

Development of 30cm Radio Telescope for Astronomical Observation in Antarctica

Masumichi Seta[1]; Naomasa Nakai[1]; Makoto Taguchi[2]

[1] Univ. of Tsukuba; [2] NIPR

We are developing 30cm radio telescope for observation of Milky Way at Dome Fuji in Antarctica. Dome Fuji is most promising site for THz astronomical observations because of its high altitude, low temperature, and clear sky. The 30cm telescope is equipped with a sensitive 500 GHz heterodyne receiver. It will observe Milky Way in CO 4-3 emission line at 460 GHz and atomic carbon CI line at 492 GHz. We derive temperature and density of the interstellar medium in Milky Way by comparing observed intensity of the CO 4-3 and CI line with that of CO 1-0 line by Columbia survey in the literature. The sensitive receiver is key technology of the telescope. We have already demonstrated noise level of 200K for the receiver alone.