

A HIGH RESOLUTION SPECTROGRAPH FOR THE BOAO 1.8M TELESCOPE

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Many observational programs have been devoted studies of atomic states of celestial objects, i.e., stars, H II region, gaseous nebulae, galaxies, and quasars. In particular, spectral studies yield information on plasma diagnostics, i.e., density and temperature and ultimately chemical compositions in an effort to understand more about their evolution. For the study of spatial distribution, kinematics, and structural forms, the echelle spectrograph gives very detailed high dispersion spectra in the optical wavelength range permitting us to measure even rather weak lines from long exposures. The high resolution echelle spectrograph with an 1.5 - 3m ground-based telescope has the great advantage of charge couple device(CCD) detection that yields a linear response(unless the line is terribly strong and it gives high spectral resolution). Spectral resolution of the echelle is vastly superior to that obtainable with the medium resolution spectrograph available now at Bohyunsan optical astronomy observatory(BOAO). Thus, the high resolution spectrograph for the Bohyunsan 1.8-m optical telescope is urgently required to execute various optical astronomy programs in the future. A 1.8-m telescope with fiber-feb or other high resolution($R = 40,000$ to $60,000$) would be exceedingly powerful even for extrasolar planet detection(e.g., the Swiss are now using, Mayor and Queloz). It would also be nice as the Bohyunsan station for global monitoring programs for stellar activity like MUSICOS.