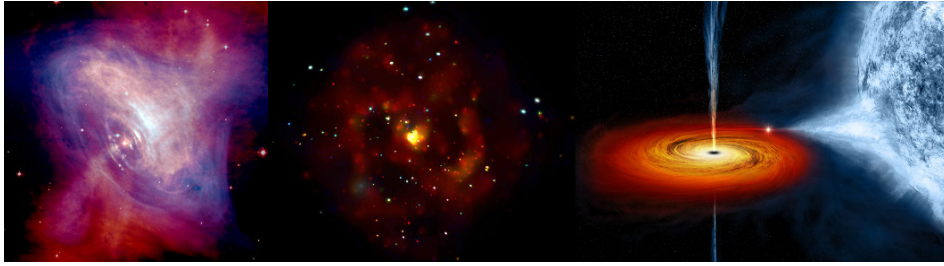


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Evidence for profile changes in PSR J1713+0747 using the uGMRT

PSR J1713+0747 is one of the most precisely timed pulsars in the international pulsar timing array experiment. This pulsar showed an abrupt profile shape change between 2021 April 16, (MJD 59320) and 2021 April 17 (MJD 59321). In this study, we report the results from multi-frequency observations of this pulsar carried out with the upgraded Giant Metrewave Radio Telescope (uGMRT) before and after the event. We demonstrate the profile change seen in Band 5 (1260 MHz–1460 MHz) and Band 3 (300 MHz–500 MHz). The timing analysis of this pulsar shows a disturbance accompanying this profile change followed by a recovery with a time-scale of ~ 159 days. We also briefly comment on the reasons for the profile change as the literature suggests profile changes may be caused due to re-organization of pulsar beams, and the recovery could be explained by the magnetosphere relaxing to its original configuration.

Presentation Type

Poster

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