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Simultaneous multi-frequency limits on radio emission at the time of a bright X-ray burst from SGR 1935+2154

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Referred to by ATel #: 13816

GCN circulars GCN #27714 and #27715 reported two bright X-ray bursts from the currently active magnetar SGR 1935+2154 (ATEl #13681, #13684, #13685) detected on May 10 at UT 06:12:02.624 and UT 21:51:17.280. At the time of the first burst, we were performing coordinated radio observations using the Westerbork single 25-m dish RT1 (P-band, 313.49-377.49 MHz), the Onsala 25-m telescope (L-band, 1360-1488 MHz), and the Torun 32-m telescope (C-band, 4550-4806 MHz). Here we report radio fluence upper limits. The data were coherently dedispersed to the recently estimated dispersion measure DM = 332.8 pc/cc (CHIME/FRB, ATel #13681) using the software correlator SFXC (Keimpema et al., 2015). This procedure also shifts all the samples to a geocentric reference frame. Subsequently, the data were converted to filterbank files and searched for bursts. An initial automated search and also a manual inspection lead to no detection in any of the observing bands. After correcting for dispersive delay, we detect no radio bursts within +/- 5 seconds of the expected geocentric arrival times in any of the three radio-frequency bands. The radio data were converted to filterbank files and searched for bursts. An initial automated search and also a manual inspection lead to no detection in any of the observing bands. After correcting for dispersive delay, we detect no radio bursts within +/- 5 seconds of the expected geocentric arrival times in any of the three radio-frequency bands. The radiometer equation and the canonical values for the system equivalent flux density of each observing system (Westerbork: 2100 Jy, Onsala: 350 Jy, Torun: 220 Jy), we estimate 7-sigma upper limits. The data were coherently dedispersed to the recently estimated dispersion measure DM = 332.8 pc/cc (CHIME/FRB, ATel #13681) using the software correlator SFXC (Keimpema et al., 2015). This procedure also shifts all the samples to a geocentric reference frame. 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