

NuSTAR and NICER observations of 4U 0114+65: a wind-accreting magnetar?

We present an X-ray spectro-temporal analysis of simultaneous NuSTAR and NICER observations of 4U 0114+65, to characterize the nature of the source. Light curves were obtained from the source in the range 3 - 79 keV. Two types of flares were identified in the light curve of the source, “large and small flare”. A pulsation of 9275 ± 2 s obtained from the analysis of the light curves was measured. This is consistent with previously found values associated with a secular spin down. Time-resolved spectra were extracted from each interval and modeled with several different models. We searched in detail for the presence of cyclotron-resonant scattering features in the spectra of both intervals, but no cyclotron resonant dispersion features are found in any interval. In order to obtain physical parameters, the Becker-Wolff self-consistent cyclotron line model was fitted, giving as a main result an estimate of the magnetic field of the order of 10^{12} G.

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