stars in the galactic pole region. The area investigated extends over 30 square degrees and reaches the twelfth magnitude in the blue.

In the course of this investigation it is shown that accurate magnitudes may be obtained over large areas of the sky with the Cleveland Schmidt telescope if the field errors are removed by applying suitable corrections to the measurements. These corrections may be derived from a consideration of the measurements themselves if the plates have been taken with more than one exposure on each plate.

The relation between the colors derived from this work and the usual $B - V$ colors from photoelectric data available shows that the colors obtained here are just twice as large as the $B - V$ colors. The relation between the colors obtained and the spectral types based on objective prism spectra taken in this area shows the expected form. The data are not adequate to determine interstellar absorption.

Several wide pairs of stars with equal components were found. Further information is required before any conclusions can be made about this phenomenon.

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van Wijk, Uco. The interpretation of the anisotropy of stellar motions.

It is assumed that stars were formed with an isotropic Maxwellian velocity distribution. Neglecting encounters the distribution of the velocities after dynamical equilibrium has been established can then be determined. The higher-order terms in the velocity distribution are sufficiently important to change the square of the observed ratio of the axes of the velocity ellipsoid to about .05 less than the local value of $-B/A - B$ if dA/dr is $2 \text{ km sec}^{-1} \text{ kpc}^{-2}$. The observed ratio should be different for different types of stars since it is found that $\sigma_\theta^2/\sigma_r^2$ depends on the dispersion in one component of the original velocity distribution, σ , with which the stars were formed. Types of stars for which σ is large would show more anisotropy than stars formed with a smaller value of σ . The difference in the values of $\sigma_\theta^2/\sigma_r^2$ for two groups of stars with initial values of σ of 15 and 30 km/sec may amount to .05.

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Wardekee, Abdul Kayum. New lines in the arc spectrum of titanium.

In 1927 Professor H. N. Russell published his analysis of the arc and spark spectra of titanium. This work was based on observations of wave lengths by various investigators of the spectra emitted by arcs and sparks between Ti electrodes in air. The spectrum of the arc-in-air shows strong bands of the TiO molecule in addition to lines of the neutral and ionized atoms. These bands are of great astrophysical importance because they serve as criteria for the classification of stars of the later spectral classes. But unfortunately these bands mask many atomic lines in the green, yellow, and red regions of the spectrum and thus prevent a complete description of the spectrum. A lamp of the type demonstrated at this meeting by Mr. Corliss was used to observe the spectrum of Ti in the region masked by the alpha-bands of TiO . The observations were made with the concave-grating spectrograph of Georgetown College Observatory. The grating is one ruled by Rowland with 20,000 lines per inch and gives excellent definition of the lines. In the region from 5600 to 5900Å nearly 200 new lines of Ti have been measured. Of these 113 have been verified as allowed transitions between terms given in Professor Russell's analysis of Ti as tabulated by Charlotte E. Moore in the first volume of Atomic Energy Levels issued by the N.B.S. Some of these new lines are found to agree with faint solar lines heretofore of unknown origin.

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Weaver, Harold. Numerical values of the Oort galactic rotation parameters.

Examination of the properties of the commonly used linear galactic rotation equations shows that they are mathematically biased. In the case of a rotation function of the form found for the galaxy, the linear equation for radial velocity, $v = A r \sin 2\lambda \cos^2 b$, produces an A value numerically too large, except when applied to a sample population in the immediate solar neighborhood. Discussed by mathematically unbiased equations, the cepheids yield the value $A = 10.8 \pm 1.8$ (estimated m.e.) km/sec kpc; 151 early B stars indicate $A = 13.2 \pm 2.7$ (m.e.) km/sec kpc. The weighted mean of these values is $A = 11.5 \pm 1.5$ (m.e.) km/sec kpc.

Tests described in the paper suggest the need