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TIME AND LATITUDE RESULTS OF OBSERVATIONS MADE AT MERATE OBSERVATORY WITH THE ASTROLABE FOR THE YEAR 1978

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Summary. — Results of the observations made with the Astrolabe Danjon OPL n° 32 are given. These 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 1978 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 the previous years (Buffoni *et al.*, 1977 ; 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.
- Code of the observers :
- 2 Francesco Mazzoleni
 - 4 Franca Chlistovsky
 - 5 Alessandro Manara
 - 6 Letizia Buffoni.

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TABLE I.

DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\psi$	W_{ψ}	R	N	W_R
78 01 05	2	6	18.54	0.6647	3.9	-16.3359	1.060	2.7	3.788	25	3.4
78 01 05	3	6	20.70	0.6016	6.3	-16.3998	0.664	4.4	3.982	21	6.5
78 01 06	3	2	20.71	0.5607	6.5	-16.4397	0.841	3.7	2.974	26	4.9
78 01 06	4	2	22.83	0.5503	2.1	-16.4499	1.265	2.0	2.995	27	1.9
78 01 09	3	4	20.51	0.4978	3.9	-16.5026	0.485	2.6	2.612	25	3.2
78 01 09	4	4	22.53	0.5676	4.1	-16.4326	1.032	3.3	2.432	23	4.0
78 01 25	4	2	21.49	0.4751	2.7	-16.5252	0.752	2.2	2.853	24	2.6
78 01 26	3	6	19.43	0.4603	1.7	-16.5403	0.987	1.0	5.178	20	1.8
78 01 26	4	6	21.50	0.3710	3.5	-16.6293	0.377	3.0	4.053	23	3.5
78 01 31	3	5	19.08	0.4815	5.4	-16.5190	0.536	2.9	2.850	23	4.6
78 01 31	4	5	21.15	0.5030	2.6	-16.4973	0.973	2.4	2.747	26	2.5
78 02 07	3	4	18.55	0.4302	2.2	-16.5705	0.301	1.2	3.154	28	1.9
78 02 07	4	4	20.73	0.4321	1.6	-16.5682	0.867	1.4	2.568	24	1.6
78 03 09	5	6	21.16	0.3686	4.5	-16.6317	0.494	2.2	4.505	18	4.8
78 03 09	6	6	23.27	0.3401	5.1	-16.6600	0.347	2.1	4.268	19	5.1
78 03 10	5	4	20.90	0.3068	3.6	-16.6935	0.332	2.5	2.683	28	2.8
78 03 10	6	4	23.19	0.3161	3.1	-16.6840	0.385	1.4	2.951	26	2.2
78 03 15	5	2	20.89	0.3027	1.7	-16.6977	0.249	1.1	3.021	21	1.8
78 03 15	6	2	22.80	0.3179	3.3	-16.6823	0.314	1.4	2.955	25	2.4
78 03 23	5	2	20.14	0.2899	2.3	-16.7106	0.192	1.6	3.020	28	1.7
78 03 28	5	5	19.79	0.3725	3.7	-16.6280	0.327	2.4	2.652	27	2.8
78 03 28	6	5	21.94	0.3544	4.0	-16.6459	0.526	2.0	2.745	27	2.8
78 05 02	7	2	21.93	0.1904	2.0	-16.8099	0.312	1.0	3.484	25	1.5
78 05 15	7	2	20.97	0.1775	3.1	-16.8229	0.393	1.8	3.034	25	2.5
78 05 15	8	2	23.11	0.1748	3.5	-16.8253	0.481	2.3	3.153	26	2.8
78 05 29	8	5	22.15	0.1592	1.1	-16.8410	0.693	1.0	3.131	18	1.6
78 06 04	8	2	21.82	0.1027	2.4	-16.8975	0.644	1.7	3.378	27	1.9
78 06 05	8	5	21.75	0.1174	2.4	-16.8828	0.512	1.5	3.289	24	2.1
78 06 06	8	4	21.48	0.1275	4.2	-16.8728	0.410	3.6	2.674	20	4.9
78 06 19	8	2	20.90	0.0360	3.6	-16.9644	0.561	2.2	3.089	23	3.1
78 06 19	9	2	22.98	0.1000	5.1	-16.9002	0.427	3.1	2.820	25	4.2
78 06 28	9	4	22.36	0.0741	4.4	-16.9261	0.582	2.8	2.754	25	3.7
78 06 29	9	2	22.32	0.0391	3.2	-16.9611	0.592	2.2	3.030	28	2.4
78 07 17	9	5	21.16	0.0523	4.8	-16.9481	0.791	3.2	3.296	25	4.0
78 07 21	9	2	20.88	-0.0033	6.9	-17.0036	0.705	4.6	3.091	28	5.2
78 07 21	10	2	23.15	-0.0073	4.8	-17.0074	0.921	3.8	2.681	27	4.0
78 08 08	10	2	21.92	-0.0217	4.2	-17.0219	0.880	3.5	2.959	27	3.6
78 08 09	10	4	21.88	-0.0399	4.3	-17.0402	0.851	3.5	2.715	28	3.5
78 08 09	11	4	24.01	-0.0434	4.6	-17.0434	0.926	2.7	2.691	27	3.4
78 08 10	10	2	21.79	-0.0377	4.5	-17.0379	0.765	3.5	2.425	27	3.7
78 08 30	10	2	20.57	-0.0107	4.7	-17.0111	1.078	3.8	3.385	21	5.2
78 08 31	10	4	20.50	-0.0678	5.9	-17.0682	1.065	4.1	2.523	25	5.1
78 08 31	11	4	22.51	-0.0739	4.1	-17.0741	1.032	2.7	2.501	26	3.3

TABLE I (continued).

DATE	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\psi$	W_{ψ}	R	N	W_R
78 09 02	10	2	20.31	-0.0947	5.0	-17.0951	0.951	4.0	2.661	28	4.0
78 09 02	11	2	22.44	-0.1089	3.3	-17.1091	1.028	2.1	2.428	27	2.5
78 09 07	10	6	19.97	-0.1071	1.5	-17.1075	0.813	1.0	2.762	24	1.3
78 09 07	11	6	22.00	-0.0812	3.2	-17.0814	1.388	1.9	2.808	22	3.0
78 09 11	10	6	19.74	-0.0620	1.8	-17.0624	1.152	1.4	2.897	25	1.6
78 09 13	11	6	21.64	-0.0690	5.4	-17.0693	1.048	3.2	2.738	23	4.8
78 09 14	10	5	19.52	-0.1053	3.1	-17.1058	0.937	2.5	3.265	28	2.5
78 09 14	11	5	21.62	-0.1101	2.7	-17.1103	0.987	1.7	3.190	27	2.1
78 09 21	11	5	21.16	-0.1279	4.5	-17.1282	1.080	2.8	2.814	28	3.3
78 09 23	11	2	20.91	-0.1305	2.9	-17.1308	0.994	2.0	2.850	21	2.9
78 09 29	11	2	20.69	-0.1670	5.0	-17.1674	0.875	3.3	2.437	26	4.0
78 10 06	11	2	20.16	-0.2112	6.3	-17.2116	1.049	4.0	2.518	26	5.0
78 10 06	1	2	22.40	-0.2083	5.7	-17.2085	1.193	3.5	2.424	28	4.1
78 10 09	11	4	19.95	-0.2336	4.1	-17.2340	0.842	2.8	2.173	26	3.4
78 10 09	1	4	22.19	-0.2361	5.3	-17.2363	1.110	3.1	2.257	27	3.9
78 10 11	11	5	19.85	-0.1832	4.7	-17.1837	0.970	2.7	2.670	26	3.6
78 10 12	11	4	19.78	-0.2381	3.8	-17.2386	0.966	2.4	2.371	28	2.7
78 10 12	1	4	21.96	-0.2274	3.5	-17.2277	1.139	2.1	2.406	26	2.7
78 10 23	11	4	19.04	-0.2593	5.6	-17.2598	1.032	3.4	2.190	27	4.2
78 10 23	1	4	21.27	-0.2663	3.9	-17.2666	1.176	2.4	2.197	25	3.2
78 10 24	11	6	18.80	-0.2522	2.2	-17.2528	1.232	1.3	2.801	18	2.5
78 10 25	1	4	21.14	-0.2667	6.6	-17.2670	1.111	3.8	2.219	27	4.9
78 10 26	1	5	21.10	-0.1948	3.8	-17.1951	1.108	2.2	3.069	24	3.2
78 11 08	1	4	20.19	-0.3344	4.3	-17.3344	1.079	2.9	2.091	23	4.2
78 11 08	2	4	22.39	-0.3197	7.3	-17.3199	0.808	5.0	2.313	27	5.8
78 11 09	1	6	20.16	-0.3087	5.3	-17.3092	1.099	3.4	3.020	21	5.3
78 11 09	2	6	22.34	-0.3125	4.2	-17.3127	1.050	2.9	3.143	23	3.9
78 11 13	1	5	19.91	-0.2867	3.4	-17.2871	0.977	2.1	2.645	28	2.5
78 11 13	2	5	22.08	-0.2486	4.0	-17.2489	0.858	2.7	2.615	26	3.2
78 11 14	1	4	19.83	-0.3234	3.0	-17.3239	1.001	1.8	2.109	27	2.3
78 11 14	2	4	22.03	-0.3152	4.0	-17.3154	0.820	3.0	2.381	28	3.2
78 11 15	1	2	19.77	-0.3435	6.6	-17.3440	1.229	4.1	2.481	28	4.8
78 11 15	2	2	22.07	-0.3226	4.6	-17.3228	1.113	3.5	2.469	23	4.5
78 11 17	1	2	19.64	-0.3750	4.6	-17.3755	1.132	2.8	2.321	28	3.3
78 11 20	1	5	19.47	-0.3127	3.9	-17.3132	0.907	2.2	2.425	22	3.6
78 11 22	1	4	19.37	-0.3497	6.1	-17.3502	1.030	4.5	2.228	24	5.7
78 11 22	2	4	21.49	-0.3274	5.5	-17.3277	0.804	3.6	2.197	24	4.8
78 11 22	3	4	23.61	-0.3362	3.8	-17.3363	0.975	2.4	2.242	21	4.2
78 11 23	1	6	19.31	-0.3921	3.1	-17.3926	1.138	1.7	2.935	22	2.8
78 11 23	2	6	21.38	-0.3565	4.8	-17.3568	0.934	2.7	2.844	21	4.7
78 11 29	2	2	21.07	-0.3670	3.2	-17.3674	1.167	2.2	2.222	27	2.5
78 11 29	3	2	23.16	-0.3933	5.8	-17.3934	0.842	3.5	1.981	27	4.3
78 11 30	1	6	18.73	-0.3932	4.1	-17.3938	1.223	2.3	2.685	25	3.3
78 12 05	1	6	18.52	-0.4197	7.6	-17.4203	1.059	4.6	2.802	25	6.2
78 12 05	2	6	20.68	-0.4274	3.9	-17.4277	0.840	2.9	2.947	25	3.5