sensitive, requiring a green-transmission filter for ordinary daylight use, the emulsion is not expected to become commercially available.

With equal exposures the emulsion is found to be 0.6 mag. faster than Super Anscochrome roll film, in keeping with the ASA ratings. At the 36-inch Steward reflector an exposure of five minutes shows 13.8 mag. faintly, but well enough to distinguish between red and white stars. Reciprocity failure is considerable, a time-of-exposure factor of 3.6 being required for an extension of one magnitude.

Color latitude is remarkable, red stars showing no appreciable dilution of color over an exposure range of 30 times, and only moderate dilution in a range of 60 times. Blue stars whiten much more rapidly with exposure time. The color latitude is much less with images of extended surfaces, since with these there is no possibility for the excess light to spread in the emulsion.

We have as yet made no comparison of the registration of color as a function of stellar color index, but the gradient of the registration seems to be very steep, so that only the extremes of color can well be recognized, for example the distinction between red and white stars.

The performance of the emulsion has been tested by photography of η Persei, NGC 1976 (M42), 1952 (M1), and the following planetaries: NGC 650 (M76), 6720 (M57), 6853 (M27), 7662. The photographs of M1 show most of the bright red filaments which appear in $H\alpha$ photographs. The dominant red, green, and blue areas of the planetary nebulae are well differentiated. Some of the edges of M27 are red, while M57 has a bright red corona.

M42 is particularly spectacular. The entire interior of the nebula is red, short exposures revealing an especially bright red edge to the central illumination southeast of the quadrilateral. On longer exposures the bright arms of the nebula which extend to the northwest and to the southeast are distinctly blue, and when the photograph is viewed with the north side upward these arms resemble a dark blue mantle draped over the red interior. There is surprisingly little spectral difference between the red and the blue areas of the nebula. With the sharp bright boundary between these areas placed across the slit, spectrograms of type F sensitivity appear identical except that the $[NII]$ lines $\lambda\lambda 6548$ and 6584 , as well as the $[SII]$ line $\lambda 6726$ are missing in the blue area of the nebula. But the color film is not sensitive as far out as $\lambda 6726$. Since $H\alpha$ appears at normal strength in the blue area of the nebula,

the tested emulsion is a very sensitive color discriminant.

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Davis, R. J., McCrosky, R. E., Whipple, F. L. and Whitney, C. A. A plan for operating an astronomical telescope in an earth satellite.

The Smithsonian Astrophysical Observatory is developing plans for an astronomical telescope in a satellite orbit for the study of the far ultraviolet radiation from objects other than the sun. A preliminary feasibility study indicates that the device will consist of an 8-inch $f/3$ off-axis mirror, with a specialized television image-tube placed at the focus. The total configuration of optical and electronic components will be almost spherical. The orbit preferably will have an inclination of 35° to 45° , mean height of at least 500 miles, approximately circular.

Optimum reliability is achieved through centering the more complex electronic components at ground installations. The entire celestial sphere can be covered through active image transmission during long-path crossings of the United States, utilizing two control stations for satellite telescopes: a master and a slave separated by a distance of 2000 miles.

The initial experiment will map the intensity of radiation from the entire sky in four colors between $1000\text{\AA}$ and $3000\text{\AA}$ with a sensitivity and resolution that will allow us to record a minimum average of 10 stars per square degree, with an angular resolution better than 1 minute of arc. The sensitivity will be adjustable over fairly wide limits.

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Gaposchkin, Sergei. The visual Milky Way.

The major part of the visual panorama of the whole Milky Way (see p. 58) done with a pen in India ink was drawn during my stay in Australia in 1956-57. The main features are as follows:

Around Ophiuchus, Sagittarius, and Scorpius there is a definite extended halo or bulge which is much more clearly outlined visually than on any set of photographic pictures. From the right side (Centaurus) the bulge is sharply outlined by a "Ditch" which begins at α Centauri and ends at α Scorpii; on the left side it is less sharply outlined by the "Sweep" in Ophiuchus. The "Coal Sack" has to its right a "Coal Scuttle" in Carina;