# RADIAL VELOCITIES OF 204 STARS IN THE REGION OF THE HYADES*

RALPH E. WILSON
Mount Wilson Observatory
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ABSTRACT

This investigation completes the determination of the radial velocities of all suggested members of the Taurus cluster brighter than 10.0 visual magnitude, with seven fainter stars. Of the 204 stars recently observed at Mount Wilson for radial velocities, 93, all located within 15° of the cluster center, are classified as definitive members.

The motions of the members of the nearer star clusters, such as the Hyades, Pleiades, and Praesepe, constitute one of the best sets of data available for the determination of stellar distances. If the population is large, the cluster parallaxes in combination with reliable magnitudes and spectral classifications become very useful in studies of the relation between absolute magnitude and spectral type.

The early Groningen photographic surveys of the Hyades,[1] though subject to considerable systematic and accidental errors, suggested a fairly large cluster population. Under the stimulus of L. Boss's classical study[2] of the motions of the brighter stars, a number of investigators have devoted considerable time during the last thirty years to a search for additional members.[3] As a result, by 1941 some three hundred stars were suggested as "certain," "probable," or "doubtful" members of the Taurus cluster. The principal criteria in the selection of these stars were proper motions of about 0".1 per year in the general direction of the Boss convergent. Rather large departures were allowed, especially among the stars listed as "probable" or "doubtful," and among these appear a number of faint early-type stars for which actual cluster membership would entail luminosities not at all in accord with those generally associated with their spectra. The question of cluster membership is further complicated by the proximity of the Taurus convergent to that of Kapteyn's stream I, which is especially pronounced among stars of types A and F, and by the possibility that the cluster itself may share in the motion of the larger stream. It had been clear for some time that the proper motions alone do not suffice to establish cluster membership, especially for stars at considerable distances from the center, and that additional information concerning the radial velocities was highly desirable.

J. H. Moore's catalogue[4] gives radial velocities for 68 cluster stars, a few of them, however, being based on one plate only. In the decade following its publication only ten more velocities were published. In 1941, however, I found in the Mount Wilson files spectrograms of 89 additional stars and decided to complete the determination of the velocities of all the stars in the Hyades list brighter than visual magnitude 10.0. Two plates were deemed sufficient if the measures agreed reasonably well with each other and with the cluster velocity; in all other cases three or more plates were secured. All the plates were

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[1] J. C. Kapteyn and W. de Sitter, *Groningen Pub.*, No. 14, 1904.

[2] *A. J.*, **26**, 31, 1908.

[3] For a history of that period and a complete bibliography see J. M. Ramberg, *Stockholms Obs. Ann.*, Vol. **13**, No. 9, 1941.

[4] *Pub. Lick Obs.*, Vol. **18**, 1932.

taken with a one-prism spectrograph attached to the 60-inch reflector. Two cameras were used, the brighter stars being observed with an 18-inch camera giving a dispersion of 38 A/mm at $H\gamma$, the fainter with a 9-inch camera, dispersion 75 A/mm.

The radial velocities of the 204 stars in Table 1 are based upon 605 plates, 75 per cent of which were secured in the period 1942–1946. All the plates of this epoch were measured by the writer. The headings of the columns of the table are largely self-explanatory. The magnitudes are mainly (*a*) photovisual magnitudes on the International System by Eric Holmberg[5] for stars within 4° of the center, and (*b*) Harvard Draper magnitudes, further from the center. Among the stars observed are seven fainter than the limit set when the program was begun. The classifications of spectra were made by the writer on the Mount Wilson system. The proper motions are compilations by the writer, based upon a number of sources, all of which were roughly reduced to the system of the *Albany General Catalogue*.[6] The probable errors of the radial velocities were computed from the relation

$$r = 0.67\sqrt{\frac{v\,v}{m\,(m-1)}}.$$

Of these stars, 93 are considered to be cluster members, 8 others are probable, and 32 must be considered, mainly on evidence other than the radial velocities, as doubtful. On the basis of the radial velocities alone, 71 of the stars may be eliminated from further consideration as cluster members. Among these are all the faint stars with early-type spectra and nearly all the stars situated more than 15° from the center. The probable spectroscopic binaries number 23, of which only 6, all located near the center, appear to be members; 7 seem to show two spectra. The most interesting of the binaries is BD+16°516 (9.2, G9), which from measures on five plates shows a velocity range of 242 km/sec. The velocities of both components of 5 visual binaries were measured. Only 1 of these, HD 26015, is considered a definitive member, although 3 others—HD 20430–20439, HD 21663, and HD 33204—are probable outliers. Eight of the stars have large velocities (Table 2). Two of these, though widely separated, may have common motion.

A discussion of the motions and absolute magnitudes of the members of the Taurus cluster will appear soon.

[5] *Lund Medd.*, Ser. II, No. 113, 1944.

[6] *Carnegie Inst. Washington Pub.* No. 468, 1938.

TABLE 1

RADIAL VELOCITIES OF 204 STARS IN THE HYADES REGION

| BD | HD | (1950) R.A. | (1950) Dec. | $m_v$ | Sp. | $\mu$ | $\theta$ | $\rho$ $r$ (Km/Sec) | Pl. | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 10° 374.. | 17663 | $2^h47^m7$ | +10° 25′ | 9.3 | G8 | 0″.144 | 92° | + 54.9±1.0 | 3 | |
| 29 503.. | ..... | 54.8 | +29 28 | 9.2 | G8 | .206 | 106 | + 25.8±0.5 | 3 | D |
| 11 456.. | 20278 | 3 13.2 | +11 26 | 7.9 | G1 | .193 | 91 | + 43.6±1.5 | 4 | D |
| 7 493.. | 20430 | 14.8 | + 7 29 | 7.4 | G0 | .187 | 92 | + 31.1±0.8 | 3 | P |
| 7 494.. | 20439 | 14.9 | + 7 30 | 7.7 | G1 | .194 | 92 | + 31.2±2.0 | 4 | P |
| 19 505.. | 20600 | 3 16.6 | +19 32 | 8.4 | F9 | .102 | 97 | + 33.0±1.8 | 3 | D |
| 11 462.. | 20717 | 17.9 | +12 10 | 7.3 | F6 | .149 | 83 | + 44.8±1.8 | 4 | D |
| 8 496.. | 20727 | 17.9 | + 8 51 | 8.3 | G3 | .301 | 103 | + 11.1±0.6 | 3 | |
| 25 545.. | 21168 | 22.8 | +25 41 | 8.6 | F8 | .087 | 116 | + 56: var. | 4 | 1 |
| 19 547.. | 21663A | 27.6 | +19 56 | 7.9 | G5 | .170 | 109 | + 25.2±1.5 | 4 | P |
| ..... | 21663B | 3 27.6 | +19 56 | 9.5 | K2 | ..... | ..... | + 28.3±0.5 | 3 | P |
| 23 465.. | ..... | 29.9 | +23 31 | 9.0 | K0 | .168 | 102 | + 32.7±0.5 | 2 | P |
| 10 461.. | 22254 | 32.6 | +11 13 | 8.3 | F9 | .180 | 95 | + 63.4±1.9 | 3 | |
| 19 562.. | 22328 | 33.5 | +19 54 | 7.6 | F6 | .101 | 114 | + 34.1±0.4 | 3 | D |
| 20 598.. | ..... | 34.6 | +21 11 | 9.0 | K0 | .159 | 103 | + 35.4±1.1 | 3 | H |
| 18 514.. | ..... | 3 34.6 | +18 27 | 8.6 | F8 | .147 | 96 | + 41.8±1.9 | 4 | H |
| 26 595.. | ..... | 37.1 | +26 48 | 9.1 | G8 | .156 | 131 | −198.4±0.4 | 3 | |
| 3 512.. | 22917 | 38.4 | + 3 25 | 9.3 | F8 | .138 | 86 | + 18.0±1.9 | 4 | |
| 26 601.. | 23007 | 39.5 | +26 26 | 7.8 | K0 | .100 | 112 | + 33.0±1.9 | 4 | D |
| 27 555.. | ..... | 41.4 | +28 03 | 9.0 | G2 | .086 | 134 | + 10.4±1.7 | 3 | |
| 24 550.. | 23375 | 3 42.6 | +24 19 | 8.6 | A8 | .078 | 132 | + 19.8±1.6 | 4* | 2 |
| 25 615.. | 23488 | 43.4 | +25 43 | 8.7 | A7 | .078 | 152 | + 3.6±2.7 | 4 | |
| 22 550.. | 23514 | 43.7 | +22 47 | 9.2 | F8 | .064 | 119 | + 12.0±0.4 | 3 | |
| 9 494.. | 23841 | 45.8 | + 9 30 | 7.0 | G8 | .072 | 80 | − 79.8±2.2 | 3 | |
| 23 556.. | 23822 | 46.0 | +23 42 | 6.6 | F0 | .077 | 133 | + 18.6±2.1 | 4 | |
| 22 575.. | 23965 | 3 47.1 | +22 21 | 7.9 | F7 | .179 | 111 | + 11.7±0.8 | 3 | |
| 16 516.. | ..... | 47.4 | +17 06 | 9.2 | G9 | .104 | 73 | + 21: var. | 5 | 3 |
| 23 571.. | ..... | 48.0 | +23 46 | 9.5 | K5 | .154 | 108 | + 38.8±1.7 | 5 | H |
| 21 544.. | ..... | 49.8 | +21 50 | 9.5 | G0 | .120 | 126 | + 58.2±2.7 | 3 | 4 |
| 26 633.. | 24301 | 49.9 | +26 31 | 8.0 | G1 | .163 | 132 | + 26.6±1.0 | 3 | |
| 27 589.. | 24365 | 3 50.7 | +27 59 | 7.8 | G5 | .094 | 95 | + 21.7±0.8 | 3 | |
| 16 529.. | ..... | 52.3 | +16 51 | 9.9 | K2 | .172 | 102 | + 39.1±1.8 | 2 | H |
| 22 596.. | 24570 | 52.4 | +23 13 | 8.6 | K0 | .103 | 93 | + 42.9±0.6 | 3 | D |
| 26 645.. | 24690 | 53.4 | +26 36 | 9.2 | A8 | .082 | 116 | + 8.1±1.0 | 3 | |
| 26 646.. | ..... | 53.9 | +27 10 | 9.1 | G9 | .090 | 96 | + 34.2±0.4 | 2 | D |
| 22 608.. | 24844 | 3 54.8 | +22 47 | 9.1 | K0 | .153 | 78 | + 27.1±0.6 | 3 | |
| 24 603.. | 24997 | 56.2 | +24 55 | 9.2 | F8 | .106 | 123 | − 23.6±0.2 | 3 | |
| 24 605.. | 25065 | 56.9 | +24 33 | 8.7 | G0 | .095 | 116 | + 26.2±0.3 | 3 | D |
| 13 625.. | 25153 | 57.5 | +14 10 | 7.7 | F5 | .065 | 101 | + 39.0±1.0 | 3 | D |
| 19 641.. | ..... | 57.7 | +20 14 | 8.6 | G2 | .157 | 108 | + 37.6±2.0 | 2 | H |
| 22 626.. | 25532 | 4 01.2 | +23 16 | 8.3 | F6 | .134 | 128 | −113.0±0.3 | 3 | |
| 25 674.. | ..... | 02.9 | +25 40 | 9.0 | G8 | .137 | 103 | + 24.0±1.6 | 4 | D |
| 15 582.. | 25825 | 03.3 | +15 34 | 7.9 | G2 | .114 | 95 | + 35.6±1.5 | 3 | H |
| 14 657.. | 26015A | 04.9 | +15 02 | 5.9 | F2 | .136 | 100 | + 34.9±1.7 | 2* | H |
| ..... | 26015B | 04.9 | +15 02 | 8.7 | G7 | ..... | ..... | + 40.8±0.3 | 2 | H |
| 13 647.. | 26091 | 4 05.5 | +13 25 | 8.8 | K1 | .074 | 88 | + 20.3±0.9 | 3 | |
| 28 624.. | 26090 | 05.8 | +29 03 | 8.5 | G2 | .101 | 99 | + 41.3±1.8 | 3 | D |
| 18 594.. | 26345 | 07.8 | +18 18 | 6.6 | F6 | .120 | 110 | + 33.6±2.1 | 2* | H |
| 0 711.. | 26623 | 10.0 | + 0 38 | 9.2 | F7 | .077 | 85 | + 25.5±1.5 | 3 | |
| 16 570.. | ..... | 10.3 | +16 40 | 9.1 | G2 | 0.153 | 109 | − 7.3±1.8 | 3 | |

TABLE 1—*Continued*

| BD | HD | (1950) R.A. | (1950) Dec. | $m_v$ | Sp. | $\mu$ | $\theta$ | $\rho$ $r$ (Km/Sec) | Pl. | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 23° 649.. | 26736 | 4h11m5 | +23° 29′ | 8.0 | G4 | 0″.129 | 106° | + 42.2±2.2 | 4 | H |
| 22 657.. | 26737 | 11.5 | +22 20 | 7.0 | F4 | .101 | 108 | + 37.9±1.7 | 4 | H |
| 14 673.. | 26756 | 11.6 | +14 30 | 8.6 | G5 | .129 | 101 | + 37.9±1.3 | 3 | H |
| 12 566.. | 26767 | 11.7 | +12 20 | 8.3 | G3 | .115 | 92 | + 38.6±1.8 | 3 | H |
| 10 551.. | 26784 | 11.8 | +10 35 | 7.1 | F7 | .125 | 96 | + 36.6±1.7 | 3 | H |
| 21 608.. | ..... | 4 12.3 | +22 11 | 9.1 | K0 | ..... | ..... | + 22.0±1.1 | 3 | |
| 20 721.. | 26874 | 12.8 | +20 42 | 8.1 | G6 | .121 | 113 | + 27.7±0.8 | 3 | H: |
| 15 603.. | 26911 | 12.9 | +15 17 | 6.4 | F5 | .123 | 106 | + 37.0±1.8 | 4* | H |
| 15 604.. | ..... | 13.1 | +15 42 | 9.5 | G9 | .078 | 134 | + 56.4±0.2 | 3 | |
| 21 612.. | ..... | 13.6 | +21 47 | 8.9 | G7 | .119 | 109 | + 40.7±0.3 | 2 | H |
| 4 666.. | 27089 | 4 14.3 | + 4 25 | 8.6 | F8 | .172 | 87 | + 59.8±0.3 | 3 | |
| 18 613.. | ..... | 14.4 | +19 13 | 9.0 | G7 | .102 | 125 | + 4.4±2.7 | 3 | 5 |
| 17 703.. | 27149 | 15.1 | +18 07 | 7.7 | G4 | .116 | 112 | + 44.0±2.7 | 4 | 6, H |
| 19 694.. | 27250 | 16.0 | +19 47 | 8.6 | G7 | .101 | 104 | + 40.6±1.6 | 2 | H |
| 17 707.. | 27282 | 16.3 | +17 24 | 8.5 | G5 | .098 | 98 | + 40.0±0.2 | 2 | H |
| 15 612.. | 27371 | 4 16.9 | +15 31 | 3.9 | G8 | .121 | 102 | + 38.5±1.4 | 4* | H |
| 13 662.. | 27372 | 16.9 | +14 03 | 7.8 | G8 | .212 | 160 | − 16.6±0.8 | 3 | |
| 23 675.. | 27370 | 17.1 | +23 28 | 7.2 | G6 | .148 | 108 | + 8.8±0.8 | 3 | |
| 13 663.. | 27397 | 17.1 | +13 55 | 5.6 | F1n | .118 | 101 | + 40: var. | 3* | 7, H |
| 18 623.. | 27406 | 17.3 | +19 07 | 7.7 | F9 | .125 | 106 | + 38.7±1.5 | 3 | H |
| 18 624.. | 27429 | 4 17.5 | +18 37 | 6.2 | F3 | .118 | 114 | + 37.6±0.5 | 6 | 8, H |
| 14 682.. | 27459 | 17.8 | +14 59 | 5.3 | A9n | .113 | 102 | + 39.7±2.8 | 3* | H |
| 13 665.. | 27483 | 18.1 | +13 45 | 6.3 | F4 | .118 | 102 | + 37.0±0.9 | 6 | 9, H |
| 18 629.. | 27534 | 18.6 | +18 18 | 7.0 | F5 | .111 | 108 | + 36.5±2.0 | 4 | H |
| 14 685.. | ..... | 18.7 | +14 44 | 10.1 | G3 | .135 | 120 | + 47.5±2.1 | 4 | D |
| 14 687.. | 27561 | 4 18.8 | +14 18 | 6.7 | F6 | .120 | 103 | + 38.4±0.5 | 2* | H |
| 5 636.. | 27610 | 19.0 | + 5 15 | 9.0 | F3 | .072 | 79 | + 22.4±1.4 | 4 | |
| 13 668.. | 27628 | 19.2 | +13 58 | 5.7 | A4 | .117 | 102 | + 37.7 var. | 4* | H |
| 31 769.. | ..... | 19.9 | +32 06 | 8.8 | F8 | .104 | 133 | + 79.4±1.0 | 3 | |
| 16 585.. | 27685 | 19.9 | +16 40 | 7.9 | G5 | .145 | 106 | + 33.2±1.0 | 2 | H |
| 13 671.. | ..... | 4 19.9 | +14 08 | 10.1 | G3 | .107 | 107 | + 39.0±0.4 | 2 | H |
| 21 635.. | 27732 | 20.4 | +21 16 | 9.1 | G7 | .105 | 115 | + 38.8±1.4 | 2 | H |
| 19 708.. | ..... | 20.4 | +19 32 | 9.1 | G7 | .094 | 109 | + 36.4±1.2 | 2 | H |
| 24 654.. | 27731 | 20.5 | +24 17 | 7.2 | F6 | .106 | 114 | + 33.6±1.2 | 2* | H |
| 15 616.. | ..... | 20.5 | +15 39 | 10.7 | K5 | .130 | 104 | + 48.1±0.3 | 2 | H |
| 14 691.. | 27771 | 4 20.7 | +14 33 | 9.3 | G8 | .107 | 98 | + 44.2±1.5 | 2 | H |
| 21 641.. | 27808 | 21.3 | +21 37 | 8.0 | F8 | .127 | 117 | + 33.4±1.0 | 2 | H |
| 14 693.. | 27836 | 21.3 | +14 39 | 7.7 | G1 | .106 | 102 | + 37.9±0.9 | 3 | H |
| 17 715.. | ..... | 21.4 | +17 53 | 10.0 | K4 | .111 | 97 | + 46.9±1.0 | 3 | H |
| 16 589.. | 27835 | 21.4 | +16 16 | 8.3 | G0 | .083 | 100 | + 38.4±0.6 | 3 | H |
| 17 716.. | ..... | 4 21.5 | +17 20 | 10.0 | K0 | .028 | 78 | + 2.1±1.3 | 3 | |
| 16 593.. | ..... | 22.1 | +16 52 | 10.4 | K2 | .087 | 101 | + 43.1±1.9 | 3 | H |
| 23 692.. | 27972 | 22.8 | +23 26 | 8.9 | F8 | .082 | 121 | + 27.7±2.2 | 3 | D |
| 17 721.. | 27990 | 22.9 | +17 55 | 9.1 | K0 | .098 | 102 | + 38.0±0.5 | 2 | H |
| 17 722.. | 28007 | 23.1 | +17 20 | 7.6 | F2 | .050 | 107 | + 30: var. | 4 | 10 |
| 21 644.. | 28033 | 4 23.3 | +21 22 | 7.5 | F9 | .111 | 108 | + 42: var. | 4 | 11, H |
| 4 690.. | 28069 | 23.3 | + 5 01 | 7.2 | F6 | .097 | 85 | + 31.1±0.3 | 3 | H |
| 16 598.. | 28068 | 23.5 | +16 44 | 8.2 | G1 | .099 | 99 | + 40.4±2.7 | 4 | H |
| 13 684.. | ..... | 24.6 | +14 09 | 10.6 | K5 | .118 | 112 | + 38.7±0.1 | 2 | H |
| 11 614.. | 28237 | 25.0 | +11 39 | 7.4 | G0 | 0.138 | 92 | + 42.2±1.1 | 2 | H |

TABLE 1—*Continued*

| BD | HD | (1950) R.A. | (1950) Dec. | $m_v$ | Sp. | $\mu$ | $\theta$ | $\rho$ $r$ (Km/Sec) | Pl. | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 13° 685.. | 28258 | 4h25m2 | +13°46′ | 9.2 | K0 | 0″.115 | 93° | + 42.0±0.6 | 2 | H |
| 19 727.. | 28291 | 25.6 | +19 38 | 8.4 | G7 | .123 | 114 | + 36.4±0.6 | 2 | H |
| 18 640.. | 28305 | 25.7 | +19 04 | 3.8 | G9 | .118 | 109 | + 38.1±0.6 | 3* | H |
| 16 606.. | 28344 | 26.0 | +17 10 | 7.8 | G2 | .105 | 106 | + 40.5±1.4 | 3 | H |
| 15 633.. | 28363 | 26.1 | +16 03 | 6.7 | F8 | .111 | 106 | + 45: var. | 4 | 12, H |
| 26 722.. | ..... | 4 26.4 | +26 34 | 9.0 | G7 | .096 | 117 | + 37.3±1.9 | 3 | H |
| 17 731.. | 28394 | 26.5 | +17 26 | 7.0 | F8 | .094 | 107 | + 33.2±2.4 | 2* | H |
| 17 732.. | 28406 | 26.6 | +17 45 | 7.0 | F7 | .109 | 104 | + 34.4±0.1 | 2* | H |
| 17 734.. | ..... | 26.6 | +17 47 | 9.0 | G7 | .116 | 107 | + 44.8±0.6 | 2 | H |
| 15 634.. | ..... | 26.7 | +16 08 | 10.5 | K5 | .097 | 99 | + 45.3±0.5 | 2 | H |
| 13 688.. | 28424 | 4 26.7 | +13 48 | 7.8 | G9 | .138 | 99 | + 96.8±1.5 | 6 | |
| 16 609.. | 28462 | 27.1 | +16 33 | 9.1 | K0 | .109 | 102 | + 41.7±0.1 | 2 | H |
| 15 636.. | 28485 | 27.3 | +15 32 | 5.8 | A8n | .108 | 104 | + 27: var. | 5* | H |
| 19 731.. | 28483 | 27.4 | +19 44 | 7.2 | F5 | .101 | 113 | + 37.2±0.8 | 2 | H |
| 15 638.. | 28545 | 27.8 | +15 38 | 9.0 | G8 | .098 | 104 | + 36.5±0.3 | 2 | H |
| 19 733.. | 28593 | 4 28.2 | +20 01 | 8.4 | G5 | .090 | 108 | + 40.0±1.3 | 2 | H |
| 10 588.. | 28608 | 28.2 | +10 38 | 7.1 | F7 | .120 | 91 | + 36.9±1.8 | 3 | H |
| 13 691.. | 28635 | 28.6 | +13 47 | 7.9 | F8 | .093 | 102 | + 42.4±0.8 | 2 | H |
| 15 645.. | 28677 | 29.0 | +15 45 | 6.1 | F0n | .110 | 107 | + 39.0±1.9 | 4* | H |
| 5 674.. | 28736 | 29.4 | + 5 18 | 6.4 | F5 | .113 | 84 | + 40.7±1.5 | 4 | H |
| 15 646.. | 28783 | 4 30.0 | +15 54 | 9.1 | G9 | .111 | 106 | + 43.4±0.5 | 2 | H |
| 16 620.. | 28878 | 30.8 | +16 38 | 9.4 | K0 | .105 | 111 | + 43.4±1.3 | 2 | H |
| 15 649.. | 28888 | 30.8 | +15 52 | 8.5 | G2 | .095 | 131 | + 56.1±0.6 | 3 | |
| 12 608.. | 28911 | 31.0 | +13 09 | 6.7 | F4 | .115 | 100 | + 34.4±2.3 | 3 | H |
| 15 650.. | 28977 | 31.6 | +15 43 | 9.7 | K0 | .122 | 103 | + 40.5±1.0 | 2 | H |
| 15 651.. | 28992 | 4 31.7 | +15 23 | 8.0 | G0 | .093 | 112 | + 41.2±0.6 | 2 | H |
| 27 667.. | ..... | 31.8 | +27 56 | 9.0 | F5 | .108 | 122 | + 32.3±1.3 | 3 | D |
| 15 654.. | 29159 | 33.2 | +15 35 | 9.4 | K0 | .104 | 106 | + 43.5±1.9 | 2 | H |
| 23 715.. | 29169 | 33.5 | +23 14 | 6.0 | F4 | .131 | 117 | + 41.7±2.0 | 3* | H |
| 15 656.. | 29225 | 33.8 | +15 46 | 6.7 | F6 | .111 | 107 | + 33.2±0.6 | 3 | H |
| 14 728.. | 29310 | 4 34.7 | +15 03 | 7.7 | G1 | .106 | 107 | + 39.7±1.9 | 3 | H |
| 15 662.. | 29387 | 35.4 | +15 21 | 9.8 | G7 | .080 | 94 | + 43.5±0.9 | 2 | D |
| 12 618.. | 29388 | 35.4 | +12 25 | 4.4 | A5n | .099 | 97 | + 45: var. | 2* | H |
| 22 721.. | 29419 | 35.9 | +23 04 | 8.4 | F9 | .147 | 108 | + 39.6±1.1 | 2 | D |
| 13 702.. | 29461 | 36.1 | +14 00 | 8.0 | G3 | .089 | 100 | + 39.7±1.7 | 2 | H |
| 15 666.. | 29488 | 4 36.4 | +15 49 | 4.7 | A5n | .089 | 103 | + 43.8±2.5 | 2* | H |
| 7 681.. | 29499 | 36.4 | + 7 46 | 5.6 | F0 | .089 | 89 | + 42.0±1.1 | 3* | H |
| 26 732.. | ..... | 36.8 | +27 06 | 9.2 | A0p | ..... | ..... | + 6: var. | 3 | 13 |
| 23 722.. | ..... | 37.1 | +23 13 | 9.0 | G9 | .093 | 111 | + 40.0±2.0 | 3 | H |
| 16 640.. | 29608 | 37.5 | +16 25 | 9.5 | K2 | .095 | 108 | + 41.4±2.5 | 3 | H |
| 23 723.. | 29621 | 4 37.8 | +23 43 | 8.8 | G5 | .095 | 126 | + 32.3±1.9 | 3 | H |
| 19 754.. | ..... | 38.5 | +20 10 | 9.7 | G8 | .083 | 127 | + 31.1±0.6 | 3 | H |
| 28 681.. | ..... | 38.6 | +29 07 | 9.2 | K2 | .084 | 126 | + 3.0±2.0 | 3 | |
| − 1 697.. | 29789 | 39.0 | − 0 51 | 8.4 | F5 | .089 | 68 | + 35.2±1.9 | 3 | D |
| 19 762.. | ..... | 39.8 | +20 07 | 9.6 | A0p | .092 | 124 | − 10: ±4: | 3 | |
| 18 684.. | 29836 | 4 39.9 | +18 38 | 7.1 | G3 | .142 | 128 | + 15.0±0.7 | 3 | |
| 21 694.. | 30169 | 43.0 | +21 12 | 9.1 | G9 | .104 | 105 | + 26.5±1.3 | 3 | |
| 3 664.. | 30286 | 43.7 | + 3 13 | 7.9 | G4 | .057 | 61 | + 19.6±1.5 | 3 | |
| 1 819.. | 30299 | 43.8 | + 1 15 | 8.5 | F6 | .053 | 80 | + 24.0±0.7 | 3 | |
| 8 759.. | 30311 | 44.0 | + 8 55 | 7.2 | G0 | 0.112 | 90 | + 39.8±0.4 | 2 | H |

TABLE 1—*Continued*

| BD | HD | (1950) R.A. | (1950) Dec. | $m_v$ | Sp. | $\mu$ | $\theta$ | $\rho$ $r$ (Km/Sec) | Pl. | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 17° 786.. | 30355 | $4^h44^m7$ | +18° 10′ | 8.2 | G4 | 0.″116 | 119° | + 42.0±0.7 | 2 | H |
| 24 689.. | 30418 | 45.4 | +24 40 | 8.0 | F5 | .035 | 147 | + 42.4±0.8 | 2 | |
| 20 823.. | ..... | 45.8 | +21 02 | 9.0 | K0 | .092 | 104 | + 42.4±1.6 | 3 | D |
| 24 692.. | ..... | 46.1 | +24 44 | 9.1 | K3 | .123 | 119 | + 44: var. | 4 | 14, H |
| 18 736.. | 30505 | 46.1 | +18 33 | 8.8 | K0 | .072 | 142 | + 42.6±0.8 | 2 | D |
| 3 679.. | 30544 | 4 46.1 | + 3 34 | 7.1 | B9 | .064 | 66 | + 33.2±2.3 | 4 | |
| 15 686.. | 30589 | 46.7 | +15 48 | 7.9 | G0 | .086 | 109 | + 39.7±2.2 | 4 | H |
| 23 747.. | 30572 | 46.8 | +23 19 | 8.6 | G4 | .073 | 120 | + 32.8±0.8 | 2 | P |
| 16 657.. | 30676 | 47.5 | +17 07 | 7.2 | F8 | .104 | 114 | + 41.6±0.8 | 2* | H |
| 14 770.. | 30712 | 47.8 | +15 00 | 8.2 | G5 | .086 | 102 | + 43.7±0.2 | 2 | H |
| 13 725.. | 30726 | 4 47.9 | +14 09 | 8.9 | G1 | .084 | 94 | + 31.0±0.7 | 3 | D |
| 15 692.. | 30738 | 48.0 | +16 08 | 7.3 | F8 | .098 | 101 | + 41: var. | 5 | 15, H |
| 0 873.. | ..... | 48.3 | + 0 30 | 9.2 | F8 | .088 | 79 | +102.7±1.7 | 3 | |
| 28 706.. | 30754 | 48.4 | +28 33 | 9.0 | K5 | .124 | 115 | + 15.8±0.9 | 3 | |
| − 0 789.. | ..... | 49.1 | − 0 10 | 8.9 | G8 | .055 | 46 | + 30: var. | 4 | 16 |
| 4 769.. | 31003 | 4 49.8 | + 4 15 | 8.5 | F8 | .085 | 107 | + 41.2±2.0 | 4 | D |
| 22 769.. | ..... | 50.6 | +22 56 | 8.8 | F8 | .083 | 103 | + 45.2±1.9 | 2 | D |
| 10 668.. | ..... | 51.1 | +10 16 | 8.9 | G8 | .070 | 108 | − 29.3±1.8 | 3 | |
| 17 807.. | 31181 | 51.2 | +17 33 | 9.8 | F7 | .072 | 115 | + 40: var. | 4 | 17, D |
| 16 664.. | 31153 | 51.2 | +16 57 | 7.1 | F8 | .080 | 93 | + 54: var. | 4 | 18 |
| − 1 747.. | ..... | 4 51.2 | − 1 15 | 9.3 | G7 | .123 | 61 | + 7.3±0.6 | 3 | |
| 19 811.. | 31236 | 52.0 | +19 24 | 6.2 | F1 | .072 | 122 | + 41.2±0.8 | 2 | H |
| 5 765.. | 31354 | 52.7 | + 5 33 | 8.2 | G0 | .112 | 72 | + 17.5±1.8 | 4 | |
| 13 749.. | 31609 | 55.0 | +13 56 | 8.5 | G5 | .093 | 113 | + 46.4±1.1 | 2 | H |
| 30 752.. | 31706 | 56.1 | +30 59 | 8.0 | F6 | .055 | 138 | + 14.2±2.4 | 3 | 19 |
| − 0 815.. | ..... | 4 56.1 | − 0 47 | 9.1 | G7 | .098 | 67 | + 26.9±1.1 | 3 | |
| 26 771.. | 31781 | 56.6 | +26 10 | 8.6 | G0 | .071 | 145 | + 16.2±0.7 | 3 | |
| 0 916.. | 32023 | 57.8 | + 0 57 | 9.1 | F8 | .072 | 76 | +105.3±2.5 | 3 | |
| − 0 823.. | 32114 | 58.2 | − 0 34 | 8.9 | A0 | .087 | 64 | + 2: ±6: | 3 | 20 |
| 31 846.. | ..... | 58.7 | +31 34 | 8.9 | G0 | .091 | 146 | + 74.9±1.8 | 3 | |
| 13 783.. | 32347 | 5 00.3 | +13 39 | 9.3 | K0 | .064 | 100 | + 43.6±1.8 | 2 | H |
| 27 732.. | 33204A | 06.6 | +27 58 | 6.0 | A3 | .088 | 138 | + 41.3±0.9 | 2* | P |
| ..... | 33204B | 06.6 | +27 58 | 8.5 | G7 | .092 | ..... | + 46.4±0.4 | 2 | P |
| 20 897.. | 33400 | 07.8 | +20 31 | 7.8 | F5 | .051 | 106 | + 44.8±1.5 | 3 | D |
| 6 865.. | 33662 | 09.4 | + 6 47 | 7.9 | K5 | .044 | 85 | + 22.4±1.3 | 3 | |
| 19 876.. | 34031 | 5 12.2 | +20 00 | 7.7 | G1 | .116 | 109 | + 22.2±1.4 | 3 | |
| 12 756.. | ..... | 13.5 | +12 10 | 8.9 | F6 | .044 | 104 | − 23.8±0.7 | 3 | |
| 26 806.. | ..... | 16.1 | +27 02 | 9.0 | G4 | .067 | 163 | + 10.2±1.2 | 3 | |
| 23 902.. | 34772pr | 17.9 | +23 59 | 8.9 | F6 | .067 | 149 | + 18.5±1.5 | 3 | |
| ..... | 34772fol | 17.9 | +23 59 | 8.9 | F6 | ..... | ..... | + 20.6±1.0 | 3 | |
| 28 783.. | 34987 | 5 19.6 | +28 42 | 8.7 | F7 | .075 | 147 | + 37.4±0.8 | 2 | D |
| 24 846.. | 244516 | 28.9 | +24 57 | 9.2 | F7 | .090 | 146 | + 41.6±0.6 | 2 | D |
| 20 978.. | ..... | 29.2 | +21 00 | 9.3 | F0 | .036 | 118 | + 37: var. | 4 | 21 |
| 29 936.. | ..... | 32.1 | +29 14 | 9.5 | G3 | .074 | 148 | + 46.1±2.1 | 3 | D |
| 23 981.. | 37388A | 36.1 | +23 16 | 8.6 | F8 | .070 | 141 | + 40.8±1.3 | 4 | D |
| ..... | 37388B | 5 36.1 | +23 16 | 9.0 | F7 | ..... | ..... | + 44.6..... | 1 | D |
| 26 899.. | 246128.. | 37.7 | +26 58 | 9.0 | G1 | .087 | 160 | + 58.4±1.0 | 3 | |
| 26 907.. | ..... | 39.3 | +26 54 | 8.9 | F8 | .097 | 155 | + 57: var. | 3 | 22 |
| 13 964.. | 37982 | 40.2 | +13 07 | 8.9 | F5 | .061 | 127 | + 49.8±0.1 | 2 | D |
| 9 970.. | ..... | 46.3 | + 9 52 | 9.0 | K0 | 0.050 | 89 | + 51.2±1.0 | 3 | D |

TABLE 1—*Continued*

| BD | HD | (1950) R.A. | (1950) Dec. | $m_v$ | Sp. | $\mu$ | $\theta$ | $\rho$ $r$ (Km/Sec) | Pl. | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| 17°1031.. | 39117 | $5^h48^m2$ | +17°50′ | 8.2 | F8 | 0.″077 | 137° | − 26.0±1.5 | 3 | |
| 24 1036.. | 249499 | 54.2 | +25 00 | 9.3 | K4 | .063 | 151 | + 5: var. | 4 | 23 |
| 25 1089.. | 40895 | 59.7 | +25 53 | 8.0 | F8 | .082 | 150 | − 21.4±1.5 | 3 | |
| 25 1105.. | 41221 | 6 01.6 | +25 11 | 8.6 | F8 | 0.073 | 155 | −7.6±1.8 | 3 | |

NOTES TO TABLE 1

* Other measures available.
H. Member of cluster.
P. Membership probable.
D. Membership doubtful.
1. +56, +59, +37, +70.
2. Two spectra.
3. +143, +99, +38, −76, −99.
4. +51, +60, +64.
5. −4, +9, +8.
6. +49, +46, +30, +51.
7. +51, +41, +30.
8. Two spectra.
9. Two spectra.
10. +43, +11, +28, +40.
11. +51, +23, +58, +38.
12. +49, +37, +52, +40.
13. +14, −28, +32.
14. Two spectra.
15. +65, +26, +38, +41, +38.
16. −13, +42, +50, +42.
17. +30, +28, +53, +48.
18. +46, +50, +58, +60.
19. Two spectra.
20. Two spectra.
21. Two spectra.
22. +44, +60, +66.
23. 0, +21, +4, −3.

TABLE 2

LARGE VELOCITIES IN THE HYADES REGION

| Star | $m_v$ | Sp. | $\rho$ | Star | $m_v$ | Sp. | $\rho$ |
|---|---|---|---|---|---|---|---|
| BD+26°595..... | 9.1 | G8 | −198.4 | HD28424..... | 7.8 | G9 | + 96.8 |
| HD23841..... | 7.0 | G8 | − 79.8 | BD+0°873..... | 9.2 | F8 | +102.7 |
| HD25532..... | 8.3 | F6 | −113.0 | HD32023..... | 9.1 | F8 | +105.3 |
| BD+31°769..... | 8.8 | F8 | + 79.4* | BD+31°846..... | 8.9 | G0 | + 74.9* |

* Possible common motion. For BD+31°769, $\mu$ = 0.″104, $\theta$ = 133°; for BD+31°846, $\mu$ = 0.″091, $\theta$ = 146°.