bly C I (UV 33.04). The most dramatic difference in the spectra from star to star is the ratio in the strength of the O I and S I features, which varies by a factor in excess of 100 from greater than 10 in Eta Per to less than 1:10 in Alpha Ori, and perhaps even smaller in Psc I. Aur or 119 Thul, as measured by the ratio of primarily O I (UV 2) feature near 1300 A to that of the primarily S I (UV 2) feature near 1810 A. Although differences in the relative amounts of interstellar and circumstellar extinction at 1300 and 1800 A can exaggerate these variations, they cannot cause the tremendous range seen in these spectra. This suggests that the well-known Bowen fluorescence excitation of the O I lines by hydrogen Lyman beta suffers a greatly reduced efficiency in some stars, since the strength of the S I feature is approximately as expected in each star and there is evidence of substantial intrinsic hydrogen emission in these stars, based on the Lyman-alpha pumped fluorescent features seen at longer wavelengths in, e.g., Alpha Ori.

22.12

Photometry of a sample of Stephenson’s K and M Dwarfs.

E. W. Weis (Van Vleck Obs.)

Broad band UVRI photometry as been obtained for a sample of 123 stars from among the 2201 stars of small or unknown proper motion which have been classified as K and M dwarf stars on the basis of an objective prism survey by Stephenson (A.J. 91, 145.) included in the sample are all of the stars with types K7-M0 and later, about 60% of the K7 stars, and a small fraction of the stars with earlier types. Overall about 25% of the sample stars appear to be giants on the basis of the photometry. Among the later types where the sample is complete about 31% are giants. The fraction of stars in the sample which are giants appears to correlate with galactic latitude and apparent magnitude.

22.13

Catalog of Stellar Maser Sources


We have prepared a catalog of H2O, OH and SiO masers primarily associated with circumstellar shells of late-type stars. Our catalog includes references to observations found in the literature from 1967 through June 1988. For each type of maser we list references for both detections and non-detections. Our listing includes about 2300 objects. The catalog is listed in RA order by the 1950 coordinates of the object and will include up to three names (variable star name, IRC number, IRAS name etc.), their spectral class, variability type, period and radial velocity if known. A list of all the papers referencing the observations is given. We have excluded maser sources known to be located in starforming regions and/or II regions. Out of the 2300 objects listed, about 300 are known to be H2O maser sources, 680 are OH sources and about 170 are SiO sources. Only about 80 sources have been detected in all three maser molecules. The catalog will be submitted to the Astrophysical Journal Supplement for publication.

We intend to keep the catalog up to date and invite preprints or reprints of maser observations.