

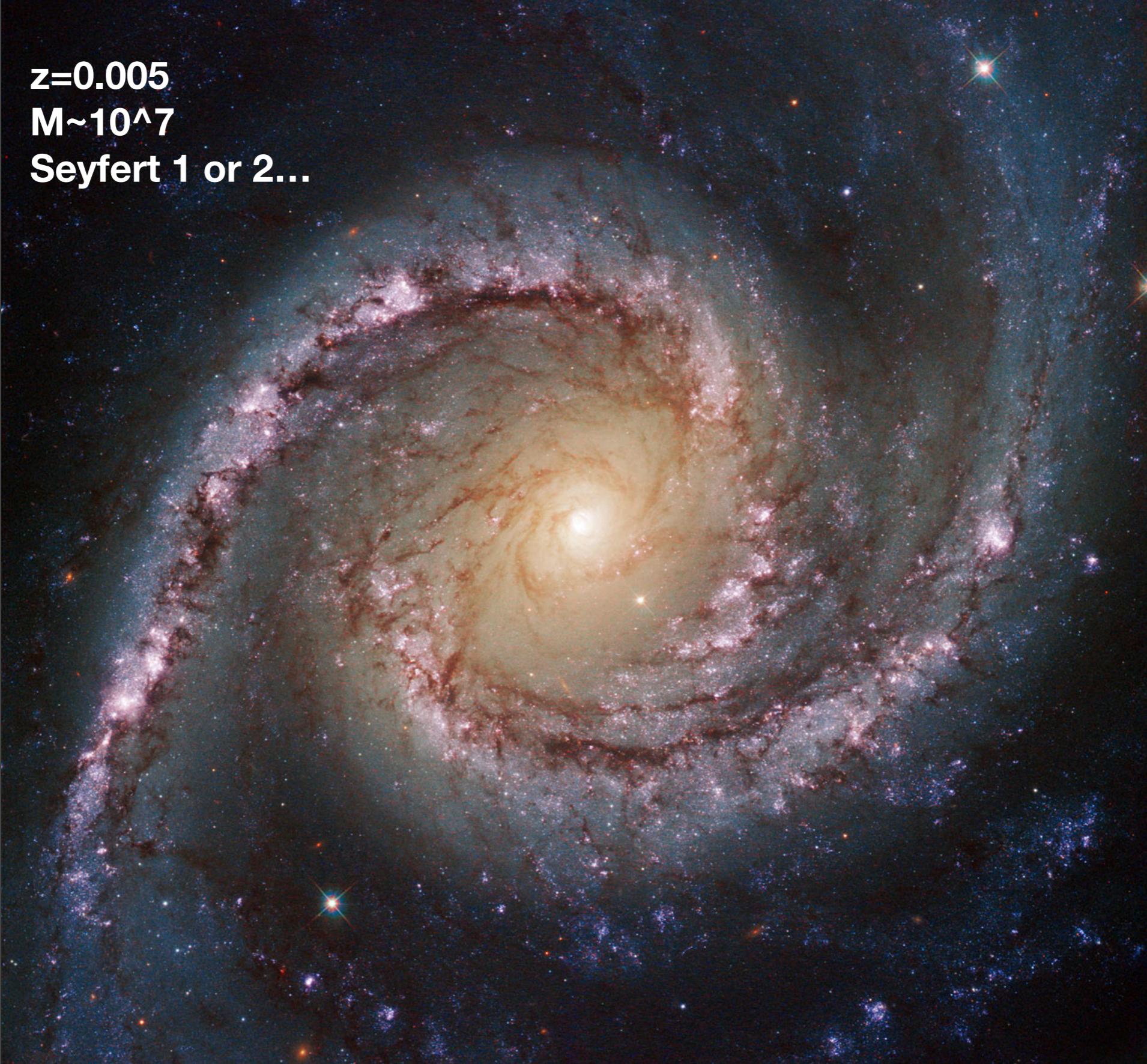
The X-ray View of the Repeat Changing-Look AGN NGC1566

M. L. Parker

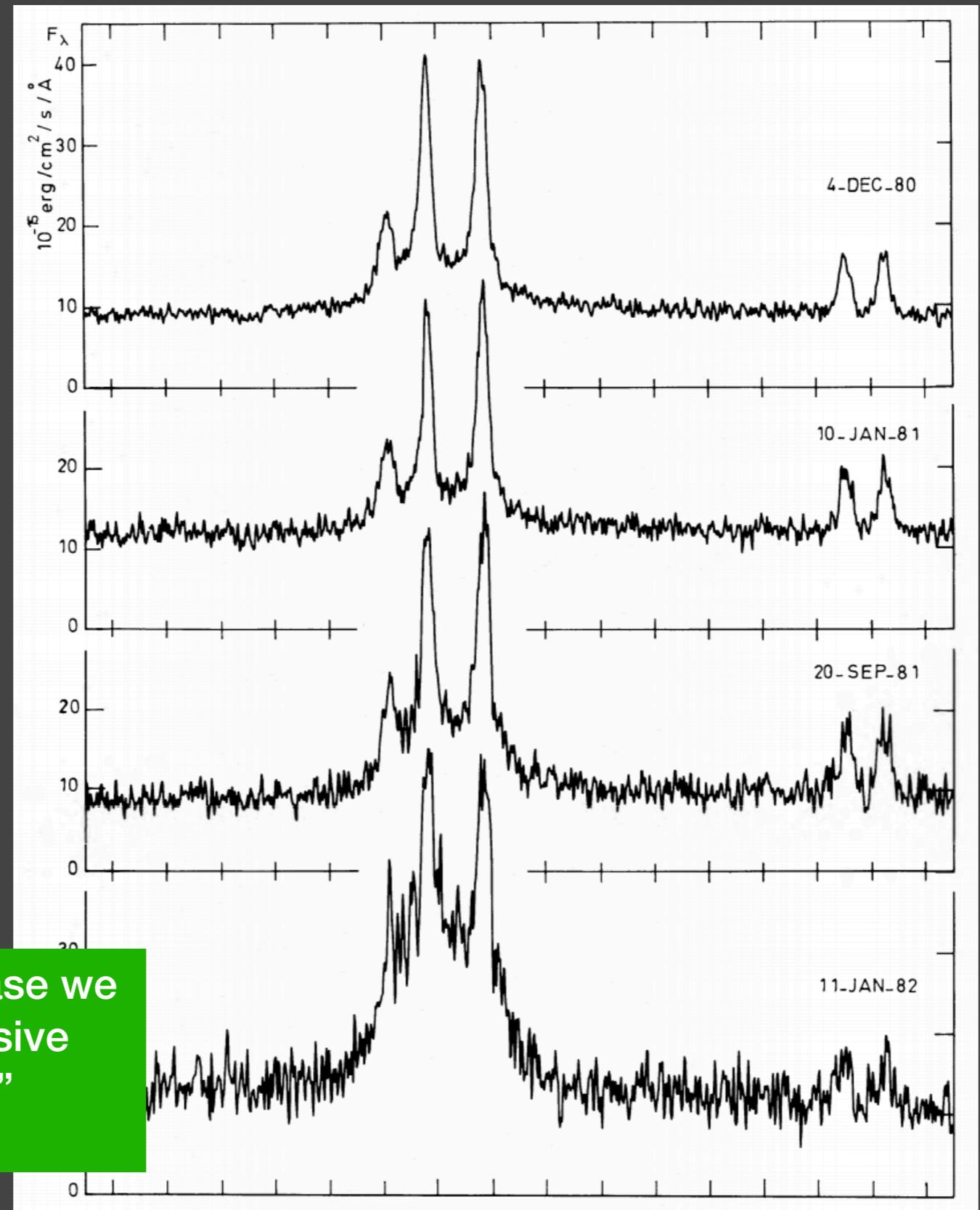
N. Schartel, D. Grupe, S. Komossa, F. Harrison, W.
Kollatschny, R. Mikula, M. Santos-Lleó, L. Tomás

Quasars in Crisis, 2019

z=0.005
M~ 10^7
Seyfert 1 or 2...

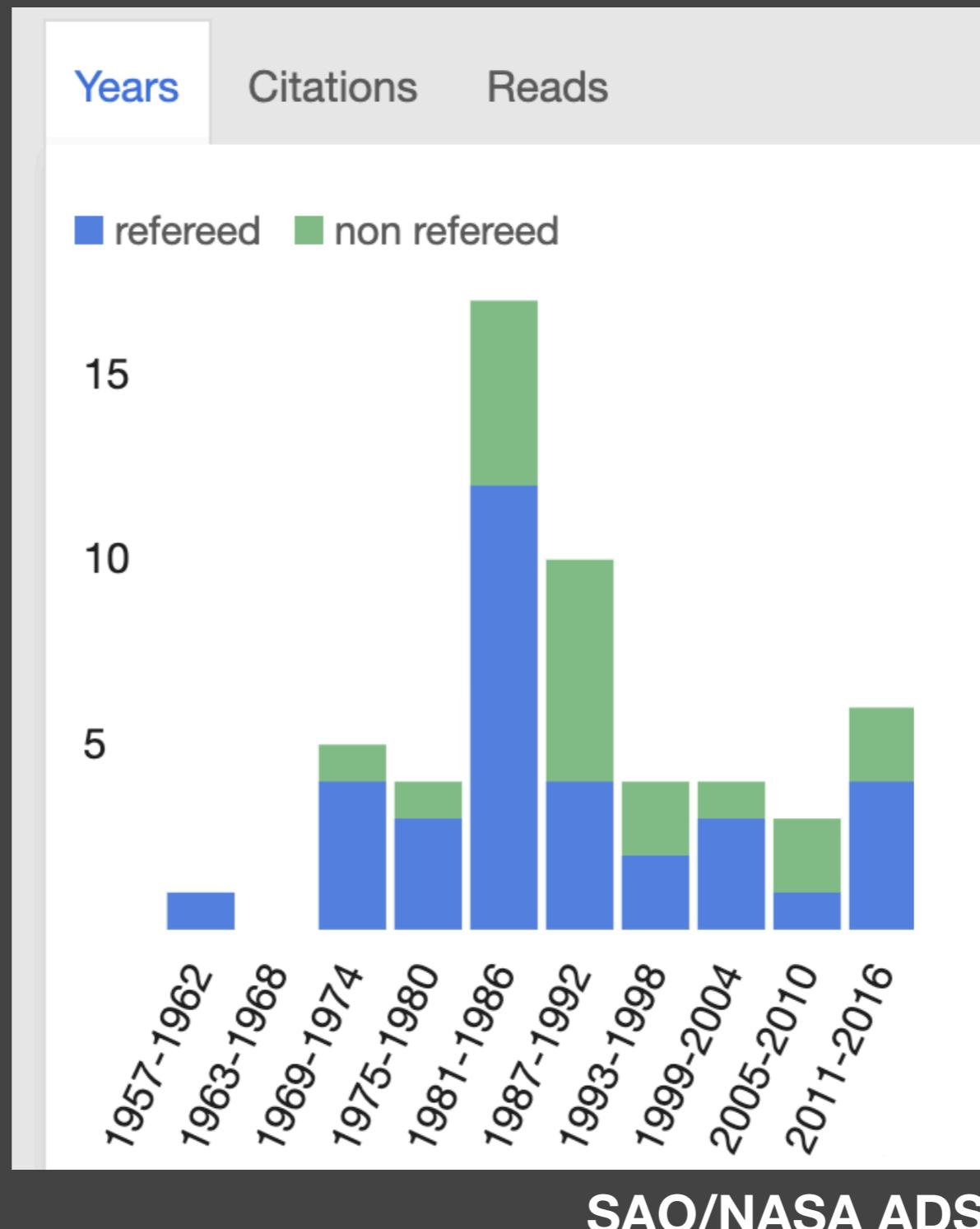


Broad H α Variations in NGC 1566

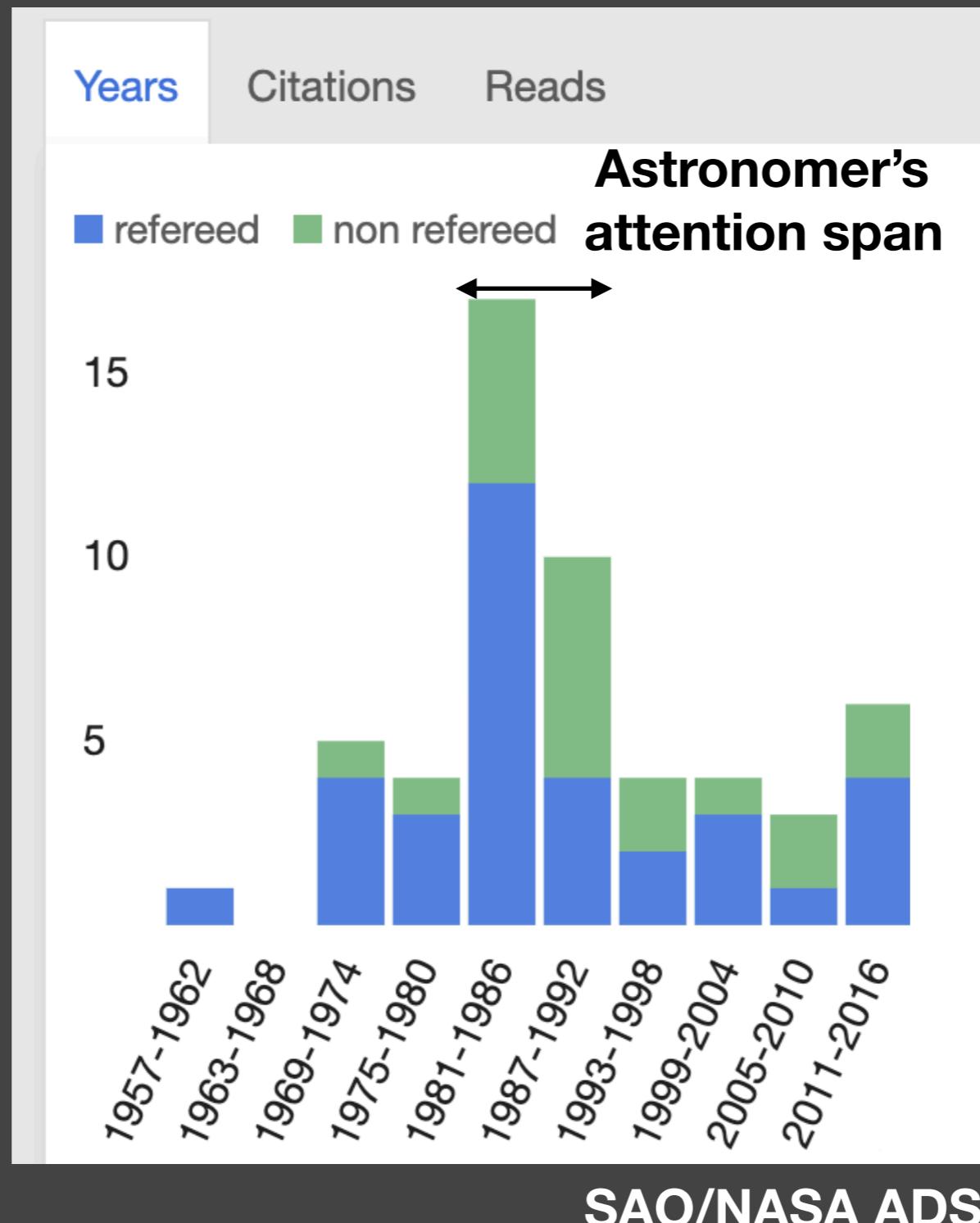


“Over this 15 yr time base we observe four successive periods of activity”
- Alloin+ 1986

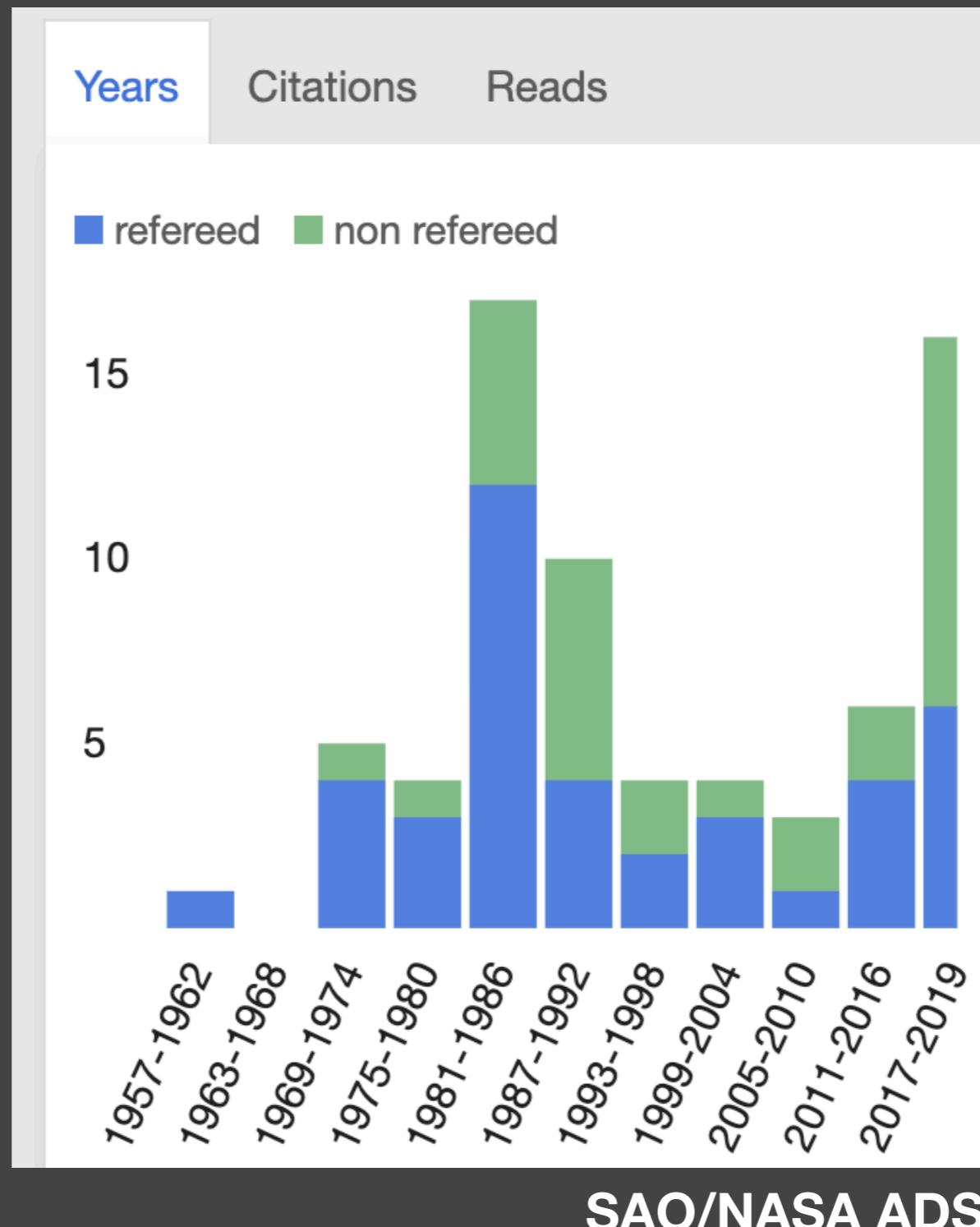
Papers with “NGC 1566” in the title



Papers with “NGC 1566” in the title



Papers with “NGC 1566” in the title



INTEGRAL detection of hard X-ray emission from NGC 1566

ATel #11754; **L. Ducci (IAAT and ISDC), T. Siegert, R. Diehl (MPE), C. Sanchez-Fernandez (ESA/ESAC), C. Ferrigno, V. Savchenko, E. Bozzo (ISDC).**

on 21 Jun 2018; 17:50 UT

Credential Certification: Carlo Ferrigno (Carlo.Ferrigno@unige.ch)

Subjects: X-ray, Gamma Ray, AGN, Transient

Swift follow-up observations determine enhanced nuclear activity from NGC 1566

ATel #11783; **C. Ferrigno (ISDC, CH), T. Siegert (MPE, Germany), C Sanchez-Fernandez, E. Kuulkers (ESAC/ESA, Spain), L. Ducci (IAAT, Germany/ ISDC, CH), V. Savchenko, E. Bozzo (ISDC, CH)**

on 26 Jun 2018; 12:31 UT

Credential Certification: Carlo Ferrigno (Carlo.Ferrigno@unige.ch)

Swift observations in all filters of the Seyfert galaxy NGC 1566 in outburst

ATel #11903; **Dirk Grupe (Morehead State University), S. Komossa (MPIfR), Norbert Schartel (ESAC)**

on 2 Aug 2018; 02:48 UT

Credential Certification: Dirk Grupe (dgrupe007@gmail.com)

Swift/UVOT observation of the enhanced nuclear activity from NGC 1566

ATel #11786; **P. Kuin (MSSL/UCL, UK), E. Bozzo, C. Ferrigno, V. Savchenko (ISDC, CH), E. Kuulkers (ESA/ESTEC, NL), C. Sanchez-Fernandez (ESAC/ESA, Spain) L. Ducci (IAAT, Germany/ISDC, CH)**

on 27 Jun 2018; 15:31 UT

Credential Certification: Carlo Ferrigno (Carlo.Ferrigno@unige.ch)

NEOWISE Mid-Infrared Observations of the Outburst in the Nucleus of NGC 1566

ATel #11913; **R. M. Cutri (Caltech/IPAC), A. K. Mainzer (JPL), S. D. Van Dyk (Caltech/IPAC), N. Jiang (USTC)**

on 5 Aug 2018; 00:21 UT

Credential Certification: Roc Cutri (roc@ipac.caltech.edu)

ASAS-SN Light Curve Reveals Dramatic Variability of Seyfert 1.5 AGN in NGC 1566

ATel #11893; **X. Dai (OU), K. Z. Stanek, C. S. Kochanek (OSU), B. J. Shappee (IfA-Hawaii), and ASAS-SN Collaboration**

on 27 Jul 2018; 14:36 UT

Credential Certification: Krzysztof Stanek (stanek.32@osu.edu)

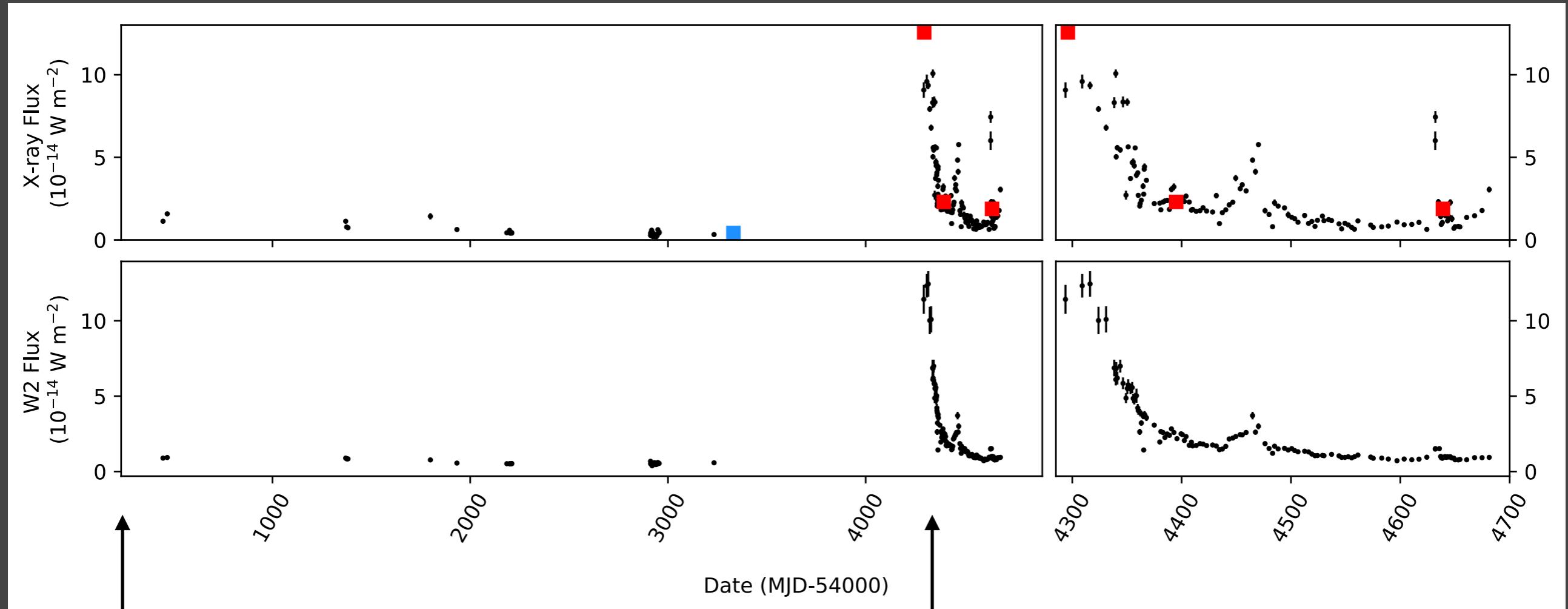
New changing look case in NGC 1566

ATel #11915; **V. L. Oknyansky, V. M. Lipunov, E. S. Gorbovskoy (M. V. Lomonosov Moscow State University, Moscow, Russia), H. Winkler, F. van Wyk (University of Johannesburg, South Africa), S. Tygankov (University of Turku, Finland; IKI, Russia), D. A.H. Buckley (South African Astronomical Observatory, South Africa)**

on 5 Aug 2018; 18:01 UT

Credential Certification: Victor Oknyansky (oknyan@mail.ru)

MLP+, 2019



September 2006

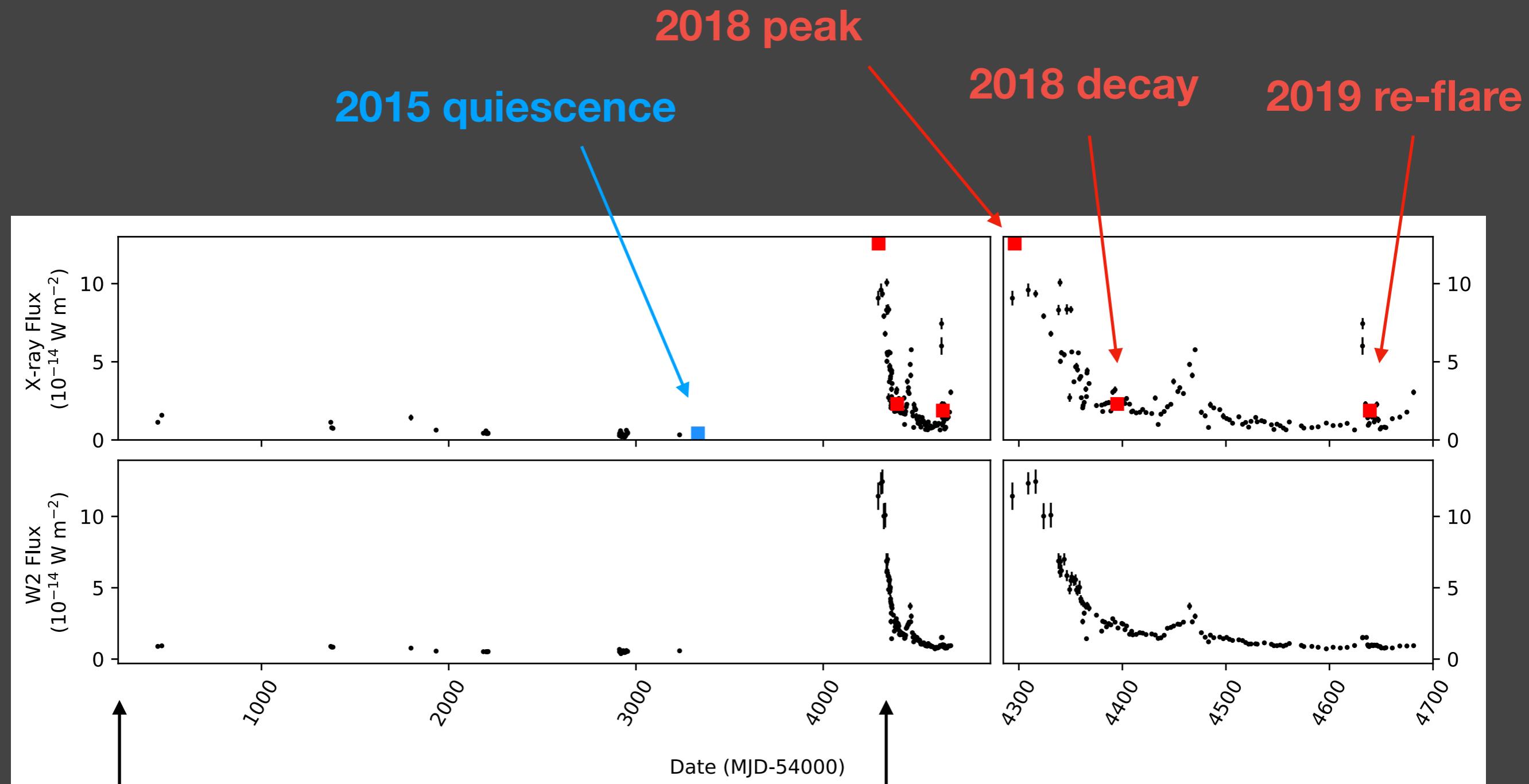
esa

June 2018



2018/19 zoom

Swift Monitoring: PI Grupe/Mikula



September 2006

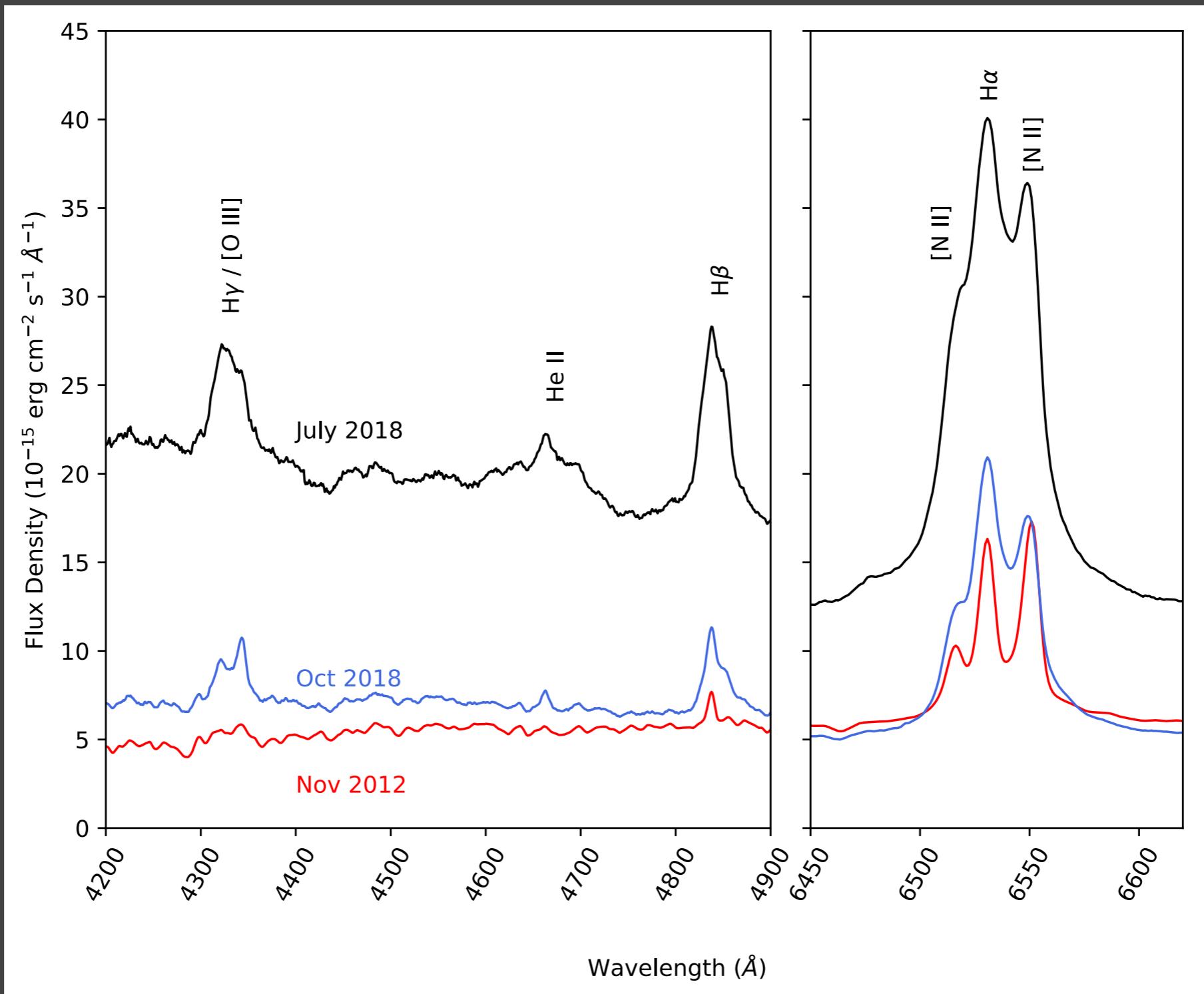
esa

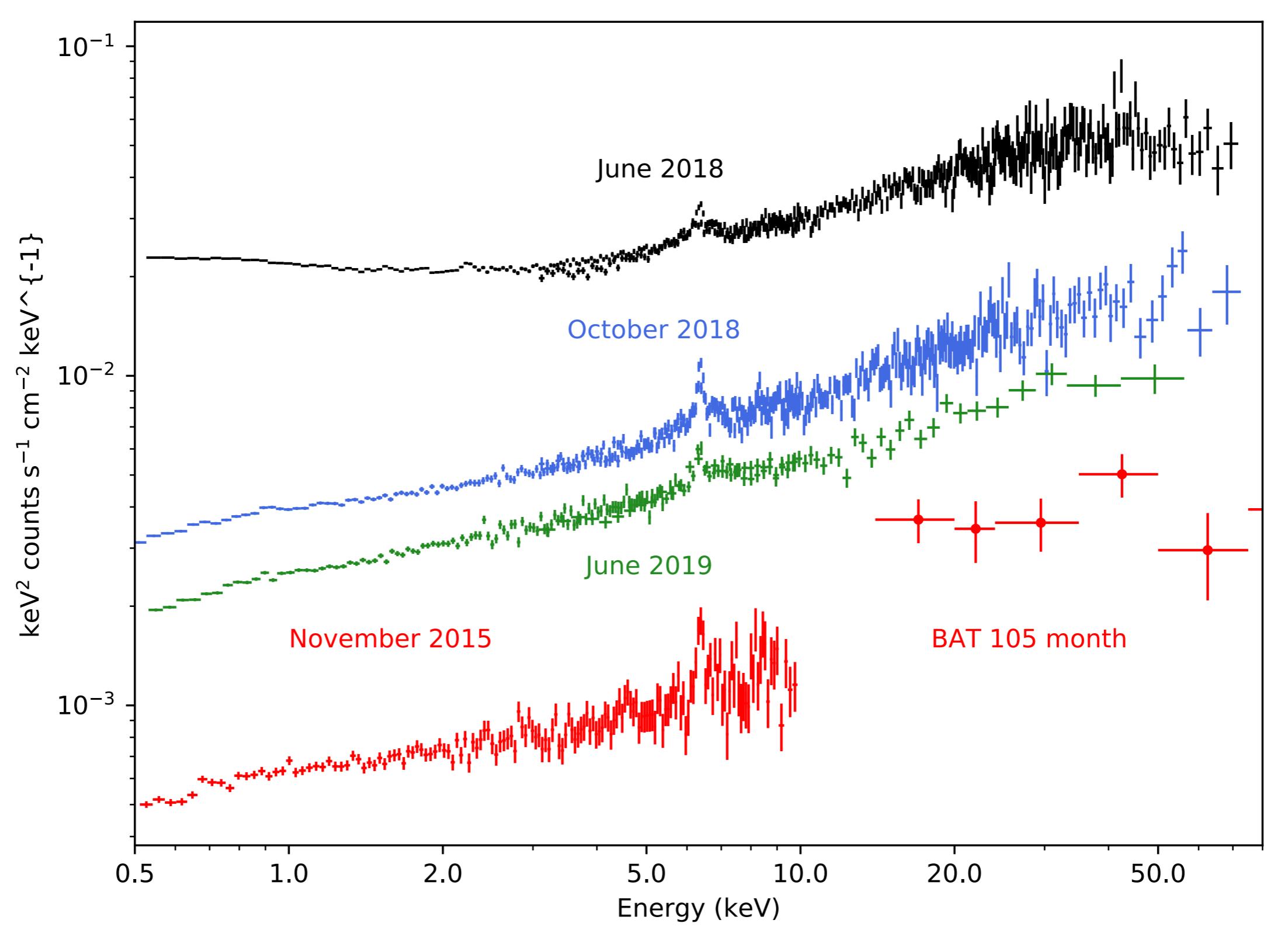
June 2018



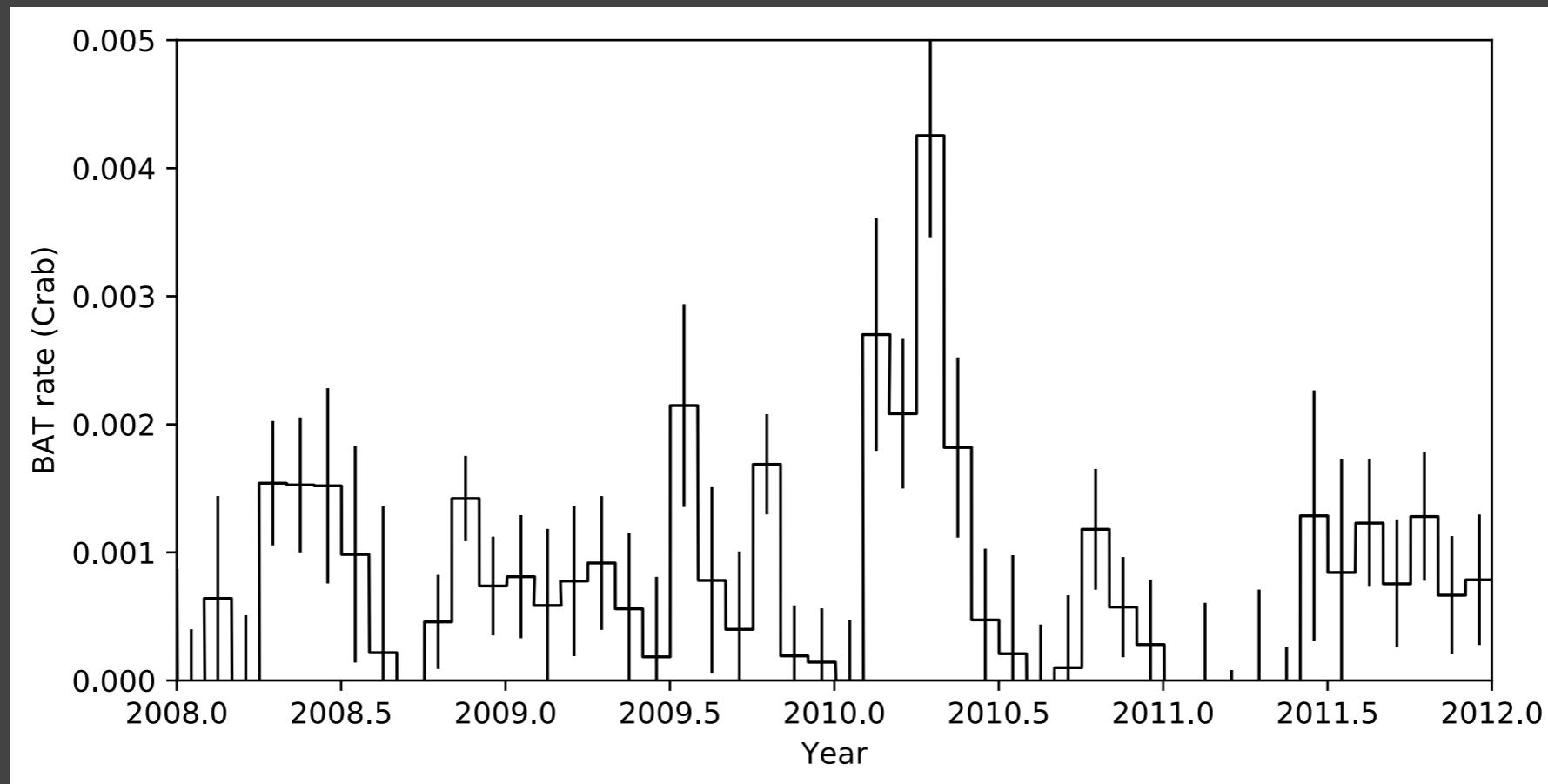
2018/19 zoom

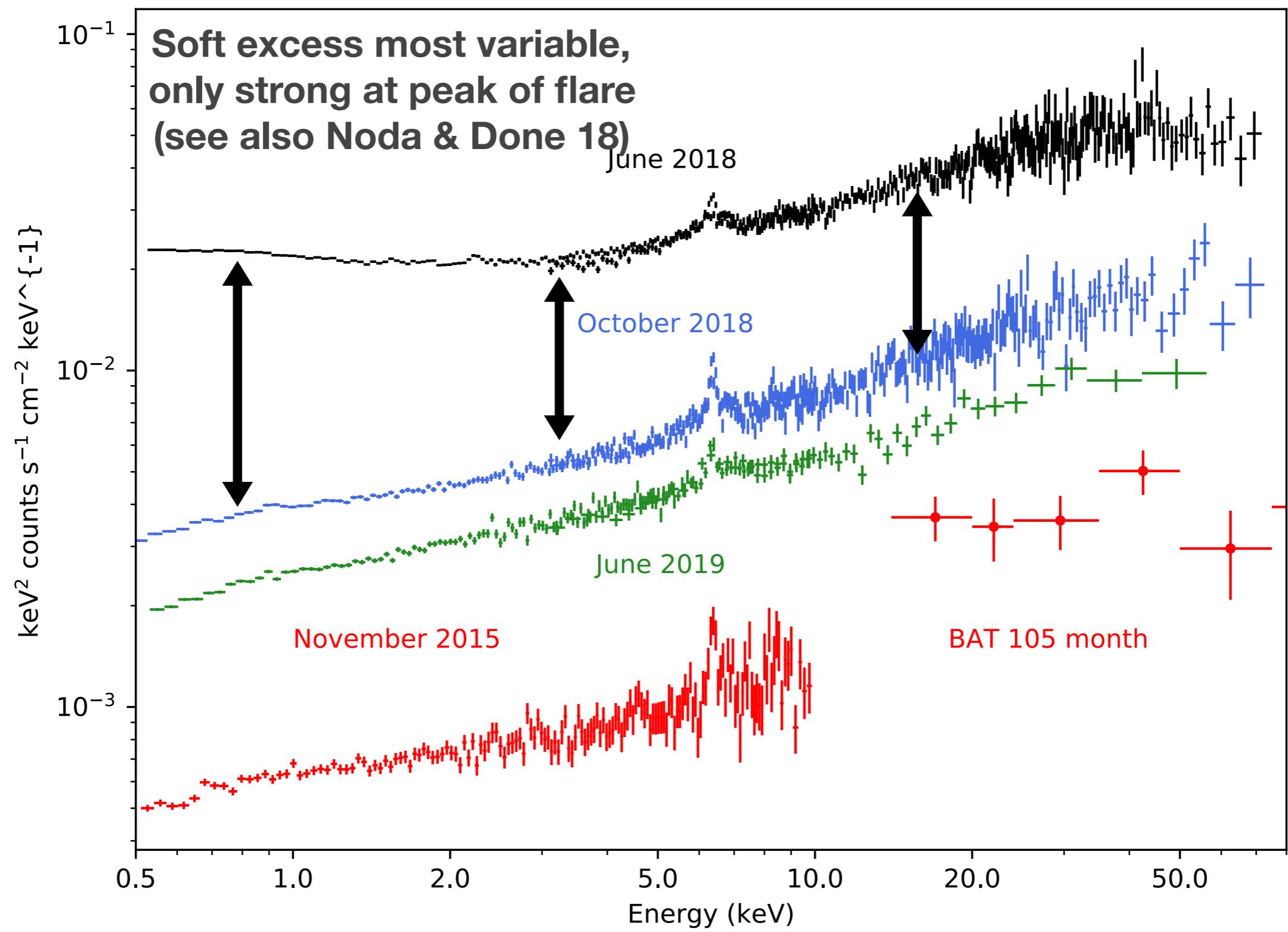
Swift Lightcurves: PI Grupe/Mikula

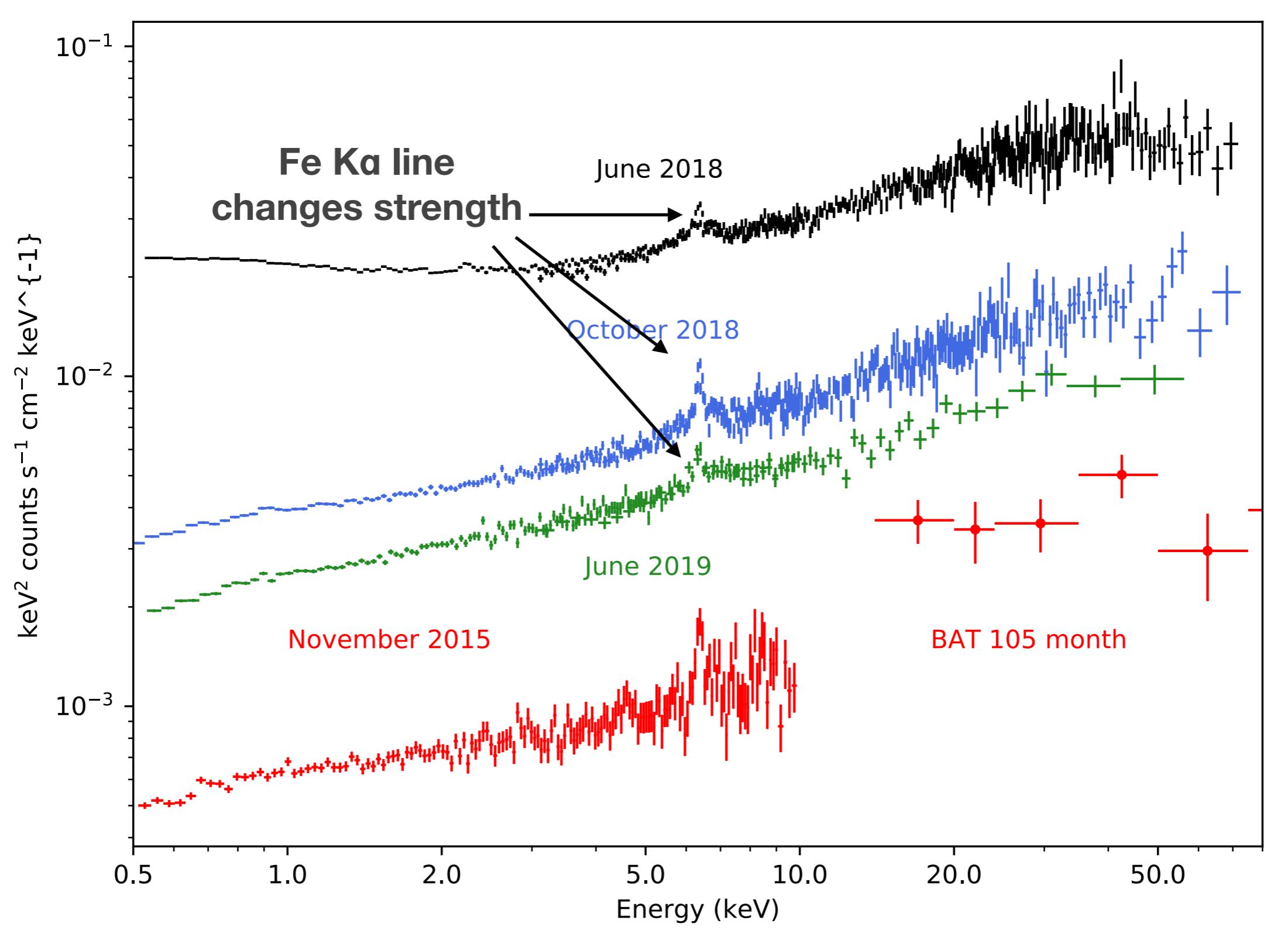


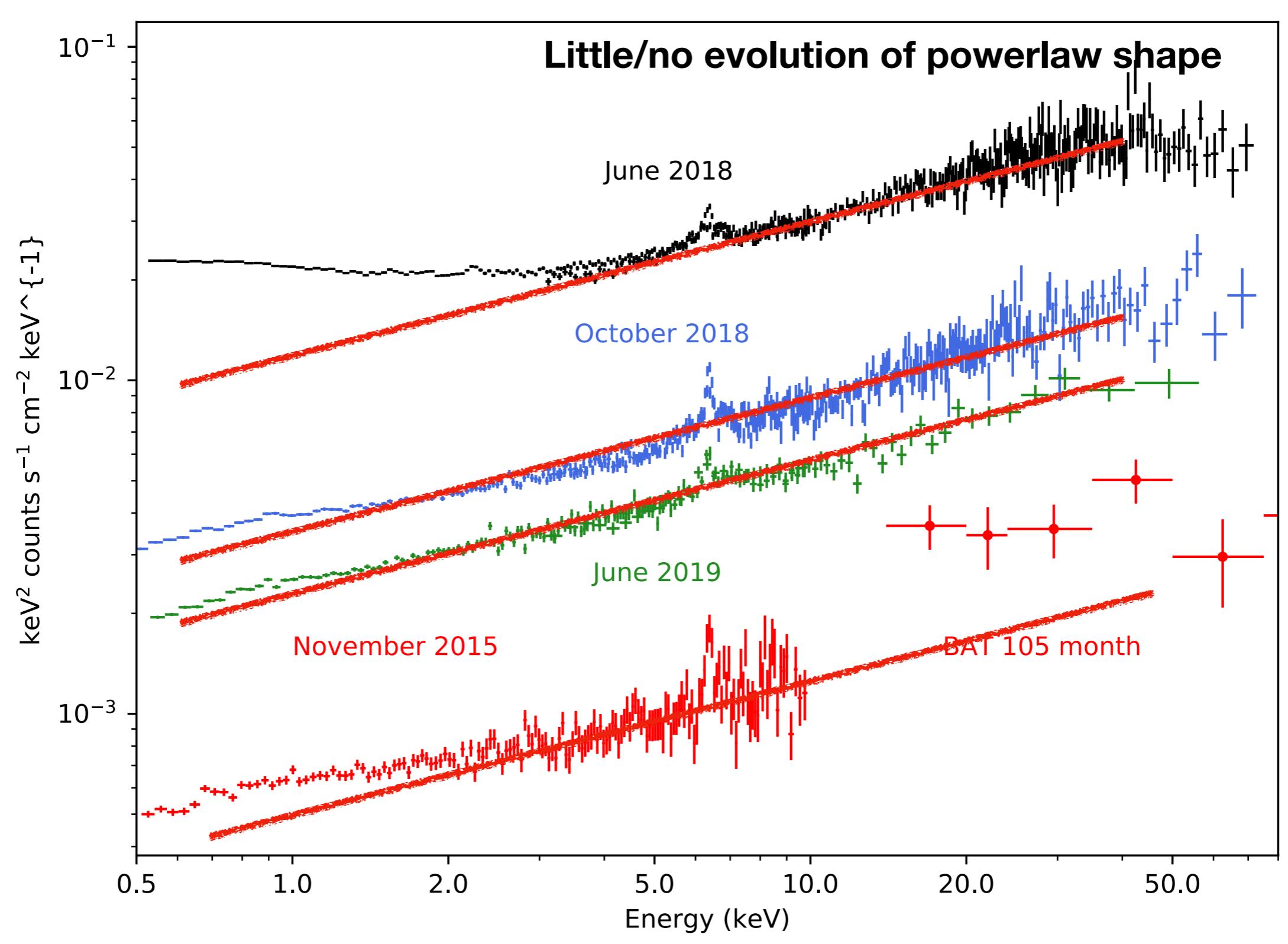


2010 outburst seen with Swift BAT







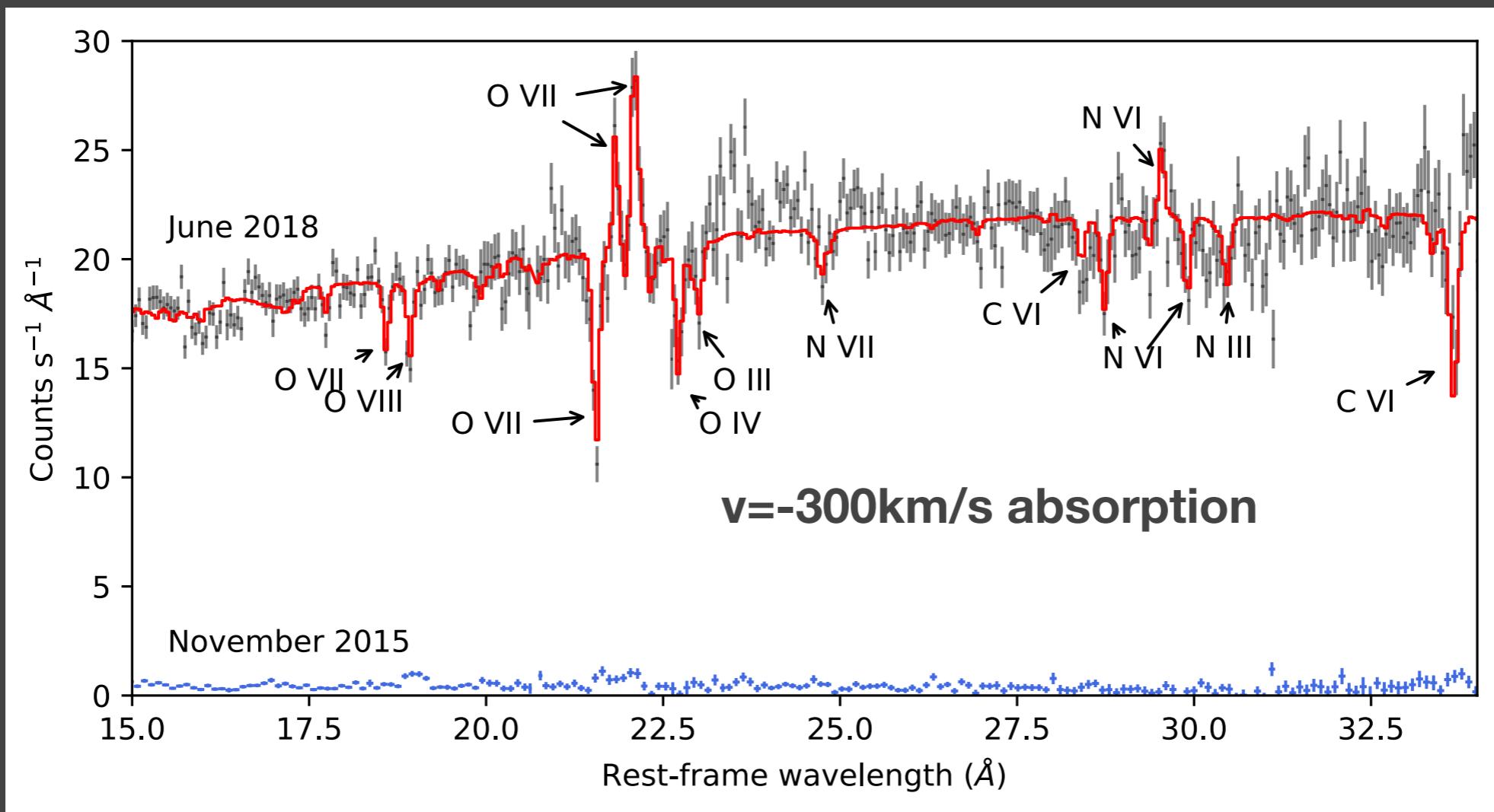


Upcoming NuSTAR observations

obs_start	obs_end	sequenceID	Name	J2000_RA	J2000_Dec	Exp	Notes
2019:217:06:50:06	2019:217:17:55:00	10502008002	Cen_A	201.36506333	-43.01911250	24.7	Calibration coordinated with ART-XC
2019:217:18:30:09	2019:218:08:30:00	90501333002	Swift_J1858d6m0814	284.645417	-8.237472	24.9	ToO Coordinated with HST, NICER
2019:218:09:00:09	2019:218:20:40:00	80502335002	Cyg_X1	299.59033	35.20161	25.2	(1/3) ToO coordinated with NICER
2019:218:21:10:21	2019:220:10:30:00	30502020004	M82_X2	148.96267	69.67931	87.4	(2/2)
2019:220:11:25:15	2019:221:16:30:00	60501031002	NGC_1566	65.00175	-54.93781	63.5	(1/3)
2019:221:17:10:05	2019:222:11:05:00	60502035010	ESO511_G030	214.84333	-26.64475	33.9	(5/5) coordinated with XMM
2019:222:11:45:13	2019:223:11:40:00	60501031004	NGC_1566	65.00175	-54.93781	53.2	(2/3)

200ks NuSTAR, 10ks XMM. PI MLP

Rest frame emission lines



Parker+19

Summary:

- Major flare observed in NGC 1566 in multiple wavebands
- ~50x brighter in X-rays, similar in UV
- Soft excess stronger at peak of flare
- Neutral Fe Ka line strongly variable
- Dramatic changes in nuclear environment emission/absorption
- No evolution of high-energy cut-off or photon index (no change in coronal properties?)

Questions:

- Is NGC 1566 representative of other CL AGN?
- Why is the coronal emission so constant in shape?
- Why does it look so similar to all other type 1 AGN?