Status report on Timing Session

Chair: Yukikatsu Terada

Brief history

- TIMING WG was active from 2nd IACHEC (UCLA 2007) to 4th IACHEC (Shonan 2009).
- We triggered a simultaneous observation of Crab between INTEGRAL, RXTE, Swift, Suzaku in Mar 2007 (Terada et al, 2008)
- Tentatively stopped at 4th IACHEC, because we "satisfied" on Suzaku, XMM, RXTE timing, promising to resume the timing session for future missions.

Members / missions

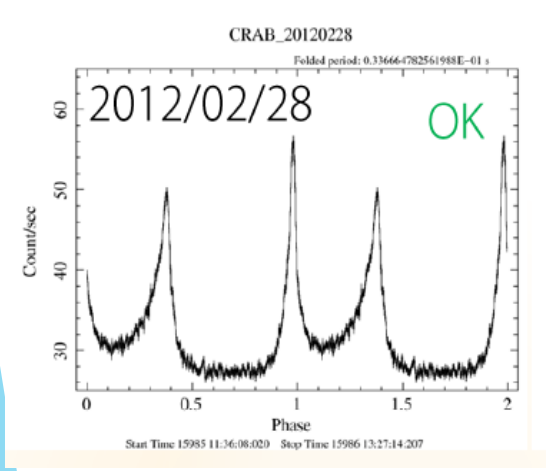
name	mission
Y. Terada	Suzaku, Astro-H
M. Nobukawa	Suzaku, Astro-H
K. Nobukawa	Suzaku, Astro-H
S. Koyama	Suzaku, Astro-H
K. Hamaguchi	Suzaku, Astro-H
K. Mukai	Suzaku, Astro-H
J. Kennea	Swift
L. Natalucci	INTEGRAL, NuSTAR
C. Markwardt	NICER, NuSTAR
B. LaMarr	NICER

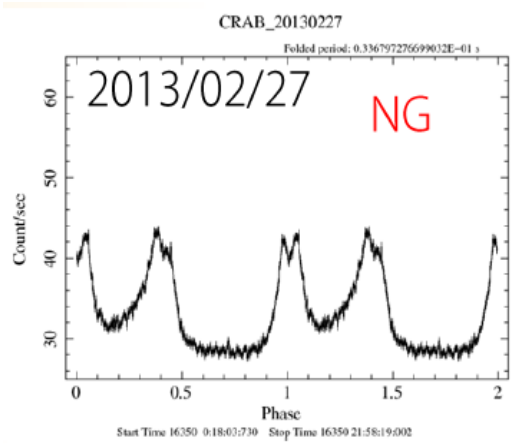
Presentation: Suzaku report

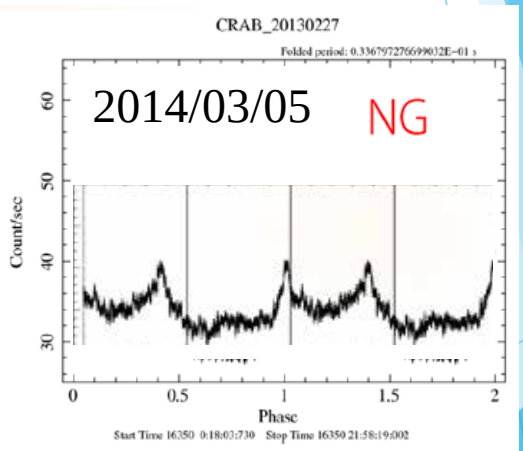
Suzaku time has

- 3 msec error at maximum (Mar 2012 -- Feb 2014)
- 200 msec error (Mar 2014 --)

due to a hardware trouble in the ground system.







Discussion: Definition of goals

1. Share information on Timing calibration
   - ü Report on Suzaku timing problem (this IACHEC)
   - ü Reports on ground timing calibration of NICER (next IACHEC)
   - ü Reports on ground timing calibration and future plan of ASTRO-H (next IACHEC)

2. Recommendation of in-flight timing calibration
   - ü For current mission(Swift, Suzaku, NuSTAR), no further timing calibration required. à No Proposal planed.
     (Note that XMM and Suzaku continue monitoring Crab pulser.)
   - ü Future missions (ASTRO-H, NICER) carries GPS receivers. (Note that it is difficult to verify time of NICER in orbit)

3. List up timing calibration targets
   - ü Setup wiki page for timing calibration and gather information.

4. Studies for effects on timing products (power spec, light curve etc) by detector's behavior (dead time etc)