

Observations de la Comète 1887 IV, d'occultations d'étoiles par la Lune et d'éclipses des Satellites de Jupiter, faites à l'Observatoire royal de Bruxelles, à l'équat. de l'Est (0<sup>m</sup>15), par *E. Stuyvaert*, astr. adjoint. (Communiquées par le Directeur *F. Folie*.)

## Observations de la Comète 1887 IV.

| 1887    | T. M. Brux.                                     | $\Delta\alpha$                    | $\Delta\delta$ | Cp. | $\alpha$ app.                                     | $\log p.A$ | $\delta$ app.  | $\log p.A$ | Red. ad l app.            | *  |
|---------|---|-----------------------------------|----------------|-----|---|------------|----------------|------------|---------------------------|----|
| Mai 28  | 12 <sup>h</sup> 35 <sup>m</sup> 37 <sup>s</sup> | -4 <sup>m</sup> 4 <sup>s</sup> 65 | + 0' 3" 1      | 4   | —   | 9.145      | —              | 0.919      | +2 <sup>s</sup> 12 — 0" 2 | 1  |
| 28      | 12 35 37  | -4 54.80                          | + 3 56.9       | 4   | 15 <sup>h</sup> 39 <sup>m</sup> 2 <sup>s</sup> 22 | 9.145      | -20° 26' 28" 8 | 0.919      | +2.11 — 0.3               | 2  |
| Juin 17 | 10 47 21  | -0 42.16                          | + 5 14.9       | 5   | 16 22 8.33  | 8.153      | - 5 6 41.1     | 0.867      | +2.07 +4.0                | 3  |
| 17      | 10 47 21  | -1 3.16                           | + 5 28.8       | 5   | 16 22 8.20  | 8.153      | - 5 6 42.8     | 0.867      | +2.07 +4.0                | 4  |
| 18      | 10 47 53  | -0 23.09                          | + 0 10.4       | 7   | —   | 8.241      | —              | 0.863      | +2.06 +4.2                | 5  |
| 18      | 10 49 0   | -1 55.10                          | -10 5.4        | 6   | —   | 8.284      | —              | 0.863      | +2.07 +4.3                | 6  |
| 19      | 10 48 46  | -0 43.68                          | - 5 24.7       | 5   | —   | 8.345      | —              | 0.859      | +2.06 +4.5                | 7  |
| 19      | 10 48 46  | -1 49.48                          | - 1 2.4        | 5   | —   | 8.345      | —              | 0.859      | +2.07 +4.5                | 8  |
| 22      | 12 22 42  | -0 16.55                          | + 4 6.6        | 4   | —   | 9.249      | —              | 0.847      | +2.07 +4.9                | 9  |
| 22      | 12 22 42  | -1 25.80                          | + 0 8.2        | 4   | —   | 9.249      | —              | 0.847      | +2.07 +5.0                | 10 |
| 23      | 11 15 54  | -0 53.80                          | - 2 13.9       | 2   | —   | 8.887      | —              | 0.845      | +2.07 +4.9                | 11 |
| 24      | 10 53 50  | +0 3.40                           | - 3 26.4       | 2   | 16 37 59.08                                       | 8.644      | - 0 37 51.3    | 0.841      | +2.07 +4.9                | 12 |
| 24      | 10 53 50  | -2 0.70                           | - 4 53.7       | 2   | 16 37 57.66                                       | 8.644      | - 0 38 9.7     | 0.841      | +2.07 +5.0                | 13 |
| 24      | 10 53 50  | -2 36.50                          | - 1 10.3       | 2   | 16 37 58.28                                       | 8.644      | - 0 38 2.8     | 0.841      | +2.08 +5.0                | 14 |
| 27      | 10 41 31  | +0 59.54                          | - 4 34.3       | 6   | 16 44 41.42                                       | 8.508      | + 1 0 50.0     | 0.831      | +2.07 +6.5                | 15 |
| 27      | 10 41 31  | -0 46.92                          | - 4 46.6       | 6   | —   | 8.508      | —              | 0.831      | +2.08 +6.6                | 16 |
| 27      | 10 41 31  | -1 29.38                          | + 2 35.4       | 6   | —   | 8.508      | —              | 0.831      | +2.08 +6.6                | 17 |

## Positions moyennes des Etoiles de comparaison.

| # | $\alpha$ 1887.0                                | $\delta$ 1887.0 | Autorité         | #  | $\alpha$ 1887.0                                 | $\delta$ 1887.0 | Autorité                           |
|---|--|-----------------|------------------|----|---|-----------------|------------------------------------|
| 1 | 15 <sup>h</sup> 43 <sup>m</sup> 5 <sup>s</sup> | -20° 27'        | Anonyme          | 10 | 16 <sup>h</sup> 34 <sup>m</sup> 58 <sup>s</sup> | - 1° 48'        | DM. -1°3229                        |
| 2 | 15 43 54.91                                    | -20 30 25" 4    | Lal. 28795       | 11 | 16 36 36  | - 1 15          | DM. -1.3236                        |
| 3 | 16 22 48.42                                    | - 5 12 0.0      | Lal. 29970       | 12 | 16 37 53.61                                     | - 0 34 29" 8    | Lal. 30423                         |
| 4 | 16 23 9.29                                     | - 5 12 15.6     | Lal. 29982       | 13 | 16 39 56.29                                     | - 0 33 21.0     | W <sub>1</sub> 16 <sup>h</sup> 736 |
| 5 | 16 25 3  | - 4 23          | Anonyme (8° gr.) | 14 | 16 40 32.70                                     | - 0 36 57.5     | W <sub>1</sub> 16 <sup>h</sup> 748 |
| 6 | 16 26 33                                       | - 4 14          | Anonyme (8° gr.) | 15 | 16 43 39.81                                     | + 1 5 17.8      | Lal. 30602                         |
| 7 | 16 27 20                                       | - 3 39          | Anonyme (9° gr.) | 16 | 16 45 26  | + 1 6           | DM. +1°3320                        |
| 8 | 16 28 26                                       | - 3 45          | Anonyme (8° gr.) | 17 | 16 46 9   | + 0 58          | DM. +1.3324                        |
| 9 | 16 33 49                                       | - 1 53          | DM. -1°3227      |    |   |                 |                                    |

## Observations d'occultations d'étoiles par la Lune.

| 1887     | Etoile                                | Gr. | Ph. | T. M. Brux.                                     | Gross. | 1887     | Etoile                             | Gr. | Ph. | T. M. Brux.                                      | Gross. |
|----------|---------------------------------------|-----|-----|---|--------|----------|------------------------------------|-----|-----|--|--------|
| Avril 26 | W <sub>2</sub> 4 <sup>h</sup> 13 13-4 | 9   | I   | 8 <sup>h</sup> 21 <sup>m</sup> 5 <sup>s</sup> 6 | 80     | Mai 4    | $\gamma$ Virginis A*               | 3   | E   | 13 <sup>h</sup> 29 <sup>m</sup> 9 <sup>s</sup> 7 | 120    |
| 27       | W <sub>2</sub> 5 <sup>h</sup> 16 77-8 | 8   | I   | 8 26 42.4                                       | 80     | 28       | W <sub>1</sub> 9 <sup>h</sup> 58 1 | 9   | I   | 10 5 21.2  | 120    |
| Mai 4    | $\gamma$ Virginis A*                  | 3   | I   | 12 48 9.7                                       | 120    | Juill. 1 | $\eta$ Librae                      | 6   | I   | 9 45 28.1  | 120    |
| 4        | $\gamma$ Virginis B*                  | 3   | I   | 12 48 10.7                                      | 120    |          |                                    |     |     |  |        |

\*  $\gamma$  Virginis A est l'étoile méridionale,  $\gamma$  Virginis B l'étoile septentrionale.

I signifie immersion par le bord obscur, E signifie émergence par le bord éclairé.

## Observations d'éclipses des Satellites de Jupiter.

| T. M. Brux.                                      | T. M. Gr.   | N. A.                           | Remarques                  | T. M. Brux.                                     | T. M. Gr.  | N. A.                           | Remarques             |
|--|---|---------------------------------|----------------------------|---|--|---------------------------------|-----------------------|
| 1887 Avril 3 II. Ec. D.                          |   |                                 |                            | 1887 Avril 8 III. Ec. D.                        |  |                                 |                       |
| 11 <sup>h</sup> 9 <sup>m</sup> 16 <sup>s</sup> 0 | 10 <sup>h</sup> 51 <sup>m</sup> 47 <sup>s</sup> 1 | 54 <sup>m</sup> 12 <sup>s</sup> | L'éclat du sat. a diminué. | 9 <sup>h</sup> 9 <sup>m</sup> 56 <sup>s</sup> 2 | 8 <sup>h</sup> 52 <sup>m</sup> 27 <sup>s</sup> 3 | 54 <sup>m</sup> 32 <sup>s</sup> | L'éclat diminue.      |
| 11 10 1.0  | 10 52 32.1  |                                 | Demi-éclat.                | 9 14 0.7  | 8 56 31.8  |                                 | Demi-éclat.           |
| 11 11 43.5                                       | 10 54 14.6  |                                 | Disparition.               | 9 17 47.7                                       | 9 0 18.8   |                                 | Disparition complète. |

| M. Brux.                 | T. M. Gr.                            | N. A.                          | Remarques  |
|--------------------------|--------------------------------------|--------------------------------|--|
| 1887 Avril 10 II. Ec. D. |                                      |                                |  |
| 42 <sup>m</sup> 33.5     | 13 <sup>h</sup> 25 <sup>m</sup> 45.6 | 30 <sup>m</sup> 3 <sup>s</sup> | L'éclat diminue.   |
| 45 4.0                   | 13 27 35.1                           |                                | Demi-éclat.  |
| 45 42.0                  | 13 30 13.1                           |                                | Disparition.   |
| Avril 21 I. Ec. R.       |                                      |                                |  |
| 15 18.6                  | 11 57 49.7                           | 57 4                           | On aperçoit le satellite.                                      |
| 16 26.6                  | 11 58 57.7                           |                                | Demi-éclat.  |
| 17 43.1                  | 12 0 14.0                            |                                | Eclat total.   |
| Mai 14 I. Ec. R.         |                                      |                                |  |
| 24 36.7                  | 12 7 7.8                             | 7 16                           | Apparition.  |
| 25 32.7                  | 12 8 3.8                             |                                | Demi-éclat.  |
| 26 39.2                  | 12 9 10.3                            |                                | Eclat total.   |
| Mai 21 III. Ec. D.       |                                      |                                |  |
| 3 39.2                   | 8 46 10.3                            | 46 12                          | L'éclat diminue.   |
| 4 56.2                   | 8 47 27.3                            |                                | L'éclat dim. rapidement.                                       |
| 9 0.7                    | 8 51 31.8                            |                                | Disparition. Obs. peu sûre à cause des nuages.                 |
| Mai 21 III. Ec. R.       |                                      |                                |  |
| 45 59.2                  | 10 28 30.3                           | 28 55                          | Par une éclaircie on aperçoit le satellite encore très-faible. |

| T. M. Brux.                          | T. M. Gr.                            | N. A.                          | Remarques   |
|--------------------------------------|--------------------------------------|--------------------------------|---|
| 1887 Juin 22 I. Ec. R.               |                                      |                                |   |
| 10 <sup>h</sup> 53 <sup>m</sup> 26.8 | 10 <sup>h</sup> 35 <sup>m</sup> 57.9 | 36 <sup>m</sup> 7 <sup>s</sup> | Apparition.   |
| 10 54 20.8                           | 10 36 51.9                           |                                | Demi-éclat.   |
| 10 55 26.8                           | 10 37 57.9                           |                                | Eclat total.  |
| Juillet 1 II. Ec. R.                 |                                      |                                |   |
| 10 23 23.6                           | 10 5 54.7                            | 5 29                           | Apparition.   |
| 10 24 16.6                           | 10 6 47.7                            |                                | Demi-éclat.   |
| 10 25 8.1                            | 10 7 39.2                            |                                | Eclat total.  |
| Juillet 3 III. Ec. R.                |                                      |                                |   |
| 10 33 9.0                            | 10 15 40.1                           | 18 54                          | Apparition.   |
| 10 38 11.0                           | 10 20 42.1                           |                                | Demi-éclat.   |
| 10 40 28.0                           | 10 22 59.1                           |                                | L'éclat augmente très-rapidement.   |
| 10 42 24.0                           | 10 24 55.1                           |                                | Eclat total. Le sat. est resté longtemps très-faible et il a gagné lentement en éclat jusqu'au delà de la demi-grandeur, puis il a tout-à-coup rapidement gagné tout son éclat. |

### Occultations observed at Windsor, N. S. Wales, in 1887.

The following is a list of all the occultations observed here during the year 1887. They are few in consequence of the extraordinarily cloudy state of the year, and the recorded times are all disappearances at the moon's N. limb. The fourth column indicates the telescope with which the observation was made, C being the Cooke 2 inch, and G the Grubb 8 inch equatorial refractor. The fifth column gives, according to direct vision, either the highly estimated angle of disappearance from the moon's north cusp or the quadrant in which the phenomenon occurred. In some few cases sufficient time was not afforded for fixing the position of the occulted star before its disappearance. With the exception of October 20 transit-observations for time were taken on every evening when an occultation was observed.

| Star                  | Mag.                          | T | AQ   | Windsor M. T.   | No. | Star                                      | Mag.                          | T | AQ   | Windsor M. T.  |
|-----------------------|-------------------------------|---|------|---|-----|---|-------------------------------|---|------|--|
| 1887                  |                               |   |      |   |     |   |                               |   |      |  |
| Yarn. 2630            | 7                             | G | —    | April 28 <sup>d</sup> 6 <sup>h</sup> 43 <sup>m</sup> 19.8 | 12  | Lal. 36376                                | 7                             | G | S.   | Sept. 25 <sup>d</sup> 10 <sup>h</sup> 51 <sup>m</sup> 46.7 |
| ν Geminorum           | 4 <sup>1</sup> / <sub>2</sub> | G | —    | » 28 6 44 17.0  | 13  | —   | 8                             | C | 160° | Oct. 20 7 32 46.3  |
| —                     | 9                             | C | 100° | May 26 6 10 9.9   | 14  | δ = -19° 13 <sup>1</sup> / <sub>2</sub> ' | 8                             | G | N.   | » 21 7 35 38.8   |
| —                     | 9                             | C | 135  | » 26 6 36 5.6   | 15  | AOe <sub>2</sub> 17550-1                  | 9                             | C | S.   | » 21 9 12 56.2   |
| —                     | 7                             | C | 110  | July 23 7 3 42.7  | 16  | AOe <sub>2</sub> 18886-7                  | 8                             | G | —    | » 22 6 55 16.9   |
| Lam <sub>1</sub> 4010 | 8                             | G | 30   | » 26 6 52 31.0  | 17  | AOe <sub>2</sub> 18943                    | 8                             | G | 110  | » 22 8 33 33.3   |
| δ = -2° 12'           | 7                             | G | —    | » 26 7 34 22.5  | 18  | AOe <sub>2</sub> 18953                    | 8 <sup>1</sup> / <sub>3</sub> | G | 45   | » 22 8 59 4.1  |
| Yarn. 5394            | 7                             | C | 45   | Aug. 22 7 15 58.9   | 19  | Yarn. 8087                                | 7                             | C | 45   | » 22 10 0 13.3   |
| —                     | 8                             | C | 20   | » 22 7 16 0.9   | 20  | h <sup>2</sup> Aquarii                    | 6 <sup>1</sup> / <sub>2</sub> | C | 70   | Nov. 23 10 59 48.5   |
| φ Ophiuchi            | 5                             | C | 120  | Sept. 22 9 41 4.9   | 21  | h <sup>3</sup> Aquarii                    | 6                             | C | 140  | » 23 11 4 47.6   |
| Lal. 31611            | 7                             | G | 80   | » 22 10 35 27.2   | 22  | h <sup>1</sup> Aquarii                    | 5 <sup>1</sup> / <sub>2</sub> | C | 40   | » 23 11 7 7.2  |
|                       |                               |   |      | » 23 8 34 25.4  | 23  | h <sup>4</sup> Aquarii                    | 6 <sup>1</sup> / <sub>2</sub> | C | 90   | » 23 11 55 31.9  |

T = Telescope, AQ = Angle or Quadrant.

#### Remarks.

- 1, 2. Disappearance not quite instantaneous.
3. Disappearance not quite instantaneous: disappearance

preceded two or three minutes by that of a faint star a minute or two farther south.