it, reveal that the eclipse began two or three weeks later and the annularity commenced about two weeks earlier than had been predicted from the ephemeris of Güssow.

The progress of light variation suggests that one abandon the idea of uniform brightness of the eclipsed F5 component, as has usually been assumed. At first the brightness declines almost imperceptibly, then very rapidly, and at the end moderately, with a total visual range about 0.85 mag.

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Gehrels, Thomas. Photometry of asteroids.

The magnitudes in the present Ephemerides of Minor Planets are not on any known photometric system, and have a probable error of 0.3 mag. In the Yerkes-McDonald Asteroid Survey, under the direction of Kuiper (Groeneveld and Kuiper 1954), the measures on the plates are made with the Ross photometer and calibrated with Mount Wilson photographic magnitudes in Selected Areas. Corrections are being applied for differential extinction, for field effects on the plate, for trailing of the asteroid image and, as found in unpublished work by Baum, a systematic correction to the Selected Areas.

A simple method was developed, for both photographic and photoelectric work, for reducing apparent to absolute magnitude, namely $g = pg - 5 \log r\rho - \alpha F$, where pg is the observed magnitude, r and ρ are respectively the heliocentric and geocentric distance in astronomical units, α is the phase angle and F is the phase factor $\delta pg/\delta\alpha$. Photographically, with the Yerkes 24-inch reflector, an average phase factor of 0.023 mag/degree, between phase angles 10° and 20°, was found from 22 asteroids. Light-curves of asteroid 20 were obtained (Gehrels 1956) photoelectrically with the 24-inch on 6 nights, at phase angles ranging from near 0° to 20°; a sharp increase of the phase factor was found at phase angles smaller than 7°.

The magnitude systems of all regular asteroid programs were compared with that of the Yerkes-McDonald Survey. Systematic differences as large as 3 mag. were found; the difference between Survey magnitudes and those in the Ephemerides is $+1.7 + 0.1(pg - 15.0)$. Data from the regular asteroid programs and from the Survey are now being combined to mean absolute magnitudes on the International Photographic System, with a probable error of some 0.08 mag.

Gehrels, T. 1956, *Ap. J.* **123**, 331.
Groeneveld, Ingrid and Kuiper, Gerald P. 1954, *Ap. J.* **120**, 200.

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Hardie, Robert. Light variation of the spectrum variable HD 124224.

The peculiar A star, HD 124224, has been found to undergo variations in light. Three-color measures disclose amplitudes of about 0.07, 0.08 and 0.15 magnitude in V, B and U, respectively. Although the U-B color undergoes a range of variation of about 0.07 magnitude, the B-V color is substantially constant, making it appear, then, that the color temperature of the star remains fairly fixed although brightness and spectral variations are occurring. On the basis of relating this recent photometric work with earlier spectral work of Deutsch (1952), it seems that the time of maximum light occurs at the time of maximum strength of the *Si*II lines, minimum strength of the *He*II lines and maximum ultraviolet radiation.

Deutsch, A. J. 1952, *Ap. J.* **116**, 536.

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Haro, G. Preliminary note on blue galaxies with nuclear emission.

Through the use of a 3-color filter technique, a good number of galaxies have been found with an extremely strong ultraviolet radiation localized in their nuclei. The spectra of these objects show not only the emission doublet at λ3727 [*O*II], but also other high-excitation emission lines. Although it is clear that a strong nuclear emission is not necessarily related to the integrated color of the galaxy, it seems that galaxies with conspicuous blue and ultraviolet colors always show emission lines in their spectra. Decidedly, then, our Schmidt color filter technique should be a valuable help in the statistical study of galaxies having strong emission lines.

At present it is a well known fact that, due to their Population I, the spiral arms of galaxies are considerably bluer than their respective nuclei; however, it does not seem to be generally recognized that in certain galaxies the nucleus can indeed be as blue or as ultraviolet as the most conspicuous blue or ultraviolet spiral arms in any galaxy. This, I believe, presents to us a most interesting problem. Are we going to consider the extreme blue-violet nuclei of galaxies as predominantly composed of Baade's stellar Population I? If such is the case, we would have