may well be that the dust in the atmosphere during the dry season is responsible for the rather high value of A . The work will be continued throughout the year with one or two runs each month.

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Edmondson, Frank K. Curvature corrections for glass and quartz prisms used with the $f/1$ camera of the McDonald Observatory Cassegrain spectrograph.

The curvature corrections both for glass and quartz prisms used with the $f/1$ camera of the McDonald Observatory Cassegrain spectrograph have been derived for use in the work on radial velocities of faint A and K stars whose proper motions have been observed at the Leander McCormick Observatory.¹

The displacement parallel to the direction of dispersion, Δx , is given by

$$\Delta x = -a_x \cdot Z^2$$

where Z is the distance in millimeters from the middle of the spectrum to the point measured. It was found that a is independent of x over the range from 3900 to 4400 angstroms, and is equal to

$$0.0197 \pm 0.0013 \text{ mm for } G f/1,$$

and

$$0.0177 \pm 0.0013 \text{ mm for } Q f/1.$$

These values have been compared with corresponding determinations by Popper for other cameras, and are in excellent agreement after allowance for difference of scale and tilt.

Maximum values of the curvature correction applied to measured radial velocities are 6 km/sec for $G f/1$ and 9 km/sec for $Q f/1$.

1. *A. J.* **51**, 19, 1944.

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Gonzalez, Graciela and Augustin Prieto. Star counts in Puppis and Vela.

Star counts between magnitudes 9 and 13 have been made for the region $l = 195^\circ$ to 230° , $b = -5^\circ$ to $+5^\circ$. The instrument used was the 3-inch Ross camera, with Selected Area 123 serving as standard. The work is now being extended to 14.5 mag. with the aid of long exposure plates with the 3-inch, and, for a few selected fields, to magnitude 17 or 18 with the aid of short

exposure plates to be taken with the Schmidt camera. The Schmidt will also be used for the strengthening of the magnitude system.

An inspection of the field reveals the existence of an interlocking system of dark nebulae at galactic latitudes -1° to -3° . This system of dark nebulae has its beginning at the dark nebula near Sirius, and is readily traced in the counts or on the long exposure plates. A photograph with the Schmidt shows nicely the bright nebulosity associated with the dark nebula near Sirius. At galactic longitude 225° , in Vela, these dark nebulae spread to northern galactic latitudes.

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Henroteau, F. Crystals and crystal lenses.

Many materials have been used for the making of lenses. Good optical glass, especially in large pieces, is expensive to produce and in aspherical lenses, such as Schmidt correctors, is long and tedious to grind and to polish. Recently plastics have been used but they are subject to strains and are easily scratched and deformed. Moreover, cast plastic lenses could never have the accuracy of glass ones for astronomical purposes, because having to be made at fairly high temperatures, they are somewhat distorted and have a slightly different refractive index after cooling.

Transparent crystals, grown to any size, are absolutely homogenous and have constant refractive indices. Many crystals, moreover, are transparent in a much wider range of the spectrum than glass and can be used for many applications in the infrared and in the ultraviolet.

Beautiful crystals of sodium chloride, potassium bromide, lithium fluoride and other chemicals crystallizing in the cubic system have been produced by special methods involving fusion followed by slow cooling.

Methods are being developed by the writer and his associates in the laboratories of the Farnsworth Television and Radio Corporation, in Fort Wayne, Indiana, to produce crystals from solutions in water. A large, single crystal of ammonium alum, weighing more than two kilograms, was recently obtained and could have been developed by accretion to weigh much more than that. Also an apparatus has just been completed by means of which lenses can be made out of soluble cubic crystals, using controlled dissolution. The principle of this apparatus is the following: A negative form of the lens surface, spherical, aspherical or even skew is made out of