

### MARS

| M d<br>2017 | Wsch.       | Kulm. | Zach.        | A   | $\alpha$ | $\delta$ | D   | F    | V   | $\Delta I$ |
|-------------|-------------|-------|--------------|-----|----------|----------|-----|------|-----|------------|
|             | $\lambda=0$ |       | $\varphi=50$ |     | $0^hUT$  |          |     |      |     |            |
|             | h m         | h m   | h m          | °   | h m      | ° ' "    | "   |      | m   | °          |
| I 0         | 10 43       | 16 03 | 21 23        | 77  | 22 42.9  | - 9 07   | 5.7 | 0.90 | 0.9 | 59         |
| 8           | 10 22       | 15 53 | 21 26        | 81  | 23 05.2  | - 6 41   | 5.5 | 0.91 | 0.9 | 57         |
| 16          | 10 00       | 15 44 | 21 28        | 85  | 23 27.3  | - 4 13   | 5.4 | 0.91 | 1.0 | 55         |
| 24          | 9 39        | 15 34 | 21 31        | 88  | 23 49.2  | - 1 43   | 5.2 | 0.92 | 1.1 | 53         |
| II 1        | 9 17        | 15 25 | 21 33        | 92  | 0 10.9   | 0 46     | 5.1 | 0.92 | 1.1 | 50         |
| 9           | 8 55        | 15 15 | 21 35        | 96  | 0 32.6   | 3 14     | 4.9 | 0.93 | 1.2 | 48         |
| 17          | 8 34        | 15 05 | 21 36        | 100 | 0 54.2   | 5 39     | 4.8 | 0.94 | 1.2 | 46         |
| 25          | 8 13        | 14 55 | 21 38        | 104 | 1 15.9   | 7 59     | 4.7 | 0.94 | 1.3 | 44         |
| III 5       | 7 52        | 14 45 | 21 40        | 107 | 1 37.7   | 10 14    | 4.5 | 0.95 | 1.3 | 42         |
| 13          | 7 31        | 14 36 | 21 41        | 111 | 1 59.6   | 12 23    | 4.4 | 0.95 | 1.4 | 40         |
| 21          | 7 11        | 14 26 | 21 42        | 114 | 2 21.7   | 14 23    | 4.3 | 0.96 | 1.4 | 37         |
| 29          | 6 52        | 14 17 | 21 43        | 117 | 2 44.1   | 16 15    | 4.2 | 0.96 | 1.5 | 35         |
| IV 6        | 6 33        | 14 08 | 21 44        | 120 | 3 06.6   | 17 57    | 4.1 | 0.97 | 1.5 | 33         |
| 14          | 6 16        | 13 59 | 21 44        | 122 | 3 29.4   | 19 28    | 4.1 | 0.97 | 1.5 | 31         |
| 22          | 5 59        | 13 51 | 21 43        | 125 | 3 52.4   | 20 48    | 4.0 | 0.98 | 1.6 | 28         |
| 30          | 5 44        | 13 42 | 21 42        | 127 | 4 15.6   | 21 56    | 3.9 | 0.98 | 1.6 | 26         |
| V 8         | 5 29        | 13 34 | 21 40        | 128 | 4 38.9   | 22 51    | 3.9 | 0.98 | 1.6 | 24         |
| 16          | 5 17        | 13 26 | 21 36        | 129 | 5 02.3   | 23 33    | 3.8 | 0.99 | 1.6 | 21         |
| 24          | 5 05        | 13 18 | 21 31        | 130 | 5 25.8   | 24 01    | 3.7 | 0.99 | 1.7 | 19         |
| VI 1        | 4 56        | 13 10 | 21 24        | 131 | 5 49.3   | 24 17    | 3.7 | 0.99 | 1.7 | 17         |
| 9           | 4 47        | 13 02 | 21 16        | 131 | 6 12.6   | 24 19    | 3.7 | 0.99 | 1.7 | 15         |
| 17          | 4 40        | 12 53 | 21 07        | 130 | 6 35.8   | 24 08    | 3.6 | 1.00 | 1.7 | 12         |
| 25          | 4 34        | 12 45 | 20 55        | 130 | 6 58.7   | 23 45    | 3.6 | 1.00 | 1.7 | 10         |
| VII 3       | 4 29        | 12 36 | 20 42        | 128 | 7 21.4   | 23 09    | 3.6 | 1.00 | 1.7 | 7          |
| 11          | 4 25        | 12 27 | 20 28        | 127 | 7 43.7   | 22 22    | 3.5 | 1.00 | 1.7 | 5          |
| 19          | 4 22        | 12 17 | 20 12        | 125 | 8 05.6   | 21 24    | 3.5 | 1.00 | 1.7 | 3          |
| 27          | 4 19        | 12 07 | 19 55        | 123 | 8 27.1   | 20 17    | 3.5 | 1.00 | 1.7 | -1         |
| VIII 4      | 4 16        | 11 57 | 19 36        | 121 | 8 48.3   | 19 00    | 3.5 | 1.00 | 1.7 | -3         |
| 12          | 4 14        | 11 46 | 19 17        | 119 | 9 09.0   | 17 35    | 3.5 | 1.00 | 1.7 | -5         |
| 20          | 4 11        | 11 35 | 18 57        | 116 | 9 29.4   | 16 03    | 3.5 | 1.00 | 1.8 | -8         |
| 28          | 4 09        | 11 23 | 18 37        | 113 | 9 49.4   | 14 24    | 3.5 | 1.00 | 1.8 | -10        |
| IX 5        | 4 06        | 11 11 | 18 16        | 110 | 10 09.1  | 12 39    | 3.6 | 1.00 | 1.8 | -13        |
| 13          | 4 03        | 10 59 | 17 54        | 107 | 10 28.4  | 10 50    | 3.6 | 0.99 | 1.8 | -16        |
| 21          | 4 00        | 10 47 | 17 32        | 104 | 10 47.6  | 8 57     | 3.6 | 0.99 | 1.8 | -18        |
| 29          | 3 57        | 10 34 | 17 10        | 101 | 11 06.5  | 7 00     | 3.7 | 0.99 | 1.8 | -21        |
| X 7         | 3 54        | 10 21 | 16 48        | 98  | 11 25.2  | 5 01     | 3.7 | 0.98 | 1.8 | -24        |
| 15          | 3 51        | 10 08 | 16 25        | 95  | 11 43.8  | 3 01     | 3.8 | 0.98 | 1.8 | -27        |
| 23          | 3 48        | 9 55  | 16 02        | 92  | 12 02.4  | 1 00     | 3.8 | 0.98 | 1.8 | -30        |
| 31          | 3 44        | 9 42  | 15 40        | 89  | 12 20.9  | - 1 01   | 3.9 | 0.97 | 1.8 | -33        |
| XI 8        | 3 41        | 9 29  | 15 17        | 86  | 12 39.4  | - 3 01   | 4.0 | 0.97 | 1.8 | -36        |
| 16          | 3 37        | 9 16  | 14 55        | 83  | 12 58.0  | - 5 00   | 4.0 | 0.96 | 1.7 | -39        |
| 24          | 3 34        | 9 04  | 14 33        | 80  | 13 16.7  | - 6 57   | 4.1 | 0.96 | 1.7 | -42        |
| XII 2       | 3 30        | 8 51  | 14 11        | 77  | 13 35.6  | - 8 50   | 4.3 | 0.95 | 1.7 | -45        |
| 10          | 3 27        | 8 38  | 13 49        | 74  | 13 54.6  | - 10 39  | 4.4 | 0.95 | 1.6 | -48        |
| 18          | 3 24        | 8 26  | 13 28        | 71  | 14 13.8  | - 12 24  | 4.5 | 0.94 | 1.6 | -51        |
| 26          | 3 20        | 8 14  | 13 07        | 68  | 14 33.2  | - 14 03  | 4.7 | 0.94 | 1.5 | -54        |
| 2018 I 3    | 3 16        | 8 02  | 12 47        | 66  | 14 52.9  | - 15 36  | 4.8 | 0.93 | 1.5 | -57        |