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IDENTIFICATION OF V735 SAGITTARII

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V735 Sgr is a variable star discovered by Luyten in the course of the Bruce Proper Motion Survey (Luyten 1936). The variable was reported at coordinates R.A. $17^{\text{h}}53^{\text{m}}5$, Dec. $-29^{\circ}33'$ (1900.0) with a blue photographic brightness variation between 14.2 – 15.5 mag.

Plaut gave a finding chart for the variable (Plaut 1948). However, at the position marked on that chart, there is a close pair of stars (7 arcsec separation). The astrometry of the two stars by Henden (using USNO-A2.0) are:

R.A. $17^{\text{h}}59^{\text{m}}51^{\text{s}}79$, Dec. $-29^{\circ}33'55''.7$ (2000.0) ... star N
R.A. $17^{\text{h}}59^{\text{m}}52^{\text{s}}03$, Dec. $-29^{\circ}34'01''.7$ (2000.0) ... star S

Vogt and Bateson observed V735 Sgr in outburst and identified the variable as “the south-eastern component of a close pair” (Vogt and Bateson 1982). The listing for V735 Sgr in the General Catalog of Variable Stars (GCVS) is based on their observations, with the star classified as having irregular short variations, with coordinates of R.A. $17^{\text{h}}59^{\text{m}}52^{\text{s}}$, Dec. $-29^{\circ}33'.8$ (2000.0), and photographic brightness variations between 13.5 – 16.5 mag.

Hazen investigated the Bruce plate marked by Luyten, and found that the brightness of star N differs between two plates, whereas the brightness of star S does not differ.

Henden observed this pair in 1999 July and August, using the 1.0-m telescope at USNO Flagstaff Station. Table 1 shows the photometry. The brightness variation of star N confirms the Luyten identification. On the other hand, star S is constant within the photometric errors. The $B - V$ colour of star N is not particularly red, so does not conflict with the classification in the GCVS.

In conclusion, the remark by Vogt and Bateson was a mistake and V735 Sgr is the north-western component of this pair. Figure 1 shows an accurate chart identifying V735 Sgr.

Table 1: Henden photometry of the pair

Star	HJD	V mag	$B - V$
N	2451379.8048	14.775 ± 0.009	0.801 ± 0.010
N	2451380.7678	14.507 ± 0.006	0.827 ± 0.007
N	2451402.6682	14.697 ± 0.007	0.785 ± 0.009
S	2451379.8048	14.748 ± 0.005	0.892 ± 0.007
S	2451380.7678	14.771 ± 0.005	0.881 ± 0.007
S	2451402.6682	14.759 ± 0.005	0.878 ± 0.006

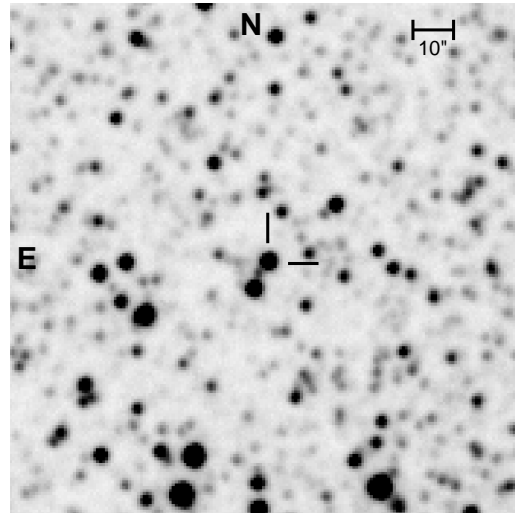


Figure 1. V-band chart of V735 Sgr

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