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BVRI PHOTOMETRY OF THE SUPERLUMINOUS SUPERGIANTS HR5171 AND  
HR6392

The G8Ia supergiant HR5171 has been monitored since 1975 at the Sutherland site of the S.A.A.O. in the Johnson B and V bands and the Cousins R and I bands using ES20 phototubes on the 0.5 and 1.0 metre telescopes. Since 1978 HR6392, a G5Ia supergiant, has also been observed. E region stars from the Cousins (1976) list were used as standards, and the observations have been corrected for atmospheric extinction.

Both stars have nearby early type companions. These have been excluded whenever possible, and corrected for when included in the aperture. The colours adopted for the companions, obtained from two or three observations on nights with good seeing conditions, are given below:

Companion	V	B-V	V-I
HR 5171 B	10.01	0.78	1.21
HR 6392 B	10.42	0.52	
HR 6392 C	11.40	1.55	

The photometry of the supergiants is given in Tables 1 and 2. The heliocentric Julian Date after 2440000 (HJD) is given with the corrected magnitude and colours.

Both stars show long period variations in magnitude and colour (Harvey 1972, Andrews 1977). During the period of observations HR5171 has varied by over a magnitude in V, and by about 0.3 in the colours; HR6392 has shown no large variation, apart from a general decrease in brightness.

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References:

- Andrews, P., 1977. Mon. Not. R. astr. Soc. 178, 131  
Cousins, A.W.J., 1976. Mem. R. astr. Soc. 81, 25  
Cousins, A.W.J., 1978. Mon. Not. R. astr. Soc. S.A. 37, 62  
Harvey, G.M., 1972. Mon. Not. R. astr. Soc. S.A. 31, 81

TABLE I

## Photometry of HR5171

Julian date	V	B-V	V-R	V-I
-2440000				
2584	7.50	2.31	1.66	2.71
2592	7.40	2.31	1.60	2.68
2609	7.41	2.29	1.66	2.71
2826	6.96	2.43	1.44	2.68
2848	6.98	2.54	1.45	2.64
2849	6.96	2.44	1.45	2.70
2852*	7.01	2.41		2.71
2861	6.95	2.43	1.46	2.69
2970	6.96	2.39	1.47	2.70
2995	6.97	2.45		2.70
3240	6.41	2.34		2.48
3242	6.39	2.33		2.47
3331	6.17	2.26	1.29	2.41
3349	6.20	2.25	1.30	2.44
3680*	6.38	2.32		
3682*	6.40	2.33		2.52
3716	6.33	2.40	1.24	2.44
3719	6.30	2.39	1.24	2.45
3912	6.69	2.53:	1.40	2.50
3914	6.69		1.42	2.52
3978*	6.81	2.64	1.49	2.69
3979*	6.84	2.61	1.49	2.70
4038*	6.85	2.67	1.50	2.71
4039*	6.84	2.67	1.50	2.71
4060	6.79	2.49	1.47	2.66
4079	6.82		1.47	2.70
4096	6.81	2.50	1.40	2.64
4099	6.78	2.46	1.40	2.65
4298	6.50	2.42	1.32	2.52
4299	6.52	2.41	1.31	2.52

\* 1.0 metre; rest are 0.5 metre

TABLE 2

## Photometry of HR6392

Julian date	V	B-V	V-R	V-I
-2440000				
3680*	6.38	2.23		
3681*	6.37	2.24		
3716	6.38	2.35	1.15	2.24
3719	6.32	2.32	1.14	2.24
3755	6.35	2.34	1.14	2.24
3756	6.34	2.33	1.14	2.24
3977*	6.42	2.39	1.17	2.26
3979*	6.37	2.40	1.17	2.28
4036*	6.41	2.39	1.17	2.26
4038*	6.39	2.41	1.16	2.26
4059	6.42	2.25	1.17	2.26
4060	6.41	2.24	1.16	2.25
4079	6.42			2.27
4099	6.43	2.23	1.17	2.25
4114	6.47	2.24	1.19	2.27
4115	6.50	2.24	1.19	2.27

\* 1.0 metre; rest are 0.5 metre