

# Astrometry of minor planets made at the Skalnaté Pleso Observatory in the years 1976-1977

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**Abstract.** The paper presents the results of position photographing of minor planets carried out at the Skalnaté Pleso Observatory in the years 1976-1977. 97 observations of 12 minor planets are given.

**Key words:** asteroids – astrometry

## 1. Introduction

The presented paper is a continuation of the previous papers which gave the results of positional observations of minor planets obtained at the Skalnaté Pleso Observatory (Svoreň, Pittich; 1991). The observations made in the years 1976-1977 are included. The reduction constants as well as methods of observation and processing and all the other necessary data are not repeated here. They are given in the paper on cometary astrometry in this volume (Svoreň, 1992).

A list of collaborators are given, together with their share in photographing, measuring and reducing the positions.

## 2. Positions of minor planets

The data have been arranged according to serial numbers of minor planets. The individual columns of the table contain the following:

N - ordinal number of observation,  
MP - number of minor planet,

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Date U.T. - date and time of the middle of the exposure,

$R.A._{1950}$  - right ascension for equinox 1950.0 (in h,m,s),

$Decl._{1950}$  - declination for equinox 1950.0 (in  $^{\circ},',''$ ),

A - the difference between independent determinations of R.A. in arc seconds,

B - the difference between independent determinations of Decl. in arc seconds,

Notes: N. 61 - black plate, N. 65, 66, 69, 70 - measurement difficult.

N	MP	Date U.T.	$R.A._{1950}$	$Decl._{1950}$	A	B	
1	3	1976 Feb.	9.87188	10 59 43.24	+ 1 08 30.0	0.3	1.0
2	3	1976 Feb.	9.93646	10 59 40.54	+ 1 09 01.8	0.4	0.8
3	3	1976 Mar.	23.95868	10 27 41.65	+ 7 56 24.5	0.9	0.7
4	3	1976 Mar.	24.02951	10 27 39.32	+ 7 56 58.6	0.2	0.8
5	3	1977 May	24.99063	15 25 03.15	- 1 37 38.9	0.6	0.5
6	3	1977 May	25.02396	15 25 01.59	- 1 37 33.5	0.3	0.2
7	3	1977 June	9.92674	15 13 43.91	- 1 09 00.4	0.8	0.4
8	3	1977 June	9.97326	15 13 42.08	- 1 08 59.5	0.6	0.7
9	11	1976 Feb.	9.86042	10 21 44.77	+13 13 26.8	0.0	0.8
10	11	1976 Feb.	9.92708	10 21 41.26	+13 13 53.9	0.9	0.0
11	11	1976 Mar.	23.94722	9 47 01.09	+17 09 10.6	0.1	0.5
12	11	1976 Mar.	24.01806	9 46 59.05	+17 09 21.0	0.8	0.3
13	11	1977 May	25.02951	18 19 59.53	-18 01 31.5	0.9	0.7
14	11	1977 May	25.05243	18 19 58.81	-18 01 32.5	0.9	0.0
15	11	1977 June	9.94549	18 08 43.20	-18 15 42.5	0.8	0.8
16	11	1977 June	9.98854	18 08 40.83	-18 15 45.9	0.5	0.3
17	18	1976 Feb.	9.86736	10 49 50.17	+ 8 16 51.9	0.1	0.5
18	18	1976 Feb.	9.93194	10 49 47.04	+ 8 17 26.4	0.5	0.5
19	18	1976 Mar.	23.95417	10 13 13.97	+14 22 06.8	0.3	0.3
20	18	1976 Mar.	24.02292	10 13 11.53	+14 22 29.7	0.1	0.3
21	18	1977 May	24.93299	16 33 15.67	- 5 13 05.5	0.3	0.3
22	18	1977 May	24.96493	16 33 13.70	- 5 13 00.7	0.2	0.4
23	18	1977 June	9.93160	16 17 05.42	- 4 43 44.6	1.0	0.1
24	25	1976 Apr.	30.99444	18 51 49.54	- 0 29 02.9	0.7	0.9
25	25	1976 May	1.03681	18 51 51.62	- 0 28 09.5	0.2	0.7
26	25	1976 June	20.00278	18 56 19.00	+16 58 31.1	0.1	0.5
27	25	1976 June	20.00660	18 56 18.82	+16 58 34.2	0.2	0.3
28	25	1976 June	20.03021	18 56 17.91	+16 58 56.0	0.1	0.6
29	25	1977 Oct.	14.99236	6 35 30.42	+ 5 20 46.3	0.1	0.2
30	25	1977 Oct.	15.01319	6 35 30.96	+ 5 20 35.1	0.4	0.2
31	25	1977 Oct.	16.00590	6 35 51.71	+ 5 10 45.3	0.4	0.8

N	MP	Date U.T.	<i>R.A.</i> <sub>1950</sub>	<i>Decl.</i> <sub>1950</sub>	A	B
32	25	1977 Oct.	21.01493	6 37 13.77	+ 4 20 42.5	0.8 0.1
33	25	1977 Dec.	15.95729	6 10 15.01	- 3 35 14.2	0.1 0.8
34	25	1977 Dec.	15.98194	6 10 13.51	- 3 35 21.1	0.3 0.7
35	25	1977 Dec.	19.05243	6 07 07.06	- 3 47 28.7	0.6 0.0
36	25	1977 Dec.	19.09479	6 07 04.38	- 3 47 36.9	0.1 0.2
37	39	1976 Feb.	9.91667	12 33 23.02	+ 0 45 34.1	1.3 0.6
38	39	1976 Feb.	9.98681	12 33 22.28	+ 0 45 54.7	0.8 0.8
39	39	1976 Feb.	10.13125	12 33 20.70	+ 0 46 37.0	0.1 0.8
40	39	1976 Mar.	23.96597	12 10 01.03	+ 5 47 47.2	0.7 0.3
41	39	1976 Mar.	24.03542	12 09 57.79	+ 5 48 19.1	0.6 0.5
42	39	1977 May	24.92604	17 53 47.07	- 8 13 29.8	0.2 0.5
43	39	1977 May	24.96910	17 53 45.38	- 8 13 23.4	0.3 1.0
44	39	1977 June	9.93854	17 41 43.07	- 7 49 56.1	0.0 0.0
45	39	1977 June	9.98299	17 41 40.71	- 7 49 54.9	0.4 0.4
46	40	1977 Oct.	12.95486	5 10 59.70	+19 06 37.1	0.1 0.7
47	40	1977 Oct.	12.97569	5 11 00.03	+19 06 38.0	0.3 0.4
48	40	1977 Oct.	14.98160	5 11 26.02	+19 07 16.0	0.5 0.2
49	40	1977 Oct.	15.00243	5 11 26.23	+19 07 16.5	0.6 0.3
50	40	1977 Oct.	15.12396	5 11 27.41	+19 07 18.8	0.8 0.4
51	40	1977 Oct.	15.97813	5 11 36.00	+19 07 32.6	0.2 0.5
52	40	1977 Oct.	15.99896	5 11 36.08	+19 07 32.6	0.2 0.9
53	40	1977 Oct.	19.95660	5 11 54.38	+19 08 31.8	0.2 0.1
54	40	1977 Oct.	20.00069	5 11 54.33	+19 08 33.3	0.4 0.1
55	40	1977 Nov.	7.94653	5 05 31.48	+19 10 52.4	0.7 0.0
56	40	1977 Nov.	7.97708	5 05 30.27	+19 10 53.8	0.2 0.1
57	40	1977 Dec.	15.93090	4 26 29.75	+19 13 02.1	0.9 0.5
58	40	1977 Dec.	15.97639	4 26 26.84	+19 13 01.7	0.5 0.5
59	40	1977 Dec.	19.05692	4 23 23.61	+19 14 15.9	0.4 0.1
60	40	1977 Dec.	19.08924	4 23 21.71	+19 14 15.9	0.4 0.3
61	51	1976 Oct.	7.99167	1 44 56.44	+ 3 14 44.1	0.3 0.1
62	51	1976 Oct.	8.03611	1 44 54.22	+ 3 14 18.9	0.5 0.2
63	51	1976 Oct.	10.88438	1 42 32.52	+ 2 47 37.1	0.1 0.6
64	51	1976 Oct.	10.93021	1 42 30.15	+ 2 47 11.6	0.1 0.6
65	51	1976 Oct.	23.98299	1 31 08.99	+ 0 50 21.3	0.2 0.4
66	51	1976 Oct.	24.00799	1 31 07.64	+ 0 50 08.8	0.6 0.5
67	51	1976 Oct.	24.99944	1 30 16.63	+ 0 42 00.2	0.1 0.3
68	51	1976 Oct.	25.04111	1 30 14.38	+ 0 41 39.2	0.3 0.2
69	51	1976 Oct.	25.82031	1 29 34.92	+ 0 35 22.0	0.7 0.9

N	MP	Date U.T.	<i>R.A.</i> <sub>1950</sub>	<i>Decl.</i> <sub>1950</sub>	A	B
70	51	1976 Oct.	25.82240	1 29 34.84	+ 0 35 20.3	0.4 0.8
71	51	1976 Oct.	25.84115	1 29 33.84	+ 0 35 12.0	0.4 0.4
72	148	1977 Oct.	13.06146	4 19 41.27	-17 44 46.7	0.6 0.8
73	148	1977 Oct.	13.08229	4 19 41.12	-17 45 02.7	0.8 0.0
74	148	1977 Oct.	15.02720	4 19 31.67	-18 10 10.0	0.9 0.6
75	148	1977 Oct.	19.97500	4 18 35.13	-19 11 21.1	0.8 0.3
76	148	1977 Oct.	20.01389	4 18 34.41	-19 11 48.8	0.3 0.1
77	148	1977 Dec.	15.94514	3 39 19.04	-20 39 50.6	0.0 0.8
78	148	1977 Dec.	15.96528	3 39 18.30	-20 39 38.1	0.1 0.0
79	511	1977 June	22.95903	17 59 38.08	-16 44 15.4	0.6 0.4
80	704	1976 Feb.	1.97292	6 34 40.08	+19 42 43.0	0.5 0.3
81	704	1976 Feb.	1.97813	6 34 39.87	+19 42 41.5	0.7 0.6
82	704	1976 Feb.	2.01667	6 34 38.47	+19 42 34.4	0.5 0.4
83	704	1976 Feb.	3.98507	6 33 31.41	+19 36 11.6	0.2 0.2
84	704	1976 Feb.	3.98750	6 33 31.27	+19 36 11.0	0.1 0.4
85	704	1976 Feb.	4.01076	6 33 30.48	+19 36 06.7	0.2 0.0
86	704	1976 Feb.	9.79931	6 30 47.14	+19 18 04.8	0.1 0.5
87	704	1976 Feb.	9.83056	6 30 46.44	+19 17 59.0	0.5 0.1
88	944	1976 Oct.	24.88611	1 20 06.41	+21 32 55.4	0.1 0.3
89	944	1976 Oct.	24.92778	1 20 01.48	+21 33 34.3	0.4 0.8
90	944	1976 Oct.	25.93750	1 18 05.80	+21 48 27.7	0.4 0.2
91	944	1976 Oct.	26.92361	1 16 12.68	+22 02 51.8	0.5 0.2
92	944	1976 Oct.	26.96528	1 16 07.90	+22 03 27.4	0.1 0.1
93	1392	1976 Oct.	24.88611	1 22 47.86	+21 48 15.8	0.2 0.1
94	1392	1976 Oct.	24.92778	1 22 44.96	+21 48 18.1	0.2 0.1
95	1392	1976 Oct.	25.93750	1 21 38.20	+21 49 17.5	0.3 0.6
96	1392	1976 Oct.	26.92361	1 20 33.78	+21 50 06.5	0.4 0.6
97	1392	1976 Oct.	26.96528	1 20 30.99	+21 50 07.7	0.9 0.6

### 3. Reference stars and dependences

Numbers of reference stars and dependences are not published here but they can be obtained from the authors on request.

## 4. List of collaborators

Name	Exposures	Measurements	Reductions
M. Antal	58	10	—
G. Červák	—	18	—
T. Čiško	9	—	—
J. Fabricius	—	7	—
J. Klobušník	—	20	—
E.M. Pittich	—	—	37
P. Rychtarčík	—	27	—
P. Schalling	30	10	—
J. Svoreň	—	5	60

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