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PHOTOMETRIC VARIABILITY OF THE λ BOOTIS STAR HD 30422

HD 30422 was classified by Gray & Corbally (1993) as a λ Bootis star with peculiar hydrogen line profiles. With an age of $3.8 \times 10^8 yr$ (Iliev & Barzova, 1995) it is one of the youngest λ Bootis stars. The peculiar nature of this group leads to a severe uncertainty to establish their location in the Hertzsprung–Russell diagram. The importance of discovering pulsation among λ Bootis stars was discussed by Weiss et al. (1994). As part of our global survey for pulsating λ Bootis stars, we observed HD 30422 for two nights in January 1994 with the Lowell 0.6m telescope at CTIO (observer: M. Gelbmann). Table 1 lists the observing log. The light curves of the first night are plotted in Figure 1. The variation of HD 30422 compared to the measurements of the comparison star is clearly visible. The amplitude spectrum of the differential data in Strömgren b and the spectral window derived by a standard Fourier technique is shown in Figure 2. The highest peak appears at 47 c/d, which corresponds to a period of 30 minutes, and with an amplitude of about 10 mmag. This is the second star we found to be variable with such a high frequency (Kuschnig et al., 1994).

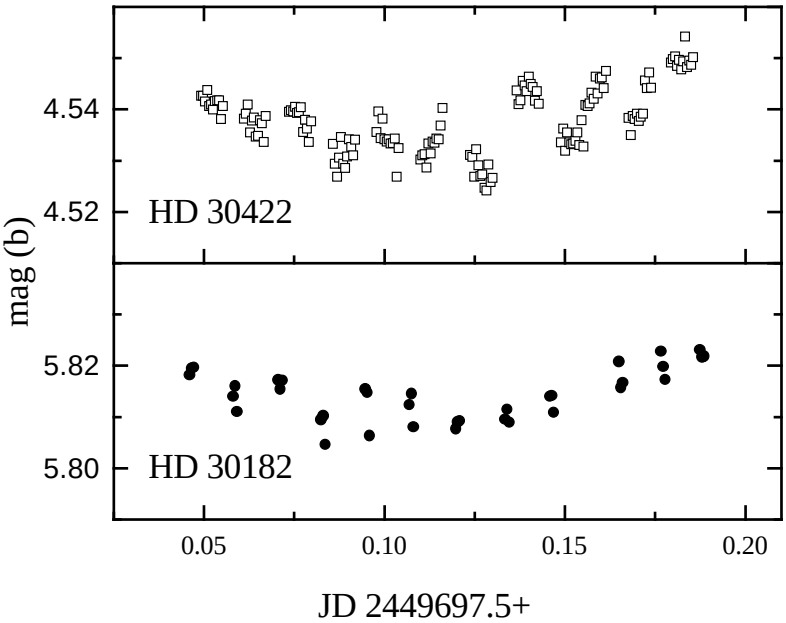

Figure 1. Light curve for HD 30422 and the comparison star HD 30182 in Strömgren b for the second night

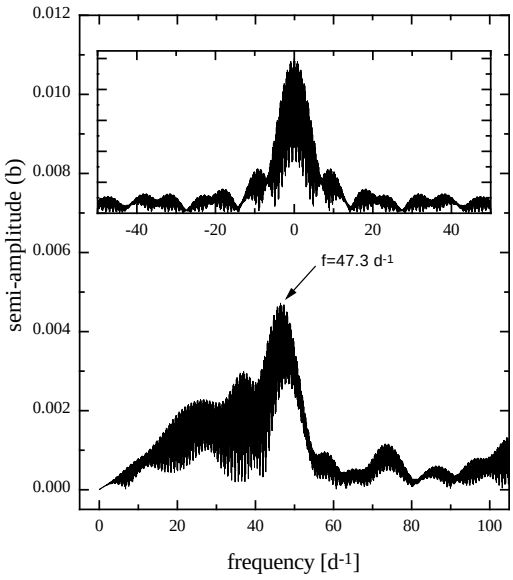

Figure 2. Amplitude spectrum and spectral window for the differential data of HD 30422 and HD 30182 in Strömgren b for both nights

Table 1. Observing log for the program and comparison star

Star	Durchm.	JD	hours	m_V	Spec.
HD 30422	CD $-28°$ 1735	2449690	2	6.2	λ Boo
		2449697	3.5		
HD 30182	CD $-27°$ 629			6.8	K4III

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Weiss, W.W., Paunzen, E., Kuschnig, R., Schneider, H., 1994, *A&A*, **281**, 797

ERRATUM

In Table 1 of the IBVS No. 4302 several cross-identifications have been erroneously given. The correct version of the Table is given below.

Table 1. Program and comparison stars, ⋆ this comparison star is used for the figure

Star	Durchm.	JD	hours	m_V	Spec.		Upper level [b]
HD 319	CD −23° 13	2449166	2	5.93	λ Boo		0.004
HD 203	CD −23° 4			6.18	F2IV	⋆	
HD 141851	BD −02° 4058	2449168	4	5.10	λ Boo		0.004
		2449175	5				
HD 141378	BD −03° 3829			5.52	A5IV	⋆	
HD 140873	BD −01° 3092			5.39	B8III		
HD 143148	CD −31° 12442	2449560	4	7.39	λ Boo(?)		0.004
HD 142542	CD −31° 12407			6.29	F5V	⋆	
HD 142851	CD −31° 12426			7.13	A0V		
HD 145782	CP −57° 7716	2449166	4	5.71	λ Boo(?)		0.006
HD 144480	CP −57° 7613			5.57	B9.5V	⋆	
HD 154153	CD −43° 11396	2449175	3	6.18	λ Boo(?)		0.004
HD 153234	CD −44° 11339			6.51	F3V		
HD 154025	CD −45° 11188			6.28	A2V	⋆	
HD 179791	BD +05° 4081	2449166	3	6.51	λ Boo(?)		0.006
HD 178596	BD +05° 4040			5.22	F0III	⋆	
HD 180482	BD +04° 4045			5.59	A3IV		
HD 188164	CP −69° 3073	2449173	3	6.35	λ Boo(?)		0.004
		2449174	6				
HD 188097	CP −69° 3072			5.75	Am	⋆	
HD 193256	CD −29° 16980	2449560	5	7.70	λ Boo		0.002
		2449563	3				
		2449564	5				
HD 193281	CD −29° 16981	2449563	3	6.61	λ Boo		0.004
		2449564	5				
HD 194170	CD −29° 17046			8.27	A4V	⋆	
HD 204041	BD −00° 4215	2449568	3	6.45	λ Boo		0.002
HD 203405	BD +00° 4714			6.78	F2		
HD 204121	BD +00° 4726			6.13	F5V	⋆	