

# Eta Car:

High Energy Observations during the Next Event

Observatories:

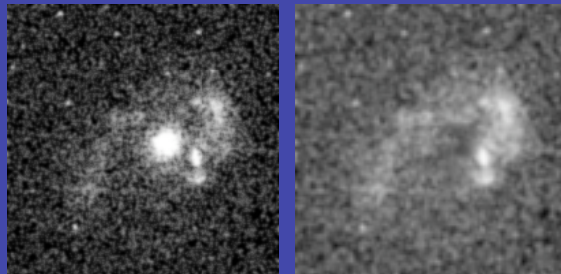
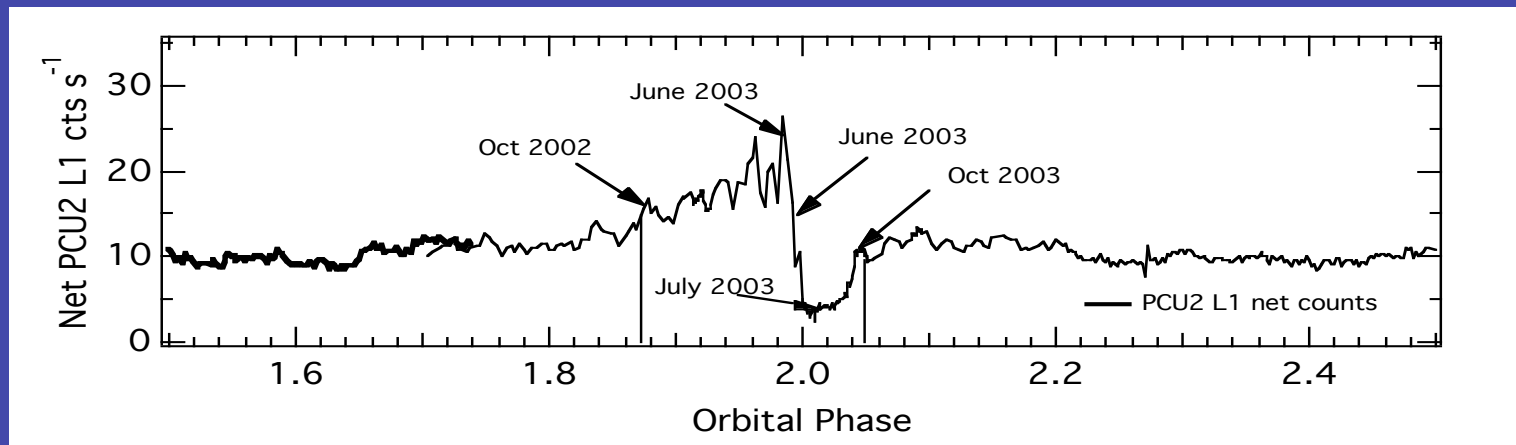
- RXTE
- Chandra
- XMM
- INTEGRAL

# CAVEAT:

- No X-ray Observations for the “event” are approved yet!
  - Chandra & XMM - peer review in mid June, results not yet public
  - RXTE: AO8 should be announced in September
  - But what would we like to do...

# Chandra: Proposed Observations

Requested: 5-100 ksec grating observations (“large project”) at important selection of phases\*

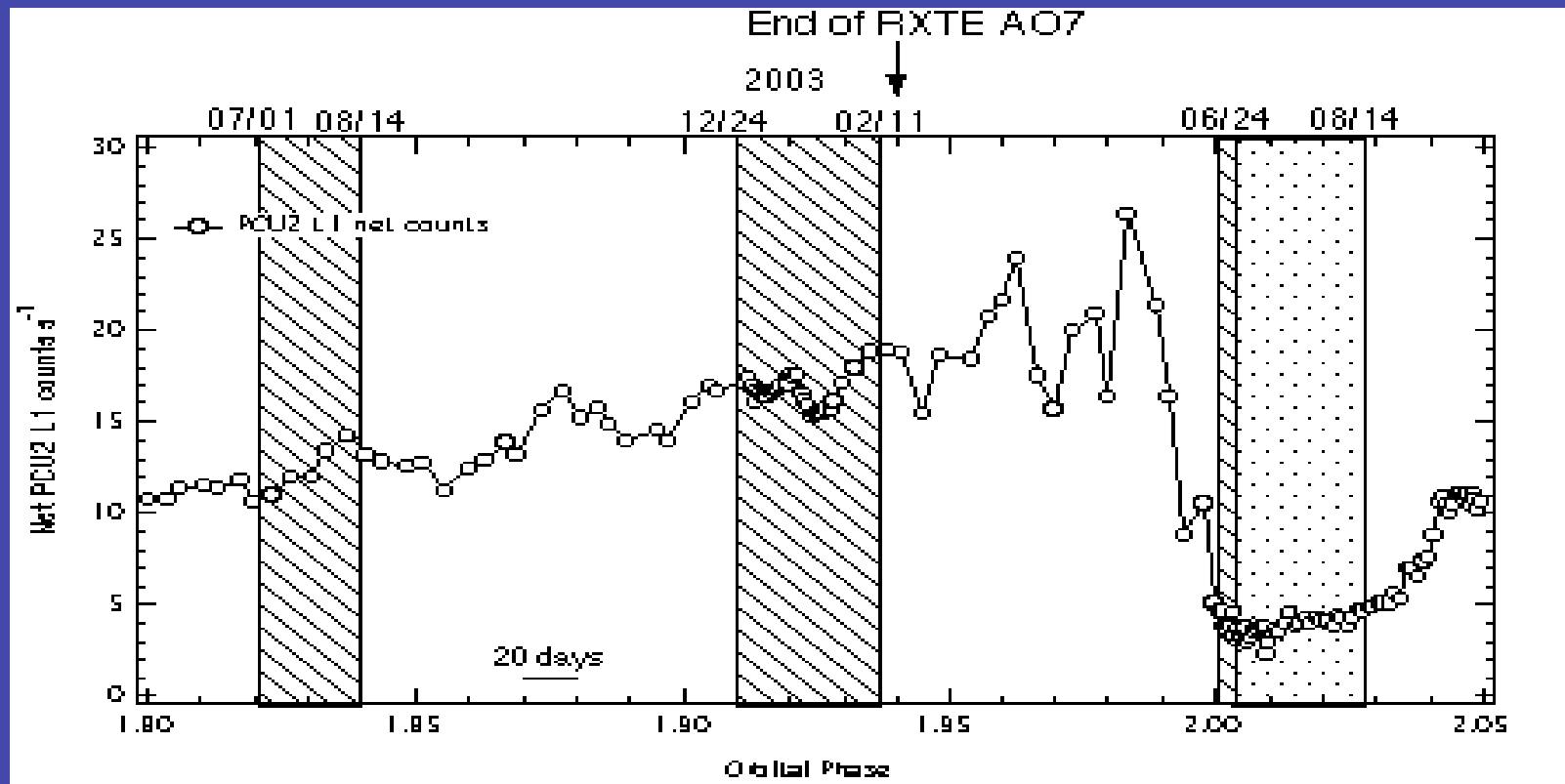


Zeroth order image outside  
and in eclipse

\* As of July 9, all 5 appear on the list of targets which were highly ranked by the Chandra Cycle 4 Peer Review.

“This list is not definitive and should only be used for planning purposes.” - CXC

# XMM-Newton: Poor Luck?



Shaded areas are XMM visibility windows during AO2; dotted area is visibility window during AO3 (RFP not yet available)

# XMM-Newton: Proposed Observations

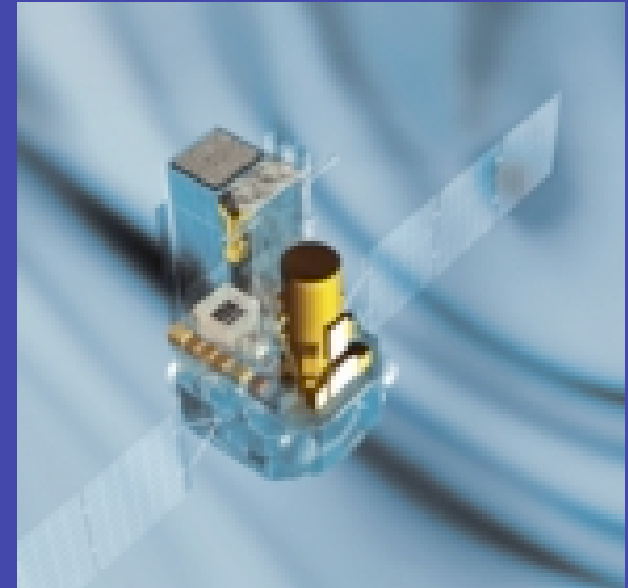
- 40-ksec during the Dec 2002/Jan 2003, broken into 4-5 individual pointings to monitor spectra variations on approach to X-ray maximum
- monitoring: ten 5 ksec observations (50 ksec total) as close to the eclipse ingress as possible. To be triggered by RXTE or ground-based observations

# RXTE: Hope it lasts!

- Propose in AO8 for continued monitoring
- Approach: higher time resolution during the pre-ingress interval when rapid changes occur
- higher time resolution of decline to minimum
- 1 ksec snapshot every day during AO8 interval?

# INTEGRAL:

## The International Gamma-Ray Astrophysics Laboratory



### Instruments:

- IBIS - coded mask imager, 15 keV - 10 MeV, 12 arcmin resolution
- SPI - spectrometer, 20 keV - 8 MeV energy resolution of 2.2 keV (FWHM) at 1.33 MeV
- JEM-X - X-ray monitor, 3 - 35 keV, coded mask, 3 arcmin resolution
- Optical Monitoring camera - Johnson V, 25" resolution, 5 x 5 degree

Launch: October 2002

# INTEGRAL Observations of Eta Car

PI: Yousaf Butt

Co-Is: Mike Corcoran, Philippe Durouchoux, Andy Pollock, Jerome Rodriguez, Gustavo Romero, Fred Seward, Roberto Viotti, Xiaolei Zhang

Purpose: To identify sources of Gamma-rays near Eta Car and to determine if Eta Car is a GR source due to inverse-compton scattering from fermi-accelerated electrons

New Purpose: To see if Eta Car is an X-ray source during the next event (due to launch delay)



# INTEGRAL Observation of Eta Car

- Awarded 200 ksec observation to observe Eta Car prior to X-ray eclipse
- Change: Observation now time-constrained to take place during X-ray eclipse (due to launch slip)
- Change: Amalgamation with GTO “core” program observation of 1 Msec
- Look for variations in GR emission from Eta Car