18.10.05 A Search for H in the Shell Surrounding Chi Ophiuchi. T. P. Siew, Princeton University Observatory. We explore some of the consequences of the interpretation of Schild et al. (Ap., 190, 731) that the infrared excesses in extreme Be stars are due to H-free bound emission. X Oph is considered a typical star in this class. Using published IR photometric data and assuming an interstellar color excess for X Oph of E(B-V) = 0.785, we derive an integrated IR excess flux of 4.9 x 10^-10 erg cm^-2 s^-1 at the star. The column density of bound H in the circumstellar shell can be derived directly from this excess flux, and is found to be on the order of 10^15 cm^-2. We have used ultraviolet spectrophotometric data obtained with the Princeton telescope on board the satellite Copernicus to search for a predicted (Macek, 1987, Proc. Soc., 96, 365) auto-ionizing absorption feature due to H at 1192.5 Å, and we place an upper limit on the column density of H of 2 x 10^14 cm^-2. In view of the small magnitude of the discrepancy between prediction and observation, and in view of uncertainties in the predicted properties of the H absorption feature, our failure to detect H in the spectrum of X Oph does not necessarily represent a criticism of the assumed interpretation of the IR excess. This work has been supported by the National Aeronautics and Space Administration contract NAS5-1810.

18.11.05 Mass Loss and Winds in K-type Stars as Derived from "Copernicus" Spectra. J. L. Linsky and G. Basri, Joint Institute for Laboratory Astrophysics and W. McInntock, R. G. Henry, and W. W. Woos, Johns Hopkins University. Profiles of the MgII 2796, 2803 Å and H II 1216 Å lines have been observed for K-type stars abee, dtau, egem, sphi, and speg using the Princeton spectrometer on the Copernicus satellite. These line profiles for abee and dtau clearly are asymmetric in the sense that redward emission predominates. The MgII lines in these stars show strong redward emission and the profiles for abee show a blue shifted central absorption feature and a weak blue emission feature as well. The c 1G 1G1 and a profiles show slightly more emission to the blue of line center. We interpret the red shifted emission features in these optically thick collision-dominated chromospheric dark cloud lines as the ejection of mass from the star. The MgII 2796 Å line profile in abee has been fit using the Arcturus chromospheric model of Ayres and Linsky, a two-level representation for MgII, and the assumptions of complete redistribution and mass flux conservation. These calculations lead to good age agreement with the observed MgII profile for a mass flux of 5 x 10^-9 M$_\odot$/yr. They predict more wavelength shift in the CaII K feature than is observed, however. Calculations are now underway incorporating the effects of partial redistribution in order to resolve this discrepancy. We will also discuss the general properties of stellar winds suggested by our results.

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