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NEW B,V LIGHT CURVES OF SZ LYNCIS

The RR_s star SZ Lyn was observed on February 29 and March 3, 1976, with the 36 cm Cassegrain telescope of the Hoher List Observatory. A single channel photometer equipped with a 1P21 multiplier and Schott BG12(1mm)+GG13(2mm) = B, GG11(2mm) = V filters, a conventional amplifier, and a strip chart recorder were used.

Following the investigations of van Genderen (1963) and Barnes and Moffett (1975), BD +45°1544 served as a comparison star. We also adopted their data $V = 9^m.43$, $B - V = 0^m.46$ for this star.

1. Times of Maximum Light

Two times of maximum light were determined by Pogson's method (Schiller 1923). The mean error of a maximum time is about 0^d.0006. The O-C's, calculated from Barnes and Moffett's sinusoidal ephemeris, are

E	t_{\max} (J.D.hel.)	O - C
39100	2 442 837.3091	+ 0 ^d .0006
39133	2 442 841.2875	+ 0.0012

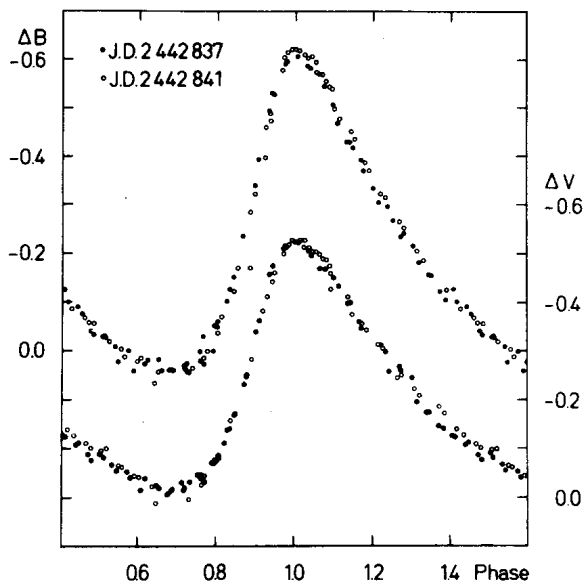


Fig. 1. B, V light curves of SZ Lyn, relative to BD +45°1544

2. Light Curves

Fig. 1 is composed of 121 B and 122 V observations which are listed in Table 1. Observations of J.D. 2 442 837 are shown as dots, those of J.D. 2 442 841 as circles. The light curves do not coincide. Deviations are particularly noticeable in the phase interval 0.0 to 0.6. In the second night, the star appeared bluer during maximum and became redder during later phases.

3. Maximum Light

Barnes and Moffett investigated the B magnitude at maximum light of SZ Lyn versus phase in the 1148 day cycle of the period variations and found no correlation. Nevertheless, their own observations indicated an increase in the brightness of SZ Lyn, compared with earlier investigations. This trend seems to continue in our new observations (Fig. 2). Also, the B magnitude at minimum light and the V magnitudes exhibit a similar phenomenon. In order to discriminate the possible secular increase in brightness of SZ Lyn against a decrease of the brightness of BD +45°1544 and/or difficulties with the transformations of the colour systems of various observers, careful observations during the next seasons are necessary.

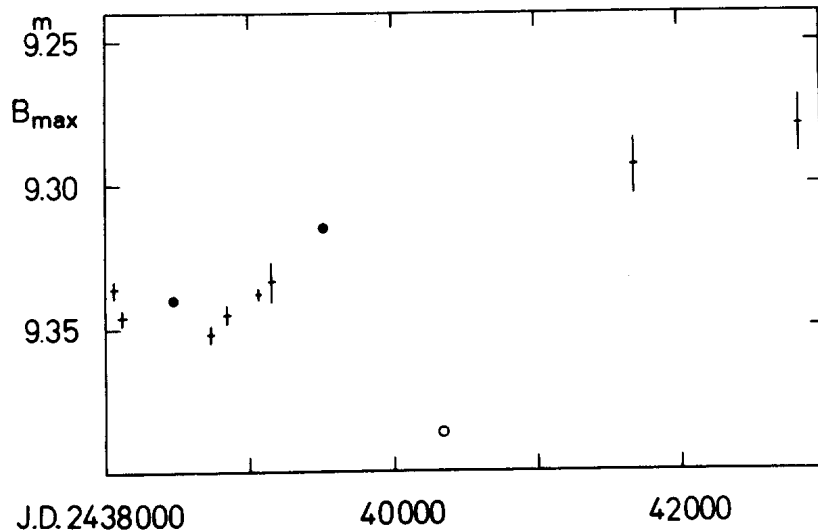


Fig. 2. Secular variation of the B magnitude at maximum. Data are taken from the compilation of Barnes and Moffett (1975), the two dots are derived by the author from the observations of Joshi and Srivastava (1967); the circle represents the result of a single observing run by Wisse and Wisse (1969)

H.W. DUERBECK
Observatorium Hoher List
Universitäts-Sternwarte Bonn
5568 Daun/Eifel, F.R.G.

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Table 1. B, V magnitude differences relative to BD +45°1544

J.D.HEL. 2442...	ΔB	J.D.HEL. 2442...	ΔB	J.D.HEL. 2442...	ΔV	J.D.HEL. 2442...	ΔV
837.2756	0.037	837.4099	-.128	837.2771	-.032	837.4056	-.077
.2768	.044	841.2776	-.398	.2807	-.040	.4084	-.111
.2802	.021	.2793	-.473	.2818	-.032	.4094	-.138
.2814	.027	.2830	-.578	.2848	-.071	841.2800	-.442
.2843	0.000	.2843	-.597	.2861	-.086	.2837	-.500
.2855	-.050	.2882	-.620	.2896	-.141	.2852	-.514
.2907	-.153	.2898	-.611	.2911	-.172	.2887	-.529
.2934	-.235	.2936	-.575	.2939	-.231	.2902	-.528
.2970	-.340	.2953	-.570	.2947	-.251	.2936	-.505
.2982	-.393	.2991	-.499	.2976	-.340	.2948	-.499
.3014	-.494	.3007	-.478	.2986	-.363	.2981	-.460
.3023	-.530	.3043	-.452	.3018	-.458	.2984	-.428
.3064	-.591	.3055	-.436	.3028	-.476	.3035	-.410
.3101	-.606	.3087	-.388	.3060	-.510	.3050	-.376
.3132	-.587	.3100	-.372	.3070	-.513	.3080	-.356
.3141	-.582	.3134	-.324	.3096	-.525	.3093	-.344
.3170	-.570	.3149	-.316	.3106	-.523	.3129	-.314
.3185	-.545	.3194	-.266	.3137	-.505	.3144	-.306
.3211	-.506	.3207	-.253	.3146	-.496	.3189	-.246
.3226	-.459	.3248	-.206	.3174	-.470	.3202	-.251
.3255	-.430	.3268	-.188	.3189	-.469	.3241	-.223
.3264	-.430	.3341	-.126	.3215	-.450	.3257	-.209
.3274	-.419	.3384	-.087	.3231	-.432	.3319	-.187
.3299	-.392	.3425	-.070	.3260	-.399	.3335	-.173
.3307	-.371	.3437	-.059	.3268	-.399	.3373	-.141
.3336	-.334	.3453	-.057	.3295	-.360	.3394	-.129
.3354	-.305	.3487	-.030	.3302	-.346	.3432	-.111
.3382	-.297	.3501	-.020	.3364	-.312	.3446	-.103
.3398	-.268	.3538	-.005	.3377	-.298	.3480	-.099
.3424	-.236	.3549	.011	.3389	-.258	.3495	-.100
.3432	-.241	.3589	.020	.3420	-.268	.3533	-.068
.3462	-.216	.3600	.014	.3427	-.259	.3543	-.064
.3480	-.182	.3642	.065	.3459	-.245	.3582	-.046
.3509	-.157	.3653	.042	.3475	-.195	.3596	-.043
.3518	-.155	.3688	.038	.3504	-.174	.3637	-.024
.3544	-.123	.3700	.039	.3512	-.174	.3648	.010
.3562	-.105	.3743	.041	.3540	-.147	.3683	-.009
.3588	-.127	.3759	.035	.3557	-.141	.3693	-.013
.3598	-.101	.3793	.014	.3584	-.127	.3732	-.016
.3629	-.091	.3804	0.000	.3593	-.124	.3750	.002
.3642	-.076	.3836	-.038	.3625	-.108	.3787	-.027
.3669	-.042	.3848	-.071	.3634	-.113	.3799	-.046
.3678	-.034	.3886	-.123	.3664	-.088	.3832	-.075
.3706	-.029	.3898	-.171	.3674	-.077	.3843	-.084
.3714	-.028	.3936	-.171	.3700	-.091	.3877	-.158
.3745	-.009	.3936	-.285	.3710	-.082	.3892	-.172
.3755	.022	.3950	-.322	.3738	-.068	.3927	-.251
.3787	0.000	.3984	-.460	.3749	-.056	.3943	-.283
.3802	.040	.3996	-.491	.3786	-.054	.3977	-.383
.3836	.026	.4009	-.528	.3795	-.042	.3991	-.412
.3847	.018	.4040	-.606	.3828	-.016	.4002	-.440
.3879	.017	.4051	-.616	.3841	-.041	.4014	-.462
.3889	.040	.4064	-.622	.3875	-.026	.4047	-.516
.3919	.038	.4075	-.621	.3884	-.020	.4057	-.519
.3957	.031	.4115	-.604	.3912	-.010	.4068	-.528
.3966	.026	.4126	-.606	.3923	-.018	.4104	-.514
.4007	.002	.4137	-.595	.3952	-.030	.4119	-.512
.4017	-.030	.4168	-.556	.3961	-.021	.4132	-.506
.4051	-.052	.4179	-.544	.4002	-.047	.4163	-.490
.4061	-.061	.4190	-.540	.4012	-.047	.4173	-.487
.4090	-.104			.4046	-.072	.4184	-.475