

**OBSERVATIONS OF H ALPHA LINE PROFILES IN BE STARS USING 45 CM
CASSEGRAIN TELESCOPE AT ARTHUR C CLARKE INSTITUTE IN SRI LANKA**

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We observed 13 Be stars (Visual magnitude less than 6.9) using 45 cm Cassegrain telescope at the Arthur C Clarke Institute, Sri Lanka during the period of August 2005 to March 2006. High resolution spectra of these Be stars were obtained using 1200 lines/mm reflective grating in first order with resolution $R = \lambda/\Delta\lambda = 76800$ and linear spectral dispersion 0.31 \AA per pixel at 6563 \AA . Data reduction was carried out using IRAF (Image Reduction & Analysis Facility) and H alpha line profiles of the stars were obtained.

Past observations on HR5941 show that V/R ratio of H alpha line profile is less than 1. Our present study shows that V/R ratio has increased to 2.12. This is a reversal of violet and red peak intensities and can be ascribed to slow apsidal motion of the gas in the elliptical ring. Shape of the line profile HR 6118 has changed from a triple peak to wine bottle type as seen in the previous studies. We observed this as a symmetric Gaussian profile. The low V_{sini} (140 km/s) implies HR 6118 should be a pole-on star and our observed line profile clearly shows this fact. Observed HR2284 profile is a wine bottle type profile which is caused by the non-coherent scattering broadening (NSB) of the optical thickness of H alpha line radiation. We developed a software code based on peak reconstruction line profile derivative method to detect the hidden peaks on wine bottle type line profiles. This method was applied to the spectra HR 2284, HR 6712 to separate the hidden peak.

We found a good correlation (0.8) between FWHM and v_{sini} . Keplerian motion of the gas in the ring is a major factor for the width of the line profile. When the stellar rotation velocity (v_{sini}) increases the projected Keplerian velocity ($v_{\text{k,sini}}$) of the disk increases and thereby increases the FWHM. The strong correlation 0.96 between I_p/I_c and equivalent widths found in our observed line profiles conform the definition of the equivalent width.