

**2.14 OPTICAL TIMING
OF THE CRAB NEBULA PULSAR NP 0532***

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Abstract. Accurate pulse arrival times have been measured for NP 0532 during the period 15 December 1969 to 3 May 1970, and have been fitted to simple models of the pulsar braking mechanism. A good fit could not be obtained to all the data at once, because of deviations on a time scale of several days. However it was possible to divide the observing period into four shorter intervals in such a way that the data within each deviated only slightly from smoothly varying functions. The difference in the parameters of these four functions may indicate sudden events in the pulsar producing changes of order of 1 part in 10^9 in the pulsar frequency and 4 parts in 10^5 in the rate of change of frequency. In each case the difference in frequency from one interval to the next implies a slowdown of the pulsar.

We found that the average value of the 'braking parameter' n in the equation $dE/dt = -A\omega^n$ was 3.63, but dividing the data into shorter intervals gave values between 0 and 5. We found no changes in the mean shape of the pulses, or the phase of the interpulse relative to the main pulse.

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