

A SURVEY OF RED STARS IN THE DIRECTION OF THE LARGE MAGELLANIC CLOUD. III. SOME REGIONS NORTH OF BAR

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Abstract

We have continued the survey for red stars in the direction of the Large Magellanic Cloud using the technique of ultra-low dispersion spectroscopy. In this paper we list 310 red stars located north of L M C bar. Finding charts and coordinates on the Hodge-Wright Atlas Charts are provided.

Key words: Large Magellanic Cloud, Late type stars

This study is an extension of our earlier survey (Bappu, Parthasarathy and Scaria 1977 and 1978) of red stars in the direction of the Large Magellanic Cloud and covers six new fields north of LMC bar.

The spectra are obtained with the f/2 Cassegrain slitless spectrograph with a three degree quartz prism at the Cassegrain focus of the 102cm Ritchey Chretien reflector at Kavalur (Bappu and Parthasarathy 1977). The spectra are unwidened. Each exposure covers a field of 40 minutes of arc diameter. The exposure times vary from 60 to 75 minutes. Eastman Kodak 103a-E emulsion and the quartz three degree prism combination gives spectra from 3500A to 6600A.

The spectral classification criteria and the method of detection of red stars

adopted here have been described earlier by Bappu and Parthasarathy (1977) and Parthasarathy (1978).

Table 1 lists 1950 coordinates of the six fields north of bar that are surveyed for red stars in the present investigation. Figure 1 shows the location of our LMC fields and includes those examined in our previous paper I and II. The new fields have numbers 14 to 19 (see Table 1) and the observed spectra of stars in these fields are displayed in Figures 2 to 7 with identification numbers 1005 to 1310. Table 2 lists stars with our identification numbers from 1005 to 1310. The X and Y coordinates for stars listed in Table 2 refer to Hodge and Wright LMC atlas chart 46 V and with the left hand bottom corner as the origin. The X and Y coordinates for stars with identification numbers 1305 to 1310 refer to the left hand bottom corner of Hodge - Wright chart 47 V.

* Deceased on 19 August 1982

Table 1 Coordinates of LMC fields

LMC field No	RA (1975)	DEC (1975)
14	0 ^h 5 22 ^m 3	68 14 3
15	0 ^h 5 24 ^m 4	68 59 3
16	0 ^h 5 24 ^m 8	68 24 4
17	0 ^h 5 25 ^m 7	68 37 7
18	0 ^h 5 28 ^m 3	68° 58' 3
19	0 ^h 5 28 ^m 8	68 25 7

Table 2 List of red stars in the direction of LMC. The X and Y coordinates refer to the left hand bottom corner of Hodge Wright chart 46 V

No	X	Y
1005	1 90	18 20
1006	2 33	19 63
1007	2 50	17 20
1008	3 02	14 70
1009	3 30	21 10
1010	3 30	20 57
1011	3 32	19 50
1012	3 40	12 80
1013	3 52	14 70
1014	3 61	11 91
1015	3 61	15 30
1016	3 70	18 58
1017	3 80	4 35
1018	3 80	18 90
1019	3 85	19 30
1020	3 95	13 80
1021	4 00	19 68
1022	4 05	2 40
1023	4 05	2 70
1024	4 10	0 30

1025	4 30	3 80
1026	4 32	18 25
1027	4 35	1 25
1028	4 43	1 88
1029	4 65	5 20
1030	4 82	0 62
1031	4 95	20 90
1032	5 02	14 76
1033	5 03	2 00
1034	5 10	3 50
1035	5 13	1 40
1036	5 17	4 00
1037	5 32	14 87
1038	5 35	14 79
1039	5 58	22 40
1040	5 78	19 12
1041	5 86	17 97
1042	5 92	8 05
1043	5 96	8 55
1044	6 07	0 10
1045	6 10	3 00
1046	6 12	2 55
1047	6 12	19 70
1048	6 20	6 40
1049	6 22	1 15
1050	6 35	11 60
1051	6 41	2 42
1052	6 42	6 95
1053	6 42	14 69
1054	6 52	0 85
1055	6 58	3 85
1056	6 62	13 75
1057	6 70	7 25
1058	6 70	6 7
1059	6 70	4 85
1060	6 72	6 81
1061	6 75	11 71
1062	6 78	1 91
1063	6 90	7 51
1064	6 90	6 21
1065	6 90	0 51
1066	6 92	7 9

1067	7.00	6.06	1109	8.70	17.60
1068	7.02	18.10	1110	8.88	2.10
1069	7.03	19.95	1111	8.90	3.30
1070	7.19	9.20	1112	8.90	21.38
1071	7.20	9.10	1113	8.90	3.70
1072	7.20	8.99	1114	9.00	21.30
1073	7.20	3.88	1115	9.00	19.80
1074	7.22	8.10	1116	9.07	13.12
1075	7.25	4.28	1117	9.10	9.58
1076	7.26	0.90	1118	9.11	7.46
1077	7.26	7.90	1119	9.18	2.80
1078	7.40	9.72	1120	9.21	21.30
1079	7.47	4.90	1121	9.22	9.30
1080	7.50	3.37	1122	9.22	1.40
1081	7.50	4.50	1123	9.26	22.03
1082	7.60	4.00	1124	9.32	1.82
1083	7.61	8.20	1125	9.38	17.88
1084	7.67	16.70	1126	9.47	5.41
1085	7.80	4.98	1127	9.50	1.68
1086	7.80	20.85	1128	9.52	12.20
1087	7.82	8.47	1129	9.55	16.30
1088	7.90	3.55	1130	9.60	6.97
1089	7.90	6.00	1131	9.62	1.52
1090	7.95	1.65	1132	9.65	2.65
1091	7.97	19.80	1133	9.65	8.08
1092	8.00	20.65	1134	9.68	7.80
1093	8.00	19.10	1135	9.68	7.90
1094	8.09	8.38	1136	9.70	13.95
1096	8.12	16.08	1137	9.72	15.10
1096	8.19	0.82	1138	9.75	16.50
1097	8.33	5.58	1139	9.85	18.10
1098	8.35	15.30	1140	9.97	5.58
1099	8.38	16.20	1141	10.00	4.90
1100	8.40	4.60	1142	10.12	0.37
1101	8.40	21.80	1143	10.18	9.36
1102	8.40	6.10	1144	10.30	14.26
1103	8.42	21.30	1145	10.40	6.70
1104	8.50	9.80	1146	10.50	17.85
1105	8.50	9.78	1147	10.63	14.02
1106	8.50	5.25	1148	10.65	18.60
1107	8.53	19.30	1149	10.70	7.63
1108	8.57	22.10	1150	10.70	9.66

1151	10.70	3.80	1193	13.75	2.45
1152	10.71	4.00	1194	13.81	1.22
1153	10.75	7.50	1195	13.81	1.10
1154	10.87	10.15	1196	13.83	6.25
1155	10.90	13.72	1197	13.90	18.45
1156	10.96	21.15	1198	13.90	8.90
1157	11.10	13.60	1199	13.92	4.82
1158	11.10	14.07	1200	13.92	11.85
1159	11.20	13.10	1201	14.14	12.98
1160	11.20	0.25	1202	14.15	7.35
1161	11.22	13.38	1203	14.16	12.70
1162	11.30	4.92	1204	14.17	4.70
1163	11.38	6.68	1205	14.19	2.80
1164	11.45	2.20	1206	14.25	12.82
1165	11.52	5.00	1207	14.38	21.65
1166	11.60	3.78	1208	14.40	18.45
1167	11.60	6.10	1209	14.40	13.15
1168	11.72	11.80	1210	14.50	5.30
1169	11.83	16.05	1211	14.55	20.20
1170	11.99	5.10	1212	14.70	7.90
1171	12.00	5.00	1213	14.80	14.18
1172	12.90	11.05	1214	14.80	22.00
1173	12.01	5.18	1215	14.84	14.80
1174	12.03	5.25	1216	14.90	19.20
1175	12.24	20.50	1217	15.02	20.40
1176	12.32	9.60	1218	15.15	22.45
1177	12.38	6.35	1219	15.23	16.00
1178	12.50	1.40	1220	15.29	10.70
1179	12.55	0.37	1221	15.32	7.20
1180	12.62	14.75	1222	15.38	23.20
1181	12.76	15.72	1223	15.40	14.35
1182	13.10	14.35	1224	15.60	8.20
1183	13.10	20.60	1225	15.60	8.88
1184	13.12	9.20	1226	15.70	18.20
1185	13.22	15.50	1227	15.70	4.60
1186	13.24	3.85	1228	15.82	14.25
1187	13.33	16.10	1229	15.97	8.83
1188	13.50	11.05	1230	16.05	21.05
1189	13.59	5.30	1231	16.30	16.08
1190	13.60	14.85	1232	16.39	3.80
1191	13.67	20.90	1233	16.40	19.04
1192	13.70	5.15	1234	16.48	5.95

1235	16.50	21.48	1276	20.68	18.24
1236	16.78	20.90	1277	20.72	5.27
1237	16.92	5.92	1278	21.03	24.73
1238	17.20	3.80	1279	21.19	17.00
1239	17.40	8.65	1280	21.38	18.80
1240	17.50	11.80	1281	21.50	5.60
1241	17.50	4.90	1282	21.61	21.40
1242	17.50	22.00	1283	21.75	24.53
1243	17.52	0.80	1284	21.78	24.83
1244	17.52	3.52	1285	21.80	26.10
1245	17.75	13.65	1286	21.92	25.22
1246	17.75	4.78	1287	22.20	22.60
1247	17.78	17.50	1288	23.25	20.96
1248	17.80	3.07	1289	23.32	21.30
1249	17.82	15.30	1290	23.37	17.55
1250	17.92	8.88	1291	23.40	17.00
1251	17.98	24.56	1292	24.00	24.30
1252	18.00	20.60	1293	24.02	24.40
1253	18.15	13.20	1294	24.20	23.00
1254	18.40	2.20	1295	24.40	19.70
1255	18.45	20.83	1296	24.45	23.60
1256	18.58	8.52	1297	24.70	21.10
1257	18.65	12.33	1298	25.00	19.38
1258	18.77	11.10	1299	25.08	17.05
1259	18.97	25.62	1300	25.17	19.98
1260	18.98	7.60	1301	25.88	22.98
1261	19.20	18.28	1302	25.90	21.25
1262	19.25	15.55	1303	26.00	21.30
1263	19.25	26.00	1304	26.10	21.30
1264	19.25	20.40			
1265	19.28	4.20			
1266	19.30	8.30	The X and Y coordinates refer to the left hand bottom corner of Hodge-Wright Chart 47 V		
1267	19.40	16.50			
1268	19.45	21.40			
1269	19.70	17.28			
1270	19.80	25.60	1305	5.05	24.12
1271	19.88	23.40	1306	6.05	23.42
1272	19.99	20.90	1307	6.58	24.22
1273	20.00	19.80	1308	6.82	23.85
1274	20.66	25.16	1309	13.85	23.85
1275	20.67	20.20	1310	14.43	24.10

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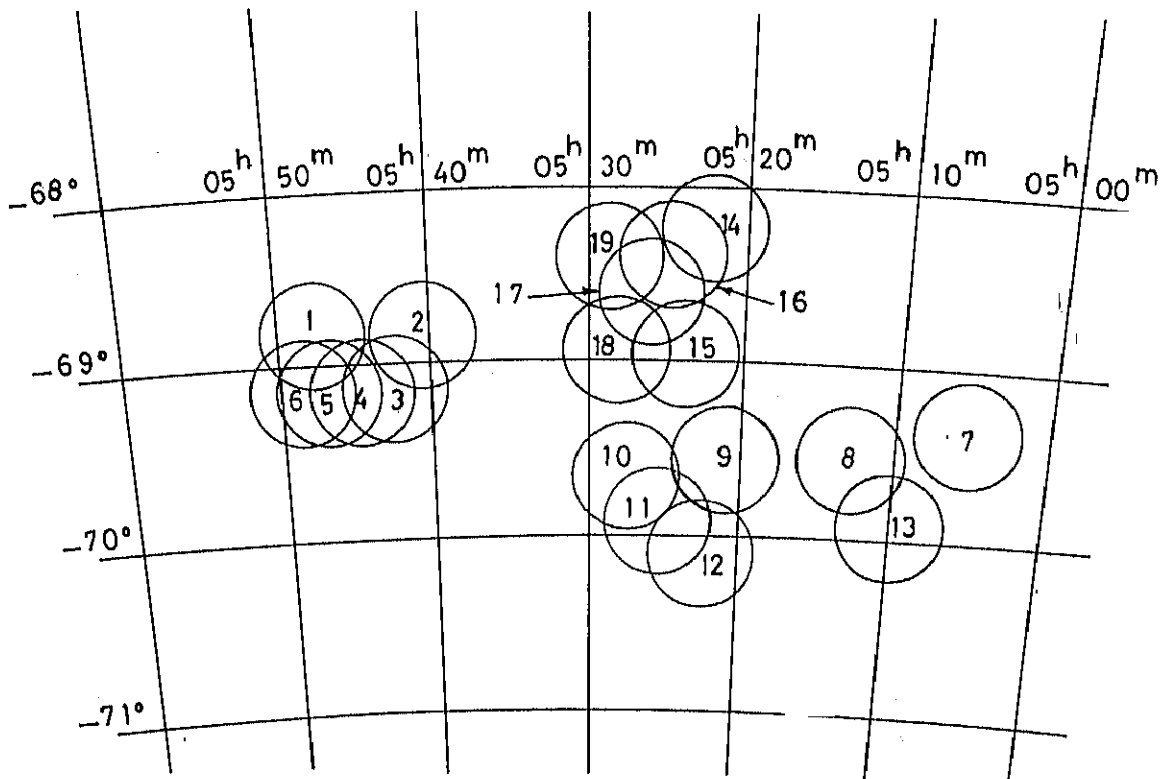


Fig. 1. LMC fields 1 to 19.

Fig. 1. LMC fields 1 to 19. Results of our survey of red stars in fields 1 to 13 are given in papers I and II. The present study includes fields 14 to 19.

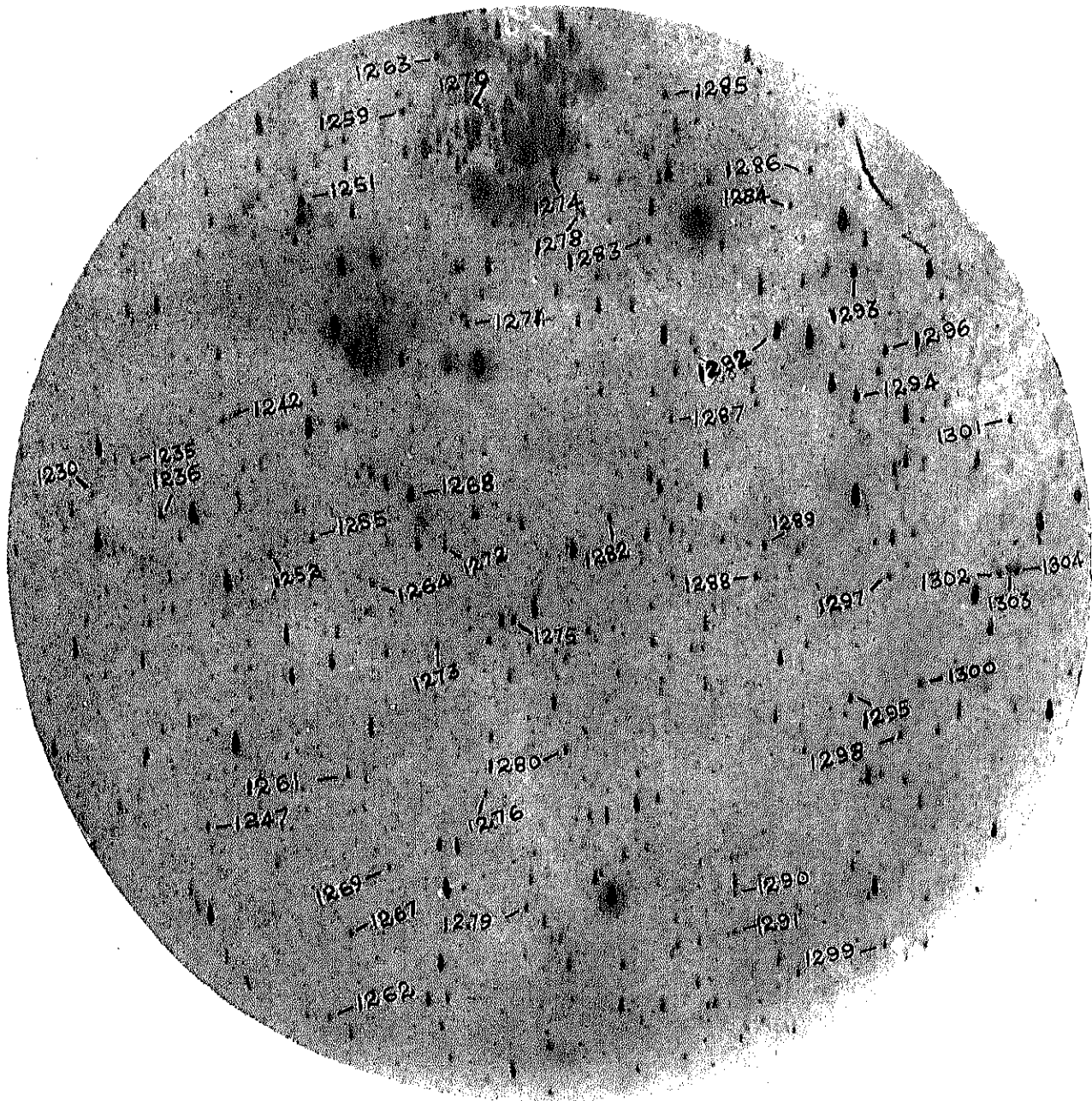


Fig. 2. Red stars in the direction of LMC field No. 14. Field center R.A. $0^{\text{h}}52^{\text{m}}.3$; DEC. $-68^{\circ}14' .3$ (1975). North is at the top and east towards the left,

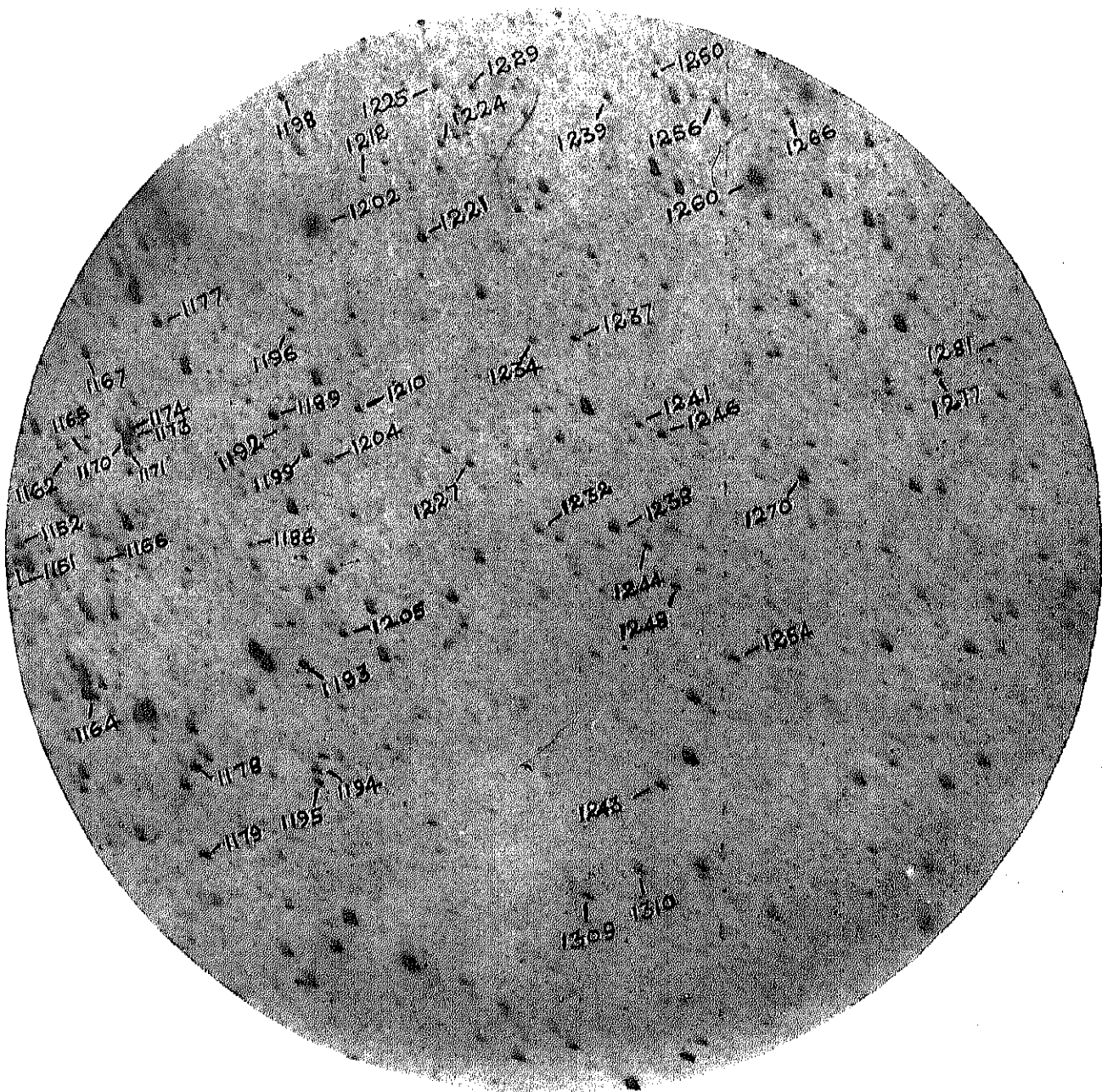


Fig. 3. Red stars in the direction of LMC field No. 15. Field center : R.A. $0^{\text{h}} 24^{\text{m}}.4$; DEC. $-68^{\circ} 59'.3$ (1975). North is at the top and east towards the left.

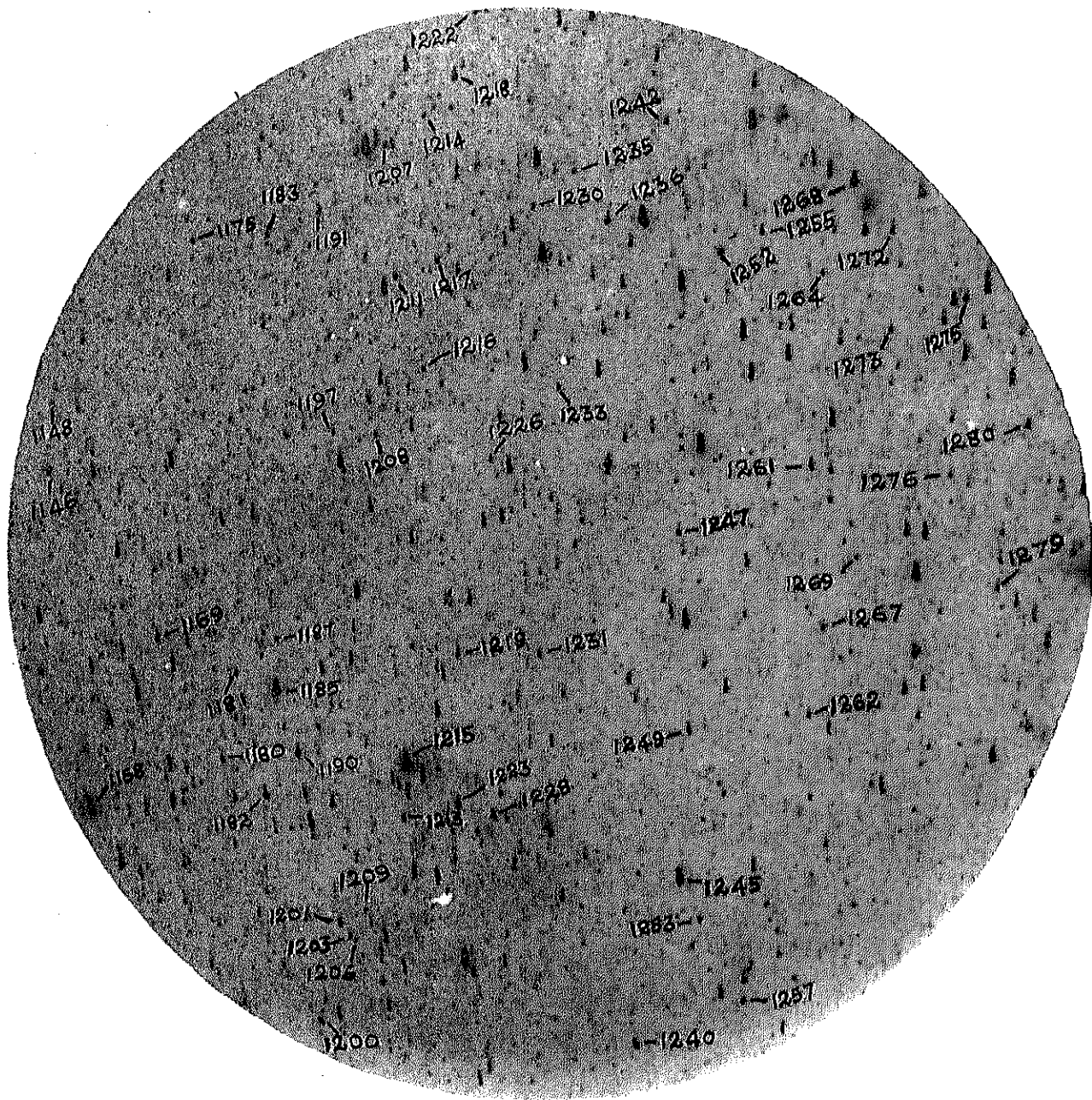


Fig. 4. Red stars in the direction of LMC field No. 16. Field center : R.A. $0^h 5 24^m .8$; DEC. $-68^\circ 24' .4$ (1975), North is at the top and east towards the left.

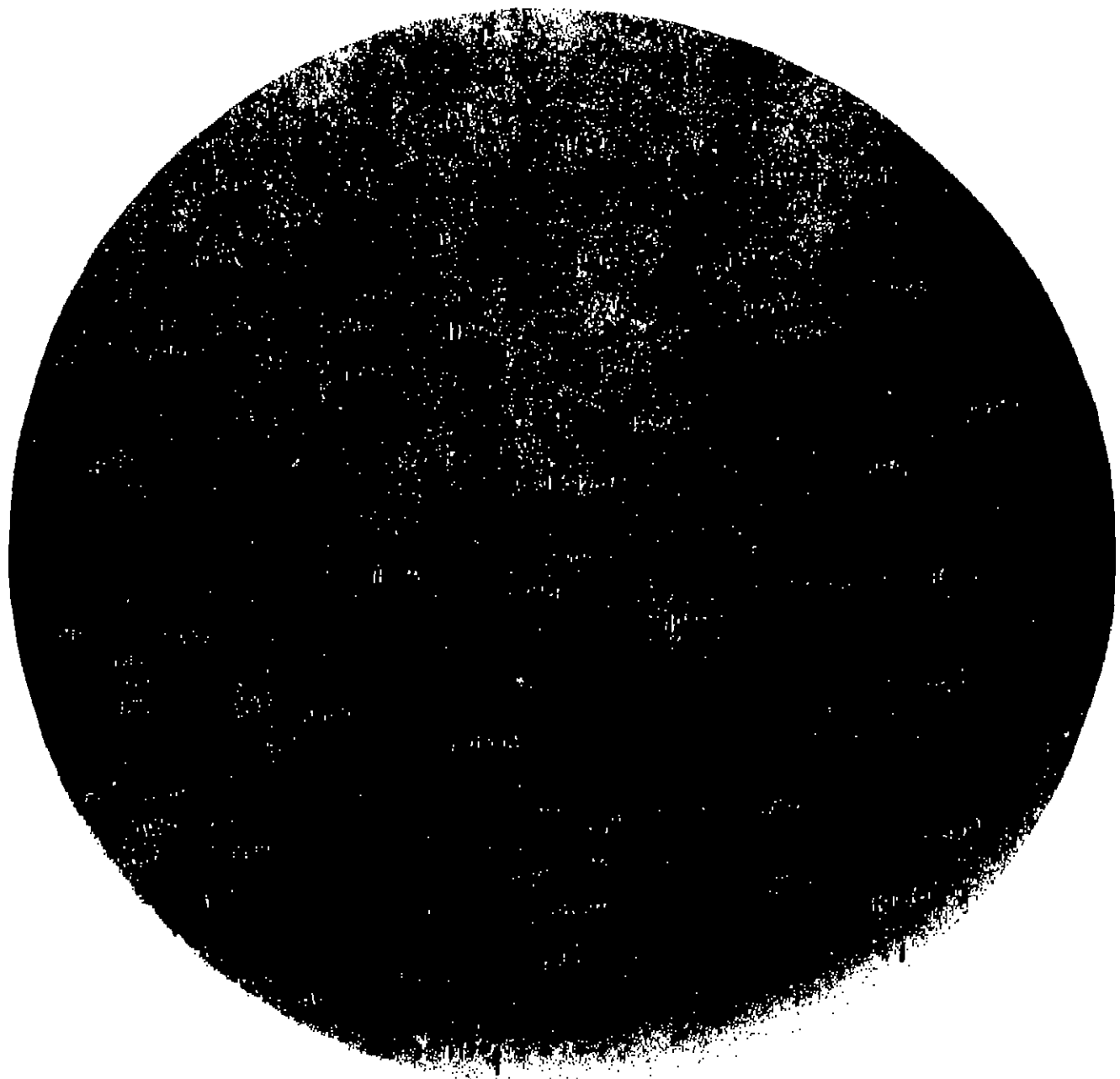


Fig. 6: Red stars in the direction of LMC field No. 17. Field center: RA. $0^h 5 26^m.7$; DEC. $-68^{\circ} 37'. 7$ (1975). North at the top and east towards the left.

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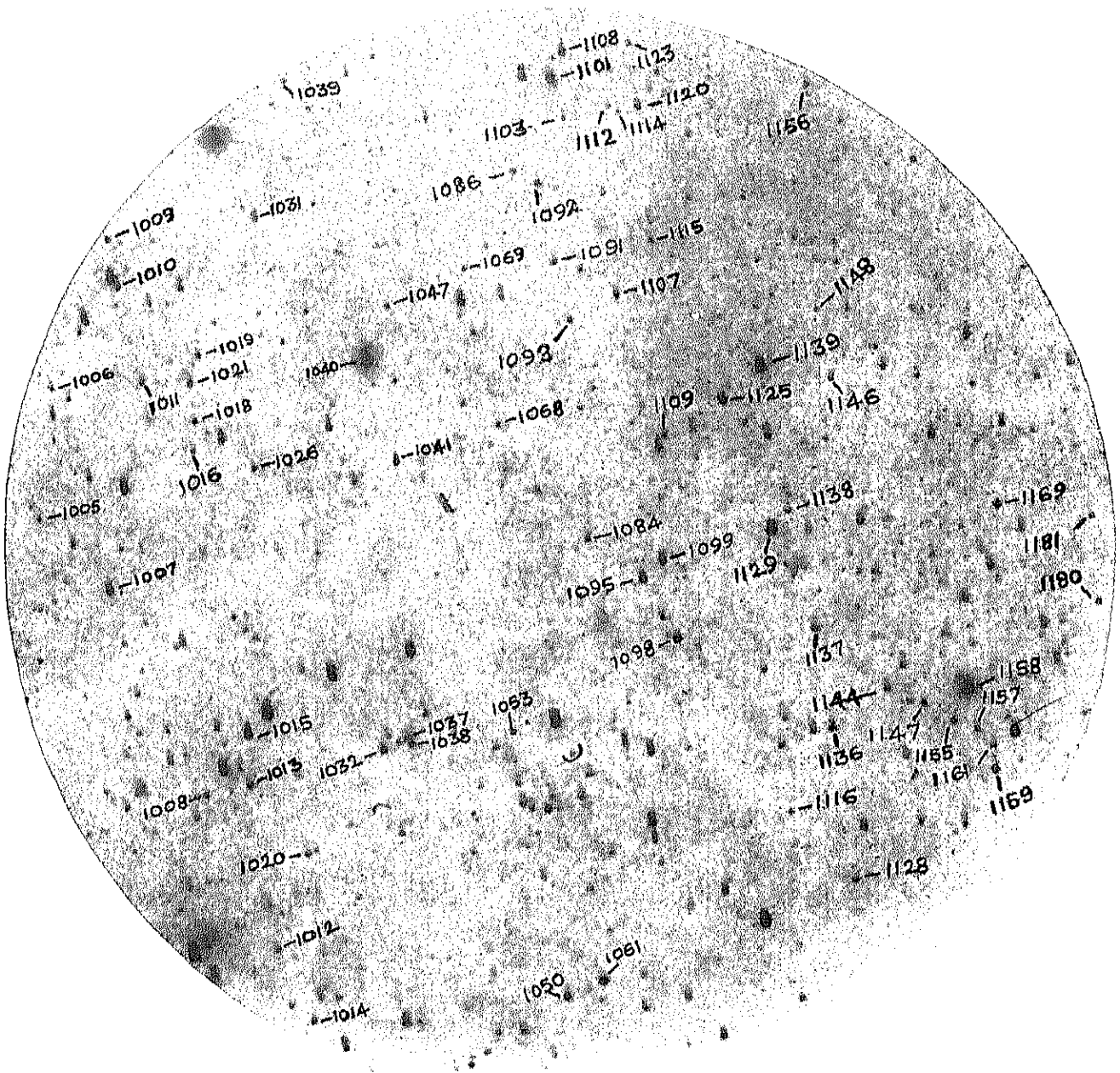


Fig. 7. Red stars in the direction of LMC field No. 19. Field center ; R.A. $0^{\text{h}}52^{\text{m}}8^{\text{s}}$; DEC. $-68^{\circ}25' .7$ (1975). North is at the top and east towards the left.