

II. CURRENT RADIAL-VELOCITY PROGRAMS FOR STARS BRIGHTER THAN NINTH MAGNITUDE

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This report is prepared from information communicated by a number of astronomers and from data published in the Draft Reports (see volume XIA). Limitations of space and time demand such condensed accounts of programs that they can only be mentioned with a minimum of description.

The report is summarized very briefly in the accompanying tabulation. The numbers of stars, spectral types, magnitudes, instrumentation, etc., were included where available. An effort was made to include programs which might be of interest, even indirectly, to the subject of the Joint Discussion; possibly this aspect of the tabulation has been overdone. Excluded from the summary are: programs recently completed which have been published; programs of binary stars and variable stars as such; programs of stars of special interest unless such programs are extensive. This report is restricted to stars brighter than ninth magnitude but some fainter stars are included if they are part of a program containing bright stars. Objective prism programs are not included.

Twelve institutions, at least, are carrying out radial-velocity programs on the brighter stars. There are only a few long-term programs that include large numbers of stars distributed generally over the sky, the emphasis being placed on shorter programs having specific objectives. It is noted that several observatories are making spectroscopic observations of galactic clusters and associations; several programs are directed at improving our knowledge of stellar velocities perpendicular to the galactic plane. The former poverty of radial-velocity data of stars in the southern sky has vanished under the energetic attack of the Radcliffe, Cape, and Mount Stromlo observatories.

It is estimated that about 5000 stars, mostly brighter than ninth magnitude, are included in current radial-velocity programs. Approximately three-quarters of these are in general programs which will add substantially to the material now available for the study of stellar dynamics.

The tabulation "Summary of Radial-Velocity Programs" is given on the following two pages, 408 and 409.

Summary of Radial-Velocity Programs

Stars Brighter than 9th Magnitude

Ref. No.	Institution	Program	Details
(1) <i>General Programs</i>			
1	Berkeley Astr. Dept.	N. Gal. Polar Cap	
2	David Dunlap	(A) Kapteyn $6^\circ \times 6^\circ$ zones	90 stars; A 0 and later; 7.5 to 8.0; 0 ^h to 6 ^h ; north of 15°
3	„	(B) Kapteyn $8^\circ \times 8^\circ$ zones	106 stars; A 0 and later; 7.6 and brighter; 9 ^h to 18 ^h ; north of 15°
4	Dominion Astrophysical	(A) Faint O-B stars	550 stars; O 8 to B 5; 7.6 to 8.6; north of 20°
5	„	(B) N. Gal. Polar Cap	120 stars; A 0 to F 5; 9.0 and brighter; within 10° of pole
6	Kitt Peak	A stars in N. Gal. Polar Cap	
7	Perkins	<i>Mira</i> stars with new p.m.	18 stars 7.5; to 9 at max.
8	Radcliffe	(A) Distant B stars	150 stars; OB
9	„	(B) Long-period variables	106 stars; Me
10	Royal Greenwich	Bright northern A stars	450 stars; B 9 to A 5; 6.4 and brighter; north of equator
11	Royal Observatory, Cape	(A) Stars with large π , large p.m., high velocity	1850 stars; F to M; 6.0 to 9.0
12	„	(B) S. Gal. Polar Cap	120 stars; A type; 6.0 to 9.0
13	Mount Stromlo	Fundamental southern stars	—
14	Mt. Wilson—Palomar	(A) F to K sub-dwarfs	—
15	„	(B) Faint OB stars	25 stars; longitude 345° to 35°
(2) <i>Special Programs</i>			
1	Kitt Peak	Orion Trapezium stars	
2	Marseilles and Haute Provence	(A) Standard velocity stars	
3	„	(B) High-velocity stars	
4	„	(C) Interstellar Lines	
5	Mt. Stromlo	(A) Stars in S.A. 193	50 stars; B and A
6	„	(B) High-velocity stars	155 stars
7	„	(C) Suspected sub-dwarfs	30 stars
8	Royal Greenwich	Stars of special interest. Stars of interest for group motion	
(3) <i>Clusters and Associations</i>			
1	Dominion Astrophysical	Clusters and Associations	5 clusters; 60 O to A stars 3 Associations; 60 O to B stars; fainter limit 11 mag.
2	Kitt Peak	Clusters and Associations	2 clusters; 50 stars; I Cephei; 20 stars
3	Mt. Stromlo	Clusters and Associations	2 clusters; 65 stars; I Scorpio
4	Mt. Wilson and Palomar	Clusters and Associations	NGC 6633; 45 stars; II Puppis
5	„	Cepheids in clusters	NGC 7790; 3 Cepheids

Summary of Radial-Velocity Programs

Stars Brighter than 9th Magnitude

Ref. No.	Telescope Dispersion	Status	Application
<i>(1) General Programs</i>			
1	36-in. refl. 125 Å/mm.	—	Accel. perp. to Gal. Plane
2	74-in. refl. 33 and 66 Å/mm.	Two-thirds complete	To supply r.v. of faint stars near zones.
3	74-in. refl. 66 Å/mm.	Observing and measuring complete	To supply r.v. of faint stars near zones.
4	73-in. refl. 51 Å/mm.	Observing and measuring complete	Gal. rotation, peculiar motions, interstellar calcium
5	„	90% complete	Accel. perp. to Gal. Plane
6	36-in. refl. 125 Å/mm.		Accel. perp. to Gal. Plane
7	200- and 100-in. refl. 13 to 30 Å/mm.	Complete, 1962	To give reliable space motions
8	74-in. 49 and 84 Å/mm.	Complete, 1962	Gal. rotation; dynamics of Galaxy
9	„	Complete, 1961	Motions of L.P.V.
10	36-in. refl. 120 Å/mm.	Observing 80% complete; measuring 20% complete	To improve r.v. of northern A stars
11	74-in. refl. 21 to 84 Å/mm.	55% complete	Motions of near stars and high-velocity stars
12	„	Completed	Accel. perp. to Gal. Plane
13			
14			
15			
<i>(2) Special Programs</i>			
1	36-in. refl. 125 Å/mm.	Partially complete	Motions of faint stars
2	47-in. refl., 76-in. refl.		Improvement of wave-length tables
3	„		
4	„		
5			
6		20% complete	r.v., spectral class
7			r.v. and luminosities
8	74-in. refl., 100-in. refl. 6.8, 10, 15 Å/mm.	Kept up to date; continuing	Accurate determination of r.v.
<i>(3) Clusters and Associations</i>			
1	73-in. refl. 51 Å/mm; 90 Å/mm.	30% complete	r.v.; spectral type; absolute mag.; membership; internal motions
2	36-in. refl.; 125 Å/mm.	About 50% complete	r.v.; motions; membership; galactic rotation
3			r.v.; spectral class; absolute mag.; motions
4			r.v.; membership; rot. vel. r.v.
5			r.v.; membership