

of the light maxima and minima and but seldom do the spectra coincide with the extremes of the range in brightness.

Star	Magnitude at Maximum	Range of Variation	Period	Observed Spectrum Variation
W Sagittarii	4.6	0.8	7.595	F0-F9
Y Sagittarii	5.8	0.8	5.773	F4-G0
U Aquilæ	6.2	0.7	7.024	F6-G2
SU Cygni	6.5	0.7	3.846	A6-F7
η Aquilæ	3.7	0.8	7.176	F1-G0
T Vulpeculæ	5.5	0.9	4.436	A9-G1

Variations seem to be present in the spectrum of S *Sagittæ*, but the plates available at present do not give a large range. Small variations are also suspected for U *Vulpeculæ* and ζ *Geminorum*.

HARLOW SHAPLEY.

NOTE ON COMET *a* 1916 (NEUJMIN).

Comet *a* 1916 was first observed photographically by M. Neujmin, of Simeis, Crimea, on February 25, 1916.

The first observation received at the Students' Observatory was one made on February 29th by Van Biesbroeck at the Yerkes Observatory. The next two observations received were made on March 3rd by Hartwig at Bamberg, and on March 7th by Aitken at the Lick Observatory. On the basis of these three observations, an orbit was computed by Mr. Jeffers, Mr. Pierce, and the undersigned. The resulting elements and an ephemeris extending until May 1st are published in *Lick Observatory Bulletin* No. 280.

This orbit is elliptic, the approximate period of revolution being 5.2 years. This period may be changed by a year or two after the comet has been longer under observation. The short period indicates that the comet belongs to the *Jupiter* group.

The comet passed closest to the Sun on March 11th at a distance of about 124,000,000 miles. The plane of motion is inclined to the ecliptic at an angle of about 10°. The eccen-

tricity is about 0.55, the longitude of the ascending node 328° , the longitude of perihelion 161° , and the semi-major axis three astronomical units or about 279,000,000 miles.

The comet was discovered in the constellation *Cancer* and is moving southeast. It is receding from the Earth. On May 1st it will be 0.34 as bright as on March 3rd, at which time it was estimated to be of the 10.5 magnitude.

There is a possibility of the identity of this comet with Comet 1889VI. A comparison of the elements of *a*1916 with those of 1889VI shows that they agree in every element except ω , the angle between the ascending node and the line of apsides on the side towards perihelion. Perturbations produced by *Jupiter* on 1889VI in 1910, 1911, 1912 may have caused a change in ω large enough to make it the same as that of *a*1916. The computation of these perturbations is now being carried on at the Students' Observatory.

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April 10, 1916.

[Note added May 22, 1916.]

The ephemeris above mentioned gives a position for the comet on April 20th which differs from an observation of the comet made by Dr. Aitken on that date by $6'.7$ in right ascension and $1'.5$ in declination.

The comet is still moving southeast. Its position on May 22nd is $11^h 15^m 42^s$ in right ascension and $-14^\circ 41'.1$ in declination. Its brightness on this date is 0.2 its brightness on March 3rd. It is moving at the rate of about $-12'$ per day in declination and $+2^m 17^s$ per day in right ascension.

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