Cosmic ray observations at Syowa Station in Antarctica for space weather study II

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A solar disturbance propagating away from the Sun causes dynamic variations in the near-Earth solar wind plasma. This space weather can be studied by measuring the directional anisotropy of high-energy cosmic ray intensity which dynamically changes responding to variations of the large-scale magnetic near the Earth. The Global Muon Detector Network (GMDN) currently consisting of four multidirectional ground-based muon detectors has been precisely measuring the anisotropy utilizing its global coverage of the sky (Fushishita *et al.*, 2010; Rockenbach *et al.*, 2014). We recently started a NIPR project for installing a new pair of neutron monitor and muon detector at Syowa-base in Antarctica which will operate in concert with the GMDN (Munakata *et al.*, 2016). In this talk, we will report on the current status of the NIPR project. We will also show the GMDN observations of the "Cosmic Ray Burst" which is reported by the GRAPES-3 muon detector in India in June 2015 (Mohanty *et al.*, 2016) and address the scientific significance of observations with the GMDN.

References

Fushishita *et al.*, Precursors of the Forbush Decrease on 2006 December 14 observed with the Global Muon Detector Network (GMDN)", *Astrophys. J.*, 715, 1239-1247, 2010.

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