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SECONDARY VARIATIONS
OF THE FLARE STAR V 1216 SAGITTARII

Observations of the flare star, V 1216 Sagittarii, made at the Boyden Observatory in 1966 revealed ten flares in 114 hours monitoring (Ref.1). During the same session secondary variations of the star's brightness and colour were sought which are known to occur with amplitudes of a few tenths of a magnitude in other UV Ceti stars (Ref.2). The relation between these secondary variations and the occurrence of flares is unclear. In fact, no significant evidence of these changes was found in the Boyden 1967 session on the flare star YZ Canis Minoris, although six flares occurred (Ref.5).

Differential measures of magnitude and colour of V 1216 Sgr and a nearby comparison star were made at the 16-inch Nishimura reflector on the night of a large flare and on five subsequent nights. The results, together with the observed flares, are shown in Fig.1. These observations were carried out at an average air mass of 1.4 at the beginning of a night's monitoring, and mean extinction coefficients were used when forming mean magnitude and colour differences for a given night. A check against a second comparison star was made on four nights.

The general conclusions that may be drawn regarding night-to-night secondary variations of V 1216 Sgr during this run are (a) that the small fluctuations in the

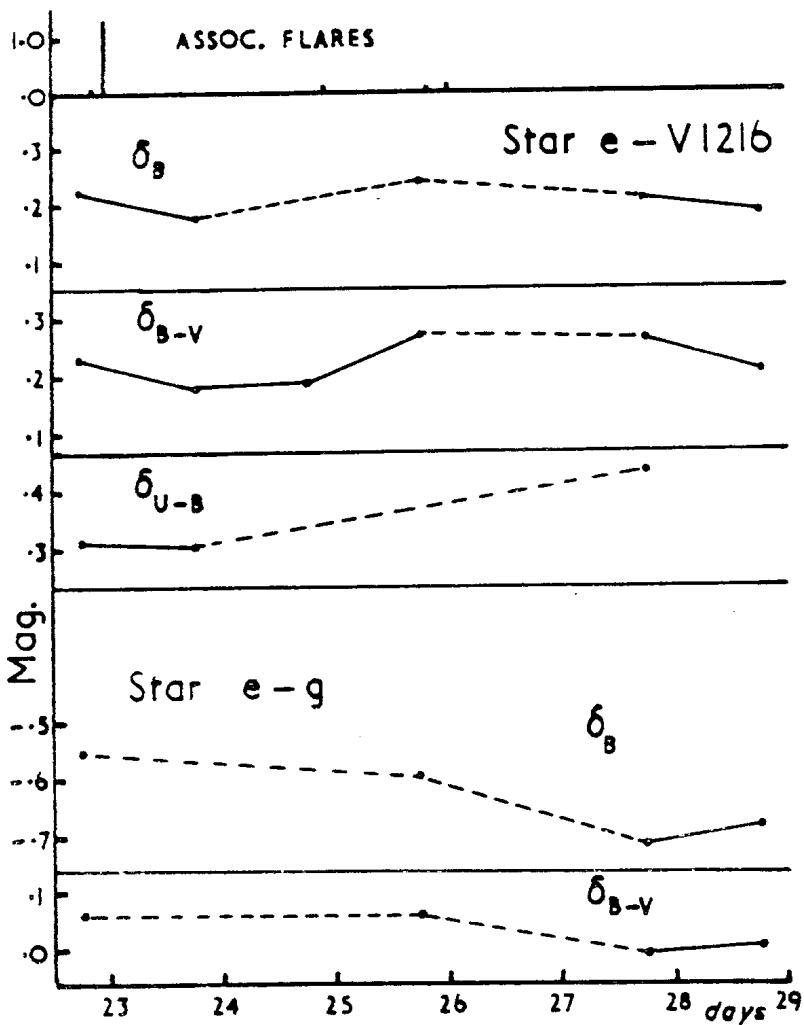


Fig.1 JD -2439300

B magnitude did not exceed ± 0.03 , and (b) that changes of colour associated with the large flare in B-V and U-B may have occurred, in the sense of a slight reddening (~ 0.1) as compared with the star in its less-active phase. Further work on the constancy of the comparison stars is particularly desirable.

An approximate UB_V sequence, useful for photographic estimates of flare amplitudes of V 1216 Sgr, was measured on a single night, 15 July 1968. See Fig.2 and the Table. The zero points in magnitude and colour were not determined on the same night, but this will not affect differential measures. The tabulated values should not be in error by greater than $\pm 0.1^m$.

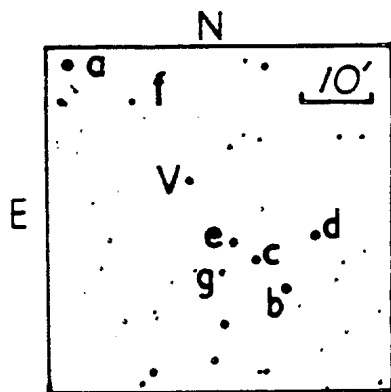


Table 1

Star	B	B-V	U-B
a	9 ^m .60	0 ^m .60	-0 ^m .30
b	10.65	0.35	-0.15
c	10.70	0.40	-0.25
d	11.80	1.70	1.30
e	12.25	2.00	1.25
f	12.35	1.85	1.55
g	12.75	1.90	1.60
V 1216 Sgr	12.00	1.70	0.95

Fig.2

REFERENCES

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