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A NEW PROBABLE FLARE STAR

A new emission-line star has been detected on a baked Kodak IIIa-J objective-prism plate (unfiltered, 75 minute exposure) taken 10 March 1981 with the Burrell Schmidt telescope at the Warner and Swasey Observatory's Kitt Peak Station. An identification chart is provided for the star which has 1950 coordinates of  $\alpha = 14^{\text{h}} 54^{\text{m}}.1$ ,  $\delta = +37^{\circ} 23'$ ,  $l = 61^{\circ}.8$ ,  $b = +61^{\circ}.9$ .

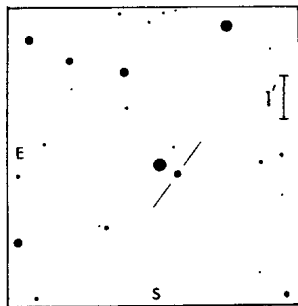


Figure 1

The unwidened spectrum, at a dispersion of  $1360 \text{ \AA mm}^{-1}$  at  $H_{\gamma}$ , shows the Balmer series strongly in emission down to at least  $H_9$ . The H and K lines of CaII are the only other emission lines visible and no strong absorption features are seen. Although the continuum longward of  $\lambda 3900$  is very weak, i.e. comparable to  $B \sim 17$  mag., the ultraviolet continuum seen down to  $\lambda 3400$  is remarkably strong. From image diameter measurements made on the Palomar Sky Survey prints one finds  $B \sim 18$  mag. and  $R \sim 16$  mag. Thus this

object has the color of a late-type star although the poorly exposed blue continuum shows no evidence of strong TiO bands. No additional plate material covering this star is available in our plate files. It does not appear to be a known proper motion star which suggests  $\mu < 0.2 \text{ yr}^{-1}$ .

The most likely explanation of these observations is that this is a M dwarf star seen undergoing a major flare event. The TiO bands would then be veiled and the strong ultraviolet continuum would be consistent with an increase in U of at least three magnitudes. Photometric monitoring and higher dispersion spectroscopy are obviously needed to confirm this interpretation.

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