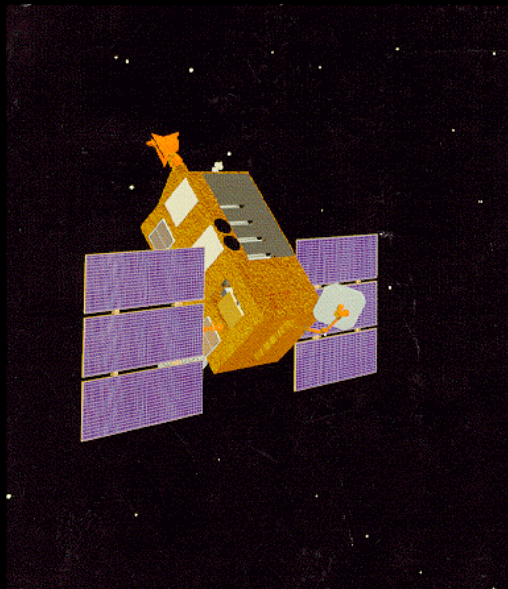


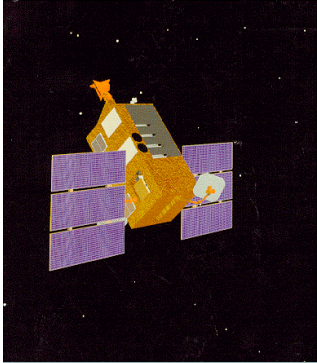
# Monitoring the Crab Pulsar with RXTE/HEXTE

Slawomir Suchy

UCSD



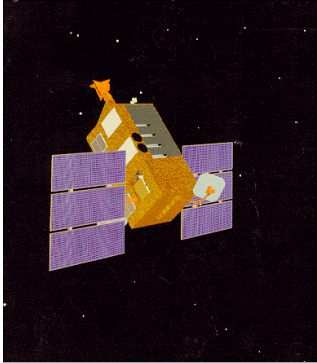
Katja Pottschmidt (UCSD)  
Keith Jahoda (GSFC)  
Richard Rothschild (UCSD)



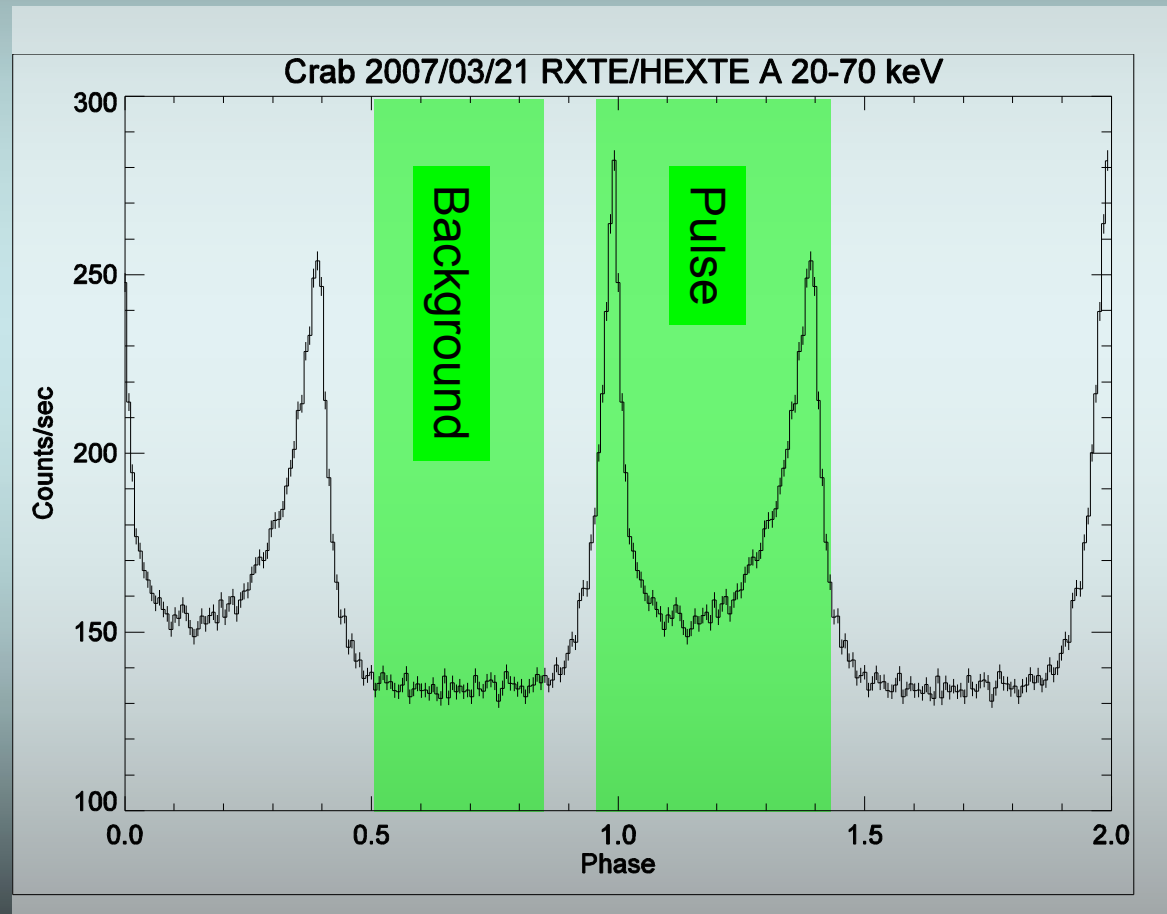
# The data process



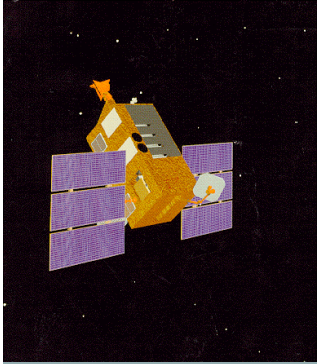
- Over 300 Observations in the last 12 years.
  - Problems:
    - Most monitoring observations: no HEXTE rocking
    - Strange data modes (early in the mission)
    - Some observations were pointing at nebula
    - Stop of rocking of Cluster A
  - pulse – offpulse for spectra
  - Model: powerlaw



# “Lightcurve”

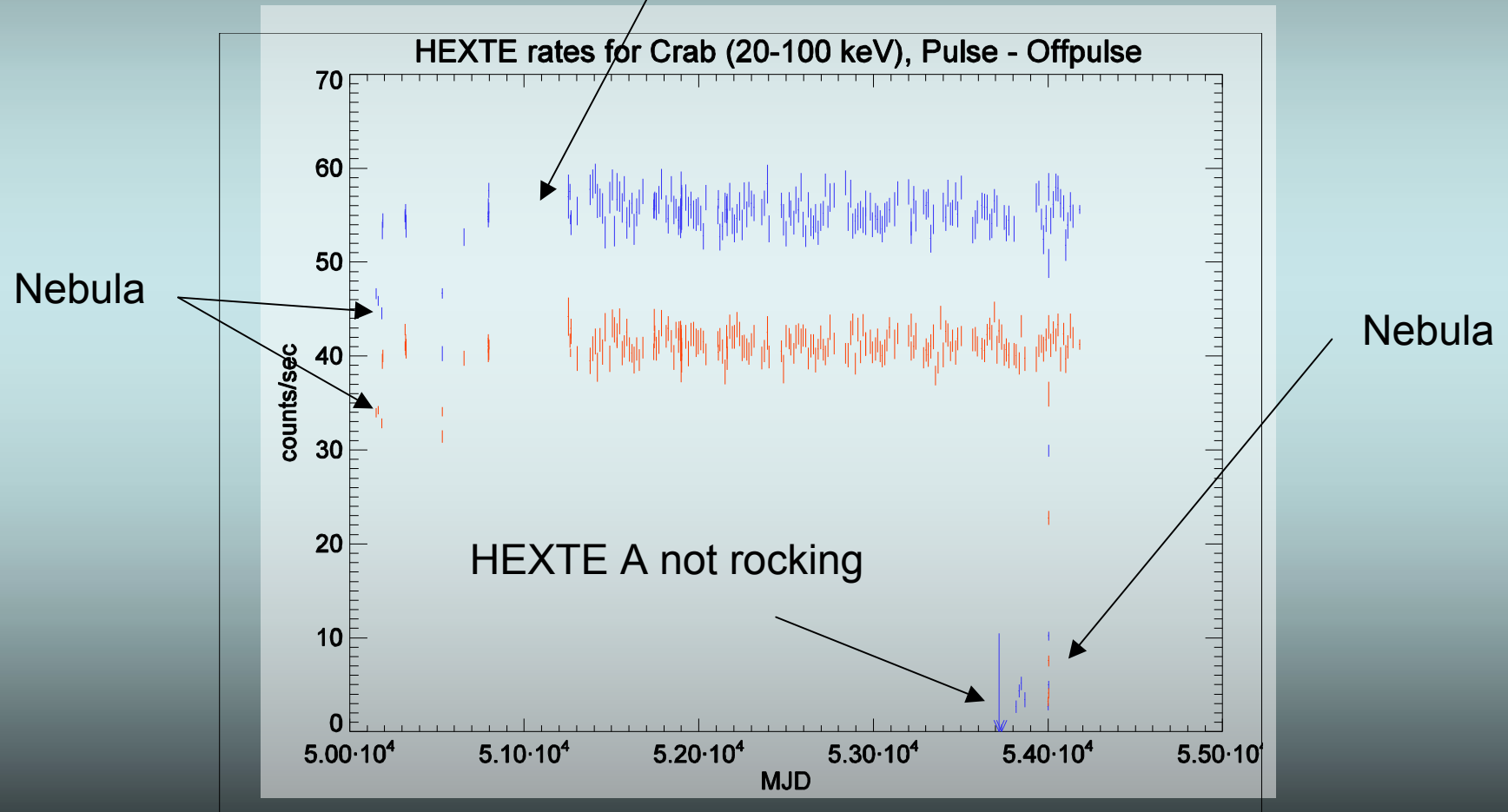


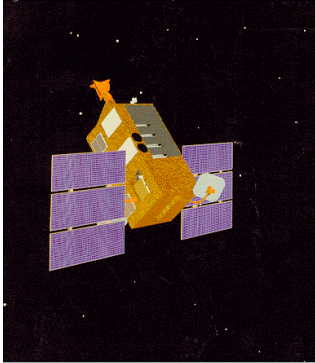
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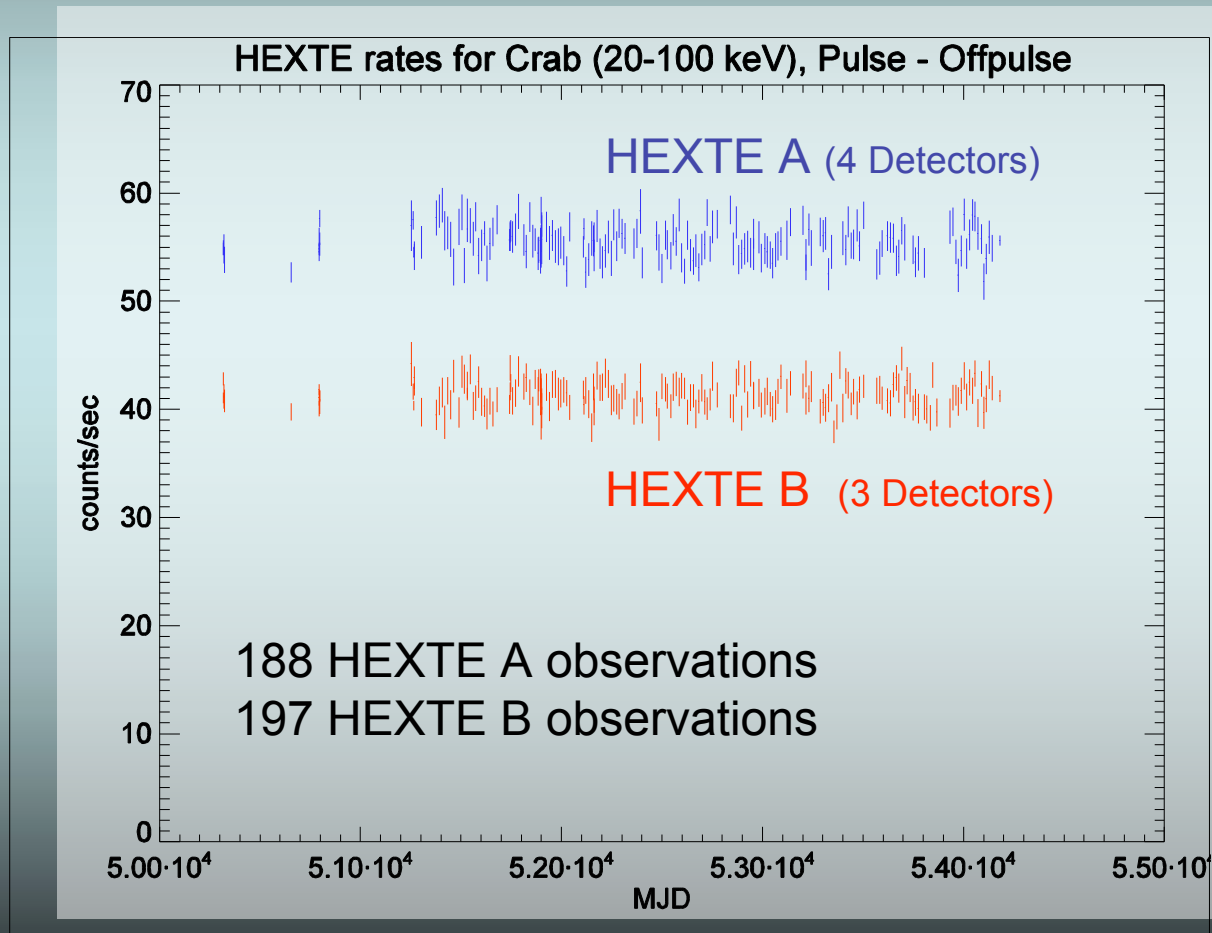
# “Lightcurve”

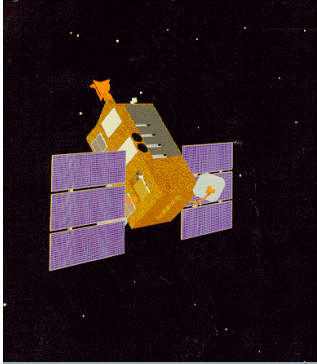
Different Data mode



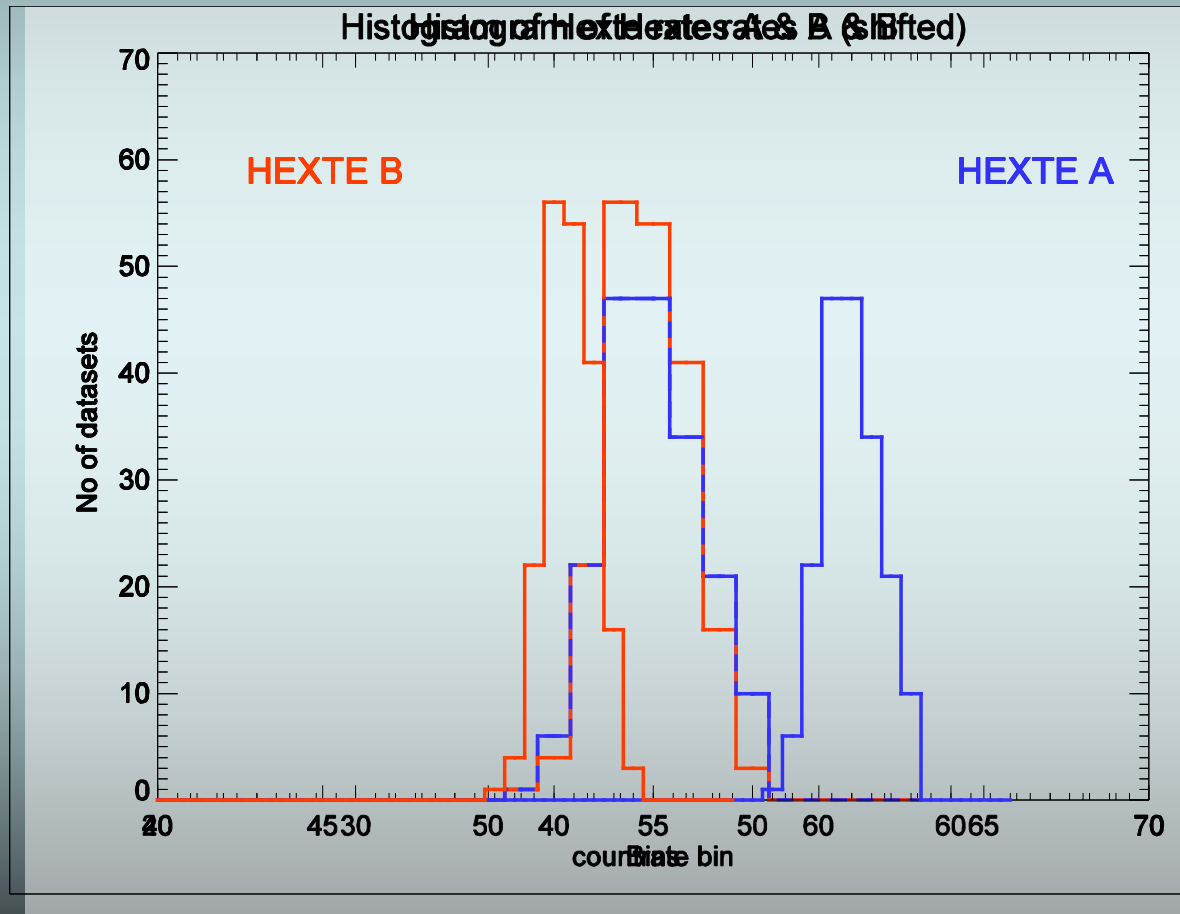


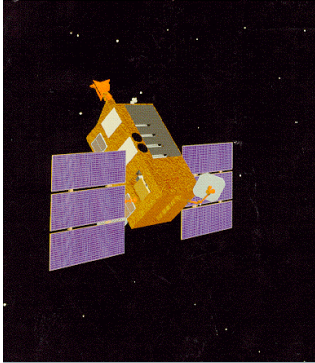
# “Lightcurve”



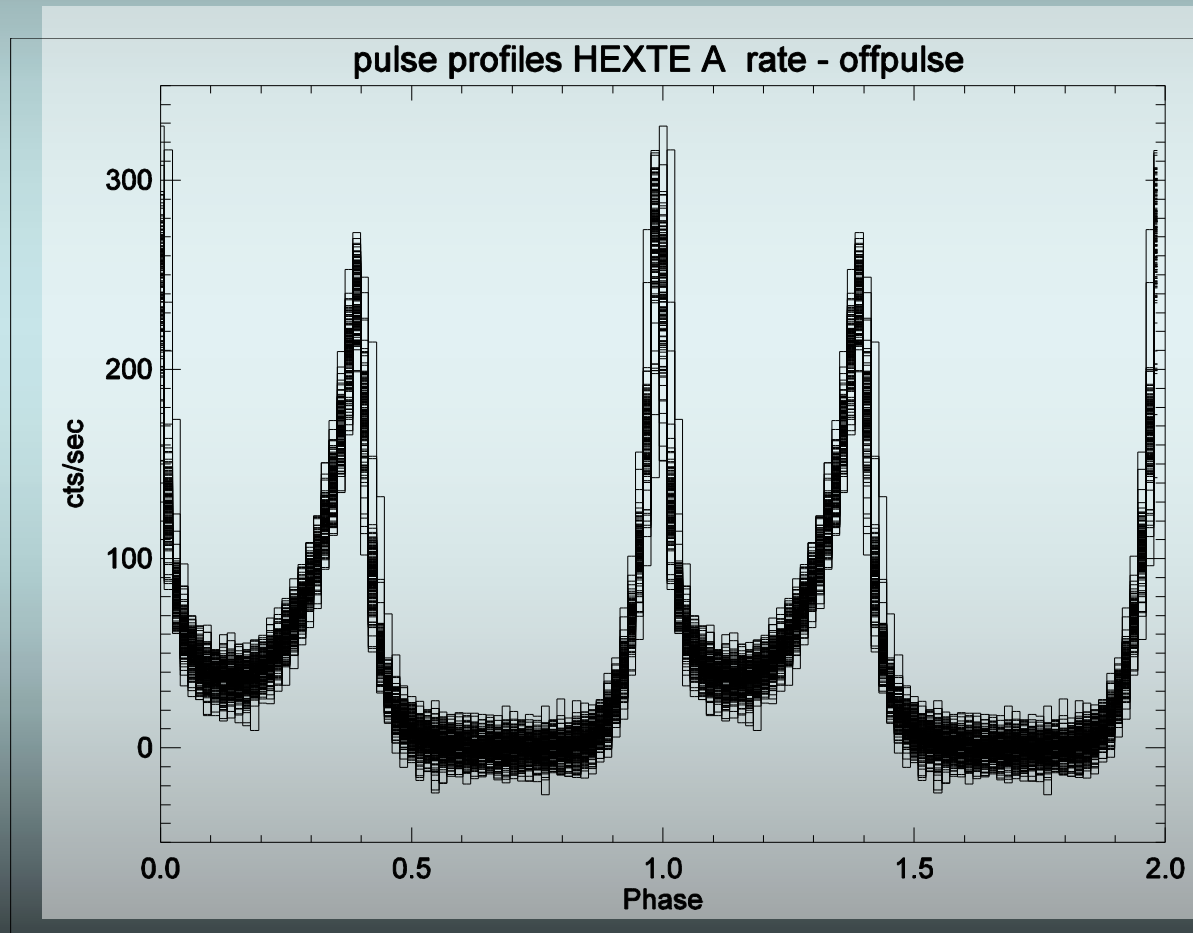


# “Lightcurve” Histogram





# Pulse profiles



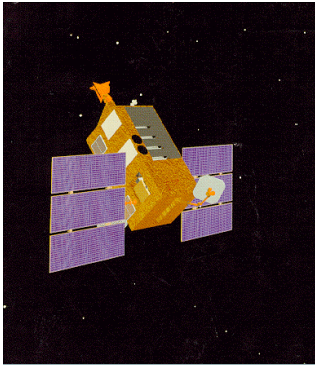
- Monthly ephemerides  
from Jodrell Bank

[www.jb.man.ac.uk](http://www.jb.man.ac.uk)

Wrong Ephemeris in  
data bank for Sept. 2004?

-> got fixed

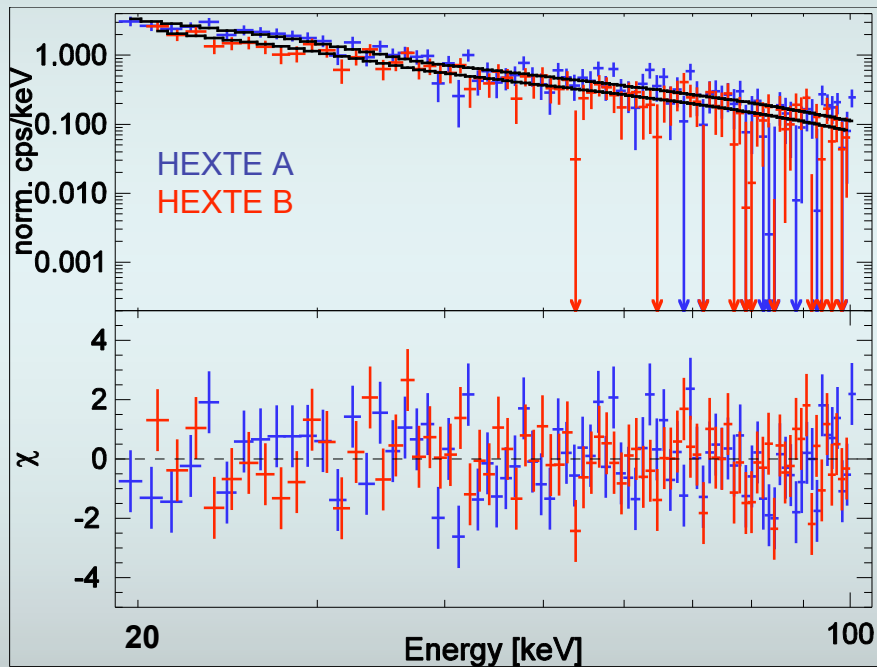
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# Spectra

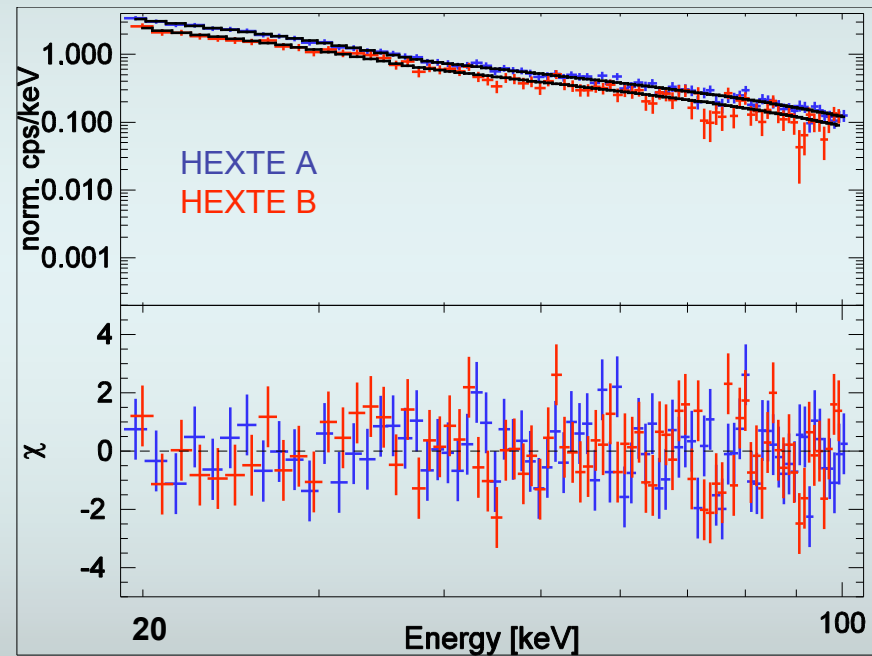


50099-01-12-00



$\Gamma = 1.95 \pm 0.07$  red. $\chi^2 = 1.19$   
Integration Time: 240 sec

92802-03-06-00

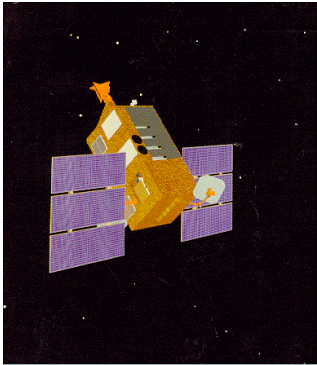


$\Gamma = 1.90 \pm 0.03$  red. $\chi^2 = 1.10$   
Integration Time: 2500/1250sec

REMEMBER: we are taking  $\approx 45\%$  of pulse time and  $\approx 50\%$  HEXTE downtime

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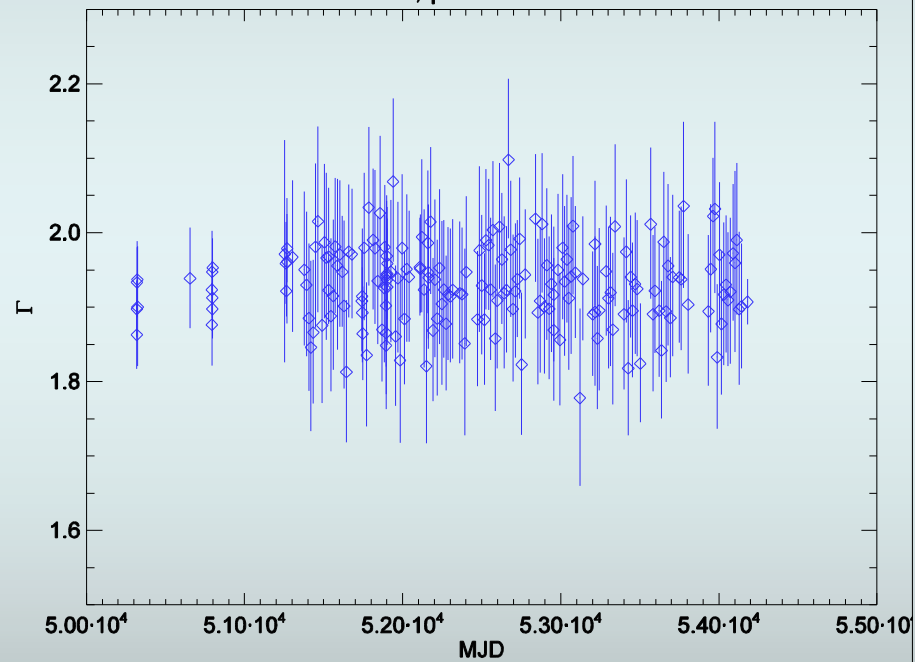




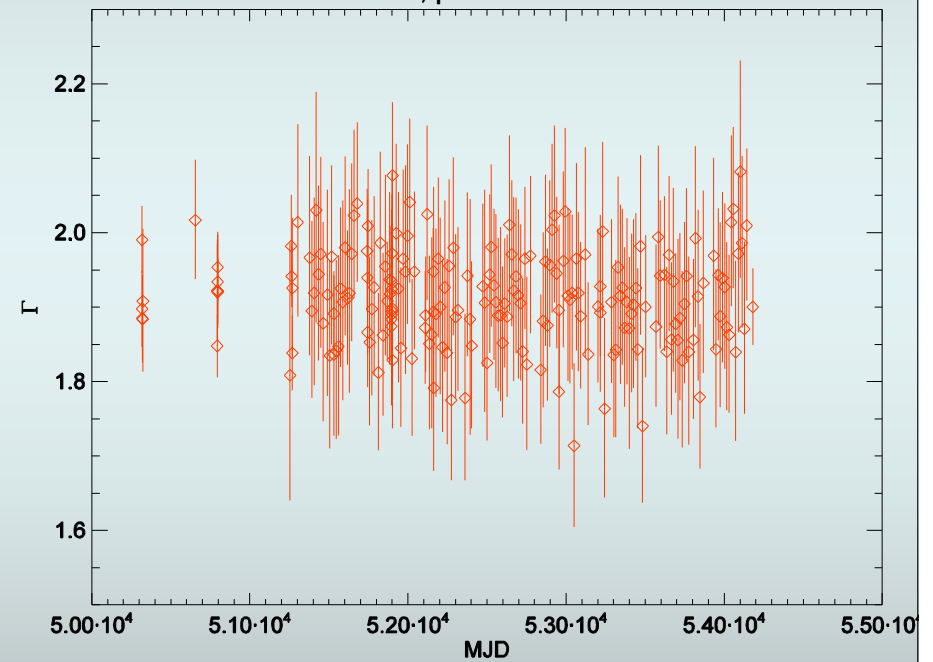
# Spectral Parameter

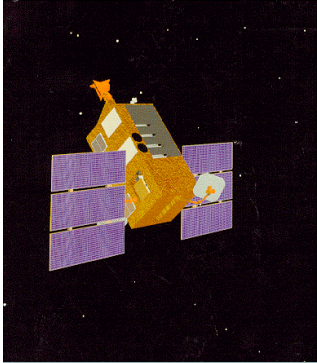


Hexete A, powerlaw index  $\Gamma$

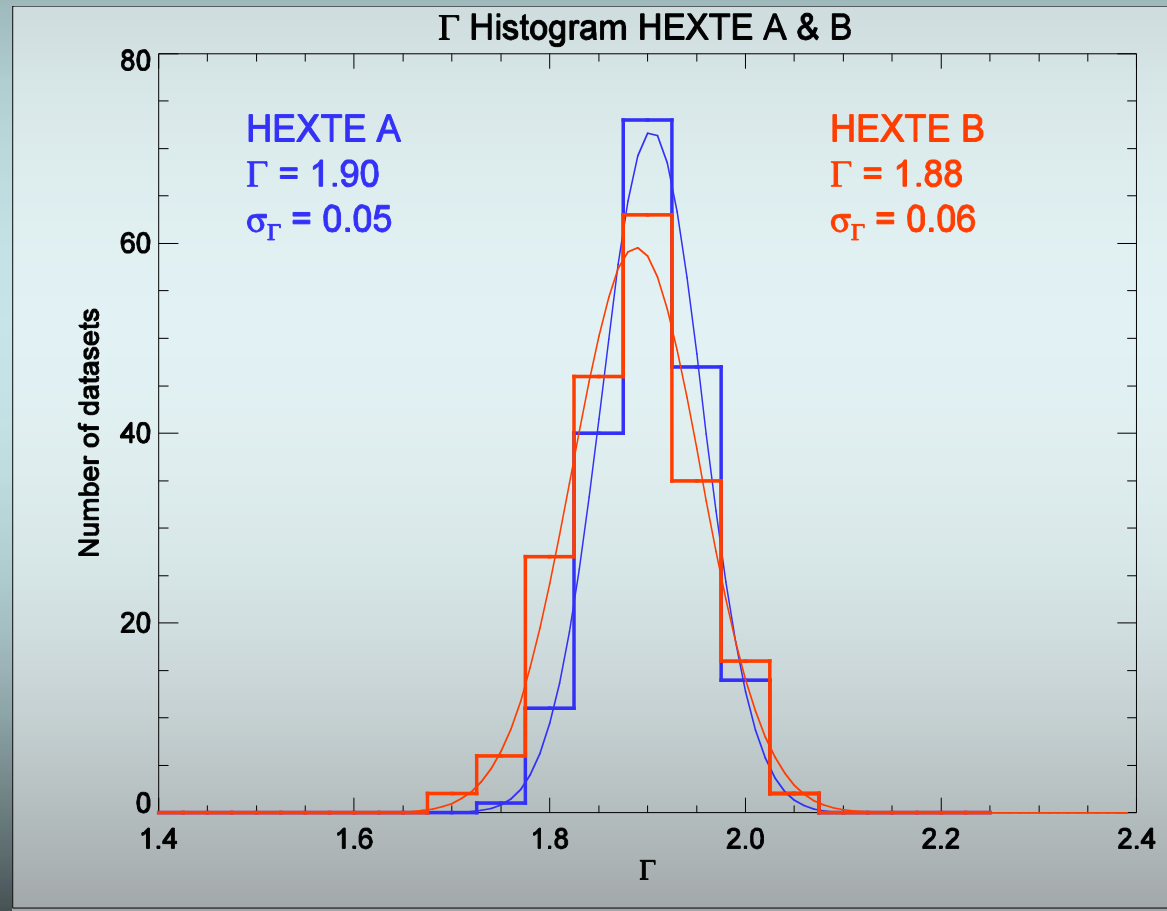


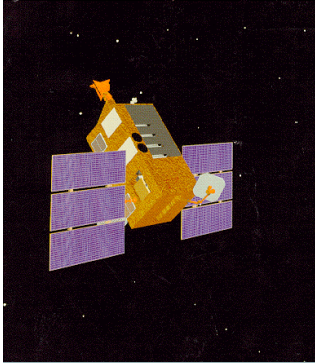
Hexete B, powerlaw index  $\Gamma$



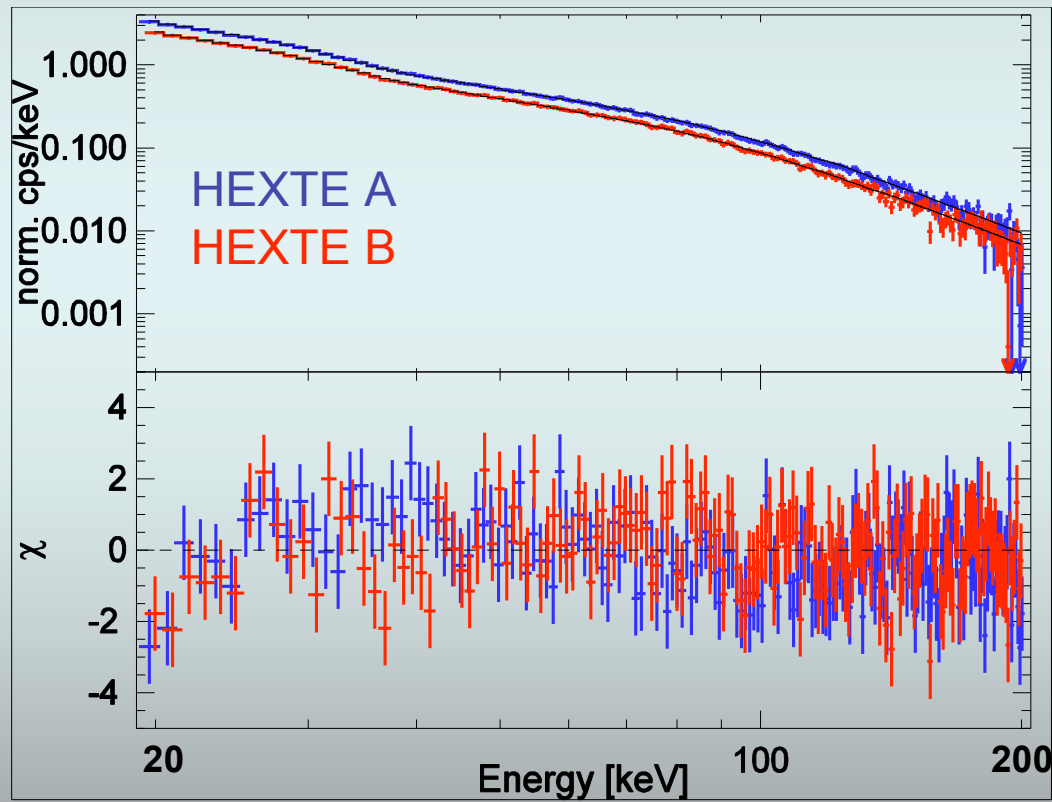


# Histogram





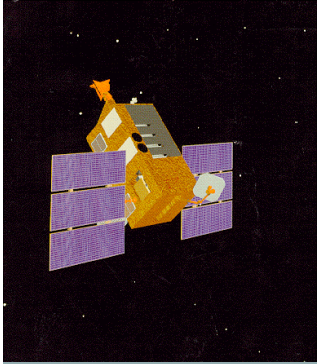
# Summarized Data



-  $\Gamma = 1.93 \pm 0.003$

- red.  $\chi^2 = 1.14$

- total integration time:  
78 ks



# Next Steps



- Use also PCA data for better spectral analysis
- Phase resolved analysis of the pulsar
  - Single peaks resolved