VISUAL OBSERVATIONS OF SHORT-PERIOD CEPHEIDS

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During 1973 the author undertook a program of visual observations on bright, short-period Cepheid variables. Sufficient data was gathered on eight of these to permit the light curves to be drawn and the O-C's to be determined.

The observations of each star were taken at random and then were reduced relative to a common phase using the elements given in Kukarkin et al. (1969). The magnitude estimates were then put in numerical order relative to the phase, and the magnitudes of the first eight data points were averaged and then plotted as a single point at the mean phase of those eight points. Next, the first four points were dropped and four more added, the resulting mean of these eight points again being plotted at their mean phase, with the process being repeated continuously until the entire light curve was plotted. Thus, each of the points shown is the average of eight observations.

For those stars not shown on the standard AAVSO charts, comparison magnitudes were taken from Becvar (1964) Atlas of the Heavens-II, Catalogue 1950.0. The comparisons used are shown in a chart inset beside each light curve (Figures 1a & 1b)

STARS OBSERVED:

024368 SU Cas: With a magnitude range of 5.8 to 6.2, this star is usually considered too difficult for visual observations. However, a 6.0 magnitude comparison is available within 2°, and thus reasonably accurate observations could be made.

Period: 1.95 days O-C: $+0^d.1$
Number of observations: 76 M-m: 0.4P
Mean Date = JD 2,441,947

175929 W Sgr: A large range and convenient comparisons make this star easy to observe, although the southern declination limits the observing season considerably for northern hemisphere observers.

Period: 7.60 days. O-C: $+1^d.05$
Number of observations: 42 M-m: 0.44P
Mean Date: JD 2,441,938

181518 Y Sgr: Although the range is not as large as the previous star, it is very easy to observe since the comparisons are convenient.

Period: 5.77 days. O-C: $+0^d.1$
Number of observations: 29 M-m: 0.35P
Mean Date: JD 2,441,951

194029 SU Cyg: The comparisons are not too convenient, but the star is easily observed if care is used.

Period: 3.85 days. O-C: $-0^d.28$
Number of observations: 85 M-m: 0.4P
Mean Date: JD 2,441,902

194700 Eta Aql: Although the range is large, the star is difficult because of its brightness and the location of the comparisons.

Period: 7.18 days. O-C: $+0^d.2$
Number of observations: 57 M-m: 0.30P
Mean Date: JD 2,441,936

195116 S Sge: This star is somewhat difficult to observe because of its proximity to the brightest star of the comparisons.

Period: 8.38 days. O-C: $+0^d.2$
Number of observations: 66 M-m: 0.39P
Mean Date: JD 2,441,929

204727 T Vul: The original comparison sequence that was used in plotting the light curve was found to be unsatisfactory, and was replaced with the one shown on the chart (see Figure 1b). The large scatter at minimum was the result of the original sequence lacking sufficient faint comparisons.

Period: 4.44 days. O-C: $-0^d.2$
Number of observations: 72 M-m: 0.3P
Mean Date: JD 2,441,933

222557 Delta Cep: The prototype of the class, it is easy to observe except at maximum. The O-C is approximate because of this difficulty.

Period: 5.37 days. O-C: $-0^d.1$
Number of observations: 122 M-m: 0.3P
Mean Date: JD 2,441,885

REFERENCES

Becvar, A. 1964, Atlas of the Heavens-II, Catalogue 1950.0. (Cambridge, Mass.: Sky Publishing Corporation)

Kukarkin, B.V. et al. 1969, General Catalog of Variable Stars. Moscow.

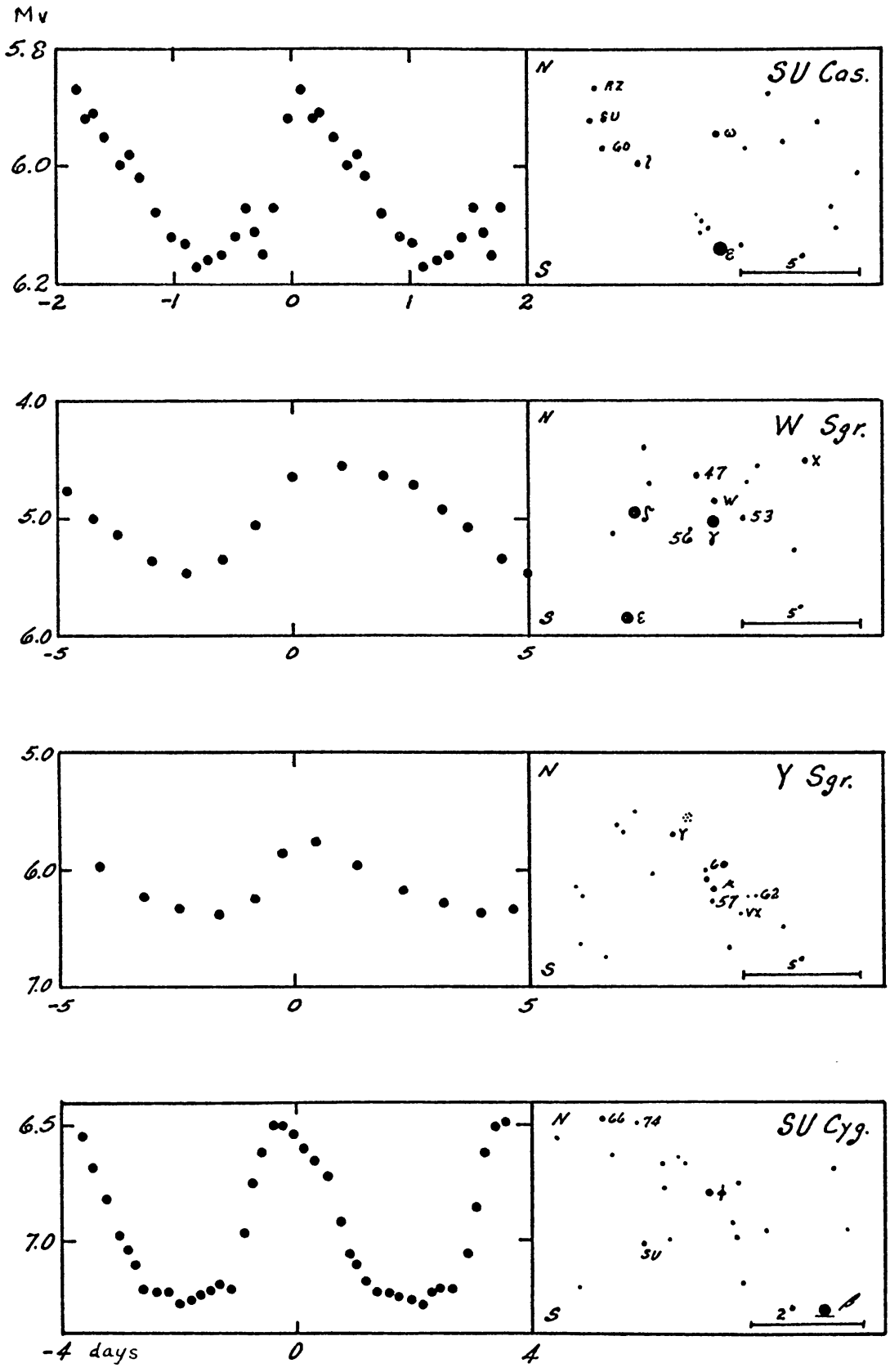

Figure 1a. Light curves and finder charts of eight short period Cepheid variables.

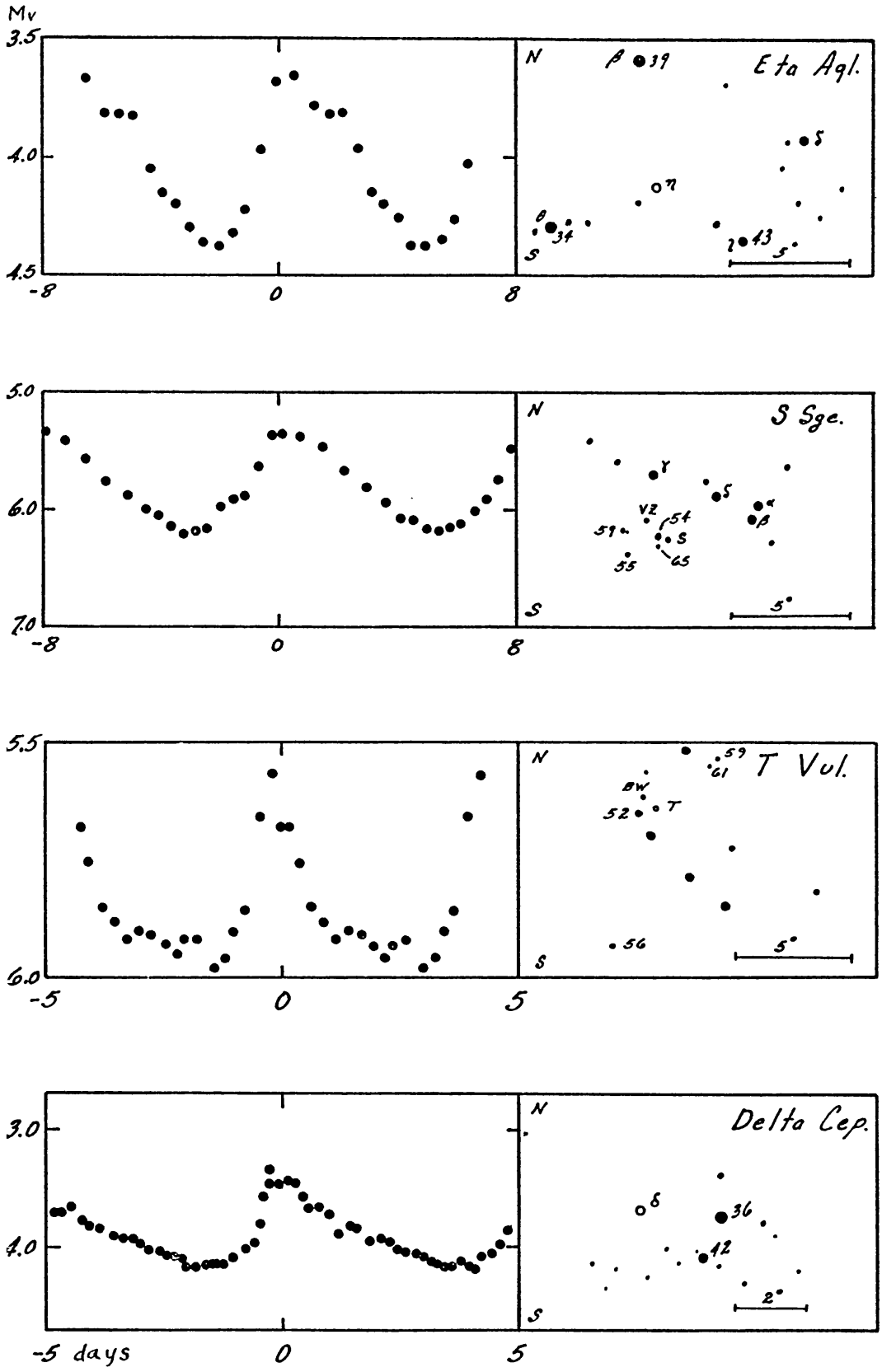

Figure 1b. Light curves and finder charts of eight short period Cepheid variables.