EX HYDRAE TIMING DATA

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The 98 min eclipsing cataclysmic variable EX Hya possesses a strong 67 min modulation in its light. This has led to a discussion of EX Hya in the context of intermediate polar variables. The observed $P/\dot{P}$ of the 67 min modulation provides a useful constraint on EX Hya models. Here we report additional timing data obtained over the interval 1982 to 1985 which bears on this matter.

Table I lists 35 moments of 67 min maximum. Data were derived from observations made with the 1 m reflector of the Kavalur observatory, South India, (denoted by an asterisk) and with the 1 m reflector of the University of Tasmania. As well, the Tasmanian observations yielded 21 mid-eclipse times, which are given in Table II, where Heliocentric Julian date is corrected to Ephemeris Time. Here the data in Table I is combined with that in Cordova *et al.* (1985), Jablonski and Busko (1985) and all previous data, as summarized in Hill and Watson (1984). The resulting quadratic ephemeris in Figure 1 is

$$HJD(max) = 2437699.8901(\pm 6) + 0.046546516(\pm 13)E - 0.84(\pm 7) \times 10^{-12}E^2.$$

From the E^2 term a $P/\dot{P} = -3.5(\pm 0.3)\times 10^6$ yrs is deduced. Following Ritter (1985), this permits limits on the primary mass accretion rate to be inferred. The value lies in the range 10^{-10} to 10^{-11} $M_\odot$ yr^{-1}. This is consistent with the 1×10^{-10} $M_\odot$ yr^{-1} obtained by Patterson (1984) using an independent technique which relies on the observed disk flux. Eclipse times in Table II, combined with previously published data, show O-C residuals from a constant period which are similar to those of the 1960's, after a systematic shift in the following decade. Similar drifts are seen in other cataclysmic variables.

REFERENCES

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TABLE I

Heliocentric Times of 67 min Maximum

HJD (2440000+)	E (100000+)	HJD (2440000+)	E (100000+)
5031.316	57508*	5825.213	74564
5031.361	57509*	5825.253	74565
5042.309	57744*	5855.969	75225
5042.354	57745*	5875.008	75634
5043.326	57766*	6149.168	81524
5043.371	57767*	6149.219	81525
5344.438	64235*	6149.266	81526
5344.484	64236*	6150.009	81542
5389.349	65200*	6150.055	81543
5389.395	65201*	6150.098	81544
5792.212	73855*	6150.149	81545
5792.258	73856*	6150.201	81546
5792.303	73857*	6150.247	81547
5792.357	73858*	6153.032	81607
5793.239	73877*	6153.126	81609
5823.154	74520	6153.180	81610
5825.075	74561	6153.224	81611
5825.118	74562		

TABLE II

Heliocentric Times of Mid-Eclipse

HJD (2440000+)	E (100000+)	HJD (2440000+)	E (100000+)
5823.1132	19049	6149.2023	23828
5823.1820	19050	6149.2704	23829
5825.0924	19078	6150.0214	23840
5825.1600	19079	6150.0890	23841
5825.2283	19080	6150.1574	23842
5856.0015	19531	6150.2259	23843
5856.0694	19532	6153.0229	23884
5871.0133	19751	6153.0921	23885
5871.0821	19752	6153.1600	23886
5875.0385	19810	6153.2282	23887
5885.0687	19957		

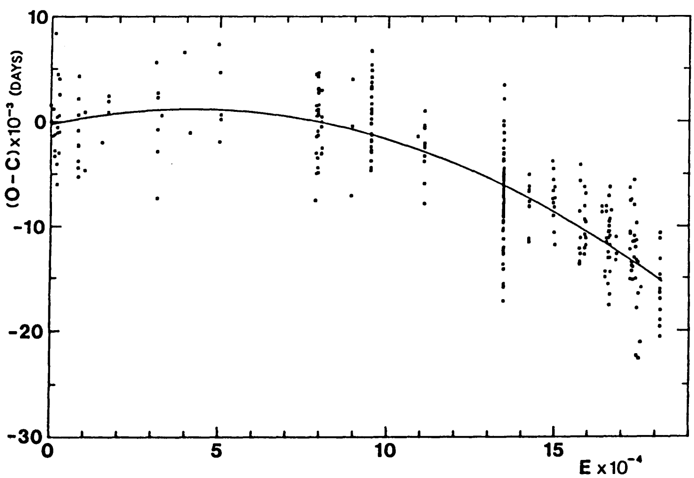

Figure 1. The residuals, O-C, in units of 10^{-3} day, versus cycle number E in the 67 min modulation of EX Hya. These residuals are derived relative to the ephemeris of Vogt *et al.* (1980). A least squares quadratic fit is shown, which is the basis of the ephemeris presented here.