



Mark Pearce
Department of Physics, KTH

KTH Space Rendezvous
“Key future space technologies”

13th October 2016



<https://www.youtube.com/watch?v=0oxd9-WI-Qg>

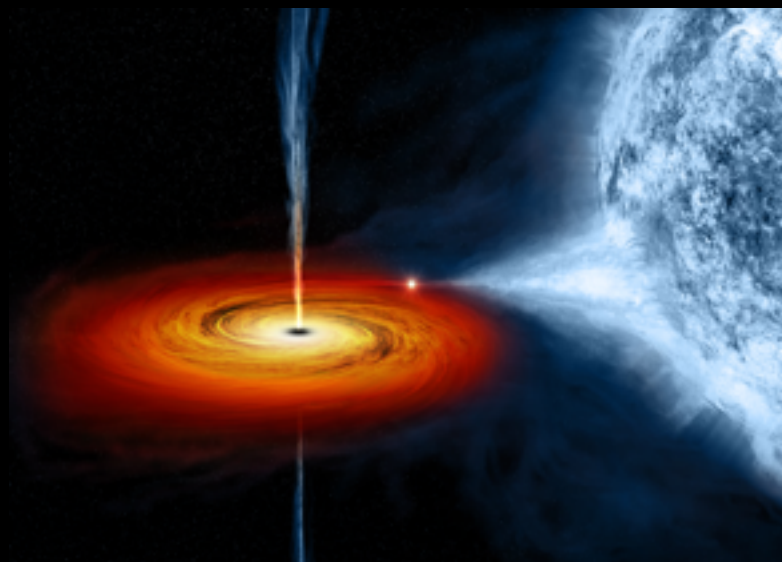


Landing
July 18th 2226 UT

Launch
July 12th 0317 UT

SSC

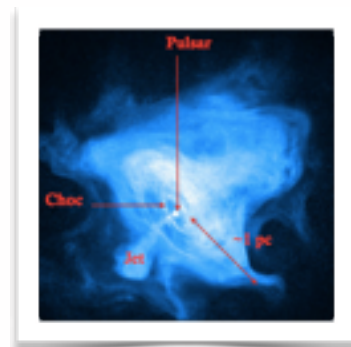
**Crab
pulsar +
nebula**



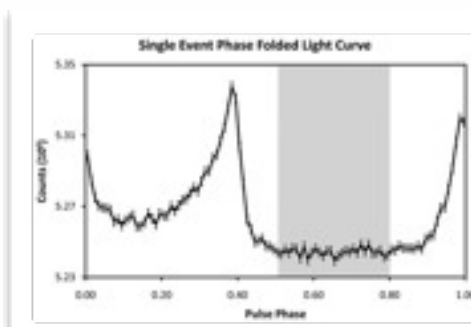
**Cygnus X-1
~15 $M_{\odot}$ black
hole binary
system**

Probing the high-energy universe with X-rays

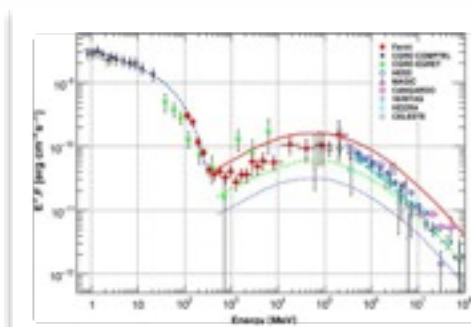
- X-ray telescopes usually determine **direction, time, energy** of incident X-rays
- Not exploited:
 - **Polarisation** - orientation of electric field vector



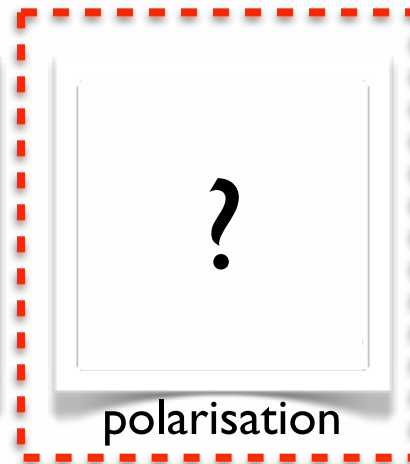
image



light curve

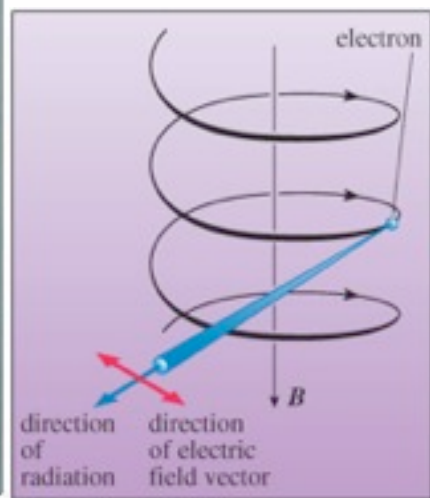
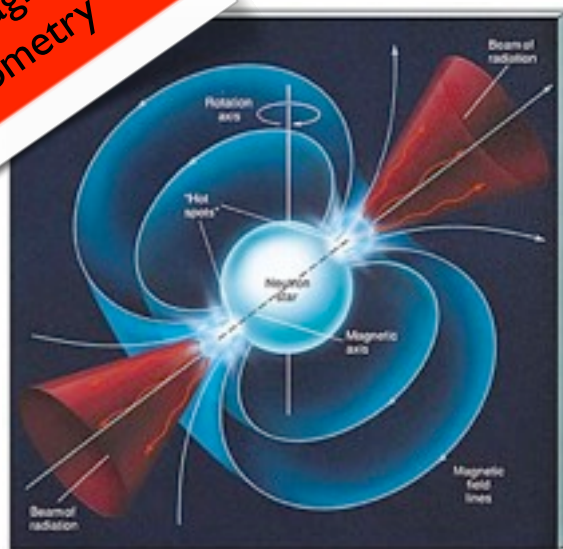


energy spectrum



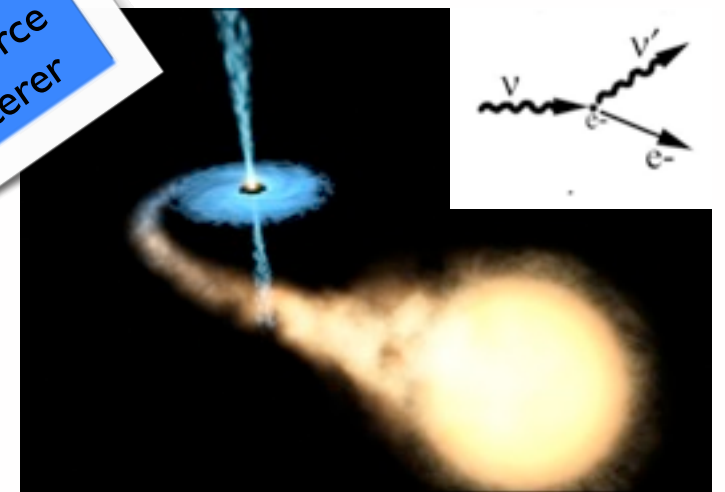
polarisation

Probe of magnetic field geometry

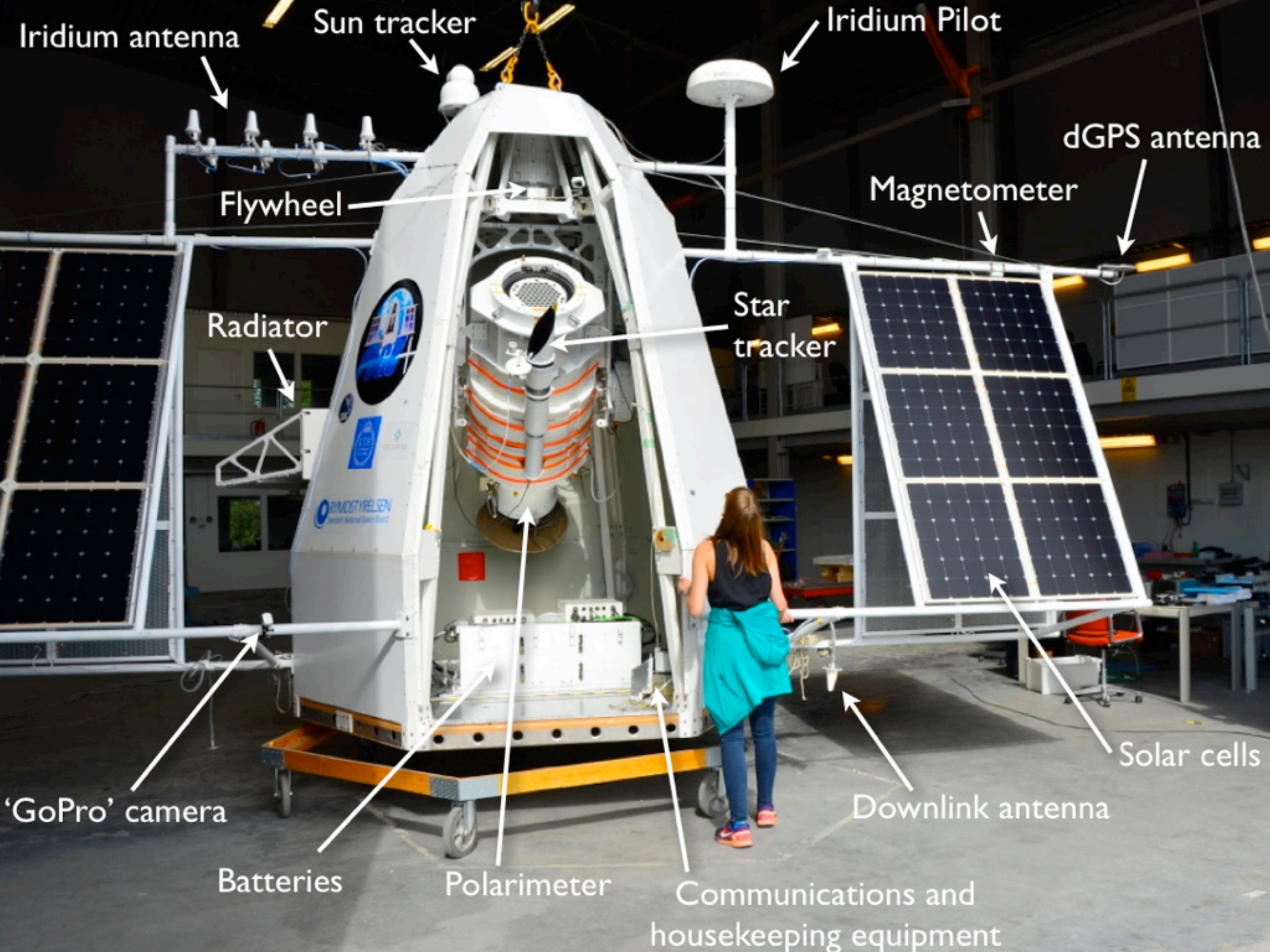


Synchrotron emission

Probe of geometrical relation between the photon source and the scatterer



Scattering



Iridium antenna

Sun tracker

Iridium Pilot

dGPS antenna

Flywheel

Magnetometer

Radiator

Star tracker

'GoPro' camera

Batteries

Polarimeter

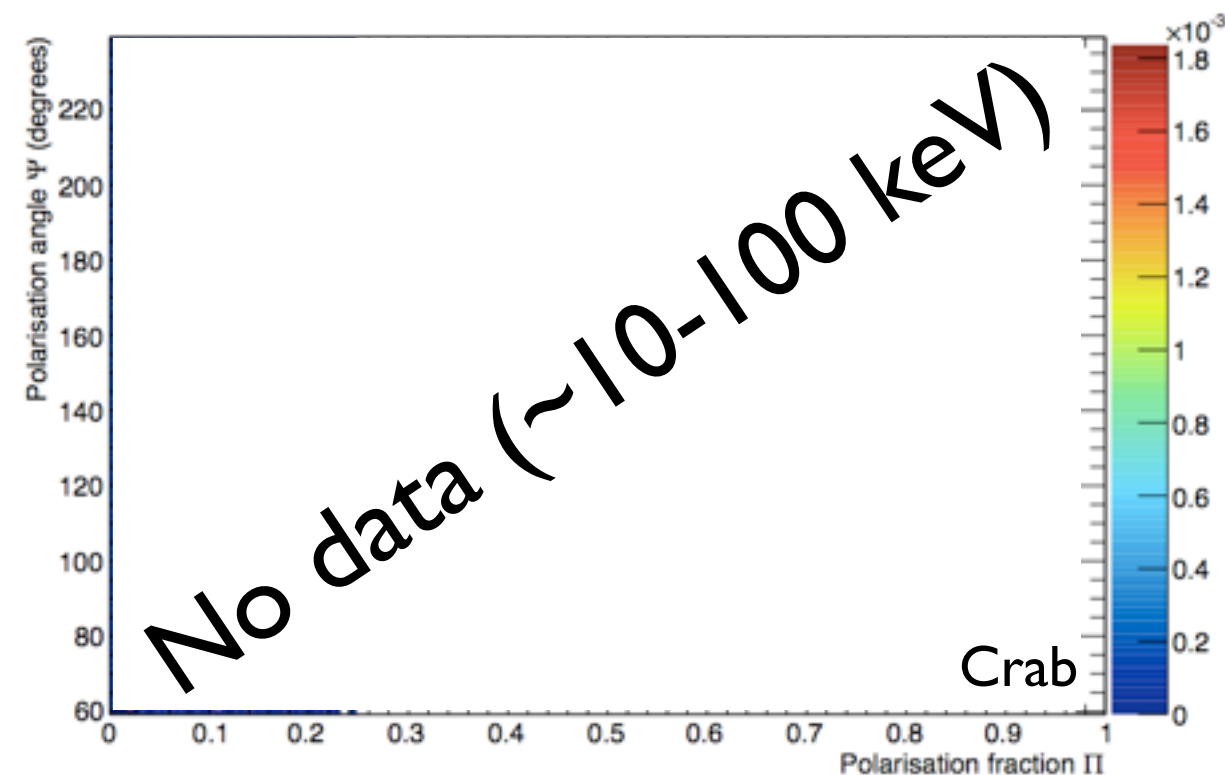
Communications and housekeeping equipment

Downlink antenna

Solar cells

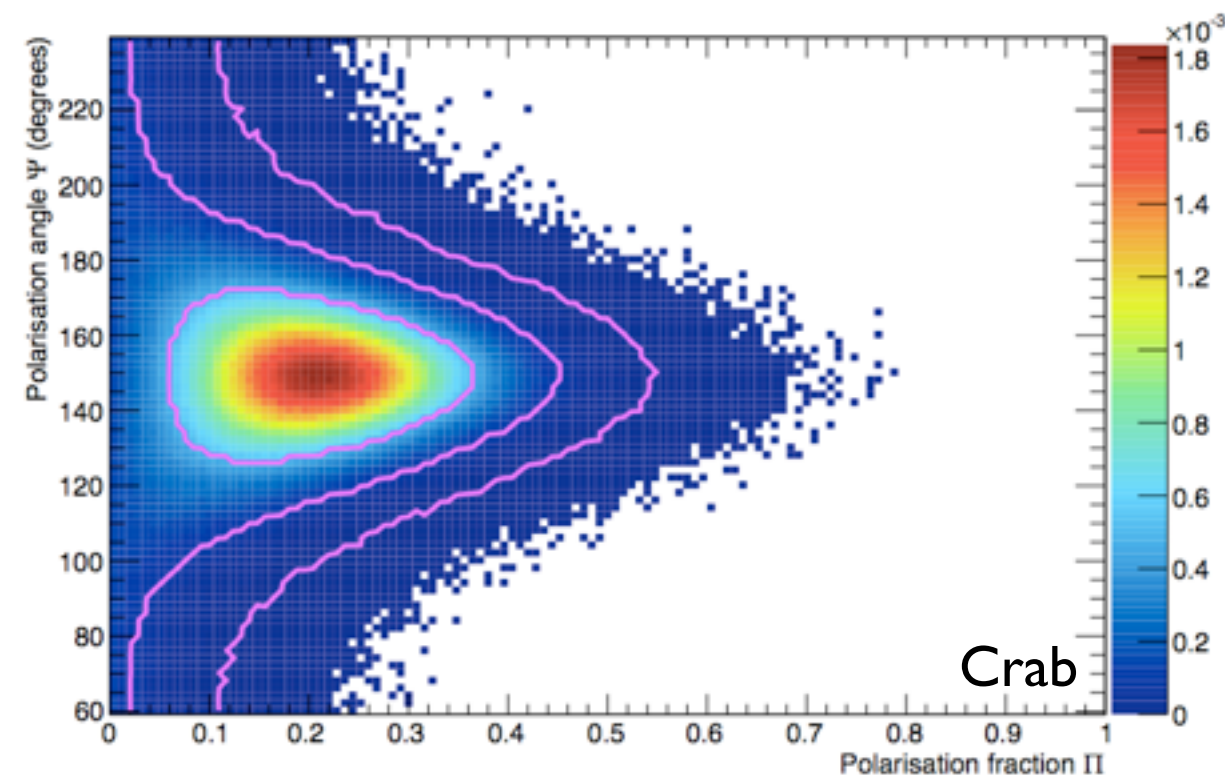
- Äntligen! A successful flight...
 - 6 complete observations of Crab and Cygnus X-1.
Excellent piloting - thanks SSC!
 - Scientific data storage unit returned to KTH 12 days after landing - thanks SSC!
 - Data reduction / analysis on-going.

BP (Before PoGO)



- Äntligen! A successful flight...
- 6 complete observations of Crab and Cygnus X-1.
Excellent piloting - thanks SSC!
- Scientific data storage unit returned to KTH 12 days after landing - thanks SSC!
- Data reduction / analysis on-going.

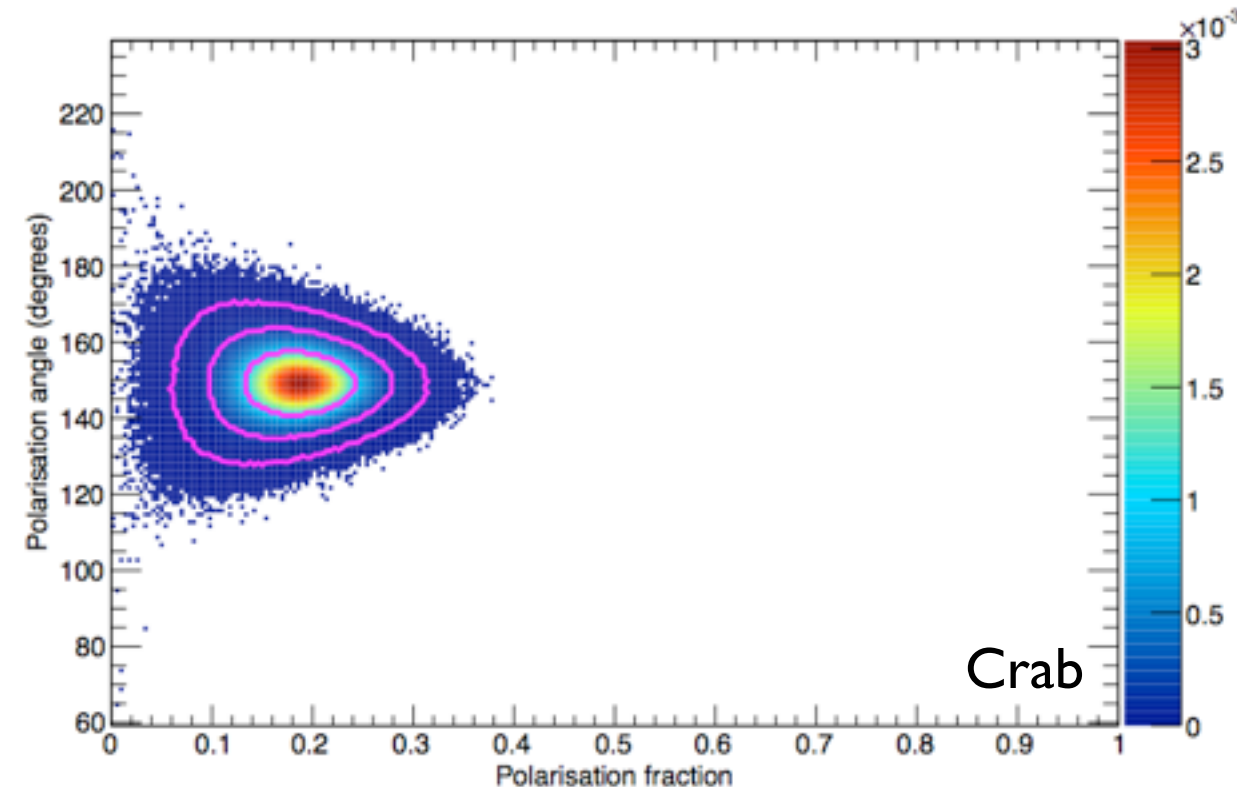
PoGOLite (2013)



M. Chauvin, et al. (PoGOLite Collaboration), MNRAS Letters 456 (1) 2015 L84.

- Äntligen! A successful flight...
- 6 complete observations of Crab and Cygnus X-1.
Excellent piloting - thanks SSC!
- Scientific data storage unit returned to KTH 12 days after landing - thanks SSC!
- Data reduction / analysis on-going.

PoGO+ (expected)



M. Chauvin, et al. (PoGO Lite Collaboration), *Astroparticle Physics* 82 (2016) 99.

