160 charts covering a total area of 125 sq deg. Eighty charts in the color B of the UBV system have all identifiable published variable stars, more than 2000 in number, marked on them. The other 80 charts, in the color V, have all published star clusters, 1100 in total, identified on them, as well as several hundred new clusters discovered by us. In addition the V charts have all known H II regions, over 500 in number, identified on them. The Atlas is being published jointly by the Smithsonian Institution and the University of California.

Identification of the (2,0) $C^{13}N^{14}$ Band in the Spectra of Carbon Stars. ARNE A. WYLLER, *Mount Wilson and Palomar Observatories, Carnegie Institution of Washington.*—The (2,0) $C^{12}N^{14}$ and $C^{13}N^{14}$ bands at λ7873 and λ7917 have been photographically recorded in the spectrum emitted by an electrodeless discharge tube filled with methane (C^{13} enriched), nitrogen, and argon gases.

On the basis of the laboratory wavelengths numerous individual $C^{13}N^{14}$ rotational lines are identified in the spectra of several early- and late-type carbon stars.

Provisional $C^{12}:C^{13}$ abundance estimates are made from the relative intensities of selected normal and isotopic rotational lines. In one star Y Canes Venaticorum, ($N3$, $C5_4$), the $C^{13}N^{14}$ band appears outstandingly strong and yields an abundance ratio between 2 and 3.

Wavelength Dependence of the Band Structures of Jupiter and of Saturn. ROBERT L. YOUNKIN, *Jet Propulsion Laboratory,* AND GUIDO MÜNCH, *Mt. Wilson and Palomar Observatories.*—Photoelectric measurements of the band structures of Jupiter and of Saturn were made during September 1963 by moving a small slot along the central meridian of the planetary image. The Mt. Wilson Ebert spectrometer was used on the 60-in. reflector as a monochromator to select wavelengths from λ3200 Å to 10 400 Å.

Curves obtained for Saturn show: (1) radiance of both equatorial zone and north tropical zone relative to B-ring exhibit broad maxima in λ5800 −λ7500 range, falling sharply to an ultraviolet minimum near λ3800 Å; (2) radiance of equatorial zone relative north tropical zone is slightly greater than unity beyond λ6000 Å, but falls to 0.58 in the ultraviolet. This ratio becomes large in strong CH_4 bands: 1.6 at λ7270 Å and 3.7 at λ8912 Å with a fairly sharp discontinuity at the north equatorial belt.

Consistent with these observations is an atmospheric model in which cloud particles over the entire planet possess similar selective absorption which increases with decreasing wavelength below λ5200 Å, but a lower effective cloud level in the temperate and polar regions than the equatorial zone. Thus at short wavelengths where Rayleigh scattering dominates particle scattering, the temperate and polar regions are brighter than the equatorial zone; and, conversely, at long wavelengths and particularly in the CH_4 bands, where particle scattering dominates.

For Jupiter, the north tropical zone was the brightest region of the planet throughout the range of wavelengths. Its radiance relative to the south tropical zone is anomalous in CH_4 absorption, increasing in the λ8900 Å band, and decreasing in the λ7270 Å band. Contrast between tropical zones and adjacent equatorial belts increases with decreasing wavelength below λ5500 Å.

In strong CH_4 absorption bands the limb darkening with latitude greatly increases. The south equatorial belt becomes the brightest region of the planet. In the λ8900 Å band both polar regions become bright at the limb.

Identification of the Spurious D3 Helium Emission from the Solar Corona. HAROLD ZIRIN, ROBERT JAMES, AND D. KEITH WATSON, *High Altitude Observatory.*—Gnevyshev has discussed observations of emission in the D3 helium line appearing on spectrograms of the solar corona. We have found that this emission appears on spectrograms as a result of chromospheric emission scattered by secondary optics of the coronagraph. Successive spectrograms were made at Climax with the sun over- and under-occulted. On the under-occulted spectrograms, in which chromospheric light could reach the secondary optics, D3 was invariably observed. In the under-occulted coronagrams it was never observed. The profile of the spurious D3 line in the underocculted coronagrams is similar to that in the chromosphere.

Compact Galaxies. F. ZWICKY, *California Institute of Technology.*—In an effort to discover what the ultimately compact bodies are among the stars, the galaxies, and the clusters of galaxies, we have concentrated our attention during the past years on a search for compact galaxies. Several hundred of these have been selected for further study. The following results were obtained with the Hale telescope.

Compact galaxies brighter than the 17th apparent magnitude, whose surface brightness is of the order of the 19th magntiude per square second of arc, often appear as bright disks with sharp outlines