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Latest Progress at Mingantu Observing Station

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Mingantu Observing Station of National Space Science Center, Chinese Academy of Sciences (NSSC), dedicated for the solar physics and space weather studies for the field scientific observation and research, is located in Mingantu Town, Inner Mongolia of China, about 400 km northwest from Beijing.

The main facilities at Mingantu Observing Station include the Mingantu Spectral Radioheliograph (MUSER, [1]), which is upgraded to have three arrays of MUSER-I: 40×4.5m antennas covering 400MHz -2 GHz, MUSER-H: 60×2m antennas covering 2 - 15 GHz, and MUSER-L: 224 log-periodic dipole antennas (LPDA) covering 30-400 MHz with 124 LPDAs as a calibration array. The 16m and 20m calibration systems for MUSER-I & H have been built in the Station. A new 3-site Interplanetary Scintillation (IPS) telescope array has been construction with three 140 m by 40 m cylinder antennas in main site at Mingantu Observing Station [2]. The three cylinder antennas and 2 sub-sites having 30 m parabolic antennas ~200 km apart have been constructed in 2024 under the Nationa Infrastructure Meridian II Project. All these facilities are in daily operations or for commissioning observations and the latest progress are presented.

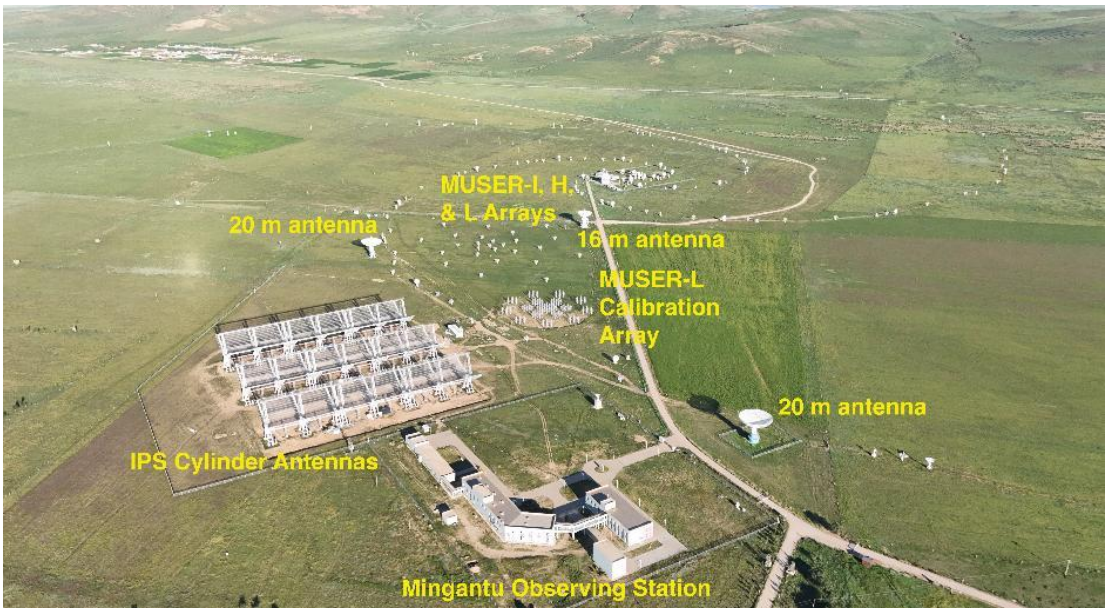

Figure 1. The bird-eye view of the Mingantu Observing Station showing some antennas of MUSER-I, H & L spiral arrays, the 20 m / 16 m calibration antennas for MUSER-I / H, the LPDA calibration array for MUSER-L, and the newly constructed three 140m × 40 m cylinder antennas for the IPS telescope array.

1. Y. H. Yan, Z. J. Chen, W. Wang, F. Liu, L. H.. Geng, L. J. Chen, C. M. Tan, X. Y. Chen, C. Su, and B. L. Tan, "Mingantu spectral radioheliograph for solar and space weather studies," *Frontiers in Astronomy and Space Sciences*, **8**, March 2021, 584043. doi:10.3389/fspas.2021.584043.

2. Y. Yan, W. Wang, L. Chen et al., "MUSER and IPS telescopes for solar and space weather observations," *Advances in Space Research*, 2023, https://doi.org/10.1016/j.asr.2023.03.003