

VARIATIONS IN THE PROFILES OF H β AND HE II 4686 A in VELA X-1

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ABSTRACT*

The first results are presented of an extensive spectroscopic study of HD 77581 = Vela X-1, based on several averaged Coude spectra. The profile of H β is phase-dependent and consists of two absorption components superimposed on one another. The profile of He II 4686 A is of the P-Cygni type around phase 0.7, whereas the line is in absorption with variable strength between phase 0.9 and phase 0.5 (with respect to the X-ray eclipse).

These observations indicate that a gaseous stream is present in the system, as well as an asymmetrically expanding envelope of HD 77581. The phase dependence of H β further supports an eccentric orbit of Vela X-1.

*As submitted before the meeting; no update has been received. (Editors).

COMMENT ON THE PAPER BY ZUIDERWIJK

Crampton: HD 77581 = Vela X-1 is interesting in that it does have a well-established eccentricity. Recently Rappaport, Joss, and Stothers (preprint) showed that there is no apsidal motion evident in their excellent X-ray observations. We can expect to have much better limits on the apsidal motion -- and hence on the internal mass distribution -- in the near future.