- 2) From the η Carinae nebula eastward to S.A. 193, there is a region of great transparency. Moderate to heavy absorption is encountered in the region which lies between S.A. 193 and the western portion of the Coal Sack.
- 3) The present data confirm the reality of the negative density gradients derived by Fr. Heyden from his star counts in this area.
- 4) The revision of magnitude standards which is being carried on at present by Bok and his associates at Bloemfontein and the presence of very many faint Cepheids in this region are most encouraging for further absorption studies planned for this part of the galaxy.

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Georgetown College Observatory,
Washington, D. C.

Markowitz, Wm. Photographic polarization results for extragalactic nebulae in Coma, southern stars, and HD 14633.

The observations were made with a calcite plate placed at the focal plane of the 26-inch refractor. For a polarized star the intensity difference between the O and E images describes a double sine-wave as the crystal is rotated through 360° .

Mean polarization was determined for 60 nebulae in the Coma cluster within $25'$ of the center. Included were the nebulae for which an unexplained color excess was found by Stebbins and Whitford. The faintest nebula measured is magnitude 17.4 photographic, 16.4 visual. Also measured were 100 faint stars in the region. Total image pairs measured, 1500. Polarization was not detected for nebulae or stars, the probable error of the mean result being ± 0.15 per cent. Hence, it appears that (1) the light from distant galaxies is not polarized by its passage through space, and (2) there is little polarization towards the galactic pole.

HD 14633 is the bluest star in the catalog of Stebbins, Huffer and Whitford. Measurement of 500 image pairs shows a definite double wave, indicating a polarization of 0.5 per cent in posi-

tion angle 33° . This agrees closely with the result found previously with the 40-inch reflector. It appears that polarization can occur in the absence of perceptible reddening. Polarization was not found for the very blue southern stars, ζ Puppis and γ^2 Velorum, the probable errors being ± 0.15 per cent.

A survey of polarization of southern stars was carried out in order to obtain data for as much of the galactic circle as possible. The polarization in Vela, Puppis, and Centaurus is small and the direction planes are nearly at random. The region near ζ Scorpii is the most highly reddened part, for the brighter stars, in the southern Milky Way.¹ Here again the polarization is moderate. A few degrees up, however, in Sagittarius, more heavily polarized stars are found.

The star of highest polarization found in the southern sky is MWC 266 = HD 160529. The polarization is close to 8 per cent; further observations, photographic and photoelectric, are being made. This star is unique in that its polarization was first detected visually.

Other stars of special interest are:

Star	P
(1) HD 148379	2%
(2) ζ^1 Sco.	3%
(3) HD 156134-154-201	2%
(4) MWC 272	3%

The three stars of line 3 are polarized parallel to the galactic plane; they probably are connected.

The present results added to those obtained with the 40-inch² give the polarization pattern for all but a sixth of the galactic circle. The data were analyzed in 10° intervals of longitude. The mean value of P_2 , the "vector" mean, is 1 per cent. The direction of the maximum magnetic vector is predominately at right angles to the galactic plane. It is inferred that the axes of the polarizing particles are (a) lined up perpendicular to the galactic plane, or (b) lying in the plane, but at random orientation. In either case little polarization would be observed in the Z-direction.

The stars observed were selected for high space reddening. It is probable that our galaxy seen edge on would show only a few tenths of a per cent polarization, and much less if seen at right angles.

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U. S. Naval Observatory,
Washington, D. C.