

Astron. Astrophys. Suppl. Ser. 44, 97-99 (1981)**TIME AND LATITUDE RESULTS OF OBSERVATIONS MADE
AT MERATE OBSERVATORY WITH THE ASTROLABE FOR THE YEAR 1979**

L. BUFFONI, F. CARTA, F. CHLISTOVSKY, A. MANARA and F. MAZZOLENI

Osservatorio Astronomico di Milano-Merate, Italy and Osservatorio Astronomico di Brera, Via Brera 28,
20121 Milano, Italia*Received July 16, accepted August 5, 1980***Summary.**- Results of the observations made with the Astrolabe Danjon OPL n°32 are given. The results are in the FK4 system.**Key words :** astrolabe - astronomical time - latitude.

The results of observations made with the Astrolabe Danjon at Merate Observatory during the year 1979 are given. In the reductions provisional CLIs (corrections de lissage interne) are introduced, determined on the basis of data obtained until 1974.

These results follow those of 1976 (Buffoni *et al.*, 1977), 1977 (Buffoni *et al.*, 1979), 1978 (Buffoni *et al.*, 1980) published in this review, while those of the years 1970 - 1975 are given in Buffoni *et al.*, 1975.

The physical time scale has been provided by a standard atomic caesium clock since the 1st March 1974.

The observational methods (Mazzoleni, 1972) and computation techniques (Buffoni *et al.*, 1975) are explained in former papers.

Results are given in the FK4 system.

The results are reported in table I, where the headings have the following meanings :

Column 1 : date in year, month, day
 Column 2 : number of group observed
 Column 3 : code of the observer (see below)
 Column 4 : mean universal time of the groups' observation
 Column 5 : difference UTO-UTC reported at the UTM time
 Column 6 : weight of time determination
 Column 7 : difference UTO-TAI reported at 24 hours
 Column 8 : instantaneous latitude residual in reference to the conventional latitude of 45°41'57".5
 Column 9 : weight of latitude determination
 Column 10 : radius of the altitude straight lines circle
 Column 11 : number of stars observed in the group
 Column 12 : weight of the residuals

Codes of the observers :

2 Francesco Mazzoleni
 4 Franca Chlistovsky
 5 Alessandro Manara
 6 Letizia Buffoni
 7 Fiamma Carta

References

- BUFFONI, L., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1977, *Astron. Astrophys. Suppl. Ser.* 30, 193 ; 1979, *Astron. Astrophys. Suppl. Ser.* 35, 345 ; 1980, *Astron. Astrophys. Suppl. Ser.* (in print).
 BUFFONI, L., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1974, 1975, 1976, *Time Service Circular* - Internal Report of Astronomical Observatory of Milano-Merate, n° 5 1974, n° 4-5-6-8-9-10 1975, n° 1 1976.
 BUFFONI, L., CARTA, F., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1975, *Boll. Geodesia e Scienze Affini*, anno XXXIV, n° 3.
 MAZZOLENI, F. : 1972, *Mem. Soc. Astron. Ital.* XLIII, n° 3.

Send offprint requests to : A. Manara, Osservatorio Astronomico di Brera

TABLE I

DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\psi$	W_{ψ}	R	N	W_r
79 01 02	3	2	20.96	0.5211	2.5	-17.4793	0.753	1.5	2.576	24	2.1
79 01 16	3	6	20.03	0.5456	3.3	-17.4548	0.640	1.8	2.534	27	2.4
79 01 16	4	6	22.02	0.5371	1.7	-17.4631	0.982	1.7	2.381	19	2.4
79 01 31	3	6	19.07	0.4752	1.8	-17.5254	0.680	1.0	3.091	27	1.4
79 01 31	4	6	21.18	0.4782	1.8	-17.5221	0.901	1.6	2.547	28	1.5
79 02 06	4	5	20.74	0.4101	2.8	-17.5903	0.824	2.3	2.226	26	2.5
79 02 21	4	4	19.80	0.3548	1.7	-17.6457	0.709	1.5	2.353	28	1.4
79 02 21	5	4	22.12	0.3583	4.5	-17.6419	0.726	3.4	2.208	27	3.7
79 02 22	4	6	19.70	0.3634	1.4	-17.6371	0.811	1.3	2.636	23	1.5
79 02 27	4	4	19.41	0.3667	3.2	-17.6338	0.641	2.9	2.120	28	2.7
79 02 27	5	4	21.75	0.3748	3.2	-17.6255	0.571	2.1	2.142	26	2.6
79 03 22	5	2	20.22	0.2805	5.4	-17.7199	0.529	3.7	2.464	28	4.1
79 03 22	6	2	22.38	0.2862	7.8	-17.7140	0.616	3.8	2.472	28	5.2
79 03 23	5	2	20.25	0.2653	2.8	-17.7352	0.463	2.0	2.309	25	2.4
79 03 23	6	2	22.18	0.2932	4.0	-17.7070	0.588	1.9	2.440	24	3.1
79 03 29	5	4	19.95	0.2664	0.9	-17.7341	0.546	0.4	2.322	15	1.1
79 04 09	6	4	21.24	0.2402	2.0	-17.7601	0.592	1.0	2.146	25	1.5
79 04 09	7	4	23.30	0.2233	4.0	-17.7768	0.498	3.1	2.113	22	4.8
79 05 03	7	5	21.83	0.1436	2.5	-17.8566	0.371	1.5	2.780	28	1.8
79 05 03	8	5	23.98	0.1439	3.1	-17.8561	0.586	2.2	2.612	25	2.6
79 05 09	7	6	21.46	0.1162	1.4	-17.8841	0.499	0.9	2.934	25	1.2
79 05 09	8	6	23.46	0.1246	1.6	-17.8754	0.460	1.5	2.844	24	1.6
79 05 10	7	5	21.37	0.1406	2.7	-17.8597	0.414	1.6	2.666	27	2.0
79 05 10	8	5	23.46	0.1341	2.2	-17.8660	0.429	1.6	2.582	28	1.7
79 05 14	8	5	23.19	0.1572	1.2	-17.8429	0.528	0.9	2.918	27	1.0
79 05 21	7	4	20.64	0.1114	2.9	-17.8890	0.413	2.0	2.249	26	2.4
79 05 21	8	4	22.74	0.1032	3.0	-17.8969	0.407	2.3	2.315	24	2.8
79 05 22	7	6	20.53	0.1040	1.2	-17.8964	0.382	0.7	3.387	24	1.0
79 05 22	8	6	22.64	0.1304	0.7	-17.8698	0.512	0.5	3.471	22	0.7
79 05 23	7	4	20.54	0.1039	2.5	-17.8965	0.355	1.3	2.257	25	2.1
79 05 23	8	4	22.52	0.1085	1.8	-17.8916	0.499	1.5	2.230	24	1.8
79 05 29	8	5	22.24	0.0906	1.8	-17.9096	0.489	1.4	2.938	25	1.6
79 06 04	8	4	21.91	0.0845	1.9	-17.9158	0.455	1.4	2.437	23	1.9
79 06 04	9	4	23.96	0.0905	1.5	-17.9095	0.528	1.1	2.142	25	1.3
79 06 11	8	6	21.38	0.0441	1.9	-17.9562	0.553	1.3	3.473	19	2.1
79 06 20	8	2	20.94	0.0322	1.9	-17.9682	0.413	1.4	2.709	23	1.8
79 06 20	9	2	22.95	0.0273	2.4	-17.9728	0.543	1.6	2.494	27	1.8
79 06 25	8	4	20.58	0.0407	3.7	-17.9597	0.503	4.0	2.395	15	6.6
79 07 04	9	2	22.01	-0.0091	2.3	-18.0094	0.508	1.6	2.400	28	1.8
79 07 04	10	2	24.24	0.0172	2.3	-17.9827	0.501	2.0	2.390	27	2.0
79 07 06	9	2	21.88	-0.0028	4.2	-18.0030	0.708	2.8	2.583	28	3.2
79 07 09	9	5	21.95	0.0282	1.8	-17.9720	0.676	1.1	2.708	20	1.9
79 07 09	10	5	23.93	0.0599	2.4	-17.9401	0.602	2.0	2.727	28	2.0
79 07 16	9	4	21.01	-0.0043	2.8	-18.0047	0.620	2.0	2.367	17	3.7

TABLE I.- (continued)

DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\psi$	W_{ψ}	R	N	Wr
79 07 23	9	4	20.54	-0.0403	2.8	-18.0407	0.657	2.6	2.191	19	3.6
79 07 24	9	5	20.70	-0.0086	5.2	-18.0090	0.655	3.5	2.746	28	3.9
79 08 06	10	4	22.10	-0.0304	4.3	-18.0306	0.623	3.4	2.095	26	3.8
79 08 13	10	4	21.64	-0.0515	4.8	-18.0518	0.677	4.0	2.355	25	4.6
79 08 13	11	4	23.75	-0.0609	3.7	-18.0609	0.706	2.2	2.257	25	3.0
79 08 21	10	2	21.15	-0.0784	1.8	-18.0787	0.744	1.5	2.591	27	1.5
79 08 21	11	2	23.21	-0.0705	2.8	-18.0706	0.772	1.7	2.425	28	2.0
79 08 27	10	4	20.72	-0.0867	1.8	-18.0871	0.762	1.4	2.171	28	1.5
79 08 27	11	4	22.67	-0.0803	3.5	-18.0805	0.691	2.1	2.119	22	3.2
79 08 28	10	2	20.66	-0.0852	2.7	-18.0855	0.756	2.1	2.355	28	2.2
79 08 29	10	4	20.59	-0.0854	2.5	-18.0857	0.690	2.0	2.121	23	2.5
79 09 04	10	4	20.21	-0.0958	1.2	-18.0962	0.738	1.2	2.196	24	1.3
79 09 04	11	4	22.29	-0.0939	3.0	-18.0941	0.774	1.9	2.164	25	2.5
79 09 06	10	2	20.09	-0.0903	2.6	-18.0907	0.783	1.9	2.501	27	2.1
79 09 06	11	2	22.13	-0.1004	3.6	-18.1006	0.729	2.4	2.391	27	2.8
79 09 12	10	6	19.63	-0.1157	0.8	-18.1162	0.784	0.7	3.165	22	0.8
79 09 12	11	6	21.66	-0.1148	1.1	-18.1150	0.769	0.7	3.604	21	1.1
79 09 13	10	2	19.58	-0.1166	2.2	-18.1171	0.796	1.7	2.624	27	1.8
79 09 13	11	2	21.70	-0.1143	1.2	-18.1146	0.824	0.8	2.621	28	0.9
79 09 26	11	4	20.82	-0.1725	3.5	-18.1728	0.841	2.1	2.101	27	2.6
79 09 26	1	4	23.10	-0.1698	2.4	-18.1699	0.799	1.5	2.153	27	1.8
79 09 27	11	2	20.75	-0.1548	5.0	-18.1552	0.949	3.1	2.308	26	3.9
79 10 18	11	4	19.41	-0.2075	1.1	-18.2080	0.829	0.8	2.105	23	1.1
79 10 18	1	4	21.63	-0.2247	1.0	-18.2250	0.897	0.6	2.075	24	0.8
79 10 19	1	2	21.69	-0.2045	2.0	-18.2048	1.025	1.3	2.397	24	1.7
79 10 19	2	2	23.75	-0.1951	2.6	-18.1951	1.031	1.9	2.203	28	2.0
79 10 30	1	6	20.80	-0.1954	1.3	-18.1957	0.855	0.7	2.396	25	1.0
79 11 02	1	2	20.70	-0.2354	1.8	-18.2358	0.967	1.1	2.236	25	1.5
79 11 05	1	4	20.52	-0.2812	2.1	-18.2816	0.889	1.3	2.000	18	2.4
79 11 07	1	4	20.33	-0.2566	2.1	-18.2570	0.809	1.1	1.558	21	1.9
79 11 07	2	4	22.48	-0.2572	2.0	-18.2574	0.860	1.8	1.723	23	2.1
79 11 08	1	5	20.20	-0.2724	1.1	-18.2728	0.891	0.6	2.329	25	0.9
79 11 20	2	2	21.66	-0.3004	1.3	-18.3006	0.956	0.9	1.869	25	1.1
79 11 20	3	2	23.81	-0.2939	2.5	-18.2939	0.834	1.5	1.677	27	1.8
79 11 26	2	4	21.47	-0.3254	1.0	-18.3257	0.854	0.7	1.890	14	1.9
79 11 27	2	5	21.34	-0.2979	2.2	-18.2982	0.820	1.8	2.264	23	2.4
79 11 28	1	6	18.86	-0.3196	1.2	-18.3202	0.947	0.6	2.433	20	1.1
79 11 30	2	2	20.99	-0.3262	1.5	-18.3265	0.915	1.1	2.186	25	1.4
79 11 30	3	2	23.15	-0.3361	1.3	-18.3362	0.907	0.7	2.134	27	0.9
79 12 03	2	4	20.82	-0.3366	2.3	-18.3370	0.925	1.7	1.723	21	2.4
79 12 03	3	4	23.02	-0.3367	1.0	-18.3368	0.900	0.7	1.780	24	0.9
79 12 04	1	7	18.70	-0.3576	0.8	-18.3582	0.896	0.5	2.500	19	0.8
79 12 04	2	7	20.78	-0.3136	0.9	-18.3139	0.939	0.5	2.323	20	0.9
79 12 12	2	6	20.21	-0.3405	1.4	-18.3409	0.960	1.1	2.527	26	1.3
79 12 12	3	6	22.34	-0.3479	2.7	-18.3481	0.811	1.4	2.773	26	2.0
79 12 17	2	5	19.87	-0.3605	1.6	-18.3603	0.907	1.1	2.074	27	1.3
79 12 17	3	5	21.98	-0.3510	1.1	-18.3510	0.770	0.6	2.293	25	0.9
79 12 18	2	4	19.86	-0.3745	2.1	-18.3744	0.815	1.5	1.685	22	2.2
79 12 18	3	4	21.92	-0.3520	1.8	-18.3521	0.842	1.1	1.614	25	1.4