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FIRST BYURAKAN SPECTRAL SKY SURVEY. STARS OF LATE - SPECTRAL TYPES. XIII. ZONE $+1^{\circ} \leq \delta \leq +13^{\circ}$

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The thirteenth list of faint late M and carbon type stars detected on the plates of the First Byurakan Spectral Sky Survey in zone $+1^{\circ} \leq \delta \leq +13^{\circ}$ covered about 3118 sq. degrees is presented. From 285 stars, 161 are newly detected objects: they are 17 carbon stars, 25 carbon star candidates and 117 M-type stars. Spectral belonging of two objects is suspected between M8 - M9 or late N-subtypes. Among 161 objects 85 (66 PSC + 19 FSC) are unclassified IRAS sources. Accurate positions, spectral classes, red magnitudes and color indices are given, using several astronomical databases. Finding charts from DSS are given for the most interesting objects.

Key words: *stars:survey - stars:classification: carbon stars*

1. *Introduction.* The study of the faint stellar populations at high Galactic latitudes, particularly stars of the late spectral classes, is of prime importance to better understanding the Galaxy formation problems and properties of the Halo of Galaxy. This paper is the continuation of the detection and listing of faint late M-type and C stars at high Galactic latitudes on the basis of the low-dispersion material provided by the First Byurakan Spectral Sky Survey (FBS) [1]. Information about FBS and the description of the spectroscopic criteria for selecting M-type and C stars on the 1-m Schmidt telescope objective-prism plates have been given in earlier papers in this series [2,3].

In our last paper [4] we reviewed the main works devoted to the faint C and M stars at high Galactic latitudes. The data for faint C stars discovered at high latitudes are presented in the third edition of the Stephenson's General Catalogue of Galactic Carbon Stars [5].

More recently authors of paper [6] presented the list of the new faint C stars at high latitudes, selected automatically on the Hamburg ESO Schmidt telescope plates. The selection of the very faint carbon stars in the Galactic Halo from the 2MASS (Two Micron All Sky Survey) based on the near-infrared colours is carried out also [7].

2. *Photographic Material.* In this paper we present the results of search for three zones FBS:

a) zone $+1^{\circ} \leq \delta \leq +5^{\circ}$, $00^{\text{h}}00^{\text{m}} \leq \alpha \leq 05^{\text{h}}20^{\text{m}}$, $08^{\text{h}}40^{\text{m}} \leq \alpha \leq 16^{\text{h}}10^{\text{m}}$, and $21^{\text{h}}20^{\text{m}} \leq \alpha \leq 00^{\text{h}}00^{\text{m}}$.

b) zone $+5^{\circ} \leq \delta \leq +9^{\circ}$, $00^{\text{h}}00^{\text{m}} \leq \alpha \leq 05^{\text{h}}20^{\text{m}}$, $08^{\text{h}}20^{\text{m}} \leq \alpha \leq 16^{\text{h}}10^{\text{m}}$, and $21^{\text{h}}20^{\text{m}} \leq \alpha \leq 00^{\text{h}}00^{\text{m}}$.

c) zone $+9^{\circ} \leq \delta \leq +13^{\circ}$, $00^{\text{h}}00^{\text{m}} \leq \alpha \leq 05^{\text{h}}20^{\text{m}}$, $07^{\text{h}}50^{\text{m}} \leq \alpha \leq 16^{\text{h}}40^{\text{m}}$, and $20^{\text{h}}25^{\text{m}} \leq \alpha \leq 00^{\text{h}}00^{\text{m}}$.

Three zones ($+1^{\circ} \leq \delta \leq +13^{\circ}$) corresponded to about 3118 sq. deg. and covered 195 $4^{\circ} \times 4^{\circ}$ fields have been surveyed.

3. *Late-Type Star Identification.* 285 objects have been identified in the survey including 212 M-type stars, 46 C stars plus 25 C star candidates. Spectral types of two objects are suspected between M8-M9 or late N-types. Identifications and cross-identifications of these stars have been made by using the SIMBAD astronomical database at the CDS (<http://simbad.u-strasbg.fr/>). For this purpose we selected on the Palomar Atlas a circular area of 1 arcmin radius with the nominal position of each object as center.

124 of these 285 very red star candidates appear in various catalogues [8-12]. 85 objects are unclassified IRAS sources [13,14]. The data of the remaining 76 stars are not contained in existing catalogues.

For 85 FBS stars identified as infrared sources, using SIMBAD database, a cross-identification with IRAS Faint Source Catalogue [14] sources was repeated. For this purpose we took advantage of remote access, over the Internet, to the XCATSCAN program for automatic IRAS source identification provided by the Infrared Processing and Analysis Center (IPAC) at Pasadena. This led us to generate $4' \times 4'$ field sky maps showing the positional uncertainty ellipse for the nearest IRAS FSC object at the nominal position of each FBS star as center. All 85 objects have been identified with visual DDS sources. The 66 of them belong to the IRAS Point Source Catalogue [13], while the 19 remaining stars are IRAS Faint Source Catalogue [14] sources. More details, identifications of detected faint FBS red stars with the IRAS FSC sources by help of XCATSCAN programme are described in last two papers of the present series [3,4].

4. *The Thirteenth List Of Red Stars.* Data for the 161 objects are gathered in Table 1, successive columns of which present:

Column 1: Running list number, column 2: FBS designation, column 3, 4: Equatorial coordinates for J2000.0 determined using POSS images in combination with the USNOC - A2.0 catalogue [15] and/or the APM catalogue [16], column 5: Rough spectral subtype estimated from the visual scrutinizing of the object spectral features displayed by our low-dispersion objective-prism plates, column 6, 7: The R magnitude and $B-R$ color index as given in the USNOC - A2.0 catalogue [15], Column 8: Cross-identification with IRAS PSC [13] and FSC [14] catalogue number, if any.

When necessary, notes on individual stars are given at the end of Table 1. We give finding charts, extracted from the DSS for all new C stars, C star candidates and other more interesting stars listed in Table 1.

Table 1

THE LIST OF THE NEW M AND C STARS

No	FBS Number	Coordinates		Spec. Type	R magn.	B - R color	IRAS PSC and FSC Identifications
		α_{2000}	δ_{2000}				
1	2	3	4	5	6	7	8
1	0118+111	01 ^h 21 ^m 02.4 ^s	+11°25'47"	M6-M7	14.2	1.9	PSC 01582+0931
2	0123+050	01 26 08.7	+05 20 52	M7-M8	13.8	2.0	
3	0153+114	01 55 30.5	+11 43 37	C(R)?	14.2	2.2	
4	0158+095	02 00 56.1	+09 45 37	M8-M9 or C(N)?	14.2	---	
5	0230+008	02 32 42.8	+01 04 10	C(R)?	17.2	2.8	PSC 02568+0547
6	0236+078	02 39 00.4	+08 03 42	M4-M5	10.6	2.4	
7	0256+057	02 59 28.7	+05 59 32	M7-M8	11.7	2.7	
8	0301+008	03 03 49.0	+01 03 23	C(R)?	18.7	1.85	
9	0302+026	03 05 25.0	+02 47 28	M6-M7	14.0	2.1	PSC 03208+0913
10	0310+016	03 12 39.9	+01 51 42	C(R)?	14.3	1.7	
11	0310+043	03 13 19.5	+04 30 25	C(R)?	14.4	2.1	
12	0318+048A	03 21 03.7	+05 03 29	C(R)?	13.8	1.9	
13	0318+048B	03 21 07.1	+05 02 33	C(R)?	15.3	1.4	PSC 03267+0608
14	0320+092	03 23 35.7	+09 23 54	M6-M7	11.8	2.5	
15	0322+041	03 25 27.1	+04 16 00	C(R)?	14.1	2.1	
16	0323+010	03 25 56.6	+01 12 26	C(R)?	14.1	1.6	
17	0323+101	03 26 17.8	+10 19 54	C(R)?	13.7	1.2	PSC 03298+0715
18	0324+034	03 27 32.5	+03 37 11	C(R)?	14.3	1.3	
19	0326+061	03 29 25.9	+06 19 09	M5-M6	11.3	2.9	
20	0328+129	03 31 13.3	+13 07 20	C(R)?	13.6	2.4	
21	0329+072	03 32 32.9	+07 25 33	M5-M6	10.0	3.0	PSC 04085+0653
22	0330+018	03 32 37.5	+01 58 34	C(R)?	12.8	2.1	
23	0332+087	03 35 31.8	+08 54 20	M6-M7	11.3	3.1	
24	0346+059	03 49 27.6	+06 04 40	M8-M9	11.2	3.5	
25	0347+087	03 50 06.6	+08 52 09	M7-M8	11.2	3.0	PSC 03474+0843
26	0348+129	03 51 44.2	+13 06 28	M6-M7	12.3	2.6	PSC 03489+1257
27	0350+085	03 53 20.7	+08 43 42	M7-M8	11.1	3.1	PSC 03506+0834
28	0352+043	03 54 57.0	+04 32 29	M6-M7	11.5	2.5	PSC 04212+0835
29	0359+085	04 01 43.3	+08 42 11	M8-M9	12.6	3.5	
30	0408+069	04 11 12.0	+07 01 09	M4-M5	12.3	2.9	
31	0409+037	04 11 56.8	+03 54 19	M6-M7	13.0	2.1	
32	0410+049	04 12 43.1	+05 03 59	C(R)?	17.3	1.1	PSC 04476+0639
33	0414+049	04 17 10.8	+05 03 13	C(N)?	---	---	
34	0415+048	04 18 33.9	+04 59 00	C(R)?	15.5	1.4	
35	0416+074	04 19 01.1	+07 35 54	C(R)?	11.5	2.4	
36	0419+037	04 21 45.8	+03 57 50	M7-M8	10.2	3.5	PSC 04191+0346
37	0421+086	04 23 57.9	+08 42 41	M6-M7	11.0	2.9	PSC 04212+0835
38	0423+037	04 25 45.3	+03 50 06	M7-M8	13.4	3.0	PSC 04231+0343
39	0423+009	04 25 59.8	+01 03 58	C(N)?	20.4	---	PSC 04289+0203
40	0428+020	04 31 31.3	+02 10 21	M7-M8	12.4	2.8	
41	0429+022	04 31 41.0	+02 20 58	M5-M6	10.9	1.6	
42	0429+009	04 32 24.0	+01 01 16	C(N)?	16.9	2.3	
43	0447+066	04 50 17.1	+06 44 44	M7-M8	13.0	2.3	PSC 04476+0639
44	0452+050	04 55 36.0	+05 05 56	M5-M8	12.1	1.5	FSC 04529+0501
45	0455+011	04 58 33.0	+01 14 30	M6-M7	12.3	2.7	FSC 04559+0110
46	0457+043	05 00 05.0	+04 27 23	M4-M5	12.1	2.4	PSC 04574+0423

Table 1 (continued)

1	2	3	4	5	6	7	8
47	0458+011	05 00 52.0	+01 14 47	M7-M8	10.8	2.5	PSC 04582+0110
48	0500+051	05 02 51.0	+05 11 11	M6-M7	11.9	1.5	PSC 05001+0506
49	0502+088	05 05 00.3	+08 56 07	C(N)	12.7	7.7	PSC 05022+0852
50	0506+013	05 09 13.7	+01 21 31	M6-M7	12.5	2.2	FSC 05066+0117
51	0509+080	05 12 06.3	+08 06 28	M3-M4	10.6	3.2	PSC 05093+0802
52	0514+015	05 16 58.7	+01 33 23	M7-M8	13.1	2.5	PSC 05143+0130
53	0518+011	05 20 39.7	+01 11 23	M7-M8	12.4	2.1	PSC 05180+0108
54	0520+029	05 23 02.3	+03 01 45	C(N)	12.3	3.3	FSC 05203+0258
55	0521+051	05 23 46.4	+05 10 31	M3-M4	11.5	2.5	FSC 05210+0507
56	0754+109	07 57 43.8	+10 49 13	C(R)?	12.1	2.0	
57	0806+052	08 09 25.5	+05 08 20	M6-M7	11.8	2.4	PSC 08067+0517
58	0821+023	08 23 46.3	+02 09 10	M5-M6	11.7	2.2	PSC 08211+0218
59	0821+026	08 24 25.2	+02 27 38	M6-M7	10.8	2.7	PSC 08218+0237
60	0822+119	08 25 27.9	+11 44 19	M5-M6	10.7	2.4	PSC 08227+1154
61	0824+129	08 27 38.1	+12 47 31	C(R)?	13.9	2.3	
62	0826+109	08 29 29.0	+10 46 24	C(N)?	13.0	6.3	
63	0837+084	08 40 02.7	+08 13 12	M8-M9	16.3	2.1	
64	0849+064	08 52 29.8	+06 14 49	M5-M6	11.1	2.3	FSC 08498+0626
65	0900+034	09 03 15.7	+03 14 01	C(R)	12.1	1.7	
66	0907+100	09 09 52.1	+09 48 18	M7-M8	12.4	3.3	PSC 09071+1000
67	0916+029	09 18 50.8	+02 45 04	C(R)	11.4	1.4	
68	0923+064	09 26 09.6	+06 13 00	M6-M7	12.5	2.9	
69	0928+026	09 30 50.9	+02 27 18	M8-M9	12.5	2.9	
				or C(N)?			
70	0933+124	09 36 06.8	+12 13 30	M6-M7	11.7	1.1	PSC 09334+1226
71	1058+083	11 01 16.6	+08 02 32	C(R)	13.8	1.6	
72	1137+038	11 40 20.8	+03 34 50	M6-M7	11.4	2.1	PSC 11378+0351
73	1140+038	11 42 49.1	+03 35 08	C(R)	12.0	1.0	
74	1225+077	12 27 40.4	+07 28 12	C(R)	13.1	1.7	
75	1305+015	13 08 17.8	+01 16 49	C(R)	12.2	2.3	
76	1339+117	13 41 33.1	+11 30 14	C(R)?	13.4	2.6	
77	1406+027	14 09 00.7	+02 32 12	C(R)	12.8	1.0	
78	1418+018	14 21 01.2	+01 37 18	C(R)	11.8	1.9	
79	1451+075	14 53 33.7	+07 20 11	C(R)	11.7	2.1	
80	1514+050	15 16 31.6	+04 52 21	M6-M7	11.7	2.8	PSC 15140+0503
81	1517+044	15 20 02.5	+04 16 30	M7-M8	11.2	2.7	PSC 15175+0427
82	1524+046	15 24 23.6	+04 28 28	C(N)?	12.0	3.9	PSC 15248+0438
83	1547+046	15 49 52.6	+04 28 34	C(R)	12.2	2.4	
84	1553+119	15 55 43.6	+11 47 16	C(R)?	12.4	2.0	
85	1602+108	16 04 57.3	+10 41 09	M6-M7	11.7	3.1	PSC 16025+1049
86	2019+035	20 22 18.5	+03 43 17	M6-M7	12.8	2.6	PSC 20197+0333
87	2021+034	20 24 05.6	+03 38 32	M5-M6	12.4	2.6	FSC 20216+0328
88	2021+030	20 24 21.0	+03 12 20	M6-M7	11.8	2.7	
89	2022+117	20 24 23.7	+11 54 56	M5-M6	12.4	3.5	PSC 20219+1145
90	2022+113	20 24 29.8	+11 30 12	M6-M7	12.4	3.0	PSC 20221+1120
91	2022+122	20 24 41.8	+12 24 31	M5-M6	11.4	2.9	PSC 20223+1214
92	2023+116	20 25 28.4	+11 47 30	M7-M8	13.1	3.1	PSC 20230+1137
93	2023+119	20 25 38.5	+12 07 39	M5-M6	11.2	2.5	PSC 20232+1157
94	2023+029	20 25 48.5	+03 05 47	M7-M8	13.1	3.5	PSC 20232+0255
95	2024+101	20 26 49.2	+10 15 42	M5-M6	12.8	2.3	
96	2024+122	20 26 52.1	+12 24 37	M6-M7	12.1	2.5	

Table 1 (continued)

1	2	3	4	5	6	7	8
97	2024+095	20 26 59.6	+09 40 53	M5-M6	10.4	3.0	PSC 20245+0930
98	2025+129	20 27 25.9	+13 05 06	M5-M6	12.7	2.8	FSC 20250+1255
99	2025+095	20 27 33.5	+09 39 58	M4-M5	12.4	2.2	
100	2029+122	20 31 51.2	+12 26 32	M4-M5	11.7	3.3	FSC 20294+1216
101	2029+101	20 31 51.8	+10 17 57	C(R)	11.8	2.1	
102	2029+026	20 32 13.8	+02 50 23	M6-M7	13.1	2.5	FSC 20297+0240
103	2030+122	20 32 54.0	+12 23 35	M5-M6	10.3	0.6?	
104	2035+124	20 38 07.6	+12 38 55	M6-M7	12.0	2.8	PSC 20357+1228
105	2036+127	20 38 24.6	+12 52 45	M7-M8	14.4	2.9	
106	2036+027	20 39 09.0	+02 57 37	M6-M7	10.8	2.8	PSC 20366+0246
107	2038+093	20 40 34.8	+09 29 02	M6-M7	10.5	3.2	
108	2038+031	20 41 16.7	+03 21 56	M7-M8	10.7	3.4	PSC 20387+0311
109	2040+092	20 42 26.1	+09 25 28	M6-M7	10.3	2.8	PSC 20400+0914
110	2040+108	20 42 27.2	+11 01 24	M5-M6	11.6	2.8	FSC 20400+1050
111	2044+048	20 46 58.2	+05 00 48	M6-M7	10.8	2.5	PSC 20445+0449
112	2044+039	20 47 02.9	+04 08 54	M7-M8	10.7	2.8	PSC 20445+0357
113	2044+015	20 47 20.1	+01 44 44	M6-M7	11.9	2.6	
114	2047+031	20 49 58.1	+03 19 28	M8-M9	13.1	2.3	PSC 20474+0308
115	2048+049	20 50 59.0	+05 05 41	M5-M6	11.9	2.6	
116	2049+093	20 52 01.1	+09 30 46	M5-M6	11.4	1.6	PSC 20495+0919
117	2050+122	20 52 29.8	+12 25 13	M6-M7	12.3	3.7	
118	2050+041	20 53 26.8	+04 17 25	M6-M7	10.5	3.5	PSC 20509+0405
119	2051+111	20 54 09.7	+11 22 26	M5-M6	13.4	2.7	PSC 20517+1111
120	2051+019	20 54 10.2	+02 11 17	M5-M6	11.2	2.5	PSC 20516+0159
121	2054+102	20 57 00.9	+10 24 48	M6-M7	11.7	2.3	PSC 20546+1013
122	2055+032	20 57 44.0	+03 24 48	M5-M6	12.8	1.6	
123	2055+100	20 58 19.7	+10 12 37	M4-M5	12.2	2.7	
124	2056+121	20 58 46.3	+12 22 04	M6-M7	12.7	3.0	FSC 20563+1210
125	2058+107	21 01 10.5	+10 58 04	M5-M6	12.6	1.9	
126	2058+109	21 01 16.2	+11 07 57	M5-M6	13.1	2.1	FSC 20588+1055
127	2059+114	21 01 38.3	+11 39 16	M6-M7	14.1	2.3	FSC 20592+1127
128	2059+008	21 02 03.7	+01 04 12	M6-M7	12.9	2.5	
129	2100+123	21 02 49.8	+12 32 26	C(R)	12.7	2.4	
130	2102+127	21 04 45.4	+12 58 47	M6-M7	12.0	1.7	PSC 21023+1246
131	2102+124	21 05 19.2	+12 35 20	M4-M5	12.8	1.7	
132	2106+035	21 09 30.2	+03 42 09	M6-M7	10.9	2.5	PSC 21069+0329
133	2107+109	21 09 58.9	+11 11 01	C(R)	13.2	2.4	
134	2110+029	21 12 57.8	+03 11 25	M6-M7	11.0	2.9	PSC 21104+0259
135	2112+117	21 14 34.3	+11 56 50	M7-M8	13.6	2.9	PSC 21121+1144
136	2112+038	21 14 49.0	+04 04 53	M5-M6	11.8	2.4	FSC 21123+0352
137	2119+036	21 22 04.0	+03 50 04	M5-M6	11.5	2.6	
138	2126+061	21 29 03.8	+06 19 40	M6-M7	12.0	2.4	FSC 21265+0606
139	2127+070	21 29 28.1	+07 15 45	M7-M8	11.8	2.8	PSC 21270+0702
140	2129+048	21 31 45.6	+05 03 50	M6-M7	13.0	2.5	
141	2131+013	21 33 45.2	+01 31 07	M6-M7	11.7	2.8	FSC 21312+0117
142	2134+101	21 36 55.2	+10 19 26	M4-M5	11.5	2.9	PSC 21345+1006
143	2134+062	21 37 19.7	+06 29 09	M7-M8	11.1	3.2	FSC 21348+0615
144	2135+019	21 37 59.6	+02 12 59	M6-M7	11.2	3.1	PSC 21354+0159
145	2136+054	21 39 00.8	+05 40 24	M7-M8	12.6	1.9	PSC 21365+0526
146	2140+054	21 42 45.8	+05 37 22	M6-M7	11.7	1.9	
147	2147+014	21 49 54.8	+01 39 21	M7-M8	11.7	3.3	PSC 21473+0125

Table 1 (the end)

1	2	3	4	5	6	7	8
148	2147+023	21 50 03.3	+02 34 16	M7-M8	10.7	2.9	PSC 21475+0220
149	2150+078	21 53 07.7	+08 02 17	M7-M8	13.0	1.3	
150	2152+093	21 55 17.5	+09 33 14	M5-M6	11.3	2.2	PSC 21528+0918
151	2154+093	21 56 39.1	+09 34 43	M4-M5	11.1	2.4	PSC 21541+0920
152	2217+100	22 19 58.5	+10 15 03	C(R)	13.3	1.7	
153	2219+113	22 22 21.0	+11 36 08	M6-M7	11.7	2.3	
154	2221+059	22 24 14.8	+06 10 43	M7-M8	11.5	3.1	
155	2225+118	22 27 36.6	+12 04 21	M6-M7	12.5	2.3	
156	2226+098	22 28 55.2	+10 06 41	M4-M5	10.6	2.5	
157	2226+029	22 29 07.3	+03 10 58	M5-M6	12.1	1.7	
158	2236+033	22 38 32.1	+03 33 58	M5-M6	11.3	2.1	
159	2240+107	22 42 47.1	+11 00 53	M7-M8	13.5	3.3	PSC 22402+1045
160	2247+070	22 50 17.6	+07 15 58	M7-M8	12.6	2.6	
161	2337+083	23 40 14.2	+08 36 04	C(R)?	11.2	1.9	

Notes to Table 1.

- 0158-095: Faint low-dispersion objective-prism spectrum at the edge of a FBS plate; object is not seen on Palomar Atlas O-chart. The APM [16] and USNOC - A2.0 [15] catalogues contained no data for this object, consequently, approximate coordinates are presented. R-magnitude on the PA E-chart are determined using "diameter-magnitude" relation [17].
- 0236-078: Erroneous identification in PSC [13].
- 0301+008: $m_v = 13.5 - 14.0$ is estimated from the FBS plate, this object is not seen on Palomar Atlas O-chart. Obviously a variable object.
- 0408+069: A nearby very faint object is visible on Palomar O-chart only, possible binary system.
- 0414+049: $m_v = 14.0 - 14.5$ is estimated from the FBS plate, this object is not seen on Palomar E and O charts, consequently, approximate coordinates are provided and an assumed position is shown on the DSS finding chart. A possible Mira type variable star.
- 0423+009: From the FBS plate this object is estimated as $m_v = 14.0 - 14.5$, not seen on Palomar Atlas E and O charts, only APM (UKST) [16] R data is available for this object. A Mira-type variable candidate.
- 0447+066: In IRAS PSC [13] catalogue this object has identification with source SSC 04476+0639.
- 0502+088: A large $B - R$ colour index indicates a possible existence of a dense gas-dust shell around this object.
- 0826+109: Judging from the large $B - R$ colour index, a dense gas-dust environment around this star can be suspected.
- 2050+122: A nearby bright object is known as an infrared source PSC 20501+1213 [13].

Our main source for JHK magnitudes is the 2MASS in its Second Incremental Release [17] which provided data only for seven objects from Table 1. The data are listed in Table 2.

As we can see from Table 2, two objects (FBS 0328+129 and FBS 0824+129) suspected as early R-type carbon stars (see Table 1), have near-infrared $J - H$ and $H - K$ colours, similar to CH-type carbon stars.

Table 2

IR DATA FOR 7 STARS

FBS Number	<i>J</i> magn.	<i>J-H</i> magn.	<i>H-K</i> magn.
0328+129	9.746	0.982	0.341
0348+129	6.130	0.958	0.430
0824+129	11.641	0.872	0.211
2024+122	7.856	0.925	0.311
2025+129	8.283	0.965	0.302
2102+124	9.548	0.889	0.272
2225+118	6.855	0.888	0.415

5. *Conclusion.* In the FBS $+1^{\circ} \leq \delta \leq +13^{\circ}$ zone we have identified 285 red stars, 161 of which are newly discovered objects. 85 are cross-identified with unclassified IRAS point sources. The lack of optical counterpart on Palomar O and E maps for two stars indicates a large brightness variability of these objects (amplitude not smaller than 7 magn.), making them bona fide long - period Mira candidates.

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ПЕРВЫЙ БЮРАКАНСКИЙ СПЕКТРАЛЬНЫЙ ОБЗОР НЕБА. ЗВЕЗДЫ ПОЗДНИХ СПЕКТРАЛЬНЫХ КЛАССОВ. XIII. ПОЛОСА $+1^{\circ} \leq \delta \leq +13^{\circ}$

К.С.ГИГОЯН¹, Г.В.АБРАМЯН¹, М.АЗЗОПАРДИ², Д.РУССЕЙ²

Приводится тринадцатый список слабых углеродных и М звезд, выявленных на пластинках Первого Бюраканского спектрального обзора неба в полосе $+1^{\circ} \leq \delta \leq +13^{\circ}$ с площадью около 3118 кв. градусов на высоких Галактических широтах. Из 285 отобранных звезд 161 обнаружена впервые. 17 объектов являются углеродными звездами, 25 - кандидатами в углеродные звезды и 117 звезд классов М. Спектральная принадлежность двух объектов подозревается между подклассами М8-М9 или поздних подклассов N. Из 161 объекта 85 идентифицированы с неизвестными

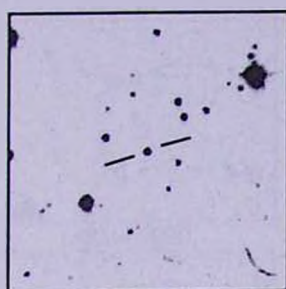
точечными источниками IRAS, причем 66 являются PSC-источниками, а 19 FSC-источниками. Приводятся точные координаты, спектральные классы, звездные величины в красном цвете, а также показатели цветов, для чего были использованы современные астрономические базы данных. Для наиболее интересных объектов даются карты отождествления из DSS.

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FINDER CHARTS FOR FBS RED STARS

(North is Up, East is to Left, 5' x 5')



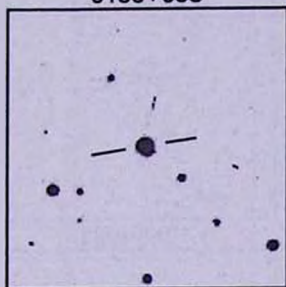
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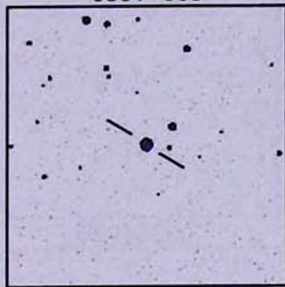
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0328+129



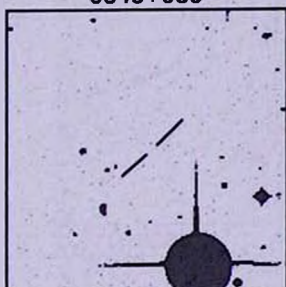
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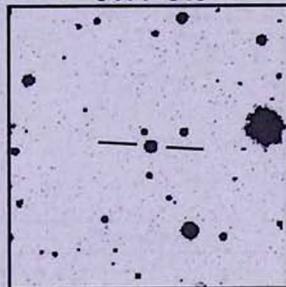
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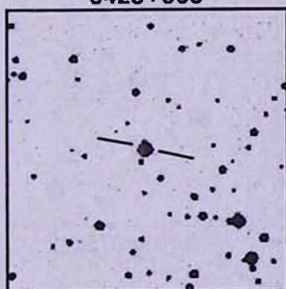
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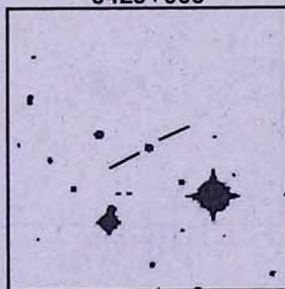
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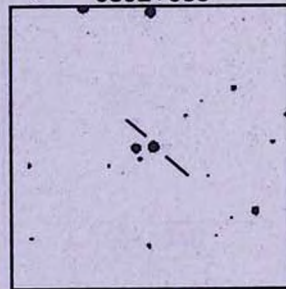
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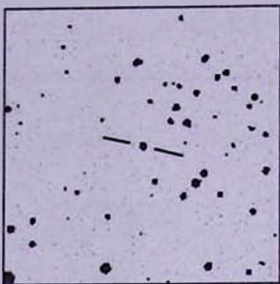
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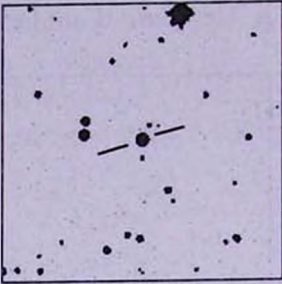
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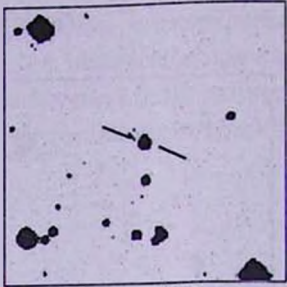
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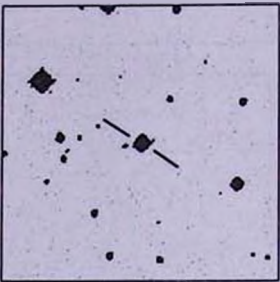
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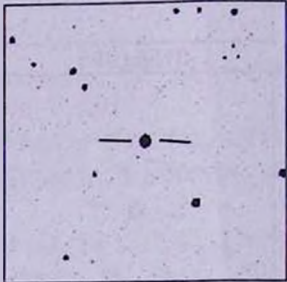
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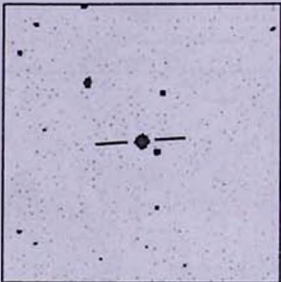
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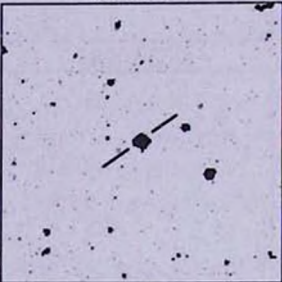
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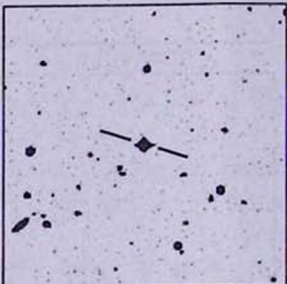
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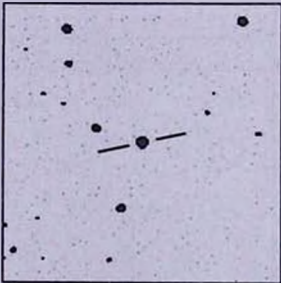
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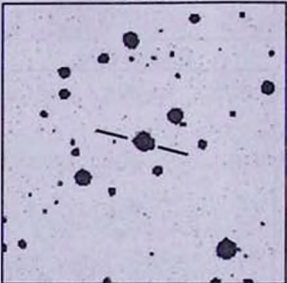
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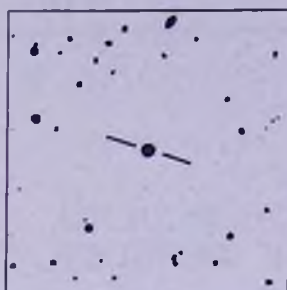
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1451+075



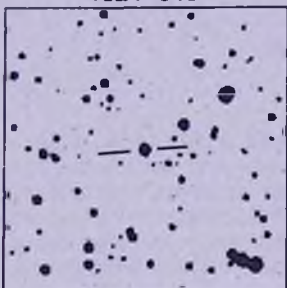
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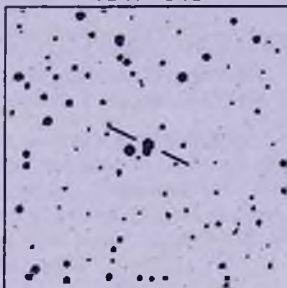
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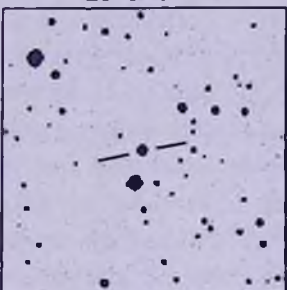
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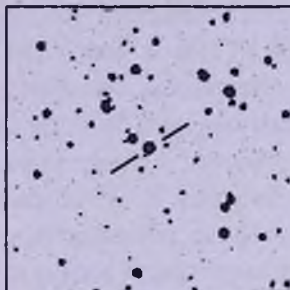
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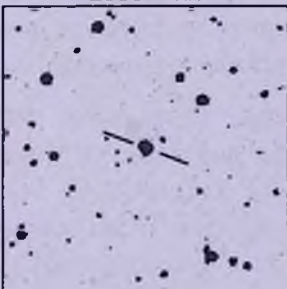
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2100+123



2107+109



2217+100



2327+083