

A28c **High Resolution Spectroscopy of Double-lined Detached Eclipsing Binaries  
Using the Gunma Astronomical Observatory Echelle Spectrograph**

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On the basis of collaboration between Gunma Astronomical Observatory in Japan and Institut Teknologi Bandung in Indonesia, high-resolution spectroscopy of stellar objects using the newly designed Gunma Astronomical Observatory Echelle Spectrometer (GAOES) installed at a 1.5 meter telescope has been actively carried out since 2004. GAOES has several advantageousnesses against conventional echelle spectrographs, i.e. its compactness, higher throughput and stability that enable one to conduct high-resolution spectroscopy ( $R \sim 70000$ ) on relatively faint objects.

Double-lined eclipsing binaries are, so far, the only objects for which fundamental and simultaneous determinations of absolute physical parameters can be deduced. In the case of detached eclipsing binaries of this type, mutual interaction can be neglected and analyses of observables can yield in simultaneous absolute dimensions for the two single stars. Further, evolutionary models should be able to predict the same age for both components for a certain chemical composition.

We have made high-resolution optical spectroscopic observations using GAOES of several double-lined detached eclipsing binaries, i.e. CD Tau, EE Peg, Beta Aur and IQ Per in 2006. Among them, CD Tau has been monitored since 2004 up to now. With the introduction of new camera system of GAOES, significant improvement on the obtained S/N data lead us to better spectra for analysis on line profiles and radial velocities.