

OBSERVATION OF HARD X-RAYS  
FROM THE CRAB PULSAR AND A0535+26

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The Crab pulsar PSR0531+21 was observed in a balloon flight from the Xianghe Balloon Station (China) on 1984 May 23. The data were obtained in the range 20-200keV with a poswish hard X-ray telescope which comprised of a 150cm<sup>2</sup> primary crystal of 5mm thick CsI(Tl) actively shielded over the lower 2 $\pi$  steradians by a 5cm thick NaI(Tl) crystal. The scintillation pulses originating in CsI and NaI crystals are distinguished by pulse shape discrimination. The telescope has a field of view of approximately 4 $^{\circ}$  HWHM determined by graded shield and collimator. The effective geometric area of the detector is 116cm<sup>2</sup>.

The apparatus was flown for eight hours. During this flight on-source observation of the Crab region at a float altitude of 33km was made for about two hours alternated with off-source measurement. A summed epoch analysis of the heliocentric arrival times for the recorded photons of on-source observation was made, the figure 1 shows the light curve derived by folding on the period of 33.29790ms.

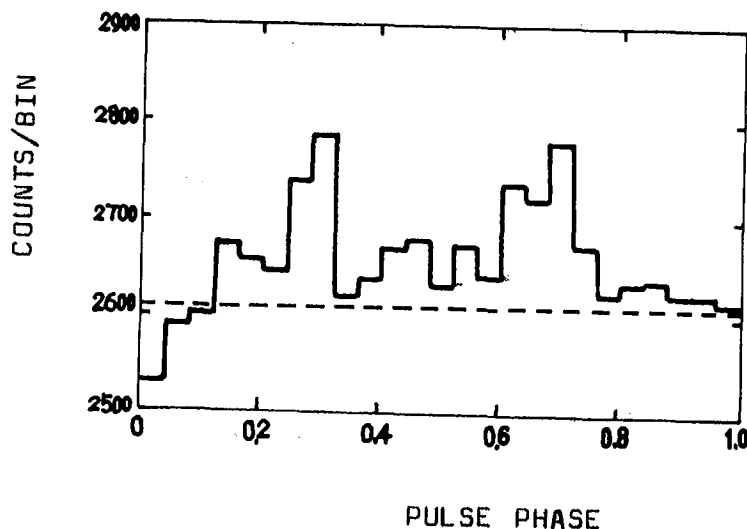


Figure 1. Hard X-ray light curve obtained from 3200s on-source observations

The transient X-ray source A0535+26, an object with interesting spectrum shape and evolution of brightness and pulsation, was within the field of view of the telescope when on-source observing. A possible periodicity of 102.25s was found in the data with a phase structure of two broad peaks similar to some observation results having been published for A0535+26. We have noted that when folding a data flow on a long period interference from the data acquisition, transmission and recording system affects the result considerably. More tests for the reality of the apparent pulsation are then needed to be made.