

Radio astronomy at the dome Fuji station in Antarctica

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

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

<http://www.px.tsukuba.ac.jp/home/astro/nakai/www/index.html>

We are planning astronomical observations at submillimeter and terahertz bands which are very important to study the formation and evolution of galaxies at the cosmological distance, at the dome Fuji station.

The amount of oxygen and water vapor, which absorb submillimeter and terahertz emission from the universe, is low at the station whose altitude is 3810m and minimum temperature is -80 degree. Thus it is expected that the dome Fuji station is the best site in the ground of Earth for the frequency bands.

We are planning (1) site testing such as the atmospheric attenuation up to 2 THz, (2) a 30-cm portable survey telescope which will be operated at the 500-GHz band for mapping of the Galactic plane, (3) a 10-m class terahertz telescope to study formation and evolution of galaxies and the structure of the universe, and (4) in future, a heterodyne interferometer which will be operated at the infrared wavelength to achieve high sensitivity and high angular resolution at the wavelength.