

[SO05] Progress Report of Korean Solar Radio Burst Locator

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KASI is developing Korean Solar Radio Burst Locator (KSRBL) in collaboration with New Jersey Institute of Technology. KSRBL is a single dish radio spectrograph which records the spectra of microwave (0.5 - 18 GHz) bursts and locates their positions on the solar disk. Major hardware manufacturing, including antenna, front-end, and RF system, is nearly completed and a first light functional test will be made at Owens Valley Radio Observatory (OVRO) in April to May, 2007. From the test, KSRBL will demonstrate its capability to locate bursts to 2 arcmin and to obtain a calibrated spectrum of the bursts at 0.5-18 GHz. Once the test is made, digital components will be integrated and additional capability will be added over several months to improve its operation in a harsh RFI environment, and to speed up the frequency cycling. KSRBL is scheduled to be installed at KASI in 2008.

[SO06] Relationship between magnetic helicity of magnetic cloud and geomagnetic storm

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It is well known that magnetic clouds (MCs), the interplanetary counterpart of coronal mass ejections (CMEs), give rise to the geomagnetic storm. There are several physical factors that determine the strength of magnetic storm, such as MC's speed and north-south component of interplanetary magnetic field (IMF B_z). We aim to examine whether magnetic helicity of MCs is another important physical factor or not. For this we calculated the MC's magnetic helicity using a linear force-free cylindrical MC model with five parameters, Θ (the latitude), ϕ (the longitude), α (constant), B_0 (the axial field strength), R_0 (the impact parameter) and selected well-defined MC events which are $R_0 < 0.5$. We have grouped MC events by equivalent speed and IMF B_z and compared its magnetic helicity with the Dst, the index of geomagnetic storm. We will present some preliminary results of this work.