

RADIAL VELOCITIES OF 40 F5–K STARS NEAR THE NORTH GALACTIC POLE

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Received June 15, 1993.

Abstract. Radial velocity measurements made with a Coravel-type spectrometer are presented for 40 photometrically identified F5–K stars brighter than 13 mag and lying in three proper-motion fields near the North Galactic Pole.

Key words: radial velocities – late-type stars – North Galactic Pole

1. Introduction

Some years ago, the Kiev Observatory program for investigation of stellar populations in the Galaxy has been proposed. It is based on determination of kinematics, space distribution and physical properties of stars in a number of fields located along the section crossing the galactic center, the Sun and the galactic poles. The main body of observational data for the survey fields (each of 1.4 deg² size) includes proper motions determined with respect to galaxies (Kharchenko, 1987), and, to a lesser extent, *UBVR* or seven-colour Vilnius photometry and the objective-prism spectral classes. A summary of the current state of the survey is given by Andruk et al. (1992).

As a part of this survey, in 1989 we began photoelectric radial velocity observations of F5–K stars in the Kiev proper-motion fields near the North Galactic Pole. The stars selected for the program

included all those for which seven-colour photometry and three-dimensional classification (i.e. spectral types, M_V and $[\text{Fe}/\text{H}]$) on the Vilnius system was available (Bartasiūtė, 1984, 1986 and unpublished data). Radial velocity measurements for 56 stars in the Kiev fields KA 112, 113 and 119 have been published by Rastorguev et al. (1990). The present paper gives the results for other 40 stars in the same fields.

2. Observations

Radial velocity observations were made from March 9 to April 7, 1991 with the photoelectric Coravel-type spectrometer of the Sternberg Astronomical Institute (Tokovinin, 1987) attached to the Lithuanian 1-meter reflector at the Maidanak Observatory in Uzbekistan. For nearly all of these stars, only one observation was obtained, since no care was taken to look for possible velocity variables. The velocity system was checked by observing on each night several standard stars from Mayor and Maurice (1985). The overall zero-point of our velocity system is based on 51 observations of 11 standard stars. All subsequent reductions were performed using the VELO program (A.A. Tokovinin, private communication).

3. Results

The measured radial velocities are given in Table 1. It contains: BD number (if available), KA identification giving the field number and the running number of a star within the field according to the proper-motion catalogue by Kharchenko (1987), 1950.0 equatorial coordinates, V magnitude and photometric spectral type, heliocentric Julian date of observation, heliocentric radial velocity and its error in km s^{-1} . Poor quality velocity data with errors exceeding 2.5 km s^{-1} are indicated by colons. It must be noted that the KA identification numbers given in Table 1, are not the same as in the papers containing the identification charts and the Vilnius photometry (Bartasiūtė, 1984, 1986) or the radial velocity data (Rastorguev et al., 1990). KA numbers in those papers have been taken from an earlier version of the Kharchenko's catalogue, whereas here we give the star numbers from the latest updated version of the Kiev proper-motion catalogue. In order to avoid possible confusion, equatorial coordinates must be considered.

Table 1. Radial velocity observations

BD	KA	$\alpha(1950)$	$\delta(1950)$	V	Sp	JD(hel) 244...	V_{rad} km/s	Error km/s		
+36 2400	112 010	13 ^h 37 ^m 12 ^s	+36°23'9"	12.93	G8	IV	8329.340	1.54	2.53	
	112 023	13 37 34	+36 03.8	11.19	sdF9		8338.468	2.36	2.32	
	112 080	13 39 07	+35 30.1	10.44	F6	V	8354.297	0.91	1.96	
	112 125	13 39 51	+36 58.5	12.58	K3	V	8325.399	−2.90	1.90	
							8337.488	−2.71	2.01	
+36 2401	112 127	13 39 53	+36 53.4	12.34	G7	V	8329.376	1.81	1.46	
	112 131	13 39 57	+35 32.4	9.87	K1	III	8345.254	−28.89	0.53	
+37 2443	112 138	13 40 01	+37 01.0	10.99	K0	III	8325.349	−12.00	1.07	
	112 140	13 40 02	+35 30.9	10.82	G2	V	8354.262	11.79	2.17	
	112 154	13 40 13	+36 21.5	13.09	G8	V	8325.464	4.76	2.17	
	112 159	13 40 15	+36 36.2	11.42	G0	V	8325.449	−38.22	1.43	
	112 162	13 40 16	+35 31.3	11.43	sdG1		8354.280	−45.34	3.00	
+35 2475	112 182	13 40 34	+35 21.6	9.08	K3	III	8345.264	27.05	0.28	
+35 2477	112 189	13 40 45	+35 22.9	10.02	F8	V	8345.271	−8.72	0.51	
	112 191	13 40 45	+36 12.0	11.94	G8	V	8325.505	9.96	2.54	
							8337.506	7.31	3.04	
+36 2405*	112 193	13 40 49	+36 56.0	11.97	K4	V	8325.532	−20.25	1.62	
							8334.357	−20.90	1.59	
	112 231	13 41 22	+35 35.8	8.54	K1	III	8345.282	−48.27	0.21	
+37 2446	112 255	13 41 49	+36 32.6	9.81	F7	V	8334.257	−0.29	0.95	
	112 271	13 42 00	+36 45.4	11.72	G2	V	8334.307	−4.78	1.21	
+36 2409	112 285	13 42 13	+36 48.8	12.53	K0	III-IV	8334.340	−20.51	1.28	
	112 305	13 42 27	+36 23.0	11.95	G0	V	8334.267	5.87	1.89	
	112 383	13 44 11	+36 15.1	11.21	G5	V	8345.301	−20.02	0.85	
	+36 2408	112 385	13 44 16	+35 48.6	9.12	G9	III	8345.291	−31.47	0.26
	113 004	13 49 23	+41 07.7	12.30	G3	V	8350.251	−30.45	2.00	
+41 2438	113 039	13 50 44	+40 58.4	12.36	G7	V	8342.483	−42.69	1.84	
	113 040	13 50 48	+40 35.7	12.04	G6	III	8350.241	−92.43	1.37	
	113 059	13 51 17	+41 13.7	12.41	G4	V	8350.286	83.25	2.09	
	113 096	13 51 53	+41 37.9	11.35	G8	III	8339.312	28.72	0.60	
	113 108	13 52 11	+40 43.4	12.39	K0	IV	8341.480	−27.63	1.34	
	113 114	13 52 19	+41 27.1	9.55	G7	V	8339.291	−16.71	0.54	
	113 144	13 52 57	+40 59.1	11.83	G2	V	8338.487	−21.02	1.65	
	113 146	13 53 02	+40 49.0	12.35	G8	III	8341.423	11.40	1.10	
	113 147	13 53 04	+40 31.5	11.68	G8	V	8351.246	−21.48	2.84	
	113 148	13 53 04	+40 31.7	12.28	G5	IV	8351.266	19.77	2.00	

Table 1 (continued)

BD	KA	$\alpha(1950)$	$\delta(1950)$	V	Sp	JD(hel) 244...	V_{rad} km/s	Error km/s
	113 194	13 53 55	+41 17.6	10.79	G2 V	8339.267	-6.61	0.68
	113 213	13 54 27	+40 42.5	11.70	MDG-G6	8339.323	2.74	1.01
	113 233	13 54 54	+40 50.2	11.89	K1 V	8339.419	-14.89	0.70
	113 245	13 55 11	+40 42.6	11.85	G1 V	8339.342	-74.29	1.59
	119 024	14 16 10	+37 03.3	12.09	G2 IV-V	8354.376	2.65	1.50
	119 190	14 19 25	+37 21.8	10.82	G8 V	8351.311	-24.25	0.68
+36 2478**		14 20 08	+35 52.5	8.13	G1 V	8346.431	2.49	0.29
						8349.259	2.50	0.50

* HD 119617.

** HD 126029, located just outside the field KA 119.

These observations, together with the radial velocities obtained earlier, cover nearly all F5-K stars in the fields KA 112, 113 and 119 down to our limiting magnitude. Further observations are in progress to cover the Kiev proper-motion fields in both the northern and southern galactic caps.

Acknowledgments. We are grateful to Alexei Rastorguev and Julius Sperauskas for their help in organizing our observational campaign and to Andrei Tokovinin who provided us with the radial velocity data reduction program. Thanks are also due to the Institute of Theoretical Physics and Astronomy, Vilnius, for allocating us observing time on their 1-meter telescope.

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