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ADDITIONAL DOUBLE-LINED ECLIPSING
 BINARIES OBSERVED WITH CCD DETECTORS

High resolution coude spectrometric observations have been made during the past six years as part of a continuing program to determine accurate absolute properties of eclipsing binary stars. Previous progress reports (Lacy and Evans 1979, Lacy 1984) have discussed 36 of the stars in this program. Observations of an additional 9 eclipsing binaries are discussed here. These observations were obtained with the 2.1 m reflector at Kitt Peak National Observatory (NOAO) and the coude CCD spectrometer. Typically 100-200 Å in the blue (4500 Å) or red (6400 Å) were observed at a resolution of 0.3-0.4 Å. The individual binaries are discussed below:

Double-Lined Eclipsing Binaries

Name	Mag.	Spec.	P(days)	Name	Mag.	Spec.	P(days)
AD Boo	9.8	G0	2.06	V643 Ori	10.6	G-K	52.4
EY Cep	10.1	A5	5.52	V526 Sgr	9.7	A0	1.92
RT CrB	10.2	G0	5.12	FV Sco	7.9	early B	5.73
V885 Cyg	9.9	B9	1.69	BP Vul	10.1	A7	1.94
GM Hya	11.0	G2	12.19				

The listed data is generally as stated in the General Catalogue of Variable Stars (GCVS), except as noted below. Of the systems listed, only AB Boo and V526 Sgr have adequate multicolor photoelectric light curves. Photoelectric observers are encouraged to observe the other binaries in at least two well-calibrated colors in order to make possible the most accurate determinations of absolute stellar properties.

AD Boo: This star has moderately narrow double lines in the red. The line strength ratio is about 2:1. My spectra are consistent with the primary's G0 spectral type from the GCVS. Recently Sheng, Xian, and Tong (1983) obtained a good B,V lightcurve and found the period to be twice its older value. This is an important solar-type system.

EY Cep: Narrow double lines are seen in the blue with a line strength ratio of about 3:2. The late-A appearance of my spectra is consistent with the GCVS spectral type of A5.

RT CrB: Narrow double lines of nearly equal strength are observed in the 6400 Å region. The spectra are consistent with the G0 spectral type of the GCVS.

Popper (1976) reports emission at the H and K lines and classifies the system as RS CVn type.

V885 Cyg: Broad double lines are seen in the blue with a line strength ratio of about 3 to 2. The appearance is consistent with the B9 spectral type.

GM Hya: Narrow double lines are seen in the red with about 5 to 1 line strength ratio. The spectra are consistent with a primary spectral type of G2.

V643 Ori: Narrow double lines are seen in the red with approximately equal line strengths. The spectra appear to be G-K, but a more precise estimate cannot be made from our observations. The color indices of Hilditch and Hill (1975) are very similar to those of YY Gem.

V526 Sgr: Broad double lines at 4481 Å MgII and 4549 Å TiII + FeII have approximately 3 to 2 line strength ratios. The spectra are consistent with A0. O'Connell (1967) has done a thorough photometric study of this eccentric system, including the determination of an accurate apsidal motion period.

FV Sco: A single observation appears to show broad double lines at 4481 Å MgII with 4 to 1 line strength ratio. The spectral type must be early B and cannot be as late as the B9 listed in the GCVS. HeI 4471 Å is very strong.

BP Vul: Narrow double lines in the blue have about 4 to 1 line strength ratios. The spectra are consistent with late A.

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