

CATALOGUE OF POSITIONS OF 223 ONDREJOV PZT STARS OBSERVED AT BELGRADE OBSERVATORY

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SUMMARY: On the basis of the data obtained with the Large Meridian Circle during the period 1985-1990 a catalogue of positions for 223 Ondrejov PZT stars, as well as the individual corrections to the fundamental-star positions, are presented.

1. INTRODUCTION

At the XIII Astrometric Conference, in 1956, it was proposed by Soviet astronomers to form "The general catalogue of latitude stars" which should contain the stars included in the programmes of all the northern-hemisphere latitude stations (VZT and PZT). The proposal was accepted at the X IAU General Assembly in 1958 (IAU Transaction 1959). Its importance has been confirmed in the resolutions of the next IAU General Assemblies, XI, XII, XIII, XIV and others. This task has not been definitively realised; only two versions of the Preliminary General Catalogue of latitude stars (Sadžakov 1978; Urasina 1987) have been made and also the Northern PZT stars catalog *NPZT₇₄* (Yasuda et al. 1983). While the former ones comprise all latitude stars observed with both visual zenith telescopes (VZT) and photographic zenith telescopes (PZT), the latter one contains the stars of the Northern-Photographic-Zenith-Telescope (NPZT) Programme only.

Since the stars of the Ondrejov PZT programme whose magnitudes are within $8.0 < m < 11.0$

were not included in Yasuda's list, we have been requested by the Prague colleagues to determine the coordinates (α, δ) for the stars of their programme.

The observations of 223 stars of the Ondrejov PZT and of 173 FK5 fundamental stars were made in the period 1985-1990 with the Large Meridian Circle ($d=190$ mm, $f=2578$ mm) of the Belgrade Observatory. The observations were visual and relative method was used.

2. RESULTS AND DISCUSSION

For the purpose of obtaining the instrument's parameters $(u+m)$, n and M_0 , the apparent positions (α, δ) of the FK5 stars, calculated by applying the vector method and by using the new constants, are utilised.

The right ascensions of the programme stars are calculated by using the Bessel formula:

$$\alpha'_i = T_i + r \sec \delta_i + (u + m)_{mean} + n_{mean} \operatorname{tg} \delta_i$$

where

T_i - mean recorded transit obtained from ten contacts;

$r = c + a \cos \varphi + \omega/2$;

c - collimation; a - diurnal-aberration constant ($0^{\circ}.021$);

$\varphi = 44^{\circ}48'10''$ - latitude of the Belgrade Meridian Circle;

$\omega/2$ - correction for the contact width and the lost motion of the micrometer;

$(u+m)_{mean}$, n_{mean} - mean values of $(u+m)$ and n obtained from fundamental stars.

The declinations of the programme stars are calculated by using the following formula:

$$\delta'_i = M_i - M_{o_{mean}}$$

$M_{o_{mean}}$ is the mean value of the equator point obtained from the fundamental stars and

$$M_i = M + mR_\delta + \Delta\lambda + \rho + f \sin z$$

where

M - mean value obtained from the readings of four microscope micrometers;

m - mean value obtained from five readings of the eyepiece micrometer;

R_δ - revolution value of the eyepiece micrometer in declination;

$\Delta\lambda$ - circle division corrections;

ρ - refraction effect;

z - zenith distance;

f - horizontal flexure of the tube.

The refraction is calculated according to the Pulkovo tables.

The positions of stars (α, δ) are given in the FK5 system for the equator and equinox of J2000.0 and for the epochs corresponding to our observations.

The programme stars were observed on the average 3.95 times in both right ascension and declination; in the case of the fundamental stars the corresponding number of observations was 3.84. The rms-error of a single observation is $\epsilon_\alpha \cos \delta = \pm 0^{\circ}.020$ in right ascension, $\epsilon_\delta = \pm 0'' 30$ in declination, for the programme stars, and $\epsilon_\alpha \cos \delta = \pm 0^{\circ}.017$ in right ascension and $\epsilon_\delta = \pm 0'' 25$ in declination for the fundamental stars. The mean observational epoch for the programme stars in the catalogue is 1987.34 in both right ascension and declination; for the fundamental stars 1987.37 also in both right ascension and declination.

The catalogue of positions of 223 Ondrejov PZT stars is presented in Table 1. The individual corrections to the right ascensions and declinations for the fundamental stars are presented in Table 2.

Explanation of Table 1:

N - star number in the catalogue

BD - BD number

m - visual magnitude

Sp - spectral type

R.A. - right ascension (hour, minute and second of time) for the equator and equinox J2000.0 and for the corresponding observational epoch

$\epsilon_\alpha \cos \delta$ - r.m.s. error of right ascension (second of time)

Ep - mean epoch of observations for right ascension

n_1 - number of observations in right ascension

DEC - declination (degree, minute and second of arc) for the equator and equinox J2000.0 and for the corresponding observational epoch

ϵ_δ - r.m.s. error of declinations (second of arc)

Ep - mean epoch of observations for declination

n_2 - number of observations in declination.

Note: The number 49.01556 in Column BD for the star under N=1401 is an AGK3 number since for this star there is no BD number.

Explanation of Table 2:

N FK5 - FK5 number

$\Delta\alpha$ - correction in right ascension (second of time)

$\epsilon_\alpha \cos \delta$ - r.m.s. error of right ascensions (second of time)

Ep - mean epoch of observations for right ascension

n_1 - number of observations in right ascension

$\Delta\delta$ - correction in declination (second of arc)

ϵ_δ - r.m.s. error of declinations (second of arc)

Ep - mean epoch of observations for declination

n_2 - number of observations in declination.

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Table 1. The positions of 223 Ondrejev PZT stars

N	BD	m	Sp	R.A.	$\epsilon_{\alpha} \cos \delta$	E_p	n_1	DEC	ϵ_{δ}	E_p	n_2
101	49.04322	8.5	K2	0 04 10.266	.025	1986.74	4	49 52 12.85	.09	1986.74	4
102	49.00007	8.1	A3	0 08 59.958	.022	1986.74	4	49 51 29.18	.31	1986.74	4
103	49.00030	7.0	A2	0 13 01.790	.009	1986.74	4	49 55 35.11	.30	1986.74	4
104	49.00035	8.7	K0	0 15 33.710	.033	1986.74	4	50 03 01.25	.40	1986.74	4
105	49.00050	8.8	K0	0 20 05.391	.028	1986.74	4	50 06 42.35	.28	1986.74	4
106	49.00089	9.3		0 27 11.298	.024	1986.74	4	49 59 17.84	.18	1986.74	4
107	49.00140	9.1	B5	0 37 00.292	.015	1986.74	4	50 06 51.65	.39	1986.74	4
108	49.00157	8.8	K0	0 41 09.227	.015	1986.74	4	49 58 02.86	.19	1986.74	4
109	49.00171	8.2	F2	0 43 26.490	.019	1986.74	4	49 53 40.98	.22	1986.74	4
110	49.00223	8.3	A2	0 51 58.153	.027	1986.74	4	50 01 08.43	.25	1986.74	4
111	49.00253	9.3	A2	0 58 20.568	.025	1986.74	4	49 59 52.68	.35	1986.74	4
112	49.00278	9.0	A0	1 04 03.741	.031	1986.74	4	50 04 15.89	.22	1986.74	4
113	49.00328	8.8	K0	1 13 35.606	.022	1986.74	4	50 06 11.60	.29	1986.74	4
114	49.00399	8.5	A0	1 30 06.165	.017	1986.74	4	49 56 32.14	.20	1986.74	4
201	49.00424	9.1	K2	1 38 20.877	.025	1986.74	4	49 58 49.74	.23	1986.74	4
202	49.00443	9.5	A2	1 43 14.180	.015	1986.74	4	50 03 32.58	.20	1986.74	4
203	49.00461	9.0	K0	1 47 46.114	.026	1986.74	4	49 52 06.48	.30	1986.74	4
204	49.00476	7.7	B9	1 51 33.080	.038	1986.74	4	49 52 10.02	.36	1986.74	4
205	49.00510	8.5	A2	1 58 25.503	.023	1986.74	4	49 54 54.27	.27	1986.74	4
206	49.00628	8.4	K5	2 19 14.036	.014	1986.74	4	50 08 38.06	.42	1986.74	4
207	49.00650	9.3	K0	2 24 35.529	.020	1986.74	4	49 49 58.50	.38	1986.74	4
208	49.00696	7.1	B9	2 34 40.276	.032	1986.74	4	50 03 56.92	.18	1986.74	4
209	49.00713	9.1	A0	2 36 51.299	.020	1986.74	4	49 59 52.54	.37	1986.74	4
210	49.00730	8.5	A2	2 39 23.984	.023	1986.74	4	50 07 10.77	.38	1986.74	4
211	49.00749	9.8	G5	2 42 39.042	.025	1986.74	4	49 55 50.36	.45	1986.74	4
212	49.00770	8.0	F8	2 47 00.237	.023	1986.74	4	50 07 27.77	.14	1986.74	4
213	49.00784	8.7	A0	2 50 24.696	.018	1986.74	4	49 56 41.01	.32	1986.74	4
214	49.00817	8.9	A2	3 00 17.637	.005	1986.74	4	49 58 26.88	.05	1986.74	4
301	49.00836	8.6	G5	3 04 25.247	.006	1986.74	4	50 01 55.07	.24	1986.74	4
302	49.00888	8.6	B5	3 15 51.565	.029	1986.74	4	49 52 40.72	.34	1986.74	4
303	49.00897	9.5	F5	3 18 05.241	.017	1986.74	3	49 54 22.18	.36	1986.74	3
304	49.00908	10.1	K0	3 21 57.151	.025	1986.74	3	50 00 35.94	.29	1986.74	3
305	49.00938	8.2	A0	3 28 18.545	.037	1986.74	3	49 57 10.73	.37	1986.74	3
306	49.00954	8.6	A5	3 31 30.156	.037	1986.74	3	49 54 07.66	.37	1986.74	3
307	49.00985	9.4	G0	3 39 51.481	.013	1986.74	3	49 56 08.94	.42	1986.74	3
308	49.01014	7.9	A0	3 45 22.573	.020	1986.74	3	49 51 42.03	.10	1986.74	3
309	49.01042	8.6	F2	3 51 37.537	.015	1986.74	3	49 47 05.37	.41	1986.74	3
310	49.01094	9.3	F5	4 04 37.239	.023	1986.88	4	50 06 03.89	.22	1986.88	4
311	49.01116	8.9	A0	4 10 46.879	.027	1986.88	4	49 56 57.90	.32	1986.88	4
312	49.01134	9.4	A0	4 13 49.287	.019	1986.88	4	50 04 23.41	.24	1986.88	4

Table 1. (continued)

N	BD	m	Sp	R.A.	$\epsilon_\alpha \cos \delta$	E_p	n_1	DEC	ϵ_δ	E_p	n_2
313	49.01146	9.2	A0	4 17 23.392	.010	1986.88	4	50 06 07.32	.32	1986.88	4
314	49.01165	7.4	G0	4 21 45.379	.019	1986.88	4	50 02 06.47	.20	1986.88	4
401	49.01210	8.6	F8	4 37 39.006	.016	1986.88	4	49 51 37.15	.31	1986.88	4
402	49.01222	8.1	F5	4 41 04.886	.029	1986.88	4	50 03 59.60	.31	1986.88	4
403	49.01230	5.8	B8	4 43 21.556	.038	1986.88	4	49 58 25.56	.48	1986.88	4
404	49.01237	9.0	K0	4 46 15.532	.024	1986.88	4	49 56 53.57	.27	1986.88	4
405	49.01262	9.8	A5	4 52 46.978	.011	1986.88	4	50 02 55.06	.25	1986.88	4
406	49.01271	6.9	F0	4 57 02.427	.026	1986.88	4	49 55 20.56	.17	1986.88	4
407	49.01300	7.4	B9	5 05 54.812	.026	1986.88	4	50 02 46.08	.47	1986.88	4
408	49.01313	9.6	F0	5 10 24.661	.023	1986.88	4	49 59 37.45	.30	1986.88	4
409	49.01323	7.6	F0	5 13 12.918	.019	1986.88	4	49 51 40.59	.32	1986.88	4
410	49.01361	10.3	F8	5 30 49.604	.013	1986.88	4	49 47 12.95	.34	1986.88	4
411	49.01379	8.8	A3	5 38 33.582	.013	1986.88	4	49 58 58.54	.19	1986.88	4
412	49.01398	5.5	A0	5 45 54.036	.031	1986.88	4	49 49 34.61	.38	1986.88	4
413	49.01409	7.6	A2	5 49 53.651	.018	1986.88	4	49 50 28.41	.35	1986.88	4
414	49.01428	6.1	G5	5 59 21.757	.014	1986.88	4	49 55 28.11	.37	1986.88	4
501	49.01444	9.0	F5	6 04 46.879	.023	1986.88	4	49 51 16.50	.29	1986.88	4
502	49.01455	8.4	A2	6 08 33.112	.019	1986.88	4	49 56 37.91	.47	1986.88	4
503	49.01464	8.9	F	6 12 21.777	.022	1986.88	4	49 56 49.62	.19	1986.88	4
504	49.01497	8.8	A0	6 28 53.711	.017	1986.88	4	49 43 33.39	.03	1986.88	4
505	49.01516	8.5	A2	6 35 50.237	.014	1986.88	4	49 52 56.69	.37	1986.88	4
506	50.01343	8.9	A2	6 43 08.728	.026	1986.88	4	50 03 36.50	.35	1986.88	4
507	50.01367	7.4	A0	6 54 32.611	.016	1986.88	4	50 02 41.60	.33	1986.88	4
508	50.01375	9.6	F0	6 57 10.587	.033	1986.88	4	49 55 36.07	.45	1986.88	4
509	50.01382	8.9	K0	7 02 15.449	.013	1986.88	4	50 04 37.10	.34	1986.88	4
510	49.01595	9.5	F8	7 08 39.630	.019	1986.88	4	49 45 30.43	.36	1986.88	4
511	50.01401	7.9		7 11 57.046	.013	1986.88	4	49 47 23.39	.42	1986.88	4
512	50.01407	9.6	K2	7 15 40.163	.020	1986.88	4	49 47 21.10	.39	1986.88	4
513	50.01413	10.2	A0	7 19 31.418	.036	1986.88	4	49 49 09.65	.29	1986.88	4
514	50.01426	9.4	A0	7 24 35.921	.025	1986.88	4	49 53 49.01	.31	1986.88	4
601	50.01436	8.5	F5	7 30 16.500	.026	1986.88	4	49 58 42.24	.27	1986.88	4
603	50.01472	8.4	K0	7 48 20.489	.021	1986.88	4	49 45 24.75	.45	1986.88	4
604	50.01485	8.9	K0	7 54 45.920	.021	1986.88	4	49 47 05.81	.43	1986.88	4
605	50.01508	9.0	F2	8 07 01.758	.013	1986.88	4	49 53 34.58	.24	1986.88	4
606	50.01517	8.1	F8	8 12 33.591	.014	1986.88	4	50 00 33.30	.32	1986.88	4
607	50.01524p	9.9	B8	8 15 58.277	.019	1986.88	4	49 46 10.81	.23	1986.88	4
608	50.01524s	8.4	G0	8 15 58.266	.029	1986.88	4	49 46 19.59	.27	1986.88	4
609	50.01537	9.5	F0	8 24 52.463	.019	1986.88	4	49 42 47.63	.33	1986.88	4
610	50.01542	7.5	F0	8 28 20.743	.020	1986.88	4	49 41 14.72	.25	1986.88	4
611	50.01551	10.7	F2	8 32 02.968	.028	1987.34	3	49 48 38.46	.22	1987.34	3

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Table 1. (continued)

N	BD	m	Sp	R.A.	$\epsilon_{\alpha} \cos \delta$	E_p	n_1	DEC	ϵ_{δ}	E_p	n_2
612	50.01571	9.0	G0	8 43 04.139	.028	1987.16	5	49 59 16.04	.30	1987.16	5
613	50.01582	8.2	F8	8 52 39.967	.014	1987.16	5	49 56 41.77	.19	1987.16	5
614	50.01598	9.4	F2	9 00 55.936	.021	1987.16	5	49 54 11.64	.43	1987.16	5
701	50.01610	10.5	A2	9 07 24.252	.009	1988.51	4	49 40 57.70	.21	1988.51	4
702	50.01614	7.8	F2	9 09 52.441	.024	1988.51	4	49 49 55.50	.37	1988.51	4
703	50.01626	10.5	K2	9 14 54.142	.025	1988.51	4	49 57 59.59	.32	1988.51	4
704	50.01640	9.5	M2	9 26 55.674	.025	1988.51	4	49 41 33.08	.21	1988.51	4
705	50.01652	10.2	A2	9 31 38.592	.024	1988.51	4	49 53 38.55	.26	1988.51	4
706	50.01660	10.1	A5	9 35 17.581	.026	1988.51	4	50 00 08.34	.46	1988.51	4
707	50.01667	10.7	F8	9 39 02.845	.013	1988.51	4	49 48 14.53	.35	1988.51	4
708	50.01676	10.8	F8	9 43 42.539	.023	1988.51	4	50 01 03.64	.24	1988.51	4
709	50.01690	9.5	K5	9 51 57.686	.008	1988.51	4	49 45 43.89	.33	1988.51	4
710	50.01698	5.3	A2	9 55 43.005	.019	1988.51	4	49 49 11.64	.18	1988.51	4
711	50.01703	9.7	K2	9 59 50.164	.013	1988.51	4	49 58 46.39	.22	1988.51	4
712	50.01706	7.5	K0	10 02 49.622	.011	1988.51	4	49 52 42.34	.30	1988.51	4
713	50.01729	9.2	F5	10 14 22.581	.009	1988.51	4	49 46 06.79	.42	1988.51	4
714	50.01739	10.4	K2	10 25 48.082	.018	1988.51	4	49 59 57.68	.25	1988.51	4
801	50.01744	9.5	K0	10 30 55.082	.017	1988.51	4	49 40 47.54	.38	1988.51	4
802	50.01753	10.2	F8	10 37 19.038	.023	1988.51	4	49 54 26.85	.37	1988.51	4
803	50.01760	7.2	K0	10 43 56.448	.028	1988.51	4	49 48 03.13	.32	1988.51	4
804	50.01776	9.3	A5	10 53 48.196	.027	1988.51	4	49 56 07.88	.20	1988.51	4
805	50.01803	8.4	K0	11 13 47.868	.018	1988.76	4	49 51 22.33	.28	1988.76	4
806	50.01816	10.1	A0	11 21 52.040	.029	1988.76	4	49 40 17.52	.22	1988.76	4
807	50.01825	10.1	G0	11 29 16.942	.014	1988.60	3	49 50 42.49	.37	1988.60	3
808	50.01836	9.7	F8	11 33 45.581	.025	1988.76	4	49 49 49.50	.22	1988.76	4
809	50.01845	8.3	F5	11 37 51.959	.014	1988.76	4	49 48 33.14	.37	1988.76	4
810	50.01852	9.1	K0	11 42 48.725	.023	1988.76	4	49 57 32.69	.19	1988.76	4
811	50.01856	7.7	F8	11 45 47.370	.020	1988.60	3	49 51 51.17	.14	1988.60	3
812	50.01862	7.0	A0	11 47 50.043	.016	1988.76	4	49 49 22.76	.37	1988.76	4
813	50.01871	8.1	K2	11 52 14.415	.019	1988.76	4	49 55 53.86	.42	1988.76	4
814	50.01877	10.2	K2	11 57 59.922	.025	1988.76	4	49 54 41.68	.07	1988.76	4
901	50.01885	10.4	F8	12 02 37.159	.022	1988.76	4	49 58 35.08	.32	1988.76	4
902	50.01891	8.9	A0	12 05 43.389	.022	1988.76	4	49 40 55.90	.35	1988.76	4
903	50.01894	10.8	G0	12 09 59.687	.018	1989.01	4	49 46 04.78	.22	1989.01	4
904	50.01903	10.0	G0	12 15 48.213	.023	1988.60	3	49 47 55.60	.35	1988.60	3
905	50.01906	10.9	G0	12 17 58.398	.016	1989.01	4	49 53 22.09	.37	1989.01	4
906	50.01921	9.8	K2	12 25 37.242	.014	1989.01	4	49 53 16.15	.21	1989.01	4
907	50.01940	11.0	A0	12 41 15.409	.013	1989.01	4	49 43 26.86	.14	1989.01	4
908	50.01946p	10.0	F8	12 46 00.558	.027	1989.01	4	49 49 17.41	.16	1989.01	4
909	50.01946s	9.0	F8	12 46 00.812	.009	1989.01	4	49 49 23.30	.25	1989.01	4

Table 1. (continued)

N	BD	m	Sp	R.A.	$\varepsilon_{\alpha} \cos \delta$	E_p	n_1	DEC	ε_{δ}	E_p	n_2
910	50.01949	10.8	K0	12 48 13.089	.019	1989.01	4	49 55 30.35	.33	1989.01	4
911	50.01977	9.0	F8	13 04 45.834	.010	1989.01	4	49 39 46.93	.28	1989.01	4
912	50.01988	10.9	K5	13 14 17.312	.018	1989.01	4	49 55 26.21	.31	1989.01	4
913	50.01990	8.9	F2	13 16 54.659	.008	1989.01	4	49 41 16.50	.28	1989.01	4
914	50.01999	10.7	K2	13 24 35.559	.017	1989.01	4	49 59 19.76	.22	1989.01	4
1001	50.02021p	8.3	K0	13 42 58.546	.022	1989.07	4	50 01 36.45	.30	1989.07	4
1002	50.02024	11.0	K0	13 45 53.159	.016	1989.07	4	49 43 44.12	.35	1989.07	4
1003	50.02031	9.8	F8	13 52 30.037	.023	1989.07	4	50 01 06.87	.28	1989.07	4
1004	50.02035	9.6	K5	13 57 38.639	.012	1989.07	4	49 41 43.62	.20	1989.07	4
1005	50.02044	9.4	F0	14 06 11.969	.009	1989.80	4	49 39 04.42	.31	1989.80	4
1006	50.02055	10.2	F0	14 11 44.446	.021	1989.80	4	49 46 01.23	.37	1989.80	4
1007	50.02065	9.4	A7	14 20 40.793	.021	1989.80	4	49 50 18.10	.27	1989.80	4
1008	50.02074	9.8	K5	14 23 56.542	.020	1989.80	4	49 52 08.20	.28	1989.80	4
1009	50.02084	5.6	G0	14 28 38.104	.025	1989.80	4	49 50 41.63	.32	1989.80	4
1010	50.02094	9.1	G0	14 34 14.230	.014	1989.80	4	50 01 32.30	.41	1989.80	4
1011	50.02101	10.5	K2	14 37 20.300	.020	1989.80	4	49 59 38.69	.43	1989.80	4
1012	50.02110	9.1	F8	14 44 37.903	.011	1989.91	3	49 40 56.85	.17	1989.91	3
1013	50.02120	8.5	F8	14 49 18.032	.021	1989.91	3	49 50 15.82	.31	1989.91	3
1014	50.02131	9.3	G5	14 59 43.946	.004	1989.91	3	49 50 35.15	.07	1989.91	3
1101	50.02154	8.2	K0	15 13 00.364	.007	1989.32	4	49 46 30.47	.23	1989.91	3
1102	50.02158	9.4	K0	15 15 18.370	.009	1989.32	4	49 45 03.25	.03	1989.32	4
1103	50.02175	10.1	K2	15 25 48.584	.020	1989.32	4	49 48 16.49	.25	1989.32	4
1104	50.02190	10.2	G0	15 33 00.995	.017	1988.87	4	49 56 21.67	.43	1988.87	4
1105	50.02194	7.1	K2	15 35 11.844	.020	1988.20	4	49 59 41.67	.44	1988.20	4
1106	50.02195	7.5	K5	15 35 14.793	.020	1988.20	4	49 41 54.25	.34	1988.20	4
1107	50.02208	9.9	K0	15 40 26.885	.015	1988.20	4	49 50 08.73	.24	1988.20	4
1108	50.02218	9.2	K2	15 48 05.840	.019	1987.28	4	50 00 16.37	.33	1987.28	4
1109	50.02239	5.9	F0	15 59 04.375	.014	1987.28	4	49 52 52.24	.43	1987.28	4
1110	50.02240	10.2	K	15 59 08.908	.025	1987.28	4	49 46 51.02	.16	1987.28	4
1111	50.02260	9.2	K0	16 11 42.485	.019	1987.28	4	49 57 47.15	.29	1987.28	4
1112	50.02268	9.9	F5	16 17 18.379	.025	1987.28	4	50 00 35.63	.29	1987.28	4
1113	50.02276	9.3	G0	16 20 41.676	.012	1987.28	4	49 47 30.72	.30	1987.28	4
1114	50.02293	9.4	F5	16 27 12.372	.009	1987.28	4	49 57 02.48	.22	1987.28	4
1201	50.02319	6.6	F5	16 42 27.633	.018	1987.04	4	49 56 12.48	.35	1987.04	4
1202	50.02326	7.3	F0	16 44 34.525	.032	1987.04	4	49 51 46.94	.29	1987.04	4
1203	50.02333	9.0	F8	16 48 13.799	.025	1986.80	4	50 01 25.54	.27	1986.80	4
1204	50.02340	9.7	G0	16 52 48.218	.018	1986.80	4	49 51 05.26	.25	1986.80	4
1205	50.02345	7.9	M1	16 56 06.437	.020	1986.80	4	50 02 20.04	.40	1986.80	4
1206	49.02588	9.3	G0	17 08 41.891	.017	1986.57	4	49 45 20.17	.41	1986.57	4
1207	49.02604	6.0	A2	17 11 40.255	.018	1986.57	4	49 44 46.86	.32	1986.57	4

CATALOGUE OF POSITIONS OF 223 ONDREJOV PZT STARS OBSERVED AT ...

Table 1. (continued)

N	BD	m	Sp	R.A.	$\epsilon_{\alpha} \cos \delta$	E_p	n_1	DEC	ϵ_{δ}	E_p	n_2
1208	50.02390	9.3	G5	17 20 59.433	.021	1986.57	4	50 04 39.22	.30	1986.57	4
1209	49.02641	8.8	A3	17 27 26.906	.027	1986.57	4	49 44 41.52	.34	1986.57	4
1210	50.02419	9.0	F0	17 30 57.156	.009	1986.57	4	50 04 12.89	.25	1986.57	4
1211	49.02678	6.6	A0	17 39 47.967	.021	1986.57	4	49 46 47.31	.30	1986.57	4
1212	50.02457	7.3	F8	17 44 55.467	.012	1986.57	4	50 02 39.44	.26	1986.57	4
1213	49.02701	9.6	G0	17 51 45.340	.026	1986.57	4	49 53 01.42	.18	1986.57	4
1214	49.02707	9.4	K0	17 54 00.759	.020	1986.57	4	49 47 42.18	.16	1986.57	4
1301	49.02730	8.8	A5	18 06 37.268	.029	1986.57	4	50 00 38.16	.14	1986.57	4
1302	49.02738	9.6	F2	18 08 53.771	.015	1986.57	4	49 50 02.20	.32	1986.57	4
1303	49.02765	9.0	F2	18 19 03.046	.020	1986.57	4	49 58 04.96	.34	1986.57	4
1304	49.02797	7.4	A3	18 27 27.479	.016	1986.57	4	49 49 06.29	.28	1986.57	4
1305	49.02824	9.9	K5	18 34 27.746	.021	1986.57	4	49 57 04.30	.42	1986.57	4
1306	49.02863	9.5	A5	18 45 58.136	.018	1986.35	4	50 00 02.30	.43	1986.35	4
1307	49.02879	9.0	F8	18 50 39.780	.012	1986.35	4	49 46 03.09	.30	1986.35	4
1308	49.02892	9.3	K2	18 53 48.511	.020	1986.35	4	50 04 59.28	.18	1986.35	4
1309	49.02929	6.5	K5	19 05 09.845	.022	1986.35	4	49 55 23.35	.17	1986.35	4
1310	49.02959	6.6	G5	19 12 04.902	.021	1986.35	4	49 51 05.71	.38	1986.35	4
1311	49.02959a	6.6	G5	19 12 05.311	.022	1986.35	4	49 51 12.22	.20	1986.35	4
1312	49.02968	6.3	G5	19 15 19.233	.007	1986.35	4	50 04 15.99	.25	1986.35	4
1313	49.03002	9.1	A2	19 25 26.900	.011	1986.35	4	49 54 45.23	.38	1986.35	4
1314	49.03003	8.6	F8	19 25 29.756	.021	1986.35	4	50 04 15.24	.14	1986.35	4
1401	49.01556*	9.8	A0	19 35 38.337	.011	1986.35	4	50 02 35.31	.22	1986.35	4
1402	49.03083	9.1	G5	19 41 51.778	.021	1986.35	4	49 59 19.51	.22	1986.35	4
1403	49.03101	6.8	K0	19 46 32.756	.016	1986.35	4	50 00 37.42	.40	1986.35	4
1404	49.03113	10.6	K0	19 49 11.117	.018	1986.35	4	49 54 01.38	.38	1986.35	4
1405	49.03159	10.3		20 01 23.763	.017	1986.35	4	50 05 40.76	.23	1986.35	4
1406	49.03189	9.4	F5	20 06 37.425	.023	1986.35	4	49 57 32.89	.39	1986.35	4
1407	49.03239	9.7	A0	20 16 14.779	.024	1986.35	4	49 54 45.63	.44	1986.35	4
1408	49.03254	9.7	F2	20 19 24.850	.016	1986.35	4	49 49 03.76	.38	1986.35	4
1409	49.03287	8.7	G5	20 27 40.691	.021	1986.35	4	49 56 18.91	.24	1986.35	4
1410	49.03310	6.7	A0	20 32 59.068	.021	1986.35	4	49 50 28.27	.40	1986.35	4
1411	49.03332	8.0	K0	20 36 50.507	.027	1986.35	4	49 54 34.60	.42	1986.35	4
1412	49.03371p	10.7	K2	20 46 32.033	.018	1986.35	4	50 05 12.89	.28	1986.35	4
1413	49.03371s	10.7	A0	20 46 33.747	.029	1986.35	4	50 04 30.01	.32	1986.35	4
1414	49.03417	9.3	B8	20 55 37.672	.023	1986.35	4	49 52 04.92	.21	1986.35	4
1501	49.03457	9.4	G5	21 04 49.945	.030	1986.62	4	50 01 33.55	.31	1986.62	4
1502	49.03481	9.4	A2	21 14 10.616	.019	1986.62	4	50 04 53.64	.46	1986.62	4
1503	49.03482	9.1	A2	21 14 13.104	.019	1986.62	4	50 07 03.02	.19	1986.62	4
1504	49.03499	7.2	K5	21 18 45.438	.020	1986.62	4	50 04 09.60	.47	1986.62	4
1505	49.03521	9.1	A2	21 26 01.017	.025	1986.62	4	49 50 24.96	.20	1986.62	4

Table 1. (continued)

N	BD	m	Sp	R.A.	$\epsilon_{\alpha} \cos \delta$	E_p	n_1	DEC	ϵ_{δ}	E_p	n_2
1506	49.03533	9.3		21 28 43.074	.024	1986.62	4	49 52 06.75	.32	1986.62	4
1507	49.03559	9.9	A0	21 35 56.501	.024	1986.62	4	49 53 15.67	.21	1986.62	4
1508	49.03584	9.2	A0	21 39 01.269	.028	1986.62	4	49 58 59.18	.23	1986.62	4
1509	49.03635	9.3	G5	21 49 59.122	.013	1986.62	4	49 59 31.51	.32	1986.62	4
1510	49.03663	9.6	A0	21 54 18.932	.027	1986.62	4	50 03 52.08	.33	1986.62	4
1511	49.03735	9.5	B5	22 06 08.374	.019	1986.62	4	49 54 08.77	.34	1986.62	4
1512	49.03784	8.3	B8	22 14 43.033	.011	1986.62	4	49 51 39.49	.41	1986.62	4
1513	49.03824	9.3	A2	22 20 41.811	.022	1986.62	4	49 58 53.40	.28	1986.62	4
1514	49.03825	9.5		22 20 42.231	.028	1986.62	4	49 58 16.84	.29	1986.62	4
1601	49.03876	9.8	A2	22 31 22.544	.019	1986.62	4	49 53 17.90	.43	1986.62	4
1602	49.03903	6.2	B3	22 35 53.386	.011	1986.62	4	50 04 14.69	.24	1986.62	4
1603	49.03919	7.8	A0	22 41 22.881	.026	1986.62	4	50 05 33.13	.29	1986.62	4
1604	49.03965	8.5	B5	22 52 58.570	.011	1986.62	4	49 51 53.19	.42	1986.62	4
1605	49.03983	8.7	A2	22 55 14.106	.026	1986.62	4	49 58 42.21	.32	1986.62	4
1606	49.04015	8.0	A3	23 00 41.364	.022	1986.62	4	49 57 21.74	.15	1986.62	4
1607	49.04028	4.9	K0	23 04 10.770	.019	1986.62	4	50 03 05.43	.42	1986.62	4
1608	49.04059	8.2	K0	23 10 05.718	.014	1986.62	4	49 59 25.95	.24	1986.62	4
1609	49.04076	9.0	A0	23 16 18.963	.021	1986.62	4	50 01 40.42	.41	1986.62	4
1610	49.04125	9.2	A2	23 27 27.461	.015	1986.62	4	50 02 07.17	.35	1986.62	4
1611	49.04138	8.5	B9	23 30 35.266	.017	1986.62	4	49 51 36.88	.30	1986.62	4
1612	49.04200	9.2	G5	23 43 22.459	.023	1986.62	4	50 04 21.03	.29	1986.62	4
1613	49.04233	9.1	K0	23 48 18.800	.016	1986.62	4	49 51 53.43	.29	1986.62	4
1614	49.04254	8.3	K0	23 52 07.640	.017	1986.62	4	50 06 52.59	.35	1986.62	4

CATALOGUE OF POSITIONS OF 223 ONDREJOV PZT STARS OBSERVED AT ...

Table 2. Individual corrections of positions of the fundamental stars

N FK5	$\Delta\alpha$	$\varepsilon_\alpha \cos\delta$	E_p	n_1	$\Delta\delta$	ε_δ	E_p	n_2
2	-.032	.011	1986.73	2	-.23	.33	1986.73	2
4	-.002	.028	1986.74	4	-.19	.33	1986.74	4
21	-.016	.012	1986.74	4	.10	.22	1986.74	4
25	.001	.010	1986.74	4	-.19	.37	1986.74	4
1021	.012	.027	1986.74	4	.19	.20	1986.74	4
33	.010	.013	1986.74	4	.15	.30	1986.74	4
1030	-.005	.022	1986.74	4	-.11	.17	1986.74	4
1035	.010	.023	1986.74	4	.23	.21	1986.74	4
48	.029	.007	1986.74	4	-.07	.20	1986.74	4
1040	.005	.019	1986.74	4	-.06	.05	1986.74	4
1045	-.024	.017	1986.74	4	.34	.05	1986.74	4
1054	-.006	.021	1986.74	4	-.06	.12	1986.74	4
73	-.002	.017	1986.74	4	.17	.15	1986.74	4
77	.008	.023	1986.74	4	.09	.24	1986.74	4
1070	.017	.007	1986.74	4	-.07	.33	1986.74	4
1077	-.001	.015	1986.74	4	-.29	.05	1986.74	4
103	.021	.025	1986.74	4	-.18	.15	1986.74	4
109	-.011	.029	1986.74	4	.22	.26	1986.74	4
112	-.012	.011	1986.74	4	.00	.32	1986.74	4
120	.009	.019	1986.74	3	-.25	.10	1986.74	3
131	-.014	.013	1986.74	3	.22	.30	1986.74	3
1105	-.016	.015	1986.74	3	-.21	.09	1986.74	3
147	.001	.010	1986.78	4	.13	.32	1986.78	4
1113	.001	.017	1986.88	4	-.05	.42	1986.88	4
152	-.002	.020	1986.88	4	.17	.11	1986.88	4
1117	-.019	.015	1986.88	4	.13	.22	1986.88	4
1122	-.038	.032	1986.88	4	.16	.37	1986.88	4
165	.036	.013	1986.88	4	-.17	.22	1986.88	4
1124	.008	.012	1986.88	4	-.13	.20	1986.88	4
175	-.006	.027	1986.88	4	.04	.34	1986.88	4
1133	.003	.016	1986.88	4	.20	.06	1986.88	4
183	-.024	.011	1986.88	4	-.21	.11	1986.88	4
1137	-.014	.022	1986.88	4	.00	.15	1986.88	4
193	.029	.008	1986.88	4	.27	.38	1986.88	4
1145	.001	.020	1986.88	4	.06	.30	1986.88	4
191	-.037	.015	1986.88	4	-.04	.02	1986.88	4
1150	-.016	.018	1986.88	4	.02	.34	1986.88	4
1157	-.027	.013	1986.88	4	-.16	.17	1986.88	4
1167	.001	.015	1986.88	4	-.35	.11	1986.88	4
234	.041	.030	1986.88	4	.23	.06	1986.88	4

Table 2. (continued)

N FK5	$\Delta\alpha$	$\varepsilon_\alpha \cos\delta$	E_p	n_1	$\Delta\delta$	ε_δ	E_p	n_2
237	.034	.014	1986.88	4	-.18	.19	1986.88	4
242	.015	.016	1986.88	4	.06	.21	1986.88	4
1172	.012	.025	1986.88	4	.13	.29	1986.88	4
250	.004	.013	1986.88	4	-.13	.12	1986.88	4
255	.001	.029	1986.88	3	-.17	.41	1986.88	3
1176	-.005	.027	1986.88	4	-.03	.29	1986.88	4
259	.034	.012	1986.88	4	.02	.27	1986.88	4
276	.018	.015	1986.88	4	-.04	.23	1986.88	4
280	-.001	.026	1986.88	4	.01	.19	1986.88	4
1209	-.011	.028	1986.88	4	-.30	.19	1986.88	4
300	-.030	.005	1986.88	4	-.01	.19	1986.88	4
302	-.027	.008	1986.88	4	.15	.41	1986.88	4
307	.002	.016	1986.88	4	.02	.13	1986.88	4
314	-.001	.021	1986.88	4	.02	.30	1986.88	4
317	-.008	.005	1986.87	2	.11	.76	1986.87	2
323	-.009	.018	1987.23	4	.03	.37	1987.23	4
1225	-.003	.030	1986.88	3	.01	.29	1986.88	3
335	-.011	.016	1986.88	4	.14	.27	1986.88	4
338	.022	.013	1988.59	3	.21	.21	1988.59	3
352	.021	.012	1988.51	4	-.20	.25	1988.51	4
358	.016	.017	1988.29	3	-.19	.26	1988.29	3
363	-.008	.009	1988.51	4	-.07	.34	1988.51	4
1255	.014	.014	1988.51	4	.02	.29	1988.51	4
374	-.013	.011	1988.51	4	-.03	.41	1988.51	4
383	.003	.017	1988.27	5	.04	.28	1988.27	5
386	.000	.029	1988.27	5	-.03	.21	1988.27	5
390	-.001	.029	1988.51	4	.07	.13	1988.51	4
398	-.011	.004	1988.51	4	.00	.15	1988.51	4
403	.021	.010	1988.27	5	-.03	.24	1988.27	5
407	-.013	.006	1988.05	4	.24	.13	1988.05	4
1282	.008	.006	1988.58	3	-.23	.25	1988.58	3
416	.015	.031	1988.60	3	.07	.46	1988.60	3
417	.034	.002	1988.60	3	-.12	.31	1988.60	3
420	.000	.019	1988.60	3	.16	.20	1988.60	3
424	-.006	.021	1988.76	4	-.06	.22	1988.76	4
1293	.000	.022	1988.76	4	-.12	.04	1988.76	4
1300	-.002	.025	1988.76	4	.02	.31	1988.76	4
447	-.008	.012	1988.76	4	-.12	.40	1988.76	4
454	.025	.014	1989.01	4	-.09	.28	1988.60	3
1316	-.011	.032	1988.93	3	.01	.24	1988.93	3

CATALOGUE OF POSITIONS OF 223 ONDREJOV PZT STARS OBSERVED AT ...

Table 2. (continued)

N FK5	$\Delta\alpha$	$\varepsilon_\alpha \cos\delta$	E_p	n_1	$\Delta\delta$	ε_δ	E_p	n_2
467	-.018	.010	1989.01	4	.05	.26	1989.01	4
470	-.010	.016	1989.01	4	.06	.36	1989.01	4
483	-.011	.020	1989.57	3	-.10	.27	1989.57	3
486	.013	.037	1989.73	2	.10	.30	1989.73	2
1338	-.001	.024	1989.01	4	.00	.23	1989.01	4
491	.014	.011	1989.01	4	.06	.26	1989.01	4
1346	.003	.013	1989.01	4	-.17	.30	1989.01	4
500	-.010	.020	1989.07	5	.03	.24	1989.07	5
502	-.003	.022	1989.07	4	-.22	.19	1989.07	4
505	.034	.019	1989.07	4	.03	.37	1989.07	4
509	-.010	.010	1988.78	2	-.11	.31	1988.78	2
1360	.012	.012	1989.07	4	.11	.28	1989.07	4
521	-.010	.012	1989.66	3	-.12	.03	1989.66	3
1368	-.018	.019	1989.80	4	-.08	.23	1989.80	4
528	-.001	.014	1989.80	4	.11	.32	1989.80	4
535	.008	.010	1989.80	4	.08	.13	1989.80	4
540	.011	.022	1989.80	4	-.08	.26	1989.80	4
549	.037	.004	1989.91	3	.03	.34	1989.91	3
554	.016	.018	1989.91	3	.15	.35	1989.91	3
555	-.001	.006	1989.91	3	-.09	.31	1989.91	3
1395	.015	.006	1989.91	3	.18	.27	1989.91	3
1397	-.014	.028	1989.91	3	-.09	.16	1989.91	3
569	.021	.014	1989.32	4	.07	.40	1989.32	4
568	-.003	.015	1989.32	4	-.17	.18	1989.32	4
573	.000	.013	1988.87	4	.21	.16	1988.87	4
580	.018	.014	1988.20	4	-.17	.24	1988.20	4
1412	-.019	.012	1987.53	3	.16	.22	1987.53	3
590	.035	.013	1988.20	4	.24	.23	1988.20	4
587	-.017	.027	1988.20	4	-.14	.20	1988.20	4
1416	.009	.015	1987.28	4	-.07	.25	1987.28	4
595	.011	.014	1987.28	4	.02	.28	1987.28	4
598	.007	.014	1987.28	4	.14	.14	1987.28	4
601	-.009	.012	1987.28	4	.19	.18	1987.28	4
614	-.019	.015	1987.28	4	-.20	.22	1987.28	4
619	.019	.021	1987.28	4	-.02	.21	1987.28	4
1432	.015	.014	1987.28	4	-.18	.16	1987.28	4
1434	-.004	.026	1987.04	4	.01	.25	1987.04	4
1448	.006	.009	1986.80	4	-.20	.28	1986.80	4
643	-.006	.025	1986.57	4	-.15	.18	1986.57	4
655	-.010	.016	1986.57	4	.27	.14	1986.57	4

Table 2. (continued)

N FK5	$\Delta\alpha$	$\varepsilon_\alpha \cos\delta$	E_p	n_1	$\Delta\delta$	ε_δ	E_p	n_2
657	.000	.019	1986.57	4	-.04	.27	1986.57	4
670	.003	.012	1986.57	4	-.05	.44	1986.57	4
676	.029	.027	1986.57	4	-.12	.06	1986.57	4
685	.003	.018	1986.57	4	.18	.20	1986.57	4
695	-.019	.013	1986.57	4	.10	.22	1986.57	4
701	.000	.008	1986.57	4	-.04	.43	1986.57	4
1494	-.002	.016	1986.35	4	.09	.20	1986.35	4
711	.007	.028	1986.35	4	-.22	.20	1986.35	4
713	.000	.019	1986.27	3	-.04	.30	1986.27	3
719	.005	.006	1986.35	4	.13	.14	1986.35	4
724	-.008	.009	1986.35	4	.08	.28	1986.35	4
726	.011	.023	1986.35	4	-.09	.31	1986.35	4
733	.005	.023	1986.35	4	-.07	.36	1986.35	4
740	-.010	.017	1986.35	4	-.04	.31	1986.35	4
1525	.008	.028	1986.35	4	.11	.26	1986.35	4
759	.008	.009	1986.35	4	-.07	.32	1986.35	4
757	-.010	.027	1986.35	4	-.31	.03	1986.35	4
765	.014	.007	1986.35	4	.22	.16	1986.35	4
1535	-.010	.015	1986.35	4	.01	.20	1986.35	4
767	-.012	.023	1986.35	4	-.05	.34	1986.35	4
777	.000	.027	1986.35	4	-.03	.37	1986.35	4
782	-.018	.023	1986.35	4	.20	.33	1986.35	4
788	.010	.013	1986.35	4	-.04	.28	1986.35	4
1551	-.022	.009	1986.35	4	.14	.13	1986.35	4
795	.033	.009	1986.62	4	.09	.26	1986.62	4
797	.009	.016	1986.62	4	-.05	.15	1986.62	4
1558	-.011	.021	1986.62	4	-.06	.25	1986.62	4
1568	.020	.015	1986.62	4	.01	.22	1986.62	4
817	-.004	.007	1986.62	4	.03	.18	1986.62	4
1571	-.008	.015	1986.62	4	.06	.28	1986.62	4
821	.021	.020	1986.62	4	.07	.23	1986.62	4
1578	-.017	.019	1986.62	4	.11	.26	1986.62	4
830	.002	.016	1986.62	4	.08	.16	1986.62	4
833	-.012	.023	1986.62	4	.13	.22	1986.62	4
836	-.020	.018	1986.62	4	-.25	.15	1986.62	4
1583	.020	.015	1986.62	4	.04	.44	1986.62	4
844	.002	.023	1986.62	4	-.06	.32	1986.62	4
847	-.013	.012	1986.62	4	.23	.26	1986.62	4
1594	.019	.014	1986.62	4	-.14	.33	1986.62	4
853	-.015	.024	1986.62	4	.08	.39	1986.62	4

Table 2. (continued)

N FK5	$\Delta\alpha$	$\varepsilon_\alpha \cos\delta$	E_p	n_1	$\Delta\delta$	ε_δ	E_p	n_2
858	.015	.007	1986.62	4	.02	.09	1986.62	4
863	.003	.009	1986.62	4	-.17	.30	1986.62	4
1604	.002	.020	1986.62	4	.09	.36	1986.62	4
875	-.001	.024	1986.62	4	-.07	.32	1986.62	4
1610	-.022	.014	1986.62	4	.12	.14	1986.62	4
1613	.000	.015	1986.62	4	.09	.15	1986.62	4
1616	.012	.011	1986.62	4	-.20	.19	1986.62	4
890	-.010	.017	1986.62	4	-.11	.21	1986.62	4
893	-.021	.012	1986.62	4	-.03	.33	1986.62	4
1619	.006	.017	1986.62	4	-.05	.33	1986.62	4
1622	-.022	.015	1986.62	4	.09	.36	1986.62	4
899	.021	.008	1986.62	4	-.11	.35	1986.62	4
1627	.005	.008	1986.62	4	-.05	.25	1986.62	4

КАТАЛОГ ПОЛОЖАЈА 223 ЗВЕЗДЕ ПЗТ ОНДРЕЈОВ ПОСМАТРАНЕ
НА БЕОГРАДСКОЈ ОПСЕРВАТОРИЈИ

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