TIMING ANALYSIS OF THE ISOLATED NEUTRON STAR RX J0720.4-3125

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We present a combined analysis of XMM-Newton, Chandra and Rosat observations of the isolated neutron star RXJ0720.4-3125, spanning a total period of \( \sim 7 \) years. We develop a maximum likelihood periodogramme for our analysis based on the \( \Delta C \)-statistic and the maximum likelihood method, which are appropriate for the treatment of sparse event lists. The study of the spin history and the measure of the spin-down rate is of extreme importance in discriminating between the possible mechanisms suggested for the nature of the X-ray emission. The implications of our measure are discussed.