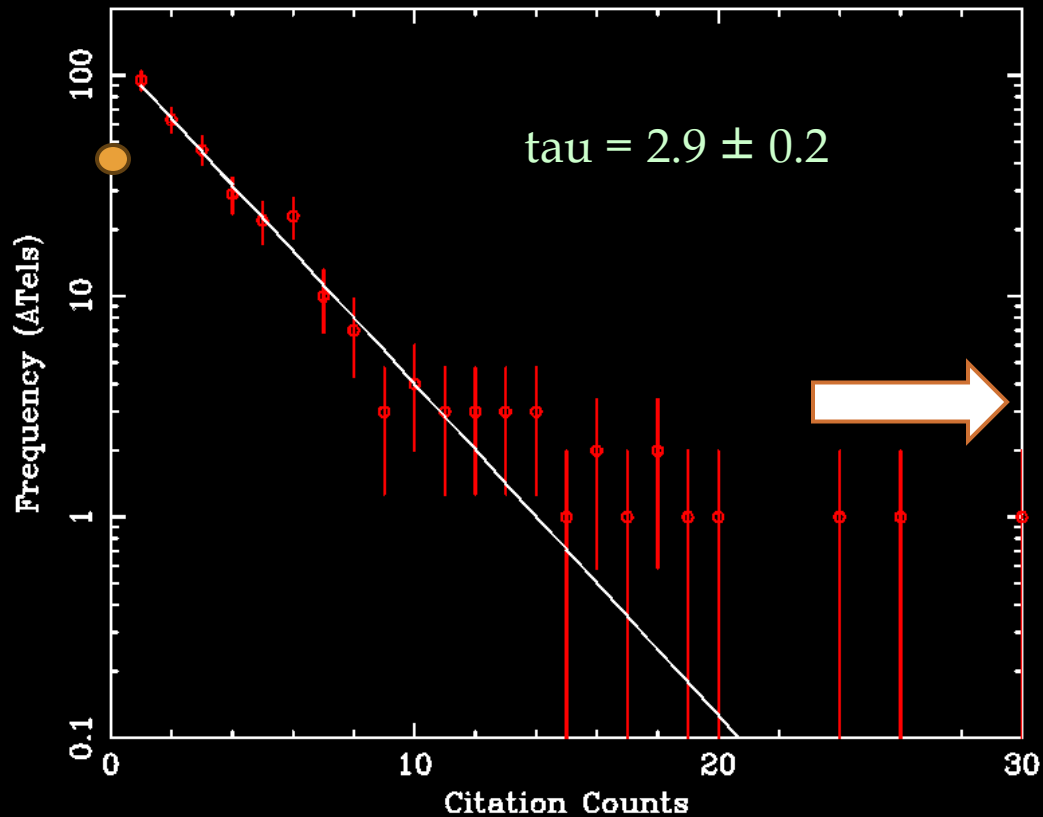
ATel & GCN's

ADS@2024 Dec. 8

The number of ATels: 413 (~27.5/Year, 2010~)

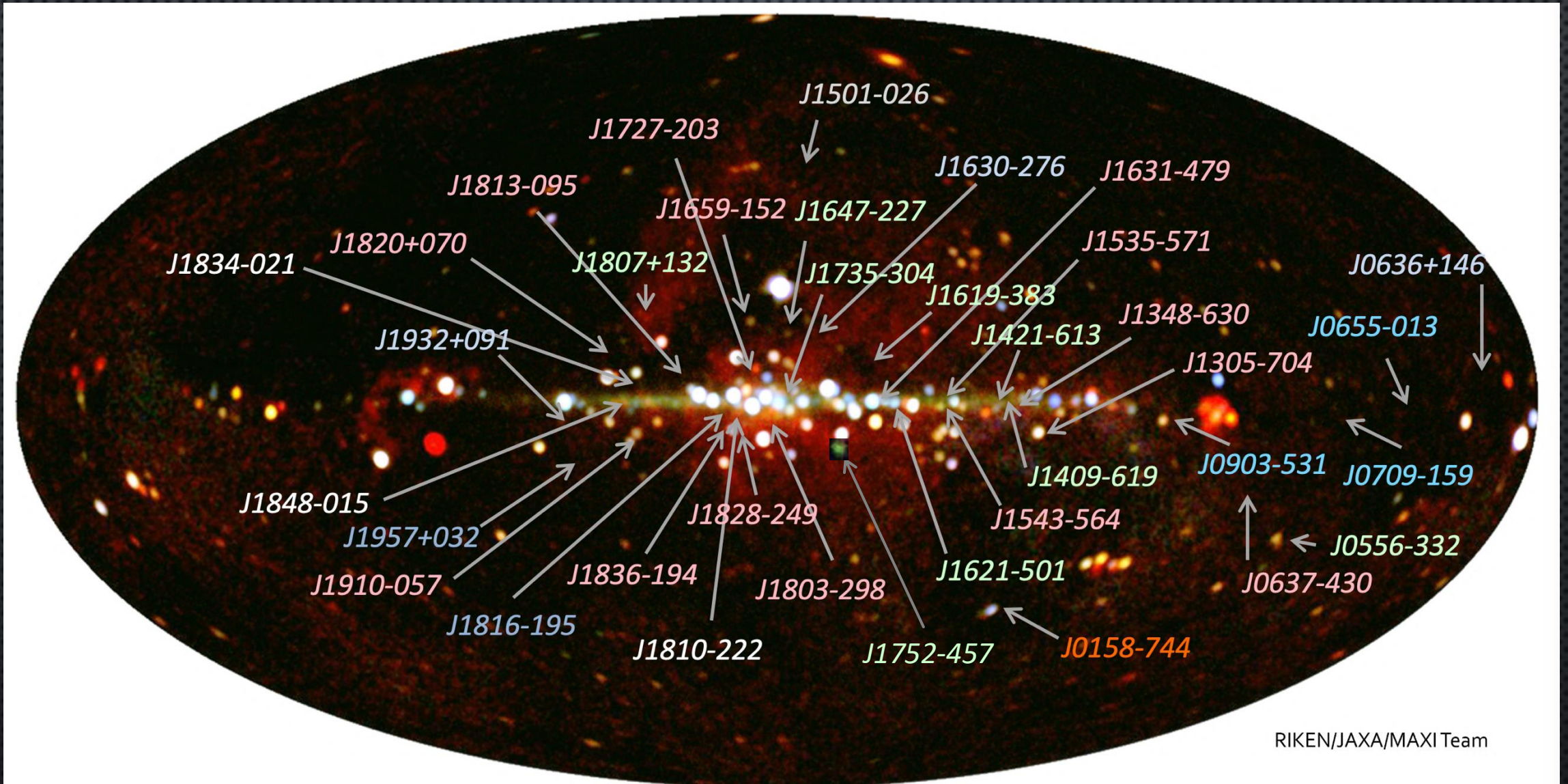
The number of GCNs: 191(~12.7/Year)+84(GW,IC)

Total Citation Counts: 1473 (+151, XRT Jamie)



1	2018ATel11399....1K	2018/03	cited: 94	MAXI/GSC detection of a probable new X-ray transient MAXI J1820+070 Kawamuro, T.; Negoro, H.; Yoneyama, T. <i>and 46 more</i>
2	2017ATel10699....1N	2017/09	cited: 60	MAXI/GSC discovery of a new hard X-ray transient MAXI J1535-571 Negoro, H.; Ishikawa, M.; Ueno, S. <i>and 40 more</i>
3	2019ATel12425....1Y	2019/01	cited: 34	MAXI/GSC discovery of a new X-ray transient MAXI J1348-630 Yatabe, F.; Negoro, H.; Nakajima, M. <i>and 45 more</i>
4	2010ATel.2873....1N	2010/09	cited: 30	MAXI/GSC detection of a new hard X-ray transient source MAXI J1659-152 Negoro, H.; Yamaoka, K.; Nakahira, S. <i>and 30 more</i>
5	2011ATel.3611....1N	2011/08	cited: 26	MAXI/GSC and Swift/BAT detect a new hard X-ray transient MAXI J1836-194 Negoro, H.; Nakajima, M.; Nakahira, S. <i>and 32 more</i>
6	2015ATel.7646....1N	2015/06	cited: 24	MAXI/GSC detection of a new outburst from the Galactic black hole candidate GS 2023+338 (V* V404 Cyg) Negoro, H.; Matsumitsu, T.; Mihara, T. <i>and 32 more</i>
7	2018ATel11828....1N	2018/07	cited: 20	MAXI/GSC observes GRS 1915+105 in the X-ray faintest state in the last 22 years Negoro, H.; Tachibana, Y.; Kawai, N. <i>and 39 more</i>
8	2017ATel11020....1S	2017/11	cited: 19	MAXI J1535-571 currently shows softest spectrum Shidatsu, M.; Nakahira, S.; Negoro, H. <i>and 45 more</i>
9	2015ATel.7943....1N	2015/08	cited: 18	MAXI/GSC detection of renewed X-ray activities of SAX J1324.5-6313/MAXI J1327-627 and H 1658-298/MAXI J1702-301 Negoro, H.; Furuya, K.; Ueno, S. <i>and 33 more</i>
10	2013ATel.4877....1K	2013/03	cited: 18	MAXI/GSC detection of 1ES 0033+595 Kawamuro, T.; Nakahira, S.; Negoro, H. <i>and 35 more</i>

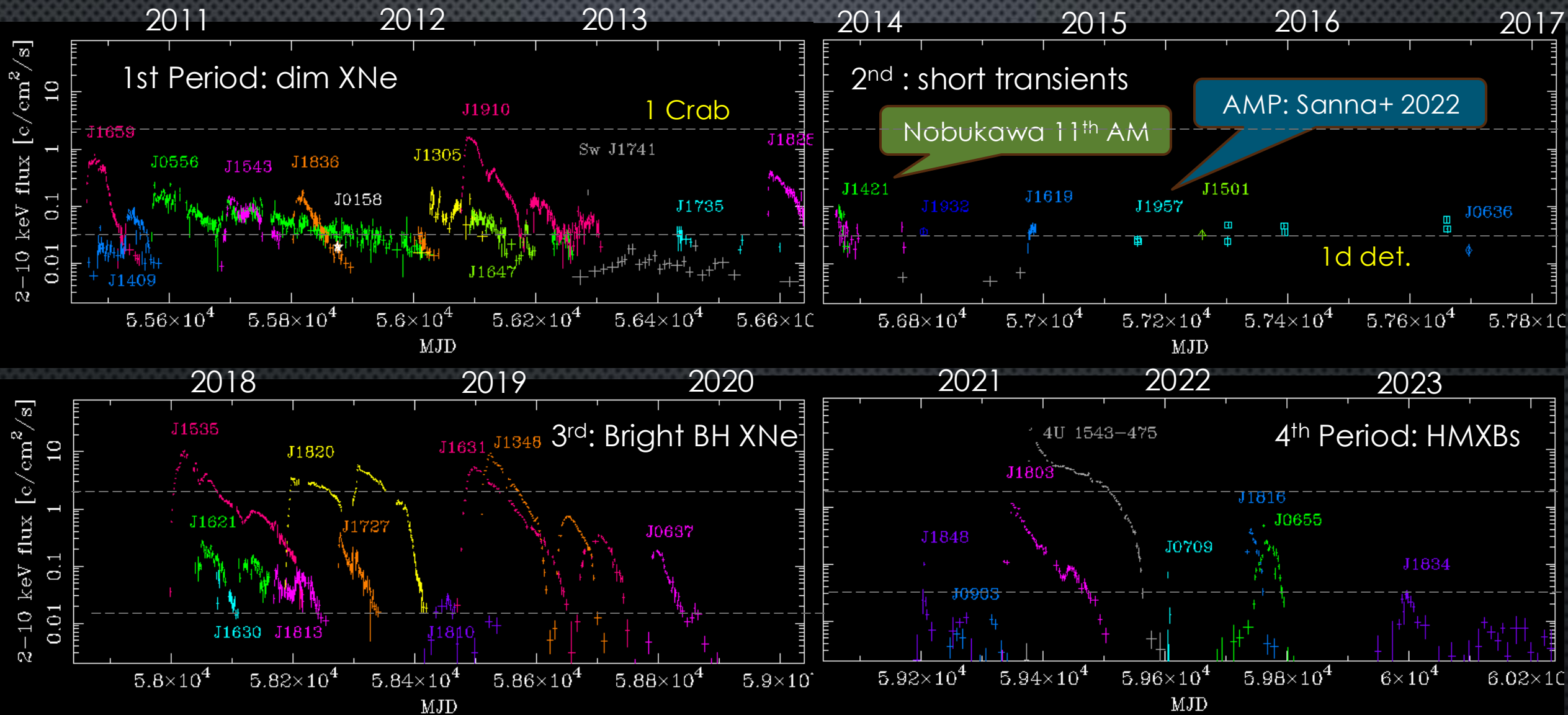
35+1 newly discovered X-ray transients/novae by MAXI



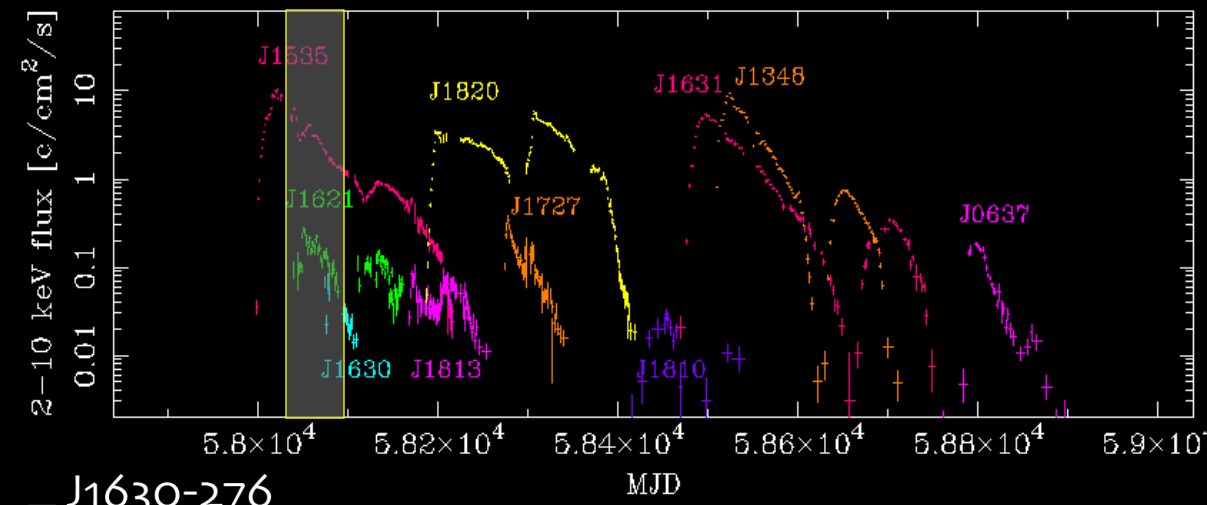
RIKEN/JAXA/MAXI Team

Total 36 : 14 black holes, 18?(-1) neutron stars, 1 white dwarf, and 3 (+1) unknown.
(NS: 12? LMXB, 1 pulsar, 2 AMSP (+J0911), 3(+1) HMXBs)

Light Curves of 35 MAXI Novae & Four Periods



MJD 58027-58101



J1630-276

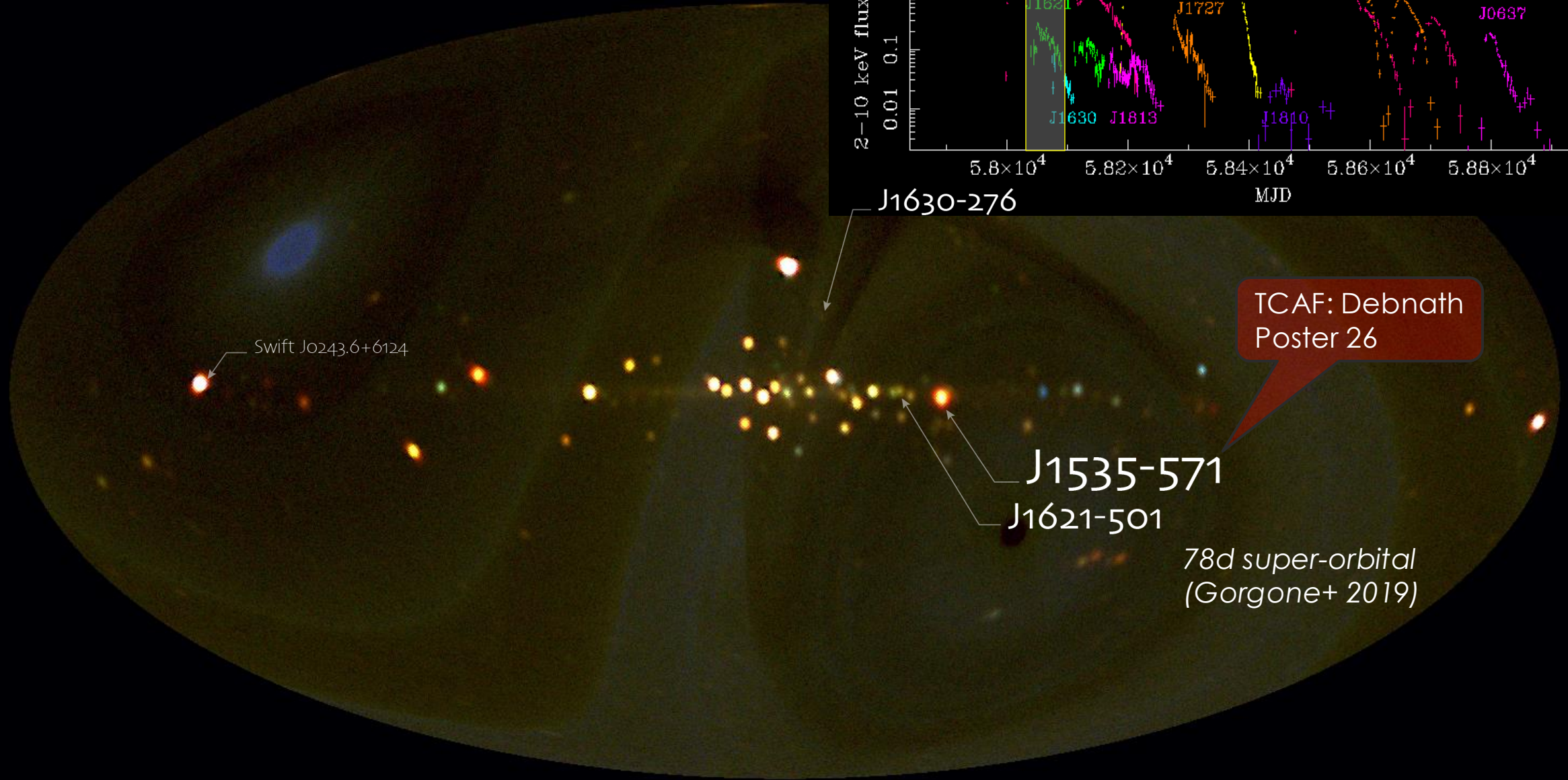
TCAF: Debnath
Poster 26

Swift J0243.6+6124

J1535-571

J1621-501

78d super-orbital
(Gorgone+ 2019)



MJD 58270-58334

Multiwavelength study:

Shidatsu (MAXI, Seimei+) 11th PM

Kimura (NICER, Tomoe) Poster 22

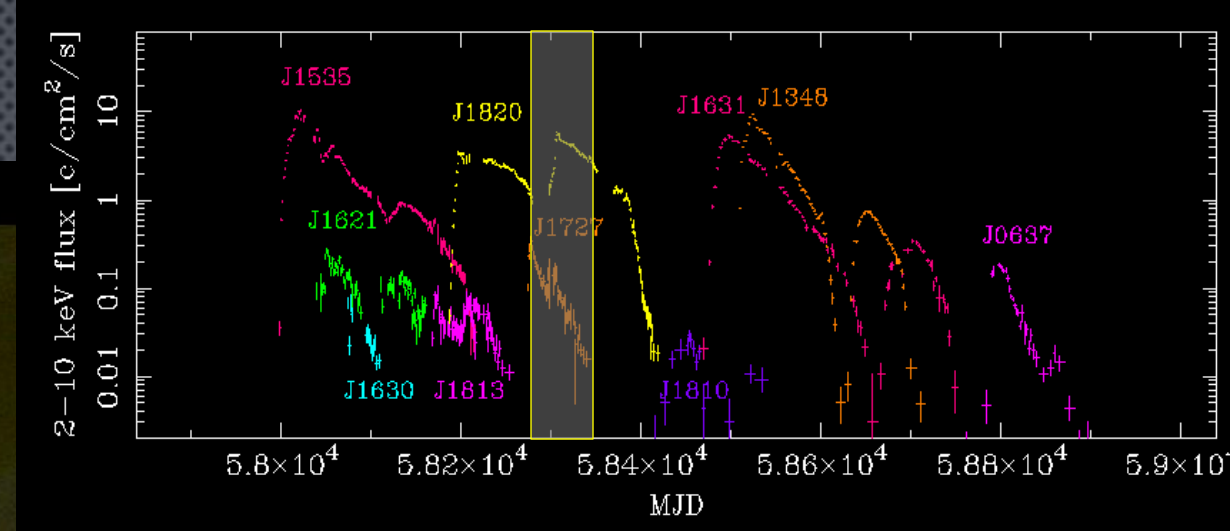
You (HXMT+) 11th PM

LFQPOs:

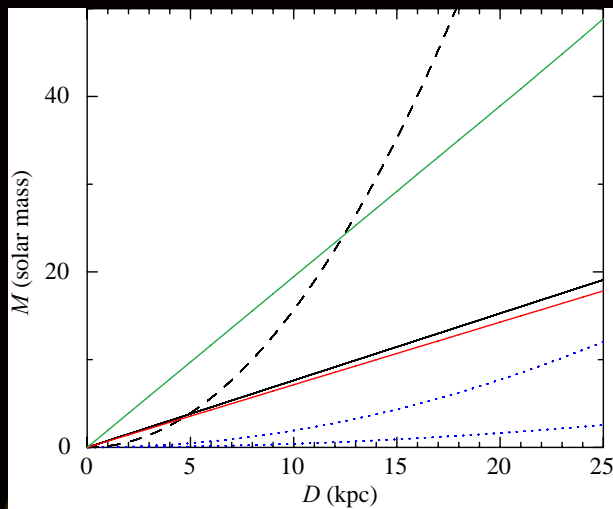
Ma (HXMT+NICER : Poster 23

J1727-203

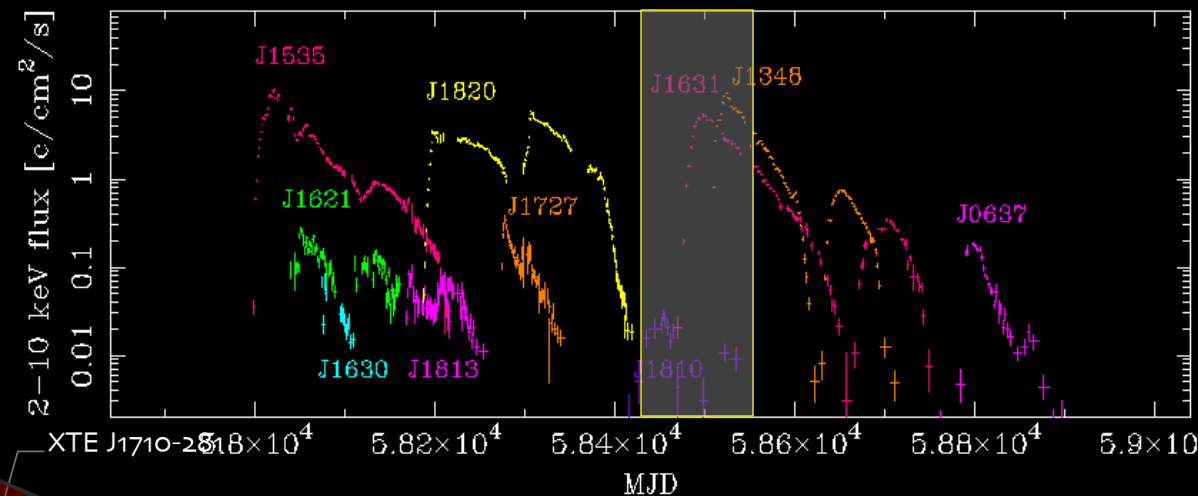
J1820+070



MJD 58430-58577



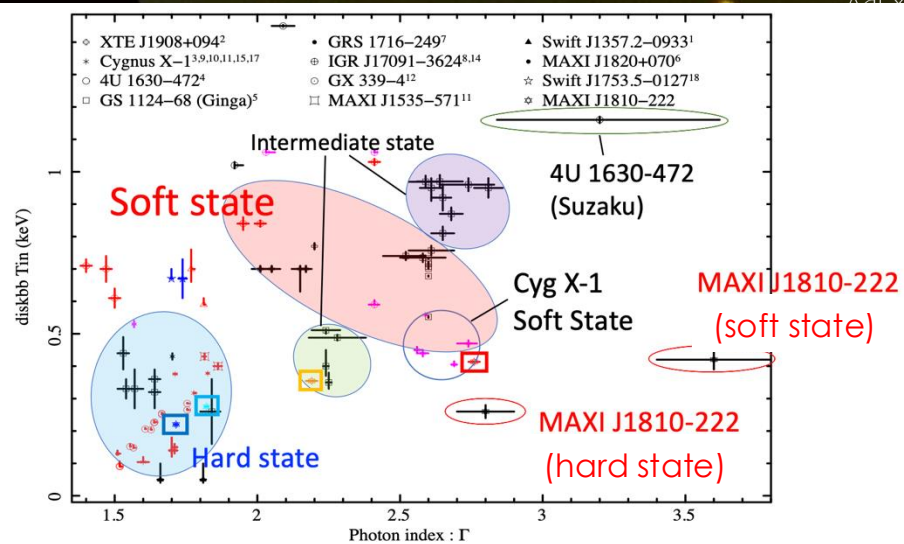
Most massive BH?:
Kobayashi Poster 25



J1631-479

J1348-630

Takagi 2020



4U 1901+03

Aql X-1

Swift J1728.9-3613

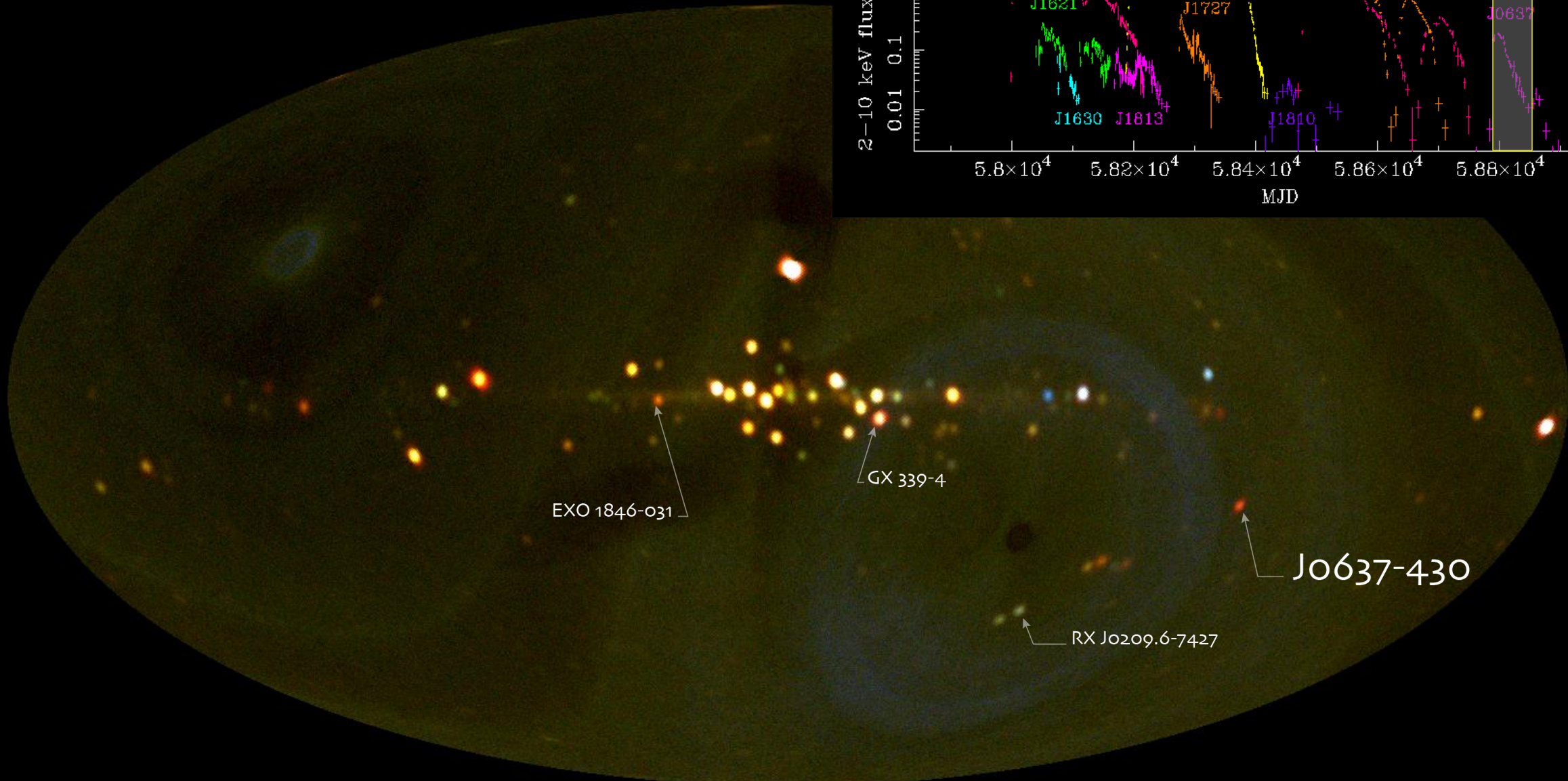
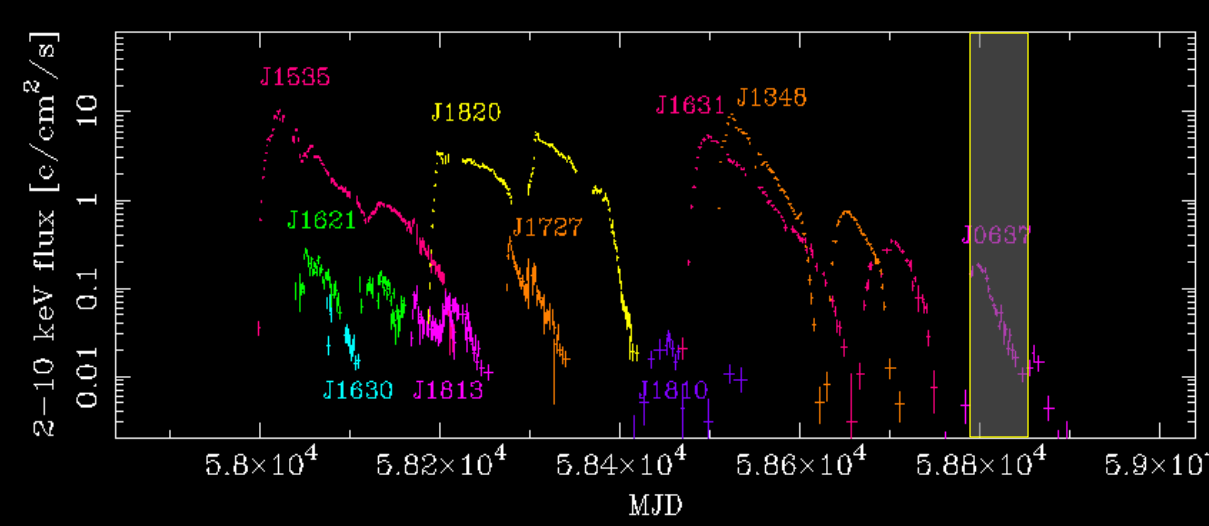
Delayed Radio Emission: Yang 11th PM
Polarization (INTGRAL): Bouchet Poster 15
TCAF: Debnath Poster 26

J1810-222

Polarization (INTGRAL): Bouchet Poster 15
X-ray Spectrum (NICER): Nakamoto Poster 24
Radio (JVN): Akimoto Poster 30

Ultra-fast outflow: Del Santo 11th PM

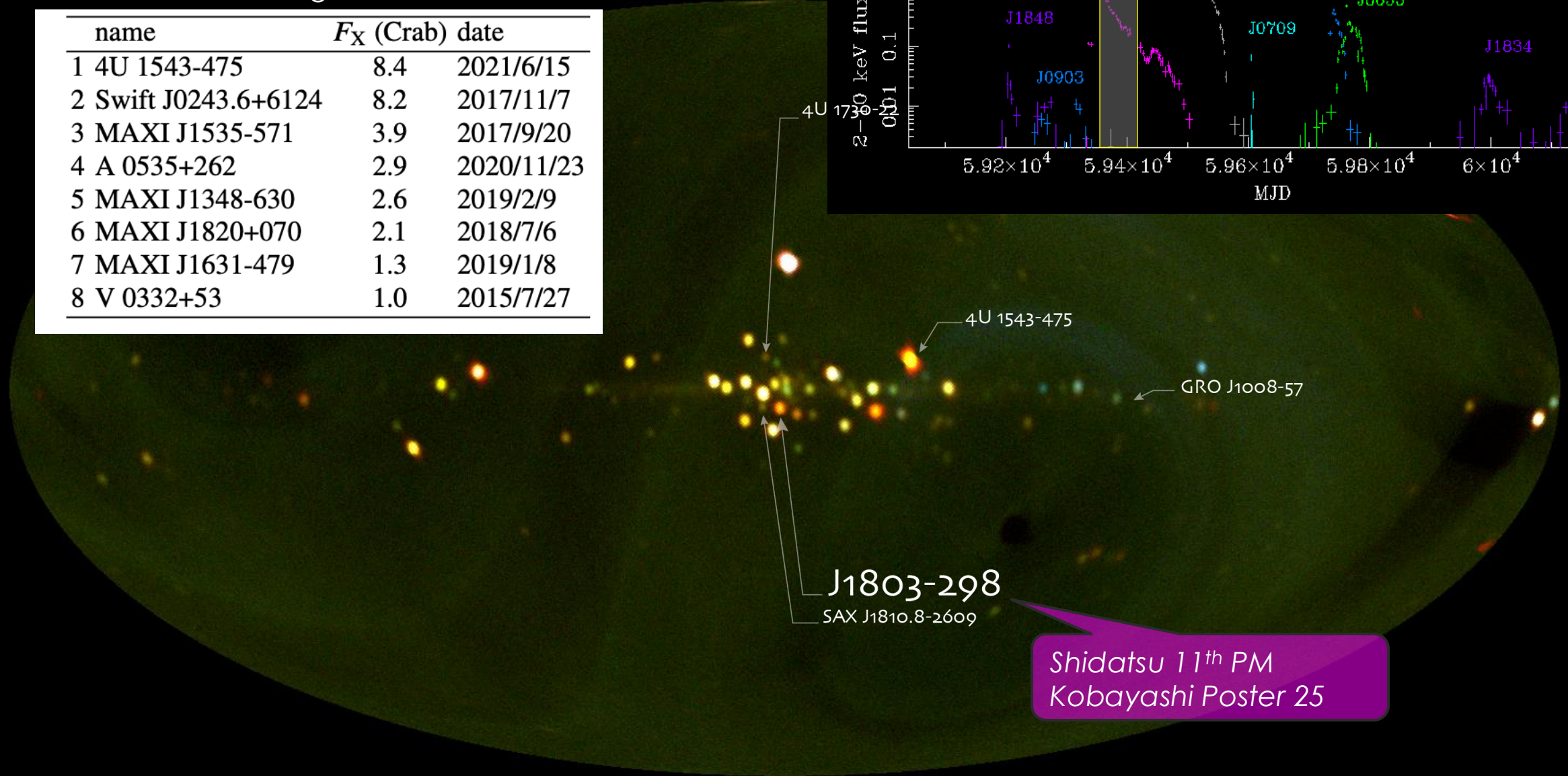
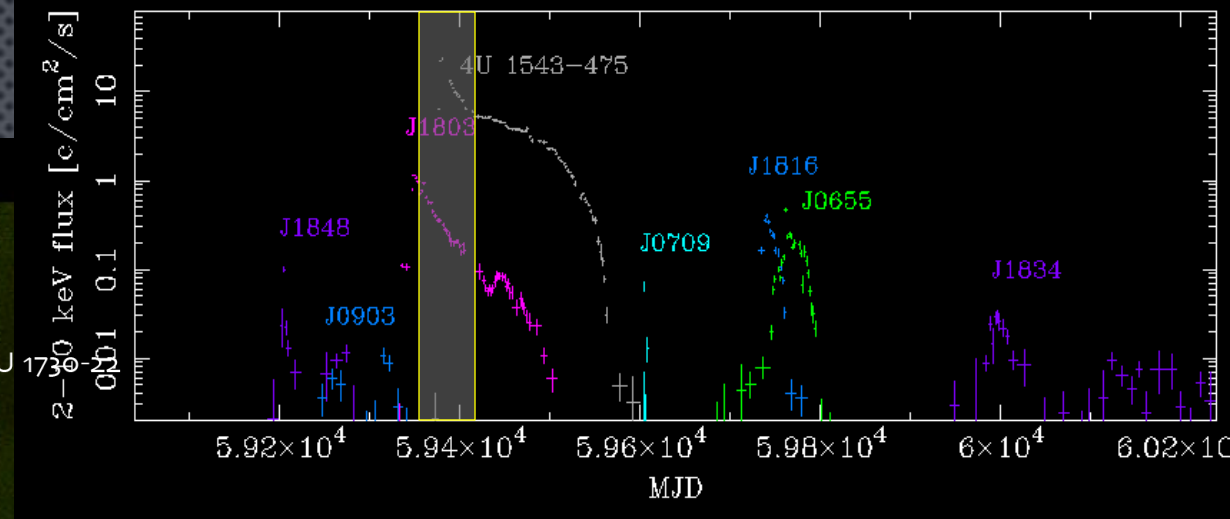
MJD 58790-58864



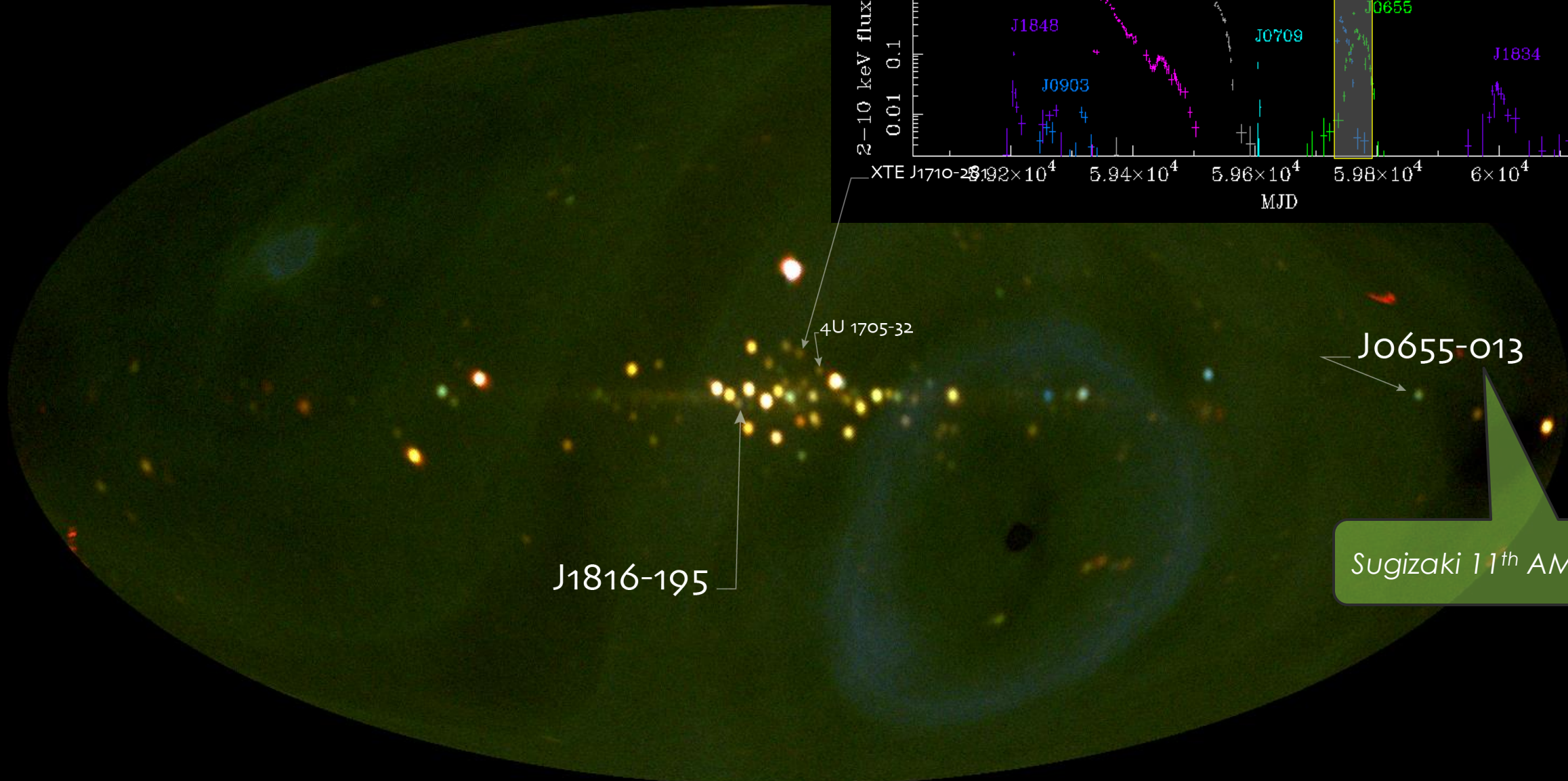
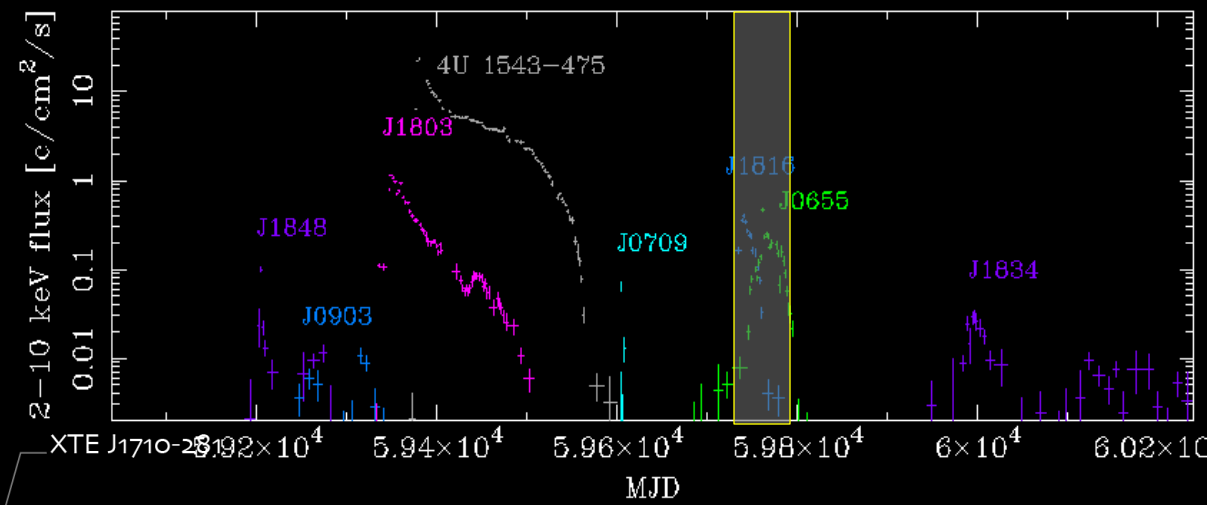
MJD 59350-59424

Mihara, Tsunemi Negoro 2022

name	F_X (Crab)	date
1 4U 1543-475	8.4	2021/6/15
2 Swift J0243.6+6124	8.2	2017/11/7
3 MAXI J1535-571	3.9	2017/9/20
4 A 0535+262	2.9	2020/11/23
5 MAXI J1348-630	2.6	2019/2/9
6 MAXI J1820+070	2.1	2018/7/6
7 MAXI J1631-479	1.3	2019/1/8
8 V 0332+53	1.0	2015/7/27



MJD 59727-59801



MAXI can observe deep fields of Galaxy ?

12 kpc

8.5 kpc

4 kpc



2023 Mar. MAXI J1834-021 (*Negoro+ ATel 15929*)
(d > 20 kpc?, Homan+ 2023 ATel. 15951)

J1828 (l, b) = (8.1, -6.5)
 d > 12 kpc !?

GS 1354-64
(d ≥ 20 kpc, Casares+ 2009)
IGR 17091-3624
(d ~ 11, 17 kpc, Rodriguez+ 2011,
d > 20 kpc ?, Altamirano+ 2011)

J1543 (l, b) = (325.1, -1.1)
 d > 12 kpc ? (*Stiele+ 2012*)

J1305
 (l, b) = (304.2, -7.6)

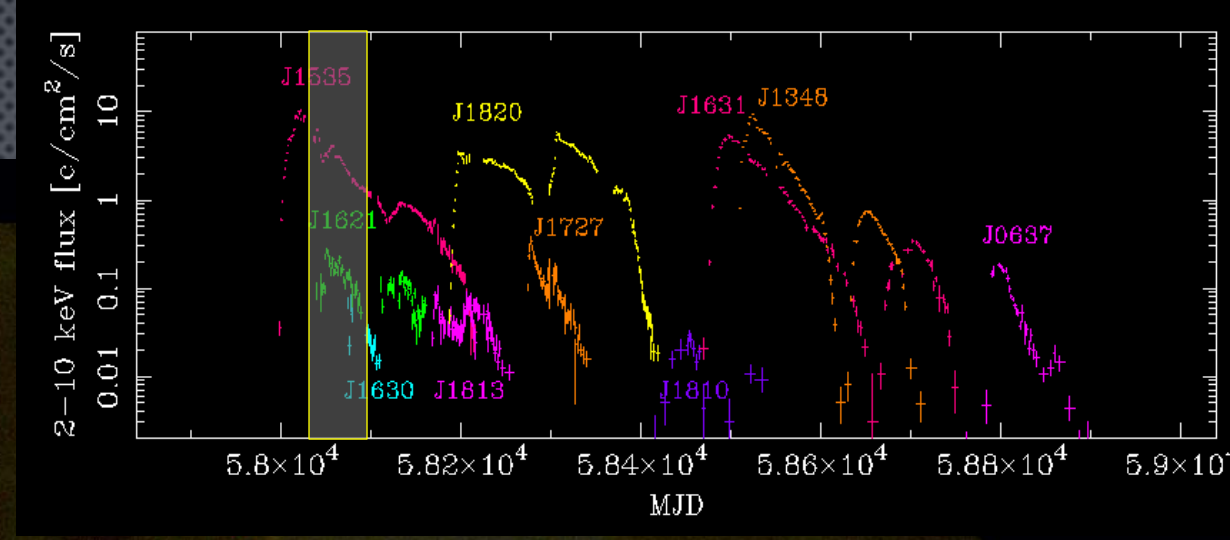
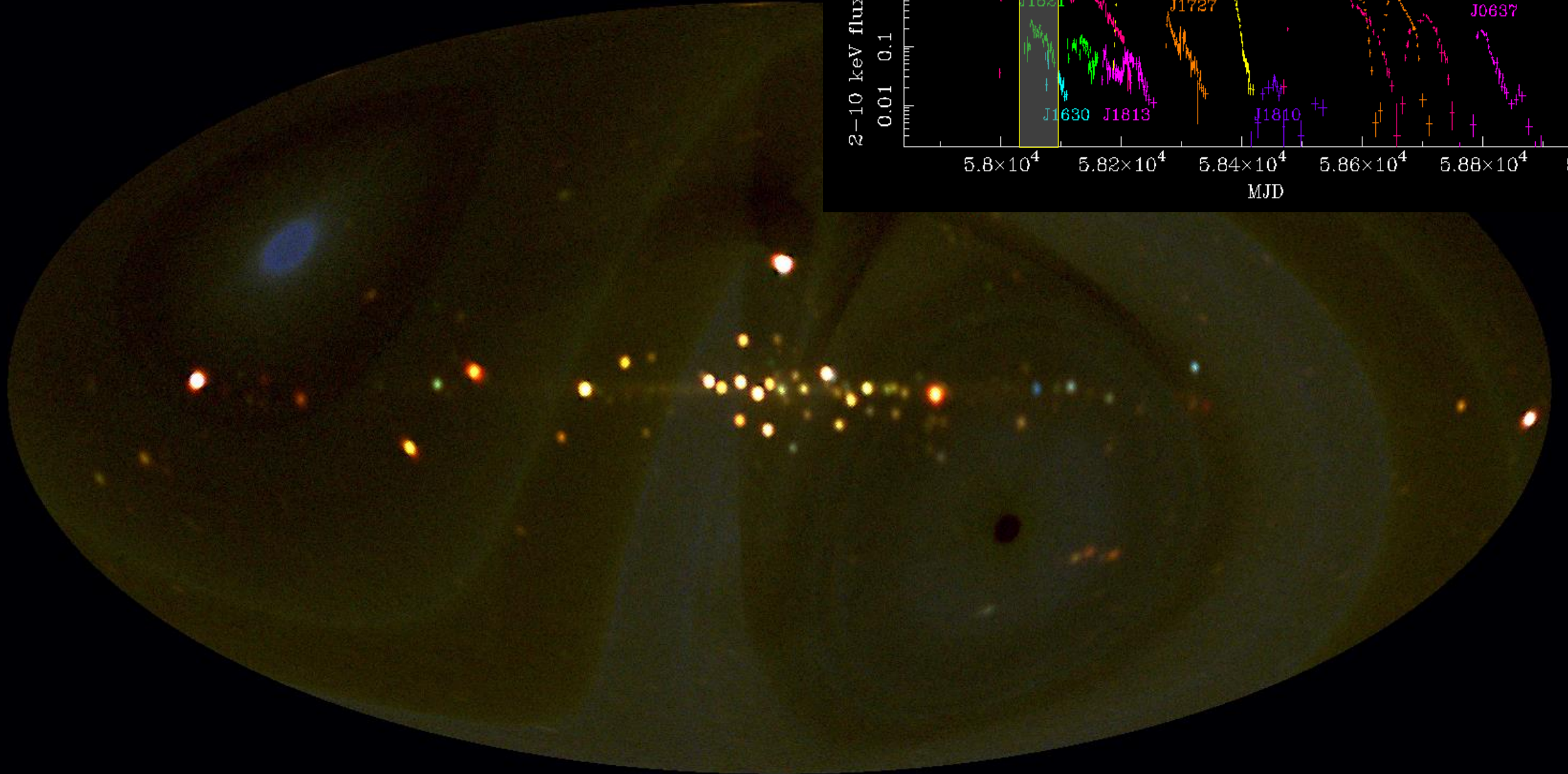
Negoro 2008

2022 Jun. BeXB MAXI J0655-013
(Serino+ ATel 15442)

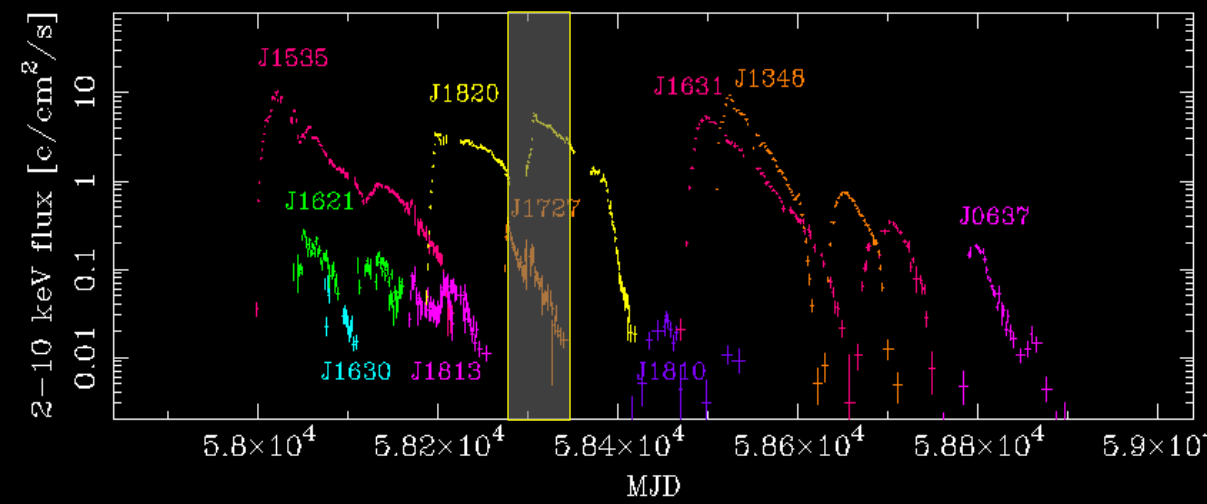
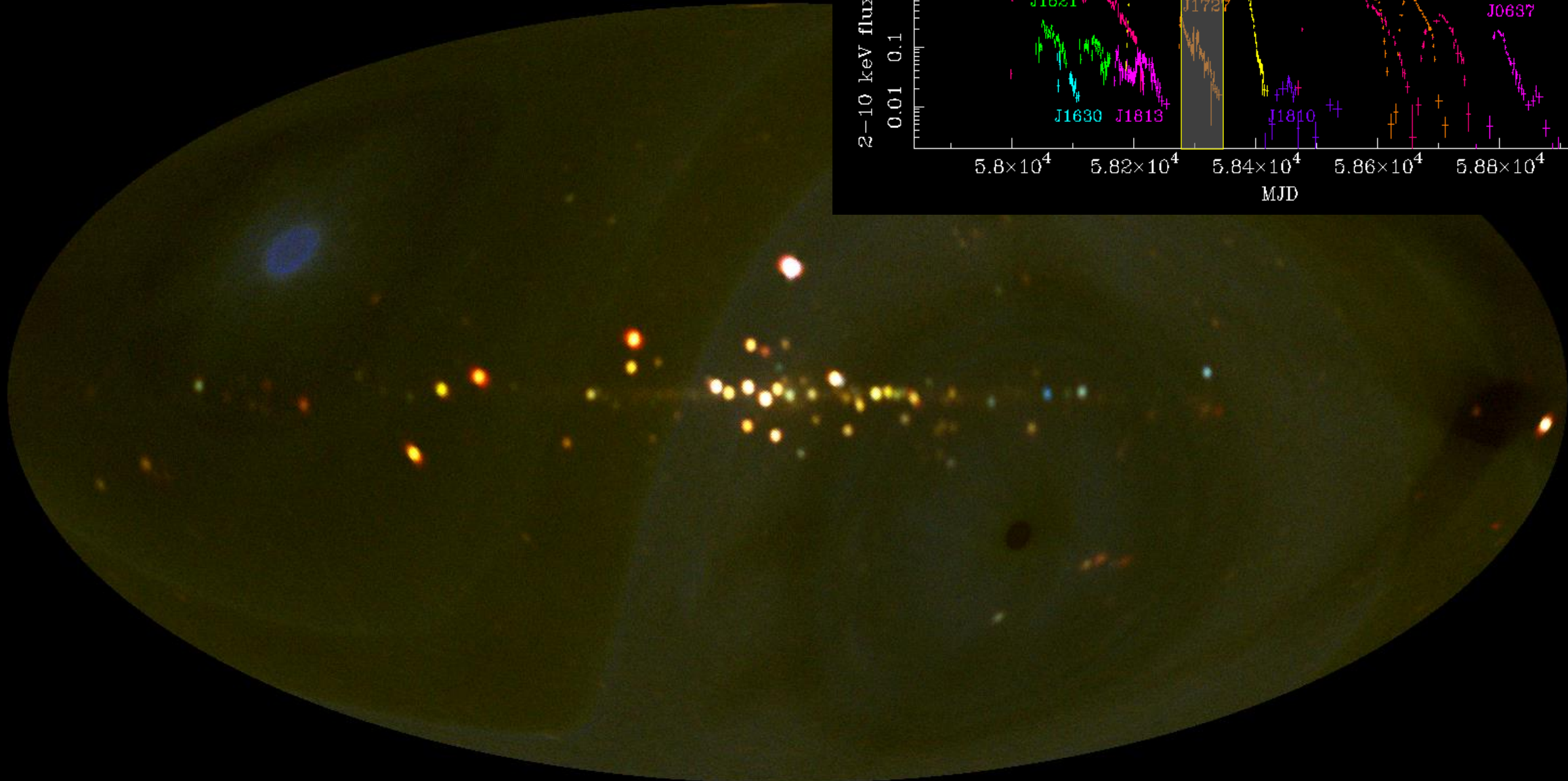
2022 Jan. SEXT MAXI J0709-159
(Serino+ ATel 15178;
Sugizaki+ 2022, PASJ, 74, 1131)

2021 Apr. BeXB MAXI J0903-531
(Yamaoka+ ATel 14555)

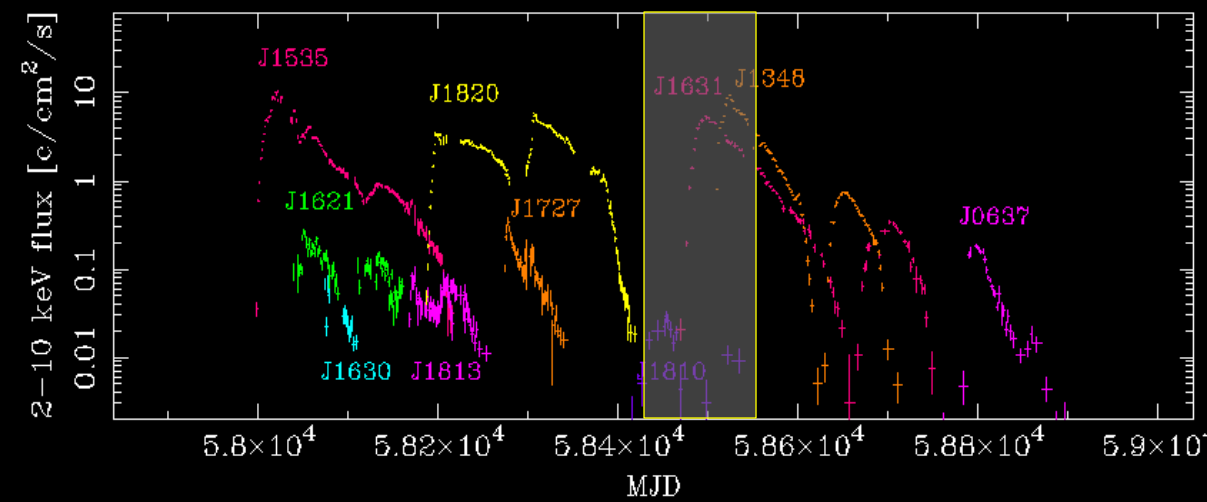
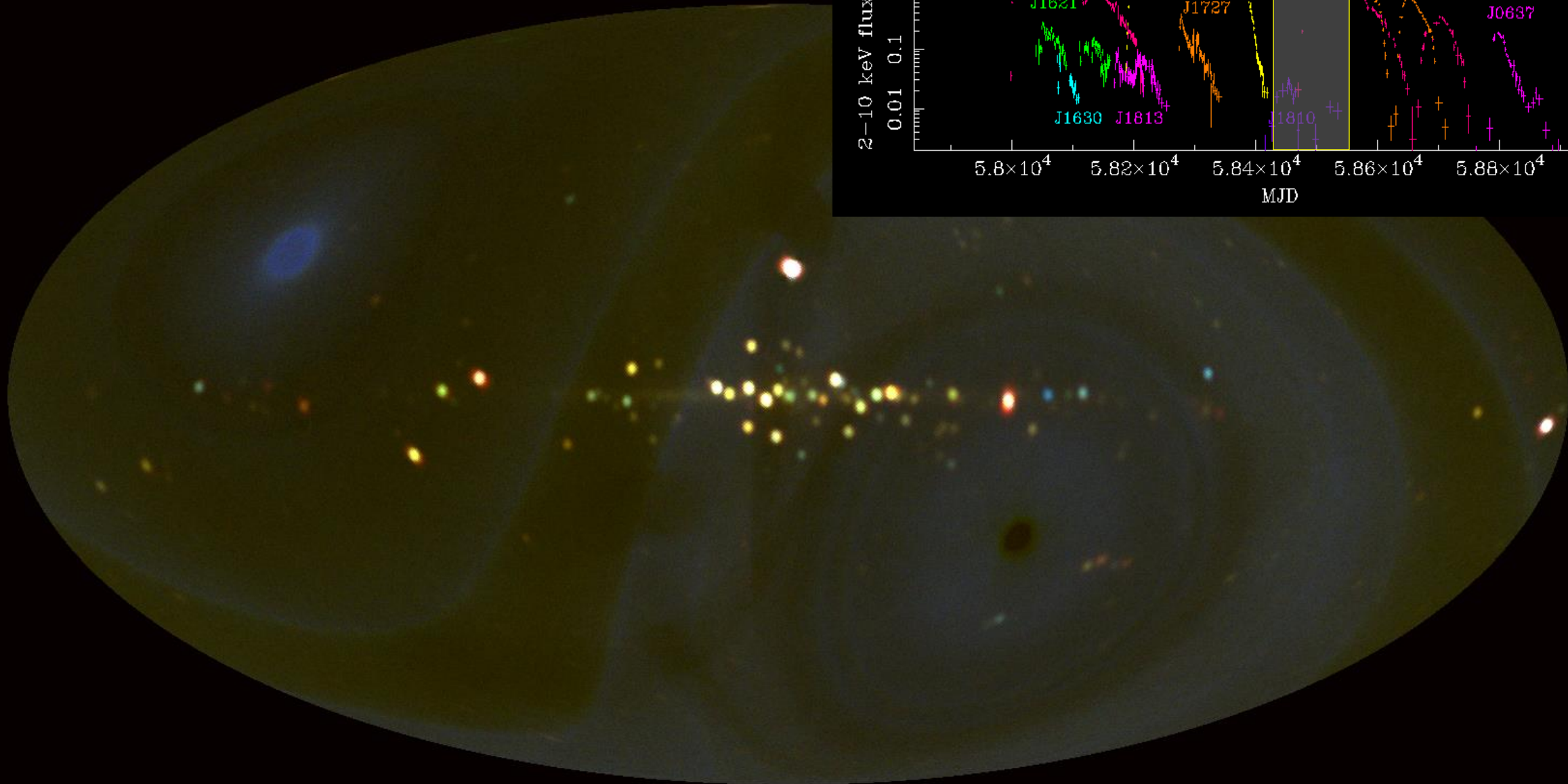
MJD 58027-58101



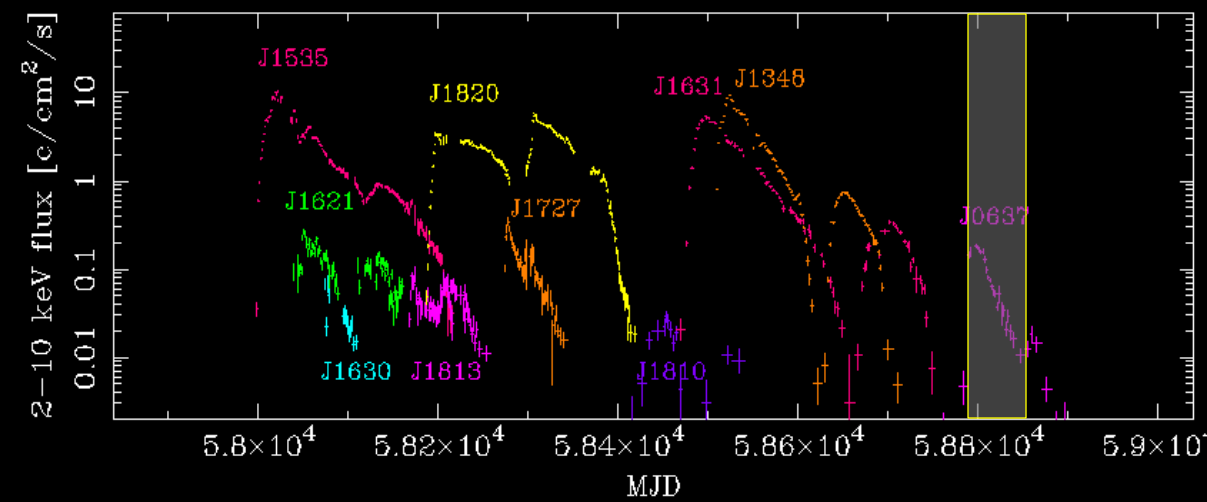
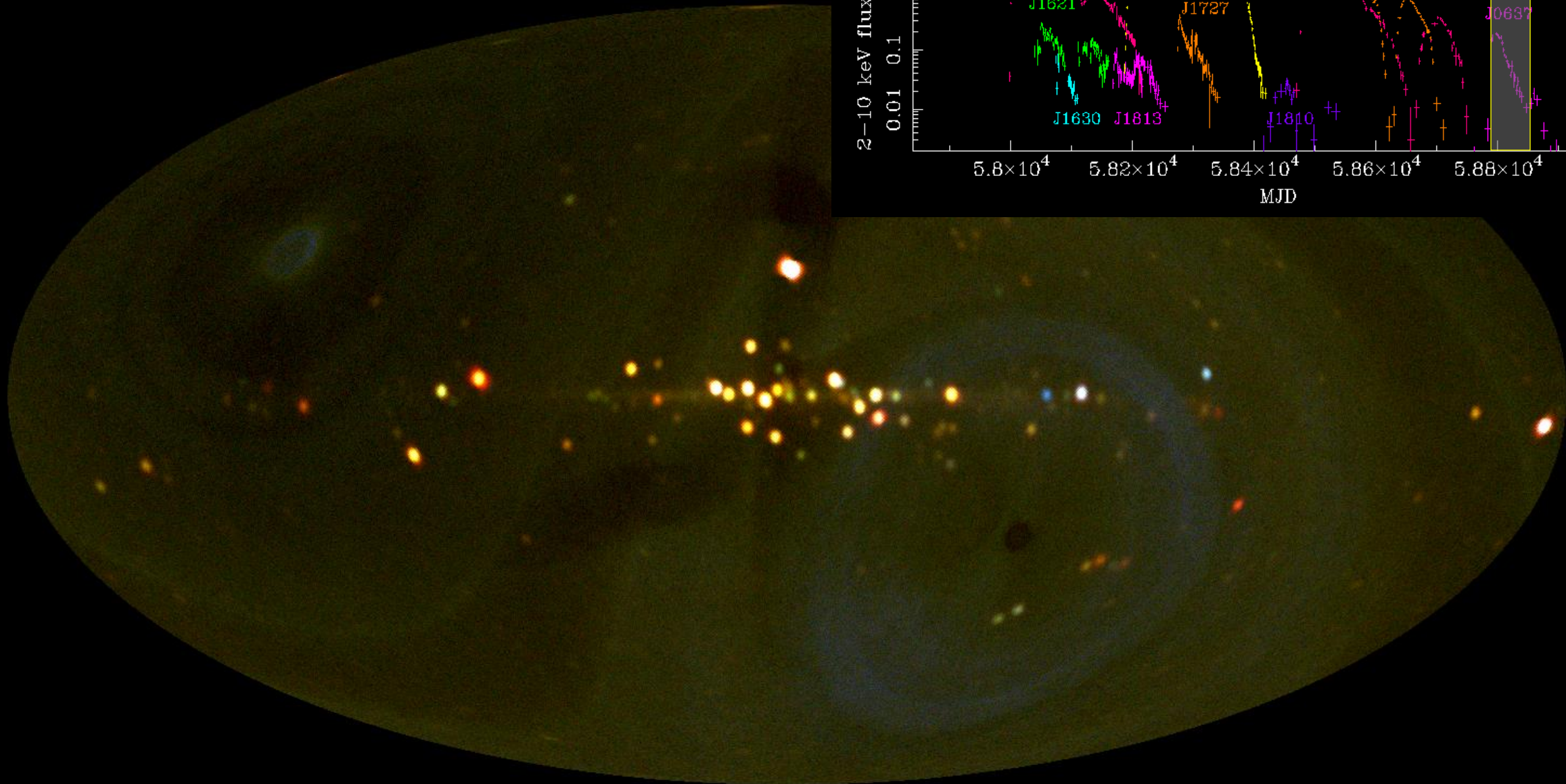
MJD 58270-58334



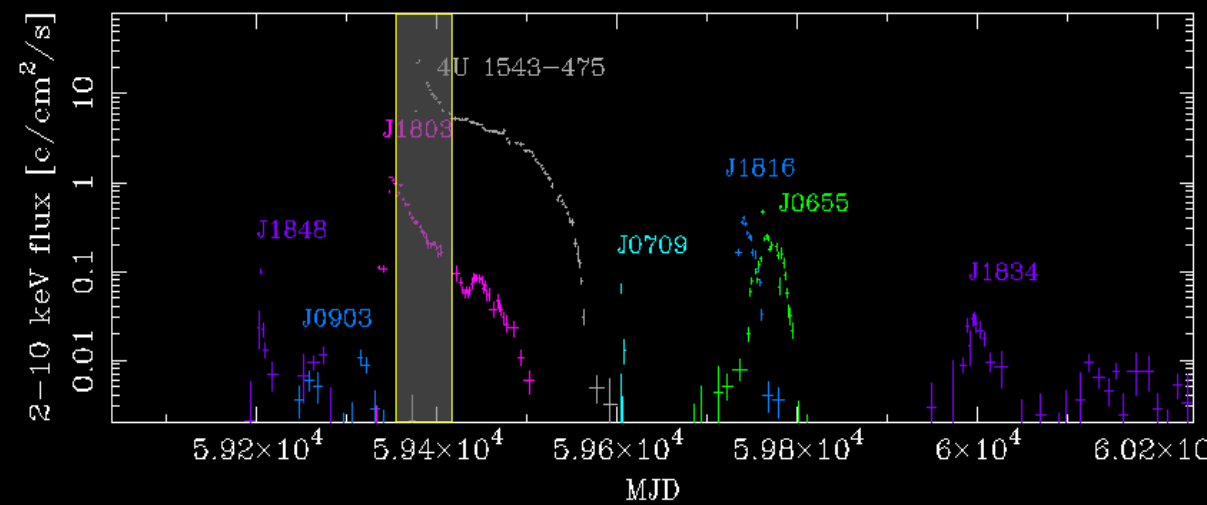
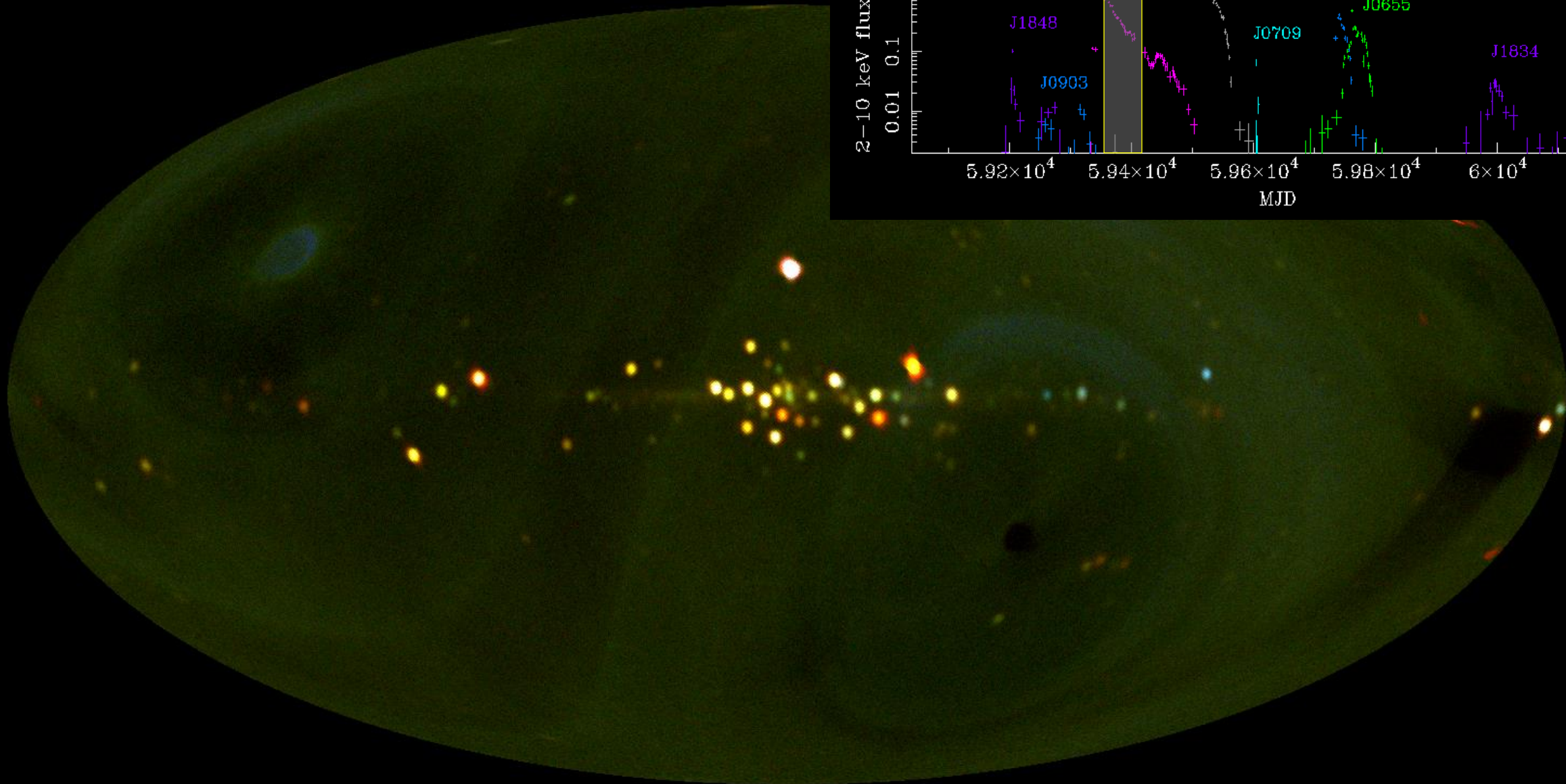
MJD 58430-58577



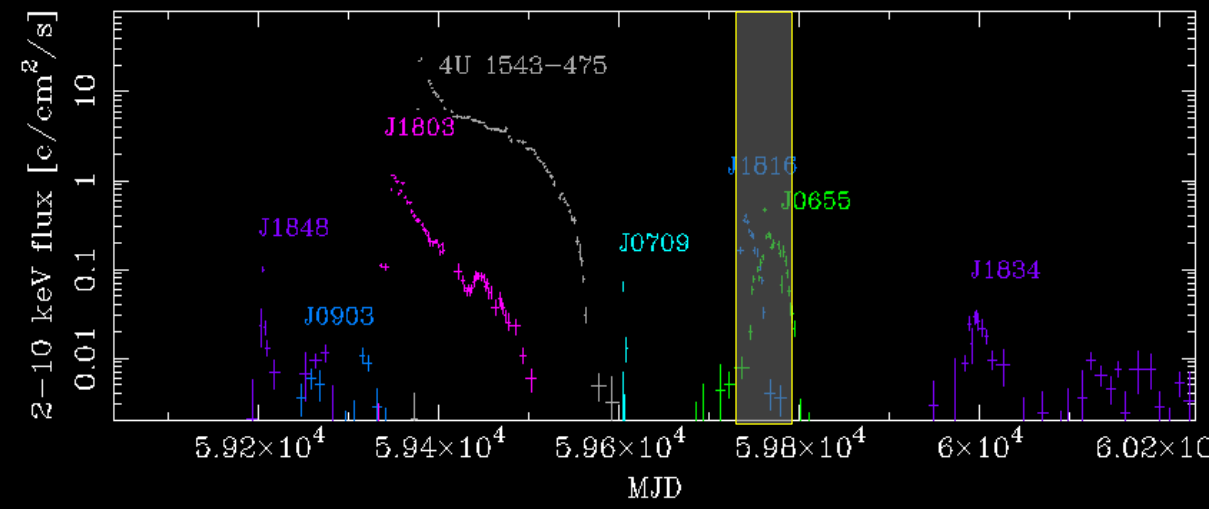
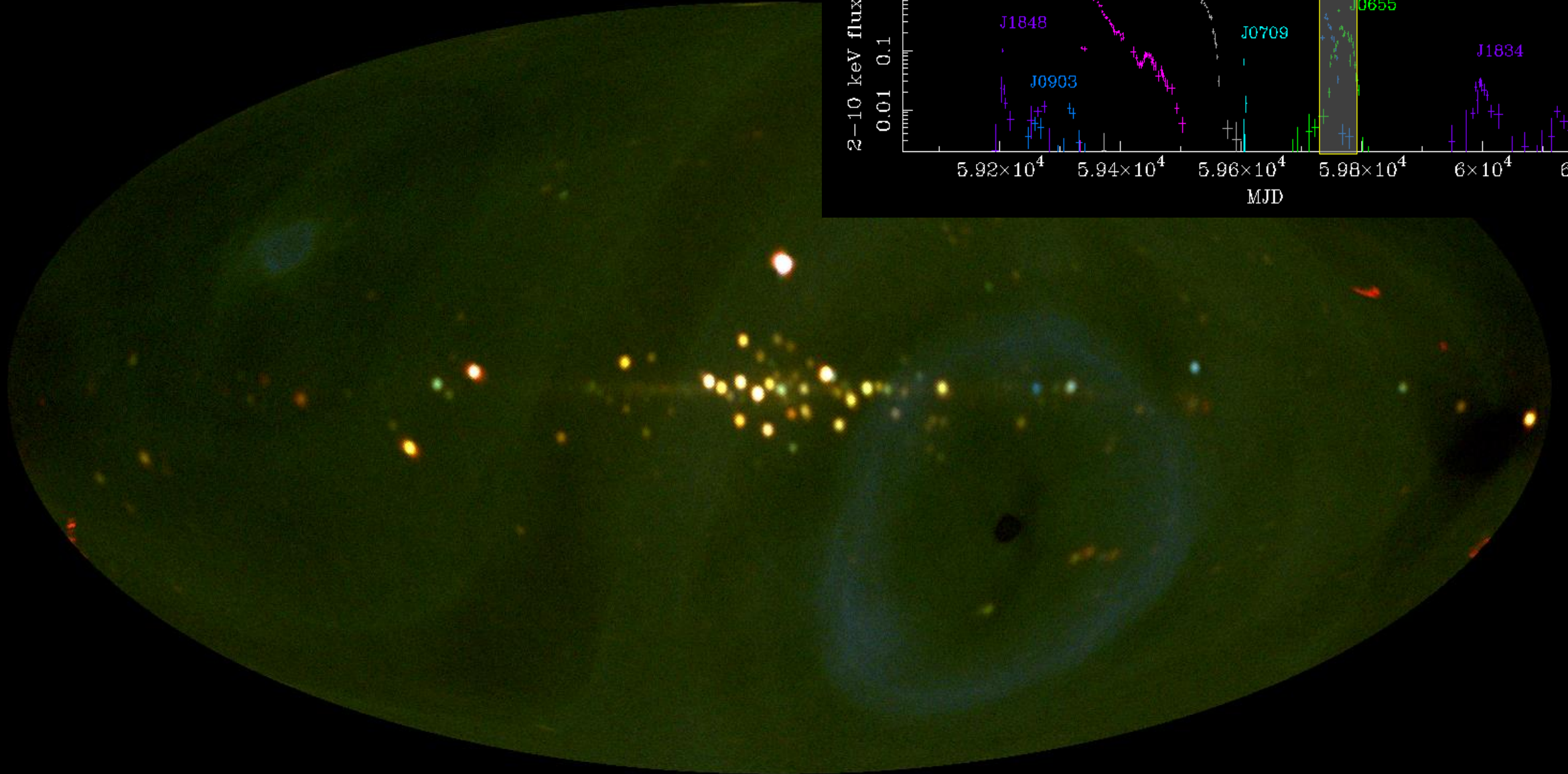
MJD 58790-58864



MJD 59350-59424



MJD 59727-59801



We are the Transients!



Thank you.

Especially thanks to Prof. Jamie Kennea for a long-standing 15 years collaboration of Swift and MAXI, who put prompt XRT ToOs anytime from everywhere in the world.