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PHOTOELECTRIC LIGHTCURVE AND MINIMA OF THE ECLIPSING BINARY CW Cas

During 1972 we have observed photoelectrically the eclipsing binary CW Cas with the 40 cm refractor of the Teramo Observatory. The observations have been performed with a conventional photometer equipped with an E.M.I. 9502 photomultiplier and Schott GG 14 + GG 13 (2 mm) filters for the V light and Schott BG 12 + GG 13 (2 mm) for the B one.

The comparison and check stars are respectively the "a" and "b" stars used by Broglia (1957) : the coordinates, the V and B-V magnitudes are given in Table I.

Table I

Star	R.A. 1975	D.1975	V	B-V
a	00 <sup>h</sup> 43 <sup>m</sup> 58 <sup>s</sup>	+ 62°59'5	10 <sup>m</sup> .72 <sup>±</sup> 0.03	0.94 <sup>±</sup> 0.03
b	00 44 16	+ 63 00.5	10.79 <sup>±</sup> 0.04	0.44 <sup>±</sup> 0.04

From the observed seven minima we have computed the new elements by a least squares solution, obtaining

$$\text{Min I} = \text{JD}_0 \ 2441649.40322 \pm 0.3188449$$

$$\pm .00009 \pm .0000028$$

The difference from the Broglia's period (1964)  $\Delta P = 0.00002$  is much greater than the error and this suggests a variation of the period; a confirmation is given from the systematic trend of the O-C's for all the minima available in the literature, but the data are insufficient for a valuable determination of a variability law.

In Table II are listed the epochs and their errors, computed by the Hertzsprung's method, and the computed O-C's.

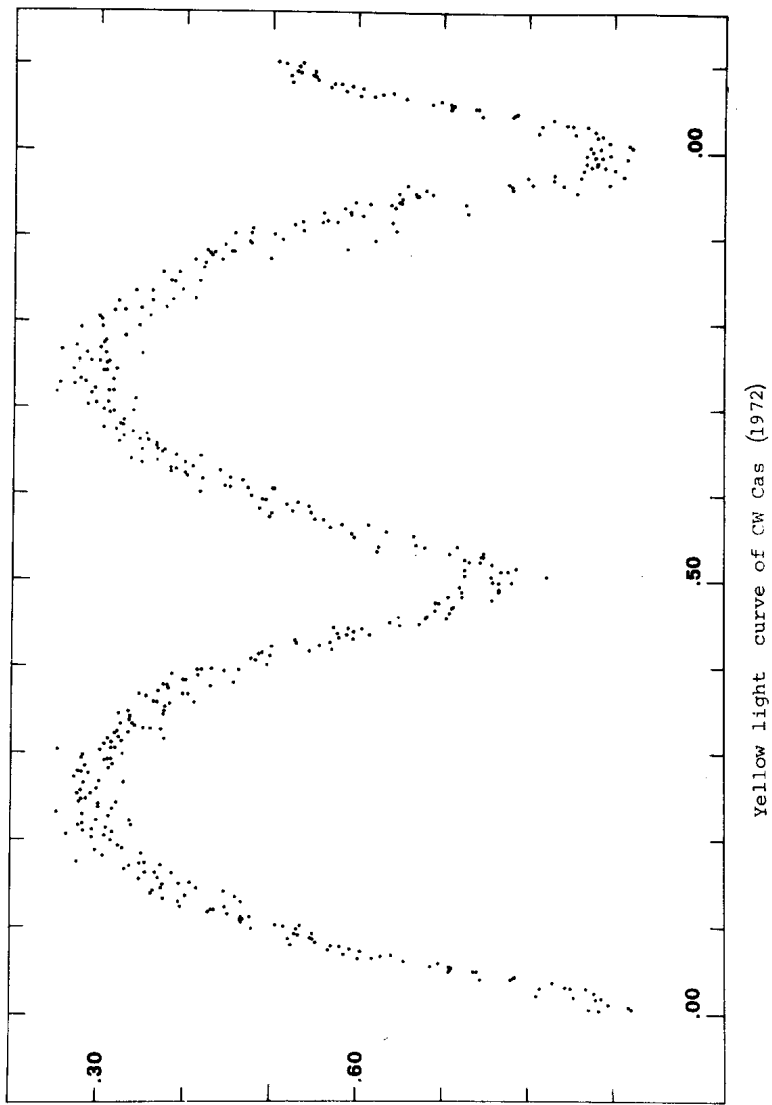
Table II

Observed minima Date	Mean error	E	O-C
JD <sub>0</sub> 2441			
632.34501	±0.00049	- 53.5	- 0.00001
634.41764	.00011	- 47.0	+ 0.00013
649.40339	.00008	0	+ 0.00017
650.35954	.00027	3.0	- 0.00021
650.51889	.00015	3.5	- 0.00029
658.33083	.00008	28.0	- 0.00005
658.49059	.00026	28.5	+ 0.00029

The composite yellow light curve is drawn in the figure.

JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV
2441542.		2441634.		2441649.		2441649.	
.4928	0.32	.2918	.47	.3180	.28	.5386	.56
.4968	.38	.2962	.40	.3213	.30	.5424	.61
.5007	.30	.2991	.38	.3246	.29		
.5049	.31	.3020	.34	.3280	.28	2441650.	
.5083	.31	.3062	.35	.3314	.30	.2402	.38
.5112	.31	.3091	.32	.3380	.30	.2435	.35
.5147	.35	.3120	.35	.3413	.30	.2464	.39
.5213	.33	.3151	.33	.3445	.35	.2507	.37
.5252	.35	.3209	.30	.3477	.38	.2535	.33
.5288	.36	.3236	.30	.3510	.36	.2565	.30
.5319	.38	.3277	.25	.3544	.39	.2594	.33
.5351	.41	.3309	.25	.3579	.39	.2623	.31
.5381	.40	.3358	.27	.3658	.45	.2650	.29
.5416	.41	.3391	.30	.3692	.47	.2702	.32
.5464	.42	.3439	.30	.3727	.48	.2736	.28
.5498	.50	.3469	.31	.3760	.56	.2827	.27
.5530	.59	.3516	.27	.3797	.56	.2857	.25
.5562	.62	.3549	.30	.3833	.65	.3004	.33
.5595	.64	.3578	.32	.3866	.65	.3040	.36
.5630	.64	.3610	.32	.3899	.78	.3074	.34
.5662	.73	.3754	.42	.3935	.86	.3112	.38
.5696	.73	.3798	.43	.3984	.87	.3144	.37
.5745	.86	.3873	.54	.4020	.90	.3190	.44
.5778	.89	.3908	.58	.4055	.92	.3221	.45
.5810	.91	.3943	.59	.4093	.86	.3254	.47
.5842	.89	.3976	.65	.4129	.84	.3287	.50
.5873	.91	.4011	.67	.4163	.78	.3321	.53
		.4047	.78	.4197	.71	.3357	.59
2441632.		.4116	.87	.4232	.60	.3391	.64
.3122	0.43	.4151	.89	.4283	.52	.3423	.67
.3175	.49	.4187	.87	.4320	.53	.3465	.76
.3195	.57	.4225	.88	.4353	.53	.3494	.80
.3218	.53	.4264	.87	.4386	.48	.3524	.86
.3238	.58	.4301	.74	.4422	.45	.3554	.88
.3258	.60	.4336	.71	.4459	.46	.3583	.87
.3289	.67	.4375	.62	.4493	.41	.3614	.88
.3309	.71	.4409	.57	.4547	.36	.3661	.81
.3329	.71			.4583	.35	.3691	.82
.3350	.71	2441649.		.4620	.35	.3722	.78
.3368	.70	.2450	.82	.4675	.29	.3750	.71
.3388	.72	.2481	.79	.4712	.31	.3781	.70
.3405	.72	.2526	.75	.4753	.31	.3811	.64
.3424	.72	.2562	.72	.4807	.28	.3843	.58
.3443	.76	.2601	.67	.4840	.29	.3872	.55
.3465	.73	.2684	.50	.4876	.33	.3915	.52
.3484	.77	.2717	.52	.4911	.29	.3943	.47
.3516	.74	.2747	.48	.4970	.28	.3976	.43
.3535	.75	.2780	.45	.5004	.32	.4007	.47
.3557	.62	.2813	.45	.5039	.38	.4043	.45
.3575	.62	.2846	.39	.5076	.37	.4074	.39
		.2893	.42	.5131	.32	.4111	.39
2441634.		.2924	.38	.5167	.38	.4140	.37
.2754	.59	.2958	.35	.5206	.35	.4200	.33
.2785	.58	.2994	.32	.5247	.46	.4229	.32
.2814	.50	.3108	.34	.5289	.45	.4262	.32
.2844	.49	.3146	.29	.5347	.50	.4294	.28
.2873	.49						

JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV	JD <sub>⊙</sub>	ΔV
2441650.		2441658.		2441658.		2441660.	
.4353	.30	.3107	.61	.4239	.31	.2172	.53
.4386	.28	.3124	.65	.4261	.33	.2222	.64
.4417	.28	.3143	.69	.4283	.31	.2242	.60
.4448	.30	.3161	.78	.4303	.32	.2265	.67
.4498	.31	.3181	.80	.4324	.32	.2287	.68
.4530	.31	.3201	.83	.4345	.32	.2310	.84
.4565	.30	.3221	.83	.4366	.34	.2594	.74
.4594	.33	.3241	.90	.4385	.34	.2613	.71
.4628	.33	.3259	.88	.4405	.38	.2631	.66
.4661	.34	.3287	.88	.4454	.36	.2650	.63
.4707	.37	.3306	.87	.4473	.36	.2668	.60
.4738	.41	.3324	.92	.4493	.37	.2687	.57
.4770	.41	.3342	.90	.4513	.38	.2713	.52
.4799	.43	.3363	.89	.4532	.40	.2731	.55
.4862	.46	.3382	.88	.4552	.42	.2748	.53
.4894	.48	.3402	.84	.4573	.42	.2766	.51
.4932	.54	.3422	.83	.4591	.50	.2784	.47
.4963	.57	.3443	.79	.4613	.48	.2802	.45
.5017	.57	.3462	.74	.4637	.49	.2820	.43
.5052	.68	.3480	.69	.4659	.50	.2861	.38
.5087	.71	.3501	.66	.4680	.53	.2880	.36
.5118	.76	.3530	.59	.4702	.59	.2899	.37
.5150	.77	.3548	.59	.4725	.61	.2917	.41
.5183	.78	.3566	.55	.4747	.64	.2935	.37
.5231	.73	.3585	.55	.4768	.68	.2953	.37
.5259	.73	.3603	.53	.4791	.69	.2979	.34
.5291	.75	.3623	.48	.4820	.69	.2995	.28
.5322	.67	.3643	.47	.4844	.71	.3096	.26
.5386	.57	.3661	.47	.4867	.77	.3112	.29
.5415	.56	.3680	.43	.4893	.77	.3129	.34
.5447	.52	.3699	.40	.4914	.76	.3145	.34
.5479	.53	.3719	.39	.4937	.78	.3175	.25
.5528	.50	.3739	.40	.4960	.76	.3211	.32
.5559	.47	.3758	.36	.4981	.73	.3226	.29
.5594	.44	.3780	.38	.5001	.71	.3331	.28
.5626	.40	.3799	.35	.5023	.68	.3350	.32
.5674	.37	.3820	.36	.5062	.60	.3369	.31
.5705	.36	.3837	.33	.5086	.63	.3389	.28
.5737	.34	.3858	.35	.5107	.61	.3409	.25
.5770	.32	.3886	.31	.5131	.55	.3428	.31
.5818	.34	.3907	.30	.5152	.55	.3446	.31
.5847	.31	.3925	.32	.5174	.54	.3466	.32
.5883	.29	.3942	.31	.5200	.49	.3487	.35
.5915	.27	.3961	.31	.5226	.42	.3505	.33
.5973	.32	.3980	.28	.5249	.45	.3531	.34
.6002	.31	.3997	.28	.5275	.42	.3549	.33
.6032	.31	.4017	.30	.5295	.40	.3566	.38
.6061	.27	.4038	.28	.5320	.41	.3582	.37
2441658.		.4057	.32	.5342	.37	.3614	.40
.2899	.41	.4076	.30	.5374	.37	.3631	.38
.2920	.43	.4117	.28	.5396	.37	.3648	.38
.2938	.42	.4135	.30	2441660.		.3665	.40
.2959	.44	.4155	.28	.2056	.43	.3685	.38
.3043	.56	.4174	.27	.2106	.51	.3701	.41
.3063	.60	.4196	.28	.2129	.46	.3818	.60
.3089	.58	.4216	.29	.2150	.48	.3837	.58
						.3852	.58



Teramo Astronomical Observatory  
I - 64100 Teramo

R. BURCHI  
R. DE SANTIS

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