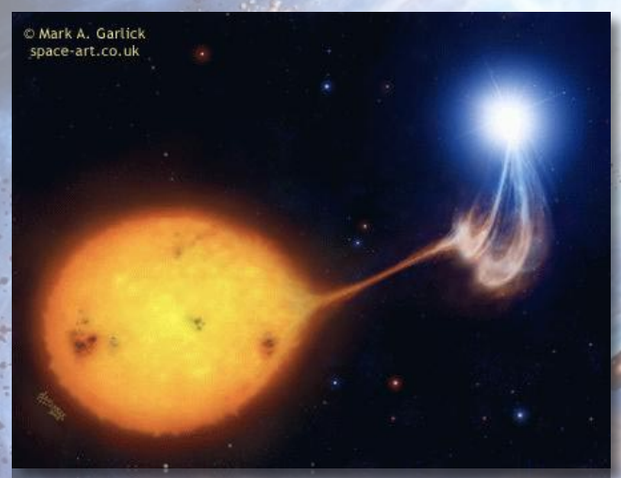
SCO X-0

INAF
ISTITUTO NAZIONALE
DI ASTROFISICA

High-Energy observations of Stellar-mass Compact Objects: from CVs to Ultraluminous X- Ray Sources

Tomaso Belloni (INAF - Osservatorio Astronomico di Brera)



26 MAGGIO 2021

Audit INAF RSN4

NASCITA DEL PROGETTO

SCO X-0

- Risposta bando INAF-ASI 2017
- Finanziamento basato su tempo+archivio
- Storia da bandi precedenti
- Rete di gruppi
- Oggetti compatti stellari

VITA DEL PROGETTO (300 k€/615 k€)

SCO X-0

- **Nascita:** Bando INAF-ASI 2017
  - Basato su osservazioni disponibili (PI)+archivio
  - Fondi richiesti: 280 k€
  - Fondi ottenuti: 101 k€ (36%)
- **Rinascita:** Bando INAF-ASI 2019
  - Basato su nuove osservazioni disponibili+archivio
  - Fondi richiesti: 260 k€
  - Fondi ottenuti: 159 k€ (61%)
- **Rianimazione:** Bando INAF-Mainstream
  - Fondi richiesti: 75 k€
  - Fondi ottenuti: 40 k€ (53%)

Satellite	Tempo (ks)
Chandra	145
XMM	1670
INTEGRAL	9890
Swift	10
Astrosat	70
TOTALE	**136 giorni**

Satellite	Tempo (ks)
Chandra	210
XMM	1722
INTEGRAL	4052
Swift	480
Astrosat	180
NICER	86
TOTALE	**78 giorni**

NUMERI DEL PROGETTO

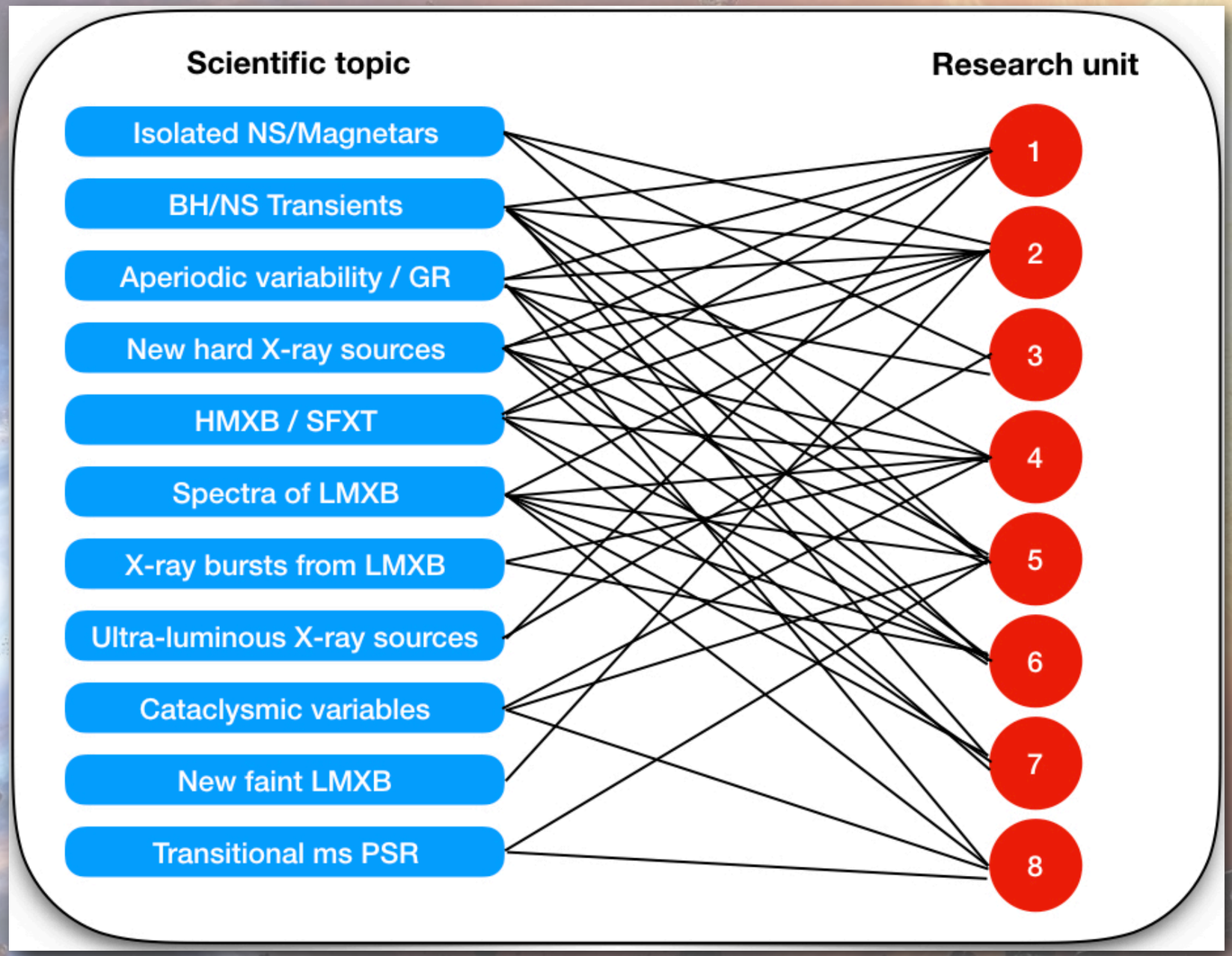
- Otto unità di ricerca
- 51 partecipanti (al 2021)
- 32 FTE (4.3 per il 2021)
- 19 partecipanti @ 0 FTE
- 3 anni AdR + 10 mesi AdR cofinanziati
- Fondi disponibili: 92.5 k€
- Estensione COVID-19 al 2022
- 12 schede figlie/sorelle/cugine
- Diversi filoni di ricerca

Istituto	PI
OA Brera	**Belloni**
IASF-Milano	Mereghetti
OA Padova	Zampieri
OAS Bologna	Masetti
OA Roma	Casella/Papitto
IAPS Roma	Bazzano
IASF Palermo	Del Santo
Univ. Palermo	Iaria

STRUTTURA DEL PROGETTO

SCO X-0

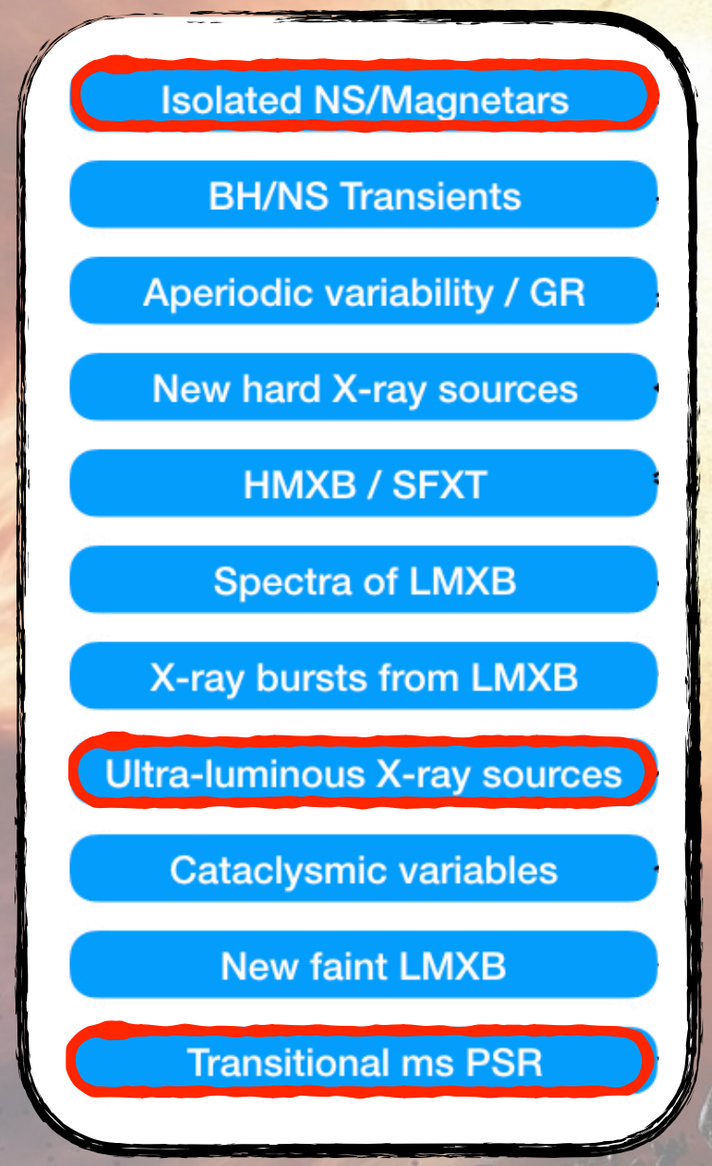
#	Istituto
1	OA Brera
2	IASF-Milano
3	OA Padova
4	OAS Bologna
5	OA Roma
6	IAPS Roma
7	IASF Palermo
8	Univ. Palermo



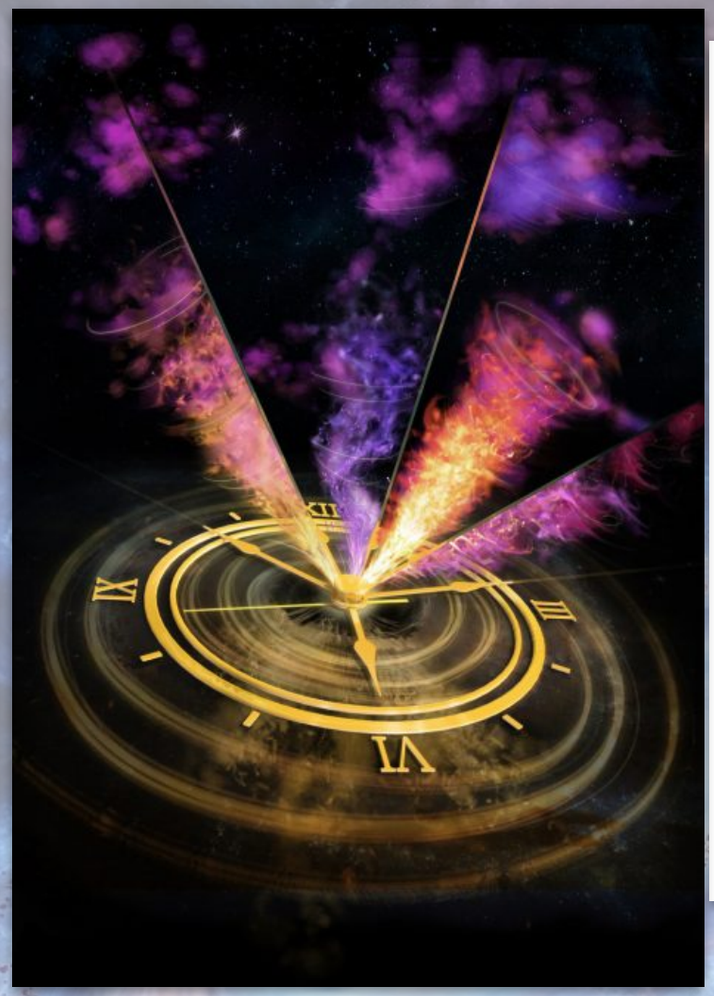
LA RICERCA

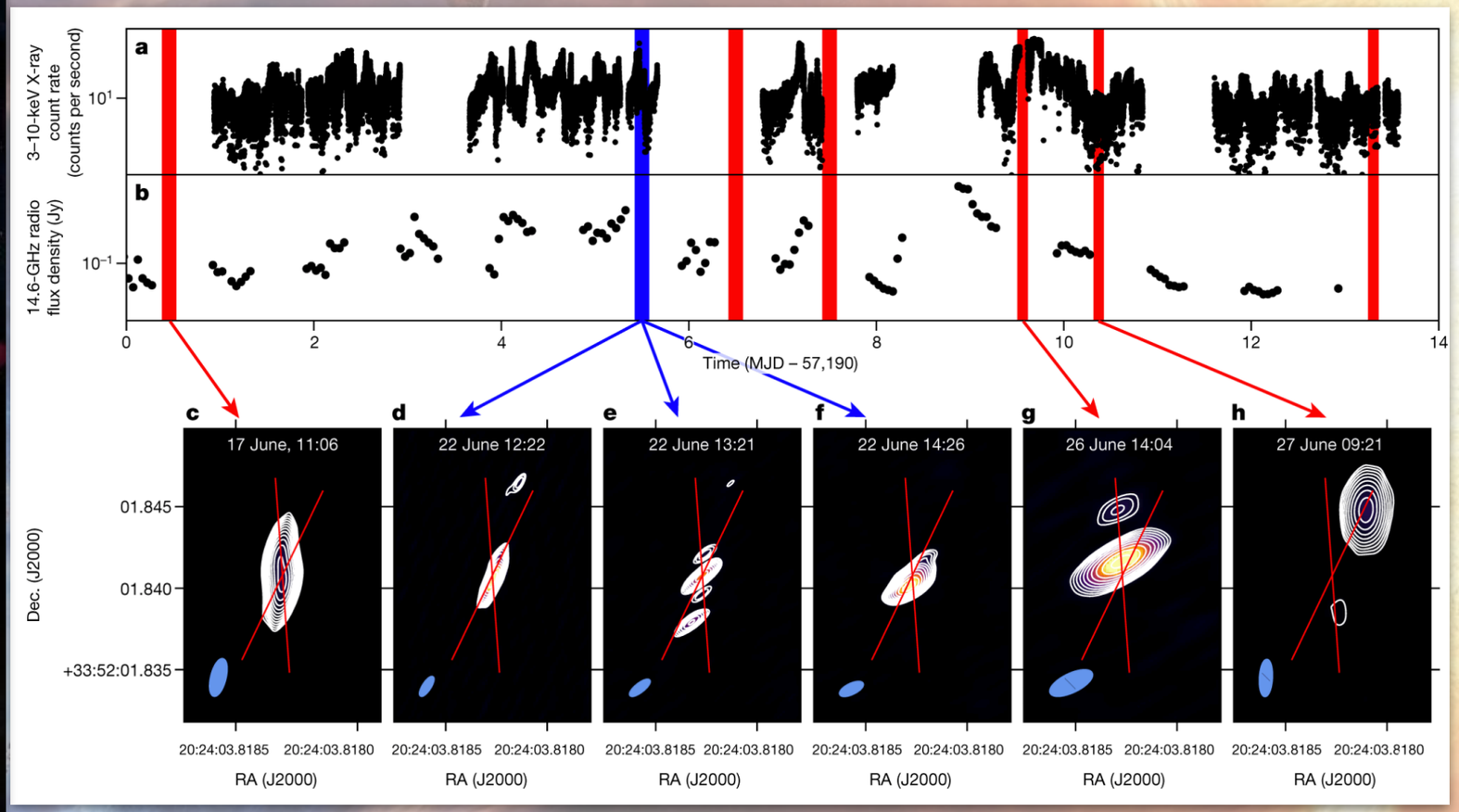
SCO X-0

- ★ 59 pubblicazioni (13 nel 2021)
- ★ Magnetars, ms PSR, ULX-t
- ★ Qualche highlight



TRANSIENTI BH e NS



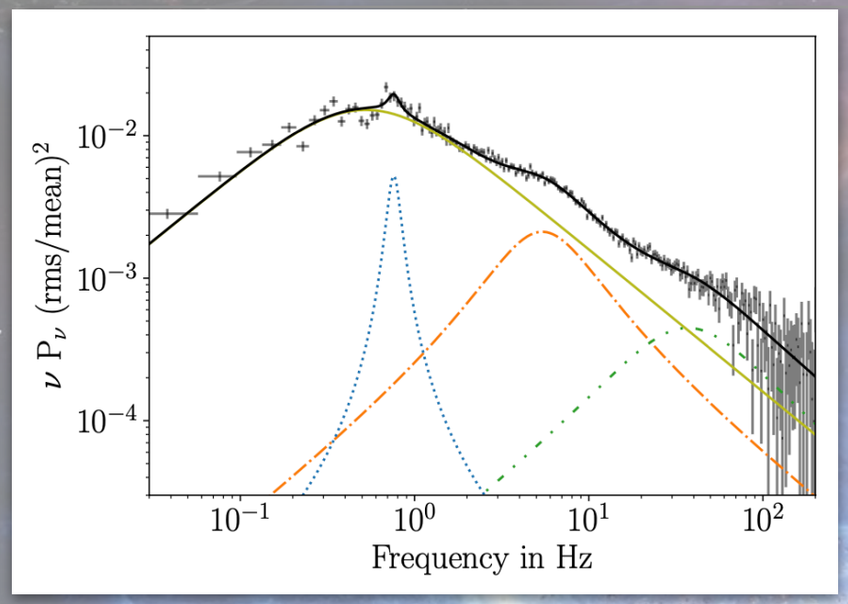


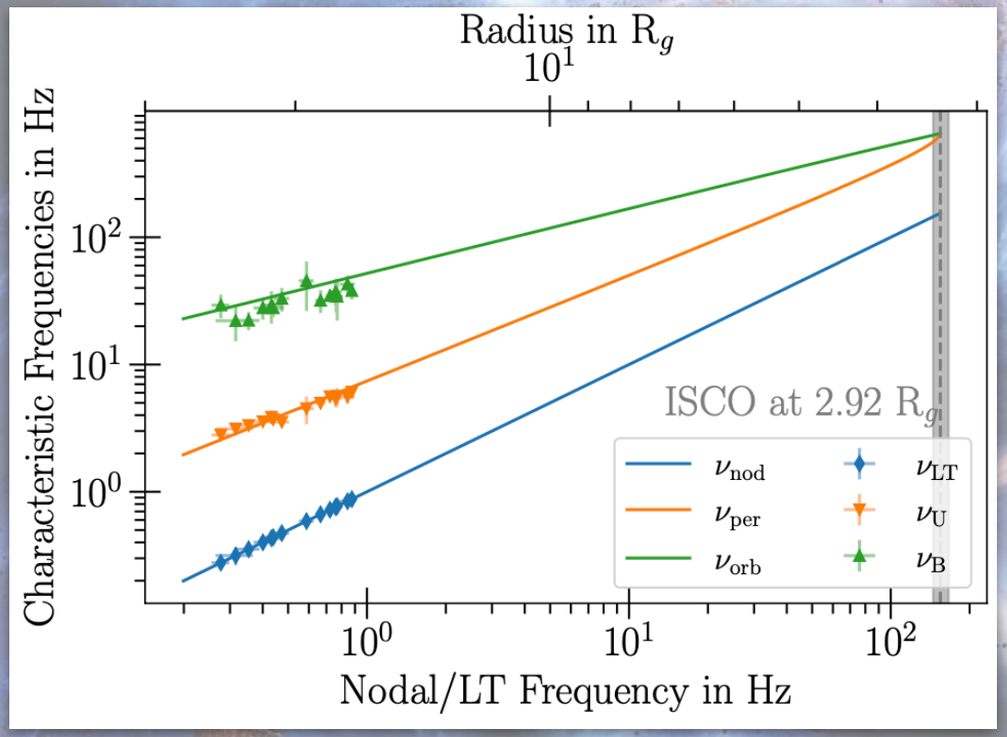
Miller-Jones et al. (2019)

V404 Cyg: Jet in precessione

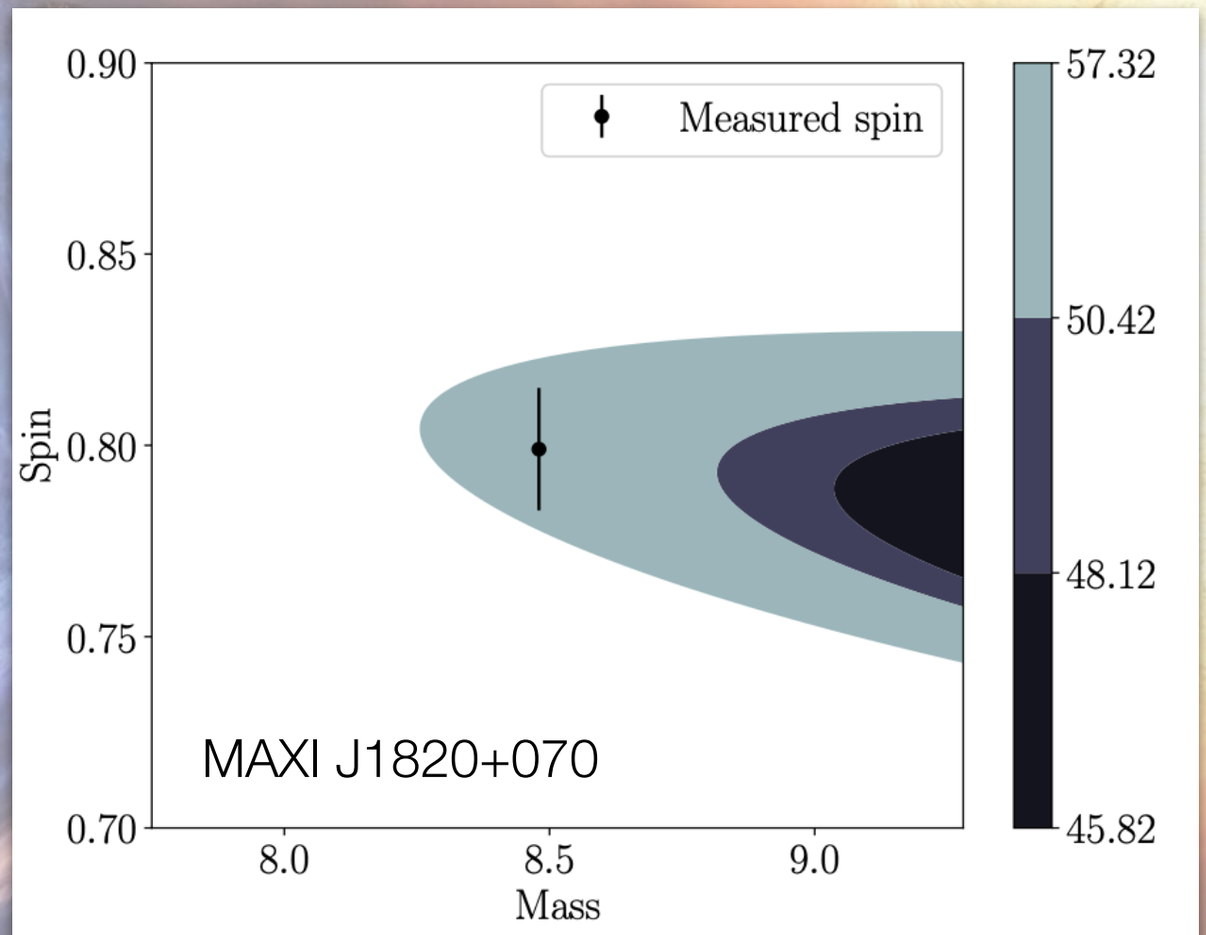
VARIABILITÀ E RELATIVITÀ GENERALE

Sco X-0





Bhargava et al. (2021, submitted)

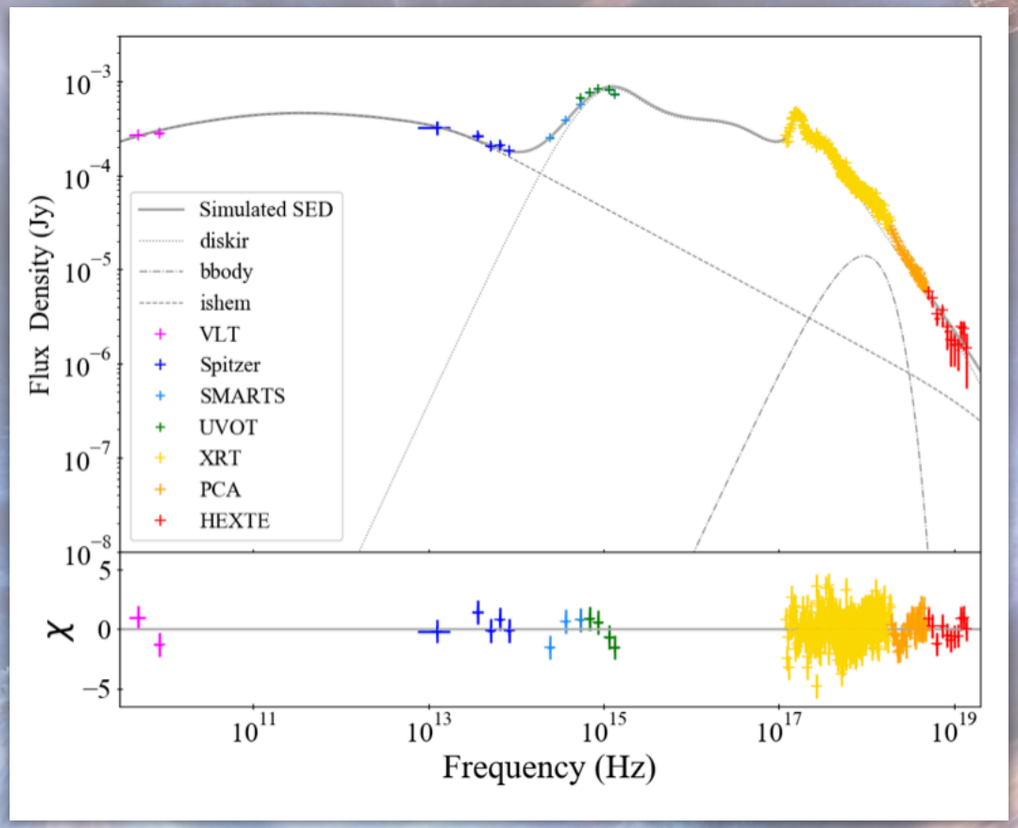


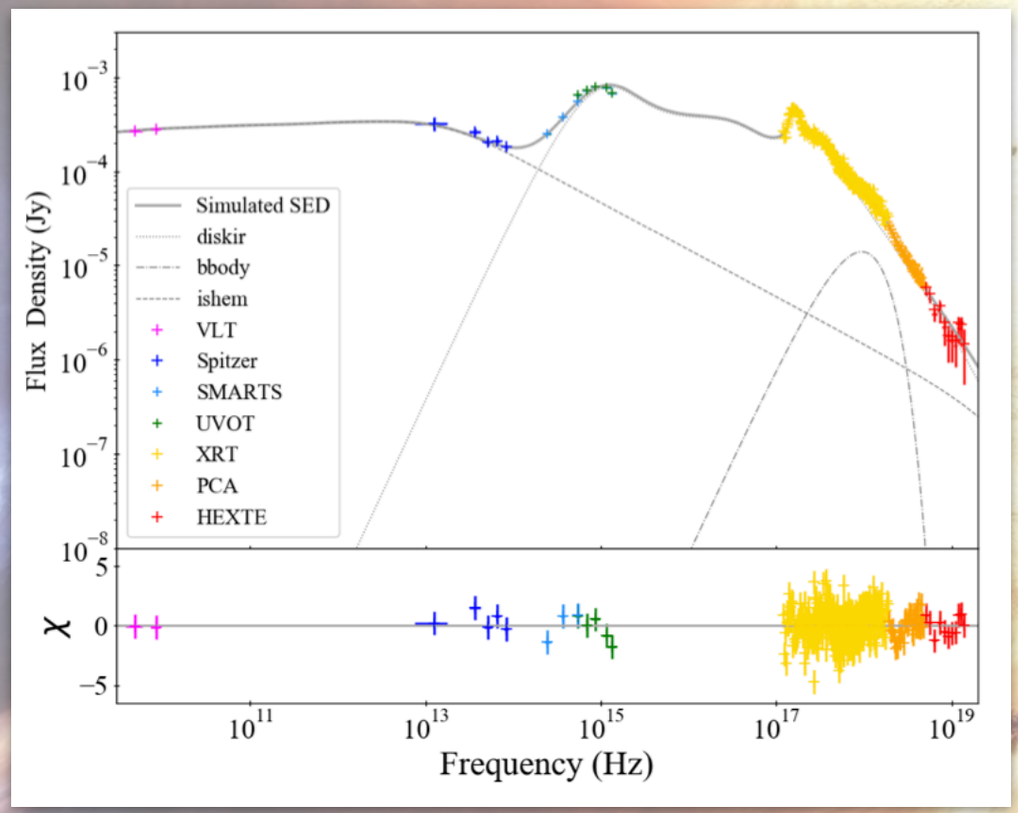
GR E MISURA DI SPIN

SED DI NS LMXB: INTERNAL SHOCK

SCO X-0

4U 0614+091 Marino et al. (2020)





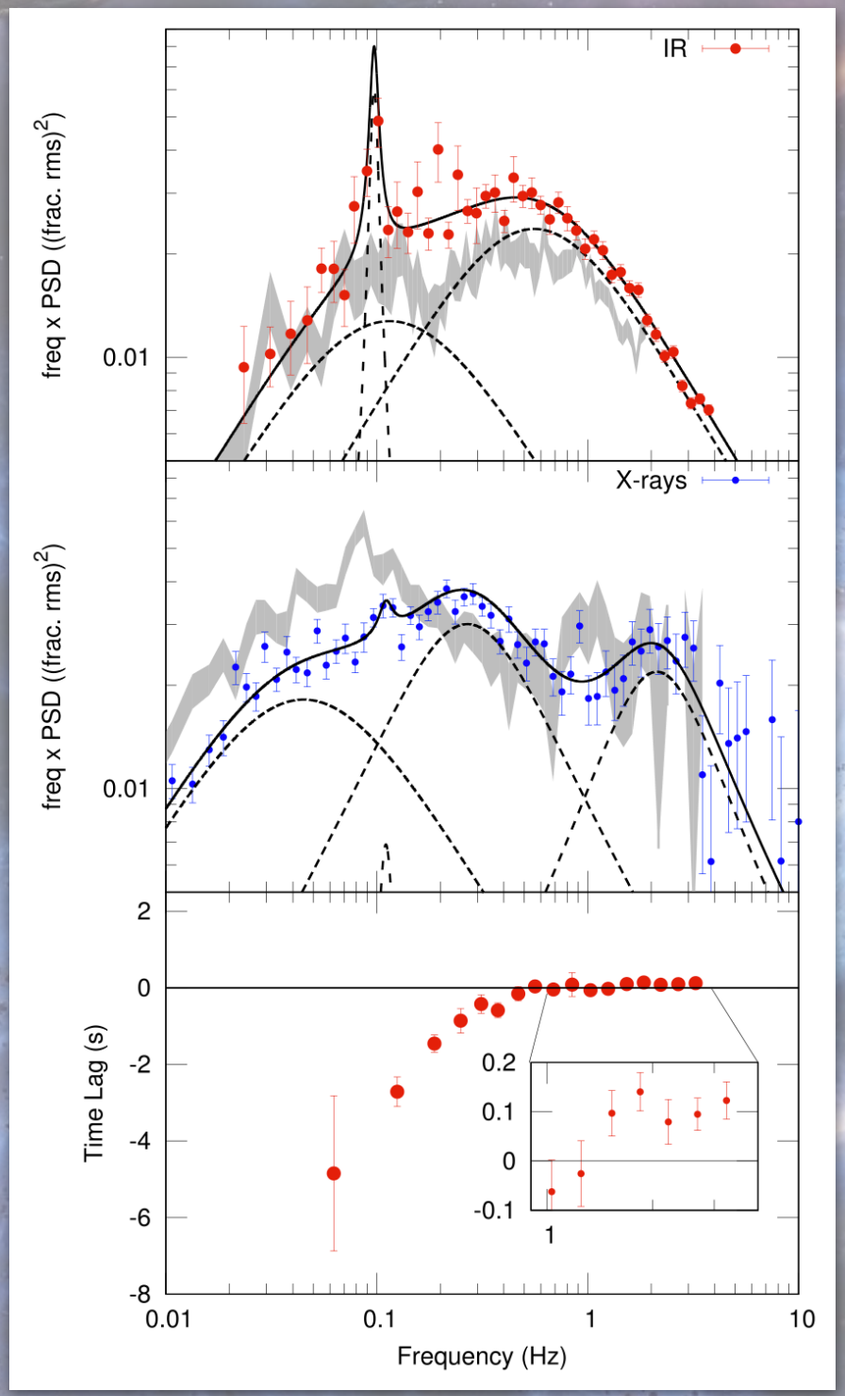
NON-CONICAL JET or DIFFERENT PDS

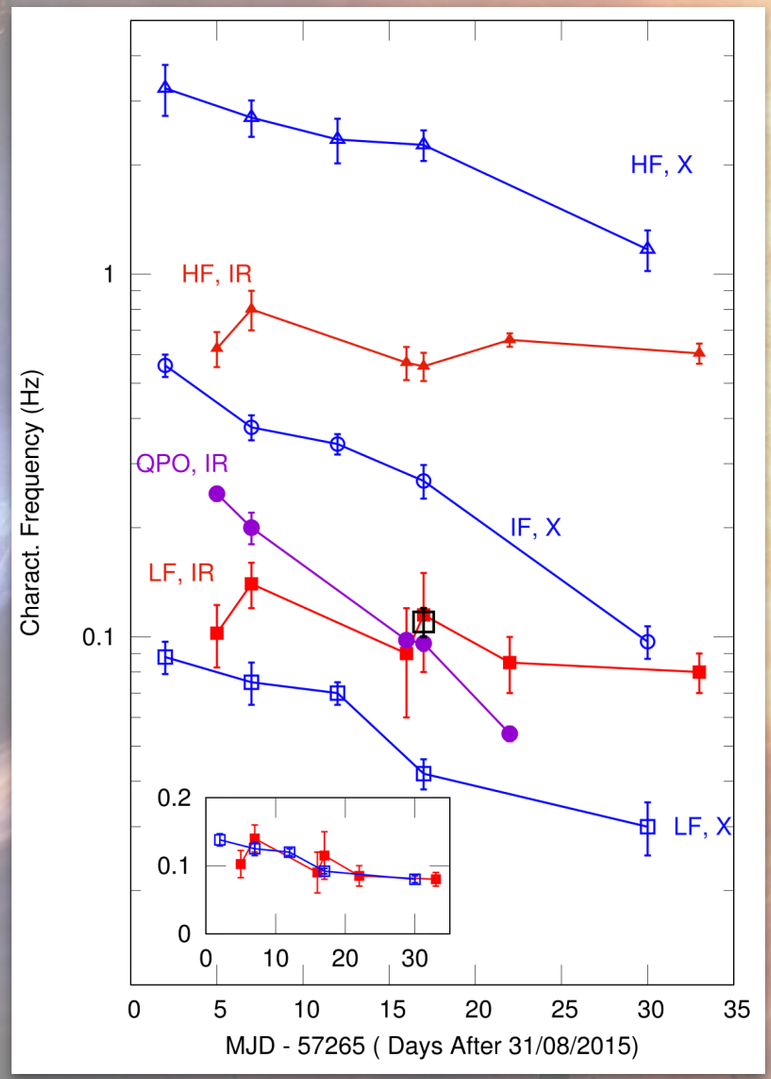
VARIABILITÀ INFRAROSSA IN JET

SCO X-0

GX 339-4

Vincentelli et al. (2019)

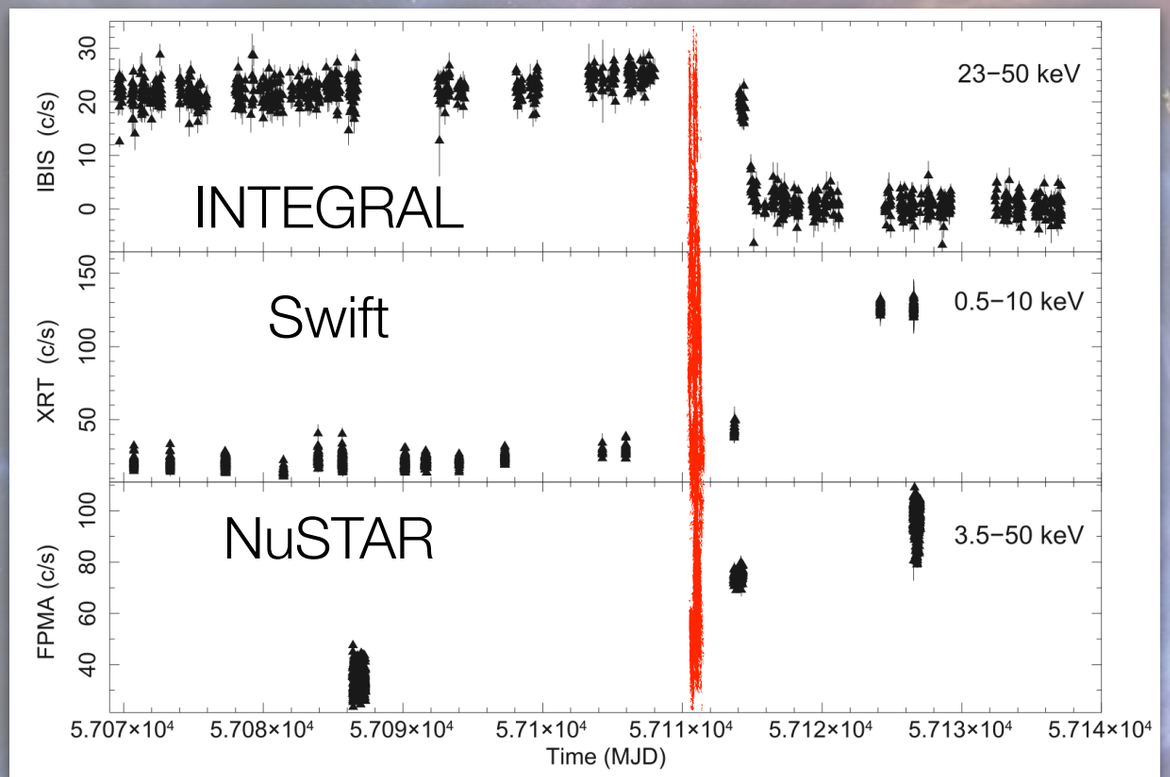




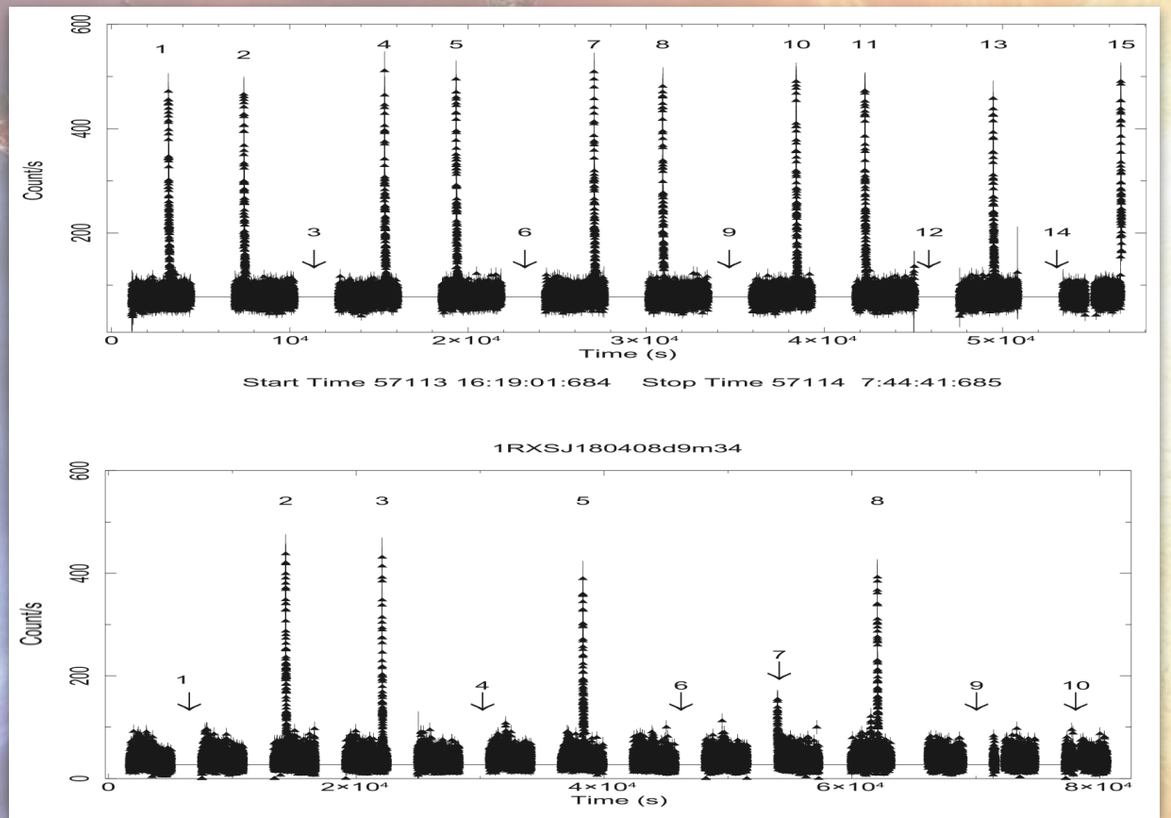
TEMPO SCALA COSTANTE

X-RAY BURSTS

SCO X-0

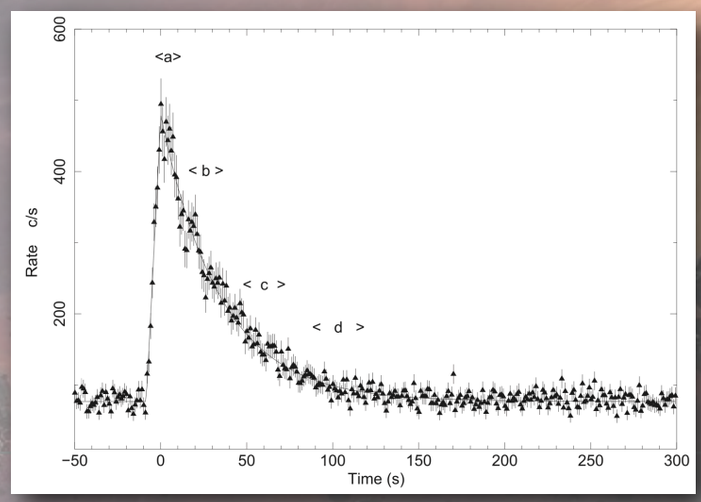


Fiocchi et al. (2019)
Marino et al. (2019)



1RXS J180408.9-342058

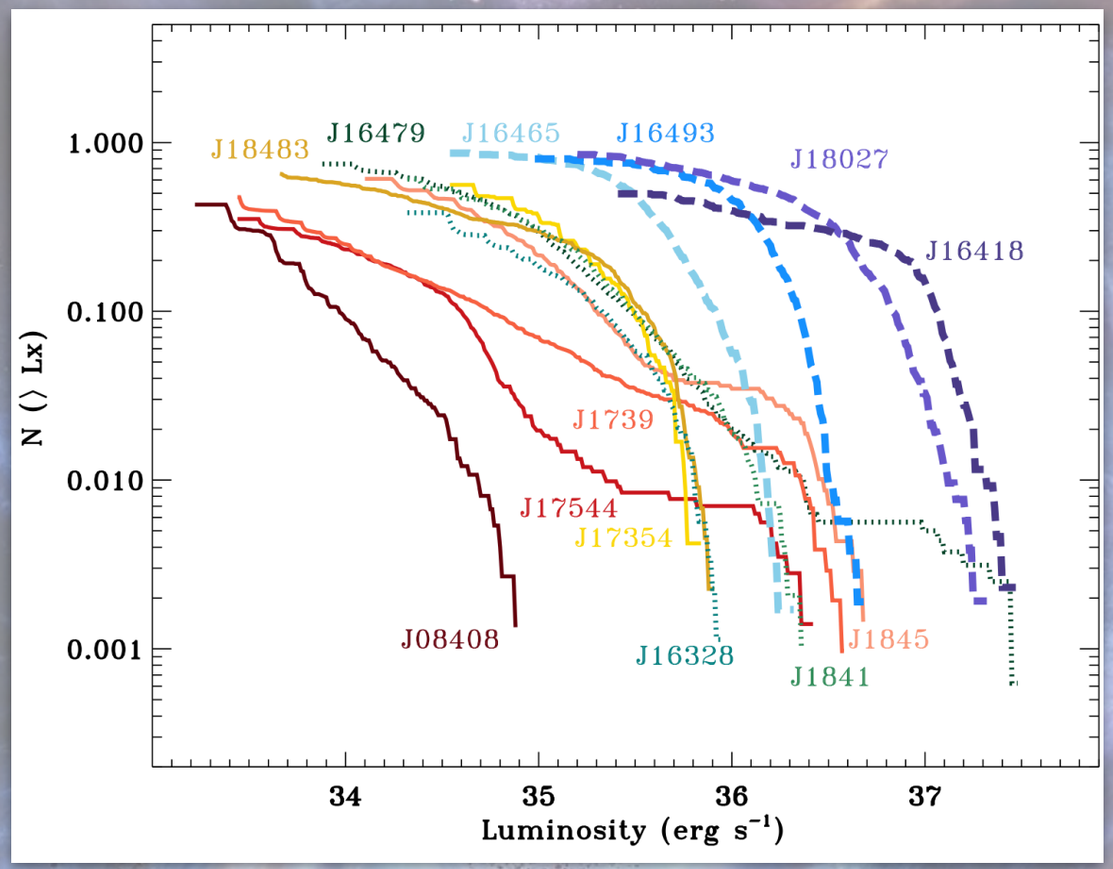
NUOVO CLOCKED BURSTER

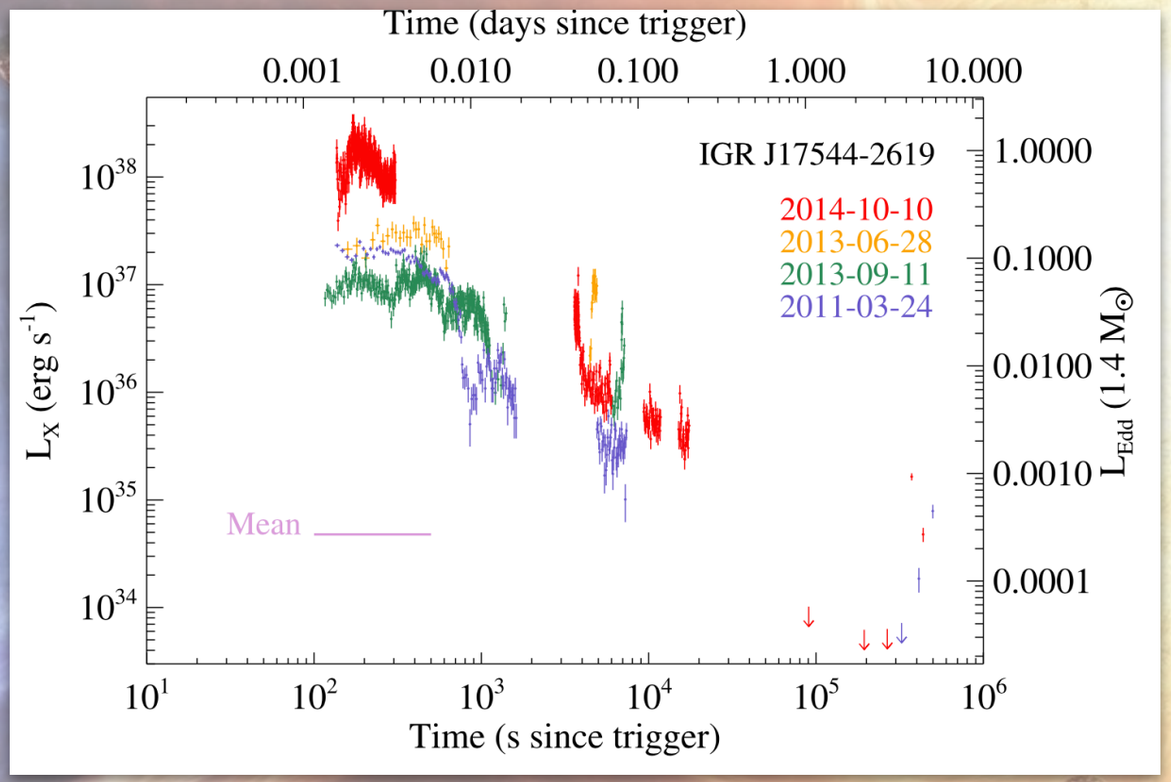


SFXT

SCO X-0

Kretschmar et al. (2020)





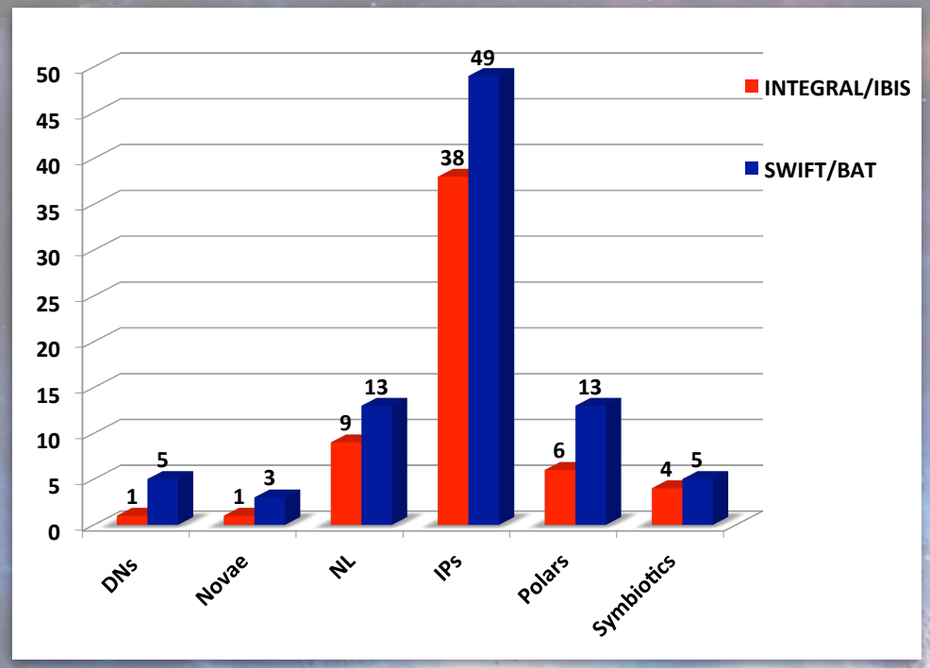
SFXT vs. HMXB

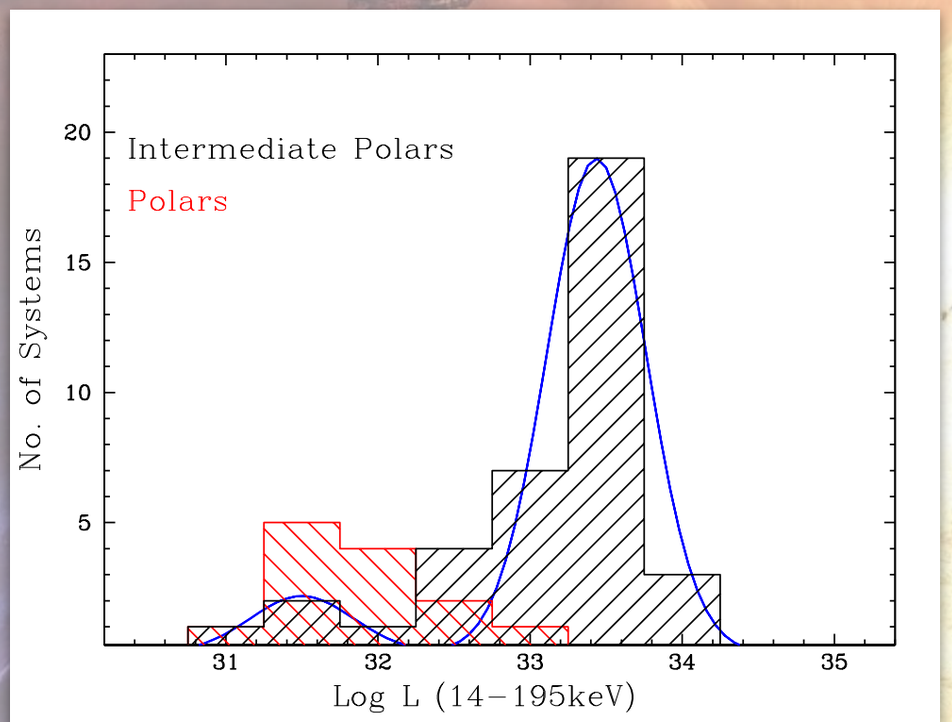
Huge flare

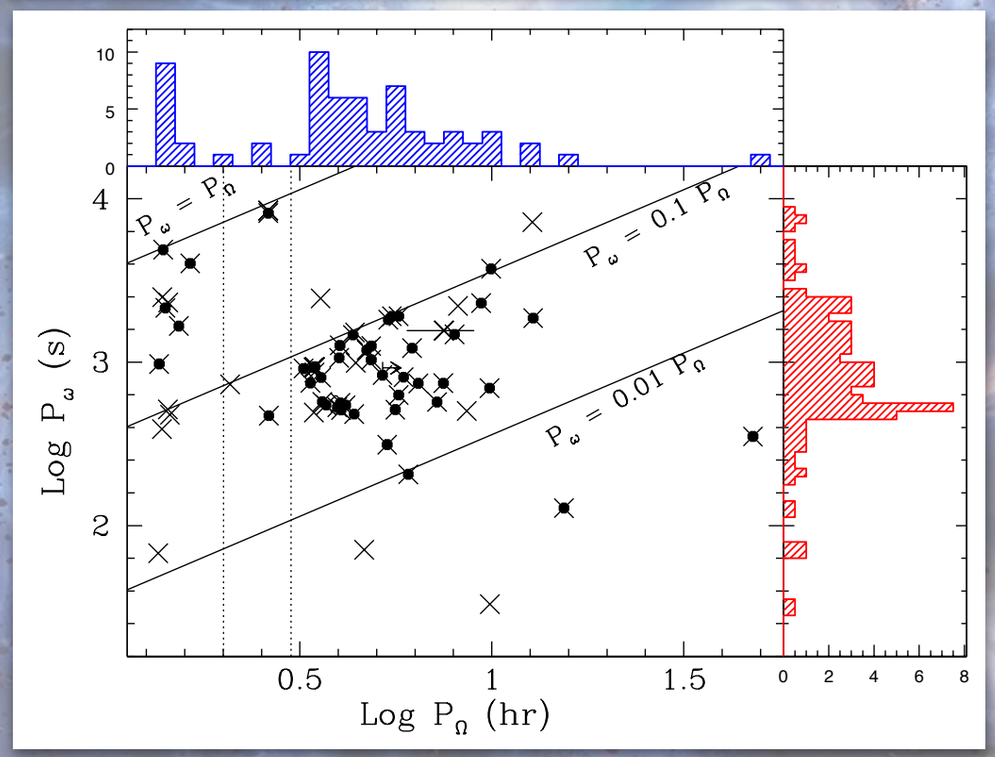
HARD CVs

Bernardini et al. (2017,2018,2019)

SCO X-0

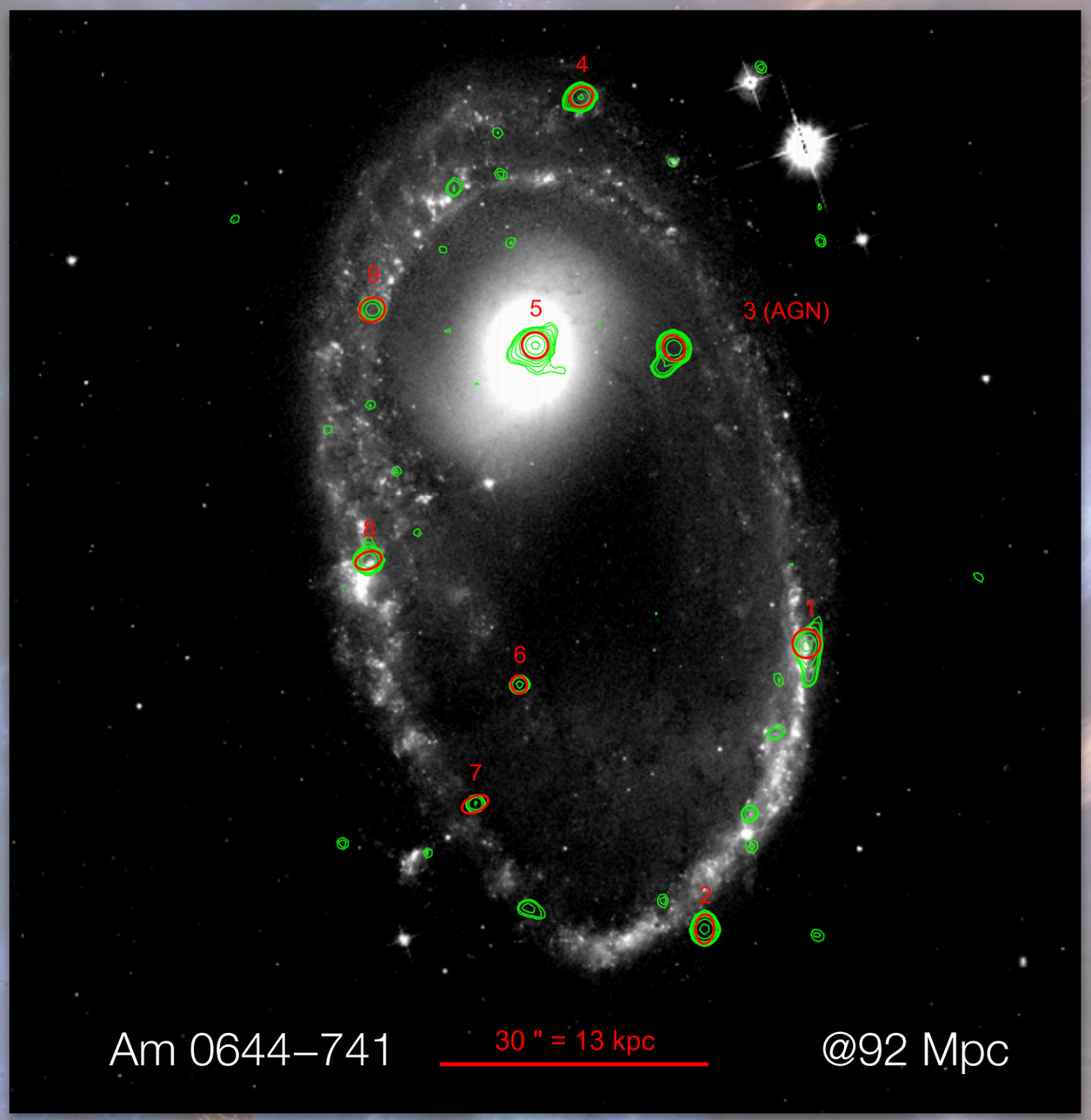






- NUOVE SORGENTI
- LUMINOSITÀ
- CAMPO MAGNETICO

SCO X-0



Wolter, Fruscione & Mapelli (2018)

Chandra
7 ULX negli anelli

Eccesso di ULX (50) in galassie ad anello

SOMMARIO

SCO X-0

- [x] Team
- [x] Aspetti scientifici/tecnologici
- [x] Risultati e/o prospettive
- [ ] Programmazione
- [x] Fondi
- [x] Leadership
- [ ] Criticità

PROGRAMMAZIONE E CRITICITÀ

SCO X-0

Fine INAF-ASI: giugno 2022
Fondi da luglio 2022?
Stabilità di finanziamenti
Nel caso INAF-ASI, sempre nuove osservazioni
Fondi per AdR/TD