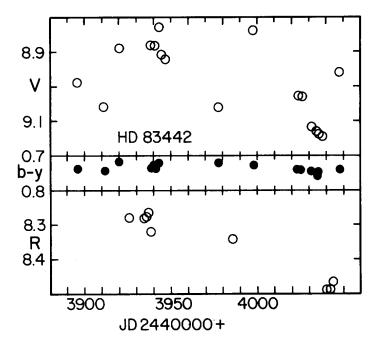
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A NEW LATE TYPE VARIABLE WITH H AND K EMISSION

An obvious source of candidates for variable G and K type giants and subgiants with H and K emission is the Michigan Spectral Type Catalogue (vols. I and II) which covers the sky from -90° to -40°. The first star selected from this catalogue for photometric monitoring was HD 83442, which is classified K2 IIIp ('Ca H and K cores are quite strongly in emission"). The observations on a modified Strömgren system are listed in Table 1 and a few on the (RI) system are in Table 2. Figure 1 shows the variations in V, b-y and R. The total range in near 0.3 mag in V and appears to be quasiperiodic with P = 65 to 70 days. The minima are relatively narrow, judging by the last observations shown in the figure (June 1979). The color is reddened at minima by only one or two hundredths in both (b-y) and (R-I). Early type stars in the region indicate a reddening of only about E(b-y) = 0.02 mag at a distance modulus of 8.5 mag in this direction. If we adopt a reddening of 0.02 mag, the values of (R-I) and \mathbf{M}_{1} indicate a near solar metal abundance. The mean value of $C_1 = 0.340$ mag indicates a lower luminosity than that given by the spectral luminosity class but this possibly is reflecting some spectral abnormality (e.g., CH or BaII). Nearly identical values of the proper motion are



given in the Cape and Yale Zone catalogues; the mean values on the FK4 system with precessional corrections are $(\mu_{\alpha} \cdot \mu_{\delta})$ = (-0.063, 0.000). The star is also BPM 34343 with a relative proper motion of 0.052 in position angle 300°. If the luminosity is near $M_V = 0$, (U, V, W) = (+140, -14 + ρ , -126) km/sec; the unknown radial velocity is essentially a measure of the V velocity only. These velocity vectors indicate a halo object, but if we lower the assumed luminosity to $M_V = +2$ mag, which would be more in accordance with the value of C_1 , the vectors become (+56, -6+ ρ , -50) km/sec.

OLIN J. EGGEN Cerro Tololo Inter-American Observatory¹ Casilla 63-D La Serena, Chile

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TABLE 1
Observations of HD 83442

V	b - y	М 1	C 1	(u-b)
8 1 9 9 9 9 0 0 6 8 0 8 9 8 0 8 8 8 8 8 8 8 8 9 1 8 0 9 2 9 0 0 6 8 0 8 4 9 0 3 9 0 3 9 0 3	0 T 4 0 0.743 0.712 0.734 0.723 0.732 0.728 0.720 0.721 0.721 0.724 0.740	0.482 0.504 0.479 0.478 0.492 0.476 0.485 0.508 0.500 0.482 0.487	0 ^m 298 0.322 0.355 0.348 0.369 0.369 0.358 0.311 0.351 0.337 0.329	2.7799 2.719 2.750 2.751 2.762 2.764 2.752 2.777 2.728 2.769 2.759
9.13 9.13 9.13	0.758 0.752 0.745	0.468 0.483 0.494	0.344 0.350 0.326	2.770 2.798 2.785 2.724
	8.99 9.06 8.89 8.88 8.88 (8.83) 8.91 8.92 9.06 8.84 9.03 9.03 9.12 9.13 9.13	8 m 9 9 0 m 7 4 0 9 . 0 6 0 . 7 4 3 8 . 8 9 0 . 7 1 2 8 . 8 8 0 . 7 3 4 8 . 8 8 0 . 7 2 3 (8 . 8 3) 0 . 7 3 2 8 . 9 1 0 . 7 2 8 8 . 9 2 0 . 7 2 0 9 . 0 6 0 . 7 2 1 8 . 8 4 0 . 7 2 4 9 . 0 3 0 . 7 4 0 9 . 0 3 0 . 7 4 0 9 . 0 3 0 . 7 4 0 9 . 1 2 0 . 7 4 6 9 . 1 3 0 . 7 5 8 9 . 1 3 0 . 7 5 2 9 . 1 3 0 . 7 4 5	8 m 9 9 0 m 7 4 0 0 m 4 8 2 9 . 0 6 0 . 7 4 3 0 . 5 0 4 8 . 8 9 0 . 7 1 2 0 . 4 7 9 8 . 8 8 0 . 7 3 4 0 . 4 7 8 8 . 8 8 0 . 7 2 3 0 . 4 9 2 (8 . 8 3) 0 . 7 3 2 0 . 4 7 6 8 . 9 1 0 . 7 2 8 0 . 4 8 5 8 . 9 2 0 . 7 2 0 0 . 5 0 8 9 . 0 6 0 . 7 2 1 0 . 5 0 0 9 . 0 6 0 . 7 2 1 0 . 5 0 0 8 . 8 4 0 . 7 2 4 0 . 4 8 2 9 . 0 3 0 . 7 4 0 0 . 4 8 7 9 . 0 3 0 . 7 4 0 0 . 4 8 7 9 . 0 3 0 . 7 4 2 0 . 4 8 4 9 . 1 2 0 . 7 5 8 0 . 4 6 8 9 . 1 3 0 . 7 5 2 0 . 4 8 3 9 . 1 3 0 . 7 5 2 0 . 4 8 3 9 . 1 3 0 . 7 4 5 0 . 4 9 4	8mg99 0m740 0m482 0m298 9.06 0.743 0.504 0.322 8.89 0.712 0.479 0.355 8.88 0.734 0.478 0.348 8.88 0.723 0.492 0.369 (8.83) 0.732 0.476 0.369 8.91 0.728 0.485 0.358 8.92 0.720 0.508 0.311 9.06 0.721 0.500 0.351 8.84 0.724 0.482 0.336 9.03 0.740 0.487 0.337 9.03 0.742 0.484 0.329 9.12 0.746 0.485 0.340 9.13 0.758 0.468 0.344 9.13 0.752 0.483 0.350 9.13 0.745 0.494 0.326

TABLE 2
(RI) Observations

1979	R	R - I
21 Feb. 2 Mar. 3 Mar. 4 Mar. 5 Mar. 21 Apr. 15 June 16 June 17 June	8 ^m 28 8.28 8.27 8.26 8.32 8.34 8.49 8.49	+0 ^m 392 +0.398 +0.406 +0.395 +0.416 +0.412 +0.427 +0.423
17 June	8.47	+0.42