

*Astron. Astrophys. Suppl. Ser.* **49**, 509-510 (1982)

## Time and latitude results of observations made at Merate Observatory with the astrolabe for the year 1981

L. Buffoni, F. Carta, F. Chlistovsky, A. Manara and F. Mazzoleni

Osservatorio Astronomico di Milano-Merate, Italia

*Received January 29, accepted February 4, 1982*

**Summary.** — Results of the observations made with the Astrolabe Danjon OPL no. 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 in the year 1981 are given. In the reduction provisional CLIs (Corrections de Lissage Interne) are introduced, determined on the basis of data obtained until 1974.

These results follow those of 1980, 1979, 1978, 1977, 1976 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  
 8 Werner Wende

### References

- BUFFONI, L., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1977, *Astron. Astrophys. Suppl. Ser.* **30** ; 1979, *Astron. Astrophys. Suppl. Ser.* **35** ; 1980, *Astron. Astrophys. Suppl. Ser.* **42** ; 1981, *Astron. Astrophys. Suppl. Ser.* **44** ; 1981, *Astron. Astrophys. Suppl. Ser.* **46**.  
 BUFFONI, L., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1974, 1975, 1976, Time Service Circular — Internal Report of Astronomical Observatory of Milano-Merate, no. 5, 1974, nos. 4-5-6-8-9-10 1975, no. 1, 1976.  
 BUFFONI, L., CARTA, F., CHLISTOVSKY, F., MANARA, A. and MAZZOLENI, F. : 1975, *Boll. Geodesia e Scienze Affini*, anno XXXIV, no. 3.  
 MAZZOLENI, F. : 1972, *Mem. Soc. Astron. Ital.* **XLIII**, no. 3.

*Send offprint requests to :* F. Chlistovsky, Osservatorio Astronomico di Brera, via Brera 28, 20121 Milano, Italia.

TABLE I.

DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-ZAI	$\Delta\psi$	$W_z$	R	N	$W_x$	DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-ZAI	$\Delta\psi$	$W_z$	R	N	$W_x$
81 01 05	2	6	18.67	-0.2875	1.2	-19.2881	0.757	1.0	2.487	25	1.1	81 07 20	9	6	20.64	0.2854	0.5	-19.7150	0.760	0.3	2.332	19	0.6
81 01 05	3	6	20.71	-0.2647	1.8	-19.2651	0.783	0.5	2.346	26	0.7	81 07 20	10	6	23.15	0.2970	0.7	-19.7031	0.811	0.6	2.438	27	0.6
81 01 05	4	6	22.87	-0.2792	1.6	-19.2783	0.738	1.4	2.184	27	1.4	81 07 27	9	5	20.53	0.2690	1.1	-19.7314	0.808	0.6	2.792	25	0.9
81 01 07	2	4	18.53	-0.2738	1.5	-19.2744	0.541	1.1	1.942	22	1.5	81 07 27	10	5	22.73	0.2779	0.9	-19.7510	0.804	0.7	2.798	27	0.8
81 01 07	3	4	20.54	-0.2560	0.6	-19.2563	0.530	0.4	1.992	25	0.5	81 07 28	9	4	20.47	0.2758	1.4	-19.7246	0.583	0.9	1.905	26	1.1
81 01 07	4	4	22.80	-0.2795	0.8	-19.2796	0.761	0.9	1.823	24	0.9	81 07 28	10	4	22.61	0.2879	1.3	-19.7123	0.716	1.1	1.976	26	1.2
81 01 08	2	4	18.57	-0.2617	2.4	-19.2623	0.670	1.9	1.890	23	2.4	81 07 28	11	4	24.71	0.2846	0.9	-19.7154	0.784	0.6	1.998	26	1.2
81 01 08	3	4	20.51	-0.2683	1.8	-19.2687	0.673	1.1	1.832	27	1.4	81 07 29	9	6	20.40	0.2922	1.4	-19.7082	0.854	1.0	2.106	26	0.7
81 01 08	4	4	22.65	-0.2797	1.6	-19.2798	0.785	1.4	1.722	28	1.3	81 07 29	10	6	22.55	0.2906	1.3	-19.7095	0.812	1.1	2.381	23	1.4
81 01 14	3	2	19.94	-0.2903	1.2	-19.2908	0.535	0.5	2.122	17	1.2	81 07 29	11	6	24.68	0.2786	0.9	-19.7214	0.714	0.6	2.389	28	0.7
81 01 16	3	2	19.99	-0.2896	2.8	-19.2901	0.794	1.5	2.109	26	2.1	81 07 30	9	4	20.26	0.2861	2.0	-19.7144	0.634	1.3	1.894	27	1.6
81 01 16	4	2	22.53	-0.2889	2.3	-19.2890	0.805	2.2	1.816	14	4.2	81 07 30	10	4	22.52	0.2817	2.2	-19.7185	0.749	1.8	1.797	22	2.3
81 01 20	3	4	19.70	-0.2935	2.2	-19.2940	0.567	1.4	1.461	24	1.9	81 08 03	10	5	22.29	0.2658	0.9	-19.7344	0.887	0.7	2.659	27	0.8
81 01 20	4	4	21.84	-0.3076	2.5	-19.3078	0.522	2.2	1.395	26	2.3	81 08 04	9	4	20.18	0.2942	0.2	-19.7062	0.670	0.2	2.093	14	0.4
81 01 20	5	4	24.19	-0.3098	1.7	-19.3098	0.722	0.8	1.861	27	0.9	81 08 04	10	4	22.10	0.2873	1.8	-19.7129	0.667	1.6	1.837	12	3.8
81 01 21	3	6	19.67	-0.3145	1.7	-19.3150	0.670	1.0	2.067	27	1.3	81 08 04	11	8	24.48	0.2705	1.5	-19.7294	0.570	0.9	1.863	20	1.6
81 01 21	4	6	21.79	-0.3212	2.6	-19.3214	0.769	2.1	2.308	25	2.4	81 08 04	1	8	26.50	0.2720	0.6	-19.7278	0.581	0.4	2.043	14	1.1
81 01 21	5	6	24.14	-0.3177	1.1	-19.3177	0.749	0.7	2.493	27	0.8	81 08 05	9	8	19.86	0.2804	1.4	-19.7200	0.736	0.8	2.028	12	2.4
81 01 22	3	4	19.60	-0.3109	2.6	-19.3114	0.565	1.7	1.931	27	2.0	81 08 07	9	8	19.95	0.2710	1.6	-19.7295	0.670	1.2	2.032	18	2.2
81 01 22	4	4	21.74	-0.3058	1.3	-19.3061	0.685	1.2	1.806	28	1.1	81 08 07	10	8	21.84	0.2780	1.2	-19.7222	0.604	1.2	2.050	16	1.9
81 01 22	5	4	24.04	-0.3046	1.8	-19.3046	0.654	1.3	1.594	25	1.5	81 08 08	9	2	19.98	0.2710	0.9	-19.7294	0.801	0.6	2.565	19	1.1
81 01 23	3	2	19.60	-0.3098	1.3	-19.3103	0.730	0.8	2.280	26	1.0	81 08 08	10	2	22.05	0.2680	2.2	-19.7323	0.886	1.3	2.892	16	2.8
81 01 23	4	2	21.67	-0.3155	1.2	-19.3158	0.774	1.1	2.463	28	1.0	81 08 10	10	4	21.82	0.2623	4.5	-19.7580	0.659	3.5	1.742	26	3.8
81 01 23	5	2	24.05	-0.3289	1.6	-19.3289	0.676	1.1	2.294	26	1.3	81 08 14	10	2	21.19	0.2564	0.9	-19.7439	0.754	0.6	2.576	15	1.3
81 01 26	3	4	19.37	-0.3154	1.8	-19.3159	0.668	1.0	2.168	27	1.3	81 08 18	10	4	21.26	0.2461	3.1	-19.7542	0.735	2.7	1.905	26	2.8
81 01 26	4	4	21.42	-0.3065	1.2	-19.3068	0.522	1.2	1.971	25	1.2	81 08 18	11	4	23.18	0.2429	1.6	-19.7572	0.751	1.1	1.981	22	1.5
81 01 26	5	4	23.80	-0.3172	2.1	-19.3173	0.725	1.5	1.812	27	1.7	DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-ZAI	$\Delta\psi$	$W_z$	R	N	$W_x$
81 01 27	3	6	19.26	-0.3135	1.3	-19.3140	0.757	0.7	2.455	27	1.0	81 08 24	10	4	20.81	0.2343	1.4	-19.7660	0.721	1.2	1.808	17	2.0
81 01 27	4	6	21.41	-0.3086	0.8	-19.3089	0.869	0.7	2.366	28	0.7	81 08 25	10	7	20.79	0.2388	1.6	-19.7615	0.856	1.2	2.291	27	1.3
81 01 27	5	6	23.72	-0.3296	1.6	-19.3297	0.797	1.1	2.089	28	1.2	81 08 25	11	7	22.68	0.2423	2.3	-19.7759	0.934	1.5	2.259	27	1.8
81 01 28	4	7	21.41	-0.3229	1.1	-19.3231	0.891	0.9	2.139	24	1.1	81 08 26	10	4	20.82	0.2304	2.0	-19.7659	0.668	1.5	1.660	23	2.0
81 01 28	5	7	23.58	-0.3097	0.8	-19.3097	0.708	0.5	2.356	25	0.7	81 08 26	11	4	22.92	0.2324	1.3	-19.7677	0.680	0.8	1.634	25	1.1
81 01 29	3	6	19.15	-0.3076	1.2	-19.3081	0.939	0.7	2.413	28	0.9	81 08 27	10	6	20.77	0.2374	1.4	-19.7629	0.628	1.2	2.495	22	1.6
81 01 29	4	6	21.28	-0.3100	1.2	-19.3103	0.893	1.1	2.350	28	1.0	81 08 27	11	6	22.81	0.2296	0.6	-19.7706	0.739	0.4	2.193	26	0.5
81 01 29	5	6	23.59	-0.2837	1.9	-19.2837	0.775	1.3	2.129	28	1.4	81 08 27	1	6	25.00	0.2330	2.2	-19.7659	0.793	1.1	2.359	26	1.6
81 01 30	3	2	19.14	-0.3247	1.2	-19.3252	0.990	0.7	2.307	26	0.9	81 08 28	10	2	20.58	0.2421	1.9	-19.7583	0.735	1.4	2.289	25	1.7
81 01 30	4	2	21.21	-0.3341	1.4	-19.3344	0.932	0.9	2.071	28	0.9	81 09 07	10	4	19.74	0.2212	1.0	-19.7793	0.784	0.8	1.814	16	1.4
81 01 30	5	2	23.56	-0.3252	1.0	-19.3252	0.773	1.0	1.938	27	1.1	81 09 08	11	2	22.01	0.1975	1.1	-19.8027	0.818	0.6	2.832	16	1.3
81 02 02	4	4	18.87	-0.3370	2.1	-19.3376	0.677	1.4	1.743	23	1.9	81 09 16	10	5	19.19	0.2021	1.7	-19.7984	0.768	1.6	2.563	22	1.9
81 02 02	4	4	21.00	-0.3331	2.9	-19.3334	0.771	2.6	1.866	26	2.6	81 10 01	11	4	19.57	0.1727	2.1	-19.8273	0.734	1.4	1.982	15	1.8
81 02 02	5	4	23.34	-0.3396	1.2	-19.3397	0.613	1.1	1.712	22	1.4	81 10 11	11	4	19.69	0.1451	2.6	-19.8553	0.619	1.8	1.907	25	2.2
81 02 05	3	6	18.68	-0.3418	0.8	-19.3424	0.780	0.5	2.305	27	0.6	81 10 13	11	4	19.69	0.1355	1.6	-19.8647	0.602	1.0	1.935	28	1.2
81 02 05	4	6	20.82	-0.3434	2.4	-19.3437	0.754	2.2	2.095	28	2.0	81 10 13	2	4	21.92	0.1509	2.1	-19.8491	0.682	1.6	2.037	28	1.7
81 02 05	5	6	23.14	-0.3514	1.7	-19.3514	0.801	1.2	2.031	28	1.3	81 10 14	11	6	19.69	0.1292	0.8	-19.8713	0.703	0.5	2.793	26	0.6
81 02 06	2	2	20.75	-0.3515	0.9	-19.3518	0.006	0.8	2.143	28	0.8	81 10 14	1	6	21.89	0.1361	1.6	-19.8642	0.751	1.0	2.854	27	1.2
81 02 06	5	2	23.15	-0.3414	1.7	-19.3415	0.829	1.2	2.096	24	1.5	81 10 14	2	6	23.79	0.1381	0.5	-19.8619	0.622	0.4	3.005	21	0.6
81 02 24	4	7	19.71	-0.3926	1.3	-19.3931	0.784	0.9	2.308	14	1.9	81 10 19	11	7	19.30	0.1355	1.7	-19.8651	0.631	0.9	2.387	16	2.0
81 02 24	5	7	21.96	-0.3912	2.0	-19.3914	0.745	1.3	2.148	22	1.9	81 10 23	1	2	21.27	0.1067	1.2	-19.8937					