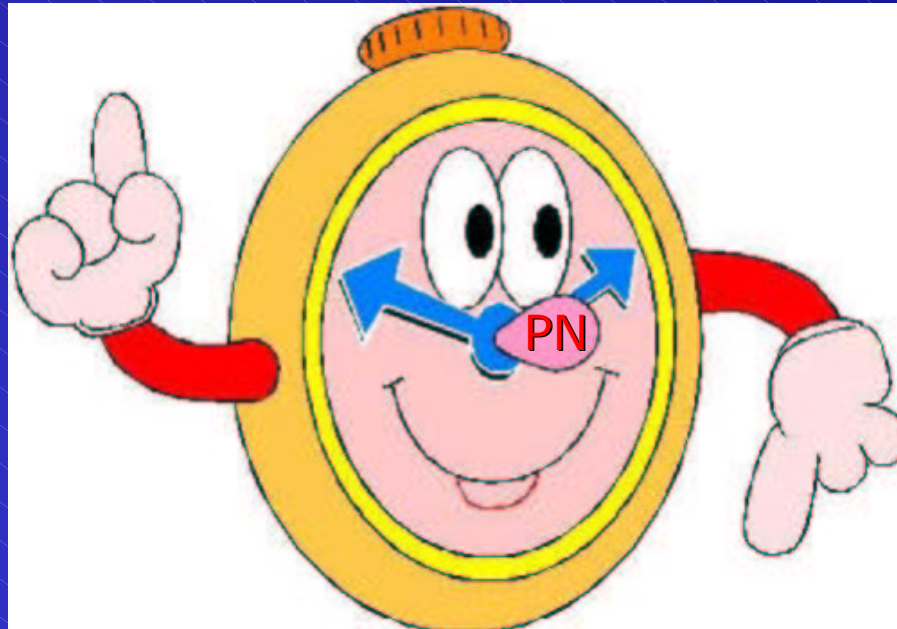




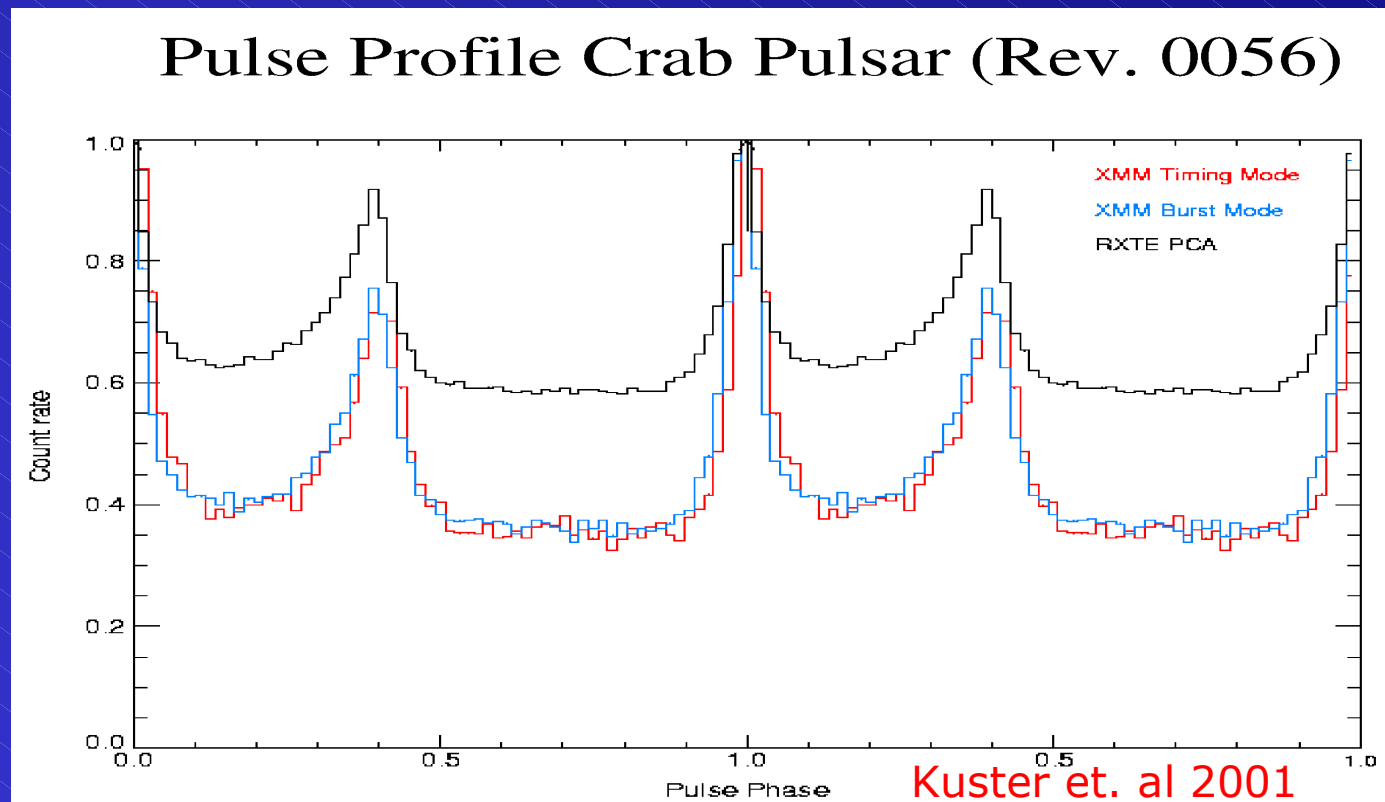
high time resolution of the epic pn-camera





situation ESTEC Nov. 01

- EPIC allows :
 - pulse analysis
 - pulse-resolved spectral analysis





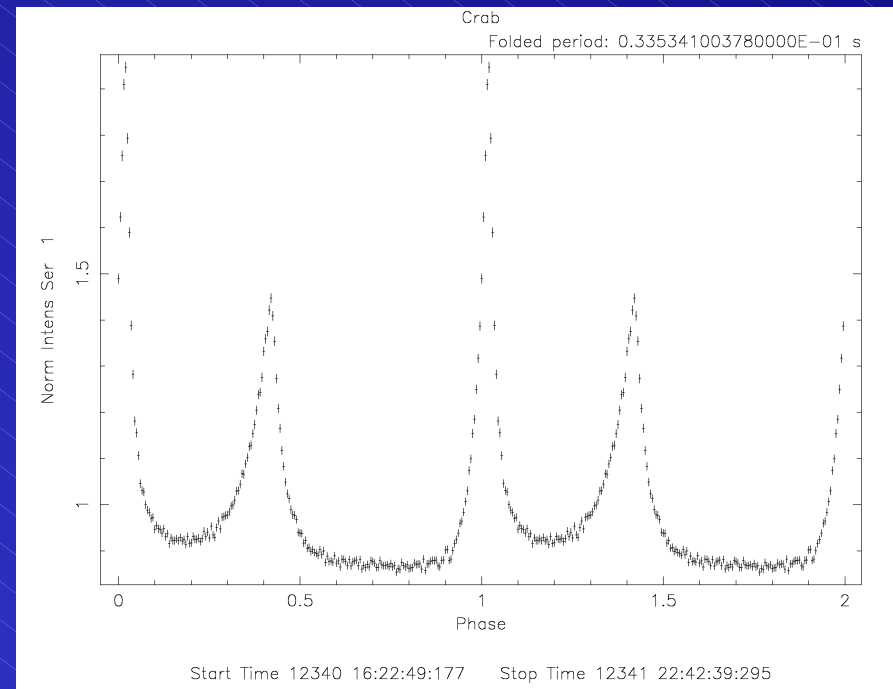
situation ESTEC Nov. 01

- EPIC allows :
 - pulse analysis
 - pulse-resolved spectral analysis
- inconsistencies in the relative and absolute time
 - under investigation with NRCO in Rev. 411 (40 ks Crab)
 - current relative time accuracy of EPIC-pn:
 $\Delta P/P \approx 10^{-6}$



performed investigations

- 40 ks crab observation in rev 411
- 4 pointings at different time of the orbit
 - 3 burst mode
 - 1 timing mode



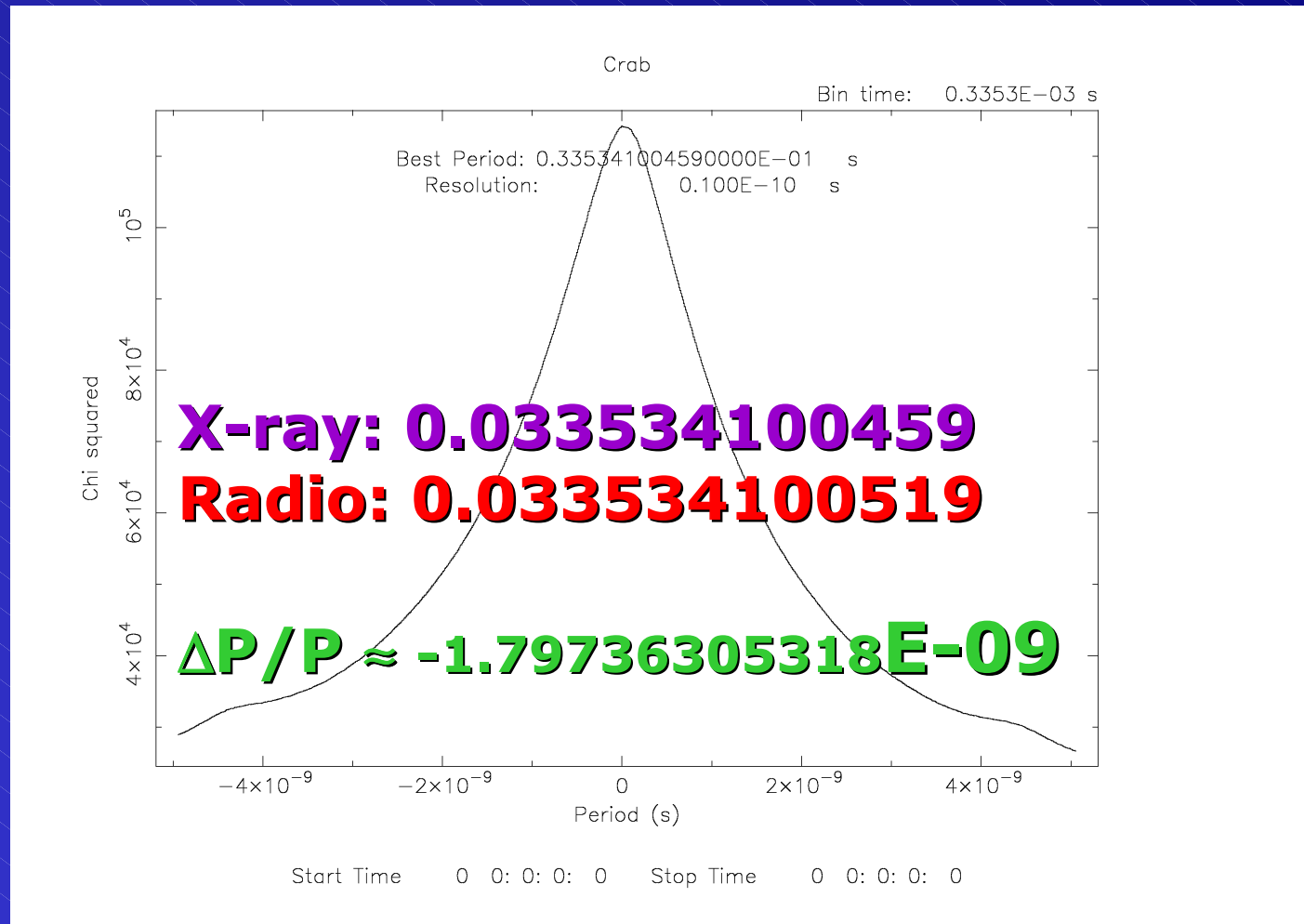


solved problems

- error in *barycen* code
- improvement in OAL
(fitting of time correlation data
with a polynomial of order 4)



period



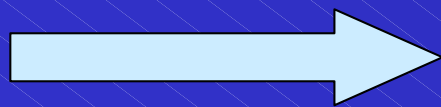
best period: 0.033534100459
epoche: 12340.68251361839



theoretically attainable timing accuracy

$$\begin{aligned}FWHM(X^2) &= \frac{P_0^2}{\text{Time of Observation}} \\ &= \frac{(0.033534100459 \text{ s})^2}{108000 \text{ s}} \\ &= 1.04 \cdot 10^{-8}\end{aligned}$$

attainable accuracy is typically FWHM/10

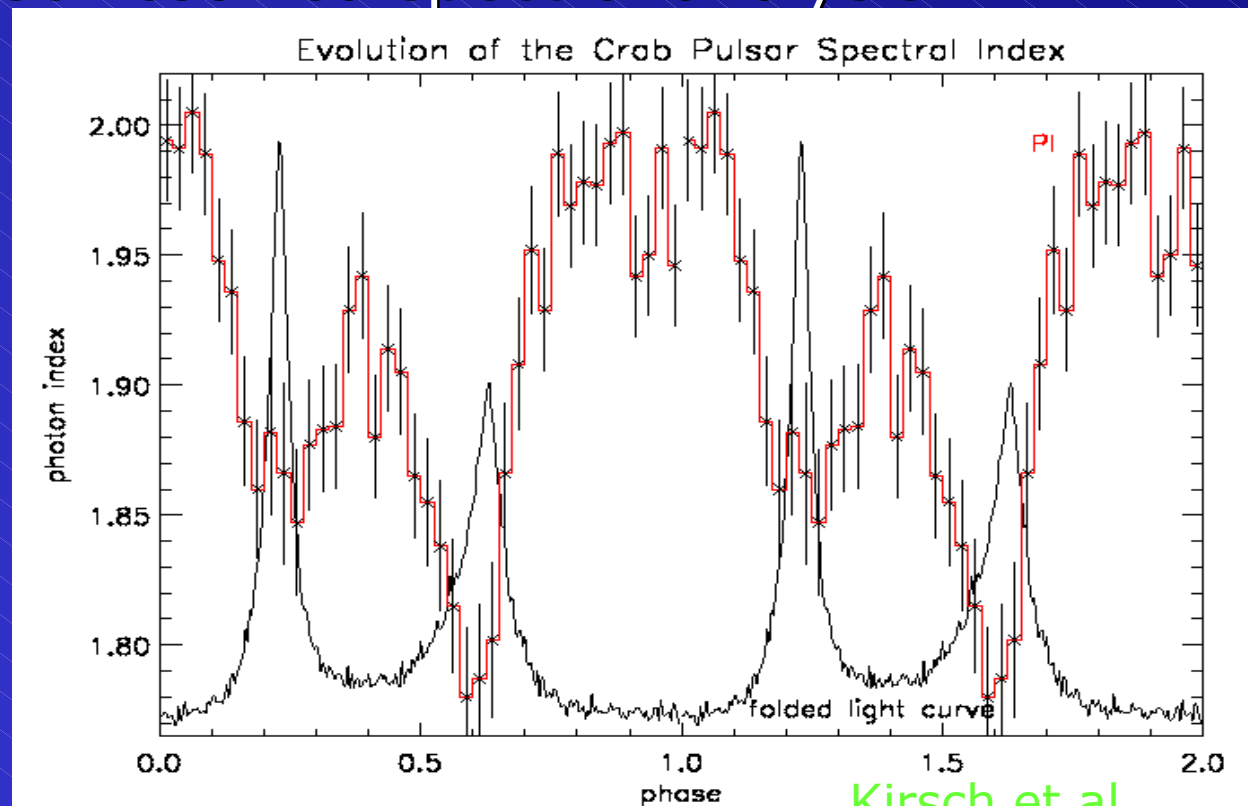


$$\sim 1-2 \cdot 10^{-9}$$



situation now

- EPIC allows :
 - pulse analysis
 - pulse-resolved spectral analysis



Kirsch et al.

TBP



situation now

- EPIC allows :
 - pulse analysis
 - pulse-resolved spectral analysis
- current relative time accuracy of EPIC-pn:
 $\Delta P/P \approx 10^{-9}$

EPIC-pn is the fastest X-ray CCD available at the moment