

PDL01 Multi-frequency radio observations of a new outburst from the recently reactivated transient magnetar XTE J1810-197

Sujin Eie (NAOJ/UTokyo), Toshio Terasawa, Mareki Honma, Takuya Akahori, Tomoaki Oyama (NAOJ), Teruaki Enoto (Kyoto Univ.), Yoshinori Yonekura (Ibaraki Univ.), Mamoru Sekido, Kazuhiro Takefuji (NICT), Hiroaki Misawa, Fuminori Tsuchiya (Tohoku Univ.), Takahiro Aoki (Yamaguchi Univ.), and Shota Kisaka (Aoyama Gakuin Univ.)

Magnetars are thought as being young neutron stars with extremely strong magnetic fields, displaying intense short bursts, pulsations and outbursts in X-ray, but the fundamental physics is still in mystery. Very recently, XTE J1810-197 re-activated after 10 years of its quiescent state, showing strong radio flare which was firstly detected on 8 December 2018 (MJD 58460, ATel #12284). We organized ToO observations in Japan with wide frequency coverage (0.3, 2, 6, 8 and 22 GHz from Iitate/Tohoku, Kashima/NICT, Hitachi/Ibaraki, and VERA/NAOJ observatories), simultaneous as much as possible, on MJD 58466, 58470, 58490, 58492, 58504, and 58530. While we have processed data so far only partially, we have successfully identified pulses from this magnetar: At 6 and 8 GHz the pulse intensities were so strong that the profile of each single pulse was visible with strong time variability. The pulse intensities at other frequencies were relatively weak (2 and 22 GHz), or only the upper limit has been obtained at 0.3 GHz. The pulse frequency spectra are now being made and will be presented. We will compare our new results with those from the previous outburst in 2006 - 2008, and discuss physical implications for magnetar physics.