

KG  
11365  
890

KG 11365.890

Notes on Double Stars, for Professor W. H. Pickering

No 363 I Mean of last set of magnitudes  
taken, omitting the 10. ?

No. 253 I In taking mean of magnitudes, 9 is  
left out of both means.

KG 11365.890











| Date | Object.                                                                                                                                                                                                                                                    | Page. |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|      | List of Stars South of $-20^{\circ}$ Magn. 42 and brighter.                                                                                                                                                                                                | 4-18  |
|      | Miscellaneous.                                                                                                                                                                                                                                             | 18    |
|      | Bright stars north of $-20^{\circ}$ Special List                                                                                                                                                                                                           | 20    |
|      | Known Variables south of $-20^{\circ}$                                                                                                                                                                                                                     | 30    |
|      | List of all Double Stars brighter than the 6th magn. and those having Dist. of 30 or less, brighter than the 8th magn. taken from, observations of Sir John Herschel made at the Cape of Good Hope. <sup>Part I</sup> 171-242, <sup>Part II</sup> 249-264. | 50-92 |
|      | List of Clusters to be taken with the 13 Inch Telescope.                                                                                                                                                                                                   | 100-  |
|      | List of Objects for Stellar Parallax                                                                                                                                                                                                                       | 120   |





4

sent with Mr. W.H.P. Dec. 1889. Copy in Mr. Bailey's book and add stars to magn. 5.2. Jan. 24, 1893. A.G.C. stars to hand 6.2 in Mr. Bailey's list are here in green ink.

13 inch Telescope. (with prism).

List of Stars South of  $-20^\circ$  Magn. 4.2 and brighter.

| Object               | A.G.C. | R.A.   | Dec.    | Magn. |
|----------------------|--------|--------|---------|-------|
| $\epsilon$ Phoenicis | 57     | 0 44   | - 46 18 | 3.8   |
| $\gamma$ Tucanae     | 233    | 0 14.7 | - 65 29 | 4.1   |
| $\beta$ Hydri        | 336    | 0 20.2 | - 77 50 | 2.7   |
| $\kappa$ Phoenicis   | 351    | 0 21.3 | - 44 14 | 3.9   |
| $\alpha$ Phoenicis   | 355    | 0 21.3 | - 42 51 | 2.4   |
| $\alpha$ Sculptoris  | 902    | 0 53.8 | - 29 54 | 4.2   |
| $\beta$ Phoenicis    | 1024   | 1 1.6  | - 47 15 | 3.3   |
| $\gamma$ Phoenicis   | 1069   | 1 4.2  | - 55 47 | 4 1/4 |
| $\gamma$ Phoenicis   | 1411   | 1 24.0 | - 43 50 | 3.4   |
| $\delta$ Phoenicis   | 1462   | 1 27.0 | - 49 35 | 4.0   |
| $\alpha$ Eridani     | 1594   | 1 34.0 | - 57 44 | 1     |
| $\chi$ Eridani       | 1905   | 1 52.0 | - 52 7  | 3.9   |
| $\nu$ Ceti           | 1965   | 1 55.3 | - 21 34 | 3.9   |
| $\alpha$ Hydri       | 1981   | 1 55.6 | - 62 4  | 2.9   |
| $\phi$ Eridani       | 2339   | 2 12.9 | - 51 58 | 3.5   |
| $\delta$ Hydri       | 2498   | 2 19.9 | - 69 7  | 4.1   |
| $\kappa$ Eridani     | 2556   | 2 23.3 | - 48 9  | 4.2   |
| $\iota$ Eridani      | 2851   | 2 36.7 | - 40 17 | 4.2   |
| $\epsilon$ Hydri     | 2887   | 2 38.1 | - 68 42 | 4.2   |
| $\theta$ Eridani     | 3223   | 2 54.5 | - 40 42 | 3     |
| $\tau_5$ Eridani     | 3284   | 2 58.0 | - 24 1  | 4.1   |
| $\alpha$ Fornacis    | 3462   | 3 7.9  | - 29 23 | 3.6   |
| $\tau_4$ Eridani     | 3607   | 3 15.1 | - 22 7  | 3.4   |
| $\beta$ Retiuli      | 4211   | 3 42.9 | - 65 7  | 3.9   |
| $\tau_6$ Eridani     | 4191   | 3 42.6 | - 23 32 | 3.9   |
| $\gamma$ Eridani     | 4256   | 3 45.7 | - 36 30 | 4.1   |
| $\gamma$ Hydri       | 4353   | 3 48.8 | - 74 33 | 3.2   |
| $\alpha$ Horolog.    | 4757   | 4 10.7 | - 42 32 | 3.8   |
| $\alpha$ Retiuli     | 4812   | 4 13.1 | - 62 43 | 3.3   |
| $\gamma$ Retiuli     | 4811   | 4 13.4 | - 51 44 | 4.4   |



| Object.                  | No.<br>A.G.C. | 1900<br>R.A.<br>h m | 1900<br>Dec.<br>° ' | Magn. |
|--------------------------|---------------|---------------------|---------------------|-------|
| X Eridani                | 4821<br>4840  | 4 14.1              | 34 2                | 3.3   |
| d Eridani                | 4940          | 4 20.2              | 34 14               | 4.0   |
| v <sub>2</sub> Eridani   | 5187          | 4 31.7              | 30 46               | 3.7   |
| $\alpha$ Doradus         | 5198          | 4 31.8              | 55 15               | 3.1   |
| $\epsilon$ Leporis       | 5816          | 5 1.3               | 22 30               | 3.1   |
| $\beta$ Leporis          | 6344          | 5 24.0              | 20 51               | 2.9   |
| $\epsilon$ Columbae      | 6427          | 5 27.7              | 35 33               | 4.1   |
| $\beta$ Doradus          | 6561          | 5 32.7              | 62 33               | 3.9   |
| $\alpha$ Columbae        | 6633          | 5 36.0              | 34 8                | 2.5   |
| $\gamma$ Leporis         | 6733          | 5 40.4              | 22 28               | 3 1/2 |
| $\beta$ Pictoris         | 6848          | 5 44.9              | 51 6                | 3.9   |
| $\delta$ Leporis         | 6884          | 5 47.0              | 20 54               | 3.7   |
| $\beta$ Columbae         | 6896          | 5 47.5              | 35 49               | 2.9   |
| $\eta$ Columbae          | 7120          | 5 56.1              | 42 49               | 4.0   |
| $\zeta$ Canis Majoris    | 7681          | 6 16.5              | 30 2                | 3.2   |
| $\delta$ Columbae        | 7731          | 6 18.4              | 33 23               | 3.9   |
| $\alpha$ Carinae         | 7843          | 6 21.8              | 52 39               | 0.4   |
| $\nu$ Puppis             | 8181          | 6 34.7              | 43 6                | 3.5   |
| $\kappa$ Canis Majoris   | 8518          | 6 46.1              | 32 24               | 4.0   |
| $\tau$ Puppis            | 8568          | 6 47.4              | 50 30               | 3.2   |
| $\alpha$ Pictoris        | 8570          | 6 47.2              | 61 50               | 3.5   |
| $\theta$ Canis Majoris   | 8629          | 6 49.9              | 24 4                | 3.9   |
| $\epsilon$ Canis Majoris | 8752          | 6 54.7              | 28 50               | 1.8   |
| $\sigma$ "               | 8839          | 6 57.7              | 27 47               | 3.6   |
| $\rho$ "                 | 8873          | 6 58.8              | 23 41               | 3.4   |
| $\delta$ " "             | 9021          | 7 4.3               | 26 14               | 2.1   |
| $\omega$ " "             | 9198          | 7 10.7              | 26 35               | 4.2   |
| $\pi$ Puppis             | 9288          | 7 13.6              | 36 55               | 2.7   |
| $\delta$ Volantis        | 9407          | 7 16.9              | 67 47               | 4.1   |



| Object               | No.   | 1900           | 1900  |  |  |
|----------------------|-------|----------------|-------|--|--|
| Alt.                 | R.A.  | Dec.           | Magn. |  |  |
| $\eta$ Canis Majoris | 9476  | 7 20.2 - 29 7  | 2.9   |  |  |
| $\sigma$ Puppis      | 9652  | 7 26.1 - 43 6  | 3.5   |  |  |
| $\zeta$ Puppis       | 10033 | 7 39.8 - 28 43 | 4.2   |  |  |
| $\epsilon$ Puppis    | 10113 | 7 41.7 - 37 44 | 3.6   |  |  |
| $\xi$ Puppis         | 10225 | 7 45.1 - 24 37 | 3.5   |  |  |
| $\alpha$ Puppis      | 10343 | 7 48.8 - 40 19 | 4.0   |  |  |
| $\chi$ Carinae       | 10507 | 7 54.2 - 52 43 | 3.7   |  |  |
| $\zeta$ Puppis       | 10691 | 8 0.1 - 39 43  | 2.5   |  |  |
| $\rho$ Puppis        | 10763 | 8 3.3 - 24 1   | 3.2   |  |  |
| $\gamma$ Velae       | 10863 | 8 6.5 - 47 2   | 3     |  |  |
| $\epsilon$ Carinae   | 11285 | 8 20.4 - 59 11 | 2.1   |  |  |
| $\alpha$ Chamaele    | 11334 | 8 21.1 - 76 36 | 4.2   |  |  |
| $\beta$ Volantis     | 11407 | 8 24.7 - 65 48 | 3.9   |  |  |
| $b$ Velae            | 11755 | 8 37.3 - 46 17 | 4.1   |  |  |
| $o$ Velae            | 11760 | 8 37.4 - 52 34 | 4.0   |  |  |
| $\alpha$ Cygnus      | 11806 | 8 39.6 - 32 49 | 3.8   |  |  |
| $\delta$ Velae       | 11887 | 8 42.0 - 54 20 | 2.2   |  |  |
| $a$ Velae            | 11900 | 8 42.6 - 45 40 | 4.1   |  |  |
| $c$ Carinae          | 12175 | 8 52.8 - 60 16 | 4.0   |  |  |
| $\alpha$ Volantis    | 12378 | 9 0.9 - 66 0   | 4.2   |  |  |
| $\lambda$ Velae      | 12438 | 9 4.3 - 43 2   | 2.5   |  |  |
| $a$ Carinae          | 12535 | 9 8.4 - 58 33  | 3.8   |  |  |
| $\beta$ Carinae      | 12636 | 9 12.1 - 69 18 | 2.0   |  |  |
| $\epsilon$ Carinae   | 12672 | 9 14.4 - 58 51 | 2.5   |  |  |
| $k$ Velae            | 12788 | 9 19.0 - 54 35 | 2.7   |  |  |
| $\psi$ Velae         | 12989 | 9 26.8 - 40 1  | 3.7   |  |  |
| $N$ Velae            | 13030 | 9 28.2 - 56 36 | 3.2   |  |  |
| $v$ Carinae          | 13389 | 9 44.6 - 64 37 | 3 1/2 |  |  |
| $\phi$ Velae         | 13593 | 9 53.4 - 54 35 | 3.9   |  |  |
| $m$ Velorum          | 13455 | 9 47.9 - 46 5  | 5     |  |  |



| Objct                     | No.    | 1900    | 1900    | 1900  | Magn. |
|---------------------------|--------|---------|---------|-------|-------|
| Abk                       | h      | m       | s       |       |       |
| <i>Velorum</i><br>g Velae | 13,968 | 10 10.6 | - 41 37 | 4     |       |
| w Carinae                 | 14,008 | 10 11.4 | - 69 32 | 3.6   |       |
| q Carinae                 | 14,054 | 10 13.7 | - 60 50 | 3.3   |       |
| p Carinae                 | 14,392 | 10 28.5 | - 61 11 | 3.6   |       |
| <i>Velorum</i><br>p Velae | 14,517 | 10 33.2 | - 47 43 | 4.1   |       |
| A Carinae                 | 14,667 | 10 39.4 | - 63 52 | 2.9   |       |
| <i>Velorum</i><br>μ Velae | 14,751 | 10 42.5 | - 48 34 | 2.9   |       |
| u Carinae                 | 14,910 | 10 49.4 | - 58 19 | 4.1   |       |
| ξ Hydrae                  | 15,786 | 11 28.1 | - 31 18 | 3.7   |       |
| λ Centauris               | 15,848 | 11 31.1 | - 62 28 | 3.4   |       |
| λ Muscae                  | 16,085 | 11 40.9 | - 66 10 | 3.8   |       |
| δ Centauri                | 16,572 | 12 32   | - 50 10 | 2.8   |       |
| α Corvi                   | 16,576 | 12 33   | - 24 10 | 4.2   |       |
| ε Corvi                   | 16,615 | 12 50   | - 22 3  | 3.3   |       |
| δ Crucis                  | 16,726 | 12 9.8  | - 58 11 | 3.4   |       |
| ε Crucis                  | 16,835 | 12 15.9 | - 59 51 | 4.0   |       |
| α Crucis                  | 16,942 | 12 21.1 | - 62 32 | 1 1/2 |       |
| α Crucis                  | 16,943 | 12 21.1 | - 62 32 | 1 3/4 |       |
| γ Crucis                  | 17,048 | 12 25.6 | - 56 33 | 2.0   |       |
| γ Muscae                  | 17,072 | 12 26.5 | - 71 35 | 4.0   |       |
| β Corvi                   | 17,129 | 12 29.1 | - 22 50 | 2.6   |       |
| α Muscae                  | 17,156 | 12 31.3 | - 68 35 | 2.9   |       |
| γ Centauri                | 17,269 | 12 36.0 | - 48 24 | 2.4   |       |
| β Muscae                  | 17,374 | 12 40.1 | - 67 33 | 3.4   |       |
| β Crucis                  | 17,411 | 12 41.8 | - 59 8  | 1.7   |       |
| δ Muscae                  | 17,693 | 12 58.4 | - 71 0  | 3.7   |       |
| γ Hydrae                  | 18,121 | 13 13.5 | - 22 39 | 3.2   |       |
| ι Centauri                | 18,149 | 13 15.0 | - 36 11 | 3.0   |       |
| w Centauri                | 18,278 | 13 20.8 | - 46 57 | 4     |       |
| δ Centauri                | 18,376 | 13 25.2 | - 38 54 | 4.5   |       |



| Object                | No.    | 1900    | 1900   |  |       |
|-----------------------|--------|---------|--------|--|-------|
|                       | Abbe   | R.A.    | Dec.   |  | Magn. |
| $\epsilon$ Centauri   | 18,559 | 13 33.6 | -52 58 |  | 2.6   |
| $\nu$ Centauri        | 18,772 | 13 43.5 | -41 12 |  | 3.7   |
| $\mu$ Centauri        | 18,773 | 13 43.6 | -41 59 |  | 3.4   |
| $\zeta$ Centauri      | 18,897 | 13 49.3 | -46 47 |  | 2.7   |
| $\phi$ Centauri       | 18,960 | 13 52.2 | -41 36 |  | 4.1   |
| $\nu$ Centauri        | 18,968 | 13 52.5 | -44 19 |  | 4.2   |
| $\beta$ Centauri      | 19,043 | 13 56.7 | -59 53 |  | 1.2   |
| $\tau$ Hydrae         | 19,128 | 14 0.7  | -26 12 |  | 3.6   |
| $\theta$ Centauri     | 19,129 | 14 0.8  | -35 52 |  | 2.2   |
| $\iota$ Lupi          | 19,354 | 14 12.0 | -45 36 |  | 3.8   |
| $\eta$ Centauri       | 19,737 | 14 29.2 | -41 43 |  | 2.5   |
| $\alpha$ Centauri     | 19,825 | 14 33.0 | -60 26 |  | 1     |
| $\alpha$ Centauri     | 19,826 | 14 33.0 | -60 26 |  | 3 1/2 |
| $\delta$ Circini      | 19,849 | 14 34.4 | -64 33 |  | 3 1/2 |
| $\delta$ Apodis       | 19,851 | 14 35.4 | -78 38 |  | 4.0   |
| $\alpha$ Lupi         | 19,873 | 14 35.2 | -46 57 |  | 2.6   |
| $\beta$ Centauri      | 19,890 | 14 35.7 | -37 21 |  | 4.2   |
| $\beta$ Lupi          | 20,263 | 14 52.0 | -42 44 |  | 2.8   |
| $\kappa$ Centauri     | 20,286 | 14 52.6 | -41 42 |  | 3.3   |
| $\sigma$ Librae       | 20,431 | 14 58.3 | -24 53 |  | 3.5   |
| $\zeta$ Lupi          | 20,572 | 15 5.1  | -51 43 |  | 3.6   |
| $\gamma$ Triang. Aus. | 20,657 | 15 9.6  | -68 19 |  | 3.1   |
| $\delta$ Lupi         | 20,779 | 15 14.8 | -40 18 |  | 3.7   |
| $\phi$ Lupi           | 20,793 | 15 15.5 | -35 54 |  | 3.6   |
| $\epsilon$ Lupi       | 20,806 | 15 15.9 | -44 20 |  | 3 3/4 |
| $\gamma$ Lupi         | 21,084 | 15 28.5 | -40 50 |  | 3.2   |
| $\nu$ Librae          | 21,146 | 15 30.9 | -27 48 |  | 3.9   |
| $\tau$ Librae         | 21,186 | 15 32.5 | -29 27 |  | 3.8   |
| $\chi$ Lupi           | 21,454 | 15 44.6 | -33 20 |  | 4.2   |
| $\psi$ Lupi           | 21,226 | 15 34.3 | -44 20 |  | 5.2   |
| $\psi$ Lupi           | 21,274 | 15 36.3 | -34 23 |  | 5.1   |



| Object                | No.    | 1900    | 1900  |  |       |
|-----------------------|--------|---------|-------|--|-------|
|                       | Abbe   | R.A.    | Dec.  |  | Magn. |
| $\epsilon$ Centauri   | 18,559 | 13 33.6 | 52 58 |  | 2.6   |
| $\nu$ Centauri        | 18,772 | 13 43.5 | 41 12 |  | 3.7   |
| $\mu$ Centauri        | 18,773 | 13 43.6 | 41 59 |  | 3.4   |
| $\zeta$ Centauri      | 18,897 | 13 49.3 | 46 47 |  | 2.7   |
| $\phi$ Centauri       | 18,960 | 13 52.2 | 41 36 |  | 4.1   |
| $\eta$ Centauri       | 18,968 | 13 52.5 | 44 19 |  | 4.2   |
| $\beta$ Centauri      | 19,043 | 13 56.7 | 59 53 |  | 1.2   |
| $\pi$ Hydrae          | 19,128 | 14 0.7  | 26 12 |  | 3.6   |
| $\theta$ Centauri     | 19,129 | 14 0.8  | 35 52 |  | 2.2   |
| $\iota$ Lupi          | 19,354 | 14 12.0 | 45 36 |  | 3.8   |
| $\eta$ Centauri       | 19,737 | 14 29.2 | 41 43 |  | 2.5   |
| $\alpha$ Centauri     | 19,825 | 14 33.0 | 60 26 |  | 1     |
| $\alpha$ Centauri     | 19,826 | 14 33.0 | 60 26 |  | 3 1/2 |
| $\delta$ Circini      | 19,849 | 14 34.4 | 64 33 |  | 3 1/2 |
| $\delta$ Apodis       | 19,851 | 14 35.4 | 78 38 |  | 4.0   |
| $\alpha$ Lupi         | 19,873 | 14 35.2 | 46 57 |  | 2.6   |
| $\beta$ Centauri      | 19,890 | 14 35.7 | 37 21 |  | 4.2   |
| $\beta$ Lupi          | 20,263 | 14 52.0 | 42 44 |  | 2.8   |
| $\kappa$ Centauri     | 20,286 | 14 52.6 | 41 42 |  | 3.3   |
| $\sigma$ Librae       | 20,431 | 14 58.3 | 24 53 |  | 3.5   |
| $\zeta$ Lupi          | 20,572 | 15 5.1  | 51 43 |  | 3.6   |
| $\gamma$ Triang. Aus. | 20,657 | 15 9.6  | 68 19 |  | 3.1   |
| $\delta$ Lupi         | 20,779 | 15 14.8 | 40 18 |  | 3.7   |
| $\phi$ Lupi           | 20,793 | 15 15.5 | 35 54 |  | 3.6   |
| $\epsilon$ Lupi       | 20,806 | 15 15.9 | 44 20 |  | 3 3/4 |
| $\gamma$ Lupi         | 21,084 | 15 28.5 | 40 50 |  | 3.2   |
| $\nu$ Librae          | 21,146 | 15 30.9 | 27 48 |  | 3.9   |
| $\tau$ Librae         | 21,186 | 15 32.5 | 29 27 |  | 3.8   |
| $\chi$ Lupi           | 21,454 | 15 44.6 | 33 20 |  | 4.2   |
| $\psi$ Lupi           | 21,226 | 15 34.3 | 44 20 |  | 5.2   |
| $\psi$ Lupi           | 21,274 | 15 36.3 | 34 23 |  | 5.1   |



| Object.              | No.    | 1900 | 1900      |    |       |
|----------------------|--------|------|-----------|----|-------|
| Abbe                 | R.A.   | Dec. | Magn.     |    |       |
| $\beta$ Tring. Ans.  | 21,484 | 15   | 46.4 - 63 | 7  | 3.1   |
| $\pi$ Scorpii        | 21,638 | 15   | 52.8 - 25 | 49 | 3.4   |
| $\eta$ Lupi          | 21,653 | 15   | 53.4 - 38 | 6  | 3 3/4 |
| $\delta$ Scorpii     | 21,685 | 15   | 54.4 - 22 | 20 | 2.4   |
| $\sigma$ Scorpii     | 22,158 | 16   | 15.1 - 25 | 21 | 3.4   |
| $\gamma$ Apis        | 22,170 | 16   | 18.1 - 78 | 41 | 3.9   |
| $\alpha$ Scorpii     | 22,314 | 16   | 23.2 - 26 | 13 | 1.4   |
| $\tau$ Scorpii       | 22,451 | 16   | 29.7 - 28 | 0  | 3.2   |
| $\alpha$ Tring. Ans. | 22,607 | 16   | 38.0 - 68 | 51 | 2.2   |
| $\eta$ Arae          | 22,672 | 16   | 41.1 - 58 | 52 | 3.8   |
| $\epsilon$ Scorpii   | 22,731 | 16   | 43.7 - 34 | 7  | 2.3   |
| $\mu$ Scorpii        | 22,761 | 16   | 45.1 - 37 | 53 | 3.6   |
| $\mu$ Scorpii        | 22,778 | 16   | 45.6 - 37 | 51 | 3.9   |
| $\zeta_2$ Scorpii    | 22,832 | 16   | 47.6 - 42 | 12 | 3.6   |
| $\gamma$ Arae        | 22,916 | 16   | 50.4 - 55 | 50 | 3.2   |
| $\epsilon$ Arae      | 22,941 | 16   | 51.6 - 53 | 0  | 4.2   |
| $\eta$ Scorpii       | 23,250 | 17   | 5.0 - 43  | 6  | 3.6   |
| $\theta$ Ophiuchi    | 23,500 | 17   | 15.8 - 24 | 54 | 3.6   |
| $\gamma$ Arae        | 23,515 | 17   | 17.0 - 56 | 17 | 3.6   |
| $\beta$ Arae         | 23,516 | 17   | 17.0 - 55 | 27 | 2.8   |
| $\delta$ Arae        | 23,636 | 17   | 22.1 - 60 | 37 | 3.7   |
| $\alpha$ Arae        | 23,694 | 17   | 24.1 - 49 | 47 | 2.9   |
| $\nu$ Scorpii        | 23,698 | 17   | 24.0 - 37 | 13 | 3.2   |
| $\lambda$ Scorpii    | 23,778 | 17   | 26.8 - 37 | 2  | 2.0   |
| $\theta$ Scorpii     | 23,849 | 17   | 30.1 - 42 | 56 | 2.1   |
| $\kappa$ Scorpii     | 23,966 | 17   | 35.5 - 38 | 59 | 2.6   |
| $\eta$ Pavonis       | 23,958 | 17   | 35.9 - 64 | 41 | 3.8   |
| $\iota$ Scorpii      | 24,107 | 17   | 40.5 - 40 | 6  | 3.3   |
| $\zeta$ Scorpii      | 24,179 | 17   | 43.0 - 37 | 1  | 3.4   |
| $\pi$ Pavonis        | 24,559 | 17   | 58.9 - 63 | 40 | 4.6   |



1893phae.

| Object                                     | No.    | 1900<br>R.A.                               | 1900<br>Dec. | Magn. |
|--------------------------------------------|--------|--------------------------------------------|--------------|-------|
| $\theta$ Arae                              | 24,574 | 17 58.8 - 50 6                             | 3.9          |       |
| $\gamma$ Sagittarii                        | 24,596 | 17 59.4 - 30 25                            | 2.8          |       |
| $\eta$ Sagittarii                          | 24,888 | 18 10.9 - 36 48                            | 3.3          |       |
| $\delta$ Sagittarii                        | 24,987 | 18 14.6 - 29 53                            | 2.8          |       |
| $\alpha$ Telescopii                        | 25,105 | 18 19.6 - 46 1                             | 3.5          |       |
| $\epsilon$ Sagittarii                      | 25,060 | 18 17.6 - 34 25                            | 2.2          |       |
| $\lambda$ Sagittarii                       | 25,171 | 18 21.8 - 25 28                            | 2.7          |       |
| $\zeta$ Pavonis                            | 25,383 | 18 31.3 - 71 31                            | 4.2          |       |
| $\phi$ Sagittarii                          | 25,614 | 18 39.4 - 27 6                             | 3.7          |       |
| $\sigma$ Sagittarii                        | 25,874 | 18 49.1 - 26 25                            | 2.4          |       |
| $\xi_2$ Sagittarii                         | 25,927 | 18 51.8 - 21 14                            | 3.5          |       |
| <del><math>\zeta_1</math></del> Sagittarii | 26,041 | 18 56.3 - 30 1                             | 3.1          |       |
| $\theta$ Sagittarii                        | 26,102 | 18 58.7 - 21 53                            | 3.8          |       |
| $\tau$ Sagittarii                          | 26,149 | 19 0.7 - 27 49                             | 3.6          |       |
| $\alpha$ Cor. Austr.                       | 26,189 | 19 2.7 - 38 4                              | 4.2          |       |
| $\beta$ Coronae Aus.                       | 26,206 | 19 3.1 - 39 30                             | 4.1          |       |
| $\pi$ Sagittarii                           | 26,225 | 19 3.8 - 21 11                             | 3.1          |       |
| $\beta_1$ Sagittarii                       | 26,485 | 19 15.4 - 44 38                            | 4            |       |
| $\alpha$ Sagittarii                        | 26,527 | 19 16.9 - 40 48                            | 4.0          |       |
| $\epsilon$ Pavonis                         | 27,225 | 19 49.0 - 73 10                            | 4.0          |       |
| $\delta$ Pavonis                           | 27,468 | 19 58.8 - 66 26                            | 3.5          |       |
| $\alpha$ Pavonis                           | 27,918 | 20 17.7 - 57 3                             | 2.1          |       |
| $\alpha$ <sup>Indi</sup> <del>Indus</del>  | 28,213 | 20 30.6 - 47 39                            | 3.1          |       |
| $\beta$ Pavonis                            | 28,338 | 20 36.0 - 66 34                            | 3.3          |       |
| $\omega$ Capricorni                        | 28,598 | 20 45.9 - 27 17                            | 4.1          |       |
| $\beta$ Indi                               | 28,615 | 20 47.0 - 58 49                            | 3.7          |       |
| $\zeta$ Capricorni                         | 29,382 | 21 20.9 - 22 51                            | 3.7          |       |
| $\nu$ Octantis <sup>21</sup>               | 29,533 | 21 <del>28.4</del> <sup>30.4</sup> - 77 50 | 3.8          |       |
| $\gamma$ Geminorum                         | 29,935 | 21 47.9 - 37 50                            | 3.0          |       |



| Objct                               | No.              | 1900                       | 1900            | Magn. |
|-------------------------------------|------------------|----------------------------|-----------------|-------|
| Abbr.                               | R.A.             | Dec.                       |                 |       |
| $\alpha$ Grus                       | 30241            | 22 1.9 - 47 27             | 1.9             |       |
| $\alpha$ Tucanae                    | 30422            | 22 11.6 - 60 46            | 2.8             |       |
| $\delta$ Grus                       | 30647            | 22 23.3 - 44 0             | 4.2             |       |
| $\beta$ Grus                        | 30913            | 22 36.7 - 47 24            | 2.2             |       |
| $\epsilon$ Grus                     | 31044            | 22 42.5 - 51 50            | 3.5             |       |
| $\alpha$ Pegasus Austr.             | 31213            | 22 52.1 - 30 9             | 1.4             |       |
| <del><math>\gamma</math> Grus</del> | <del>31263</del> | <del>22 55.0 - 53 17</del> | <del>4.0</del>  |       |
| <del><math>\theta</math> Grus</del> | <del>31380</del> | <del>23 1.2 - 44 4</del>   | <del>4.2</del>  |       |
| $\epsilon$ Aquarii                  | 31431            | 23 4.1 - 21 43             | 3 $\frac{3}{4}$ |       |
| $\iota$ Grus                        | 31445            | 23 4.7 - 45 47             | 3.9             |       |
| $\gamma$ Tucanae                    | 31563            | 23 11.6 - 58 47            | 4.0             |       |
| $\delta$ Aquarii                    | 31676            | 23 17.7 - 20 39            | 3.9             |       |

Copy in Mr. Bailey's Book.  
Jan. 24, 1893

Miscellaneous.

|                    |           |                 |      |  |
|--------------------|-----------|-----------------|------|--|
| $\alpha$ Eridani   | 1594      | 1 34.0 - 57 44  | 1    |  |
| $\pi^4$ Orionis    | H.P. 845  | 4 45.9 + 5 26   | 4.0  |  |
| - Leon. Maj.       | H.P. 1311 | 6 50.0 - 23 48  | 6.4  |  |
| $\gamma$ Velorum   | 10863     | 8 6.5 - 47 2    | 3    |  |
| $\epsilon$ Velorum | 12372     | 9 0.7 - 46 42   | 4.6  |  |
| $\eta$ Argus       | 14720     | 10 41.2 - 59 10 | var. |  |
| $\delta$ Centauri  | 16572     | 12 3.2 - 50 10  | 2.8  |  |
| $\theta$ Muscae    | 17840     | 13 1.7 - 64 46  | 6    |  |
| $\alpha$ Hydrae    | 18361     | 13 24.3 - 22 46 | var. |  |
| $\mu$ Centauri     | 18773     | 13 43.6 - 41 59 | 3.4  |  |
| $\eta$ Centauri    | 19737     | 14 29.2 - 41 32 | 2.5  |  |
| $\beta$ Ophiuchi   | 23614     | 17 20.2 - 24 6  | 4.5  |  |
| $\nu$ Sagittarii   | H.P. 3321 | 19 16.0 - 16 8  | 4.7  |  |
| $\nu$ Cygni        | H.P. 3747 | 21 13.8 + 34 28 | 4.4  |  |

(Take at Max.)

(Take at Intervals)



copy in Mr. Bailey's Book.  
Jan. 24, 1893

# Bright Stars north of $-20^\circ$

## Special List.

Take with long runs and heavy loads.

for Determination of Scale by comparison with Cambridge photographs

| Object.                    | No.   | R.A.                    | Dec.                      | Magn.              |
|----------------------------|-------|-------------------------|---------------------------|--------------------|
| $\alpha$ Coridani A.G.C.   | 1594  | <sup>1900.</sup> 1 34.0 | <sup>1900.</sup> -57° 44' | 1.0                |
| $\alpha$ Tauri H.P.        | 797   | 4 30.2                  | +16 19                    | 1.0                |
| $\alpha$ Aurigae "         | 932   | 5 9.3                   | +45 54                    | 0.2                |
| $\beta$ Orionis "          | 936   | 5 9.7                   | -8 19                     | 0.3                |
| $\alpha$ Orionis "         | 1091  | 5 49.8                  | +7 23                     | 0.9                |
| $\alpha$ Can. Maj. "       | 1275  | 6 40.7                  | -16 34                    | -1.4               |
| $\alpha$ Can. Min. "       | 1442  | 7 34.1                  | +5 30                     | 0.5                |
| $\beta$ Geminae "          | 1459  | 7 39.2                  | +28 16                    | 1.1                |
| $\alpha$ Argus A.G.C.      | 11900 | 8 42.6                  | -45 40                    | <sup>0.4</sup> 4.1 |
| $\alpha$ Leonis H.P.       | 1797  | 10 3.1                  | +12 28                    | 1.4                |
| $\alpha_1$ Crucis A.G.C.   | 16942 | 12 21.1                 | -62 32                    | 1 $\frac{1}{2}$    |
| $\alpha_2$ Crucis A.G.C.   | 16943 | 12 21.1                 | -62 32                    | 1 $\frac{3}{4}$    |
| $\alpha$ Virginis H.P.     | 2263  | 13 19.9                 | -10 38                    | 1.2                |
| $\beta$ Centauri A.G.C.    | 19043 | 13 56.7                 | -59 53                    | 1.2                |
| $\alpha$ Bootis H.P.       | 2400  | 14 11.1                 | +19 44                    | 0.03               |
| $\alpha_1$ Centauri A.G.C. | 19825 | 14 33.0                 | -60 26                    | 1                  |
| $\alpha_2$ Centauri "      | 19826 | 14 33.0                 | -60 26                    | 3 $\frac{1}{2}$    |
| $\alpha$ Scorpii H.P.      | 2764  | 16 23.2                 | -26 13                    | 1.1                |
| $\beta$ Crucis A.G.C.      | 17411 | 12 41.8                 | -59 8                     | 1.7                |
| $\alpha$ Lyrae H.P.        | 3147  | 18 33.6                 | +38 41                    | 0.2                |
| $\alpha$ Aquilae "         | 3427  | 19 45.3                 | -11 1                     | 5.6                |
| $\alpha$ Cygni "           | 3631  | 20 38.0                 | +44 56                    | 1.5                |
| $\alpha$ Pis. Austr. "     | 4057  | 22 52.1                 | -30 9                     | 1.3                |



22

Mr. Bailey's book  
1893Take with Erythrosin.Special List.

| Object.    | H.P. No. | <sup>1900</sup><br>R.A.                   | <sup>1900</sup><br>Dec. | Magn. |
|------------|----------|-------------------------------------------|-------------------------|-------|
| Lynx       | 1685     | 9 <sup>h</sup> 15.0 <sup>m</sup> +34° 49' |                         | 3.4   |
| γ Hydrae   | 1893     | 10 44.7 -15 40                            |                         | 3.3   |
| δ Virginis | 2193     | 12 50.6 +3 57                             |                         | 3.7   |

Take also with erythrosin all stars having peculiar spectra, all III Type stars and a number of II Type Stars.

also.  
Take with erythron all stars having  
peculiar spectra all III Type stars &  
portion of II Type stars.  
HP. 2193, 1893 and 1685 with erythron

Make special list for Vol XIV p 406  
of bright stars north of  $-20$  as far through list  
as  $\alpha$  Cygni. Take with long runs and  
heavy tracks. Add to special list - HP. 845 & 374



This list has been superseded and will not be copied in Mr. Bailey's Book. Jan. 24, 1893

Known Variables south of  $-20^\circ$ .

| Object              | Obj. No. | R.A.<br><sup>1900</sup><br>h. m. | Dec.<br><sup>1900</sup><br>° ' " | Magn.<br><sup>max</sup> <sup>min</sup> | Period | Class | Spectr.                |
|---------------------|----------|----------------------------------|----------------------------------|----------------------------------------|--------|-------|------------------------|
| $\gamma$ Ceti       | 100      | 0 16.7                           | $-20^\circ 37'$                  | 5.1 7.0                                | 65?    | II?   |                        |
| R Sculptoris +      | 494      | 22.4                             | $-33^\circ 4'$                   | 5.8 7.8                                | 207    | II    | IV?                    |
| R Reticuli +        | 1635     | 4 32.5                           | $-63^\circ 14'$                  | 7 <13                                  |        |       |                        |
| R Doradus           | 1654     | 4 35.6                           | $-62^\circ 16'$                  | 5.5 6.8                                |        |       |                        |
| - Caeli +           | 4        | 37.1                             | $-38^\circ 26'$                  |                                        |        |       |                        |
| $L_2$ Puppis +      | 2583     | 7 10.5                           | $-44^\circ 29'$                  | 3.5 6.3                                | 136.0  | II    | III?                   |
| $\delta$ Puppis     | 2783     | 7 43.8                           | $-47^\circ 52'$                  | 7.2 9                                  |        |       |                        |
| $\delta$ Antliae    | 3407     | 9 27.9                           | $-28^\circ 11'$                  | 6.7 7.3                                |        |       |                        |
| $\eta$ Velorum +    | 3409     | 9 28.2                           | $-56^\circ 36'$                  | 3.4 4.4                                |        |       |                        |
| R Carinae +         | 3418     | 9 29.7                           | $-62^\circ 21'$                  | 4.3 10.0                               | 312.1  | II    |                        |
| $\lambda$ Carinae + | 3495     | 9 42.5                           | $-62^\circ 3'$                   | 3.7 5.2                                | 31.0   | II?   |                        |
| R Antliae           | 3633     | 10 5.5                           | $-37^\circ 14'$                  | 6.5 <8                                 |        |       |                        |
| $\delta$ Carinae    | 3637     | 10 6.2                           | $-61^\circ 4'$                   | 6.2 9                                  |        |       |                        |
| $\eta$ Argus +      | 3847     | 10 41.2                          | $-59^\circ 10'$                  | >1 7.4                                 | Irr.   | II?   | B                      |
| $\gamma$ Hydrae +   | 3881     | 10 46.8                          | $-20^\circ 43'$                  | 6.7 <9.1                               | 575    | II    |                        |
| R Muscae +          | 4536     | 12 36.0                          | $-68^\circ 51'$                  | 6.6 7.4                                | 0.89   | IV    |                        |
| R Hydrae +          | 4826     | 13 24.2                          | $-22^\circ 46'$                  | 3.5 9.7                                | R      | II    | III!                   |
| - Centauri +        | 12       | 19.3                             | $-48^\circ 51'$                  |                                        |        |       | (suspected.)           |
| $\eta$ Hydrae       | 4940     | 13 43.4                          | $-27^\circ 52'$                  | 7 ?                                    |        |       |                        |
| - Hydrae +          | 13       | 43.4                             | $-27^\circ 44'$                  |                                        |        |       | (a.c. 18770. Magn 7.0) |
| R Centauri +        | 5095     | 14 9.4                           | $-59^\circ 27'$                  | 6.0 9.8                                |        | II    |                        |
| R Tri. Austr. +     | 5465     | 15 10.8                          | $-66^\circ 8'$                   | 6.6 8.0                                | 3.40   | IV    |                        |
| $\delta$ Librae     | 5494     | 15 15.6                          | $-20^\circ 2'$                   | 8.0 <13                                | 192.3  | II    | III                    |
| X Librae            | 5583     | 15 30.4                          | $-20^\circ 50'$                  | 11? <14                                |        | II    |                        |
| $\psi$ Librae       | 5617     | 15 36.2                          | $-20^\circ 52'$                  | 9 <14                                  |        | II    |                        |
| $\zeta$ Librae      | 5644     | 15 40.7                          | $-20^\circ 49'$                  | 11 <13                                 |        |       |                        |
| R Lupi              | 5682     | 15 47.0                          | $-36^\circ 0'$                   | 9 <11                                  |        | II?   |                        |
| $\zeta$ Scorpii     | 5761     | 16 0.1                           | $-21^\circ 28'$                  | 9 12?                                  |        |       |                        |



| Object         | Ch. No. | 1900 |        | Dec.     | Magn. |        | Period | Class | Spectr. |
|----------------|---------|------|--------|----------|-------|--------|--------|-------|---------|
|                |         | h.   | m.     |          | Max   | Min    |        |       |         |
| X Scorpii      | 5776    | 16   | 2.7    | -21° 16' | > 11  | < 13   | Irr.   | II?   |         |
| T Scorpii      | 5826    | 16   | 11.1   | -22 44   | 7.0   | < 12   |        | I.    |         |
| R Scorpii      | 5830    | 16   | 11.7   | -22 42   | 9.4   | < 13   | 224.5  | II.   |         |
| S Scorpii      | 5831    | 16   | 11.7   | -22 39   | 9.1   | < 13   | 176.7  | II.   |         |
| - Serpent.     | 6268    | 17   | 24.6   | -21 24   | > 1   | ?      |        | I     |         |
| X Sagittarii   | +6368   | 17   | 41.3   | -27 48   | 4     | 6      | 7.01   | IV.   |         |
| - Scorpii +    | 16      | 48.4 | -44 57 |          |       |        |        |       |         |
| W Sagittarii   | +6472   | 17   | 58.6   | -29 35   | 5     | 6.5    | 7.59   | IV    |         |
| x Pavonis      | +6760   | 18   | 46.6   | -67 21   | 4.0   | 5.5    | 9.10   | IV.   |         |
| S Cent. Aus.   | 6806    | 18   | 54.4   | -37 5    | < 9.5 | 13.0   | 6?     | IV?   |         |
| R Cent. Aus.   | 6811    | 18   | 55.2   | -37 5    | 9.8   | 13.2   | 30.5?  | II?   |         |
| T Cent. Aus.   | 6812    | 18   | 55.3   | -37 5    | < 9.8 | 13     |        | II    |         |
| Z Sagittarii   | 6923    | 19   | 13.8   | -21 6    | 8.5   | < 12   |        |       |         |
| W Capricorni   | 7252    | 20   | 8.6    | -22 17   | 11?   | 14?    | 42.5   | II.   |         |
| - Sagittarii + | 20      | 9.4  | -39 29 |          |       |        |        |       |         |
| T Capricorni   | 7571    | 21   | 1.8    | -24 19   | 9.5?  | 14?    | 310    | II.   |         |
| X Capricorni   | 7577    | 21   | 28     | -21 45   | 11.5? | < 14   | 210    | II.   |         |
| R Pis. Aust.   | +7994   | 22   | 12.3   | -30 6    | 5.7?  | < 11?  |        | II.   |         |
| R Indi         | 8093    | 22   | 28.9   | -67 48   | 9?    | 11?    |        | II?   |         |
| S Aquarii      | 8230    | 22   | 51.7   | -20 53   | 7.7   | < 12.5 | 279.3  | II    |         |
| R Phoenix      | 8588    | 23   | 51.3   | -50 21   | 8.5?  | 11?    |        | II.   |         |

(a. g. b. 22855. Magn 7)

+ Important

Take charts of 10<sup>m</sup>. ex. with Bache Telescope at intervals of from two to four weeks. Photograph spectra when sufficiently bright with 13 inch telescope, or with Bache telescope with 13° or 5° prism.



to be  
used for  
Bailey  
Jan. 24, 1893

List of all Double Stars brighter than the 6<sup>th</sup> Magn. and those having  
Dist. of 30 or less, brighter than the 8<sup>th</sup> Magn. taken from observations of  
Sir John Herschel made at Cape of Good Hope. p. 171-242, 249-264.

| * Capet. <sup>Tab. I</sup> |      | Capet. <sup>Tab. II</sup> |              | R.A. <sup>1900</sup> |       | Dec.  | Dist. | Position.  | Magn. | Tab. I | Tab. II |
|----------------------------|------|---------------------------|--------------|----------------------|-------|-------|-------|------------|-------|--------|---------|
|                            |      |                           |              |                      |       |       |       |            |       |        |         |
| 3347                       |      | 0                         | 4.1 - 50 44  | 30                   | 85.0  | 7' 14 | 55    |            |       |        |         |
| 5442                       |      |                           | 2.5 - 78 3   | 25                   | 60.4  | 7' 12 | 36    | (Br. 39)   |       |        |         |
|                            |      |                           | 4.3 - 28 33  | 0.7                  | 110   | 6 6   | 56    | K. Sculley |       |        |         |
| 3362                       |      |                           | 17.8 - 19 35 | 4                    | 73.3  | 7 11  |       |            |       |        |         |
| 3366                       |      |                           | 22.3 - 68 17 | 25                   | 35.4  | 7' 14 | 561   |            |       |        |         |
| —                          | 1118 |                           | 27.0 - 63 31 | 27.7                 | 172.3 | 5' 5' | 451   |            |       |        |         |
| 3375                       | 1123 |                           | 28.8 - 35 32 | 6.5                  | 164.1 | 6' 8  | 478   |            |       |        |         |
| 3376                       | 1126 |                           | 28.8 - 55 53 | 7.6                  | 247.6 | 6' 11 | 480   |            |       |        |         |
| 3378                       | 1136 |                           | 29.0 - 61 42 | 9                    | 353.6 | 7 15  | 486   |            |       |        |         |
| 3380                       |      |                           | 34.6 - 17 17 | 30                   | 96.2  | 7' 13 |       |            |       |        |         |
| 3387                       |      |                           | 37.2 - 57 3  | 15                   | 252.1 | 5' 12 | 633   |            |       |        |         |
| 3390                       |      |                           | 38.6 - 45 44 | 15                   | 313.5 | 7' 11 | 659   |            |       |        |         |
| 3391                       |      |                           | 38.8 - 58 1  | 20                   | 209.5 | 5 14  | 662   |            |       |        |         |
| 3397                       |      |                           | 42.1 - 54 39 | 10                   | 160.0 | 7' 15 | 718   |            |       |        |         |
|                            | 1131 |                           | 48.6 - 70 3  | 21.4                 | 79.9  | 6' 7  | 810   |            |       |        |         |
| —                          | 1138 |                           | 53.1 - 16 14 | 6.7                  | 32.3  | 7' 7' | 890   |            |       |        |         |
| 3416                       | 1141 |                           | 59.2 - 60 38 | 5.2                  | 126.8 | 7' 7' | 982   |            |       |        |         |
| 3415                       |      |                           | 59.4 - 41 11 | 1                    | 157.5 | 7 8   | 981   |            |       |        |         |
| 3417                       |      | 1                         | 1.6 - 47 15  | 30                   | 17.6  | 3' 11 | 1024  |            |       |        |         |
| —                          | 1145 |                           | 4.2 - 55 47  | 6.3                  | 244.0 | 5 11  | 1069  |            |       |        |         |
| 3423                       | 1148 |                           | 12.3 - 69 24 | 5.0                  | 16.1  | 6' 9  | 1210  |            |       |        |         |
| 3426                       | 1150 |                           | 12.6 - 66 55 | 2±                   | 347.2 | 7' 11 | 1231  |            |       |        |         |
| 3430                       |      |                           | 16.5 - 57 52 | 1½                   | 246.3 | 6' 11 | 1280  |            |       |        |         |
| 3429                       |      |                           | 17.0 - 24 39 | 5                    | 15±   | 7 9'  | 1285? |            |       |        |         |
| 3435                       |      |                           | 21.5 - 60 1  | 25                   | 355.6 | 7' 10 | 1365  |            |       |        |         |
| 3436                       |      |                           | 22.5 - 30 45 | 12                   | 126.3 | 7 10  | 1379  |            |       |        |         |
| 3437                       | 1154 |                           | 23.4 - 17 47 | 13.4                 | 245.2 | 7 9'  |       |            |       |        |         |
| 3442                       |      |                           | 27.6 - 25 57 | 30                   | 208.3 | 6' 10 |       |            |       |        |         |
| 3447                       | 1156 |                           | 31.6 - 30 25 | 33                   | 75.4  | 6' 8  | 1547  |            |       |        |         |

\* Where a star is common to both tables in Capet list, the Position Angle and Dist. given are derived from the mean of the etc. in the last table.



| Tab. I   | Tab. II  | 1900                                   |       |       |           |                   |      |          |
|----------|----------|----------------------------------------|-------|-------|-----------|-------------------|------|----------|
| Cap. No. | Cap. No. | Alt.                                   | Dec.  | Dist. | Position. | Mag.              | Hebb | A. G. B. |
| 3449     | ..       | 1 <sup>h</sup> 31.8-53 42 <sup>m</sup> | 18    | 153.3 | 7' 14     |                   | 1556 |          |
| 3453     | ..       | 33.9-79 0                              | 35    | 285.4 | 5' 14     |                   | 1586 |          |
| ..       | 1158     | 35.0-53 56                             | 10.4  | 104.6 | 7' 8      |                   | 1606 |          |
| 3452     | ..       | 35.3-37 58                             | 20    | 277.0 | 7' 9'     |                   | 1613 |          |
| ..       | 1160     | 36.0-56 42                             | 3.7   | 122.3 | 7=7       |                   | 1633 |          |
| ..       | 1164     | 36.8-11 49                             | 46    | 86.9  | 6 8       |                   | 1643 |          |
| 3461     | 1165     | 41.0-25 33                             | 56    | 69.5  | 6 10      |                   | 1713 |          |
| 3467     | ..       | 41.3-79 39                             | 15    | 346.0 | 6 13      |                   | 1736 |          |
| 3469     | 1167     | 45.5-38 54                             | 2 1/4 | 70.9  | 6 10      |                   | 1791 |          |
| 3474     | ..       | 48.7-80 41                             | 25    | 20.9  | 6 13      |                   | 1869 |          |
| 3478     | ..       | 52.0-52 7                              | 12    | 192.3 | 4' 14     |                   | 1905 |          |
| 3475     | 1168     | 52.1-60 48                             | 33    | 37.6  | 7'=7'     |                   | 1908 |          |
| 3482     | ..       | 2 2.0-65 37                            | 30    | 202.8 | 7 15      |                   | 2114 |          |
| 3486     | ..       | 7.4-64 50                              | 30    | 220.4 | 7' 14     |                   | 2228 |          |
| ..       | ..       | 7.7-2 52                               | 18    | 227.7 | 6' 8      |                   | 2218 |          |
| ..       | ..       | 12.9-57 58                             | 80    | 210.4 | 5 9       |                   | 2339 |          |
| 3498     | ..       | 17.6-28 19                             | 10    | ..... | 7 16      |                   | 2426 |          |
| ..       | ..       | 20.8-11 4                              | 10    | 265.8 | 6 11      |                   | ..   |          |
| 3503     | ..       | 24.9-58 35                             | 20    | 202.8 | 7' 11     |                   | 2599 |          |
| 3502     | ..       | 25.3-23 7                              | 25    | 82.5  | 6' 13     |                   | 2598 |          |
| 3506     | 1176     | 29.5-28 40                             | 10.9  | 242.0 | 6' 8      |                   | 2693 |          |
| 3509     | ..       | 29.9-31 57                             | 25    | 53.0  | 7 11'     |                   | 2701 |          |
| 3511     | ..       | 31.4-21 50                             | 18    | 94.3  | 7' 10     |                   | 2739 |          |
| 3524     | ..       | 38.3-20 43                             | 20    | 135.2 | 7 8'      |                   | ..   |          |
| 3526     | 1184     | 38.8-31 30                             | 15±   | 56.6  | 7 11      |                   | 2888 |          |
| ..       | ..       | 39.4-28 20                             | 2     | 110   | 7 10      | Qu 261 Form. 2899 |      |          |
| 3527     | 1185     | 39.5-40 58                             | 16    | 43.4  | 7'=7'     |                   | 2905 |          |
| ..       | 1188     | 39.8-25 56                             | 11.0  | 185.2 | 6' 9      |                   | 2911 |          |
| 3532     | ..       | 44.6-37 49                             | 6     | 150.6 | 6' 8      |                   | 3004 |          |



| Feb. I   | Feb. II  | 1900         | No.                   | No.                              |
|----------|----------|--------------|-----------------------|----------------------------------|
| Caput h. | Caput h. | R.A.         | Dec.                  | Dist. Position. Magn. Webb. Alb. |
| 3536     | 2        | 46.3 - 36 16 | 4                     | 3.5 6 13 3030                    |
| .. 1190  |          | 52.8 - 25 22 | 28.6 221.4 7 7'       | 3182?                            |
| .. 1191  |          | 54.5 - 40 42 | 8.8 81.6 4 5 3228     |                                  |
| 3548     |          | 59.3 - 21 45 | 12 122.2 7 12 ..      |                                  |
| .. 3     |          | 0.3 - 51 43  | 30 68.7 7' 7' ..      |                                  |
| ..       |          | 1.9 - 13 43  | 18 12.3 7' 11 ..      |                                  |
| 3555     | 1196     | 7.9 - 29 23  | 5.3 309.6 4 7 3462    |                                  |
| 3556     | ..       | 8.9 - 44 47  | 1 1/2 233.3 6 11 3487 |                                  |
| 3557     | ..       | 10.2 - 13 48 | 20 9.9 7' 12 ..       |                                  |
| 3564     | ..       | 12.6 - 59 53 | 30 274.4 6 13 3574    |                                  |
| .. 1202  |          | 13.6 - 64 48 | 19.3 102.3 7 9 3594   |                                  |
| 3565     | 1200     | 14.1 - 18 55 | 5.8 110.4 5 9 3591    |                                  |
| 3576     | 1204     | 21.2 - 46 1  | 4.2 338.4 7 9 3733    |                                  |
| 3575     | ..       | 21.6 - 51 25 | 25 41.2 7' 12 3740    |                                  |
| 3579     | ..       | 24.4 - 44 0  | 15 263.3 7' 11 76.702 |                                  |
| 3580     | ..       | 27.6 - 63 18 | 60 122.4 4 12 3879    |                                  |
| 3582     | ..       | 20.0 - 83 54 | 15 286.2 7 11 3780    |                                  |
| .. 1209  |          | 36.2 - 40 40 | 8.9 326.6 7 8 4055    |                                  |
| ..       |          | 36.2 - 60 6  | 30± 250± 7 8 4062     |                                  |
| 3589     | 1215     | 40.6 - 40 58 | 66 344.8 7 11 4148    |                                  |
| 3592     | 1216     | 42.0 - 54 35 | 60 11.3 6 10 4185     |                                  |
| .. 1218  |          | 44.9 - 87 55 | 8.7 199.6 5 6 4241    |                                  |
| 3613     | ..       | 48.0 - 80 20 | 20 159.5 7' 9 4359    |                                  |
| 3608     | ..       | 53.4 - 13 48 | 45 233.6 3' 13 4407   |                                  |
| .. 4     |          | 9.6 - 10 30  | 5 146.6 6' 12 4725    |                                  |
| 3632     | 1227     | 11.1 - 30 19 | 10.7 162.0 7' 9 4763  |                                  |
| 3638     | ..       | 12.1 - 62 43 | 40 353.6 4 12 4812    |                                  |
| 3641     | 1231     | 12.5 - 62 26 | 69 289.6 5' 13 4820   |                                  |
| 3636     | ..       | 14.1 - 34 2  | 50 13.4 3 14 4821     |                                  |



| Oct. I   | Oct. II  | 1900                                      |      |       |          |       |      |         |  |
|----------|----------|-------------------------------------------|------|-------|----------|-------|------|---------|--|
| Cap. to. | Cap. to. | R.A.                                      | Dec. | Dist. | Position | Magn. | Hebb | A.G.B.  |  |
| 3642     | 1232     | 4 <sup>h</sup> 15.2 <sup>m</sup> - 34° 8' | 59   | 157.6 | 7        | 10    |      | 4841    |  |
| 3643     | ..       | 16.1 - 44 30                              | 60   | 115.5 | 5'       | 8     |      | 4859    |  |
| —        | 1234     | 16.6 - 63 30                              | 62   | 6.1   | 6        | 9     |      | 4880    |  |
| ..       | 1236     | 22.3 - 57 17                              | 72   | 231.8 | 7'       | 8     |      | 4985    |  |
| 3650     | 1238     | 23.2 - 40 45                              | 50   | 184.1 | 6        | 9     |      | 4997    |  |
| 3654     | ..       | 23.6 - 66 58                              | 15   | 94.7  | 6'       | 12    |      | 5018    |  |
| 3659     | ..       | 27.0 - 35 53                              | 30   | 35.6  | 6        | 14    |      | 5078    |  |
| 3673     | ..       | 29.3 - 77 54                              | 12   | 61.7  | 7'       | 8     |      | 5182    |  |
| ..       | 1240     | 30.7 - 25 15                              | 22.4 | 189.7 | 7        | 11    |      | 5161    |  |
| 3668     | 1241     | 31.8 - 55 15                              | 82.3 | 108.6 | 3        | 11    |      | 5198    |  |
| 3670     | ..       | 32.6 - 63 2                               | 30   | 95.0  | 6        | 8'    |      | 5223    |  |
| * 3679   | ..       | 35.6 - 62 16                              | 20   | 350±  | 7        | 12    |      | 5276    |  |
| 3683     | ..       | 38.6 - 59 8                               | 3    | 261.5 | 7        | 7     |      | 5335    |  |
| ..       | 1248     | 46.4 - 45 20                              | 58   | 62.3  | 7'       | 10'   |      | 76.1563 |  |
| 3697     | ..       | 47.0 - 41 29                              | 15   | 284.6 | 6'       | 10    |      | 5510    |  |
| 3699     | ..       | 47.7 - 45 50                              | 5    | 141.5 | 7'       | 13    |      | 5527    |  |
| —        | 1252     | 48.7 - 53 38                              | 12.4 | 57.9  | 6'       | 7     |      | 5555    |  |
| 3700     | ..       | 48.9 - 20 56                              | 20   | 245.3 | 7'       | 14    |      | 5549    |  |
| 3705     | ..       | 52.3 - 16 18                              | 16   | 139.3 | 7'       | 10    |      | 5620    |  |
| 3715     | ..       | 56.8 - 49 37                              | 12   | 111.7 | 7        | 10    |      | 5743    |  |
| —        | ..       | 5 3.6 - 8 48                              | 25   | 84.6  | 7'       | 10    |      | 5864    |  |
| 3728     | ..       | 5.3 - 41 21                               | 12   | 255.0 | 6        | 11    |      | 5922    |  |
| —        | ..       | 8.7 - 13 3                                | 2    | 359.9 | 5'       | 9     |      | 5987    |  |
| ..       | 1256     | 9.7 - 8 19                                | 9.4  | 199.8 | 1        | 9     |      | 6004    |  |
| 3742     | ..       | 11.5 - 55 41                              | 15   | 254.8 | 7        | 14    |      | 6057    |  |
| 3740     | ..       | 11.7 - 36 46                              | 30   | 284.7 | 7        | 8'    |      | 6052    |  |
| 3748     | ..       | 12.5 - 62 32                              | 6    | 283.3 | 5'       | 11    |      | ..      |  |
| 3745     | 1261     | 14.4 - 34 8                               | 13.5 | 166.7 | 7'       | 10    |      | 76.487  |  |
| —        | ..       | 14.9 - 18 37                              | 30   | 17.2  | 6 = 6    |       |      | 6116    |  |

\* R. Doradus. Var. in A.G.B.



| Tab. I   | Tab. II  | 1900         |            |                  |                       |       | No.   | No.    |
|----------|----------|--------------|------------|------------------|-----------------------|-------|-------|--------|
| Cap. No. | Cap. No. | R.A.         | Dec.       | Dist.            | Position.             | Magn. | Hebb. | A.S.B. |
| 3750     | 5        | 16.2 - 21 20 | 3          | 295.3            | 5 10                  |       |       | 6141   |
| 3752     | 1267     | 17.6 - 24 52 | 3.4        | 110.0            | 6 10                  |       |       | 6177   |
| 3757     | ..       | 19.4 - 31 50 | 18         | 272.9            | 7' 11                 |       |       | 6225   |
| 3759     | 1272     | 21.7 - 19 47 | 8.6        | 315.3            | 7 9                   |       |       | 6285   |
| 3760     | 1275     | 22.3 - 35 27 | 7.3        | 221.6            | <del>6 7</del><br>4 4 |       |       | 6302   |
| ..       | ..       | 22.5 - 52 25 |            |                  | 0 Pict.               |       |       | 6313   |
| 3761     | ..       | 24.0 - 20 51 | 70         | 145.9            | 4 13                  |       |       | 6344   |
| 3762     | ..       | 24.1 - 32 30 | 25         | 212.7            | 6' 13                 |       |       | 6352   |
| 3767     | 1279     | 27.4 - 47 9  | 32.2       | 228.1±           | 6 14                  |       |       | 6423   |
| ..       | 1282     | 28.1 - 42 23 | 8.4        | 171.8            | 7 8                   |       |       | 6438   |
| 3766     | ..       | 28.3 - 17 54 | 25         | 154.8            | 3' 12                 |       |       | 6436   |
| 3770     | ..       | 29.4 - 24 24 | 12         | 10.0             | 7 13                  |       |       | 6459   |
| 3783     | ..       | 32.1 - 70 59 | 20         | 262.1            | 7' 10                 |       |       | 6557   |
| 3784     | ..       | 35.4 - 46 9  | 3 1/2      | 51.3             | 7' 10                 |       |       | 6620   |
| ..       | 1285     | 35.8 - 2 0   | 28         | 147.9            | 2 6                   |       |       | 6614   |
| 3795     | ..       | 35.8 - 76 25 | 60         | 67.3             | 5 12                  |       |       | 6674   |
| 3788     | ..       | 37.3 - 26 24 | 25         | 151.3            | 7' 9                  |       |       | 6662   |
| 3793     | ..       | 39.0 - 48 18 | 12         | 102.8            | 7 11                  |       |       | 6705   |
| 3794     | ..       | 39.3 - 34 0  | 25         | 266.3            | 7 13                  |       |       | 6709?  |
| 3801     | ..       | 43.7 - 46 38 | 30         | 193.3            | 5" 14                 |       |       | 6817   |
| 3803     | 1288     | 44.1 - 44 50 | 20.0       | 113.5            | 7 10                  |       |       | 6828   |
| 3807     | ..       | 48.5 - 41 43 | 4          | 267.3            | 7' 13                 |       |       | 6917   |
| 3816     | ..       | 50.5 - 47 59 | 25         | 177.9            | 7 13                  |       |       | 6969   |
| 3820     | ..       | 52.0 - 69 56 | 30         | 111.3            | 7 10                  |       |       | 7044   |
| 3819     | ..       | 54.0 - 35 18 | 30         | 104.4            | 4 14                  |       |       | 7064   |
| 3822     | ..       | 55.1 - 53 26 | { 70<br>20 | { 304.3<br>133.4 | { 6' 7<br>7 13        |       |       | 7103   |
| 3825     | ..       | 58.2 - 27 26 | 25         | 342.8            | 7' 11                 |       |       | 7167   |
| 3834     | .. 6     | 1.8 - 45 5   | 1 1/4      | 245.9            | 6 10                  |       |       | 7279   |
| ..       | ..       | 2.2 - 48 27  | 2 1/2      | 343.5            | 7 7'                  |       |       | 7297   |



| Tab. I  | Tab. II | 1900                                       |               |              |          |       |       |        |
|---------|---------|--------------------------------------------|---------------|--------------|----------|-------|-------|--------|
| Cape N. | Cape N. | P.A.                                       | Dec.          | Dist.        | Position | Magn. | Hebb. | A.G.C. |
| —       | 1297    | 6 <sup>h</sup> 12.0-65 30                  | 21.5          | 115.1        | 7' 8"    |       | 7579  |        |
| 3845    | ..      | 12.8-22 40 25                              | 51.7          | 6' 12"       |          | 7574  |       |        |
| —       | ..      | 19.8-12 55 35                              | 296.3         | 7 11         |          | 7763  |       |        |
| 3856    | ..      | 20.1-45 35 30                              | 48            | 7 10         |          | 7788  |       |        |
| ..      | 1304    | 30.6-36 40 69.4                            | 66.3          | 5' 7"        |          | 7800  |       |        |
| 3857    | ..      | 20.7-36 39 12                              | 257.6         | 7' 12"       |          | 7803  |       |        |
| 3858    | ..      | 22.1-33 58 3                               | 313.8         | 7' 8"        |          | ..    |       |        |
| 3868    | ..      | 22.4-75 11 { <sup>18</sup> / <sub>25</sub> | 141.7<br>51.8 | 7 13<br>7 14 |          | 7898  |       |        |
| 3860    | ..      | 32.6-40 55 12                              | 223.0         | 7' 12"       |          | 7855  |       |        |
| 3870    | ..      | 24.5-75 4 18                               | 11.4          | 7' 13"       |          | 7952  |       |        |
| 3863    | ..      | 25.3-22 32 2                               | 121±          | 6' 9"        |          | 7918  |       |        |
| 3864    | ..      | 25.9-14 53 20                              | 43.3          | 7' 12"       |          | 7936  |       |        |
| ..      | 1307    | 27.3-50 10 13.5                            | 318.0         | 6 9          |          | 7991  |       |        |
| 3869    | ..      | 28.9-31 57 25                              | 249.3         | 7' 9"        |          | 8017  |       |        |
| 3871    | ..      | 30.3-29 33 10                              | 353.1         | 7' 8"        |          | 8053  |       |        |
| 3874    | ..      | 30.5-58 41 3                               | 2245          | 6 12         |          | 8071  |       |        |
| —       | ..      | 32.0-18 35 20                              | 260.9         | 7 8'         |          | 8088  |       |        |
| 3875    | ..      | 32.0-36 42 20                              | 297.3         | 6 13         |          | 8093  |       |        |
| 3882    | ..      | 35.8-44 58 20                              | 332.5         | 7' 11"       |          | 8218  |       |        |
| 3884    | ..      | 35.7-55 15 25                              | 275.7         | 7 12         |          | 8222  |       |        |
| —       | 1309    | 36.0-48 8 13.1                             | 317.1         | 6 9          |          | 8227  |       |        |
| —       | 1314    | 38.8-38 18 8.2                             | 275.9         | 6' 7"        |          | 8304  |       |        |
| 3891    | 1318    | 41.8-30 51 5.0                             | 222.0         | 6 10         |          | 8382  |       |        |
| 3893    | ..      | 44.0-37 50 60                              | 290±          | 5'           |          | 8455  |       |        |
| 3895    | ..      | 44.0-47 42 25                              | 60.8          | 7' 11"       |          | 8464  |       |        |
| 3900    | ..      | 50.6-34 6 2                                | 284.7         | 6 11         |          | 8648  |       |        |
| —       | ..      | 51.5-13 55 2                               | 339±          | 4' 10"       |          | 8664  |       |        |
| 3901    | ..      | 51.5-37 49 20                              | 218.8         | 7 11         |          | 8675  |       |        |
| 3911    | ..      | 51.7-76 44 19.6                            | 432           | 7 12         |          | 8730  |       |        |



| Tab. I |        | Tab. II |      | 1900 |    | Dist.                 | Position                | Mag.           | Wobb. | A.G.B. |
|--------|--------|---------|------|------|----|-----------------------|-------------------------|----------------|-------|--------|
| Caput. | Caput. | h.      | m.   | °    | '  |                       |                         |                |       |        |
| 3914   | ..     | 6       | 57.9 | 23   | 21 | 12                    | 315.6                   | 7' 13          |       | 8846   |
| 3922   | ..     |         | 57.0 | 60   | 43 | 15                    | 332.1                   | 7' 13          |       | 8896   |
| ..     | 1321   | 7       | 0.9  | 48   | 28 | 20.4                  | 121.0                   | 6' 7           |       | 8936   |
| —      | 1329   |         | 1.7  | 59   | 2  | 2.5                   | 748                     | 7 7            |       | 8973   |
| 3928   | 1323   |         | 1.9  | 34   | 37 | 5.4                   | 157.6                   | 5' 7           |       | 8961   |
| ..     | 1337   |         | 8.4  | 55   | 25 | 7.6                   | 225.0                   | 7' 7           |       | 9142   |
| 3938   | ..     |         | 9.6  | 22   | 44 | 18                    | 252.6                   | 7' 8           |       | 9165   |
| —      | 1346   |         | 9.6  | 70   | 20 | 12.8                  | 301.4                   | 5' 7           |       | 9206   |
| * 3943 | ..     |         | 10.5 | 44   | 28 |                       | 210 ±                   | 5'             |       | 9197   |
| 3945   | 1342   |         | 12.4 | 23   | 9  | 28.2<br><del>20</del> | 67.6<br><del>70 ±</del> | 7 8            |       | 9247   |
| —      | ..     |         | 13.6 | 36   | 55 | 70                    | 211.8                   | 3 8            |       | 9288   |
| 3948   | ..     |         | 14.5 | 24   | 47 | { 8<br>15             | 85.8<br>73.3            | 5' 11<br>5' 12 |       | 9313   |
| —      | 1356   |         | 18.0 | 52   | 8  | 10.5                  | 16.1                    | 7 7'           |       | 9422   |
| —      | 1361   |         | 18.6 | 48   | 20 | 22.8                  | 157.6                   | 7' 9           |       | 9448   |
| 3965   | ..     |         | 20.4 | 35   | 39 | 25                    | 207.2                   | 6 13           |       | 9485   |
| 3967   | ..     |         | 20.9 | 55   | 23 | 25                    | 137.6                   | 7 15           |       | 9522   |
| 3966   | 1364   |         | 21.3 | 37   | 6  | 7.0                   | 141.0                   | 7' 7           |       | 9523   |
| 3968   | ..     |         | 22.7 | 41   | 55 | 25                    | 127.7                   | 7' 12          |       | 9559   |
| —      | 1367   |         | 25.1 | 31   | 39 | 9.5                   | 51.8                    | 7' 8           |       | 9616   |
| —      | 1372   |         | 26.1 | 43   | 6  | 22.5                  | 75.0                    | 5 10           |       | 9652   |
| 3996   | ..     |         | 27.8 | 84   | 17 | 12                    | 244.8                   | 6' 12          |       | 9819   |
| ..     | 1374   |         | 30.1 | 23   | 15 | 9.4                   | 106.8                   | 6 6            |       | 9745   |
| 3984   | ..     |         | 30.8 | 54   | 57 | { 15<br>60            | 317.3<br>255.9          | 7 14<br>7 8    |       | 9775   |
| ..     | 1382   |         | 34.7 | 26   | 34 | 10.4                  | 137.8                   | 5 = 5          |       | 9880   |
| ..     | 1385   |         | 36.5 | 48   | 49 | 13.6                  | 17.2                    | 6' 10          |       | 9949   |
| —      | ..     |         | 40.9 | 14   | 27 | 25                    | 350 ±                   | 7 8            |       | 10077  |
| 3997   | ..     |         | 37.4 | 74   | 3  | 1                     | 101.3 ::                | 7 = 7          |       | 10006  |
| 4000   | ..     |         | 40.4 | 58   | 24 | 13.4                  | 230.3                   | 6' 11          |       | 10080  |
| —      | ..     |         | 43.0 | 72   | 22 | 18                    | 117.7                   | 5 9'           |       | 10203  |

\* Var. in A.G.B. L<sub>2</sub> Proppis.



| <i>Tab. I</i>  | <i>Tab. II</i> | <i>1900</i>            |                                        |                                            |                                          |              |              |            |
|----------------|----------------|------------------------|----------------------------------------|--------------------------------------------|------------------------------------------|--------------|--------------|------------|
| <i>Caputo.</i> | <i>Caputo.</i> | <i>R.A.</i>            | <i>Dec.</i>                            | <i>Dist.</i>                               | <i>Position</i>                          | <i>Magn.</i> | <i>Webb.</i> | <i>No.</i> |
| 4005           | ..             | $7^h 43.5^m - 56^s 29$ | 30                                     | 215.3                                      | 6 12                                     |              |              | 10187      |
| 4012           | ..             | 47.5 - 60 2            | 12                                     | 105.5                                      | 5' 13                                    |              |              | 10320      |
| 4013           | ..             | 49.6 - 18 3            | 12                                     | 199.7                                      | 7' 13                                    |              |              | ..         |
| ..             | 1398           | 50.4 - 59 21           | 6.1                                    | 323.7                                      | 7' 10'                                   |              |              | 10405      |
| 4025           | ..             | 55.3 - 48 58           | $\begin{cases} 18 \\ 40 \end{cases}$   | $\begin{cases} 47.6 \\ 84.8 \end{cases}$   | $\begin{cases} 6 14 \\ 6 12 \end{cases}$ |              |              | 10534      |
| 4028           | 1405           | 56.4 - 49 42           | 17.4                                   | 46.9                                       | 7' 7'                                    |              |              | 10566      |
| 4031           | 1407           | 56.7 - 60 35           | 6.3                                    | 359.4                                      | 7' 9                                     |              |              | 10595      |
| 4032           | 1409           | 56.8 - 47 2            | 30.8                                   | 351.4                                      | 7 9'                                     |              |              | 10580      |
| ..             | ..             | 58.5 - 27 16           | 5                                      | 246                                        | 7 10                                     | Br 203.49    |              | 10640      |
| 4035           | ..             | 59.2 - 32 11           | 30                                     | 131.7                                      | 7' 9                                     |              |              | 10661      |
| 4038           | 1411           | 59.3 - 41 2            | 29.1                                   | 345.4                                      | 7 8'                                     |              |              | 10668      |
| 4041           | .. 8           | 0.7 - 22 8             | 3                                      | 179.3                                      | 7 15                                     |              |              | ..         |
| 4046           | 1415           | 1.9 - 33 17            | 22.3                                   | 88.5                                       | 7' 10                                    |              |              | 10728      |
| 4067           | ..             | 5.6 - 83 26            | $\begin{cases} 25 \\ 30 \end{cases}$   | $\begin{cases} 65.1 \\ 88.0 \end{cases}$   | $\begin{cases} 7 12 \\ 7 12 \end{cases}$ |              |              | 10948?     |
| —              | 1419           | 6.4 - 42 20            | 6.0                                    | 80.5                                       | 7 8'                                     |              |              | 10859      |
| —              | 1421           | 6.5 - 47 2             | 41.2                                   | 220.2                                      | 3' 5                                     |              |              | 10863      |
| 4051           | ..             | 7.3 - 36 59            | 15                                     | 263.4                                      | 6 14                                     |              |              | 10884      |
| —              | 1431           | 7.6 - 68 19            | 6.9                                    | 22.8                                       | 5' 9                                     |              |              | 10923      |
| 4057           | 1428           | 8.0 - 42 41            | 23.8                                   | 297.8                                      | 6 11                                     |              |              | 10913?     |
| 4058           | ..             | 9.7 - 35 35            | 4                                      | 190±                                       | 6 7                                      |              |              | 10963      |
| 4059           | ..             | 10.2 - 31 50           | 30                                     | 339±                                       | 6 14                                     |              |              | 10971      |
| ..             | 1433           | 10.2 - 36 1            | 67.7                                   | 175.2                                      | 5' 6                                     |              |              | 10973      |
| 4062           | ..             | 10.5 - 40 2            | 50                                     | 343.4                                      | 5' 10                                    |              |              | 10984      |
| 4070           | ..             | 11.6 - 14 50           | 30                                     | 103.5                                      | 7' 12                                    |              |              | ..         |
| 4079           | ..             | 15.3 - 55 35           | 20                                     | 173.5                                      | 7 14                                     |              |              | 11134      |
| 4085           | ..             | 17.5 - 36 10           | 5                                      | 270.0                                      | 5' 14                                    |              |              | 11194      |
| 4088           | ..             | 19.7 - 28 39           | 25                                     | 290±                                       | 6 11                                     |              |              | 11246      |
| 4103           | ..             | 23.0 - 73 5            | $\begin{cases} 30 \\ 45 \end{cases}$   | $\begin{cases} 287.4 \\ 158.4 \end{cases}$ | $\begin{cases} 5 13 \\ 5 14 \end{cases}$ |              |              | 11378      |
| 4104           | 1448           | 25.9 - 47 36           | $\begin{cases} 44 \\ 20.1 \end{cases}$ | $\begin{cases} 242.3 \\ 39.9 \end{cases}$  | $\begin{cases} 6 10 \\ 6 9 \end{cases}$  |              |              | 11424      |



| Vol. I  |         | Vol. II |         | 1900 |                 | Dist.                   | Position             | Magn. | Webb.      | No. Alb. |
|---------|---------|---------|---------|------|-----------------|-------------------------|----------------------|-------|------------|----------|
| Caputo. | Caputo. | h.      | m.      | h.   | m.              |                         |                      |       |            |          |
|         | 1444    | 8       | 26.0-44 | 23   | 5.7             | 350.4                   | 6 9                  |       |            | 11429    |
| 4107    | ..      |         | 27.4-38 | 43   | { 3<br>30       | 325.4<br>98.7           | 7 10<br>7 9          |       |            | 11460    |
| 4110    | ..      |         | 28.7-66 | 48   | 25<br>54        | 221.4                   | 7 11                 |       |            | 11517    |
| 4115    | ..      |         | 33.5-33 | 23   | { 20<br>40      | 155.6<br>21.3           | 6' 12<br>6' 13       |       |            | 11628    |
| 4120    | ..      |         | 35.5-29 | 12   | 50              | 40                      | 5' 11                |       |            | 11696    |
| 4125    | ..      |         | 35.5-62 | 30   | 8               | 230.3                   | 7 11                 |       |            | 11711    |
| 4124    | ..      |         | 37.1-15 | 35   | 35              | 122.8                   | 5 14                 |       |            | 11736    |
| 4126    | 1453    |         | 37.1-52 | 42   | 16.0            | 31.5                    | 7' 11                |       |            | 11751    |
| 4128    | 1456    |         | 37.1-59 | 58   | 2.6             | 221.0                   | 7' 8                 |       |            | 11759    |
| 4127    | ..      |         | 37.3-46 | 17   | 30              | 57.7                    | 5 11                 |       |            | 11755    |
| 4130    | 1458    |         | 38.3-57 | 11   | 3.5±            | 226.2                   | 7' 10                |       |            | 11785    |
| 4134    | ..      |         | 38.7-70 | 1    | 35              | 105.8                   | 5' 9                 |       |            | 11810    |
| 4133    | 1463    |         | 40.8-42 | 17   | 47.2            | 60.8                    | 5 13                 |       |            | 11852    |
| 4136    | ..      |         | 42.0-57 | 20   | 80              | 640                     | 2' 10                |       |            | 11887    |
|         | ..      |         | 42.7-58 | 21   | { 4<br>60<br>80 | 289.7<br>357.3<br>217.6 | 7 7'<br>7 12<br>7 12 |       |            | 11911    |
| 4144    | ..      |         | 46.5-35 | 34   | 2               | 309±                    | 7 13                 |       |            | 12014    |
| ..      | 1471    |         | 50.6-17 | 52   | 69.0            | 145.5                   | 5' 7                 |       |            | 12119    |
| 4153    | ..      |         | 51.8-44 | 40   | 30              | 121.6                   | 6 14                 |       |            | 12148    |
| 4156    | ..      |         | 52.8-60 | 16   | 25              | 322.3                   | 5 14                 |       |            | 12175    |
| ..      | 1475    |         | 54.5-58 | 51   | 40.6            | 75.1                    | 5' 7                 |       |            | 12221    |
| 4161    | ..      |         | 55.5-46 | 51   | 20              | 329.3                   | 6' 13                |       |            | 12235    |
| 4165    | 1479    |         | 58.7-51 | 48   | 1.4             | 88.0                    | 6 8                  |       |            | 12330    |
| 4175    | ..      | 9       | 1.0-61  | 57   | 20              | 130.6                   | 7 11                 |       |            | 12380    |
| 4178    | ..      |         | 2.2-57  | 27   | 3               | 164.8                   | 6 14                 |       |            | 12397    |
| ..      | ..      |         | 5.4-25  | 24   | 1.5             | 160<br>75               | 7 9                  |       | On 410.4y. | 12460    |
| 4183    | ..      |         | 3.7-29  | 57   | 18              | 144.9                   | 6' 9'                |       |            | 12466    |
| 4188    | 1483    |         | 8.8-43  | 12   | 2.9             | 287.0                   | 6' 7'                |       |            | 12542    |
| 4187    | ..      |         | 7.5-44  | 17   | ..              | ...                     | 3' 10                |       |            | ..       |
| 4190    | ..      |         | 8.8-57  | 33   | 7               | 19.5                    | 7 12                 |       |            | 12548    |



|      | Tab. I<br>Caput. b. | Tab. II<br>Caput. b. | Ret.      | Dec. | Dist.         | Position       | Magn.          | Wobb. | No.<br>Alg. |
|------|---------------------|----------------------|-----------|------|---------------|----------------|----------------|-------|-------------|
| 4191 | ..                  | 9 <sup>h</sup>       | 10.6 - 42 | 49   | 4             | 6.8            | 6' 13          |       | 12593       |
| 4211 | 1487                |                      | 11.3 - 85 | 16   | 15            | 113.2          | 6 10           |       | 12688       |
| 4206 | ..                  |                      | 17.6 - 74 | 28   | { 5<br>40     | 338.5<br>347.7 | 6 13<br>6 11   |       | 12768       |
| 4213 | ..                  |                      | 22.9 - 61 | 31   | 7             | 318.3          | 7' 10          |       | 12889       |
| 4212 | ..                  |                      | 24.0 - 42 | 8    | 15            | 67.3           | 7 14           |       | 12903       |
| 4217 | ..                  |                      | 24.9 - 77 | 28   | 20            | 278.9          | 7 13           |       | 12967       |
| —    | 1491                |                      | 26.5 - 31 | 26   | 8.3           | 210.8          | 7' 8           |       | 12978       |
| 4220 | 1495                |                      | 30.2 - 48 | 34   | 2.8           | 202.0          | 7 = 7          |       | 13077       |
| 4241 | ..                  |                      | 40.0 - 66 | 28   | 30            | 302.7          | 7 12           |       | 13283       |
| ..   | 1501                |                      | 41.4 - 49 | 2    | 18.2          | 68.5           | 7' = 7'        |       | 13303       |
| 4246 | ..                  |                      | 43.4 - 37 | 44   | { 25<br>30    | 144.4<br>23.5  | 7 15<br>7 15   |       | 13356       |
| → .. | 1515                |                      | 45.4 - 85 | 33   | 16.2          | 267.2          | 7 7            |       | 13480       |
| ..   | 1507                |                      | 44.6 - 64 | 37   | 5.2           | 125.8          | 3 9            |       | 13389       |
| 4256 | ..                  |                      | 47.5 - 7  | 28   | 30            | 314.3          | 5' 12          |       | 13448       |
| —    | 1512                |                      | 50.4 - 44 | 49   | 5.9           | 239.0          | 7 9'           |       | 13518       |
| 4269 | ..                  |                      | 53.9 - 47 | 56   | 15            | 316.9          | 7 12           |       | 13607       |
| 4271 | ..                  |                      | 54.6 - 35 | 25   | 30            | 312.1          | 4 13           |       | 13618       |
| 4273 | ..                  |                      | 55.5 - 44 | 28   | 16            | 136.3          | 7' 11          |       | 13639       |
| —    | ..                  |                      | 59.3 - 17 | 37   | 30            | 270±           | 7' 8           |       | 13722       |
| 4284 | ..                  | 10                   | 1.1 - 45  | 24   | 10            | 72.8           | 7' 11          |       | 13768       |
| 4290 | ..                  |                      | 6.1 - 45  | 17   | 15            | 305.3          | 7 11'          |       | 13873       |
| 4295 | ..                  |                      | 7.0 - 68  | 11   | 20            | 36.4           | 6 13           |       | 13897       |
| 4306 | 1527                |                      | 16.0 - 64 | 11   | 15            | 139.9          | 7 = 7          |       | 14115       |
| —    | 1530                |                      | 17.2 - 53 | 33   | { 7.1<br>36.7 | 103.3<br>191.6 | 5' 10<br>5' 10 |       | 14145       |
| 4312 | ..                  |                      | 18.3 - 47 | 28   | 30            | 268.1          | 7 11           |       | 14169       |
| 4311 | ..                  |                      | 18.4 - 12 | 53   | 4             | 122.3          | 7 14           |       | 14164       |
| 4321 | ..                  |                      | 24.9 - 30 | 6    | 10            | 225±           | 6 10           |       | 14319       |
| 4322 | ..                  |                      | 25.7 - 24 | 22   | 8             | 101.1          | 7' 13          |       | 14329       |
| 4329 | 1544                |                      | 27.5 - 53 | 13   | 17.5          | 17.4           | 5 9            |       | 14369       |



| Tab. I    | Tab. II   | 1900            | Dec.       | Dist.          | Position.      | Magn. | Hebb. | Alg. |
|-----------|-----------|-----------------|------------|----------------|----------------|-------|-------|------|
| Caput. h. | Caput. h. | P.A.            |            |                |                |       |       |      |
|           | 1540      | 10 27.7 - 44 33 | 140        | 37.8           | 6' 6'          |       | 14373 |      |
| 4333      | ..        | 28.7 - 72 43    | 30         | 96.1           | 6 12           |       | 14405 |      |
| 4330      | ..        | 28.8 - 46 30    | 30         | 160.6          | 5' 10          |       | 14397 |      |
| 4332      | 1548      | 29.4 - 46 28    | 26.4       | 164.8          | 7 11           |       | 14406 |      |
| ..        | 1550      | 29.4 - 54 53    | 26.4       | 30.7           | 7' 8'          |       | 14408 |      |
| ..        | 1558      | 34.9 - 58 40    | 15.3       | 21.4           | 6 9'           |       | 14558 |      |
| 4339      | ..        | 35.6 - 12 59    | { 30<br>3  | 61.3<br>89.3   | 7 12<br>13=13  |       | ..    |      |
| ..        | 1563      | 39.3 - 60 39    | 13.0       | 173.6          | 7 11           |       | 14664 |      |
| 4352      | ..        | 39.9 - 51 24    | { 15<br>30 | 212.3<br>226.7 | 6' 12<br>6' 14 |       | 14676 |      |
| 4356      | ..        | 40.1 - 59 1     | 2          | 150.5          | 7' 9           |       | 14686 |      |
| * 4366    | ..        | 41.2 - 59 10    | { 12<br>15 | 46.8<br>30.3   | 2 16<br>2 15   |       | 14720 |      |
| ..        | 1582      | 49.4 - 58 19    | 65.3       | 13.0           | 4' 8           |       | 14910 |      |
| 4383      | ..        | 50.4 - 70 11    | 1/2        | 275.8          | 6 8            |       | 14943 |      |
| 4388      | ..        | 53.1 - 45 20    | 25         | 214.6          | 7 13           |       | 14990 |      |
| 4393      | 1585      | 53.8 - 68 30    | 7.1        | 131.0          | 6' 9           |       | 15012 |      |
| 4391      | ..        | 54.4 - 34 20    | 25<br>60±  | 60±            | 7' 11          |       | 15016 |      |
| 4409      | 1586 11   | 2.7 - 42 6      | 1.5        | 278.0          | 5' 8'          |       | 15224 |      |
| 4410      | ..        | 3.1 - 15 26     | 15         | 205.3          | 7 15           |       | ..    |      |
| 4414      | ..        | 8.3 - 59 46     | 12         | 278.4          | 5 12           |       | 15356 |      |
| 4415      | ..        | 8.6 - 63 37     | 20         | 128.5          | 6 14           |       | 15365 |      |
| 4421      | ..        | 11.3 - 47 22    | 12         | 68.7           | 6' 10          |       | 15422 |      |
| ..        | 1588      | 11.9 - 45 20    | 1.3        | 269.8          | 7' = 7'        |       | 15437 |      |
| 4426      | ..        | 16.9 - 43 0     | 18         | 175.3          | 7 13           |       | 15543 |      |
| 4432      | 1591      | 19.1 - 64 24    | 2.4        | 288.9          | 6 8            |       | 15588 |      |
| 4438      | ..        | 22.6 - 39 19    | 18         | 196.1          | 7" 11          |       | 15661 |      |
| ..        | 1595      | 23.8 - 42 7     | 12.8       | 166.8          | 6' 9           |       | 15684 |      |
| 4440      | ..        | 23.8 - 77 58    | 15         | 166.1          | 7 12           |       | 15693 |      |
| 4445      | ..        | 27.1 - 58 53    | 15         | 126.3          | 7 12           |       | 15755 |      |
| ..        | 1598      | 27.3 - 28 43    | 8.9        | 30.2           | 6 = 6          |       | 15759 |      |

\* Var. in A.G.C. η Carinae.



| Caputo | Caputo | 1900    | Dec.  | Dist.                     | Position                  | Magn. | Webb  | Alt. |
|--------|--------|---------|-------|---------------------------|---------------------------|-------|-------|------|
| h m    | h m    | h m     |       |                           |                           |       |       |      |
| 4449   | ..     | 11 28.1 | 31 18 | 60                        | 170±                      | 4' 11 | 15786 |      |
| 4451   | ..     | 28.9    | 45 46 | 12                        | 212.0                     | 7 13  | ..    |      |
| 4455   | 1599   | 31.6    | 33 1  | 40                        | 244.8                     | 6 9   | 15854 |      |
| 4456   | ..     | 31.7    | 38 53 | 25                        | 120.5                     | 7 11  | 15859 |      |
| 4458   | ..     | 31.9    | 73 20 | 15                        | 37.3                      | 7 10  | ..    |      |
| 4460   | ..     | 34.4    | 57 11 | 10                        | 177.7                     | 7' 9  | 15923 |      |
| ..     | 1602   | 35.2    | 62 55 | <del>22</del> 26.0        | 275.7                     | 7' 8' | 15948 |      |
| 4463   | ..     | 35.6    | 33 1  | 2 1/2                     | 248.3                     | 6 8   | ..    |      |
| 4465   | ..     | 36.7    | 31 56 | 7                         | 315±                      | 7 13  | 15986 |      |
| 4471   | ..     | 40.9    | 66 10 | ..                        | 272.9                     | 5' 14 | 16085 |      |
| 4478   | 1603   | 47.9    | 33 21 | 2.1                       | 339.8                     | 5 5'  | 16217 |      |
| 4484   | ..     | 52.3    | 40 23 | 1 1/2                     | 299.2                     | 6 12  | 16345 |      |
| 4486   | 1613   | 54.7    | 77 40 | 16                        | 178.3                     | 6 6'  | 16382 |      |
| 4490   | ..     | 57.3    | 85 4  | 30                        | 144.6                     | 6' 10 | 16438 |      |
| 4495   | 1620   | 12 1.0  | 32 23 | 7.1                       | 313.8                     | 7' 9  | 16521 |      |
| 4498   | ..     | 1.2     | 65 9  | 15                        | 58.8                      | 7 9   | 16534 |      |
| 4501   | ..     | 1.7     | 64 3  | 30                        | 297.7                     | 5' 11 | 16541 |      |
| ..     | ..     | 4.3     | 11 17 | { 12 87.9<br>60 93.0      | 7 9<br>7 8                | 16597 |       |      |
| ..     | ..     | 6.3     | 16 14 | 8                         | 280.8                     | 6 8   | 16645 |      |
| 4504   | ..     | 6.5     | 82 48 | 30                        | 214.4                     | 6 10  | ..    |      |
| ..     | ..     | 8.8     | 45 10 | 4                         | 247.2                     | 5' 7  | 16700 |      |
| 4512   | ..     | 13.0    | 63 26 | 30                        | 233.5                     | 5 16  | 16778 |      |
| ..     | 1624   | 21.1    | 62 32 | { 5.7 120.8<br>91.1 201.2 | <del>12</del> 47<br>3 = 3 | 16942 |       |      |
| ..     | 1647   | 24.7    | 15 57 | 23.4                      | 213.0                     | 3' 10 | 17030 |      |
| ..     | ..     | 25.6    | 56 33 | 120                       | 38.0                      | 2 5   | 17048 |      |
| 4528   | ..     | 28.9    | 31 32 | 15                        | 163.8                     | 7' 12 | 17126 |      |
| 4533   | ..     | 30.6    | 39 19 | 30                        | 77.5                      | 6 12  | 17149 |      |
| 4535   | ..     | 33.0    | 66 38 | 7                         | 336.4                     | 7' 12 | 17195 |      |
| 4539   | 1648   | 36.0    | 48 24 | < 1"                      | 334.5                     | 4 4'  | 17269 |      |



| Cap. No. | Cap. No. | 1900           | Dec.                                                             | Dist.                                                               | Position                                                        | Magn. | Webb.   | No. |
|----------|----------|----------------|------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|-------|---------|-----|
| Cap. No. | Cap. No. | R.A.           | Dec.                                                             | Dist.                                                               | Position                                                        | Magn. | Webb.   | No. |
|          | 1658     | 12 36.1- 12 28 | 7.4                                                              | 122.3                                                               | 7 = 7                                                           |       | 17271   |     |
|          | 1660     | 36.6- 0 54     | $\left\{ \begin{array}{l} 1.5 \\ 0.5 \\ 0.7 \end{array} \right.$ | $\left\{ \begin{array}{l} 43.1 \\ 35.3 \\ 29.2 \end{array} \right.$ | $\left\{ \begin{array}{l} 4 \\ 4 \\ \vdots \end{array} \right.$ |       | 17292   |     |
| 4542     | ..       | 37.3- 24 4     | 30                                                               | 60.6                                                                | 7' 12                                                           |       | 36.3142 |     |
| 4548     | ..       | 40.6- 55 56    | 70                                                               | 1735                                                                | 5 9                                                             |       | 17390   |     |
| 4554     | ..       | 46.3- 30 32    | 18                                                               | 28±                                                                 | 6 10                                                            |       | 17486   |     |
| 4556     | 1685     | 48.8- 27 25    | 7.1                                                              | 80.2                                                                | 6' 8                                                            |       | 17550   |     |
|          | ..       | 48.8- 56 38    | 45                                                               | 15.5                                                                | 5' 6                                                            |       | 17541   |     |
| 4560     | ..       | 52.5- 38 22    | 25                                                               | 251.4                                                               | 7 14                                                            |       | 17636   |     |
| 4563     | 1692     | 55.6- 33 5     | 6.6                                                              | 236.8                                                               | 7' 8                                                            |       | 17708   |     |
| 4566     | ..       | 13 0.3- 77 55  | 15                                                               | 219.4                                                               | 6 15                                                            |       | 17795   |     |
| 4567     | ..       | 0.4- 47 56     | 15                                                               | 87.3                                                                | 5 13                                                            |       | 17811   |     |
|          | 1694     | 1.0- 49 22     | 26.0                                                             | 100.4                                                               | 5 10                                                            |       | 17826   |     |
|          | 1696     | 1.7- 64 46     | 5.7                                                              | 187.2                                                               | 7 10                                                            |       | 17840   |     |
| 4571     | ..       | 5.9- 34 36     | 15                                                               | 266.4                                                               | 7' 10                                                           |       | 17938   |     |
|          | 1700     | 8.5- 67 22     | 59.8                                                             | 332.4                                                               | 5' 7                                                            |       | 17989   |     |
|          | ..       | 9.7- 10 50     | 50                                                               | 53.1                                                                | 7 8                                                             |       | 18026   |     |
| 4576     | ..       | 9.9- 56 32     | 6                                                                | 129.7                                                               | 7 10'                                                           |       | 18027   |     |
| 4578     | ..       | 12.0- 36 29    | 8                                                                | 159.1                                                               | 7 12                                                            |       | 18081   |     |
|          | ..       | 16.2- 60 28    | 60                                                               | 342.3                                                               | 5' 7                                                            |       | 18174   |     |
| 4583     | ..       | 18.6- 62 58    | 40                                                               | 232.0                                                               | 5' 12                                                           |       | 18232   |     |
| 4588     | ..       | 21.4- 39 39    | 30                                                               | 141.4                                                               | 6 12                                                            |       | 18296   |     |
| 4592     | ..       | 24.6- 60 13    | 12                                                               | 222.8                                                               | 7' 15                                                           |       | 18363   |     |
| 4590     | ..       | 24.6- 77 3     | 25                                                               | 136.6                                                               | 6' 11                                                           |       | 18352   |     |
|          | 1708     | 25.3- 63 32    | 16.8                                                             | 358.2                                                               | 7' 9                                                            |       | 18371   |     |
|          | 1710     | 31.3- 25 59    | 10.0                                                             | 191.5                                                               | 6' 7                                                            |       | 18512   |     |
|          | ..       | 32.3- 7 22     | 3                                                                | 220.8                                                               | 7' 8                                                            |       | 18536   |     |
| 4598     | ..       | 33.2- 74 37    | 15                                                               | 40.5                                                                | 5 14                                                            |       | 18537   |     |
| 4604     | ..       | 35.2- 27 44    | 15                                                               | 387±                                                                | 7 9                                                             |       | 18590   |     |
|          | 1713     | 35.4- 54 3     | 5.5                                                              | 164.2                                                               | 6 7                                                             |       | 18587   |     |



| Star I   | Star II  | 1900          | Dec.                                 | Dist.                                      | Position                                   | Magn.              | Reb.  | Alt.       |
|----------|----------|---------------|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------|-------|------------|
| Cap. No. | Cap. No. | Alt.          |                                      |                                            |                                            |                    |       |            |
| 4606     | ..       | 13 36.0-22 57 | 30                                   | 350.8                                      | 7 11                                       |                    |       | 18610      |
| ..       | ..       | 406-11 56     | 25                                   | 160.3                                      | 6 12                                       |                    |       | 18711      |
| 4612     | ..       | 41.1-35 45    | 25                                   | 346.6                                      | 5' 14                                      |                    |       | 18718      |
| ..       | 1719     | 422-61 37     | 13.5                                 | 358                                        | 7' 8                                       |                    |       | 18733      |
| 4610     | ..       | 425-79 47     | 25                                   | 311.4                                      | 7 13                                       |                    |       | z.b. 2429  |
| ..       | 1723     | 456-52 19     | 18.3                                 | <del>288.9</del><br>285.8                  | 7 8'                                       |                    |       | 18817      |
| ..       | 1728     | 460-32 30     | 8.8                                  | 112.9                                      | 6 7                                        |                    |       | 18833      |
| ..       | ..       | 463-31 8      | 1.2                                  | 120                                        | 6 8.5                                      | B <sub>2</sub> 343 | 18839 |            |
| ..       | 1733     | 474-31 27     | 13.8                                 | 185.6                                      | 6' 9                                       |                    |       | 18855      |
| ..       | 1725     | 471-66 25     | 24.4                                 | 50.3                                       | 7' 8'                                      |                    |       | 18845?     |
| 4624     | ..       | 477-46 39     | 15                                   | 355.4                                      | 6 12                                       |                    |       | 18859      |
| 4628     | ..       | 493-46 47     | ..                                   | ..                                         | 3 11                                       |                    |       | 18897      |
| ..       | 1735     | 506-55 32     | 11.5                                 | 310.1                                      | 7' 9                                       |                    |       | 18927      |
| 4632     | ..       | 510-65 18     | 6                                    | 9.3                                        | 6 11                                       |                    |       | 18931      |
| 4633     | ..       | 507-57 13     | $\begin{cases} 70 \\ 12 \end{cases}$ | $\begin{cases} 267.9 \\ 301.4 \end{cases}$ | $\begin{cases} 7' 10 \\ 10 14 \end{cases}$ |                    |       | 18925      |
| 4643     | ..       | 582-36 47     | 15                                   | 139.5                                      | 7' 11                                      |                    |       | 19073      |
| ..       | 1740 14  | 10-53 13      | 24.4                                 | 27.8                                       | 7' 8                                       |                    |       | 19130      |
| 4653     | ..       | 26-42 59      | 25                                   | 34.8                                       | 6' 14                                      |                    |       | 19171      |
| 4659     | ..       | 58-55 0       | 12                                   | 115.8                                      | 7' 11                                      |                    |       | 19224      |
| 4657     | ..       | 66-75 18      | 18                                   | 80.7                                       | 7 10                                       |                    |       | z.b. 377   |
| 4672     | ..       | 139-42 36     | 3                                    | 301.6                                      | 6 10'                                      |                    |       | 19371      |
| ..       | 1747     | 155-58 0      | 9.7                                  | 163.3                                      | 6 8'                                       |                    |       | 19406      |
| ..       | 1750     | 173-7 19      | 6.2                                  | 164.0                                      | 7'=7'                                      |                    |       | 19458      |
| ..       | 1751     | 193-11 13     | 1/4                                  | 321.6                                      | 7' 9                                       |                    |       | 19509?     |
| 4684     | ..       | 274-64 27     | 12                                   | 266.8                                      | 7' 14                                      |                    |       | z.b. 1618  |
| 4690     | ..       | 308-45 42     | 25                                   | 24.0                                       | 7 10                                       |                    |       | 19773      |
| ..       | 1757     | 330-60 26     | 16.6                                 | 219.7                                      | 1 2                                        |                    |       | 19825      |
| ..       | 1781     | 344-64 33     | 15.7                                 | 244.0                                      | 3 8'                                       |                    |       | 19849      |
| ..       | 1785     | 358-54 44     | 6.7                                  | 204.0                                      | 7' 8                                       |                    |       | z.b. 2221? |



| Caput. I. | Caput. II | 1900.    | Dec.               | Dist.           | Position        | Magn.          | Webb.  | No.         |
|-----------|-----------|----------|--------------------|-----------------|-----------------|----------------|--------|-------------|
|           |           | h. m.    |                    |                 |                 |                |        |             |
| ..        | ..        | 14 35.9- | 30 30              | 76.1            | 160             | 6.5 6.5        | Bu 414 | cent. 19894 |
| 4696      | ..        | 39.4-    | 44 26              | 4               | 210.0           | 6 14           |        | 19969       |
| 4698      | ..        | 40.0-    | 51 57              | 10              | 261.4           | 5' 13          |        | 19985       |
| 1788      | ..        | 40.2-    | 25 1               | 9.2             | 134.2           | 6 7            |        | 19997       |
| 4695      | ..        | 41.0-    | 74 31              | 15              | 292.1           | 7 11           |        | 19987       |
| 1791      | ..        | 44.6-    | 46 59              | 7.1             | 217.4           | 7' 10          |        | 20097       |
| 4707      | ..        | 45.7-    | 66 0               | 1 1/2           | 219.7           | 7 8            |        | 20112       |
| 1797      | ..        | 46.8-    | 45 26              | 16.8            | 224.2           | 7 10           |        | 20134       |
| 4715      | 1801      | 49.8-    | 47 28              | 3.0             | 277.9           | 7 8            |        | 20202       |
| ..        | ..        | 48.5-    | 32 53              | 10              | 340             | 6 10           | Bu 347 | cent. 20183 |
| 1804      | ..        | 51.6-    | 20 57              | 12.0            | 277.6           | 6 7'           |        | 20257       |
| 4722      | ..        | 53.5-    | 30 19              | 10              | 344.5           | 6' 9           |        | 20313       |
| 4723      | ..        | 54.9-    | 51 31              | 6               | 171.0           | 7' 12          |        | 20338       |
| 4728      | 1806      | 58.3-    | 46 40              | 0.7             | 111.0           | 5' = 5'        |        | 20428       |
| 4734      | ..        | 15 38-   | 54 58              | 12              | 242.7           | 5 15           |        | 20543       |
| 4735      | ..        | 48-      | 60 1               | 3               | 27.8            | 7' 12          |        | 20560       |
| 1814      | ..        | 5.0-     | 48 22              | 27.2            | 144.3           | 6 7            |        | 20570       |
| ..        | ..        | 5.1-     | 51 43              | 80              | 247.6           | 4' 6           |        | 20572       |
| 1817      | ..        | 7.9-     | 43 1               | 10.9            | 46.9            | 7' 9           |        | 20631       |
| 4742      | ..        | 8.8-     | 75 12              | 15              | 203.3           | 6 13           |        | 20625       |
| 4750      | ..        | 8.9-     | 47 42              | 12              | 23.2            | 7 12           |        | 20655       |
| ..        | ..        | 9.7-     | 27 14              | 13              | 170             | 6.5 8          | Bu 350 | cent. 20685 |
| 4753      | 1819      | 11.5-    | 47 31              | 2.0             | 173.5           | 6 6            |        | 20713       |
| 1824      | ..        | 11.6-    | 47 31 <sup>2</sup> | 22.9            | 131.3           | 6 7            |        | 20714       |
| 4757      | 1828      | 15.4-    | 58 58              | 1.2             | 107.3           | 5' = 5'        |        | 20785       |
| 1833      | ..        | 15.9-    | 44 20              | 26.6            | 175.6           | 4' 10          |        | 20806       |
| 4764      | ..        | 20.6-    | 73 2               | 25              | 248.8           | 6' 12          |        | 20878*      |
| 1837      | ..        | 18.8-    | 38 32              | { 89.5<br>144.5 | { 298.8<br>45.9 | { 5 9'<br>5 9' |        | 20861       |
| 1845      | ..        | 22.2-    | 51 2               | 12.6            | 250.1           | 7' 12          |        | 20939?      |

\* See Caput. 4764 p. 220. "The obs. gives 163° S.P.D. B makes it 162° by 18 obs. I have misread 1° if it

be the same \*.

| Cat. I                                                                                         |      | Cat. II |      | 1900.          |      | Dec.           |       | Dist.          |          | Position       |   | Magn.          |   | Webb.          |   | A.B.           |   |
|------------------------------------------------------------------------------------------------|------|---------|------|----------------|------|----------------|-------|----------------|----------|----------------|---|----------------|---|----------------|---|----------------|---|
| Cape                                                                                           | Lat. | Cape    | Lat. | h <sub>m</sub> | m    | h <sub>m</sub> | m     | h <sub>m</sub> | m        | h <sub>m</sub> | m | h <sub>m</sub> | m | h <sub>m</sub> | m | h <sub>m</sub> | m |
| 4774                                                                                           | ..   | 15      | 22.9 | 28             | 31   | 10             | 8.5   | 7              | 10       | 20964          |   |                |   |                |   |                |   |
| 4776                                                                                           | 1847 | 23.7    | 41   | 34             | 60   | 224.2          | 6'    | 9              | 20976    |                |   |                |   |                |   |                |   |
| ..                                                                                             | 1849 | 24.8    | 57   | 4              | 63   | 301.8          | 7'    | 9'             | 20998    |                |   |                |   |                |   |                |   |
| 4783                                                                                           | 1854 | 25.9    | 19   | 49             | 11.0 | 281.9          | 6     | 9              | 21034    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1856 | 27.3    | 24   | 9              | 9.5  | 120.5          | 7     | 7              | 21062    |                |   |                |   |                |   |                |   |
| 4786                                                                                           | 1861 | 28.5    | 40   | 50             | 0.8  | 95.3           | 4'    | 4'             | 21084    |                |   |                |   |                |   |                |   |
| 4788                                                                                           | 1876 | 29.0    | 44   | 37             | 3.1  | 348.5          | 5     | 8'             | 21095    |                |   |                |   |                |   |                |   |
| 4792                                                                                           | ..   | 36.3    | 72   | 8              | 6    | 110.0          | 7     | 8              | 76.2324? |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 35.0    | 57   | 48             | 5    | 94.3           | 7'    | 10             | 21237    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1881 | 33.2    | 8    | 28             | 12.2 | 8.0            | 7'    | 7'             | 21208    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1885 | 38.7    | 65   | 8              | 2.4  | 155.4          | 7     | 7              | 21319    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1890 | 43.3    | 54   | 45             | 23.3 | 21.9           | 7     | 10             | 21421    |                |   |                |   |                |   |                |   |
| 4813                                                                                           | ..   | 47.2    | 59   | 53             | 2    | 97.0           | 6     | 11             | 21499    |                |   |                |   |                |   |                |   |
| ..                                                                                             | 1894 | 47.4    | 50   | 3              | 12.3 | 10.7           | 6'    | 7              | 21510    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1897 | 50.5    | 33   | 40             | 10.7 | 49.2           | 6'    | 6'             | 21586    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1902 | 53.4    | 28   | 6              | 15.0 | 22.1           | 5'    | 9              | 21653    |                |   |                |   |                |   |                |   |
| 4825                                                                                           | 1905 | 55.4    | 57   | 29             | 9.9  | 251.8          | 6'    | 9              | 21694    |                |   |                |   |                |   |                |   |
| * —                                                                                            | 1907 | 58.9    | 11   | 6              | 1.4  | 10.2           | 5     | 9              | 21786    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 59.6    | 19   | 32             | 18   | 25.6           | 3'    | 4              | 21805    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 16      | 0.4  | 6              | 1    | 20             | 230.5 | 7              | 12       | 21829          |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 3.2     | 32   | 23             | 15   | 86.3           | 7     | 7+             | 21875    |                |   |                |   |                |   |                |   |
| —                                                                                              | 1916 | 5.5     | 78   | 25             | 13.6 | 25.7           | 5     | 6              | 21886    |                |   |                |   |                |   |                |   |
| 4839                                                                                           | 1924 | 6.0     | 28   | 9              | 4.9  | 81.6           | 7'    | 10             | 21948    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 6.1     | 19   | 12             | 60   | 336.6          | 5     | 6              | 21954    |                |   |                |   |                |   |                |   |
| 4841                                                                                           | ..   | 12.4    | 49   | 55             | 25   | 248.5          | 6     | 12             | 22075    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 13.2    | 30   | 40             | 20   | 321±           | 7'    | 8              | 22108    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 14.7    | 19   | 58             | 15   | 22.6           | 7'    | 8              | 22150    |                |   |                |   |                |   |                |   |
| 4843                                                                                           | ..   | 15.0    | 33   | 4              | 15   | 270.6          | 7     | 13             | 22153    |                |   |                |   |                |   |                |   |
| —                                                                                              | ..   | 15.1    | 25   | 21             | 15   | 274.3          | 4'    | 9              | 22158    |                |   |                |   |                |   |                |   |
| * Cape Cat. Cat. I R.A. 35.0, Cape Cat. Cat. II & III 55.0 Accurately to be accurate in Cat. I |      |         |      |                |      |                |       |                |          |                |   |                |   |                |   |                |   |



| Jah. I   |          | Jah. II |            | 1900                |                | Dist.        | Position                 | Magn. | Helt | A.C.  |
|----------|----------|---------|------------|---------------------|----------------|--------------|--------------------------|-------|------|-------|
| Caput b. | Caput b. | R.A.    | Dec.       | R.A.                | Dec.           |              |                          |       |      |       |
|          |          | 16      | 15.5-43 41 | 40                  | 196.3          | 5 9          |                          |       |      | 22159 |
| 4845     | 1930     | 16.9-   | 41 1       | 1.1                 | 135.0          | 7 7'         |                          |       |      | 22188 |
| 4848     | 1934     | 17.5-   | 32 58      | 6.0                 | 154.9          | 7 7          |                          |       |      | 22199 |
| 4850     | 1937     | 18.4-   | 29 29      | 8.0                 | 348.3          | 7 7'         |                          |       |      | 22222 |
|          | 1932     | 18.7-   | 63 50      | 24.7                | 27.3           | 7' 12        |                          |       |      | 22212 |
|          | 1943     | 19.6-   | 23 13      | { 4.1<br>2.2<br>2.6 | 27.6           | 7=7          |                          |       |      | 22250 |
| 4853     | 1940     | 19.8-   | 47 20      | 23.9                | 335.3          | 5 7          |                          |       |      | 22246 |
| 4861     | ..       | 26.4-   | 47 54      | 10                  | 5±             | 6 10         |                          |       |      | 22371 |
| 4858     | ..       | 28.8-   | 77 18      | 20                  | 104.8          | 5 14         |                          |       |      | 22393 |
| 4867     | ..       | 31.4-   | 43 12      | 12                  | 295.5          | 7 10         |                          |       |      | 22476 |
| 4866     | 1950     | 31.5-   | 56 47      | 3.8                 | 126.0          | 7 7+         |                          |       |      | 22473 |
| 4870     | ..       | 32.4-   | 37 1       | 30                  | 10.2           | 6' 12        |                          |       |      | 22503 |
| 4871     | 1953     | 32.5-   | 47 35      | 28.1                | 47.2           | 7 10         |                          |       |      | 22502 |
| 4876     | 1961     | 33.9-   | 48 34      | 9.6                 | 264.0          | 7' 8         |                          |       |      | 22534 |
| ..       | 1967     | 41.5-   | 36 42      | 25.2                | 147.5          | 7' 8'        |                          |       |      | 22687 |
| 4889     | 1971     | 44.3-   | 37 21      | 7.3                 | 5.0            | 6 9          |                          |       |      | 22744 |
| ..       | 1976     | 49. -   | 46 42      | 4.4                 | 28.1           | 7' 9'        |                          |       |      | ..    |
| ..       | ..       | 51.2-   | 19 22      | 5                   | 229.6          | 6' 8         |                          |       |      | 22944 |
| 4900     | ..       | 51.2-   | 59 10      | 20                  | 22.9           | 7' 12        |                          |       |      | 22930 |
| 4922     | .. 17    | 2.7-    | 20 5       | 25                  | 314±           | 7' 11        |                          |       |      | ..    |
| ..       | 1981     | 2.9-    | 46 36      | 8.6                 | 166.1          | 7' 9         |                          |       |      | 23194 |
| 4912     | ..       | 6.5-    | 82 41      | 25                  | 123.7          | 7 13         |                          |       |      | 23192 |
| 4926     | ..       | 7.5-    | 39 44      | { 10<br>12          | 230.8<br>212.0 | 7 12<br>7 13 |                          |       |      | ..    |
| ..       | 1984     | 9.2-    | 26 37      | 4.7                 | 43.5           | 6=6          |                          |       |      | 23354 |
| ..       | 1983     | 9.2-    | 42 14      | 2                   | 159.7          | 7 11         |                          |       |      | 23344 |
| ..       | ..       | 11.9-   | 24 11      | 15                  | 358.3          | 5" 6         |                          |       |      | 23419 |
| ..       | ..       | 12.1-   | 34 53      | { 1.8<br>15         | 240<br>130     | 6, 8.5, 10   | (Triple)<br>Run 46 Scrp. |       |      | 23422 |
| 4942     | ..       | 17.0-   | 56 17      | 12                  | 327.2          | 3 12         |                          |       |      | 23515 |
| 4949     | 1995     | 19.4-   | 45 46      | { 3.3<br>104.5      | 266.7<br>313.5 | 6' 7         |                          |       |      | 23591 |



| Pch. I | Pch. II | 1900                                        | Dec.  | Dist.         | Position             | Magn.             | Height | No.   |
|--------|---------|---------------------------------------------|-------|---------------|----------------------|-------------------|--------|-------|
| Caputo | Caputo  | R.A.                                        |       |               |                      |                   |        | Alt.  |
| —      | 2002    | 17 <sup>h</sup> 21.8 <sup>m</sup> - 43° 54' | 14.2  | 171.0         | 7' 9"                |                   |        | 23638 |
| 4955   | ..      | 24.1 - 49 47                                | 60    | 178.5         | 4 13                 |                   |        | 23694 |
| 4962   | ..      | 28.1 - 32 31                                | 2     | 95.5          | 6' 13"               |                   |        | 23811 |
| —      | ..      | 29.7 - 5 49 { 20<br>25                      |       | 162.7<br>10.9 | 7' 12"<br>10         |                   |        | ..    |
| 4975   | 2004    | 40.3 - 55 22                                | 18    | 98.5          | 6' 10"               |                   |        | 24087 |
| 4977   | ..      | 40.3 - 3 27                                 | 25    | 139±          | 7 14                 |                   |        | ..    |
| 4978   | 2006    | 42.3 - 53 35                                | 12.2  | 269.5         | 6 11'                |                   |        | 24147 |
| 4979   | ..      | 43.1 - 60 22                                | 8     | 240.8         | 7 11                 |                   |        | 24161 |
| 4974   | ..      | 43.5 - 76 10                                | 20    | 115.1         | 7 15                 |                   |        | 24135 |
| 4995   | ..      | 48.6 - 11 19                                | 18    | 140±          | 6' 12"               |                   |        | 24311 |
| —      | ..      | 50.5 - 15 47                                | 25    | 157.1         | 7 9                  |                   |        | 24357 |
| ..     | 2010    | 52.1 - 36 51                                | 47.1  | 265.1         | 5' 7"                |                   |        | 24388 |
| 5003   | 2014    | 52.7 - 30 14                                | 6.0   | 107.1         | 7 8                  |                   |        | 24407 |
| 5005   | 2016    | 53.8 - 45 49                                | 6.8   | 28.2          | 7' 9"                |                   |        | 24435 |
| ..     | 2012    | 53.9 - 36 57                                | 6.6   | 107.2         | 7 11                 |                   |        | 24437 |
| 5006   | ..      | 55.9 - 59 12                                | 30    | 333.7         | 6 13                 |                   |        | 24480 |
| —      | ..      | 56.3 - 23 2 { 5<br>15                       |       | 21.1<br>211.3 | 7 11<br>7 8          |                   |        | 24509 |
| 5014   | 2019    | 57.6 - 43 26                                | 0.7   | 69.2          | 6' 6"                |                   |        | 24598 |
| 5015   | ..      | 18 1.1 - 45 47                              | 3     | 262.6         | 6 11                 |                   |        | 24630 |
| 5021   | ..      | 3.6 - 56 27                                 | 3     | 315.5         | 7 15                 |                   |        | 24690 |
| ..     | ..      | 3.6 - 30 45                                 | 3.5   | 355           | 6 10                 | Segitt.<br>Bm 245 |        | 24708 |
| 5019   | ..      | 4.5 - 66 50                                 | 45    | 332.5         | 7' 12"               |                   |        | 24702 |
| 5030   | ..      | 5.6 - 23 43                                 | 30    | 281.0         | 5' 13"               |                   |        | 24755 |
| 5024   | ..      | 6.2 - 63 5                                  | 30    | 3.6           | 5 11                 |                   |        | 24745 |
| 5032   | 2034    | 6.6 - 43 14                                 | 1 1/2 | 335.8         | 7 10'                |                   |        | 24771 |
| 5035   | ..      | 7.8 - 31 5                                  | 18    | 267±          | 4 13                 |                   |        | 24812 |
| 5045   | 2045    | 17.0 - 44 9                                 | 76.3  | 164.5         | 5' 9"                |                   |        | 25040 |
| 5041   | ..      | 17.6 - 53 41                                | 2     | 260.5         | 7' 9"                |                   |        | 25055 |
| ..     | ..      | 21.5 - 26 41                                | 1.8   | 270           | 75 75 Bm 133 Segitt. |                   |        | 25160 |



|      | 1900     | 1900     | 1900     | 1900                               | 1900     | 1900     | 1900     | 1900     |
|------|----------|----------|----------|------------------------------------|----------|----------|----------|----------|
|      | Caputo   | Caputo   | Ret.     | Der.                               | Dist.    | Position | Mag.     | Hebb.    |
|      | h. m. s. | h. m. s. | h. m. s. | h. m. s.                           | h. m. s. | h. m. s. | h. m. s. | h. m. s. |
| 5045 | 18       | 23.4     | 48 5     | 6                                  | 22.8     | 7 12     |          | 25209    |
| —    | ..       | 25.9     | 10 52    | 12                                 | 250.8    | 7' 12    |          | 25295    |
| 2050 | 26.5     | 38 48    | 22.0     | 359.3                              | 7 7'     |          |          | 25306    |
| 5049 | ..       | 30.0     | 47 9     | 25                                 | 272.3    | 7' 12    |          | 25377    |
| 5048 | ..       | 31.3     | 71 31    | 35                                 | 353.7    | 5' 14    |          | 25383    |
| 5043 | ..       | 33.9     | 83 32    | 30                                 | 10.7     | 6 13     |          | 25370    |
| 5059 | ..       | 39.7     | 49 45    | { 12 257.0 7 12<br>15 205.1 13     |          |          |          | 25613    |
| 5064 | ..       | 41.6     | 37 8     | 20                                 | 271.5    | 6' 12    |          | 25672    |
| 5062 | ..       | 42.9     | 62 18    | 40                                 | 206.1    | 4' 15    |          | 25692    |
| 5065 | ..       | 43.4     | 58 2     | 20                                 | 20.3     | 7' 10    |          | 25703    |
| 5066 | ..       | 44.0     | 41 10    | 12                                 | 90.0     | 6' 10'   |          | 25732    |
| 5070 | ..       | 47.2     | 61 56    | 12                                 | 90.8     | 7 12     |          | 25814    |
| 5074 | ..       | 52.2     | 39 40    | 12                                 | ...      | 6' 13    |          | 25937    |
| 2061 | 54.3     | 37 12    | 13.0     | 282.5                              | 7 7      |          |          | 25978    |
| 5082 | ..       | 57.2     | 19 23    | { 6 91 6 11'<br>18 107.4 6 12      |          |          |          | 26063    |
| 5084 | 2062     | 59.7     | 37 12    | 26                                 | 34.5     | 6=6      |          | 26123    |
| 5094 | .. 19    | 6.1      | 34 1     | 15                                 | 243.3    | 7 7+     |          | 26283    |
| 5700 | ..       | 104      | 56 20    | 20                                 | 163.8    | 6' 12    |          | 26383    |
| 2074 | 15.4     | 44 38    | 29.1     | 78.8                               | 5 7'     |          |          | 26485    |
| 5713 | ..       | 18.8     | 29 30    | 25                                 | 121.9    | 6 11'    |          | 26582    |
| 5714 | 2077     | 19.8     | 54 31    | { 134 131.0 6 11<br>69.4 270.7 6 7 |          |          |          | 26593    |
| 5737 | ..       | 39.7     | 73 3     | { 30 191.3 7 12<br>35 308.7 12     |          |          |          | 27019    |
| 5741 | ..       | 40.2     | 62 3     | 15                                 | 341.7 75 | 7' 11    |          | 27047    |
| 5748 | ..       | 43.0     | 45 37    | 12                                 | 317.4    | 7 12     |          | 27119    |
| 2085 | 44.7     | 55 13    | 23.2     | 150.7                              | 7 7+     |          |          | 27144    |
| 5753 | ..       | 55.1     | 79 24    | 25                                 | 126.8    | 7 13     |          | 27327    |
| ..   | 48.3     | 24 11    | 20       | 170.6                              | 7' 11    |          |          | 27244    |
| 5763 | ..       | 56.3     | 63 20    | 1/2                                | 248.5    | 7' 8     |          | 27405    |
| 5765 | ..       | 58.0     | 32 20    | 30                                 | 306.4    | 6' 13    |          | 27463    |



| Tab. I |        | Tab. II      |                                 | 1900.          |              |                      |       |       |  | No. |
|--------|--------|--------------|---------------------------------|----------------|--------------|----------------------|-------|-------|--|-----|
| Caput. | Caput. | R.A.         | Dec.                            | Dist.          | Position     | Mag.                 | Webb. | Abb.  |  |     |
| 5168   | ..     | 20 12-30 1   | 15                              | 83.2           | 7 12         |                      |       | 27526 |  |     |
| 5171   | ..     | 5.5-64 44    | { 12<br>25                      | 305.4<br>334.3 | 7 10'<br>10' |                      |       | 27608 |  |     |
| 5173   | ..     | 4.6-36 21    | 15                              | 118.7          | 5' 14        |                      |       | 27600 |  |     |
| 5174   | ..     | 5.4-50 37    | 18                              | 240.2          | 7' 13        |                      |       | 27613 |  |     |
| 5178   | ..     | 7.3-34 25    | 3                               | 7.3            | 7 10         |                      |       | 27676 |  |     |
| 5183   | ..     | 9.9-36 46    | { 30<br>40                      | 222.8<br>183.7 | 6 13<br>14   |                      |       | 27731 |  |     |
| ..     | 2093   | 11.2-40 30   | 11.1                            | 115.0          | 7' 8         |                      |       | 27769 |  |     |
| 5188   | ..     | 14.3-29 30   | { 25<br>5                       | 324.7<br>73.5  | 7' 8<br>10   |                      |       | 27847 |  |     |
| 5190   | ..     | 15.7-42 21   | { 40<br>15                      | 268.7<br>299.9 | 6 15<br>16   |                      |       | 27879 |  |     |
| 5182   | ..     | 16.6-81 17   | 30                              | 352.7          | 5' 12        |                      |       | 27836 |  |     |
| 5197   | ..     | 20.3-62 47   | 30                              | 211.3          | 7' 13        |                      |       | 27980 |  |     |
| 5194   | ..     | 20.4-69 24   | 3                               | 247.6          | 7' 14        |                      |       | 27976 |  |     |
| ..     | 2099   | 23.1-18 9    | 4.2                             | 177.5          | 5' 8         |                      |       | 28073 |  |     |
| ↑      | 2096   | 25.8-75 42   | 18.6                            | 17.3           | 7' 8         |                      |       | ..    |  |     |
| ..     | 2101   | 24.1-18 55   | 22.1                            | 239.3          | 7 7          |                      |       | 28100 |  |     |
| 5207   | ..     | 28.5-34 16   | 15                              | 256.2          | 7' 11        |                      |       | 28175 |  |     |
| 5209   | ..     | 30.6-47 39   | 45                              | 193.2          | 3 16         |                      |       | 28213 |  |     |
| 5211   | ..     | 34.2-42 45   | 20                              | 301.0          | 6 10         |                      |       | 28307 |  |     |
| 5218   | ..     | 39.2-30 51   | 16                              | 187.9          | 7' 13        |                      |       | 28438 |  |     |
| 524    | ..     | 41.4-26 47   | 1.5                             | 270            | 7 10         | 3m 1536 <sup>h</sup> |       | 28489 |  |     |
| ..     | 2105   | 43.3-62 48   | 3.2                             | 101.4          | 6' = 6'      |                      |       | 28519 |  |     |
| 5224   | 2107   | 43.8-34 9    | 21.7                            | 164.5          | 5 9          |                      |       | 28544 |  |     |
| 5226   | ..     | 44.1-27 45   | <sup>15</sup><br><del>7.2</del> | 70.8           | 7' 8'        |                      |       | 28557 |  |     |
| ..     | 2108   | 49.0-70 48   | 7.4                             | 110.9          | 7' 8         |                      |       | 28649 |  |     |
| 5233   | ..     | 57.5-83 40   | 15                              | 276.8          | 6' 13        |                      |       | 28756 |  |     |
| 5235   | ..     | 21 0.6-84 43 | 2 1/2                           | 92.1           | 7' = 7'      |                      |       | 28820 |  |     |
| ..     | ..     | 6.1-31 0     | 3.5                             | 250            | 7 10         | 3m 251 <sup>h</sup>  |       | 29058 |  |     |
| 5259   | ..     | 12.7-47 29   | 25                              | 138.7          | 7 11         |                      |       | 29217 |  |     |
| 5258   | 2115   | 12.7-53 52   | 3.7                             | 306.6          | 6 10         |                      |       | 29216 |  |     |



|              | Tab. I     | Tab. II      | 1900                | Dist.         | Position | Magn.                            | Webb.             | No.    |
|--------------|------------|--------------|---------------------|---------------|----------|----------------------------------|-------------------|--------|
|              | Caput. No. | Caput. No.   | Ret.                |               |          |                                  |                   | Alt.   |
| ..           | ..         | 21           | 14.0-26 46          | 1.8           | 250      | 7 10                             | Br 271 Br. Austr. | 29240  |
| 5260         | ..         | 15.7-72 14   | 30                  | 270.3         | 6' 12    |                                  |                   | 29261  |
| 5262         | 2119       | 20.2-80 29   | 29.8                | 92.4          | 7 11     |                                  |                   | 29316? |
| * 5267       | 2121       | 20.1-46 30   | { <sup>5</sup> 56.8 | 183.4         | 7 11     |                                  |                   | 29352  |
| 5270         | ..         | 22.8-60 39   | 18                  | 56.4          | 7' 12    |                                  |                   | 36.647 |
| 5278         | 2123       | 35.6-83 10   | 3.7                 | 82.7          | 5' 9'    |                                  |                   | 29624  |
| ..           | 2128       | 41.7-47 45   | 30.1                | 13.3          | 5' 10    |                                  |                   | 29785  |
| 5296         | ..         | 41.9-31 22   | 30                  | 335.7         | 5' 10    |                                  |                   | 29795  |
| 5292         | ..         | 49.7-85 13   | 3                   | 130±          | 7' 10    |                                  |                   | ..     |
| ..           | 2131       | 52.4-15 36   | 18.5                | 319.5         | 7 10     |                                  |                   | 30041  |
| 5306         | ..         | 53.2-76 36   | 30                  | 71.3          | 6 11     |                                  |                   | 30034  |
| ..           | ..         | 55.1-28 56   | 1.8                 | 120           | 5 6      | n Br. Austr. (Br 276)            |                   | 30101  |
| +            | 2143       | 17.1-75 31   | 25                  | 82.9          | 6' 9'    |                                  |                   | 30520  |
| 5334         | 2145       | 20.2-65 8    | 6.9                 | 282.3         | 5 11     |                                  |                   | 30594  |
| 5338         | ..         | 22.2-52 17   | 25                  | 190.7         | 7' 12    |                                  |                   | 30629  |
| ..           | 2149       | 23.7-0 32    | 3.7                 | 352.0         | 5' 5'    |                                  |                   | 30663  |
| ..           | 2147       | 23.8-44 15   | 61.3                | 215.7         | 5' 9     |                                  |                   | 30657  |
| ..           | 2152       | 25.8-32 51   | 29.3                | 173.3         | 5 9      |                                  |                   | 30704  |
| 5346         | ..         | 31.0-32 11   | 12                  | 290±          | 7' 15    |                                  |                   | 30810  |
| 5349         | ..         | 33.0-53 12   | 30                  | 117.3         | 7 12     |                                  |                   | 30847  |
| ..           | 2159       | 34.2-28 50   | 4.3                 | 57.9          | 7' 9     |                                  |                   | 30870  |
| ..           | ..         | 42.7-4 45    | 4                   | 245.3         | 7=7      |                                  |                   | 31053  |
| 5365         | ..         | 46.1-36 25   | 3                   | 270±          | 6' 13    |                                  |                   | 31110  |
| 5367         | 2163       | 47.0-33 24   | 36                  | 276.7         | 5 9      |                                  |                   | 31123  |
| 5350         | ..         | 53.9-88 30   | 20                  | 120±          | 6' 12    |                                  |                   | 31129  |
| ..           | 2167       | 23 1.5-51 14 | 8.0                 | 260.5         | 7' 8     |                                  |                   | 31388  |
| ..           | 2170       | 26-60 17     | 15.3                | 291.2         | 7' 9'    |                                  |                   | 31409  |
| ..           | 2172       | 68-12 29     | 3.4                 | 100.2         | 7'=7'    |                                  |                   | 31477  |
| * Caput. No. | Tab. I     | 135 47       | ..                  | Tab. II + III | 136 47   | Assumed to be an error in Tab. I |                   |        |
| +            | ..         | 160 51 44    | ..                  | ..            | 165 52   | ..                               |                   |        |



| Tab. I    | Tab. II         | 1900       |            |                |          |       |       |       |  |
|-----------|-----------------|------------|------------|----------------|----------|-------|-------|-------|--|
| Caput. b. | Caput. b.       | Pos. A.    | Dec.       | Dist.          | Position | Magn. | Wett. | Alto. |  |
| ..        | 2173            | 23 88-9 28 | 25.7       | 356.7          | 7 7'     | ..    |       |       |  |
| ..        | 2174            | 10.6-9 38  | 49.3<br>60 | 311.5<br>310.7 | 5' 10    | 31545 |       |       |  |
| 5390      | <del>2174</del> | 11.1-45 2  | 15         | 12.8           | 6 12     | 31549 |       |       |  |
| ..        | 2177            | 13.8-14 0  | 14.8       | 343.6          | 6 9      | 31605 |       |       |  |
| 5394      | ..              | 14.2-5 40  | 10         | 26.3           | 6 14     | 31614 |       |       |  |
| ..        | 2178            | 15.2-50 51 | 16.9       | 211.6          | 6 10     | 31630 |       |       |  |
| ..        | 2181            | 18.2-54 22 | 27.1       | 213.5          | 6 6'     | 31685 |       |       |  |
| ..        | 2183            | 18.6-9 1   | 6.9        | 90.2           | 7' 8     | 31700 |       |       |  |
| 5400      | ..              | 24.8-74 41 | 18         | 179.3          | 7' 13    | 31797 |       |       |  |
| ..        | 2188            | 34.1-47 12 | 45         | 268.6          | 6 6'     | 31982 |       |       |  |
| 5413      | ..              | 36.6-18 23 | ..         | ...            | 5' 7     | 32023 |       |       |  |
| 5417      | ..              | 39.3-26 48 | 8          | 326.9          | 6' 9'    | 32078 |       |       |  |
| ..        | ..              | 40.8-19 14 | 7          | 138.2          | 6 8      | 32105 |       |       |  |
| 5423      | ..              | 44.6-25 54 | 15         | 313.8          | 6' 15    | 32180 |       |       |  |
| 5428      | ..              | 48.4-66 30 | 12         | 115.5          | 7 14     | 32240 |       |       |  |
| 5429      | ..              | 48.6-29 58 | 25         | 221.3          | 7' 10    | 32243 |       |       |  |
| ..        | 2191            | 49.2-27 36 | 6.8        | 267.5          | 6' 7     | 32251 |       |       |  |
| 5437      | ..              | 55.4-53 40 | 2          | 297.6          | 5' 11    | 32359 |       |       |  |

Visual Observations - Deen.

Extended by Anglin's method of lightness  
of variable limit of  $-30^\circ$ ; to at least once every  
month.

Relative lightness of components of selected list  
of double stars.

Observations of position limits when limit of  $-30^\circ$

Distance and position of very close double stars

Even for high double stars



Copy in Mr. Bailey book.  
charts (of 60 m. or more).  
Jan. 1893.

# List of Clusters to be taken With the 13 inch Telescope.

| No.   | W. H. C. | Other Obs.                           | 1860<br>R. A.                                   | 1860<br>Dec. | Description.                                                  | Appearance on Chart.             |
|-------|----------|--------------------------------------|-------------------------------------------------|--------------|---------------------------------------------------------------|----------------------------------|
|       |          |                                      | $0^h 0^m -67 18$                                |              |                                                               | Ft. close cluster. 15'.          |
|       |          |                                      | $0 7 -71 45$                                    |              |                                                               | Ft. close cluster 3'             |
| 104   |          | Lac. I, I, $\Delta 18$ .             | $0 17.8 -72 52$                                 |              | $\oplus!! vB, vL, vm CM.$                                     | Fine close cluster of moderately |
|       |          |                                      | $0 20 -68 0$                                    |              |                                                               | Ft. close clusters 6' & 15'.     |
|       |          |                                      | $0 31 -65 10$                                   |              |                                                               | Ft. close cluster 30'            |
|       |          |                                      | $0^h 38^m -0^h 56^m -73^\circ 5' -74^\circ 50'$ |              |                                                               | Magellanic cloud. Several        |
|       |          |                                      | $0 42 -65 15$                                   |              |                                                               | Ft. close cluster 6' & 15'.      |
|       |          |                                      | $0 50 -65 05$                                   |              |                                                               | Ft. close cluster. 9'            |
| 360?  |          |                                      | $0 57.4 -66 22$                                 |              | $eF, vm E 145; vlb M.$                                        | Ft. close cluster 9'.            |
| 362   |          | $\Delta 62$                          | $0 57.5 -71 36$                                 |              | $\oplus, vB, vL, vC, vmb M, st 13-14.$                        | Fine close cluster of            |
|       |          |                                      | $0 59 -71 20$                                   |              |                                                               | Close cluster 3' in diam.        |
| 419?  |          | $\Delta 36?$                         | $1 41 -73 38$                                   |              | $pB, pL, R, glb M$                                            | Ft. close cluster, 15'           |
|       |          |                                      | $1 18 -73 58$                                   |              |                                                               | Small cluster 24' in diam.       |
| 1947? |          |                                      | $5 25.6 -64 53$                                 |              | $pB, L, R, glb M, * qnp.$                                     | Close cluster 3'.                |
| 3247  |          |                                      | $10 19.6 -57 11$                                |              | $st inv in neb$                                               | Small cluster 3' in diam.        |
|       |          |                                      | $10 23 -57 0$                                   |              |                                                               | Small cluster 3' in diam.        |
| 3293  |          |                                      | $10 28.1 -57 28$                                |              | $Cl, B, Ri, pL.$                                              | Fine close cluster of moderately |
| 3766  |          | Lac III 7, $\Delta 289$              | $11 29.7 -60 50$                                |              | $Cl, pL, pRi, pC, st 8...13$                                  | Fine cluster of moderately       |
|       |          |                                      | $11 32 -62 30$                                  |              |                                                               | cluster of moderately            |
| 4103  |          | $\Delta 291$                         | $11 59.5 -60 28$                                |              | $Cl, pL, pC, iR, st 10...14.$                                 | Small cluster of moderately      |
| 4755  |          | Lac. II 12, $\Delta 301$             | $12 45.4 -59 35$                                |              | $Cl, vL, st vB (\kappa Crucis)$                               | Fine cluster of moderately       |
| 5139  |          | { Halley, Lac I 5, }<br>$\Delta 440$ | $13 18.4 -46 35$                                |              | $!!!, \oplus, \omega Centauri$                                | $\omega Centauri.$               |
| 5281  |          | Lac I 7, $\Delta 273$                | $13 36.9 -62 12$                                |              | $Cl, B, S, pC, iR, st 10...12$                                | Small cluster of moders.         |
| 5986  |          | $\Delta 552$                         | $15 36.9 -37 19$                                |              | $!, \oplus, vB, L, R, vglb M, st 13...15$                     | Neb. surrounding                 |
| 6067  |          | $\Delta 360$                         | $16 2.3 -53 51$                                 |              | $Cl, vB, vL, vRi, lC, st 10...$                               | Fine cluster of moderately       |
| 6093  |          | M 80                                 | $16 8.7 -22 38$                                 |              | $\{!! \oplus, vB, L, vmb M (var *), \}$<br>$\{ rrr, st 14 \}$ | Nebulosity surrounding           |
| 6121  |          | Lac I 9, M 4                         | $16 15.1 -26 11$                                |              | $\{ Cl, for 10 B st. in line, with \}$<br>$\{ 5 st, rrr \}$   | Fine cluster of moder.           |
| 6216  |          | $\Delta 454$                         | $16 39.3 -44 28$                                |              | $Cl, pS, pRi, pC, st 12...15$                                 | Cluster of ft. st.               |

t.

tely br. st. 6' in diam.

n.s.b. objects in this reg.

moderately br. st. 3'

m.

m.

u.

u.

tely br. st. 6' in diam.

br. st. 12' in diam.

ft. st. 3' in diam.

tely ft. st. 6' in diam.

ly br. st. 6' in diam.

ders. br. st. 6' in diam.

star?

ately br. st. 18' in diam.

ding star?

r. br. st. 9' in diam.

9' in diam.

| No.  | W.H. | Other Obs.                         | 1860<br>R.A. | 1860<br>Dec. | Description.                                   | Appearance on Chart.                               |
|------|------|------------------------------------|--------------|--------------|------------------------------------------------|----------------------------------------------------|
| 6231 |      | {Halley<br>Lac II 13, Δ 499}       | 16 44.2      | -41° 34'     | Cl, B, c L, p Ri, st 10...13                   | Fine cluster of br. st                             |
| 6266 |      | M 62, Δ 627                        | 16 52.3      | -29 54       | ! ⊕, v B, L, qm b M, rrr st 14...16            | Neb. surrounding                                   |
| 6273 |      | M 19                               | 16 54.0      | -26 3        | ⊕, v B, L, R, v GM, rrr, st 16.                | {Close cluster 3 in diam<br>Neb. surrounding star} |
| 6354 |      | Barnard                            | 17 15.0      | -38 24       | e F S                                          | Close cluster of very                              |
| 6362 |      | Δ 225                              | 17 17.4      | -66 56       | {⊕, c B, L, vgm b M, rrr, st<br>14...17}       | Close cluster of very                              |
| 6383 |      |                                    | 17 25.6      | -32 29       | Cl, st 13, * 67 in M                           | Neb. surrounding st.                               |
| 6388 |      | Δ 457                              | 17 26.0      | -44 38       | {⊕, v B, L, R, k, p, v m b M<br>rrr, st 17...} | Neb. surrounding st.                               |
| 6397 |      | Lac III II, Δ 366                  | 17 29.3      | -53 35       | ⊕, B, v L, Ri, st 13.                          | Fine cluster of moderately                         |
| 6441 |      | Δ 557                              | 17 40.7      | -37 0        | ⊕, v B, p L, R, vgm b M, rrr, st 18.           | Neb. surround                                      |
| 6531 |      | M 21                               | 17 56.2      | -22 30       | Cl, p Ri, l C, st 9...12                       | Cluster of br. st. 12'                             |
| 6541 |      | {bacciatore<br>Δ 473}              | 17 57.8      | -43 43       | ⊕, B, R, c G, g b M, rrr, st 15...16.          | {Neb. surrounding st?<br>Fine close cluster}       |
| 6559 |      |                                    | 18 1.4       | -24 8        | v F, v L, l E, * inv.                          |                                                    |
| 6626 |      | M 28                               | 18 15.9      | -24 56       | {! ⊕, v B, L, R, g e GM, rrr,<br>st 14...16}   | Cluster of moderately<br>Neb. surrounding st.      |
| 6637 |      | M 69, Δ 613                        | 18 22.2      | -32 27       | ⊕, B, L, R, rrr, st 14...16                    | Neb. surrounding st.                               |
| 6656 |      | {J A Shle, 1665<br>M 22, Lac I 12} | 18 27.8      | -24 1        | {!! ⊕, v B, v L, R, v Ri, v m C<br>st 11...15} | Fine close cluster                                 |
| 6681 |      | M 70, Δ 614                        | 18 34.1      | -32 25       | ⊕, B, p L, R, g b M, st 14...17                | Neb. surrounding st                                |
| 6715 |      | M 54, Δ 624                        | 18 46.1      | -30 38       | ⊕, v B, L, R, g, sm b M, rrr st 15.            | Neb. surround. st                                  |
| 6723 |      | Δ 573                              | 18 50.1      | -36 49       | ⊕, v L, v l E, v g b M, rrr, st 14...16        | Fine cluster of                                    |
| 6752 |      | Δ 295                              | 18 58.5      | -60 12       | ⊕, B, v L, i R, rrr, st 11...16                | Fine close cluster                                 |
| 6809 |      | {Lac I 14, M 55,<br>Δ 620}         | 19 31.1      | -31 16       | {⊕, p B, L, R, v Ri, v g b M, st<br>12...15}   | Fine cluster of ft. st.                            |
| 7099 |      | M 30                               | 21 32.4      | -23 49       | {! ⊕, B, L, l E, g p m b M, st<br>12...16}     | Fine close cluster                                 |
| 7103 |      | M u II                             | 21 32.8      | -23 6        | v F, v S, R, g b M, 1st of 2                   | Neb. surrounding                                   |
| 7104 |      | M u II                             | 21 32.8      | -23 4        | v F, v S, i R, g b M N, 2nd of 2               | Neb. surrounding                                   |
| 7313 |      | m 486                              | 22 27.8      | -26 50       | e F, E                                         | Ft. close cluster 15'                              |
| 7314 |      |                                    | 22 28.0      | -26 46       | c F, L, m E o, v l b M                         | Ft. close cluster 15'                              |
| 7582 |      | Δ 476?                             | 23 10.7      | -42 53       | p B, L, p m E, g b M                           | Ft. close cluster 15'                              |
|      |      |                                    | 23 52        | -71 10       |                                                | Ft. close cluster 15'                              |

\* Objects having no W. G. C. No. have approximate positions estimated from A. G. C. Charts. Epoch 1875.

9' in diam  
star.

ft. st. 3' in diam.

ft. st. 3' in diam.

br. st. 15' in diam.

ring st.

in diam.

3' in diam.

br. st. 6' in diam.

resem.  $\alpha$  Centauri 9' in diam.

ft. st. 6' in diam.

resem.  $\alpha$  Centauri 6' in diam.

9' in diam.

3' in diam.

star.

star.

Copy in Mr. Bailey's  
book. Jan. 24, 1893  
10 m. Take two plates, one with unaltered film, with the two days of dates given in Table.

13 inch Boyden Telescope.

# List of Objects for Stellar Parallax.

| Name                 | Design                   | R.A. <sup>1900</sup> | Dec. <sup>1900</sup> | Magn.      | Lat. | Long. | Date     |                     |
|----------------------|--------------------------|----------------------|----------------------|------------|------|-------|----------|---------------------|
| $\epsilon$ Eridani   | A.G.C. 3623              | 3 15.8               | -43 27               | 4.4        | -58° | 25°   | Jan. 15  | July 17 Motion 3.0  |
| $\alpha$ Beti        | A.G.C. 2354              | 2 14.3               | -3 26                | 17 9.5     | -16° | 30°   | Jan. 20  | July 23 Var. bl. II |
| $\rho$ Eridani       | $\Sigma$ 407             | 3 25.3               | -11 29               | A8.2 B10.7 | -28° | 45°   | Feb. 4   | Aug. 7 Binary       |
| $\delta$ Eridani     | A.G.C. 4751              | 4 10.7               | -7 47                | 4.4        | -28° | 58°   | Feb. 16  | Aug. 21 Motion 4.1  |
| Weiss V 592          | —                        | 5 26.3               | -3 40                | 9.5        | -28° | 81°   | Mich. 11 | Sept. 14 Motion 2.2 |
| Net. in Orion        | A.G.C. 1976              | 5 30.4               | -5 27                |            | -29° | 82°   | Mich. 12 | Sept. 15 Cluster    |
| - Canis Maj.         | A.G.C. 8631<br>H.P. 1311 | 6 50.0               | -23 48               | 7.4<br>6.4 | -47° | 107°  | April 7  | Oct. 10 Bright Line |
| L <sub>2</sub> Puppi | A.G.C. 9197              | 7 10.5               | -44 28               | 3.5 6.3    | -66° | 122°  | April 22 | Oct. 25 Var. bl. II |
| $\gamma$ Argus       | A.G.C. 10863             | 8 6.5                | -47 2                | 3          | -66° | 146°  | May 17   | Nov. 18 Bright Line |
| $\delta$ Antliae     | A.G.C. 13016             | 9 27.9               | -28 12               | 6.7 7.3    | -40° | 156°  | May 27   | Nov. 28 Var. bl. V  |
|                      | A.G.C. 13420             | 9 46.4               | -22 33               | 6.5        | -34° | 158°  | May 29   | Nov. 30 IV Type     |
| W. 20 3273           | A.G.C. 14842             | 10 46.7              | -20 33               | 6.0        | -26° | 172°  | June 13  | Dec. 14 IV Type     |
| R Carinae            | A.G.C. 13073             | 9 29.7               | -62 21               | 4.3 10.0   | -68° | 196°  | July 8   | Jan. 6 Var. bl. II  |
| $\epsilon$ Carinae   | A.G.C. 13336             | 9 42.5               | -62 3                | 3.7 5.2    | -66° | 196°  | July 8   | Jan. 6 Var. bl. II  |
|                      | A.G.C. 3293              | 10 29.6              | -57 40               |            | -59° | 197°  | July 9   | Jan. 7 Cluster      |
| $\gamma$ Argus       | A.G.C. 14720             | 10 41.2              | -59 10               | var        | -59° | 201°  | July 13  | Jan. 11 Bright Line |
| $\delta$ Centauri    | A.G.C. 16572             | 12 3.2               | -50 10               | 2.8        | -44° | 206°  | July 18  | Jan. 16 Bright Line |
| R Hydrae             | A.G.C. 18361             | 13 24.2              | -24 46               | 3.5 9.7    | -13° | 208°  | July 21  | Jan. 18 Var. bl. II |
|                      | A.G.C. 3766              | 11 31.5              | -61 3                |            | -56° | 212°  | July 25  | Jan. 22 Cluster     |
|                      | A.G.C. 5739              | 13 20.8              | -46 48               |            | -35° | 219°  | Aug. 1   | Jan. 29 Cluster     |
| $\mu$ Centauri       | A.G.C. 18773             | 13 43.6              | -41 59               | 3.4        | -29° | 220°  | Aug. 2   | Jan. 30 Bright Line |
| $\alpha$ Centauri    | A.G.C. 4755              | 12 47.8              | -59 48               |            | -49° | 222°  | Aug. 4   | Feb. 1 Cluster      |
| Piazzi IV 212        | A.G.C. 20257             | 14 57.6              | -20 57               | 5.9        | -4°  | 227°  | Aug. 9   | Feb. 6 Motion 2.0   |
| $\delta$ Muscae      | A.G.C. 17840             | 13 1.7               | -64 46               | 6          | -52° | 228°  | Aug. 10  | Feb. 6 Bright Line  |
| Arg. Pelly. 14318    |                          | 15 4.8               | -15 57               | 9.2        | +2°  | 228°  | Aug. 10  | Feb. 6 Motion 3.6   |
| Arg. Pelly. 14320    |                          | 15 4.8               | -15 52               | 9.0        | +3°  | 228°  | Aug. 10  | Feb. 6 Motion 3.6   |
| $\eta$ Centauri      | A.G.C. 19737             | 14 29.2              | -41 43               | 2.5        | -26° | 229°  | Aug. 12  | Feb. 8 Bright Line  |

4941 2.54 R

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

| Name          | Design                   | Rd. | Dec. | Magn.                   | Lat.         | Long.         | Date                                                 |             |
|---------------|--------------------------|-----|------|-------------------------|--------------|---------------|------------------------------------------------------|-------------|
| R Muscae      | A.G.C. 17463             | 12  | 36.0 | -68 51                  | 6.6          | 74° 56' 230°  | Aug. 13 <sup>Evening</sup> Feb. 8 <sup>Morning</sup> | Var. bl. IV |
| α Centauri    | A.G.C. 19826             | 14  | 33.0 | -60 26 5 <sup>3/4</sup> | -43°         | 239°          | Aug. 22 Feb. 17                                      | Motion 3.7  |
| R Trianguli   | A.G.C. 20693             | 15  | 108  | -66 8                   | 6.6          | 8.0 -46° 247° | Aug. 30 Feb. 25                                      | Var. bl. IV |
|               | N.G.C. 6121              | 16  | 17.5 | -26 17                  | -5°          | 247°          | Aug. 30 Feb. 25                                      | Cluster     |
|               | A.G.C. 20554             | 16  | 48   | -69 42                  | 6.2          | -50° 248°     | Aug. 31 Feb. 26                                      | IV Type     |
|               | N.G.C. 6067              | 16  | 54   | -53 57                  | -32°         | 250°          | Sept. 2 Feb. 28                                      | Cluster     |
| Scorpio       | A.G.C. 22817<br>St. 9168 | 16  | 47.3 | -41 40                  | 7.6          | -19° 250°     | Sept. 8 Mch. 6                                       | Bright Line |
|               | N.G.C. 6397              | 17  | 32.5 | -53 37                  | -30°         | 266°          | Sept. 18 Mch. 15                                     | Cluster     |
| × Sagittari   | A.G.C. 24120             | 17  | 41.3 | -27 48                  | 4 6          | -5° 266°      | Sept. 19 Mch. 16                                     | Var. bl. IV |
| W Sagittari   | A.G.C. 24577             | 17  | 58.6 | -29 35                  | 5 6.5        | -6° 270°      | Sept. 23 Mch. 30                                     | Var. bl. IV |
| α 17681       | DM-214864                | 18  | 25   | -21 16                  | 7.8          | +2° 271°      | Sept. 24 Mch. 21                                     | Bright Line |
| κ Perseus     | A.G.C. 25786             | 18  | 46.6 | -67 21                  | W 5.5        | -44° 276°     | Sept. 29 Mch. 26                                     | Var. bl. IV |
|               | N.G.C. 6156              | 18  | 30.2 | -23 59                  | -1°          | 278°          | Sept. 31 Mch. 28                                     | Cluster     |
|               | N.G.C. 6752              | 19  | 2.0  | -60 9                   | -37°         | 280°          | Oct. 3 Mch. 30                                       | Cluster     |
| γ Cor. Austr. | A.G.C. 26123             | 18  | 57.7 | -27 12                  | 4.6          | -14° 282°     | Oct. 5 - April 2                                     | Binary      |
| γ Sagittari   | A.G.C. 26041             | 18  | 56.3 | -30 1                   | 3.1          | -7° 283°      | Oct. 6 April 3                                       | Binary      |
| β Hydri       | A.G.C. 336               | 0   | 20.2 | -77 50                  | 5 3.0        | -6.5 300°     | Oct. 23 23 April 20                                  | Motion 2.2  |
|               | A.G.C. 27776             | 20  | 11.2 | -21 36                  | 5 7.4        | -2° 300°      | Oct. 23 April 20                                     | IV Type     |
|               | A.G.C. 29794             | 21  | 13.6 | -45 27                  | 6.0          | -28° 306°     | Oct. 29 April 26                                     | IV Type     |
| Lacaille 8760 | A.G.C. 29191             | 21  | 11.5 | -39 15                  | 5 7.6        | -22° 308°     | Oct. 31 April 28                                     | Motion 3.4  |
| ε Indi        | A.G.C. 30105             | 21  | 55.5 | -57 11                  | 5.2          | -42° 308°     | Oct. 31 April 28                                     | Motion 4.6  |
|               | N.G.C. 104               | 0   | 19.6 | -72 39                  | -62°         | 310°          | Nov. 2 April 30                                      | Cluster     |
| Nubeula Minor |                          | 0   | 48.6 | -73 55                  | -65°         | 310°          | Nov. 2 April 30                                      | Cluster     |
|               | N.G.C. 7999              | 21  | 34.7 | -23 38                  | -9°          | 318°          | Nov. 10 May 8                                        | Cluster     |
| γ Lyncæ       | A.G.C. 233               | 0   | 14.7 | -65 29                  | 4.1          | -58° 321°     | Nov. 13 May 12                                       | Motion 2.0  |
| R Pice Austr. | —                        | 22  | 12.3 | -30 6                   | 67° 41' -18° | 324°          | Nov. 16 May 15                                       | Var. bl. II |
|               | A.G.C. 30562             | 22  | 18.3 | -31 59                  | 8 1/2        | -20° 325°     | Nov. 17 May 16                                       | IV Type     |
| Lacaille 9352 | A.G.C. 31353             | 22  | 59.2 | -36 26                  | 5 7.2        | -27° 331°     | Nov. 23 May 22                                       | Motion 6.9  |
| β Doradæ      | A.G.C. 32416             | 23  | 50.3 | -37 50                  | 5 8.2        | -34° 343°     | Dec. 5 Jan. 3                                        | Motion 4.7  |

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System



$\gamma$  Argus  $\left. \begin{array}{l} 8 \ 5.7-46.58 \checkmark \\ 14720 \cdot \checkmark \end{array} \right\}$

$\gamma$  Argus

$\epsilon$  Argus  $8 \ 59.8-46 \ 36 \checkmark$

H.P. 1311

$\delta$  Centaur  $\checkmark$

$\mu$  "  $\checkmark$

$\gamma$  "  $\checkmark$

$\checkmark$  R Hydrae at max.

$\delta$  Ophiuchi at intervals.  $\checkmark$

$\nu$  Sagittarii

$\delta$  Muscae

$\downarrow$   $\alpha$  Eridani

~~Known Variables. -20 and south.~~

~~New var.~~

1900  
H.P. 845  $4 \ 46.9^m + 5^s \ 26' \ 4.0 \checkmark$

3747  $21 \ 13.8 + 34 \ 28 \ 4.4 \checkmark$

6  $50.0-23 \ 48 \ 6.4 \checkmark$

a.g.c. 19737

14  $29.2-41 \ 32 \ 2.5 \checkmark$

18361

13  $24.8^3 - 22 \ 46 \ \text{var.}$

H.P. 3321

19  $16.0 - 16.8 \ 4.7 \checkmark +$

~~Bridging line bright?~~

~~13  $24.2 - 22 \ 46$~~

~~M.P. stars incomplete or discordant.~~

$\checkmark$   $\delta$  Cent. 1875  $12 \ 1.9 \ -50 \ 2 \ 2.8 \ \text{u.a.}$

$\gamma$   $\mu$  Cent  $13 \ 42.1 \ -41 \ 51 \ 3.4$

$\checkmark$   $\delta$  Oph.  $17 \ 18.7 \ -24 \ 4 \ 4.5$

$\downarrow$   $\alpha$  Erid.  $1 \ 33.0 \ -57 \ 52 \ 1.0$

$\checkmark$   $\theta$  Muscae  $13 \ 0.1 \ -64 \ 38 \ 5.9$

Tab. I.      Tab. II.      Rist. 1900.  
Caputo.    Caputo.    Port. Dec.    Dist. Position.    Mgr.    Webb.    J. A. B.

When star is common to both tables in large lat. the Position angle & Dist. given ~~is~~ <sup>is derived</sup>

from the mean of the obs. in the last table.

3429. See if 1285 is *A. g. b.* No.

| Name                 | R.A.                             | Dec.               | Max            | Min          |
|----------------------|----------------------------------|--------------------|----------------|--------------|
| $\lambda$ Barnard    | 9 <sup>h</sup> 42.5 <sup>m</sup> | - 62° 3'           | 3.7            | 5.2          |
| R Antliae            | 10 5.5                           | - 37 14            | 6.5            | < 8          |
| S Barnard            | 10 6.2                           | - 61 4             | 6.2            | 9            |
| V Hydrae             | 10 46.8                          | - 20 43            | 6.7            | < 9.1        |
| W Hydrae             | 13 43.4                          | - 27 52            | 7              | ?            |
| S Librae             | 15 15.6                          | - 20 2             | 8.0            | < 13         |
| RR Librae            | 15 50.6                          | - 18 1             | 8.4            | 14           |
| J Scorpii            | 16 11.1                          | - 22 44            | 7.0            | < 12         |
| <del>Serpentis</del> | <del>17 24.6</del>               | <del>- 21 24</del> | <del>7.1</del> | <del>?</del> |
| W Sagittarii         | 17 58.6                          | - 29 35            | 5              | 6.5          |
| U Sagittarii         | 18 26.0                          | - 19 12            | 7.0            | 8.3          |
| $\times$ Phoenix     | 18 46.6                          | - 67 21            | 4.0            | 5.5          |
| J Sagittarii         | 19 10.5                          | - 17 9             | 7.6            | < 11         |
| R Sagittarii         | 19 10.8                          | - 19 29            | 7.0            | < 12         |
| R Pisc. Austr.       | 22 12.3                          | - 30 6             | 5.7?           | < 11?        |
| S Aquarii            | 22 51.7                          | - 20 53            | 7.7            | < 12.5       |
| R Phoenix            | 23 51.3                          | - 50 21            | 8.5?           | 11?          |

| N.G.C.           | Page.     | N.G.C.                                                                        | Page.        |
|------------------|-----------|-------------------------------------------------------------------------------|--------------|
| 4755             | 4 (21) ✓  | 66121                                                                         | 14 (27) ✓    |
| x 3293           | 4 (17) ✓  | 6362                                                                          | 16 (33) ✓    |
| 4103             | 4 (20) ✓  | 6637                                                                          | 16 (43) ✓    |
| 3766             | 4 (18) ✓  | 6681                                                                          | 16 (45) ✓    |
| 5281             | 4 (23) ✓  | 6715                                                                          | 16 (46) ✓    |
| 5139             | 6 (22) ✓  | c 6752                                                                        | 16 (48) ✓    |
| it 32-62 36      | 6 (49) ✓  | Δ 6397                                                                        | 18 (36) ✓    |
| c 6752           | 6 (48) ✓  | c 6752                                                                        | 18 (48) ✓    |
| x 3293           | 6 (17) ✓  | 7099                                                                          | 18 (50) ✓    |
| 10 23-57 0       | 6 (16) ✓  | 7103.4                                                                        | 18 (51) (52) |
| 3247             | 6 (15) ✓  | 6216                                                                          | 18 (28) ✓    |
| 06231            | 8 (29) ✓  | a 6809                                                                        | 20 (49) ✓    |
| 5986             | 8 (24) ✓  | Δ 6397                                                                        | 20 (36) ✓    |
| 6067             | 8 (25) ✓  | 0 <sup>h</sup> 59' - 71° 20'                                                  | 20 (11) ✓    |
| -6383            | 8 (34) ✓  | d 104                                                                         | 20 (3) ✓     |
| * 6093           | 8 (26) ✓  | 1 <sup>h</sup> 18 <sup>m</sup> - 73° 58'                                      | 20 (13) ✓    |
| -6383            | 8 (34) ✓  | ▽ 6541                                                                        | 20 (39) ✓    |
| Δ 6397           | 8 (36) ✓  | d 104                                                                         | 22 (3) ✓     |
| δ 6626           | 8 (42) ✓  | 7313.14                                                                       | 24 (53) (54) |
| h 6559           | 8 (40) ✓  | 7582                                                                          | 24 (55) ✓    |
| 18 0.7 - 18° 32' | 10 (41) ✓ | 419 ?                                                                         | 24 (12) ✓    |
| δ 6626           | 10 (42) ✓ | 0 <sup>h</sup> 38 <sup>m</sup> to 0 <sup>h</sup> 56 - 73° 5' to 74° 50' ✓ (6) |              |
| 6531             | 10 (38) ✓ | d 104                                                                         | 24 (3) ✓     |
| +6273            | 10 (31) ✓ | 0 <sup>h</sup> 7 - 71° 45' 24                                                 | (2) ✓        |
| ← 6266           | 10 (30) ✓ | 23 52 - 71 10 24                                                              | (56) ✓       |
| +6273            | 10 (31) ✓ | 362                                                                           | 24 (10) ✓    |
| ← 6266           | 12 (30) ✓ | 0 <sup>h</sup> 20 - 68° 0' 24                                                 | (4) ✓        |
| ← 6266           | 12 (30) ✓ | 0 0? - 67 18 26                                                               | (1) ✓        |
| 06231            | 12 (29) ✓ | 360 ??? 26                                                                    | (9) ✓        |
| ▽ 6541           | 12 (39) ✓ | 0 42 - 65 15 26                                                               | (7) ✓        |
| * 6093           | 12 (26) ✓ | 0 31 - 65 10 26                                                               | (5) ✓        |
| 66121            | 12 (27) ✓ | 0 50 - 65 05 26                                                               | (8) ✓        |
| 6441             | 12 (37) ✓ | 1947 ??? 26                                                                   | (14) ✓       |
| 6388             | 12 (35) ✓ |                                                                               |              |
| 6723             | 12 (47) ✓ |                                                                               |              |
| a 6809           | 12 (49) ✓ |                                                                               |              |
| 6354             | 12 (32) ✓ |                                                                               |              |
| 6656             | 12 (44) ✓ |                                                                               |              |
| Δ 6397           | 14 (36) ✓ |                                                                               |              |
| ▽ 6541           | 14 (39) ✓ |                                                                               |              |
| +6273            | 14 (31) ✓ |                                                                               |              |
| a 6809           | 14 (49) ✓ |                                                                               |              |
| ▽ 6541           | 14 (39) ✓ |                                                                               |              |

The Milky Way passes  
through region ~~A 1+3~~

|   |               |
|---|---------------|
| A | 1+3           |
| B | 1 2 3 8 9     |
| C | 3 4 5 9 10 11 |
| D | 3 4 5 9 10    |
| E | 3 4 6 7       |

~~Group H. P. each zone.~~  
~~each 2 <sup>li</sup> <sup>in</sup> 40.~~

187  
26

M.  
mag.  
D.

3

4

5

9

10

Bache Telescope. - Take spectrum plates (60 m. exposure) of the following variable stars, at regular intervals, using 5° prism when the star is faint and 13° prism when bright. -

| Name                 | R.A. <sup>1900</sup> Dec.    | Magn. | Mix                |
|----------------------|------------------------------|-------|--------------------|
| R Sculptoris         | 1 <sup>h</sup> 22.4 - 33° 4' | 5.8   | 7.8                |
| R Reticuli           | 4 32.5 - 63 14               | 7     | 13.                |
| S Antliae            | 9 27.9 - 28 11               | 6.7   | 7.3                |
| <del>W</del> Velorum | 9 28.2 - 56 36               | 3.4   | <del>5.2</del> 4.4 |





1893phae.proj..891F

Stellar Parallax

for Southern Stars

Preparatory List

The last part of the sketch is in pencil

# Stellar Parallax.

The last column shows why the object was inserted

The following plan provides for the determination of the stellar parallax of <sup>various</sup> objects showing any peculiarity such as planetary nebulæ and stars having peculiar spectra, large proper motion or variable light. Take photographs at intervals of about six months at times when the parallax is greatest. The exposures should generally last from five to fifteen minutes and should not be much longer than is required to show the object and its companion stars. At least two good photographs should be obtained at each season two six months later and two twelve months later. The first and last groups will serve to determine and eliminate the proper motion if any. Similar photographs should be made with the film side of the photograph turned from the star. Placing a direct and reversed negative film to film so that all the stars will appear double an appreciable parallax will be obvious on inspection and may be accurately measured micrometrically. In the following table the right ascension for 1901 the decl. for 1901 and the approx. <sup>approx.</sup> <sup>approx.</sup> time of each object is followed by its latitude longitude and the approx. time at which it should be photographed.

✓  
2)  
8  
✓  
13.  
✓  
14.  
✓  
18.  
✓  
33  
✓

✓  
28  
✓  
30  
✓  
36  
✓  
37  
✓  
39  
✓

101  
✓

# Var. of Class 2

| Name                   | No.     | 1900<br>R.A.    | 1900<br>Dec. | Magn.<br>max. min. | Lat. | Long.                     | Date.             |
|------------------------|---------|-----------------|--------------|--------------------|------|---------------------------|-------------------|
| 2) $\beta$ Cete        | Ch. 806 | $h^m$<br>2 14.3 | -3° 26'      | 1.7 9.5            | -16  | 30 <sup>170</sup><br>300  | Jan. 20 July 23.  |
| 8) $\gamma$ Puppis     | " 2583  | 7 10.5          | -44 29       | 3.5 6.3            | -66  | 122 <sup>212</sup><br>32  | April 22. Oct. 25 |
| 13) $\delta$ Carinae   | " 3418  | 9 29.7          | -62 21       | 4.3 10.0           | -68  | 196 <sup>286</sup><br>106 | Jan. 6. July 8    |
| 14) $\epsilon$ Carinae | " 3495  | 9 42.5          | -62 3        | 3.7 5.2            | -66  | 196 <sup>286</sup><br>106 | Jan. 6. July 8    |
| 18) $\zeta$ Hydorae    | " 4826  | 13 24.2         | -22 46       | 3.5 9.7            | -13  | 208 <sup>298</sup><br>118 | Jan. 18. July 21. |
| 53) $\eta$ Pis. Austr. | " 7994  | 22 12.3         | -30 6        | 5.7? <11?          | -18  | 324 <sup>54</sup><br>234  | Nov. 16. May 15   |

# Var. of Class 4

|                            |          |                  |          |         |     |                           |                     |
|----------------------------|----------|------------------|----------|---------|-----|---------------------------|---------------------|
| 28) $\alpha$ Muscae        | Ch. 4536 | $h^m$<br>12 36.0 | -68° 51' | 6.6 7.4 | -56 | 230 <sup>320</sup><br>140 | Feb. 8. Aug. 13     |
| 30) $\beta$ Triang. Austr. | Ch. 5465 | 15 10.8          | -66 8    | 6.6 8.0 | -46 | 247 <sup>337</sup><br>157 | Feb. 25. Aug. 30    |
| 36) $\gamma$ Sagittarii    | " 6368   | 17 41.3          | -27 48   | 4 6     | -5  | 266 <sup>356</sup><br>176 | March 16. Sept. 19. |
| 37) $\delta$ Sagittarii    | " 6472   | 17 58.6          | -29 35   | 5 6.5   | -6  | 270 <sup>360</sup><br>180 | March 20. Sept. 23  |
| 39) $\epsilon$ Paronis     | " 6760   | 18 46.6          | -67 21   | 4.0 5.5 | -44 | 276 <sup>6</sup><br>186   | March 26. Sept. 29. |

# Var. of Class 5

|                      |          |        |        |         |     |                          |                  |
|----------------------|----------|--------|--------|---------|-----|--------------------------|------------------|
| 10) $\alpha$ Antliae | Ch. 3407 | 9 27.9 | -28 11 | 6.7 7.3 | -40 | 156 <sup>246</sup><br>66 | May 27. Nov. 28. |
|----------------------|----------|--------|--------|---------|-----|--------------------------|------------------|



## Clusters

1860

\* 0 17.8 - 72 52

10 28.1 - 57 28

11 29.7 - 60 50

\* 12 45.4 - 59 35

\* 13 18.4 - 46 35

~~16 2.3 - 53 21~~~~16 15.1 - 26 11~~

17 29.3 - 53 35

\* 18 27.8 - 24 1

\* 18 58.5 - 60 12

21 32.4 - 23 49

1976 Neb. in Orion 5 29 - 5 28 (1880)

Nebula Minor 0 47.0 - 74 0 (1880)

H. G. C. 104 9.8 52

" 3293 9.6 2144

" 3766 9.6 2468

" 4755 9.6 3275

" 5139 9.6 3531

6067 ~~02~~ 6397 9.6 4162

" 6121 9.6 4183

6397 9.6 4311

6656 9.6 4424

6752 9.6 4467

7099 9.6 4687

9.6.1179 (M 42)

~~1611~~

1860

0 17.8 - 72 52

10 28.1 - 57 28

11 29.7 - 60 50

12 45.4 - 59 35

13 18.4 - 46 35

16 2.3 - 53 51

16 15.1 - 26 11

17 29.3 - 53 35

18 27.8 - 24 1

18 58.5 - 60 12

21 32.4 - 23 49

5 30.4 - 5 27.2

0 48.8 - 73 54.9

$$\begin{array}{r} 5 \ 28.4 \\ - 5 \ 29.01 \\ \hline 5 \ 30.4 \end{array}$$

$$\begin{array}{r} 5 \ 30.4 \\ - 5 \ 24.2 \\ \hline 5 \ 30.4 \end{array}$$

$$\begin{array}{r} 5 \ 30.4 \\ - 5 \ 24.2 \\ \hline 5 \ 30.4 \end{array}$$

$$\begin{array}{r} 6 \ 120 \\ - 20 \\ \hline 6 \ 120 \end{array}$$

$$\begin{array}{r} 2.74 \\ - 1.8 \\ \hline 0.94 \end{array}$$

$$\begin{array}{r} 47.2 \\ - 1.6 \\ \hline 45.6 \end{array}$$

$$\begin{array}{r} 48.8 \\ - 74.8 \\ \hline 48.8 \end{array}$$

$$\begin{array}{r} 13.1 \\ - 54.9 \\ \hline 13.1 \end{array}$$

$$\begin{array}{r} 19.6 \\ - 1.8 \\ \hline 17.8 \end{array}$$

$$\begin{array}{r} 19.6 \\ - 1.8 \\ \hline 17.8 \end{array}$$

$$\begin{array}{r} 19.6 \\ - 1.8 \\ \hline 17.8 \end{array}$$

49  
✓  
15  
✓  
19  
✓  
22  
✓  
20  
✓  
33  
✓  
31  
✓  
35  
✓  
40  
✓  
41  
✓  
57  
✓  
6  
✓  
50  
✓

# Clusters.

| G.C.N.                    | 1900            | Lat. | Long. | Date                 |
|---------------------------|-----------------|------|-------|----------------------|
| 49 <sup>✓</sup> 52        | 0 19.6 - 72 39  | -62  | 310   | April 30. Nov. 2     |
| 15 <sup>✓</sup> 2144      | 10 29.6 - 57 40 | -59  | 197   | Jan 7. July 9.       |
| 19 <sup>✓</sup> 2468      | 11 31.5 - 61 3  | -56  | 212   | Jan. 22. July 25.    |
| 22 <sup>✓</sup> 3275      | 12 47.8 - 59 48 | -49  | 222   | Feb. 1 Aug. 4        |
| 20 <sup>✓</sup> 3531      | 13 20.8 - 46 48 | -35  | 219   | Jan. 29. Aug. 1      |
| 33 <sup>✓</sup> 4162      | 16 5.4 - 53 57  | -32  | 250   | Feb. 28 Sept. 2      |
| 31 <sup>✓</sup> 4183      | 16 17.5 - 26 17 | -5   | 247   | Feb. 25. Aug. 30.    |
| 35 <sup>✓</sup> 4311      | 17 32.5 - 53 37 | -30  | 265   | March 15. Sept. 18   |
| 40 <sup>✓</sup> 4424      | 18 30.2 - 23 59 | -1   | 278   | March 28. Sept. 31.  |
| 41 <sup>✓</sup> 4467      | 19 2.0 - 60 9   | -37  | 280   | March 30. Oct. 3     |
| 51 <sup>✓</sup> 4687      | 21 34.7 - 23 38 | -9   | 318   | May 8. Nov. 10       |
| 6.11 79 Neb in Cr.        | 5 30.4 - 5 27   | -29  | 82    | March. 12. Sept. 15. |
| 50 <sup>✓</sup> 166 " " " | 0 48.6 - 73 55  | -65  | 310   | April 30. Nov. 2     |

## Southern.

✓ Binary Stars. ✓  
 ✓ Neg. Orion. Br. line Stars. ✓ Sp. Centauri, y, y Agno?  
 ✓ Neg. Min. Clusters, ω Centauri, x Crucis, x Doradus  
 ✓ Var. of Cl. 1 - Serpens 17 24.6 - 21 24  
 ✓ Var. of Cl. 2. de Ruffis, R Carinae, R Carinae, R Hydrae, R Pico Ant.  
 ✓ Var. 4 R Muscae, R Triang. Ant. x, W Sagittarii, x Pavonis  
 ✓ Var. of Cl. 5. S Antliae.  
 ✓ TV Type Stars. Deneb II, 24, 27, 47. A.G.L. 20584, 30562, 29232  
 Large Proper Motion



# Binary Stars.

|                      | 1890         | 1890              |
|----------------------|--------------|-------------------|
| $\rho$ Bridani       | $1^h 35^m.6$ | $-56^{\circ} 45'$ |
| $\alpha$ Centauri    | $14 32.2$    | $-60 23$          |
| $\gamma$ Sagittari   | $18 55.6$    | $-30 2$           |
| $\gamma$ Cor. Austr. | $18 59.0$    | $-37 13$          |

# Bright line Stars.

$\delta$  Centauri  
 $\mu$  Centauri  
 $\eta$  Centauri  
 $\gamma$  Argus  
 $\eta$  Argus  
 D.C. 17681  
 St. 9168  
 $\delta$  Muscae.  
 H.P. 1311



# Binary Stars.

| Name                 | 1900<br>R.A.         | 1900.<br>Dec.        | Magn.                                                               | <del>Magn.</del>                                  |
|----------------------|----------------------|----------------------|---------------------------------------------------------------------|---------------------------------------------------|
| $\beta$ Eridani      | 3 <sup>h</sup> 25.3  | -11 29               | <sup>a</sup> 8.2 <sup>b</sup> 10.7<br><del>4.0</del> <del>7.6</del> | <sup>a-b</sup> +3.1<br><del>+3.6</del> I No. 407. |
| $\alpha$ Centauri    | 14 <sup>h</sup> 33.0 | -60° 26'             | <sup>magn.</sup> 0.5                                                | <sup>magn.</sup> 3.7 (A.G.C. No 19825, Mag 1)     |
| $\zeta$ Sagittarii   | A.G.C. 26041         | 18 <sup>h</sup> 56.3 | -30° 1'                                                             | 3.1                                               |
| $\gamma$ Cor. Austr. | A.G.C. 26123         | 18 <sup>h</sup> 59.7 | -37° 12'                                                            | 4.6                                               |

# Bright Line Stars.

|                        |                                 |                      |          |                                                                     |
|------------------------|---------------------------------|----------------------|----------|---------------------------------------------------------------------|
| $\delta$ Centauri      | A.G.C. 16572                    | 12 3.2               | -50 10   | 2.8                                                                 |
| $\mu$ Centauri         | A.G.C. 18773                    | 13 43.6              | -41 59   | 3.4                                                                 |
| $\eta$ Centauri        | A.G.C. 19737                    | 14 <sup>h</sup> 29.2 | -41° 43' | 2.5                                                                 |
| $\gamma$ Argus         | A.G.C. 10863                    | 8 6.5                | -47 2    | 3                                                                   |
| $\eta$ Argus           | A.G.C. 14720                    | 10 41.2              | -59 10   | par                                                                 |
| A.A. 17681             | <del>A.G.C.</del> DM -21° 48 64 | 17 <sup>h</sup> 59.8 | -21 16   | 7.8. (18 <sup>h</sup> 2.5 -21 16) <sup>1855.</sup> <sup>1900.</sup> |
| Stone 9168             | A.G.C. 22827                    | Scorpius 16 47.3     | -41 40   | 7                                                                   |
| $\delta$ Muscae        | A.G.C. 17840                    | 13 <sup>h</sup> 1.7  | -64° 46' | 6                                                                   |
| H.P. 1311 - Canis Maj. | 6 50.0                          | -23° 48'             | 6.4      | (A.G.C. 8631. Mag. 7.4)                                             |

7  
✓  
52  
44  
✓  
(1)  
4N  
5  
29  
23  
✓  
25  
26  
47  
48  
55  
56

# Stars with Large Proper Motion.

| Name.                                | RA                  | Dec.     | Magn. | Motion | Lat. | Long.                  | Date               |
|--------------------------------------|---------------------|----------|-------|--------|------|------------------------|--------------------|
| 52 <sup>h</sup> $\gamma$ Tucanae     | 0 <sup>h</sup> 14.7 | -65° 29' | 4.1   | 2.0    | -58  | 321 <sup>51</sup> 231  | May 12. Nov. 13.   |
| 44 <sup>h</sup> $\beta$ Hydri        | 0 20.2              | -77 50   | 3.0   | 2.2    | -65  | 300 <sup>30</sup> 210  | April 20. Oct. 23  |
| (11) <sup>h</sup> $\epsilon$ Eridani | 3 15.8              | -43 27   | 4.4   | 3.0    | -58  | 25 <sup>115</sup> 295  | Jan. 15. July 17   |
| 4 <sup>h</sup> $\gamma$ Eridani      | 4 10.7              | -7 47    | 4.4   | 4.1    | -28  | 58 <sup>148</sup> 328  | Feb. 16. Aug. 21   |
| 5 <sup>h</sup> Weisse 8.592.         | 5 26.3              | -3 40    | 9.5   | 2.2    | -28  | 81 <sup>171</sup> 351  | March 11. Sept. 14 |
| 24 <sup>h</sup> $\alpha$ Centauri    | 14 33.0             | -60 26   | -0.5  | 3.7    | -43  | 239 <sup>329</sup> 149 | Feb. 17. Aug. 22   |
| 23 <sup>h</sup> $\gamma$ Centauri    | 14 51.6             | -20 57   | 5.9   | 2.0    | -4   | 227 <sup>317</sup> 137 | Feb. 6. Aug. 9     |
| 25 <sup>h</sup> $\gamma$ Centauri    | 15 4.8              | -15 57   | 9.2   | 3.6    | +2   | 228 <sup>318</sup> 138 | Feb. 6. Aug. 10    |
| 26 <sup>h</sup> $\gamma$ Centauri    | 15 4.8              | -15 52   | 9.0   |        | +3   |                        |                    |
| 4 <sup>h</sup> Lacaille 8760         | 21 11.5             | -39 15   | 7.6   | 3.4    | -22  | 308 <sup>38</sup> 218  | April 28. Oct. 31  |
| 48 <sup>h</sup> $\epsilon$ Indi      | 21 55.5             | -57 11   | 5.2   | 4.6    | -42  | 308 <sup>38</sup> 218  | April 28. Oct. 31  |
| 55 <sup>h</sup> Lacaille 9352        | 22 59.2             | -36 26   | 7.2   | 6.9    | -27  | 331 <sup>61</sup> 241  | May 22. Nov. 23    |
| 56 <sup>h</sup> Cordoba 32416        | 23 59.3             | -37 50   | 8.2   | 6.1    | -34  | 343 <sup>73</sup> 253  | June 3. Dec. 5     |

11.  
12.  
48  
32  
54  
46

# IV Type Stars.

|       | No           | <sup>1900</sup><br>P.A. | <sup>1900</sup><br>Dec. | Magn.                        | Lat. | Long.                             | Date               |
|-------|--------------|-------------------------|-------------------------|------------------------------|------|-----------------------------------|--------------------|
| 11. ✓ | Runer II. 24 | 9 46.4                  | -22° 33'                | 6.5                          | -34  | 158 <sup>248</sup> <sub>68</sub>  | May 29. Nov. 30    |
| 12. ✓ | Runer II 27  | 10 46.8                 | -20 43                  | 6.0                          | -26  | 172 <sup>262</sup> <sub>92</sub>  | June 13. Dec. 14   |
| 48. ✓ | Runer II 47  | 20 11.2                 | -21 36                  | 7.4                          | -2   | 300 <sup>30</sup> <sub>210</sub>  | April 20. Oct. 23. |
| 32. ✓ | A.G.C. 20554 | 15 4.8                  | -69 42                  | 6.2                          | -50  | 248 <sup>338</sup> <sub>158</sub> | Feb. 26. Aug. 31   |
| 54. ✓ | " 30562      | 22 18.3                 | -31 59                  | 8 <sup>55</sup> <sub>2</sub> | -20  | 325 <sup>55</sup> <sub>235</sub>  | May 16. Nov. 17    |
| 46. ✓ | " 29232.     | 21 13.6                 | -45 27                  | 6.0                          | -28  | 306 <sup>36</sup> <sub>216</sub>  | April 26. Oct. 29  |











| Object              | H.P. No.           |                 |                       |                 |      |                                  |           |         |
|---------------------|--------------------|-----------------|-----------------------|-----------------|------|----------------------------------|-----------|---------|
| $\alpha$ Tauri      | 797                | 4               | 30.2                  | +16° 19'        | ✓    |                                  | May<br>C. |         |
| $\alpha$ Aurigae    | 932                | 5               | 9.3                   | +45° 54'        | ✓    |                                  |           |         |
| $\beta$ Orionis     | 936                | 5               | 9.7                   | -8° 19'         | ✓    |                                  |           |         |
| $\alpha$ Orionis    | 1091               |                 |                       |                 | ✓    |                                  |           |         |
| $\alpha$ Can. Maj.  | 1275               |                 |                       |                 | ✓    |                                  |           |         |
| $\alpha$ Can. Min.  | 1442               |                 |                       |                 | ✓    |                                  | 3         |         |
| $\beta$ Gemin.      | 1459               |                 |                       |                 | ✓    |                                  | 4         |         |
| $\alpha$ Leonis     | 1797               |                 |                       |                 | ✓    |                                  | 5         |         |
| $\alpha$ Virginis   | 2263               |                 |                       |                 | ✓    |                                  |           |         |
| $\alpha$ Bootis     | 2400               |                 |                       |                 | ✓    |                                  |           |         |
| $\alpha$ Scorpii    | 2764               |                 |                       |                 | ✓    |                                  | 9         |         |
| $\alpha$ Lyrae      | 3147               |                 |                       |                 | ✓    |                                  | 10        |         |
| $\alpha$ Aquilae    | 3429               |                 |                       |                 |      |                                  | 11        |         |
| $\alpha$ Cygni      | 3631               |                 |                       |                 |      |                                  |           |         |
| $\alpha$ Pis Austr. | 4057               |                 |                       |                 |      |                                  |           |         |
| $\alpha$ Argus      | a.g.c. 11900       | 8               | 42.6                  | -45° 40'        |      |                                  |           |         |
| $\alpha$ Centauri   | 19825 }<br>19826 } | <del>8</del> 14 | <del>41</del> 31      | <del>47</del> 7 | -45  | <del>35</del> 19.1               | 4.1       | Vela. ✓ |
| $\alpha$ Eridani    |                    | 1               | 34.0<br><del>33</del> | <del>3</del>    | -57  | <del>44</del><br><del>52.3</del> | 1.0       |         |
| $\beta$ Centauri    | 19043              | 13              | 56.7<br><del>55</del> | <del>1</del>    | -59  | <del>53</del><br><del>46.1</del> | 1.2       | ✓       |
| $\alpha$ Crucis     | 16942<br>16943     | 12              | 19                    | 40              | -62  | 24.4                             | 1.3       | dpl. ✓  |
| $\beta$ Crucis      | a.g.c.             | 17              | 411                   | 12              | 41.8 | -59                              | 8         | 1.7. ✓  |











