COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1472

Konkoly Observatory
Budapest
1978 September 13

A SEARCH FOR VARIABILITY OF SOME SELECTED STARS

During several observing periods at the ESO site in La Silla (Chile), the He-weak-stars α Scl and 12 CMa, the old nova RR Pic and the T Tauri-star V 380 Ori have been tested for variability, especially for short periodic oscillations. The reduction techniques were the same as described by Haefner et al. (1975).

He-weak-stars are suspected to show photometric and spectroscopic variations (Jaschek et al. 1974). One of the brightest members of this group, α Scl, has been observed with a photometer in a high speed mode and a spectrum scanner (Schoembs et al. 1976). For 12 CMa only two photometric runs have been obtained. The observational data are compiled in Table 1.

Table 1 The observations (He-weak-stars)

Photometry (Hβ wide/narrow)*

Star	Telescope	Date	Start(UT)	Dur. (min.)	Integrat. time(s)	Time resolution(s)
α Scl	60cm Bochum	1974,Nov.25	01^h08^m	40	1	4
		1974,Dec.05	01 20	22	1	4
		06	00 49	36	1	4
		12	01 01	145	1	4
		13	01 05	33	1	4
		14	01 02	93	1	4
	50cm ESO	1975,Nov.03	00 39	103	2	8
12 CMa	60cm Bochum	1974,Dec.06	04 49	38	1	4
	50cm ESO	1975,Nov.02	06 05	125	2	8

Scanner (Hα, Hβ)

Star	Telescope	Date	Start(UT)	Dur. (min.)	Spectral resolution (A)	Time resolution(s)
α Scl	50cm ESO	1974,Nov.25	00^h47^m	90	7	17
		1974,Dec.05	00 46	60		
		06	00 30	60		
		12	00 36	60		
		13	00 46	60		
		14	00 35	120		

*) Cyclically used

The longer runs have been analyzed by Fourier techniques, but no period in the range between 17 and 500 s could be detected. Night to night changes also were not evident. The r.m.s.-variation of the ratio H_β wide/H_β narrow amounts to 0.33 % for α Scl and to 0.18 % for 12 CMa. For the mean values of the scanner equivalent widths of H_α and H_β (α Scl) we obtained 5475±106 mA and 5403±38 mA, respectively. In accordance with the photometry the equivalent widths do not show any systematic variation during the observation period.

To look for the 30 s - period reported for RR Pic (Warner, 1976), high speed photometric observations have been performed. Additionally (partly simultaneous) polarimetric observations were obtained. The observational data are listed in Table 2.

Table 2 The observations of RR Pic

Photometry (Integral)

Telescope	Date	Start(UT)	Dur.	Integrat. time (s)	Time resolution (s)
50cm ESO	1973,Oct. 29	06^h27^m	2^h49^m	0.99	1
	30	04 21	4 00	0.99	1
	1977,March 11	01 35	1 30	1	3
	12	03 03	1 20	1	3
	13	03 12	1 20	1	3
	14	00 43	3 45	1	3

Polarimetry (Integral)

Telescope	Date	Start(UT)	Dur.	I-Time/ single measurement (s)	Number of measurements
1m	1973,Oct.29	06^h53^m	1^h20^m	480	3
	30	04 52	2 34	480	6

All photometric runs have been investigated for short periodic oscillations in the range from 6 to 500 s. But no significant period could be found. Polarization degree and angle show a large scatter which is enhanced at the rising part of the light curve. The mean values are $\overline{P}=(23 \pm 31)\cdot 10^{-4}$, $\overline{\theta}=15^o \pm 34^o$. The scatter, which is twice that for the comparison star, probably indicates a variability which should be confirmed by further observations.

V380 Ori has been observed photometrically. The data are compiled in Table 3.

Table 3 The observations of V380 Ori

Telescope	Date	Start(UT)	Dur.	Integrat. time (s)	Time resolution (s)
60cm Bochum	1974,Dec.06	02^h10^m	1^h40^m	1	2
50cm ESO	1974,Dec.06	02 10	1 10	1	0.99

The analysis of these simultaneous runs did not reveal a significant periodicity in the range between 6 and 500 s.

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