to sign between the absorptions found here and by Hubble was found to be ± 0.14 mag.

In the course of the examination of one of the Schmidt plates an unusually densely crowded group of six galaxies, magnitudes 15 to 17, was discovered in the constellation Serpens. This sextet of galaxies, the brightest member of which is NGC 6027, is contained within a volume of space $100''$ in diameter in a region in which the normal nebular counts give evidence of no absorption. Under the assumption that the average absolute magnitude of the six galaxies is -14.5 , the mean apparent magnitude 16.4 indicates a distance of 15 million parsecs. Assuming a mass of 2×10^9 solar masses for each of the six members, the average density of material in the Serpens sextet is 4×10^{-24} gr/cc. If a greater distance is assigned, it would be necessary to postulate correspondingly greater masses for the individual objects due to their larger absolute magnitudes and the computed density would remain essentially unchanged.

A more detailed analysis of this group together with a comparison of its density with that of other known groups and clusters of galaxies is now being prepared for publication.

1. *Ap. J.* **79**, 8, 1934.

2. *Lick Obs. Bull.* **16**, 177, 1939.

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Slettebak, Arne. Rotational velocities of Bnn stars.

Rotationally-broadened line contours have been computed by a graphical method and compared with the corresponding observed contours in Be stars. The Roche model at the instability point where centrifugal force and gravitational attraction just balance was used on the assumption that the main-sequence Be stars are rotating so rapidly that equatorial instability has occurred, as suggested by Struve. For a B3 main-sequence star this model gives an equatorial rotational velocity of 560 km/sec. Gravity darkening was taken into account, the intensity of the line used, *He* I 4026, being computed as a function of gravity and temperature over the disc. The line *He* I 4026 in the B3 star ι Herculis was used for determining the undisturbed contour, and the rotationally-broadened contour was computed by the graphical method due to Struve and Shajn. This contour was then compared with that of the B3ne star, β Monocerotis A. Under the assumptions made, the agreement is good and

supports the rotational instability hypothesis for the Be stars.

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Stebbins, Joel and A. E. Whitford. The relation between color index and red shift for extragalactic nebulae.

Observations of the magnitudes and colors of nebulae were made at Mount Wilson from March to June, 1947, with a 1P21 photomultiplier tube on the large reflectors. The program was arranged by Messrs. Edwin Hubble and Walter Baade who also took part in the observations. In addition to many field nebulae, measures were made of members of the clusters in Virgo, Coma Berenices, Corona Borealis, and Bootes. The nebula in Bootes with apparent velocity 38,900 km/sec and photographic magnitude 18.2 was about at the limit for useful measures of magnitude and color with the installation on the 100-inch.

TABLE I. COLORS OF E NEBULAE

Cluster	P_{gp}	C_p	V	No.
		m	km/sec	
Virgo	9.5-15.6	0.86	1,240	18
Coma	13.2-17.4	0.99	6,580	3
Corona	16.8-17.3	1.135	22,000	4
Bootes	18.2	1.36	38,900	1

In Table I the magnitude P_{gp} and color index C_p are on the International scale, deduced from the photoelectric measures. V is from M. L. Humason. The standard deviation of a C_p in the Virgo cluster is ± 0.06 mag.; the mean error of the C_p in Bootes is ± 0.05 mag. from six observations on three nights. From the quantities in the table we derive the relation

$$C_p = 0.84 + 0.0133 \times 10^{-3} V$$

where V is in km/sec. That this increase of color index with red shift is not caused by an instrumental error is shown by the facts that our colors agree within a few hundredths with the North Polar Sequence down to mag. 16.5; that there is no increase of reddening in stars in Selected Areas down to mag. 17.0; and, finally, that the nebula in Coma at mag. 17.4 has the same color as the brighter nebulae in the same cluster.

From our six-color photometry of the E nebula M32, assuming dG6 stars to radiate like black bodies at 5500° , we find for a red shift like that of the Bootes nebulae, $1 + d\lambda/\lambda = 1.13$, a predicted reddening $\Delta C_p = 0.08$; the observed value is $\Delta C_p = 0.52$.