REPRESENTATIONS OF OBSERVATIONS OF THIRTY-FOUR MINOR PLANETS
 BELONGING TO A GROUP WHICH INCLUDES THE GROUP ONE-HALF

Minor Planet	n	i	φ	First Obs.	Last Obs.*	Span	Position		Residuals		
							R.A.	Dec.	R.A.	Dec.	
(16) Psyche	710''	3°	8°	1852	1949 Aug.	5.931	97	309°89	−16°63	−0°11	−0°03
(24) Themis	640	1	7	1853	1950 Sept.	13.94	97	356.90	−2.13	−0.17	−0.04
(47) Aglaja	726	5	8	1857	1949 May	4.333	92	249.42	−28.59	+0.26	+0.09
(57) Mnemosyne	634	15	6	1859	1949 Nov.	14.636	90	39.12	+5.41	+0.24	−0.42
(76) Freia	566	2	10	1862	1950 Oct.	16.90	88	23.66	+10.20	−0.39	−0.14
(81) Terpsichore	735	8	12	1864	1950 July	6.869	86	283.52	−34.37	+0.25	+0.22
(86) Semele	648	5	12	1866	1950 Apr.	5.88	84	182.30	+6.08	−0.04	0.00
(87) Sylvia	545	11	5	1866	1949 Feb.	19.585	83	155.49	+25.36	+0.13	−0.06
(92) Undina	622	10	5	1867	1950 Jan.	25.678	83	125.81	+24.54	+0.19	0.00
(100) Hekate	652	6	9	1868	1947 Jan.	19.126	79	103.74	+19.76	+0.12	+0.03
(104) Klymene	635	3	9	1868	1949 Mar.	27.563	81	177.83	+3.98	−0.01	−0.04
(106) Dione	629	5	10	1869	1950 Mar.	12.574	81	176.84	+7.93	+0.12	−0.06
(108) Hecuba	616	4	5	1869	1950 May	21.647	81	227.06	−23.54	+0.08	0.00
(121) Hermione	553	8	8	1872	1949 May	23.906	77	249.47	−20.92	+0.09	+0.04
(122) Gerda	615	2	2	1873	1950 Jan.	15.654	77	102.39	+20.71	−0.06	0.00
(133) Cyrene	662	7	8	1873	1948 Sept.	8.280	75	339.39	−4.47	−0.28	−0.15
(137) Meliboea	644	13	13	1874	1947 Sept.	20.495	73	10.00	+10.87	−0.16	−0.05
(147) Protogeneia	639	2	2	1875	1949 Dec.	23.045	74	86.34	+22.54	−0.03	−0.03
(150) Nuwa	689	2	7	1875	1950 Mar.	13.540	75	176.94	−0.41	−0.05	+0.02
(167) Urda	736	2	2	1876	1949 Oct.	16.0	73	37.25	+12.15	+0.16	+0.02
(168) Sibylla	572	5	3	1876	1949 June	16.933	73	260.37	−17.94	+0.07	+0.04
(174) Phaedra	733	12	8	1877	1948 Mar.	5.90	71	157.76	+5.07	−0.24	+0.12
(175) Andromache	620	3	12	1877	1950 Mar.	21.285	73	161.52	+10.70	+0.47	−0.40
(179) Klytaemnestra	692	8	6	1877	1949 Dec.	23.90	72	86.25	+20.25	−0.10	−0.02
(211) Isolda	668	4	9	1880	1950 Mar.	13.940	70	174.71	−3.97	−0.17	+0.13
(221) Eos	679	11	6	1882	1950 Feb.	19.575	68	150.23	+13.89	+0.08	0.00
(241) Germania	666	6	6	1884	1950 Jan.	19.894	66	97.65	+21.59	+0.07	+0.10
(268) Adorea	651	2	8	1887	1947 May	25.0	60	264.64	−20.83	+0.33	−0.03
(318) Magdalena	620	11	4	1891	1948 July	27.081	57	295.98	−10.69	−0.42	0.00
(325) Heidelberga	620	9	10	1892	1950 May	7.271	58	203.92	−19.48	−0.36	−0.34
(349) Dembowska	709	8	5	1892	1950 May	21.647	58	229.01	−22.96	+0.06	−0.05
(372) Palma	636	24	15	1893	1949 Sept.	17.8	56	332.00	−3.33	+0.29	−0.30
(372) Palma**	636	24	15	1893	1949 Sept.	17.8	56	332.00	−3.33	+0.35	−0.29
(381) Myrrha	618	13	7	1894	1951 Feb.	6.885	57	105.18	+19.21	+0.17	+0.03
(511) Davida	628	16	11	1903	1949 July	18.843	46	295.50	−23.52	−0.29	+0.06

* Universal Time.

** Jenvall higher inclination terms included.

It is of interest to remark that the range of the perturbations in the mean anomaly of (175) Andromache, previously reported as 50°, is now 55°. The perturbation used in the representation of the 1950 observations was 30°.

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About one-third of the perturbations were developed by Mr. Steel, another third by David W. Bressler, and the remaining third by other graduate assistants in the Department of Mathematics. Mr. Steel has made the computations for all thirty-four representations.

1. Sophia L. McDonald, *A. J.* **53**, 199, 1948.
2. Sophia L. McDonald and A. O. Leuschner, Tables of General Perturbations for a Group of Minor Planets Which Includes the Group One-Half, with Applications to Thirty-Four Cases. *Pub. Lick Obs.* **20**, (in proof).

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McLaughlin, Dean B. Spectroscopic observations of the eclipse of 31 Cygni.

The eclipse of 31 Cygni in 1951 showed absorption effects as spectacular as those of ζ Aurigae, and practically identical in appearance. Numerous spectrograms were obtained during ingress in August and a continuous run for 12 days during egress in October.

From spectrograms taken August 12.1 and October 13.0 UT, it was first estimated that second contact occurred Aug. 12.2 and third contact Oct. 12.8, the eclipse being certainly deeper at the ingress observation. Data communicated by E. F. Carpenter, however, suggest the time of third contact may need revision to Oct. 12.5.

The atmosphere was unsymmetrical in the same direction as that of ζ Aurigae.¹ The absorption effects were stronger at a given time interval before second contact than at an equal interval after third contact. The maximum difference, at 7 days from totality, corresponded to nearly two days' motion of the companion.