

ASTROMETRIC POSITIONS OF PERIODIC COMET HALLEY MADE AT THE "ESTACION ASTRONOMICA DE CERRO EL ROBLE" (Research Note)

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RESUMEN

Este trabajo presenta 273 posiciones astrométricas del cometa periódico Halley obtenidas en noviembre de 1985 a junio de 1986 con el telescopio astrográfico Maksutov de la Estación Astronómica de Cerro El Roble. Se usó estrellas de los Catálogos: The Comet Halley Catalog o el Supplemental Halley Star Catalog, publicados por el grupo de astrometría del International Halley Watch.

ABSTRACT

273 positions of periodic comet Halley obtained from November 1985 to June 1986 with the Maksutov astrograph of the Estación Astronómica El Roble are presented. The Comet Halley Catalog or the Supplemental Halley Star Catalog, provided by the Astrometry Network of the International Halley Watch (IHW), have been used.

Key words: COMETARY ASTROMETRY – COMETS – P/HALLEY

I. INTRODUCTION

With occasion of the 1985-1986 perihelion of periodic comet Halley, we have participated in the International Halley Watch's Astrometry, Near Nucleus and Large Scale Phenomena Networks. The observations were made during the Halley's days, as defined by the IHW.

We are presenting in this paper the results of our astrometric observations. The 70/100/210-cm Maksutov astrograph uses 18 X 18-cm plates covering a flat field of 5 X 5 degrees and giving images of very good quality; the exposure times and emulsion types varied, according to the brightness of the comet, from 30 seconds on

E. Kodak IIAO or IIA D plates to 5 second exposures on IIIA J without hypersensitization. In order to save plates, several exposures were made on each plate when convenient.

About 20 stars per plate, the fainter and with smaller proper motions, were selected from the Comet Halley Catalog or the Supplemental Halley Star Catalog. Measurements were done with the Zeiss-Jena Ascorecord measuring machine of the Observatorio de Cerro Calán. Quadratic terms were used in all reductions. Stars giving residuals equal or larger than 1.5 arc-sec were discarded and the computation was repeated. The obtained positions of Comet Halley are presented in Table 1.

TABLE 1

POSITIONS

Epoch	R. A. (1950.0)	Decl.	Epoch	R. A. (1950.0)	Decl.	Epoch	R. A. (1950.0)	Decl.
1985 11 15.10226	03 56 52.43	+21 55 09.9	1985 12 13.09516	23 26 32.22	+04 41 49.4	1986 03 10.54865	20 08 56.58	-20 08 03.3
1985 11 15.10660	03 56 50.15	+21 55 06.4	1985 12 13.10211	23 26 29.85	+04 41 34.0	1986 03 10.35004	20 08 56.43	-20 08 05.6
1985 11 15.10868	03 56 49.02	+21 55 06.6	1985 12 13.10905	23 26 27.36	+04 41 19.0	1986 03 10.35143	20 08 56.32	-20 08 08.0
1985 11 16.07864	03 48 05.15	+21 45 51.9	1985 12 13.11599	23 26 24.88	+04 41 04.2	1986 03 10.35282	20 08 56.14	-20 08 11.3
1985 11 16.08073	03 48 03.63	+21 45 50.4	1985 12 13.12641	23 26 21.24	+04 40 40.3	1986 03 10.35421	20 08 56.00	-20 08 13.8
1985 11 16.08281	03 48 02.46	+21 45 48.9	1986 03 07.35143	20 15 01.43	-18 46 42.8	1986 03 10.35560	20 08 55.84	-20 08 15.8
1985 11 16.08409	03 48 00.89	+21 45 47.2	1986 03 07.35282	20 15 01.31	-18 46 45.6	1986 03 12.34101	20 04 30.66	-21 07 39.5
1985 11 16.08906	03 47 58.98	+21 45 45.4	1986 03 07.35421	20 15 01.09	-18 46 46.8	1986 03 12.34240	20 04 30.49	-21 07 41.6
1985 12 11.10281	23 38 57.93	+05 55 40.4	1986 03 07.35560	20 15 00.97	-18 46 50.0	1986 03 12.34379	20 04 30.26	-21 07 45.7
1985 12 11.10698	23 38 56.38	+05 55 32.7	1986 03 07.35698	20 15 00.82	-18 46 52.3	1986 03 12.34518	20 04 30.15	-21 07 47.4
1985 12 11.11114	23 38 54.69	+05 55 20.8	1986 03 07.35837	20 15 00.62	-18 46 54.1	1986 03 12.34657	20 04 29.95	-21 07 49.9
1985 12 11.11531	23 38 53.00	+05 55 13.5	1986 03 07.35976	20 15 00.48	-18 46 55.8	1986 03 12.34796	20 04 29.74	-21 07 53.4
1985 12 11.11948	23 38 51.50	+05 55 04.0	1986 03 09.37226	20 10 59.45	-19 40 33.7	1986 03 12.34935	20 04 29.49	-21 07 55.5
1985 12 11.12364	23 38 49.72	+05 54 52.2	1986 03 09.37365	20 10 59.27	-19 40 35.9	1986 03 12.35073	20 04 29.38	-21 07 58.1
1985 12 11.12781	23 38 48.14	+05 54 42.2	1986 03 09.37504	20 10 59.16	-19 40 38.8	1986 03 13.34657	20 02 07.36	-21 39 41.6
1985 12 12.09035	23 32 58.30	+05 18 10.7	1986 03 09.37643	20 10 58.97	-19 40 40.7	1986 03 13.34796	20 02 07.16	-21 39 44.3
1985 12 12.09452	23 32 56.73	+05 18 01.8	1986 03 09.37782	20 10 58.79	-19 40 43.6	1986 03 13.34935	20 02 06.92	-21 39 47.6
1985 12 12.09868	23 32 55.15	+05 17 52.4	1986 03 09.37921	20 10 58.60	-19 40 45.6	1986 03 13.35073	20 02 06.72	-21 39 50.2
1985 12 12.10285	23 32 53.52	+05 17 44.5	1986 03 09.38060	20 10 58.44	-19 40 48.2	1986 03 13.35212	20 02 06.55	-21 39 52.6
1985 12 12.10702	23 32 51.99	+05 17 33.4	1986 03 09.38198	20 10 58.32	-19 40 50.3	1986 03 13.35351	20 02 06.38	-21 39 54.5
1985 12 12.11118	23 32 30.31	+05 17 23.7	1986 03 10.34587	20 08 57.10	-20 07 59.2	1986 03 13.35490	20 02 06.10	-21 39 58.2
1985 12 12.11525	23 32 28.80	+05 17 15.9	1986 03 10.34726	20 08 56.81	-20 08 01.2	1986 03 13.35629	20 02 05.93	-21 40 00.0

TABLE 1 (CONTINUED)

Epoch	R. A. (1950.0)	Decl.	Epoch	R. A. (1950.0)	Decl.	Epoch	R. A. (1950.0)	Decl.
1986 03 14.36671	19 59 34.36	-22 13 45.3	1986 04 07.12226	16 34 43.72	-46 24 27.1	1986 04 13.30212	13 57 31.23	-44 43 22.5
1986 03 14.36810	19 59 34.06	-22 13 48.5	1986 04 07.12921	16 34 33.97	-46 24 47.9	1986 04 13.30907	13 57 21.43	-44 42 48.9
1986 03 14.36949	19 59 33.91	-22 13 51.0	1986 04 07.13615	16 34 24.15	-46 25 09.9	1986 04 13.31601	13 57 11.50	-44 42 15.4
1986 03 14.37088	19 59 33.68	-22 13 53.7	1986 04 07.29171	16 30 43.81	-46 32 36.7	1986 04 13.32296	13 57 01.78	-44 41 41.0
1986 03 14.37227	19 59 33.49	-22 13 55.9	1986 04 07.30212	16 30 28.96	-46 33 06.1	1986 04 13.32990	13 56 51.88	-44 41 07.1
1986 03 14.37366	19 59 33.30	-22 13 59.0	1986 04 07.30907	16 30 19.06	-46 33 24.6	1986 04 13.33615	13 56 07.65	-44 38 27.2
1986 03 14.37505	19 59 33.04	-22 14 01.4	1986 04 07.31601	16 30 09.13	-46 33 43.4	1986 04 13.37157	13 55 53.16	-44 37 35.4
1986 03 14.37644	19 59 32.84	-22 14 05.3	1986 04 07.32296	16 29 59.19	-46 34 03.6	1986 04 13.37851	13 55 43.40	-44 37 00.8
1986 03 15.37157	19 56 55.43	-22 48 50.6	1986 04 07.32990	16 29 49.34	-46 34 22.5	1986 04 13.38546	13 55 33.64	-44 36 26.1
1986 03 15.37296	19 56 55.18	-22 48 54.0	1986 04 08.08060	16 11 35.95	-47 03 03.3	1986 04 13.39240	13 55 23.85	-44 35 53.2
1986 03 15.37435	19 56 54.98	-22 48 57.0	1986 04 08.09101	16 11 20.48	-47 03 23.7	1986 04 13.39935	13 55 14.35	-44 35 17.1
1986 03 15.37574	19 56 54.66	-22 49 00.6	1986 04 08.09865	16 11 08.95	-47 03 39.3	1986 04 14.07365	13 40 00.54	-43 35 35.2
1986 03 15.37713	19 56 54.49	-22 49 02.5	1986 04 08.10560	16 11 08.55	-47 03 53.0	1986 04 14.08407	13 39 46.73	-43 34 37.2
1986 03 15.37852	19 56 54.23	-22 49 06.3	1986 04 08.11264	16 10 48.13	-47 04 07.1	1986 04 14.09101	13 39 37.50	-43 33 59.1
1986 03 15.37990	19 56 54.01	-22 49 09.1	1986 04 08.11948	16 10 37.70	-47 04 20.8	1986 04 14.09796	13 39 28.32	-43 33 21.0
1986 03 15.38129	19 56 53.96	-22 49 10.3	1986 04 08.30907	16 05 57.13	-47 09 55.4	1986 04 14.10837	13 39 14.51	-43 32 24.3
1986 03 16.31254	19 54 18.02	-23 23 19.9	1986 04 08.31948	16 05 35.25	-47 10 12.2	1986 04 14.11532	13 39 05.30	-43 31 45.8
1986 03 16.31393	19 54 17.72	-23 23 23.5	1986 04 08.32643	16 05 24.76	-47 10 23.6	1986 04 14.22573	13 36 39.71	-43 21 17.1
1986 03 16.31532	19 54 17.44	-23 23 27.3	1986 04 08.33337	16 05 14.14	-47 10 35.5	1986 04 14.23615	13 36 26.16	-43 20 18.4
1986 03 16.31671	19 54 17.20	-23 23 29.5	1986 04 08.34032	16 05 03.61	-47 10 45.3	1986 04 14.24379	13 36 16.07	-43 19 35.6
1986 03 16.31948	19 54 16.75	-23 23 35.8	1986 04 08.34726	16 04 53.02	-47 10 55.8	1986 04 14.25004	13 36 07.91	-43 19 00.4
1986 03 17.32711	19 51 17.94	-24 02 24.1	1986 04 08.35421	15 46 39.42	-47 23 51.1	1986 04 14.25698	13 35 58.82	-43 18 20.0
1986 03 17.32850	19 51 17.59	-24 02 27.0	1986 04 08.36115	15 46 29.24	-47 23 59.5	1986 04 14.26393	13 35 49.82	-43 17 41.0
1986 03 17.32989	19 51 17.26	-24 02 30.9	1986 04 09.07643	15 46 12.36	-47 24 03.8	1986 04 14.32296	13 34 32.89	-43 11 56.7
1986 03 17.33128	19 51 17.11	-24 02 34.2	1986 04 09.08337	15 46 01.55	-47 24 10.3	1986 04 14.33337	13 34 19.38	-43 10 56.2
1986 03 17.33267	19 51 16.83	-24 02 37.3	1986 04 09.09032	15 45 50.75	-47 24 15.3	1986 04 14.34032	13 34 10.49	-43 10 15.0
1986 03 17.33406	19 51 16.54	-24 02 39.5	1986 04 09.09726	15 45 39.73	-47 24 22.0	1986 05 05.07023	10 43 39.08	-15 11 36.2
1986 03 17.33545	19 51 16.32	-24 02 43.3	1986 04 09.27782	15 40 58.38	-47 25 53.2	1986 05 05.07162	10 43 38.90	-15 11 32.7
1986 03 17.33683	19 51 16.08	-24 02 47.4	1986 04 09.28823	15 40 58.89	-47 25 57.5	1986 05 05.07301	10 43 38.73	-15 11 29.4
1986 03 18.29171	19 48 15.22	-24 41 26.4	1986 04 09.29518	15 40 27.48	-47 26 00.2	1986 05 05.07440	10 43 38.51	-15 11 26.2
1986 03 18.29310	19 48 14.92	-24 41 29.4	1986 04 09.30212	15 40 16.92	-47 26 02.6	1986 05 05.07579	10 43 38.32	-15 11 22.5
1986 03 18.29448	19 48 14.60	-24 41 32.1	1986 04 09.30907	15 40 05.95	-47 26 05.1	1986 05 05.07718	10 43 38.14	-15 11 19.2
1986 03 18.29587	19 48 14.32	-24 41 35.9	1986 04 09.31601	15 39 54.99	-47 26 07.8	1986 05 05.07856	10 43 37.95	-15 11 16.3
1986 03 18.29726	19 48 13.98	-24 41 40.4	1986 04 09.32300	15 39 44.02	-47 26 10.5	1986 05 05.07995	10 43 37.77	-15 11 13.0
1986 03 18.29865	19 48 13.74	-24 41 44.0	1986 04 09.33000	15 39 33.05	-47 26 13.2	1986 05 05.22240	10 43 18.69	-15 05 33.2
1986 03 18.30004	19 48 13.47	-24 41 46.2	1986 04 09.33700	15 39 22.08	-47 26 15.9	1986 05 05.22448	10 43 18.45	-15 05 27.9
1986 03 18.30143	19 48 13.26	-24 41 50.6	1986 04 09.34400	15 39 11.11	-47 26 18.6	1986 05 05.22657	10 43 18.09	-15 05 20.8
1986 03 18.30282	19 48 13.05	-24 41 54.9	1986 04 09.35100	15 39 00.14	-47 26 21.3	1986 05 05.22865	10 43 17.80	-15 05 15.8
1986 03 18.30421	19 48 12.84	-24 41 59.3	1986 04 09.35800	15 38 49.17	-47 26 24.0	1986 05 05.23073	10 43 17.61	-15 05 13.5
1986 03 18.30560	19 48 12.63	-24 42 03.6	1986 04 09.36500	15 38 38.20	-47 26 26.7	1986 05 05.23282	10 43 17.31	-15 05 08.5
1986 03 18.30699	19 48 12.42	-24 42 07.9	1986 04 09.37200	15 38 27.23	-47 26 29.4	1986 05 05.23490	10 43 17.06	-15 05 03.1
1986 03 18.30838	19 48 12.21	-24 42 12.2	1986 04 09.37900	15 38 16.26	-47 26 32.1	1986 05 05.23698	10 43 16.74	-15 04 56.7
1986 03 18.30977	19 48 12.00	-24 42 16.5	1986 04 09.38600	15 38 05.29	-47 26 34.8	1986 05 06.08967	10 41 30.28	-14 32 22.0
1986 03 18.31116	19 48 11.79	-24 42 20.8	1986 04 09.39300	15 37 54.32	-47 26 37.5	1986 05 06.09106	10 41 30.12	-14 32 18.7
1986 03 18.31255	19 48 11.58	-24 42 25.1	1986 04 09.40000	15 37 43.35	-47 26 40.2	1986 05 06.09245	10 41 29.95	-14 32 16.0
1986 03 18.31394	19 48 11.37	-24 42 29.4	1986 04 09.40700	15 37 32.38	-47 26 42.9	1986 05 06.09384	10 41 29.80	-14 32 12.8
1986 03 18.31533	19 48 11.16	-24 42 33.7	1986 04 09.41400	15 37 21.41	-47 26 45.6	1986 05 06.09523	10 41 29.62	-14 32 09.8
1986 03 18.31672	19 48 10.95	-24 42 38.0	1986 04 09.42100	15 37 10.44	-47 26 48.3	1986 05 06.09662	10 41 29.44	-14 32 06.6
1986 03 18.31811	19 48 10.74	-24 42 42.3	1986 04 09.42800	15 36 59.47	-47 26 51.0	1986 05 06.09801	10 41 29.27	-14 32 03.3
1986 03 18.31950	19 48 10.53	-24 42 46.6	1986 04 09.43500	15 36 48.50	-47 26 53.7	1986 05 06.09939	10 41 29.11	-14 32 00.3
1986 03 18.32089	19 48 10.32	-24 42 50.9	1986 04 09.44200	15 36 37.53	-47 26 56.4	1986 06 01.08038	10 23 53.13	-06 32 58.8 1
1986 03 18.32228	19 48 10.11	-24 42 55.2	1986 04 09.44900	15 36 26.56	-47 26 59.1	1986 06 01.08177	10 23 52.96	-06 32 55.4 1
1986 03 18.32367	19 48 9.90	-24 42 59.5	1986 04 09.45600	15 36 15.59	-47 27 01.8	1986 06 01.08316	10 23 52.79	-06 32 52.4 1
1986 03 18.32506	19 48 9.69	-24 43 03.8	1986 04 09.46300	15 36 04.62	-47 27 04.5	1986 06 01.10122	10 23 53.21	-06 32 48.7 1
1986 03 18.32645	19 48 9.48	-24 43 08.1	1986 04 09.47000	15 35 53.65	-47 27 07.2	1986 06 01.10261	10 23 53.04	-06 32 46.7 1
1986 03 18.32784	19 48 9.27	-24 43 12.4	1986 04 09.47700	15 35 42.68	-47 27 09.9	1986 06 01.11510	10 23 53.26	-06 32 43.0 1
1986 03 18.32923	19 48 9.06	-24 43 16.7	1986 04 09.48400	15 35 31.71	-47 27 12.6	1986 06 01.12257	10 23 53.20	-06 32 39.3 1
1986 03 18.33062	19 48 8.85	-24 43 21.0	1986 04 09.49100	15 35 20.74	-47 27 15.3	1986 06 02.07031	10 23 55.87	-06 25 30.5
1986 03 18.33201	19 48 8.64	-24 43 25.3	1986 04 09.49800	15 35 09.77	-47 27 18.0	1986 06 02.07378	10 23 55.82	-06 25 28.5
1986 03 18.33340	19 48 8.43	-24 43 29.6	1986 04 09.50500	15 34 58.80	-47 27 20.7	1986 06 02.07725	10 23 55.68	-06 25 26.9
1986 03 18.33479	19 48 8.22	-24 43 33.9	1986 04 09.51200	15 34 47.83	-47 27 23.4	1986 06 02.08073	10 23 55.90	-06 25 25.2
1986 03 18.33618	19 48 8.01	-24 43 38.2	1986 04 09.51900	15 34 36.86	-47 27 26.1	1986 06 02.08420	10 23 55.94	-06 25 23.8
1986 03 18.33757	19 48 7.80	-24 43 42.5	1986 04 09.52600	15 34 25.89	-47 27 28.8	1986 06 02.08767	10 23 55.92	-06 25 22.0
1986 03 18.33896	19 48 7.59	-24 43 46.8	1986 04 09.53300	15 34 14.92	-47 27 31.5	1986 06 02.09114	10 23 55.98	-06 18 41.7 2
1986 03 18.34035	19 48 7.38	-24 43 51.1	1986 04 09.54000	15 34 03.95	-47 27 34.2	1986 06 03.02587	10 23 59.96	-06 18 39.3 2
1986 03 18.34174	19 48 7.17	-24 43 55.4	1986 04 09.54700	15 33 52.98	-47 27 36.9	1986 06 03.03073	10 24 00.05	-06 18 37.3 2
1986 03 18.34313	19 48 6.96	-24 44 00.0	1986 04 09.55400	15 33 42.01	-47 27 39.6	1986 06 03.03559	10 23 59.97	-06 18 35.9 2
1986 03 18.34452	19 48 6.75	-24 44 04.7	1986 04 09.56100	15 33 31.04	-47 27 42.3	1986 06 03.04045	10 24 00.02	-06 18 34.4 2
1986 03 18.34591	19 48 6.54	-24 44 09.4	1986 04 09.56800	15 33 20.07	-47 27 45.0	1986 06 03.04531	10 24 00.03	-06 18 32.5 2
1986 03 18.34730	19 48 6.33	-24 44 14.1	1986 04 09.57500	15 33 09.10	-47 27 47.7			
1986 03 18.34869	19 48 6.12	-24 44 18.8	1986 04 09.58200	15 32 58.13	-47 27 50.4			
1986 03 18.35008	19 48 5.91	-24 44 23.5	1986 04 09.58900	15 32 47.16	-47 27 53.1			
1986 03 18.35147	19 48 5.70	-24 44 28.2	1986 04 09.59600	15 32 36.19	-47 27 55.8			
1986 03 18.35286	19 48 5.49	-24 44 32.9	1986 04 09.60300	15 32 25.22	-47 27 58.5			
1986 03 18.35425	19 48 5.28	-24 44 37.6	1986 04 09.61000	15 32 14.25	-47 28 01.2			
1986 03 18.35564	19 48 5.07	-24 44 42.3	1986 04 09.61700	15 32 03.28	-47 28 03.9			
1986 03 18.35703	19 48 4.86	-24 44 47.0	1986 04 09.62400	15 31 52.31	-47 28 06.			