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CHANGES IN THE LIGHT CURVES OF AP LEONIS

AP Leo is an over-contact binary system (Zhang et al., 1992). Its light curves showed large changes in the past ten years. Photoelectric observations were carried out by us in 1983, 1984, 1985, 1988 (Zhang et al., 1989), 1990, 1991 and 1993 seasons. Six annual BV light curves were obtained. We present three light curves observed in 1985, 1991 and 1993 as shown in Figures 1-3.

Table I lists the minimum times observed in the nineties.

Table I  
 New light minima for AP Leo

J.D. (Hel) V 2440000+	M.E.	J.D (Hel) B 2440000+	M.E.	Min
7925.2716	0.0020	7925.2723	0.0017	II
7928.2856	0.0006	7928.2867	0.0005	II
8310.2278	0.0005	8310.2284	0.0004	I
8311.3031	0.0003	8311.3033	0.0005	II
9037.0988	0.0005	9037.0980	0.0007	I
9037.3107	0.0002	9037.3117	0.0004	II

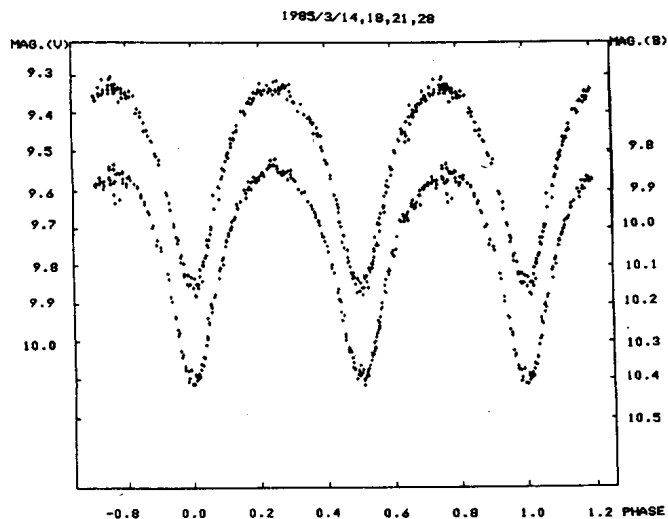


Figure 1. The light curves of AP Leo in 1985.

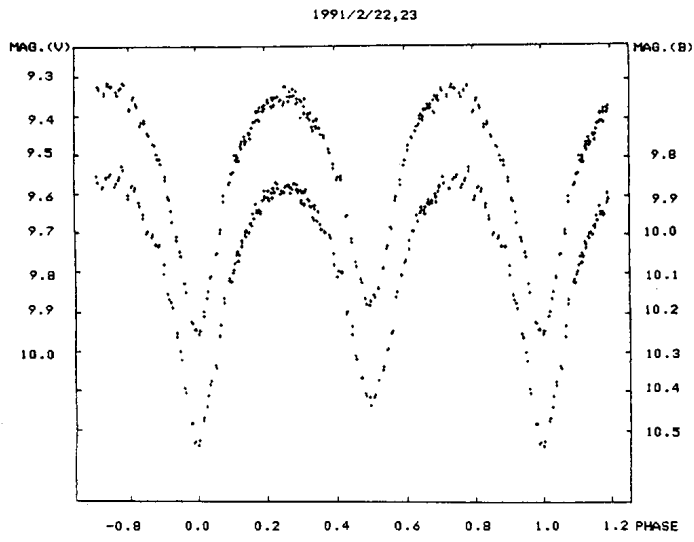


Figure 2. The light curves of AP Leo in 1991.

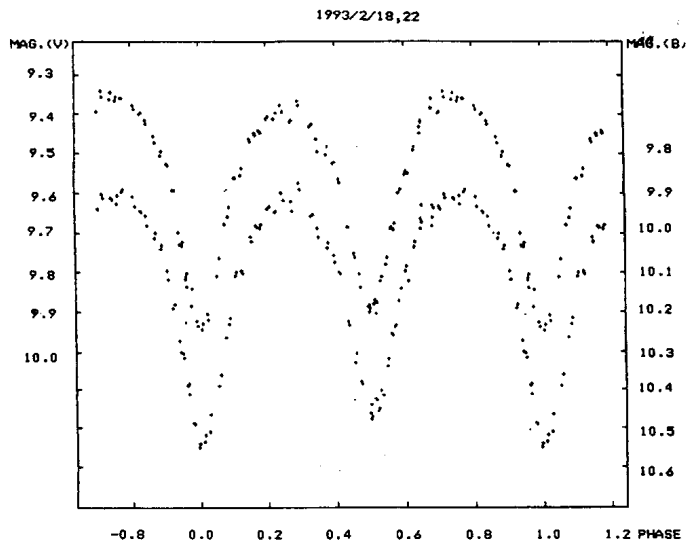


Figure 3. The light curves of AP Leo in 1993.

It is found that the depth of the primary minima of AP Leo changes as shown in Table II.

Table II  
Eclipse depth of AP Leo

Amplitude	1985	M.E.	1991	M.E.	1993	M.E.
V Min(I)-Max	0 <sup>m</sup> 54	0 <sup>m</sup> 01	0 <sup>m</sup> 63	0 <sup>m</sup> 01	0 <sup>m</sup> 59	0 <sup>m</sup> 02
V Min(II)-Max	0 <sup>m</sup> 53	0 <sup>m</sup> 01	0 <sup>m</sup> 54	0 <sup>m</sup> 01	0 <sup>m</sup> 53	0 <sup>m</sup> 02
B Min(I)-Max	0 <sup>m</sup> 58	0 <sup>m</sup> 01	0 <sup>m</sup> 67	0 <sup>m</sup> 01	0 <sup>m</sup> 64	0 <sup>m</sup> 01
B Min(II)-Max	0 <sup>m</sup> 58	0 <sup>m</sup> 01	0 <sup>m</sup> 56	0 <sup>m</sup> 01	0 <sup>m</sup> 56	0 <sup>m</sup> 01

The detailed analysis will be published in a forthcoming paper.

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References:

- Zhang, J. T., Zhang, R. X., Zhai, D. S., Li, Q. S., Jin, T. L., 1989, *IBVS*, No. 3302  
Zhang, J. T., Zhang, R. X. et al., 1992, *Acta Astronomica Sinica*, **33**, 131