OBSERVATIONS OF THE OUTER ATMOSPHERIC REGIONS OF α ORIONIS

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Abstract

We present three separate observational studies of mass flows above the photosphere of α Ori (M2 Ia-Ib). The Ca II infrared triplet lines and Hα are asymmetric showing a systematic blue shift with decreasing residual intensity. These lines remain fixed in wavelength although the weak photospheric lines vary by ±4 km/sec. Observations of the 4.6μ vibration-rotation spectrum of CO show two sharp, cold components expanding at velocities of 10 and 17 km/sec relative to the centre of mass. Direct photographs of the shell in the light of KI λ7699 show that the cold shell is asymmetric and extends outward to at least 50".

Details of these studies are either in press or will be submitted to "The Astrophysical Journal".

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