Characteristics of MHD Wave Energy Generated in Late Type Stars

Yong-Jae Moon and Hong Sik Yun
Department of Astronomy, Seoul National University

An attempt has been made to examine the characteristics of acoustic and MHD waves generated in stellar convection zones ($4,000\,K \leq T_{eff} \leq 7,000\,K$, $3 \leq \log g \leq 4.5$). With the use of wave generation theories formulated by Stein (1967) for acoustic waves, by Musielak and Rosner (1987, 1988) for MHD body waves, and Musielak *et al.* (1989a, 1989b) for MHD tube waves, the energy fluxes are calculated and their dependence on effective temperature, surface gravity, and magnetic field strength are analyzed by using 2-D or 3-D optimization techniques. According to our analysis, it is found that the acoustic types of waves are likely to be responsible for the chromospheric heating, the Alfvén types of waves, for the heatings of the transition region and corona.

The Observation of SiO Maser Emissions for 13 Mira Variables

Bong-Gyu Kim and Duk-Gyoo Roh
Daeduk Radio Astronomy Observatory, Institute of Space Science and Astronomy

We observed the intensity variation of SiO maser emissions($v = 1$, $J = 2 \rightarrow 1$) of 13 Mira type variables with one month interval from April 1989 to November 1990 through the 13.7m Radio Telescope at DRAO. More than one period were covered for all sources except VX Sgr.

We confirm the characteristics that the intensity variation of SiO maser emission has a phase delay about 0.2 from that of optical intensity. And we present a possibility of minor variation of the intensity with about 1/7 optical period.

The Missing Maxima appear as real feature. The shock at the shell by the material ejected from central star may disassociate SiO molecule, and cause the phenomena.

From the comparision with the other transition of SiO ($v = 1$, $J = 1 \rightarrow 0$) observed at Yebes Radio Observatory, Spain, we find a linear relation between those peak intensities of each sources. It may be interpreted the SiO emission is saturated when peak intensity.

Determination of Spectral Indices Sensitive to Atmospheric Parameters

Kim, Kye-Young and Lee, Sang-Gak
Department of Astronomy, Seoul National University

142 digital spectra of 113 standard stars with 1 Å resolution in $\lambda\lambda$ 3,900 Å$\sim$4,150 Å observed by Coude-feed telescope equipped with CCD detector at Kitt Peak National Observatory were analyzed to determine spectral indices sensitive to atmospheric parameters (T_{eff}, $\log g$, [Fe/H]) using the IRAF (Image Reduction and Analysis Facility). The standard stars cover the temperature range from about 4,000 K to about 7,000 K, the surface gravity in $\log g$ from 0 to 5, and the metal abundance [Fe/H] from -2.7 to 0.4. Pseudo-continuum ratio p (4038)/p (4093) and FeI (4045 Å, 4063 Å), SrII(4077 Å), and Hδ (4101 Å) lines were found to be useful for determination of atmospheric parameters. T_{eff} was estimated with $\sigma = \pm 100$K for the best case and with $\sigma = \pm$