About 1900 stars of high luminosity were found in this area of which 1633 stars were OB and 261 were of the later-type supergiants. About 25 per cent of the stars of magnitude 12 and brighter show the ultraviolet emission. The surface distribution of these luminous stars seems to indicate that the relative frequency of the different types differs from association to association.

An area of similar size in Sagitta, Vulpecula and Cygnus has been surveyed in Cleveland with plates taken at Hamburg. The total number of highly luminous stars in this region is about 1000 with a conspicuous concentration in the P Cygni area. The percentage of stars showing the ultraviolet emission is about the same. It was also noted that the later-type supergiants do not show the same concentration around the P Cygni region as the OB stars.

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STOCK, J. AND UPGREN, A. R., JR. **Characteristics of objective prisms.**

Certain characteristics of objective prisms such as the variation of the dispersion across the field and the field distortions on the plate caused by the prism have been investigated on a theoretical basis.

For spectrophotometric programs it is preferred that the dispersion vary as little as possible across the field while for survey programs it is advantageous for the field distortion to be minimized in order that the positions of the stars may be measured conveniently directly from the spectral plates themselves.

For a prism of given angle and index of refraction, it has been shown that the variation of dispersion and the field distortion depend upon the angle between the prism and the optical axis of the telescope. It was found that the dispersion varies least for a value of this angle different from that for the case of minimum deflection. The field distortions, although minimized for the value of the angle corresponding to minimum deflection, are only slightly larger and are of a simpler form with the value of the angle corresponding to minimum dispersion.

It seems desirable, therefore, to mount an objective prism at the angle for which the dispersion is a minimum rather than at the angle for minimum deflection as has often been done.

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SWIHART, THOMAS L. **Convection in the sun.**

It is well known that a radiative model of the solar atmosphere has a negative density gradient in the moderately deep layers. The minimum convection in the sun would thus be that amount which would remove this negative gradient. The maximum convection would be found by using the adiabatic temperature gradient in the unstable layers.

The above described atmospheres, as well as a purely radiative atmosphere, were constructed on the Los Alamos IBM 704 calculator, and the resulting radiation fields were compared with observations. The adiabatic model was considerably superior to the other two in reproducing observed limb-darkening values and the resulting temperature-optical depth relation, and it was also somewhat better in reproducing absolute monochromatic intensities at the center of the disc; however it predicted a Balmer discontinuity of only 0.06, while the minimum convective and the radiative models had 0.08 and 0.11 respectively.

Instability according to the Schwarzschild criterion sets in at an optical depth ($\lambda 5000$) of 0.8 for the adiabatic model and about 1.1 for the minimum convective model.

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TOUSEY, R., PURCELL, J. D., PACKER, D. M. AND HUNTER, W. R. **A new solar spectrum in the extreme ultraviolet.**

An extreme ultraviolet spectrograph, employing near normal incidence a grating of 40-cm radius and 600 line/mm, was flown to an altitude of 200 km on March 13, 1959. This spectrograph was greatly improved in speed and straylight characteristics through the use of an aluminum oxide over germanium coating on the plastic grating surface. Approximately 100 emission lines were photographed, with a resolution of about $1/2\text{\AA}$. The first 11 lines of the Lyman series were resolved, except for γ , which was not positively present, presumably because of extremely strong absorption by O_2 . Below 919 $\text{\AA}$ a rise in background density takes place, reaching a maximum at 910 $\text{\AA}$, then falling gradually to the straylight level at about 850 $\text{\AA}$. This may be ascribable to the unresolved high members of the Lyman series and the Lyman continuum. Among new lines identified at this time are *HeI* 584.3 $\text{\AA}$, *OII* and *OIII* resonance lines near 834 $\text{\AA}$,