A DIFFERENTIAL CATALOGUE OF RIGHT ASCENSIONS OF 263 RRS2 STARS OBTAINED FROM OBSERVATIONS MADE WITH THE ODESSA MERIDIAN CIRCLE IN 1990-1993

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ABSTRACT. This catalogue contains the results of 1321 right ascensions observations of 263 Radio References Stars obtained at Odessa with the Repsold transit circle in 1990-1993. The precise positions of these stars are necessary to establish a connection between the radio and optical systems of celestial coordinates (CONFOR program). All observations were made by author in the differential way and reduced by formula Bessel in FK5 system. Each star was observed on the average five times. The positions are for equinox J2000.0 and for epoch of observations. The mean square error of catalogue position is $0.^s007$. This catalogue was sent to Astronomical Observatory of Kiev University for the inclusion in a summary catalogue.

Key Words: Astrometry, Catalogue, CONFOR program, meridian circle.

Meridian observations of stars according to programs, which are of great interest for other branches of astronomy (stellar astronomy, astrophysics and radio astrometry), are traditional for Odessa Astronomical Observatory. The meridian Repsold circle (d=135 mm, F=1980 mm, magn.200^x, ocular micrometer visual) is a classical instrument of fundamental astrometry; systematic observations with it have been carried out for over 70 years. The instrument was described in detail by Novopashenny (1954), Volyanskaya et al. (1984). A meridian transit of a star is recorded by means of the electronic system developed and designed by Genovsky (1984).
The meridian circle was used for conducting the meridian part of the CONFOR program (Tel'nyuk-Adamchuk, V.V. and Molotay, A.A. (1989)) in order to establish connection between the radio and optical coordinate systems. To connect the radio interferometric coordinate system with the fundamental one of optical coordinates it is necessary to determine coordinates of extragalactic radio sources (15-18^m) in the system of a fundamental catalogue (e.g. FK5) which contains, as a rule, a limited number of stars brighter then 6^m.

The problem is solved in several stages, the first one consisting of measurements of stellar coordinates to 9^m near radio sources (RRS2 program) in the FK5 system, by meridian astrometry methods.

Measurements of right ascensions for stars to 9^m in areas with extragalactic sources, declinations from $-20°$ to $+45°$ (with gravity center near the equatorial zone from $-10°$ to $+10°$) were carried out with the meridian circle at Odessa Astronomical Observatory starting from March 1990. Stars of the FK5 catalogue were observed as references stars.

The observations were made with help of a hand-driven impersonal micrometer. The star was bisected all the time of observation (6 central screw rotations).Although the stars were observed from a comparatively large meridian arc during the whole night, the main principle of the differential determination of coordinates was taken into account: the reduction of observed stars to the reference catalogue should be made by using narrow zones. Observations and their processing were carried out according to the Instruction (1954). The visual brightness of bright stars was decreased to 7.5-8^m by using a reduction screen mounted in front of the tube objective. 4001 differential observations of right ascensions of the program and reference stars were made in 1990-1993 within 89 nights. Each star was observed, on the average, five times.

Apparent positions of observed stars were initially calculated by researchers of the Astrometry Department of Astronomy Observatory, Kiev University, to whom the author extends his gratitude. Later, we used a code for computing apparent stellar positions developed by Zhukov (1996).

Reduction of observations was accomplished by formula Bessel. The error of collimation was measured with the aid of horizontal collimating telescopes locating outside the pavilion. We constructed a graph of collimation variations with time, and took the collimation readings for each observation evening from this graph. The «n» parameter was determined from all pairs of reference stars close in time with a large declination difference.

Data about accuracy of catalogue positions (depending to declination zones) were grouped in following table:

Observation zone		δ_m	m	n	p	$\varepsilon \cos \delta_m$
°		°				$0.^s001$
< -10		-14.65	25	149	6.0	7.3
- 10	0	-5.24	35	169	4.8	7.2
0	+10	4.40	96	452	4.7	8.3
+10	+20	13.06	65	323	5.0	7.7
+20	+30	24.32	14	77	5.5	6.6
> +30		37.48	28	151	5.4	6.5

where:
δ_m - mean value of RRS2 stars declinations observed in zone;
m - number of RRS2 stars in zone;
n - total number of RRS2 stars observations in zone;
p - mean number of observations per one star;
$\varepsilon \cos \delta_m$ - mean value of mean square error of right ascension . obtained from inner consistency reduced to equator.

This catalogue was send to Astronomical Observatory of Kiev University for the inclusion in a summary catalogue.

Acknowledgement. I'm thankful to V.V.Zhukov for his help in computations.

There are following values in catalogue:
RRS2 - designation of the star in the RRS2 list;
PPM - designation of the star in the PPM Catalogue (1991);
mag - photographic magnitude, copied from PPM;
Sp - spectral type, copied from PPM;
α_{cat} - right ascension for equinox J2000.0 and epoch of observations on the system of FK5;
n - number of observations;
ep - mean epoch of observations;
δ - proximal declination for J2000.0 (from PPM)..

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RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
72004	181814	8.6	G0	0	4	30.183	5	90.86	-6	57.6
72007	181894	7.9	K2	0	8	30.890	3	90.90	-6	47.3
72024	143293	5.9	F0	0	14	58.841	4	90.87	8	49.2
72044	174714	9.5	K0	0	23	40.443	2	90.83	-0	32.3
72054	143498	8.8	G5	0	26	3.079	2	90.83	0	26.1
72067	65408	7.0	A3	0	32	14.026	2	90.85	34	59.4
72792	153018	6.8	B9	7	37	41.615	4	87.69	1	55.4
72802	153059	8.8	G5	7	39	0.600	2	93.16	0	57.4
72807	153085	9.0	A2	7	40	0.988	4	87.69	2	6.0
72821	153176	7.1	A3	7	42	50.248	2	93.16	1	36.3
72829	124408	8.1	G5	7	45	46.320	7	89.48	10	23.5
72834	124422	8.8	G5	7	46	34.542	5	89.98	10	24.1
72886	154415	9.3	K5	8	24	28.337	3	93.17	3	17.6
72892	154466	8.1	K0	8	26	20.151	3	93.17	2	29.2
72901	154503	7.5	K0	8	27	55.609	3	93.17	3	13.1
72910	154543	8.6	G5	8	29	28.452	4	92.44	3	5.4
72960	125649	8.8	K0	8	43	8.349	4	92.44	18	9.0
72972	125837	8.8	K0	8	52	1.579	4	91.72	19	48.3
73008	155504	9.3	G0	9	10	36.391	3	90.25	1	47.1
73043	74552	8.8	K0	9	30	6.477	4	91.01	38	55.2
73045	192618	7.9	F0	9	40	7.204	4	90.25	-9	5.4
73047	192630	8.7	A0	9	41	11.900	2	93.30	-7	37.4
73048	192648	8.7	G0	9	42	12.168	4	90.98	-7	46.1
73052	192699	9.0	K2	9	45	12.267	2	90.25	-7	56.4
73053	192703	7.6	K0	9	45	25.288	4	91.75	-8	28.6
73062	126887	9.5	G5	9	53	22.801	6	91.27	17	24.2
73068	126935	9.1	G0	9	55	41.593	3	90.26	18	7.0
73076	127063	9.0	K0	10	2	54.145	5	90.87	14	7.5
73079	127081	8.5	K2	10	4	26.406	6	90.77	13	35.4
73087	127177	8.6	K0	10	10	56.504	8	91.40	14	28.6
73104	51899	7.8	K0	10	27	43.907	2	91.78	41	14.1
73106	51919	7.5	F8	10	30	4.462	4	91.01	40	28.1
73109	51922	9.2	K0	10	30	27.168	3	91.29	41	28.3
73124	51959	8.1	K5	10	35	8.604	4	91.02	41	54.3
73127	51961	8.3	K0	10	35	12.286	3	92.30	40	52.3
73143	157031	8.8	G5	10	38	17.692	7	91.13	6	29.0
73154	157072	9.6	G5	10	40	38.376	5	91.48	5	27.6
73161	157098	10.0	G0	10	42	30.182	3	91.28	6	40.1

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
73165	157122	11.0	K2	10	44	7.565	2	90.25	5	57.5
73169	127682	7.3	A2	10	46	19.317	5	92.70	12	44.5
73174	157346	7.5	K0	10	56	10.535	7	90.85	0	25.6
73175	157355	9.5	G5	10	56	46.812	4	93.31	1	30.5
73179	157393	8.3	K0	10	58	47.742	3	92.31	1	43.4
73180	157394	9.5	K0	10	58	59.842	3	93.31	2	11.4
73181	157408	9.8	K5	11	0	8.412	5	92.08	2	13.3
73184	157447	7.8	A3	11	2	17.903	6	91.95	2	11.2
73195	128054	6.5	A5	11	11	43.776	5	90.87	14	24.0
73204	128124	9.3	G0	11	16	43.979	2	91.78	14	6.2
73206	128132	9.1	G0	11	17	7.292	4	91.79	15	1.0
73210	128145	6.8	A0	11	18	21.047	5	91.72	11	59.0
73211	128154	10.1	K0	11	18	55.147	4	91.79	11	52.5
73213	128168	8.8	K0	11	20	4.465	4	92.58	12	3.3
73216	128186	8.8	K0	11	21	4.024	4	92.05	12	33.3
73220	128209	9.1	K0	11	22	54.736	6	91.63	14	19.2
73222	128222	8.5	K0	11	24	15.647	5	92.73	13	54.1
73224	128224	9.0	K0	11	24	24.158	3	91.28	13	57.1
73237	157907	9.3	A5	11	29	15.469	2	91.80	0	43.4
73247	157948	9.6	F8	11	32	11.871	2	91.78	0	43.1
73251	157955	8.3	F8	11	32	36.423	3	91.00	1	20.2
73255	157973	9.6	K2	11	33	23.509	5	92.09	0	48.1
73260	158010	9.6	K0	11	35	47.299	4	90.58	0	12.3
73262	158021	9.6	K5	11	36	20.450	5	92.72	0	35.5
73279	194801	8.6	G5	11	46	7.954	3	92.67	-6	38.2
73298	194855	6.9	K5	11	49	10.770	5	90.34	-7	21.4
73300	158237	9.3	K0	11	49	28.057	5	92.91	0	36.3
73312	158301	6.5	A5	11	53	50.283	4	90.59	0	33.1
73313	178626	8.8	K2	11	54	2.169	4	92.55	-1	2.2
73328	101586	9.5	K0	12	1	17.613	6	91.66	24	13.0
73329	101602	8.5	K0	12	2	42.139	7	90.48	24	26.5
73330	76324	9.8	F8	12	11	0.183	6	90.84	35	22.5
73331	76328	7.8	F2	12	11	32.097	7	90.80	34	15.3
73352	158751	9.0	K2	12	21	0.213	6	90.37	4	32.2
73353	158755	8.6	F2	12	21	14.160	5	90.55	3	42.3
73355	158757	9.1	K0	12	21	24.492	4	92.32	2	43.4
73357	158769	8.5	F8	12	22	17.145	5	90.37	3	17.5
73365	158803	8.6	K0	12	24	32.597	8	90.86	4	19.5
73367	158831	8.5	K0	12	25	54.797	5	90.37	4	11.6
73373	158861	8.8	K0	12	27	39.260	6	90.86	4	25.0
73375	158874	9.3	K0	12	28	16.349	5	90.35	3	41.5
73376	158876	9.1	A5	12	28	17.155	3	91.99	3	16.2

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
73379	129094	8.8	F0	12	29	32.298	5	90.37	11	29.3
73385	129110	9.1	K0	12	30	48.931	5	90.37	12	29.1
73387	158927	9.5	K0	12	31	17.387	4	88.34	2	18.1
73388	129121	8.0	F0	12	31	39.359	8	90.98	12	7.4
73390	129161	9.1	G5	12	34	52.737	4	90.84	12	27.3
73392	129168	8.5	K0	12	35	10.732	5	90.38	11	32.5
73419	195845	6.7	F8	12	47	33.424	7	90.65	-6	18.1
73432	195874	8.2	A0	12	49	42.710	5	90.55	-6	52.5
73435	195878	7.4	F5	12	50	5.135	6	90.37	-7	37.6
73439	129417	8.1	A2	12	53	10.480	5	90.37	12	27.6
73441	129422	6.0	A3	12	53	49.721	7	91.06	12	25.1
73447	129446	9.8	K0	12	55	29.116	7	90.51	10	42.6
73448	129448	9.0	K0	12	55	29.572	4	90.60	12	42.1
73452	195988	8.8	K5	12	56	30.770	5	89.34	-6	19.4
73454	129462	9.5	G5	12	57	9.083	4	90.37	11	24.6
73457	196002	8.6	K2	12	57	39.985	7	90.52	-6	23.3
73479	226835	4.9	K0	13	7	53.826	8	90.37	-10	44.3
73487	77024	8.8	A5	13	13	28.731	6	90.87	31	40.2
73491	77031	7.3	G0	13	13	44.622	4	90.64	32	31.5
73510	77154	7.9	A2	13	24	23.427	6	90.88	32	5.0
73521	77199	8.8	F0	13	27	59.300	5	90.79	32	34.5
73523	77204	8.5	G5	13	28	54.859	6	90.86	30	33.4
73528	102654	8.9	G5	13	30	46.809	4	90.63	24	13.6
73531	102657	7.6	A5	13	31	0.898	7	91.51	26	23.3
73535	77247	8.5	K0	13	32	47.933	6	90.39	30	44.5
73538	227502	8.1	A3	13	34	28.168	9	91.26	-13	20.5
73542	227539	8.1	G5	13	35	47.472	5	90.58	-13	28.4
73543	227558	8.7	K2	13	36	28.416	5	91.00	-13	9.2
73545	227602	8.3	F5	13	38	27.789	9	90.71	-13	33.2
73551	227672	7.5	K0	13	40	59.707	6	90.54	-12	46.6
73556	130035	9.8	K2	13	44	43.171	5	90.79	12	55.1
73558	130046	9.1	G0	13	45	22.958	2	90.38	11	28.5
73561	130066	9.0	G5	13	46	38.391	4	92.62	12	39.2
73581	227984	7.9	F0	13	53	51.724	4	92.64	-14	39.5
73591	228021	7.8	K2	13	55	36.859	4	92.15	-16	8.4
73598	130213	9.0	F5	13	58	7.430	5	90.56	19	27.3
73599	130215	9.6	K0	13	58	20.035	3	90.39	18	56.4
73603	228141	8.2	K0	14	0	28.217	4	91.37	-14	57.1
73604	103023	10.6	K0	14	0	53.968	4	90.39	20	9.1
73647	130807	10.1	K0	14	43	28.663	5	91.64	10	34.4
73652	130836	7.8	G5	14	45	21.569	6	91.61	10	35.6
73656	130878	10.3	K0	14	47	39.801	4	91.69	10	41.5

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
73659	131077	9.5	K5	15	2	5.619	4	91.44	11	9.2
73675	131139	8.5	F0	15	7	13.202	5	93.27	10	17.5
73676	131142	8.5	K0	15	7	21.263	5	91.45	10	31.4
73683	103829	10.5	K2	15	9	19.593	2	92.44	22	47.2
73684	103832	7.8	F5	15	9	29.503	5	91.45	24	40.3
73688	103854	9.5	G0	15	11	37.101	3	91.45	24	13.6
73689	103857	9.3	F8	15	11	49.323	3	91.76	23	2.0
73694	103875	6.3	A0	15	13	31.849	5	92.87	22	59.0
73698	198381	8.5	G5	15	14	33.524	6	92.27	-8	12.4
73700	103908	9.3	K2	15	16	29.955	6	91.95	23	32.4
73713	161912	9.5	A2	15	47	13.843	4	91.45	3	12.1
73714	161916	10.1	K2	15	47	31.857	6	93.47	2	25.2
73716	161924	8.3	F0	15	48	7.850	6	92.32	3	26.4
73720	161951	7.9	A2	15	49	51.612	5	91.45	2	30.0
73721	161952	9.6	K2	15	49	53.984	5	93.45	2	47.4
73724	161962	6.5	K0	15	50	17.548	7	92.47	2	11.5
73725	161963	8.8	G0	15	50	26.069	4	93.27	1	49.1
73726	161969	9.3	F5	15	50	59.055	5	91.46	2	53.0
73732	162054	9.1	G5	15	55	22.639	9	91.91	0	4.4
73734	179685	9.6	K5	15	56	53.923	9	92.25	-0	57.2
73736	179687	8.6	A0	15	57	40.182	8	90.59	-0	5.3
73738	162101	9.3	A5	15	58	31.046	6	91.79	0	34.3
73740	162113	7.6	A0	15	59	5.771	9	92.37	0	35.4
73742	162130	8.8	K5	16	0	2.147	8	92.23	0	37.3
73747	104585	9.4	A3	16	5	13.870	8	92.34	26	43.3
73757	104665	8.5	F8	16	10	57.164	8	92.72	26	23.5
73758	104669	7.8	F5	16	11	7.898	10	92.67	26	53.3
74576	162466	8.6	F5	16	18	41.996	10	91.88	6	16.6
75013	162496	9.7	K2	16	20	11.134	2	87.49	5	43.0
73775	79421	9.0	A2	16	33	11.524	7	92.32	38	4.2
73777	79432	7.5	F5	16	33	41.827	7	92.34	38	5.3
73781	79462	8.6	A0	16	35	28.427	7	92.65	37	46.1
73782	55525	8.8	G0	16	35	42.468	5	92.46	40	8.4
73794	79494	8.8	K5	16	37	26.665	7	92.04	37	29.3
73795	79505	8.1	K0	16	38	4.035	6	92.67	39	34.4
73798	79524	8.1	A2	16	39	8.960	7	92.63	38	20.4
73799	55579	10.3	K0	16	39	24.596	6	92.66	40	9.1
73810	55633	8.3	A0	16	45	5.792	7	92.16	40	38.2
73811	79616	9.0	K0	16	45	31.245	8	92.75	39	22.6
73816	79682	9.5	K0	16	49	42.107	7	92.07	39	14.3
73818	163230	9.8	F0	16	53	19.394	5	92.50	5	51.1
73822	163279	9.5	A2	16	56	1.973	6	92.34	5	52.5

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
73827	163307	9.6	F0	16	57	20.444	5	92.53	4	59.4
73828	163306	8.1	K0	16	57	20.258	5	92.08	6	12.4
73830	163311	10.0	F8	16	57	31.885	4	93.49	5	25.3
73839	163355	9.6	K0	16	59	34.503	8	91.85	5	48.1
73840	163365	9.6	A2	17	0	12.755	8	92.88	5	38.2
73844	163411	9.3	G0	17	1	44.172	5	92.12	4	54.5
73845	163416	10.6	K0	17	1	54.063	7	92.66	5	0.5
73848	163452	10.3	M1	17	3	0.604	7	92.46	4	44.5
73855	133233	10.0	K5	17	18	51.021	8	92.34	17	57.4
73856	133239	9.8	M0	17	18	59.260	6	92.83	17	32.3
73860	133276	8.8	K2	17	20	45.827	8	92.11	17	2.2
73862	80288	10.3	K0	17	29	42.593	7	92.65	39	8.6
73865	233205	9.4	A2	17	32	0.431	5	92.73	-12	31.2
73868	233229	7.8	A0	17	32	50.732	11	92.57	-13	28.6
73874	233279	7.4	A2	17	35	7.466	9	92.16	-13	38.2
73894	200951	9.1	K0	17	42	9.176	5	92.89	-4	16.5
73901	200974	8.7	G5	17	43	37.838	6	92.52	-3	12.5
73904	200977	7.8	G5	17	43	44.265	7	92.19	-3	55.0
75014	201012	8.3	A0	17	45	34.258	2	87.49	-3	30.2
73916	201032	8.7	A3	17	46	41.799	7	91.91	-4	3.1
73918	201058	8.1	M0	17	47	42.385	8	92.76	-3	38.4
73922	133870	9.1	K0	17	49	23.162	7	91.78	10	20.2
73928	164686	7.6	A0	17	50	37.200	7	92.64	9	32.3
73932	164707	9.3	G5	17	51	35.007	4	92.23	9	47.3
73937	164730	7.9	A2	17	52	7.239	6	92.16	8	49.2
73944	164750	9.1	F5	17	52	49.631	7	93.07	8	54.1
73950	164788	9.3	K5	17	53	54.359	6	91.82	9	47.1
73961	134057	8.0	F5	17	58	6.966	7	91.82	15	8.2
73966	267779	6.1	O5	18	3	52.440	10	92.03	-24	21.4
73983	134631	9.3	A2	18	22	46.843	6	92.56	11	19.1
73984	134648	8.8	K0	18	23	20.629	9	92.34	11	21.4
73989	134679	9.3	K5	18	24	40.295	6	91.96	10	11.0
73991	134698	9.3	F8	18	25	18.505	5	92.76	11	5.5
73994	134728	8.8	A2	18	26	32.850	6	91.73	10	23.5
73995	235551	8.4	K0	19	8	52.708	5	91.71	-19	48.5
73999	269430	8.3	B9	19	11	19.276	6	91.84	-20	20.5
74004	269477	8.2	F5	19	13	9.117	6	91.99	-20	25.2
74039	236311	7.3	B8	19	39	52.310	7	91.86	-15	10.0
74046	236370	8.8	A0	19	42	17.089	6	91.71	-14	58.1
74050	236398	5.4	F2	19	43	33.550	6	91.71	-15	28.1
74053	168720	7.9	A5	19	49	9.537	5	91.70	8	16.4
74054	168721	9.1	F5	19	49	11.558	3	92.96	8	36.2

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
74058	168751	9.1	K2	19	50	2.756	2	91.71	7	51.1
74059	168764	6.0	B3	19	50	17.500	6	91.71	7	54.1
74063	168811	8.6	A5	19	51	26.155	5	92.42	7	47.0
74064	168827	7.5	A2	19	51	46.953	6	91.71	8	4.2
74070	236801	8.1	M0	20	0	42.228	4	91.72	-18	17.2
74072	236832	8.2	A2	20	1	51.768	4	92.87	-17	33.0
74076	236860	7.8	G0	20	2	54.936	4	91.70	-18	32.5
74078	236866	8.0	F5	20	3	13.002	4	92.61	-18	14.3
74082	203693	8.2	A0	20	8	43.001	7	91.83	-7	1.1
74083	203720	8.0	G0	20	10	29.626	6	91.85	-6	9.5
74093	203768	7.1	A0	20	12	38.618	5	91.70	-6	21.6
74094	203769	9.1	F5	20	12	41.893	2	93.05	-7	10.3
74112	138423	9.6	M1	20	28	47.895	5	92.05	12	4.4
74113	138432	7.3	B9	20	29	8.770	3	92.08	12	40.5
74116	138491	9.8	K5	20	30	44.468	7	92.11	12	5.3
74123	138561	9.6	K5	20	32	52.879	4	92.14	12	3.3
74128	138602	9.1	K5	20	33	57.097	5	92.27	12	6.1
74129	138601	5.5	A2	20	33	57.051	2	91.73	13	1.4
74173	171835	9.6	K2	21	30	8.889	5	90.82	5	25.3
74182	171876	8.3	K2	21	31	55.000	6	90.81	5	17.4
74194	171923	9.3	K2	21	33	55.408	6	90.81	0	13.3
74200	171977	9.1	G0	21	35	55.463	4	90.78	0	40.5
74208	140406	8.3	F2	21	37	46.499	4	90.78	15	3.3
74215	172085	9.6	K5	21	40	7.037	4	90.78	1	10.3
74217	140491	8.3	A2	21	41	37.692	4	91.37	14	39.3
74218	140492	8.3	K5	21	41	41.728	5	90.80	15	2.3
74220	172184	8.6	F8	21	44	4.646	3	90.76	9	54.2
74223	172203	8.1	F8	21	44	51.875	2	90.88	6	25.6
74226	172231	7.9	A0	21	46	19.444	2	90.87	9	20.3
74227	172235	8.0	F5	21	46	31.323	2	90.88	6	32.1
74232	172258	9.0	G0	21	47	59.732	5	91.19	9	50.4
74243	172318	8.1	K0	21	49	51.238	3	90.87	5	12.5
74250	172358	9.3	K2	21	51	50.587	5	91.19	6	16.5
74258	172396	9.1	K0	21	53	44.174	5	91.19	6	34.1
74287	62425	10.8	M0	22	3	41.281	2	90.86	41	54.1
74322	206163	8.7	F0	22	15	57.415	4	90.82	-2	44.4
74326	206193	9.1	A2	22	17	49.716	5	90.84	-4	15.0
74328	206233	8.2	A3	22	19	49.035	4	90.82	-4	3.6
74329	206243	9.0	K2	22	20	26.846	3	91.53	-4	28.2
74355	141564	9.8	G0	22	32	59.161	2	90.84	11	58.6
74365	141603	9.1	K0	22	35	5.693	5	90.85	11	52.5
74384	240726	8.5	K0	22	46	8.802	5	90.84	-12	9.3

RRS2	PPM	mag	Sp	α_{cat}			n	Ep	δ	
				h	m	s		1900 +	°	′
74409	173547	8.5	K2	22	54	44.228	6	90.99	7	15.3
74424	173581	10.1	G5	22	56	45.512	4	91.07	8	32.1
74436	173611	6.5	A0	22	58	42.617	3	91.53	7	20.2
74439	173631	7.5	A2	23	0	6.426	3	91.18	7	23.0
74443	173881	7.8	G5	23	13	23.785	7	91.25	2	40.3
74445	173967	9.5	F8	23	18	47.580	4	91.06	5	10.0
74452	173998	5.0	K0	23	20	20.594	5	91.04	5	22.5
74467	207499	8.6	K2	23	23	23.099	2	91.28	-3	12.6
74468	174040	8.8	K0	23	23	23.475	3	90.88	5	14.3
74477	207569	7.8	K0	23	27	14.663	5	91.06	-2	38.1
74495	142588	9.1	K5	23	31	21.431	4	90.89	10	53.1
74503	142608	8.0	A3	23	32	35.636	5	90.87	10	58.4
74536	142811	8.1	A2	23	45	13.953	3	90.90	10	6.2
74540	174408	8.0	G0	23	46	18.333	2	91.30	9	47.1
74545	242127	7.9	F5	23	48	9.329	2	91.30	-16	41.6