The Fermi Gamma-ray Burst Monitor as a Transient Monitor

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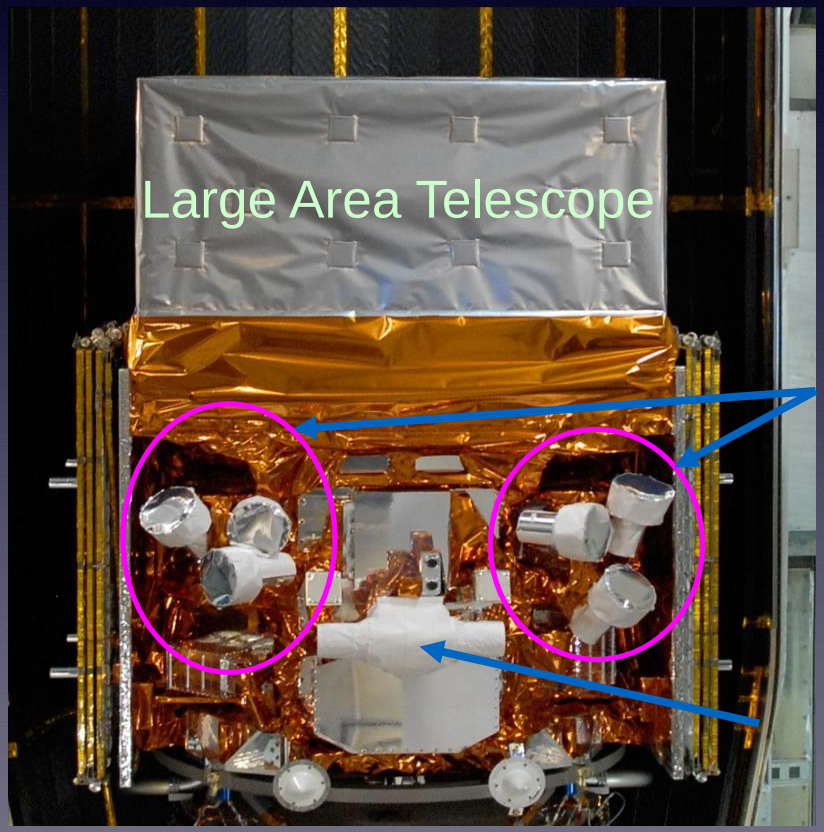
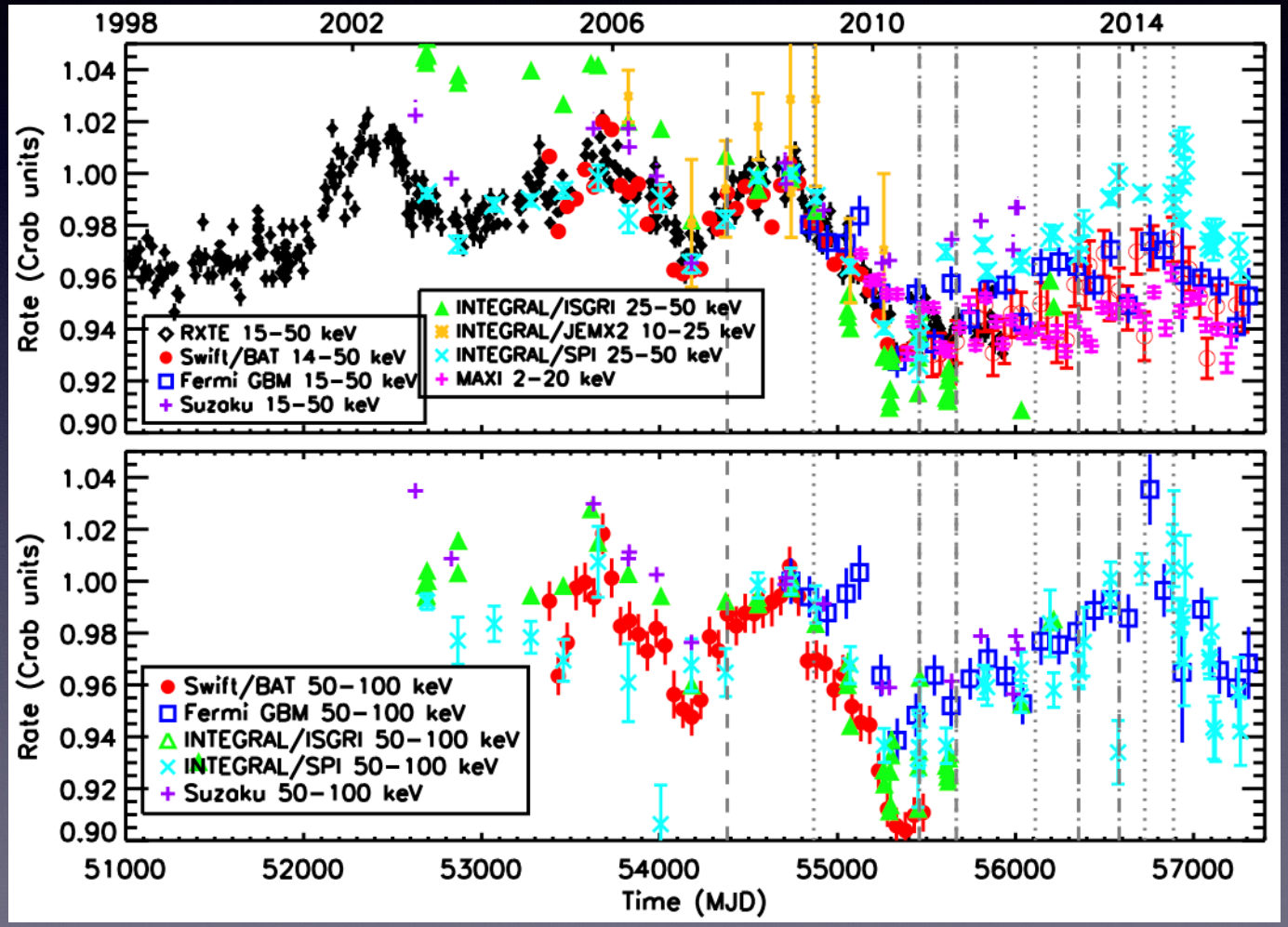


GBM NaI Detector (12)
-8 keV to 1000 keV
-126 cm^2 area, 1.27 cm thickness

GBM BGO Detector (2)
-200 keV to 40 MeV
-126 cm^2 area, 12.7 cm thick
-Bridges gap between NaI and LAT

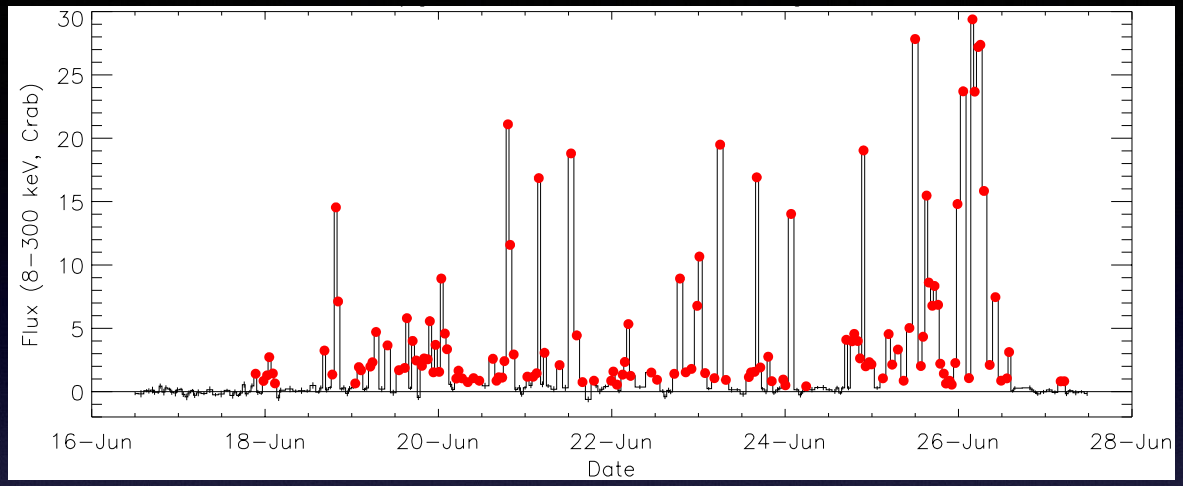
Long-term Hard X-ray Variations in the Crab Nebula

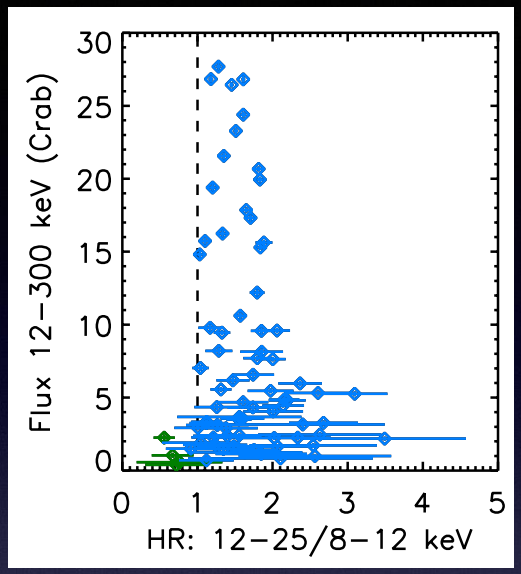
Crab flux has been fading for last year, especially above 50 keV!



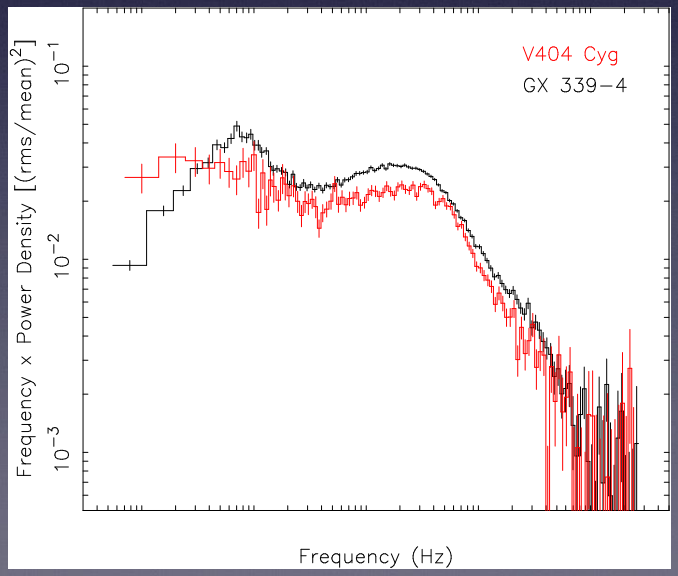
C.A. Wilson-Hodge et al. 2011; C.A. Wilson-Hodge et al. 2016 in prep.

V404 Cyg Observations with GBM





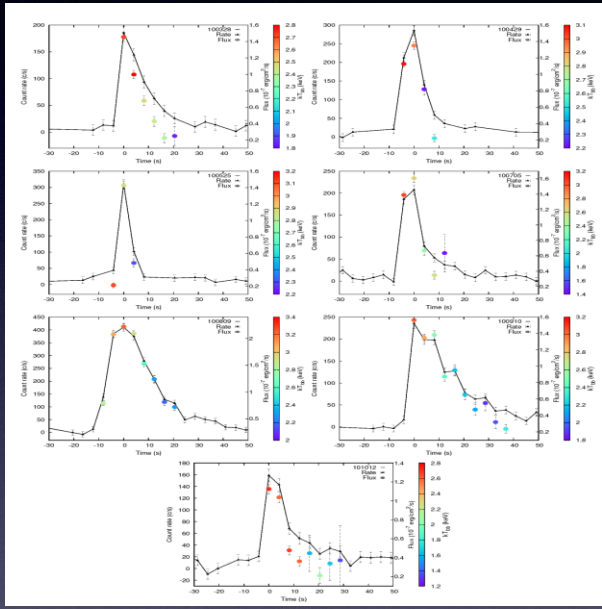
- V404 Cyg is a black hole binary previously observed in outburst in 1989
- GBM triggered on V404 Cyg 169 times from Jun 15-27
- Peak fluxes measured with Earth occultation in the 8-300 keV band reached 30 Crab
- Power spectra and hardness ratios indicate V404 Cyg was in a hard state for the entire outburst
- Energy spectral analysis indicated that the electron temperature decreased with decreasing luminosity

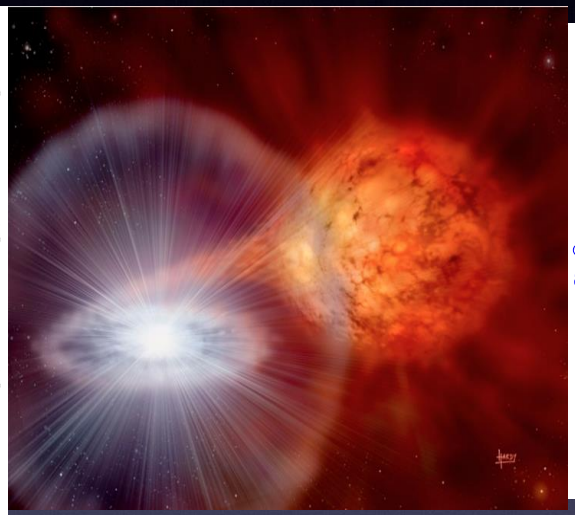


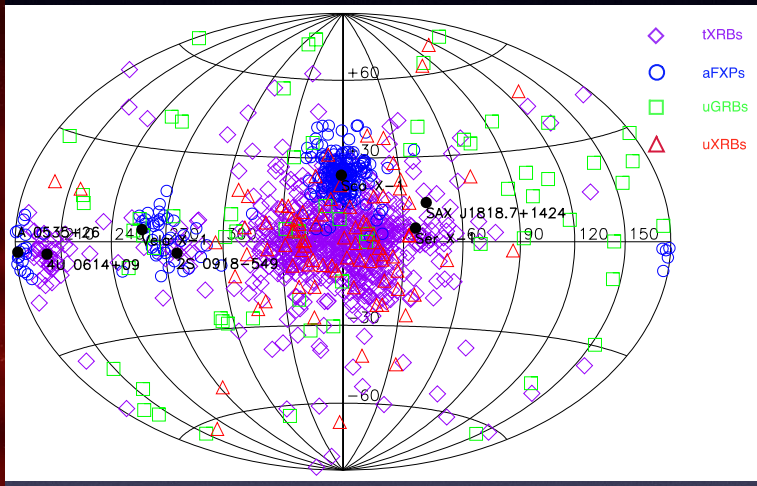
P. A. Jenke et al. 2016, ApJ, submitted

Type 1 X-ray Bursts Detected with GBM

671 photospheric radius expansion bursts detected in 3 years!



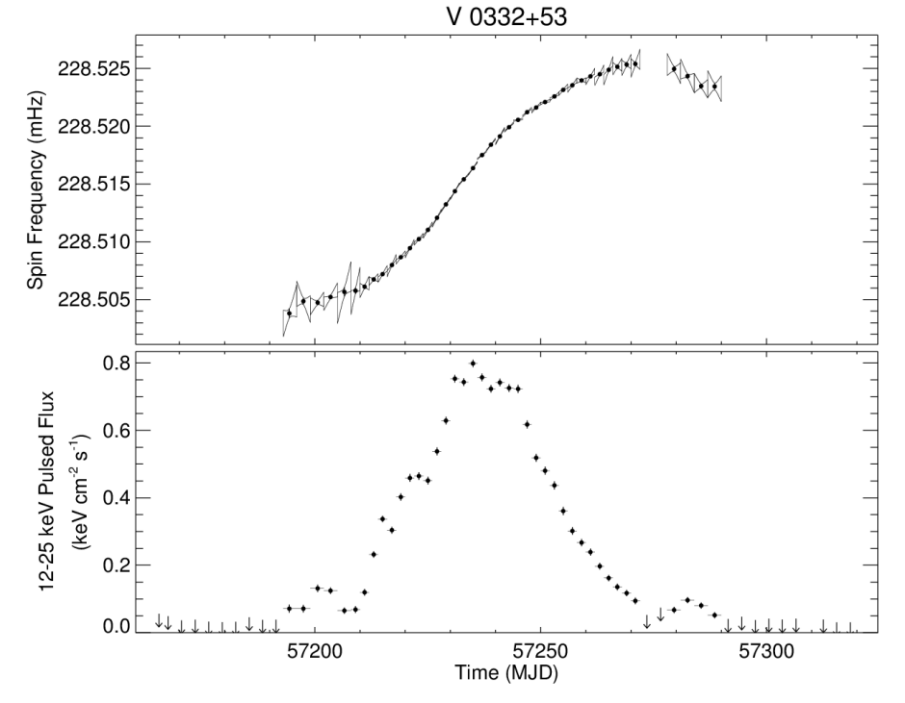


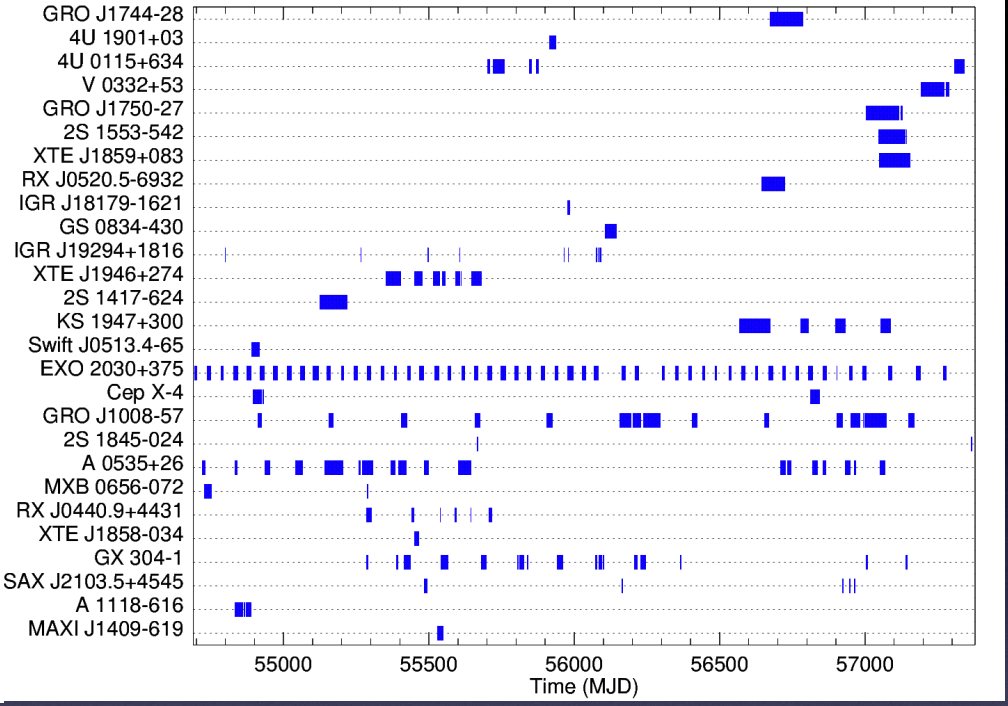


- Highest detection rate of PRE bursts for any current or past instrument
- Search of GBM data from March 2010-2013
  - 671 PRE bursts, 267 accretion flares and X-ray pulses, 65 untriggered GRBs, 84 bursts of unknown origin
  - Average blackbody temperature of GBM detected XRBs is 3.2±0.3 keV

P.A. Jenke et al 2016, ApJ, in preparation

Monitoring Accreting Pulsars with GBM





- Recently Active: V0332+53
- Discovered in 1973
- X-ray pulsar and O8-9Ve star
- 34.25 day eccentric orbit
- 4.3-s spin period
- Major outbursts in 1983, 1989, 2004, and 2015
- Newly updated orbital solution

- Monitoring Program
- 38 sources monitored
- 35 sources detected
- 8 Persistent, 27 transients

http://gammaray.nsstc.nasa.gov/gbm/science/pulsars.html