

CCD ASTROMETRIC OBSERVATIONS OF COMETS AT THE BELGRADE OBSERVATORY DURING 1998 - 2000 (I)

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SUMMARY: 143 precise astrometric positions of seven comets were obtained with the CCD equipped Askania astrograph (13.5/160) of Belgrade Astronomical Observatory. The SBIG ST-8(1530 × 1020 pixel array) camera was used in the observations.

1. INTRODUCTION

The results of CCD observations of seven comets are presented. These objects were observed at the Belgrade Astronomical Observatory during the period December 1998 - June 2000 with the Askania astrograph (CCD camera being mounted on its visual telescope).

143 precise astrometric positions were obtained.

2. OBSERVATIONS, MEASUREMENTS AND REDUCTIONS

From the beginning of 1998 CCD SBIG ST-8 camera, based on Kodak's new CCD sensor (KAF1600, 1530×1020 pixels, 9×9 microns), was used in all Solar system bodies observations. Timings relied on the radio-controlled clock.

All the high-precision measurements of comet coordinates were carried out by the authors. The CCDO software program and GSC (Guide Star Catalogue) data were used. For the 2000 precise positions the USNO A2.0 catalogue was used.

3. RESULTS

The results are presented in Table 1. which contains the comet designations, time in UT and the topocentric coordinates AR and Dec. for the Epoch 2000.0.

All other data have been already published previously (Protitch-Benishek, V., 1998).

REFERENCES

Protitch-Benishek, V., Benishek, Vl.: 1998, *Serb. Astron. J.*, **157**, 115.

Table 1. *Positions of comets Approximate Coordinates*

C/1998 M5 (LINEAR)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
1999 01 17.70544	19 06 37.37	+46 58 41.7	12.9 T
1999 01 17.70882	19 06 37.48	+46 58 46.4	
1999 01 17.71122	19 06 37.47	+46 58 50.1	12.7 T
1999 01 17.71428	19 06 37.68	+46 58 55.4	
1999 01 17.71794	19 06 37.98	+46 59 00.2	12.9 T
1999 01 17.73123	19 06 38.62	+46 59 21.9	12.8 T
C/1998 P1 (Williams)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
1999 01 15.95749	12 08 22.30	+07 12 17.7	12.5 T
1999 01 15.95992	12 08 21.82	+07 12 25.8	
1999 01 15.96065	12 08 21.59	+07 12 29.2	12.7 T
1999 01 15.96653	12 08 20.49	+07 12 49.5	
1999 01 15.96804	12 08 19.92	+07 12 54.6	12.5 T
1999 01 15.97006	12 08 19.83	+07 13 00.0	
1999 01 15.97141	12 08 19.34	+07 13 07.7	12.6 T
1999 01 15.97331	12 08 19.02	+07 13 13.8	
1999 01 15.97404	12 08 18.82	+07 13 16.5	12.6 T
1999 01 15.97484	12 08 18.58	+07 13 17.2	
1999 01 15.97693	12 08 18.29	+07 13 25.1	12.6 T
1999 01 15.98193	12 08 17.11	+07 13 43.1	
1999 01 15.98269	12 08 17.03	+07 13 45.8	12.6 T
1999 01 15.98485	12 08 16.54	+07 13 54.1	
1999 01 15.98559	12 08 16.31	+07 13 55.9	12.6 T
1999 01 17.98913	12 01 00.80	+09 12 24.4	12.4 T
1999 01 17.99098	12 01 00.37	+09 12 31.5	
1999 01 17.99294	12 00 59.91	+09 12 38.4	12.3 T
1999 01 17.99367	12 00 59.71	+09 12 40.7	
1999 01 17.99534	12 00 59.40	+09 12 46.5	12.3 T
1999 01 17.99599	12 00 59.09	+09 12 49.0	
1999 01 17.99770	12 00 58.78	+09 12 55.9	12.4 T
1999 01 17.99840	12 00 58.76	+09 12 58.6	

Table 1. *continued*

C/1998 U3 (Jaeger)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
1998 12 29.76428	06 40 29.27	+38 12 40.5	11.7 T
1998 12 29.76675	06 40 29.19	+38 12 39.5	
1998 12 29.76748	06 40 29.03	+38 12 38.4	11.7 T
1998 12 29.76997	06 40 28.89	+38 12 37.8	
1998 12 29.77106	06 40 28.90	+38 12 36.0	11.8 T
1998 12 29.77462	06 40 28.60	+38 12 34.9	
1998 12 29.77580	06 40 28.60	+38 12 34.5	11.6 T
1998 12 29.77928	06 40 28.50	+38 12 32.8	
1998 12 29.78030	06 40 28.40	+38 12 32.0	11.8 T
1998 12 29.78398	06 40 28.23	+38 12 29.6	
1998 12 29.78789	06 40 28.03	+38 12 27.2	
1998 12 29.79153	06 40 27.79	+38 12 25.1	11.7 T
1998 12 29.79233	06 40 27.72	+38 12 24.9	
1999 01 15.83330	06 26 05.19	+34 49 19.4	12.2 T
1999 01 15.83404	06 26 05.12	+34 49 18.8	
1999 01 15.83571	06 26 05.01	+34 49 16.2	12.1 T
1999 01 15.83644	06 26 05.09	+34 49 17.4	
1999 01 15.83792	06 26 05.00	+34 49 14.4	12.1 T
1999 01 15.83863	06 26 04.96	+34 49 14.1	
1999 01 15.84103	06 26 04.94	+34 49 12.3	12.1 T
1999 01 15.84175	06 26 04.81	+34 49 11.4	
1999 01 15.84343	06 26 04.77	+34 49 10.3	12.0 T
1999 01 15.84458	06 26 04.76	+34 49 09.0	
1999 01 15.84650	06 26 04.60	+34 49 08.2	12.1 T
1999 01 17.75509	06 24 47.82	+34 22 53.4	12.1 T
1999 01 17.75745	06 24 47.72	+34 22 52.0	
1999 01 17.75816	06 24 47.62	+34 22 50.9	12.0 T
1999 01 17.76185	06 24 47.56	+34 22 48.2	
1999 01 17.76501	06 24 47.33	+34 22 46.2	12.0 T
1999 01 17.76572	06 24 47.35	+34 22 44.9	

Table 1. *continued*

C/1999 H1 (Lee)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
1999 09 14.93723	04 40 17.70	+58 00 53.2	11.2 T
1999 09 14.93994	04 40 16.11	+58 00 56.3	
1999 09 14.94118	04 40 15.27	+58 00 57.5	11.6 T
1999 09 14.94795	04 40 10.75	+58 01 08.4	11.6 T
1999 09 14.95015	04 40 09.52	+58 01 12.0	
1999 09 14.95411	04 40 06.75	+58 01 17.2	11.7 T
1999 09 14.95617	04 40 05.42	+58 01 20.6	
1999 09 14.95944	04 40 03.48	+58 01 24.6	11.7 T
1999 09 14.96120	04 40 02.29	+58 01 27.9	11.8 T
1999 09 14.96411	04 40 00.28	+58 01 33.1	
1999 09 14.96745	04 39 58.24	+58 01 36.2	11.8 T
1999 09 20.87156	03 25 43.20	+59 20 10.3	12.5 T
1999 09 20.87255	03 25 42.19	+59 20 16.1	12.4 T
1999 09 20.87457	03 25 40.76	+59 20 15.9	
1999 09 20.88227	03 25 34.18	+59 20 11.2	12.4 T
1999 09 20.88325	03 25 33.62	+59 20 13.6	
1999 09 20.88442	03 25 32.10	+59 20 15.5	12.3 T
1999 09 20.88744	03 25 29.81	+59 20 14.8	12.5 T
1999 09 20.88900	03 25 28.58	+59 20 16.7	
1999 09 20.89022	03 25 27.29	+59 20 13.6	12.7 T
1999 09 20.89396	03 25 23.76	+59 20 14.0	12.1 T
1999 09 20.89791	03 25 21.05	+59 20 12.9	12.2 T
1999 09 30.89455	01 06 05.21	+53 19 51.2	12.2 T
1999 09 30.89857	01 06 02.52	+53 19 34.4	12.5 T
1999 09 30.90385	01 05 59.03	+53 19 12.8	
1999 09 30.91220	01 05 52.71	+53 18 39.6	12.4 T
1999 09 30.91737	01 05 49.03	+53 18 15.0	12.4 T
1999 09 30.91973	01 05 47.52	+53 18 08.1	
1999 09 30.92256	01 05 45.16	+53 17 56.7	12.5 T
1999 09 30.92373	01 05 44.37	+53 17 51.1	12.2 T
1999 09 30.92491	01 05 43.60	+53 17 48.1	12.3 T
1999 10 02.85321	00 44 00.15	+50 57 35.5	12.1 T
1999 10 02.85699	00 43 57.55	+50 57 22.0	12.5 T
1999 10 02.86037	00 43 55.52	+50 57 06.0	
1999 10 02.86279	00 43 53.99	+50 56 55.3	12.3 T
1999 10 02.86388	00 43 53.38	+50 56 49.5	12.4 T
1999 10 02.86740	00 43 51.26	+50 56 33.6	12.2 T
1999 10 02.86994	00 43 49.26	+50 56 19.8	
1999 10 02.87101	00 43 48.64	+50 56 17.0	12.1 T
1999 10 02.87207	00 43 47.96	+50 56 12.1	12.3 T
1999 10 02.87463	00 43 46.47	+50 56 01.2	
1999 10 02.87566	00 43 45.64	+50 55 56.9	12.5 T
1999 10 02.87678	00 43 45.01	+50 55 49.7	12.5 T

Table 1. *continued*

C/1999 S3 (LINEAR)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
1999 10 02.80274	00 41 15.50	+52 31 48.1	13.6 T
1999 10 02.81159	00 41 12.54	+52 32 10.2	14.1 T
1999 10 02.81387	00 41 11.90	+52 32 14.8	
1999 10 02.82837	00 41 06.83	+52 32 44.5	13.6 T
C/1999 L3 (LINEAR)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
2000 02 07.77832	08 27 54.86	+23 42 50.3	13.5 T
2000 02 07.77919	08 27 54.35	+23 42 52.5	
2000 02 07.77987	08 27 54.01	+23 42 54.4	13.3 T
2000 02 07.78251	08 27 53.06	+23 43 00.3	
2000 02 07.78367	08 27 52.47	+23 43 03.0	13.4 T
2000 02 07.78670	08 27 50.96	+23 43 09.6	
2000 02 07.78786	08 27 50.21	+23 43 17.7	12.8 T
2000 02 07.78897	08 27 49.82	+23 43 18.4	
2000 02 07.79470	08 27 47.37	+23 43 25.8	13.2 T
2000 02 07.79567	08 27 47.06	+23 43 30.0	
2000 02 07.79742	08 27 26.28	+23 43 34.1	13.1 T
2000 02 07.79817	08 27 45.93	+23 43 34.0	
2000 02 10.77196	08 06 24.33	+25 21 56.8	13.3 T
2000 02 10.77269	08 06 24.15	+25 21 55.7	
2000 02 10.77346	08 06 23.79	+25 21 57.9	13.2 T
2000 02 10.77785	08 06 22.12	+25 22 05.3	
2000 02 10.77863	08 06 21.50	+25 22 11.4	13.2 T
C/1999 S4 (LINEAR)			
Date(UT)	R.A.(2000.0)	Decl.(2000.)	Mag.
2000 02 07.74081	01 35 59.62	+27 13 45.2	13.7 T
2000 02 07.74191	01 35 59.32	+27 13 48.5	
2000 02 07.76259	01 35 59.15	+27 13 36.3	14.3 T
2000 06 02.06006	02 06 32.16	+32 31 26.9	11.3 T
2000 06 02.06323	02 06 32.47	+32 31 28.8	
2000 06 02.06626	02 06 32.53	+32 31 30.0	11.3 T
2000 06 02.06774	02 06 32.48	+32 31 32.4	
2000 06 02.06834	02 06 32.71	+32 31 32.8	11.8 T
2000 06 02.06909	02 06 32.62	+32 31 34.7	
2000 06 02.07035	02 06 32.65	+32 31 33.3	11.4 T
2000 06 02.07596	02 06 32.98	+32 31 38.8	
2000 06 04.05905	02 07 41.65	+32 56 38.0	11.5 T
2000 06 04.06063	02 07 41.80	+32 56 39.4	11.3 T
2000 06 04.06146	02 07 41.79	+32 56 41.3	
2000 06 04.06219	02 07 41.83	+32 56 40.3	11.6 T
2000 06 04.07032	02 07 42.05	+32 56 49.7	
2000 06 04.07112	02 07 42.13	+32 56 48.0	
2000 06 04.07182	02 07 42.17	+32 56 49.0	12.1 T
2000 06 04.07251	02 07 42.25	+32 56 49.9	

**ССД АСТРОМЕТРИЈСКА ПОСМАТРАЊА КОМЕТА СА АСТРОНОМСКЕ
ОПСЕРВАТОРИЈЕ У БЕОГРАДУ У ПЕРИОДУ 1998-2000.**

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Стручни чланак

У периоду 1998.- 2000. на Астрономској опсерваторији у Београду вршена су ССД посматрања седам комета и изведени су прецизни астрометријски положаји, укупно 143. У обради су коришћени Guide Star Catalog и USNO A 2.0 каталог.