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Time and latitude results of observations made at Merate Observatory with the astrolabe for the year 1982

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Summary. — Results of 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 in the year 1982 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 1981, 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.

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TABLE I.

Date	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\Psi$	W_Ψ	R	N	W_r
82 01 08	3	2	20.72	-0.0721	1.0	-20.0725	0.558	0.5	2.477	20	1.0
82 01 08	4	2	22.67	-0.0681	1.5	-20.0682	0.593	1.3	2.429	28	1.2
82 01 20	3	2	19.76	-0.0836	2.9	-20.0836	0.608	1.8	2.101	28	2.1
82 01 20	4	2	21.88	-0.0749	3.3	-20.0751	0.706	3.0	1.983	28	2.8
82 01 22	3	2	19.74	-0.0832	2.6	-20.0836	0.699	1.5	2.072	24	2.1
82 01 28	3	7	19.56	-0.1014	0.7	-20.1019	0.686	0.5	2.341	15	1.0
82 01 28	4	7	21.30	-0.1015	1.8	-20.1018	0.731	1.4	2.366	24	1.7
82 01 29	3	2	19.12	-0.1007	3.0	-20.1013	0.670	1.7	2.095	25	2.4
82 01 29	4	2	21.29	-0.1090	1.5	-20.1093	0.607	1.4	2.508	28	1.3
82 02 05	4	2	20.81	-0.1096	2.4	-20.1100	0.645	2.3	2.335	26	2.3
82 02 05	5	2	23.15	-0.1093	1.4	-20.1094	0.495	1.0	2.196	28	1.1
82 02 09	4	2	20.57	-0.1085	1.8	-20.1089	0.644	1.6	2.046	28	1.6
82 02 09	5	2	22.89	-0.1121	1.8	-20.1122	0.645	1.2	2.121	28	1.4
82 02 11	4	6	20.42	-0.1158	1.6	-20.1162	0.740	0.9	2.606	20	1.7
82 02 11	5	6	22.71	-0.1184	2.3	-20.1185	0.522	1.6	2.580	24	2.1
82 02 12	4	4	20.36	-0.1239	1.3	-20.1243	0.593	1.3	2.146	27	1.2
82 02 12	5	4	22.69	-0.1305	1.4	-20.1306	0.530	1.0	2.027	24	1.3
82 02 12	6	4	24.86	-0.1336	3.2	-20.1335	0.670	1.6	2.070	26	2.4
82 03 01	4	4	19.05	-0.1541	2.1	-20.1547	0.573	2.0	1.948	19	2.9
82 03 11	5	6	20.93	-0.1612	1.4	-20.1616	0.596	0.9	2.751	26	1.1
82 03 11	6	6	23.12	-0.1671	1.1	-20.1672	0.699	0.5	2.507	27	0.8
82 03 11	7	6	25.28	-0.1658	0.9	-20.1657	0.579	0.5	2.558	27	0.6
82 03 15	5	5	20.70	-0.1829	1.7	-20.1833	0.690	1.2	2.614	26	1.4
82 03 16	5	6	20.60	-0.1909	0.9	-20.1913	0.675	0.6	2.668	22	0.9
82 03 16	6	6	22.79	-0.1854	1.8	-20.1855	0.606	0.9	2.652	27	1.3
82 03 19	5	4	20.34	-0.1991	1.4	-20.1995	0.609	0.9	1.981	24	1.2
82 03 19	6	4	22.62	-0.1968	2.2	-20.1969	0.777	0.9	1.940	17	2.4
82 03 23	6	4	22.19	-0.2154	1.8	-20.2156	0.674	0.6	1.913	17	1.9
82 03 25	5	4	20.00	-0.2176	2.6	-20.2181	0.694	1.8	1.965	26	2.2
82 03 25	6	4	22.17	-0.2116	2.7	-20.2118	0.702	1.3	1.971	25	2.0
82 03 25	7	4	24.37	-0.2190	1.7	-20.2190	0.621	1.1	2.131	26	1.4
82 04 26	6	6	20.18	-0.2820	1.4	-20.2825	0.875	0.7	2.725	25	1.0
82 04 26	7	6	22.29	-0.2905	1.2	-20.2907	0.923	0.7	2.944	26	0.9
82 04 26	8	6	24.35	-0.2708	1.4	-20.2708	0.913	1.0	2.629	27	1.1
82 04 28	6	6	19.77	-0.2767	0.6	-20.2772	0.742	0.2	2.517	14	0.9
82 04 28	7	6	22.19	-0.2883	4.3	-20.2885	0.826	2.0	3.049	24	3.5
82 04 28	8	6	24.16	-0.2950	1.4	-20.2950	0.839	1.2	2.964	26	1.2
82 05 11	7	4	21.36	-0.3333	2.8	-20.3336	0.661	1.5	2.423	25	2.2
82 05 11	8	4	23.32	-0.3248	9.7	-20.3248	0.771	8.2	2.352	23	9.8
82 05 12	7	7	21.29	-0.3260	2.0	-20.3263	0.786	1.1	2.737	26	1.6
82 05 12	8	7	23.15	-0.3203	0.8	-20.3204	0.876	0.8	2.769	17	1.2
82 05 13	7	6	21.13	-0.3333	1.9	-20.3336	0.877	1.2	2.882	27	1.4
82 05 13	8	6	23.20	-0.3330	1.1	-20.3331	0.909	0.9	2.787	24	1.0
82 05 14	7	2	21.14	-0.3296	2.1	-20.3299	0.798	1.2	2.622	27	1.6
82 05 14	8	2	23.23	-0.3361	3.5	-20.3362	0.759	2.8	2.593	25	3.2
82 05 18	7	4	20.57	-0.3349	2.6	-20.3353	0.831	1.5	2.225	20	2.8
82 05 19	7	7	20.73	-0.3454	1.4	-20.3458	0.772	0.8	2.752	26	1.1
82 05 19	8	7	22.87	-0.3421	1.0	-20.3422	0.825	0.7	2.880	24	0.9
82 05 20	7	6	20.74	-0.3455	1.3	-20.3459	0.795	0.8	2.952	27	1.0

TABLE I *(continued)*.

Date	Gr.	Obs.	UTM	UT0-UTC	W DT	UT0-TAI	$\Delta\varphi$	W_φ	R	N	W_r
82 05 25	7	4	20.38	-0.3539	5.8	-20.3543	0.772	3.2	2.095	26	4.5
82 05 25	8	4	22.46	-0.3702	2.7	-20.3704	0.822	2.1	2.002	28	2.1
82 05 31	8	6	22.05	-0.3733	1.0	-20.3736	0.880	1.0	2.619	21	1.2
82 06 01	8	5	22.05	-0.3780	2.8	-20.3783	0.835	2.1	2.656	26	2.4
82 06 02	8	4	21.92	-0.3879	2.6	-20.3882	0.823	2.1	2.342	26	2.3
82 06 03	8	6	21.90	-0.3845	1.5	-20.3847	1.008	1.2	2.800	25	1.4
82 06 03	9	6	24.07	-0.3868	1.2	-20.3868	0.851	0.8	2.610	26	0.9
82 06 14	8	4	21.09	-0.4099	2.4	-20.4102	0.733	2.1	2.064	24	2.4
82 06 14	9	4	23.13	-0.4039	2.4	-20.4040	0.884	1.4	1.911	18	2.7
82 06 28	9	6	22.45	-0.4217	1.5	-20.4219	1.054	1.1	2.618	26	1.3
82 06 28	10	6	24.71	-0.4341	2.0	-20.4340	0.852	1.5	2.759	26	1.7
82 07 01	9	6	22.19	0.5655	1.9	-20.4347	1.053	1.3	2.791	28	1.5
82 07 01	10	6	24.45	0.5652	3.4	-20.4347	0.934	2.5	2.633	27	2.7
82 07 07	9	5	21.77	0.5578	2.9	-20.4425	1.000	2.2	2.710	24	2.7
82 07 12	9	6	21.49	0.5498	1.2	-20.4604	0.974	0.8	2.497	27	0.9
82 07 21	9	6	20.90	0.5326	1.3	-20.4677	0.859	0.8	2.626	23	1.2
82 07 21	10	6	23.19	0.5366	1.3	-20.4635	1.091	1.0	2.505	26	1.1
82 07 22	9	4	20.69	0.5294	2.6	-20.4710	0.867	1.7	1.945	24	2.3
82 07 22	10	4	22.84	0.5335	0.6	-20.4666	1.007	0.7	2.057	16	1.0
82 08 09	10	4	21.93	0.5014	2.2	-20.4989	0.984	1.7	2.107	18	2.9
82 08 09	11	4	23.57	0.5078	1.2	-20.4922	0.974	1.0	2.114	16	1.8
82 08 17	10	7	21.38	0.4934	1.7	-20.5069	0.927	1.3	2.497	24	1.6
82 08 17	11	7	23.47	0.4908	1.4	-20.5093	0.966	0.8	2.236	27	1.0
82 08 18	10	4	21.29	0.4810	1.8	-20.5193	0.911	1.5	1.885	26	1.6
82 08 18	11	4	23.32	0.4854	4.2	-20.5147	0.893	2.6	1.944	23	3.7
82 08 23	10	4	20.92	0.4763	2.6	-20.5241	0.932	2.3	2.072	21	3.0
82 08 24	10	6	20.87	0.4712	2.9	-20.5292	1.008	2.4	2.422	26	2.6
82 08 24	11	6	23.02	0.4711	1.4	-20.5290	0.922	0.9	2.417	27	1.1
82 08 25	10	4	20.84	0.4699	3.2	-20.5305	0.879	2.7	1.994	27	2.8
82 08 25	11	4	22.90	0.4712	4.2	-20.5289	0.797	2.8	2.019	27	3.3
82 09 02	10	6	20.23	0.4696	1.1	-20.5308	0.892	0.9	2.650	19	1.4
82 09 02	11	6	22.41	0.4664	1.4	-20.5338	0.987	0.9	2.594	28	1.0
82 09 02	1	6	24.60	0.4496	2.4	-20.5504	0.920	1.4	2.334	26	1.8
82 09 03	10	2	20.42	0.4565	2.9	-20.5439	1.080	2.3	2.443	21	3.1
82 09 03	11	2	22.29	0.4548	1.9	-20.5454	0.882	1.1	2.448	22	1.7
82 09 09	10	6	19.89	0.4592	1.5	-20.5413	0.923	1.1	2.420	24	1.4
82 09 09	11	6	21.74	0.4560	3.4	-20.5443	0.982	2.2	2.319	22	3.3
82 09 09	1	6	23.77	0.4460	1.7	-20.5541	0.935	0.4	2.153	13	2.1
82 09 10	10	2	19.58	0.4566	1.0	-20.5439	0.956	0.8	2.635	20	1.1
82 09 16	10	5	19.39	0.4255	1.7	-20.5750	0.829	1.4	2.583	28	1.4
82 09 16	11	5	21.49	0.4235	2.3	-20.5768	0.851	1.5	2.562	28	1.7
82 09 17	10	2	19.33	0.4154	1.3	-20.5852	0.898	1.1	2.510	28	1.1
82 09 17	11	2	21.42	0.4193	2.0	-20.5810	0.832	1.3	2.559	25	1.7
82 09 27	11	6	20.77	0.3965	1.7	-20.6039	0.927	1.0	2.674	28	1.2
82 09 27	1	6	22.97	0.3941	2.8	-20.6060	0.898	1.7	2.655	27	2.1
82 09 27	2	6	25.15	0.4014	1.5	-20.5985	0.819	1.2	2.555	27	1.3
82 09 28	11	4	20.71	0.3794	2.7	-20.6210	0.825	1.8	1.977	25	2.2
82 09 28	1	4	22.93	0.3912	4.1	-20.6089	0.740	2.7	1.842	27	3.2
82 10 02	11	2	20.68	0.3789	1.7	-20.6215	0.892	0.9	2.477	21	1.6
82 10 02	1	2	22.64	0.3746	5.4	-20.6255	0.892	3.3	2.240	27	4.1

TABLE I *(continued)*.

Date	Gr.	Obs.	UTM	UTO-UTC	W DT	UTO-TAI	$\Delta\varphi$	W_φ	R	N	W_r
82 10 12	1	6	22.13	0.3600	1.3	-20.6403	0.842	1.0	2.344	19	1.6
82 10 14	1	6	21.97	0.3638	1.9	-20.6364	0.852	1.2	2.540	25	1.6
82 10 14	2	6	24.08	0.3524	0.9	-20.6476	0.756	0.8	2.336	23	1.0
82 10 15	11	2	19.57	0.3527	4.3	-20.6578	0.938	2.8	2.402	25	3.6
82 10 15	1	2	21.75	0.3554	4.2	-20.6549	0.837	2.7	2.423	22	4.1
82 10 20	11	2	19.50	0.3453	1.7	-20.6552	0.758	0.9	2.279	21	1.6
82 10 20	1	2	21.47	0.3496	6.5	-20.6507	0.838	3.7	2.297	27	4.8
82 10 20	2	2	23.33	0.3408	0.4	-20.6592	0.851	0.4	2.346	17	0.7
82 10 25	11	2	19.06	0.3237	4.1	-20.6769	0.820	2.5	2.428	24	3.5
82 10 25	1	2	21.15	0.3288	3.4	-20.6716	0.875	2.0	2.383	27	2.5
82 10 25	2	2	23.32	0.3397	1.9	-20.6604	0.825	1.3	2.142	26	1.6
82 10 26	11	6	18.90	0.3298	1.7	-20.6708	0.729	1.1	2.454	27	1.3
82 10 27	11	2	18.75	0.3259	3.2	-20.6747	0.920	2.0	2.318	25	2.6
82 10 28	11	5	18.79	0.3250	1.5	-20.6750	0.734	1.0	2.321	26	1.2
82 10 28	1	5	20.95	0.3220	1.7	-20.6784	0.743	1.0	2.638	27	1.3
82 10 29	11	2	18.67	0.3158	1.8	-20.6848	0.772	1.1	2.335	28	1.3
82 10 29	1	2	20.90	0.3193	2.7	-20.6810	0.928	1.7	2.360	27	2.1
82 10 29	2	2	23.08	0.3163	1.4	-20.6838	0.814	1.0	2.452	28	1.1
82 11 02	11	5	18.41	0.3107	2.8	-20.6899	0.699	1.7	2.418	28	2.0
82 11 02	1	5	20.62	0.3151	1.6	-20.6853	0.752	0.9	2.606	27	1.1
82 11 05	1	2	20.43	0.3064	4.1	-20.6940	0.728	2.5	2.143	28	3.0
82 11 05	2	2	22.62	0.3072	1.9	-20.6929	0.793	1.4	2.114	28	1.5
82 11 16	1	6	19.78	0.2752	1.6	-20.7253	0.730	0.9	2.328	25	1.3
82 11 17	1	5	19.64	0.2804	1.6	-20.7201	0.598	1.0	2.594	28	1.1
82 11 17	2	5	21.83	0.2782	1.2	-20.7220	0.661	0.9	2.425	28	0.9
82 11 18	1	6	19.54	0.2677	1.3	-20.7328	0.812	0.8	2.346	27	1.0
82 11 18	2	6	21.66	0.2811	0.8	-20.7191	0.550	0.6	2.730	24	0.7
82 11 18	3	6	23.81	0.2746	1.7	-20.7254	0.463	1.0	2.665	20	1.9
82 11 19	1	2	19.51	0.2733	3.2	-20.7272	0.647	2.0	2.220	28	2.3
82 11 19	2	2	21.70	0.2641	3.3	-20.7361	0.757	2.4	2.205	28	2.6
82 11 19	3	2	23.84	0.2714	2.0	-20.7286	0.531	1.2	2.245	28	1.4
82 12 11	2	2	20.26	0.2074	1.6	-20.7930	0.601	1.2	2.844	28	1.2
82 12 11	3	2	22.42	0.2193	1.4	-20.7809	0.616	0.9	2.552	27	1.1
82 12 13	2	6	20.13	0.2136	1.4	-20.7869	0.549	1.1	2.502	28	1.1
82 12 13	3	6	22.26	0.2111	2.2	-20.7891	0.540	1.3	2.363	28	1.6
82 12 13	4	6	24.39	0.2164	1.3	-20.7836	0.531	1.2	2.555	28	1.1
82 12 14	2	4	20.10	0.2099	4.5	-20.7906	0.459	3.2	1.767	25	3.9
82 12 14	3	4	22.21	0.2150	3.1	-20.7852	0.471	2.0	1.784	27	2.4
82 12 14	4	4	24.32	0.2162	2.1	-20.7837	0.363	1.8	1.907	27	1.8