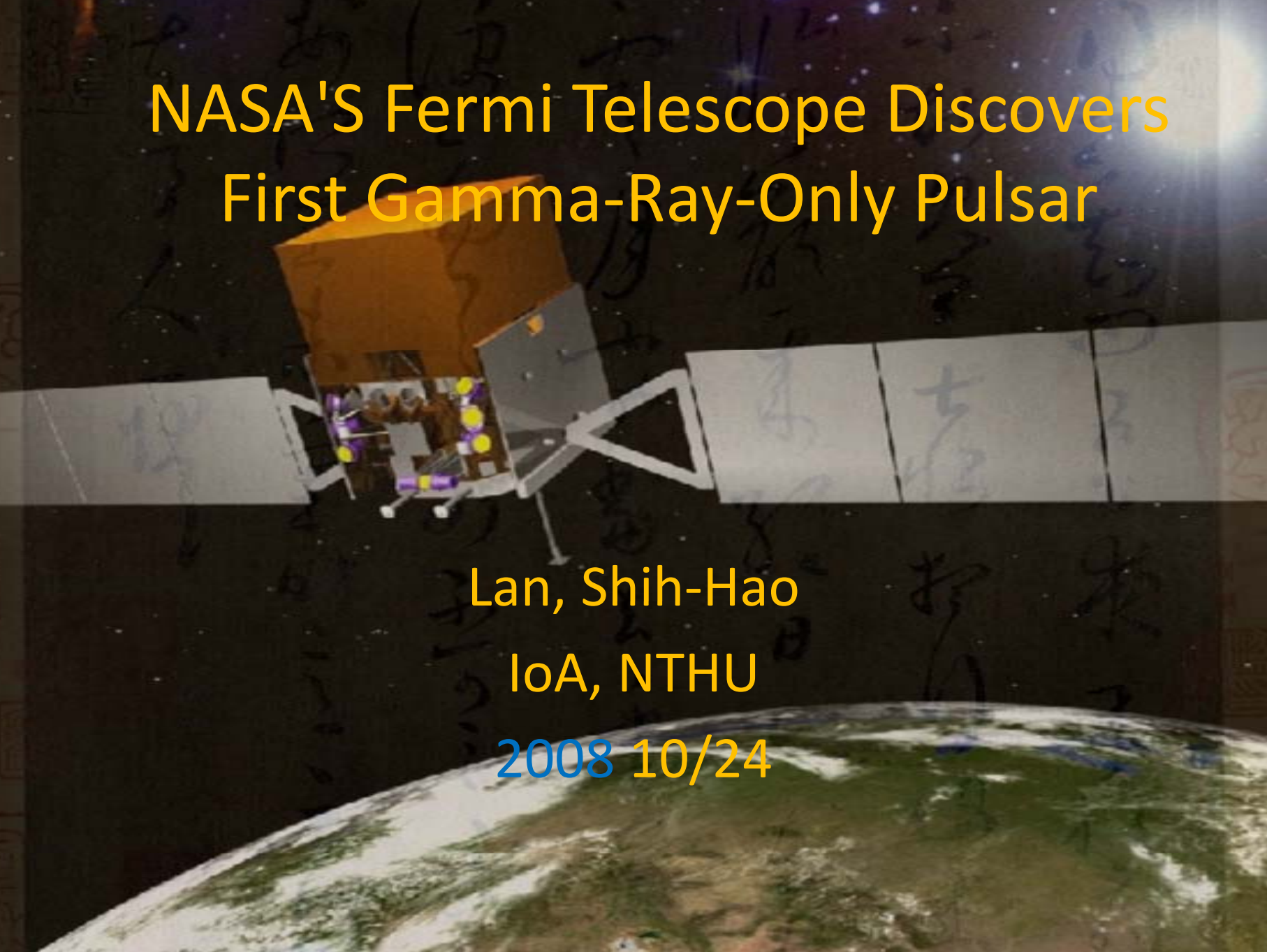


# NASA'S Fermi Telescope Discovers First Gamma-Ray-Only Pulsar

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# Fermi Gamma-ray Space Telescope

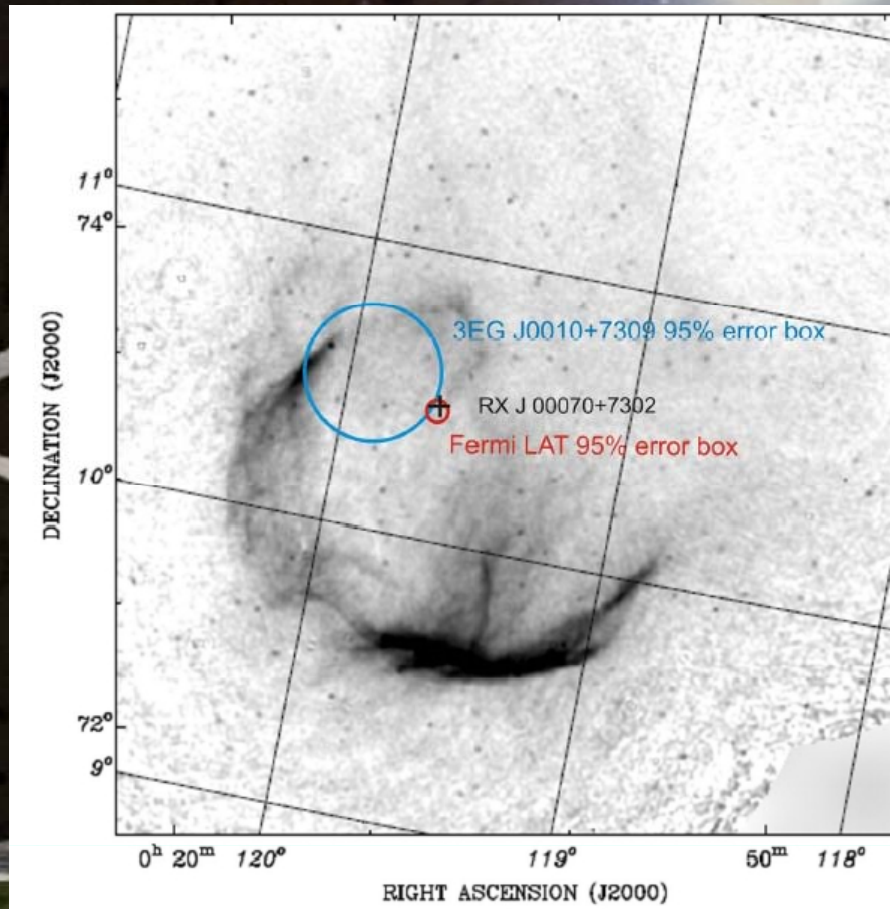
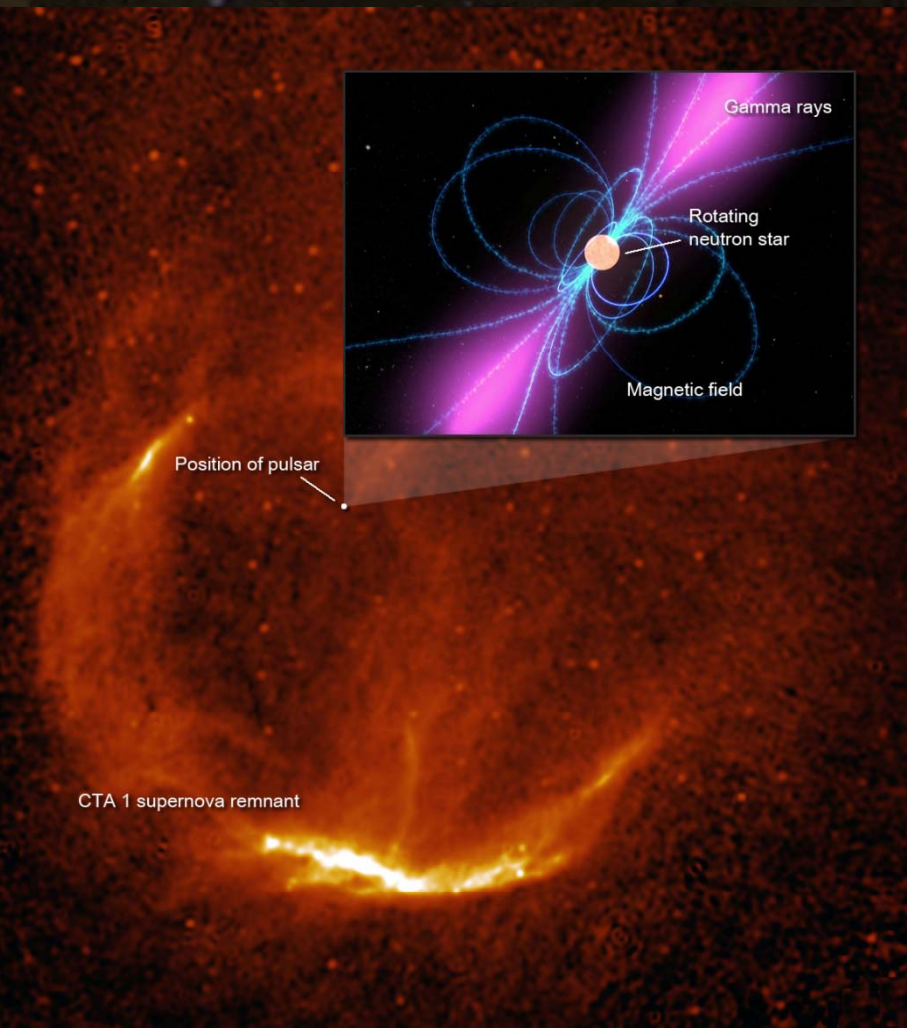
The background of the slide is a composite image. At the top, a dark space scene shows a bright star and a satellite with a large orange cube-shaped instrument. Below this, a satellite with long solar panel arrays is shown in orbit. At the bottom, a curved horizon of the Earth is visible, showing green land and white clouds.

- Fermi was launched June 11, 2008
- **Large Area Telescope (LAT)**
- Energy range: 20 MeV ~ 300 GeV
- Angular resolution < 3.5° (100 MeV)  
< 0.15° (>10 GeV)
- Source Location Determination < 0.5'
- **GLAST Burst Monitor**
- < 10 keV - > 25 MeV

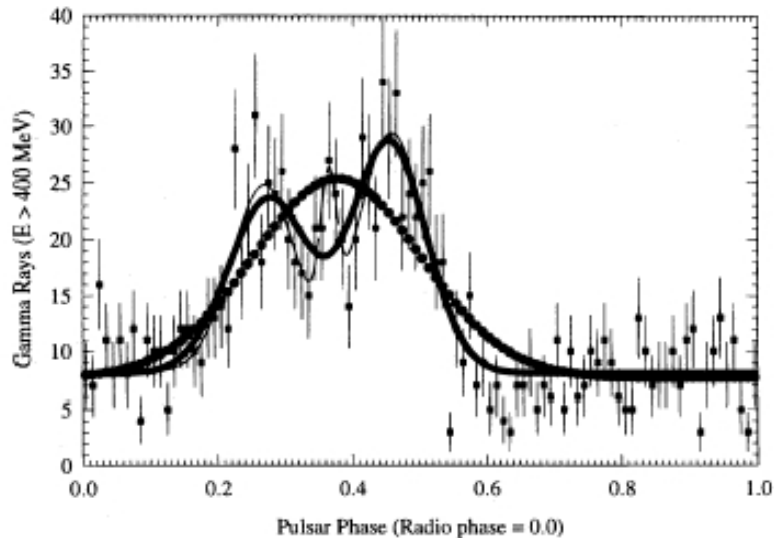
# Rotational Ephemeris of Pulsar in CTA 1

- Frequency : 3.1659 Hz
- Period: 315.864ms
- $(L, b) = 119^{\circ}.6595, 10^{\circ}.463$
- $\text{Flux}_{(>100\text{MeV})} = 3.8 (0.2) \times 10^{-7} \text{ ph cm}^{-2} \text{ s}^{-1}$
- Distance : 1.4 (0.3) kpc
- Remana age : 13000 yr

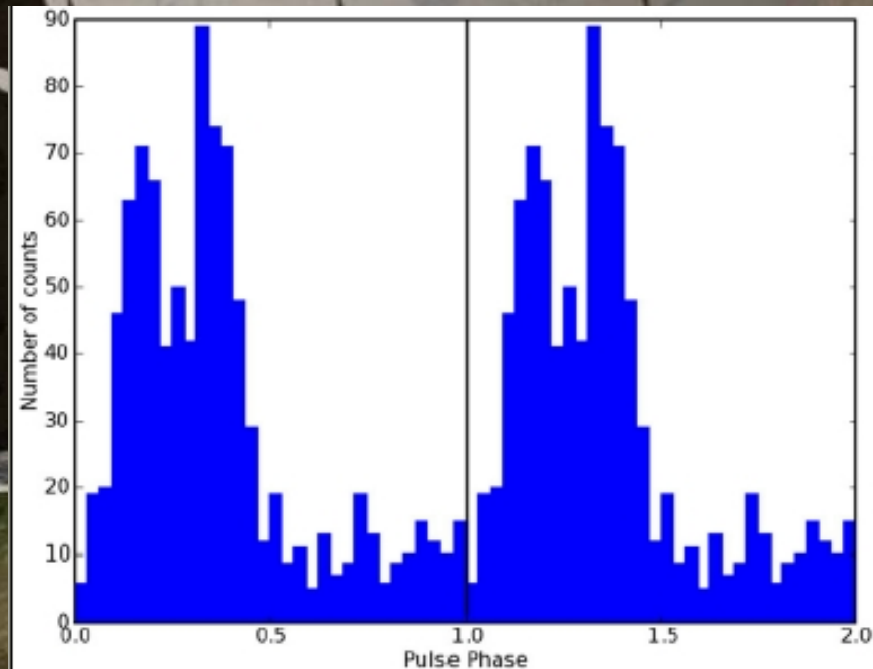




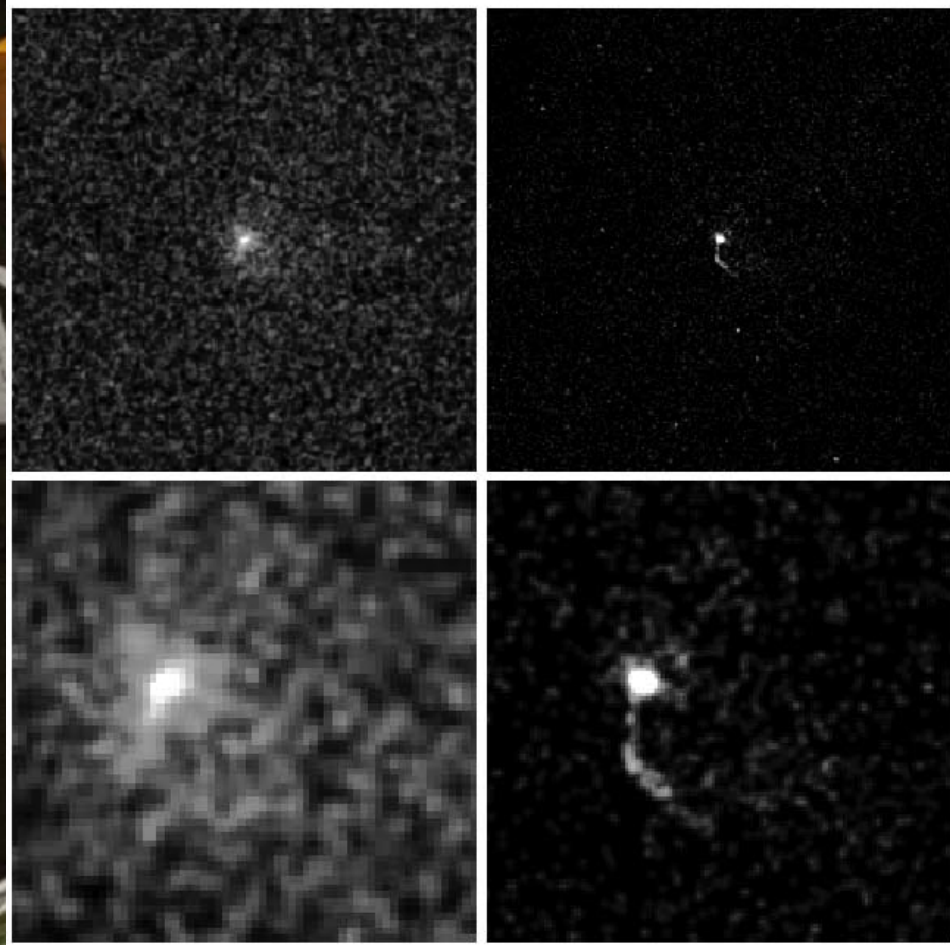
# Light Curves



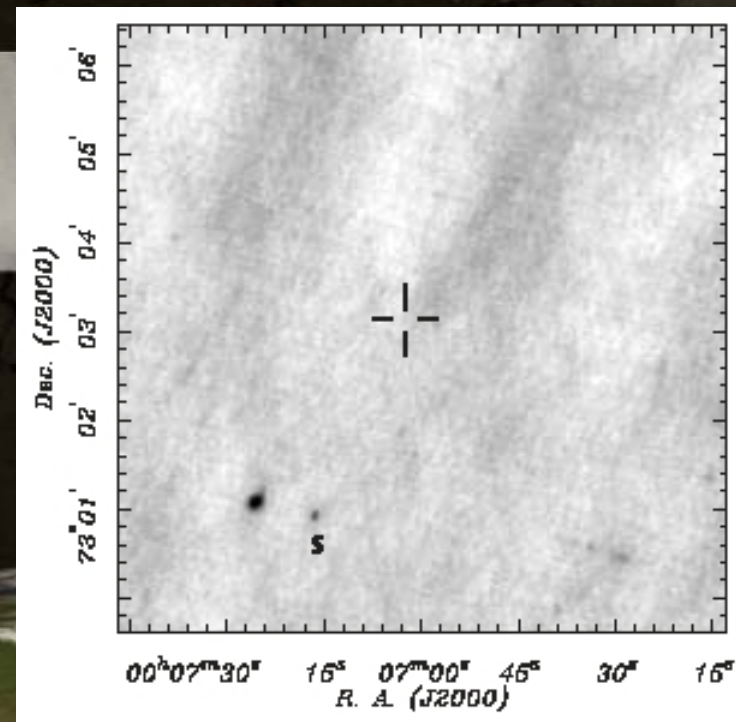
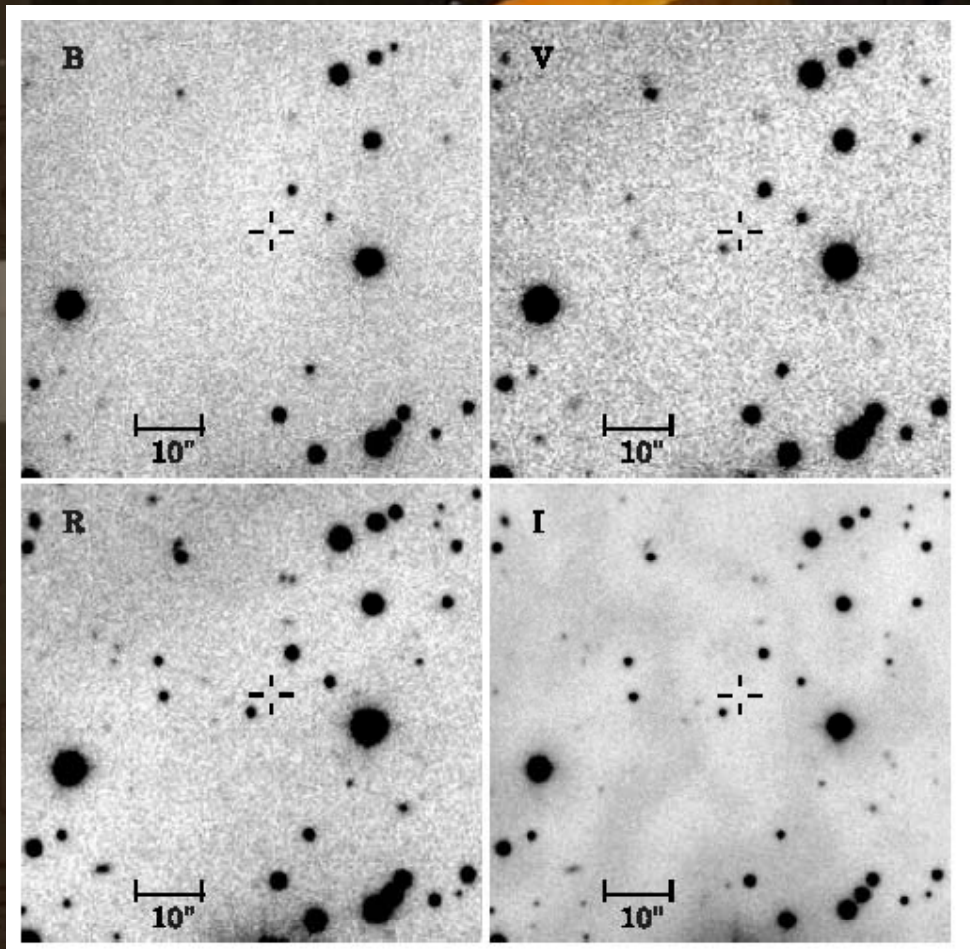
High-energy gamma-ray light curve for PSR B1706-44, with 100 phase bins. Uncertainties due to counting statistics are shown. The fitted curves, as described in the text, are two Gaussian peaks plus a constant background (*heavy solid line*), three Gaussian peaks plus a constant background (*light solid line*), and single Gaussian peak plus a constant background (*heavy dotted line*).



# Chandra and XMM images



# Optical and Radio images



# Reference

- Abdo A. A. et al. Science express 16 October 2008
- Halpern, J. P. et al, 2004, ApJ, 612, 398
- Thompson, D. J. et al, 1996, ApJ, 465, 385

