



Contribution ID: 2

Type: **not specified**

Activities on Antarctic Astronomy in Japan

Tuesday, 16 September 2025 11:20 (20 minutes)

The Antarctica plateau is the best site for submm-terahertz observations in Astronomy on the earth. Taking the advantages of the Antarctic plateau, we are conducting the Antarctic 30-cm submm telescope project. The 30-cm submm telescope will be transported to Dome Fuji II in 2026. The scientific purpose is to understand the evolutionary process of interstellar gas from diffuse gas to dense gas by observing $[\text{CI}](^3P_1 - ^3P_0)$ (492 GHz) and $\text{CO}(J = 4-3)$ (461 GHz) lines simultaneously. $[\text{CI}](^3P_1 - ^3P_0)$, fine structure line of atomic carbon, is considered as a good tracer of the diffuse molecular gas which cannot be observed by CO lines because of the photodissociation of CO molecule (CO-dark gas). On the other hand, $\text{CO}(J = 4-3)$ is a good tracer of warm and dense molecular gas associated with star forming regions. We will conduct a Galactic plane survey in these two lines until 2029. As the next step, we are planning Antarctic 12-m Terahertz Telescope project (ATT12). The telescope is designed to have very wide field of view for the survey of distant dark-galaxies which can be found only with dust thermal emission. MKID arrays with wide field of view will be installed for the survey. Heterodyne receivers whose observing frequencies are matched to the atmospheric windows up to 2 THz will be also installed. We will introduce these activities on Antarctic astronomy in Japan.

Primary author: Prof. KUNO, Nario (University of Tsukuba)

Co-author: CONSORTIUM OF ANTARCTIC ASTRONOMY OF JAPAN

Presenter: Prof. KUNO, Nario (University of Tsukuba)

Session Classification: Overview/Summary