

## CHAPTER III

### DATA

The area scanned in each plate which was exposed to eastern direction was 70 x 50 square millimeters, and that exposed to western direction was 50 x 50 square millimeters. The results are shown in Table I, and II. The star rates in stars/c.c./day in the column denoted by (c - a) are obtained by multiplying the difference between the numbers of stars in the column (C) and the column (a) by  $(3 \times \text{area scanned} \times \text{thickness} \times \text{no. of days from 31 January to 3 April})^{-1}$  and those in the column (c - b) are obtained by the difference between the numbers of stars in the column (c) and the column (b) by  $(3 \times \text{area scanned} \times \text{thickness} \times \text{no. of days from 20 February to 3 April})^{-1}$ . The errors shown are standard errors (see Appendix I).

Table I. Frequency distribution of stars from easterly direction

| No. of<br>prongs<br>per star | Dates of processing    |                        |                        | star rates<br>(stars/c.o./day) |                   | Mean<br>star rates |
|------------------------------|------------------------|------------------------|------------------------|--------------------------------|-------------------|--------------------|
|                              | 31 Jan.<br>1962<br>(a) | 20 Feb.<br>1962<br>(b) | 3 April<br>1962<br>(c) | c - a                          | c - b             |                    |
|                              |                        |                        |                        |                                |                   |                    |
| 2                            | 330                    | 371                    | 739                    | 2.10 $\pm$ .10                 | 2.79 $\pm$ .15    | 2.45 $\pm$ .18     |
| 3                            | 662                    | 921                    | 2030                   | 7.00 $\pm$ .20                 | 8.40 $\pm$ .25    | 7.70 $\pm$ .32     |
| 4                            | 529                    | 758                    | 1479                   | 4.87 $\pm$ .16                 | 5.45 $\pm$ .20    | 5.16 $\pm$ .25     |
| 5                            | 188                    | 206                    | 318                    | 0.67 $\pm$ .06                 | 0.85 $\pm$ .08    | 0.76 $\pm$ .10     |
| > 5                          | 82                     | 72                     | 72                     | -0.051 $\pm$ .016              | 0.00 $\pm$ 0.00   | -0.026 $\pm$ .016  |
| > 8                          | 33                     | 32                     | 28                     | -0.026 $\pm$ .011              | -0.030 $\pm$ .015 | -0.028 $\pm$ .019  |
| > 15                         | 1                      | 2                      | 3                      | +0.010 $\pm$ .007              | 0.008 $\pm$ .008  | 0.009 $\pm$ .011   |
| Total                        | 1791                   | 2328                   | 4638                   | 14.6 $\pm$ .27                 | 17.5 $\pm$ .37    | 16.05 $\pm$ .46    |

Total area scanned 31500 (mm)<sup>2</sup>.

Table II. Frequency distributions of stars from westerly direction

| No. of<br>prongs<br>per star | Dates of processing    |                        |                        | star rates<br>(stars/c.c./day) |                 | Mean<br>star rates |
|------------------------------|------------------------|------------------------|------------------------|--------------------------------|-----------------|--------------------|
|                              | 31 Jan.<br>1962<br>(a) | 20 Feb.<br>1962<br>(b) | 3 April<br>1962<br>(c) | c - a                          | c - b           |                    |
|                              |                        |                        |                        |                                |                 |                    |
| 2                            | 178                    | 207                    | 528                    | 2.51 $\pm$ .13                 | 3.40 $\pm$ .19  | 2.96 $\pm$ .23     |
| 3                            | 437                    | 700                    | 1385                   | 8.30 $\pm$ .24                 | 7.25 $\pm$ .28  | 7.78 $\pm$ .37     |
| 4                            | 330                    | 528                    | 1127                   | 5.71 $\pm$ .20                 | 6.35 $\pm$ .26  | 6.03 $\pm$ .33     |
| 5                            | 89                     | 172                    | 274                    | 1.33 $\pm$ .10                 | 1.08 $\pm$ .11  | 1.21 $\pm$ .15     |
| > 5                          | 65                     | 56                     | 45                     | .143 $\pm$ .032                | .117 $\pm$ .035 | .130 $\pm$ .047    |
| > 8                          | 20                     | 18                     | 5                      | .108 $\pm$ .028                | .138 $\pm$ .038 | .123 $\pm$ .047    |
| > 15                         | 2                      | 5                      | 1                      | .007 $\pm$ .007                | .042 $\pm$ .021 | .025 $\pm$ .022    |
| Total                        | 1099                   | 1663                   | 3359                   | 16.2 $\pm$ .34                 | 18.05 $\pm$ .44 | 17.3 $\pm$ .56     |

Total area scanned 22500 (mm)<sup>2</sup>