

| Star                 | $\alpha$ |    | $\delta$ |    | Plates | Remarks                                    |
|----------------------|----------|----|----------|----|--------|--------------------------------------------|
|                      | h        | m  | °        | '  |        |                                            |
| $\pi$ 8 Virginis     | 11       | 56 | + 7      | 10 | 15     |                                            |
| 16 Comae             | 12       | 22 | +27      | 22 | 4      |                                            |
| 12 Canum Venaticorum | 12       | 51 | +38      | 52 | 4      | new spec. binary<br>constant velocity, - 2 |
| $\tau$ Virginis      | 13       | 57 | + 2      | 02 | 12     |                                            |
| 33 Bootes            | 14       | 35 | +14      | 50 | 2      |                                            |
| 10 Serpentis         | 15       | 21 | + 2      | 12 | 1      |                                            |
| 12 Coronae Borealis  | 15       | 52 | +38      | 14 | 3      |                                            |
| 21 Ophiuchi          | 16       | 46 | + 1      | 23 | 4      |                                            |
| 101 Herculis         | 18       | 05 | +20      | 01 | 4      |                                            |
| Boss 1669            | 18       | 22 | +29      | 46 | 2      |                                            |
| 50 Draconis          | 18       | 50 | +75      | 20 | 28     | additional measures                        |
| Boss 5070            | 19       | 47 | +10      | 20 | 7      |                                            |
| 13 Vindemiatrix      | 19       | 49 | +23      | 50 | 6      |                                            |
| Boss 5535            | 21       | 28 | +60      | 01 | 1      |                                            |

 $\eta$  PISCUM

(1900.  $\alpha = 1^h 26^m.1$ ,  $\delta = +14^\circ 50'$ , mag. 3.72, type (15))

In the *Astrophysical Journal*, volume XIX, page 249 and volume XXI, page 313, are given the measures of 15 plates taken by Lord at the Emerson McMillan Observatory in the years 1901 to 1905. The range shown is from +9.5 to +24.9, and Lord suspected that the star was a spectroscopic binary of long period. Giving his plates equal weight would bring the mean velocity about +16.4 km. per second.

From 1897 to 1904 there were 7 plates of the star secured at the Lick Observatory with practically no range in velocity shown. Campbell used the mean +15.5 km. per sec. as the velocity of the star, though he stated that Lord's contention of its spectroscopic character was neither proved nor disproved by his plates.

From 1904 to 1907 K $\ddot{u}$ stner secured 4 plates with a single-prism spectrograph showing no appreciable range and giving a mean velocity of +14.8 km. per second.

In 1906, 1907 and 1908 there were 44 plates secured here as given in the table following. For reasons given in the column of remarks the numbers 606, 624, 1057 and 1254 have not been considered in the discussion. Of the remaining 40 plates, 16 were made with the three-prism universal spectroscope adapted for radial velocity work, 5 with the single-prism long-focus camera, and the remaining 19 with the regular three-prism long-focus camera arrangement. From our early plates it was felt that the variation was real and the period short, and a number of plates were made and measured the labourious method of applying the Hartman-Cornu formula for each line being used before it was suspected that some systematic error in the instrument might be the cause of the variations measured. This suspicion is probably the correct view for the universal and single-prism instruments, as in the early stages of the work they were not so perfect as later experience made them.