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PRIMARY MINIMUM AND NEW EPHEMERIS OF TT Hya

Primary minimum of eclipsing variable TT Hya was observed photo-electrically in UBV with 41 cm reflector at Siding Spring on 13/14 Feb. 1979. Observing conditions were not very good. The observation had to be interrupted because of cloudiness also the observation was terminated because of photocell failure. The star HD 97637 (Sp. AO) served as comparison star. A pulse counting system with IP21 photomultiplier and standard UBV filters of the Mt. Stromlo and Siding Spring Observatories were used. Observation consisted of the sequence CVCVC.... each star being observed in all three colours, and three to five 10-second integrations were made to check the fluctuations. Each integration reading of the photometer was printed and the local sidereal time was read off the digital display and recorded manually.

TT Hya - primary minimum in UBV
 13/14 February, 1979, Siding Spring, 41 cm

HJD 2440000.+	ΔV		ΔB		ΔU
3917.9321	-0.093	3917.9343	0.284	3917.9348	0.274
.9424	+ .032	.9442	.494	.9449	.490
.9527	.140	.9543	.693	.9549	.704
.9614	.239	.9630	.913	.9639	.994
.9709	.354	.9726	1.161	.9733	1.361
.9801	.443	.9819	1.318	.9827	1.545
.9911	.490	.9927	1.336	.9935	1.603
3918.0165	.500	3918.0182	1.372	3918.0188	1.642
.0493	.508	.0514	1.410	.0522	1.718
.0599	.496	.0616	1.422	.0623	1.732
.0716	.497	.0732	1.404	.0741	1.738
.0818	.491	.0834	1.415	.0842	1.727
.1786	.494	.1802	1.416	.1808	1.708
.1871	.487	.1888	1.383	.1893	1.678
.1951	.490	.1966	1.379	.1971	1.664
.2029	.479	.2043	1.396	.2048	1.659
.2258	.460	.2273	1.330	.2278	1.615
.2337	.432	.2357	1.240	.2365	1.402
.2416	.362	.2431	1.139	.2436	1.225
.2503	.232	.2517	.874	.2524	.900
.2595	.135	.2612	.630	.2617	.563
.2685	.099	.2700	.447	.2706	.610

The data in the Table represents the time in heliocentric Julian Days and the observed differential magnitude in the telescope-photometer natural system (variable minus comparison). As the minimum was not well covered by observations the time of minimum was obtained by simple Kordylewski's method of folded tracing paper at large scale using averages from all 3 colours. The error was estimated also by that graphical method. The primary minimum occurred at HJD 2443918.1060 \pm 0.0006 which is 1^h 05^m later than according to the ephemeris given in GCVS. The new period is slightly longer than in GCVS and the new ephemeris is

$$T_{\min} = 2443918.1060 + 6.9534287 E.$$

The observed points of the light curve are represented in Fig. 1, which is the direct output of the Plotter HP-9125B. The reduction of the observation was done with HP-97 and HP-9100 (+HP-9101A) calculators.

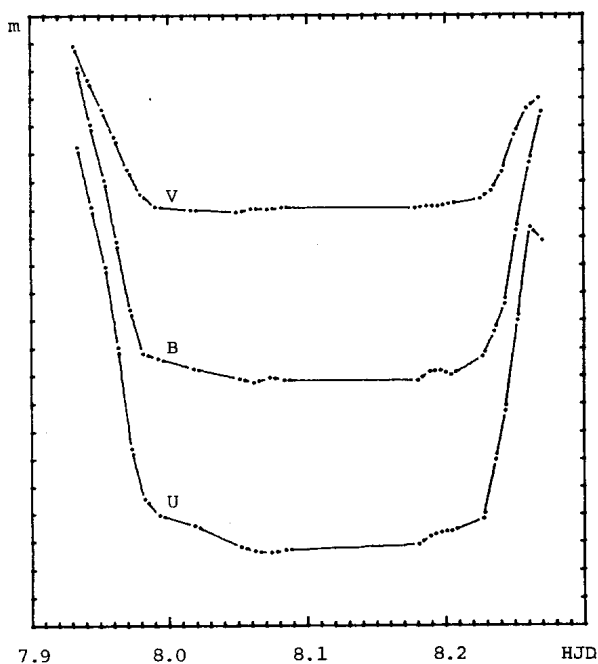


Fig. 1. Differential magnitudes TT Hya - HD 97637.
Magnitude zero-point arbitrary, division marks 0.1^m.

These results are part of the project of photoelectric observation of southern eclipsing variable stars with known changes of periods or stars not observed for long time or not observed photoelectrically at all. This project is supported by the Grant No. B 76/15712 of the Australian Research Grant Commission. I wish to express my thanks to the Mt. Stromlo and Siding Spring Observatories for the time allocation and facilities at Siding Spring and to Mrs. A.E. Harris for her assistance during the observation.

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