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HIGH SPEED PHOTOMETRY OF V794 AQUILAE

X-ray and optical observations of V794 Aql were recently reported by Szkody *et al.* (1981), which show that this star is a member of the cataclysmic variable class. Their photometric observations show that V794 Aql is variable by up to 0.5 mag on an hourly timescale, with greater variations on a timescale of days. This note draws attention to the tremendous activity that occurs on a timescale of tens of seconds.

Observations were made on the nights of 30 and 31 May, 1982, with the high speed photometer attached to the 40 inch reflector at the Sutherland site of the South African Astronomical Observatory. Integrations in white light of 5 secs and 10 secs respectively were used. The lengths of observation were 2.0 hours and 3.2 hours respectively.

The light curve (corrected for atmospheric extinction) obtained on 30 May is shown in Figure 1. The mean light level corresponds approximately to $V = 14.6$, so V794 Aql was in a "high state" at the time of observation.

It can be seen from Figure 1 that V794 Aql is one of the most active of cataclysmic variables. Brightness variations of up to 0.5 mag occur on a timescale of minutes with smaller flares on timescales of tens of seconds.

The light curve for 31 May was similar to that seen in Figure 1. Power spectra of each of the light curves do not show any significant periodic components. Nor is there any sign of orbital modulation of the light curve that would indicate a period less than 3 hours.

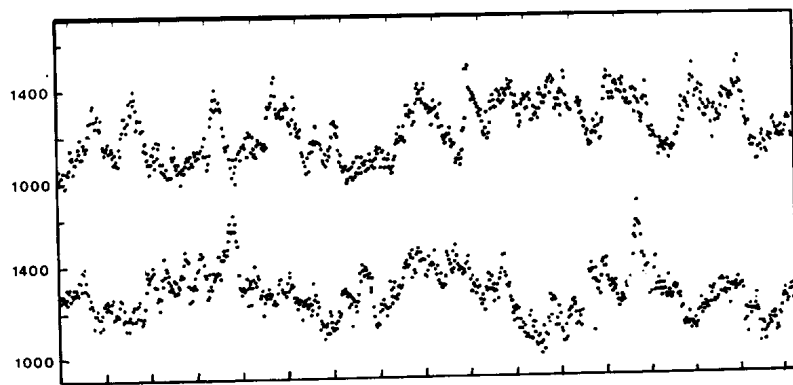


Figure 1

Light curve of V794 Aql at 5 sec time resolutions. The ordinate is counts per second. Abscissa marks are at intervals of 0.0025 day (216 secs) starting in the top left hand corner at JD_0 2445120.5925, and continuing along the lower axis for the bottom curve.

BRIAN WARNER
Department of Astronomy
University of Cape Town

Reference:

P. Szkody, L. Crosa, G.D. Bothun, R.A. Downes and R.A. Schommer,
Astrophys. J. Letts., 249, L61, 1981.