the photosphere and against the chromosphere have the same shaped profiles, but there is a sudden change in profile at the point where the flare protrudes above the chromosphere.

*High Altitude Observatory
of the University of Colorado,
Boulder, Colo.*

Boggess, Albert, III and Dunkelman, Lawrence.
Stellar flux measurements at 2700Å.

A program of stellar photometry in the middle ultraviolet by means of rockets has been initiated. A chemical filter having a band pass of 350 Angstroms at 2700Å (Dunkelman and Field 1955) is employed in a miniature photometer capable of detecting early B stars down to fifth magnitude. Three of these photometers were flown in an Aerobee rocket on the night of March 28, 1957 and allowed to scan the sky as the rocket spun and precessed. Measurable signals were obtained from forty-nine stars, ranging in spectral type from O5 to F5, and flux measurements were made with an absolute accuracy of 20 per cent. *B* and *V* magnitudes are available for eighteen of the twenty-three main sequence stars which were observed, and the 2700Å fluxes have been combined with the *B* magnitudes to form 2700Å-blue colors spanning the Balmer discontinuity. When these colors are plotted against ordinary *B-V* colors the main sequence splits into two parallel branches in the vicinity of the A stars. These branches are separated by about six-tenths of a magnitude along the 2700Å-blue axis. Theoretical colors computed from model atmospheres fit the cooler branch satisfactorily, indicating that the anomalous stars are those showing an ultraviolet excess.

Dunkelman, L. and Field, D. E. 1955, *NRL Report* 4647.

*U. S. Naval Research Laboratory,
Washington, D. C.*

Bok, Bart J. and Bok, Priscilla. **Four photoelectric sequences for the southern hemisphere.**

During 1950-51 the authors determined at Boyden Station preliminary standard sequences of magnitudes 9 to 15 for Selected Areas 141 (South Galactic Pole), 193 (Carina, Crux, Centaurus) and 158 (Sagittarius, Scorpius). In the past year, these sequences and a standard sequence for the Large Magellanic Cloud by Uco van Wijk, also determined at Boyden Station, have been reobserved at Mount Stromlo Observatory, where all observations are on the *U*, *B*, *V* system. The Boyden and Mount Stromlo magnitude and color systems have been related to

each other. The primary purpose of the work is to provide standards for the measurement of magnitudes and colors of O, B and A stars, and in Selected Area 141 of later-type stars as well. The work on the Boyden Station photographs is carried out by Margaret Olmsted, that on plates taken with the Uppsala-Schmidt Telescope at Mount Stromlo Observatory by Jane Basinski.

*Mount Stromlo Observatory,
Canberra, Australia*

Brandt, John C. **Radiative transfer of resonance lines in finite atmospheres.**

Chandrasekhar's theory of radiative transfer has been applied to the problem of conservative, isotropic scattering of an incident parallel beam by a plane-parallel, isothermal atmosphere with a Lambert's law ground. The transfer theory, which is exact to all orders of scattering, gives the monochromatic intensity in terms of certain *X* and *Y* functions. The integration of the monochromatic intensity over a Doppler profile has been carried out for two problems, and the solutions expressed in terms of rapidly converging series. These solutions require knowledge of the *X* and *Y* functions, their moments, and certain $\mathfrak{B}_n$ -functions. Tables of all these functions have been computed for small optical depths.

The results have applications to the sodium twilight and day airglow.

*Yerkes Observatory,
Williams Bay, Wis.*

Bretz, Marianne C. and Billings, Donald E. **Red coronal line intensities from Climax, 1942-1955.**

We have compared the intensity of the red coronal line $\lambda 6374$ from *FeX*, as observed at Climax during the years 1942-1955, with that obtained by Waldmeier. Waldmeier had arrived at the rather surprising conclusion that the intensity in this coronal line reached a strong maximum in 1943, just before sunspot minimum, and showed only a small secondary increase during sunspot maximum. Our observations show only a relatively small secondary maximum in 1944, at a time when there was practically no green line $\lambda 5303$ from *FeXIV* emission. We found the greatest part of the red line emission during the cycle to occur in a broad maximum extending from the beginning of 1945 to the end of 1951. We also found the general level of red line emission from 1951-1954 to be higher, but much steadier, than in the early years of the cycle.