temperature gradient, wavelength dependence of absorption cross section, and radial density gradient. On the basis of the annual variation of the ecliptic latitude at which the zodiacal thermal emission shows maximum brightness, we deduced values for the inclination i and the ascending node Ω of the symmetry plane relative to the ecliptic: i = 1.°4 and Ω = 52 °. A brief discussion will be presented on the three-dimensional density models and the symmetry plane.

OBSERVATION OF THE GREAT SUNSPOT IN 1989 AT MILLIMETER WAVELENGTH

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Solar observation at millimeter wavelength was performed with the KAO 14m radio telescope on March 15, 1989 when solar activity cycle 22 approaches to the maximum. We found the great brightness enhancement associated with the strong sunspots groups which are well visible in optical photograph. The brightness temperature of the strongest sunspot region is 11,330 K, i.e., 51.1% increasement of the quiet central disk's. In addition, the active regions on Hα photographs correlate very well with the regions of enhanced radio emission.

Magnetospheric MHD Wave Excitation Driven by Narrow-Banded Solar Wind Sources

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A monochromatic source for magnetospheric MHD waves is closely related to the solar wind-magnetosphere coupling. The source frequency becomes narrow-banded when the solar wind invokes the Kelvin-Helmholtz instability near the dawn- and dusk-side of the magnetosphere or when upstream waves in the foreshock region drive a periodic perturbation at the magnetopause. We will investigate how the narrow-banded external energy source produce MHD waves in the magnetosphere and introduce the effect of boundary interference which arise due to the magnetospheric cavity. In addition, dynamical aspects of the MHD wave propagation from the solar wind into the inner magnetosphere will be described both analytically and numerically. The result indicates that even a monochromatic energy source driven by the solar wind may produce a broad-banded wave spectrum, which is consistent with current observational data.