



Ephemeriden für Sternfreunde

von Karl-Heinz Bücke



Mars

Januar 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \varnothing | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|---------------|-------|-------|-------|------|-------|-------|-------|-------|--------|--------|-------|-------|
| 1 | 16:47 | -22.5° | -0.1° | 2.341 | 4.0" | 1.7 | 17.1° | 0.978 | 0.1" | 33.6° | 4.6° | 96° | 12.0° | 150.5° | 236.0° | -0.2° | 1.537 |
| 3 | 16:53 | -22.7° | -0.2° | 2.330 | 4.0" | 1.7 | 17.5° | 0.977 | 0.1" | 33.1° | 4.0° | 96° | 11.7° | 151.5° | 237.0° | -0.2° | 1.534 |
| 5 | 16:59 | -22.9° | -0.2° | 2.320 | 4.0" | 1.7 | 17.9° | 0.976 | 0.1" | 32.6° | 3.4° | 95° | 11.3° | 152.5° | 238.0° | -0.3° | 1.531 |
| 7 | 17:05 | -23.0° | -0.2° | 2.309 | 4.1" | 1.7 | 18.3° | 0.975 | 0.1" | 32.0° | 2.8° | 95° | 10.9° | 153.6° | 239.1° | -0.3° | 1.529 |
| 9 | 17:11 | -23.2° | -0.2° | 2.298 | 4.1" | 1.7 | 18.7° | 0.974 | 0.1" | 31.5° | 2.2° | 94° | 10.4° | 154.6° | 240.1° | -0.3° | 1.526 |
| 11 | 17:17 | -23.3° | -0.2° | 2.287 | 4.1" | 1.7 | 19.1° | 0.972 | 0.1" | 30.9° | 1.5° | 93° | 10.0° | 155.6° | 241.1° | -0.4° | 1.524 |
| 13 | 17:24 | -23.4° | -0.3° | 2.276 | 4.1" | 1.7 | 19.5° | 0.971 | 0.1" | 30.3° | 0.9° | 93° | 9.6° | 156.7° | 242.2° | -0.4° | 1.521 |
| 15 | 17:30 | -23.5° | -0.3° | 2.265 | 4.1" | 1.7 | 19.9° | 0.970 | 0.1" | 29.7° | 0.3° | 92° | 9.2° | 157.7° | 243.2° | -0.4° | 1.518 |
| 17 | 17:36 | -23.6° | -0.3° | 2.253 | 4.2" | 1.7 | 20.3° | 0.969 | 0.1" | 29.1° | -0.3° | 91° | 8.8° | 158.8° | 244.3° | -0.5° | 1.516 |
| 19 | 17:43 | -23.7° | -0.3° | 2.242 | 4.2" | 1.7 | 20.7° | 0.968 | 0.1" | 28.4° | -1.0° | 91° | 8.4° | 159.9° | 245.3° | -0.5° | 1.513 |
| 21 | 17:49 | -23.8° | -0.4° | 2.230 | 4.2" | 1.7 | 21.0° | 0.967 | 0.1" | 27.8° | -1.6° | 90° | 7.9° | 160.9° | 246.4° | -0.5° | 1.511 |
| 23 | 17:55 | -23.8° | -0.4° | 2.219 | 4.2" | 1.6 | 21.4° | 0.965 | 0.1" | 27.1° | -2.2° | 89° | 7.5° | 162.0° | 247.5° | -0.6° | 1.508 |
| 25 | 18:02 | -23.8° | -0.4° | 2.207 | 4.2" | 1.6 | 21.8° | 0.964 | 0.2" | 26.4° | -2.9° | 89° | 7.1° | 163.0° | 248.5° | -0.6° | 1.505 |
| 27 | 18:08 | -23.9° | -0.4° | 2.196 | 4.3" | 1.6 | 22.2° | 0.963 | 0.2" | 25.7° | -3.5° | 88° | 6.6° | 164.1° | 249.6° | -0.6° | 1.503 |
| 29 | 18:14 | -23.9° | -0.5° | 2.184 | 4.3" | 1.6 | 22.6° | 0.962 | 0.2" | 24.9° | -4.1° | 87° | 6.2° | 165.2° | 250.7° | -0.7° | 1.500 |
| 31 | 18:21 | -23.8° | -0.5° | 2.172 | 4.3" | 1.6 | 23.0° | 0.960 | 0.2" | 24.2° | -4.7° | 87° | 5.7° | 166.3° | 251.8° | -0.7° | 1.498 |

Februar 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \varnothing | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|---------------|-------|-------|-------|------|-------|--------|-------|-------|--------|--------|-------|-------|
| 1 | 18:24 | -23.8° | -0.5° | 2.166 | 4.3" | 1.6 | 23.1° | 0.960 | 0.2" | 23.8° | -5.0° | 86° | 5.5° | 166.8° | 252.3° | -0.7° | 1.496 |
| 3 | 18:30 | -23.8° | -0.5° | 2.154 | 4.3" | 1.6 | 23.5° | 0.958 | 0.2" | 23.0° | -5.7° | 86° | 5.1° | 167.9° | 253.4° | -0.7° | 1.494 |
| 5 | 18:37 | -23.7° | -0.5° | 2.142 | 4.4" | 1.6 | 23.9° | 0.957 | 0.2" | 22.3° | -6.3° | 85° | 4.6° | 169.0° | 254.5° | -0.8° | 1.491 |
| 7 | 18:43 | -23.6° | -0.6° | 2.130 | 4.4" | 1.6 | 24.3° | 0.956 | 0.2" | 21.5° | -6.9° | 85° | 4.1° | 170.1° | 255.6° | -0.8° | 1.488 |
| 9 | 18:49 | -23.5° | -0.6° | 2.118 | 4.4" | 1.6 | 24.6° | 0.954 | 0.2" | 20.7° | -7.5° | 84° | 3.7° | 171.2° | 256.6° | -0.8° | 1.486 |
| 11 | 18:56 | -23.4° | -0.6° | 2.106 | 4.4" | 1.5 | 25.0° | 0.953 | 0.2" | 19.8° | -8.1° | 83° | 3.2° | 172.3° | 257.7° | -0.9° | 1.483 |
| 13 | 19:02 | -23.3° | -0.6° | 2.094 | 4.5" | 1.5 | 25.4° | 0.952 | 0.2" | 19.0° | -8.7° | 83° | 2.7° | 173.4° | 258.9° | -0.9° | 1.481 |
| 15 | 19:09 | -23.2° | -0.7° | 2.081 | 4.5" | 1.5 | 25.8° | 0.950 | 0.2" | 18.2° | -9.3° | 82° | 2.3° | 174.5° | 260.0° | -0.9° | 1.478 |
| 17 | 19:15 | -23.0° | -0.7° | 2.069 | 4.5" | 1.5 | 26.1° | 0.949 | 0.2" | 17.3° | -9.9° | 81° | 1.8° | 175.6° | 261.1° | -1.0° | 1.476 |
| 19 | 19:21 | -22.8° | -0.7° | 2.057 | 4.6" | 1.5 | 26.5° | 0.948 | 0.2" | 16.4° | -10.5° | 81° | 1.3° | 176.7° | 262.2° | -1.0° | 1.473 |
| 21 | 19:28 | -22.7° | -0.7° | 2.045 | 4.6" | 1.5 | 26.8° | 0.946 | 0.2" | 15.6° | -11.1° | 80° | 0.9° | 177.8° | 263.3° | -1.0° | 1.471 |
| 23 | 19:34 | -22.5° | -0.8° | 2.032 | 4.6" | 1.5 | 27.2° | 0.945 | 0.3" | 14.7° | -11.7° | 80° | 0.4° | 178.9° | 264.4° | -1.1° | 1.468 |
| 25 | 19:40 | -22.2° | -0.8° | 2.020 | 4.6" | 1.5 | 27.6° | 0.943 | 0.3" | 13.8° | -12.2° | 79° | -0.1° | 180.1° | 265.5° | -1.1° | 1.466 |
| 27 | 19:47 | -22.0° | -0.8° | 2.008 | 4.7" | 1.5 | 27.9° | 0.942 | 0.3" | 12.9° | -12.8° | 78° | -0.6° | 181.2° | 266.7° | -1.1° | 1.463 |

März 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \varnothing | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|---------------|-------|-------|-------|------|-------|--------|-------|-------|--------|--------|-------|-------|
| 1 | 19:53 | -21.8° | -0.8° | 1.995 | 4.7" | 1.4 | 28.3° | 0.940 | 0.3" | 12.0° | -13.4° | 78° | -1.1° | 182.3° | 267.8° | -1.1° | 1.461 |
| 3 | 19:59 | -21.5° | -0.9° | 1.983 | 4.7" | 1.4 | 28.6° | 0.939 | 0.3" | 11.1° | -13.9° | 77° | -1.5° | 183.5° | 268.9° | -1.2° | 1.458 |
| 5 | 20:06 | -21.2° | -0.9° | 1.971 | 4.7" | 1.4 | 29.0° | 0.937 | 0.3" | 10.1° | -14.5° | 77° | -2.0° | 184.6° | 270.1° | -1.2° | 1.456 |
| 7 | 20:12 | -20.9° | -0.9° | 1.958 | 4.8" | 1.4 | 29.3° | 0.936 | 0.3" | 9.2° | -15.0° | 76° | -2.5° | 185.8° | 271.2° | -1.2° | 1.453 |
| 9 | 20:18 | -20.6° | -0.9° | 1.946 | 4.8" | 1.4 | 29.7° | 0.934 | 0.3" | 8.3° | -15.5° | 76° | -3.0° | 186.9° | 272.4° | -1.3° | 1.451 |
| 11 | 20:24 | -20.3° | -1.0° | 1.934 | 4.8" | 1.4 | 30.0° | 0.933 | 0.3" | 7.3° | -16.0° | 75° | -3.5° | 188.1° | 273.5° | -1.3° | 1.449 |
| 13 | 20:31 | -20.0° | -1.0° | 1.921 | 4.9" | 1.4 | 30.3° | 0.931 | 0.3" | 6.4° | -16.5° | 75° | -4.0° | 189.2° | 274.7° | -1.3° | 1.446 |
| 15 | 20:37 | -19.6° | -1.0° | 1.909 | 4.9" | 1.4 | 30.7° | 0.930 | 0.3" | 5.4° | -17.0° | 74° | -4.5° | 190.4° | 275.9° | -1.3° | 1.444 |
| 17 | 20:43 | -19.3° | -1.0° | 1.897 | 4.9" | 1.3 | 31.0° | 0.928 | 0.4" | 4.5° | -17.5° | 74° | -5.0° | 191.5° | 277.0° | -1.4° | 1.442 |
| 19 | 20:49 | -18.9° | -1.1° | 1.884 | 5.0" | 1.3 | 31.4° | 0.927 | 0.4" | 3.5° | -18.0° | 73° | -5.4° | 192.7° | 278.2° | -1.4° | 1.440 |
| 21 | 20:55 | -18.5° | -1.1° | 1.872 | 5.0" | 1.3 | 31.7° | 0.925 | 0.4" | 2.5° | -18.5° | 73° | -5.9° | 193.9° | 279.4° | -1.4° | 1.437 |
| 23 | 21:01 | -18.1° | -1.1° | 1.860 | 5.0" | 1.3 | 32.0° | 0.924 | 0.4" | 1.6° | -18.9° | 72° | -6.4° | 195.0° | 280.5° | -1.4° | 1.435 |
| 25 | 21:07 | -17.7° | -1.1° | 1.848 | 5.1" | 1.3 | 32.3° | 0.922 | 0.4" | 0.6° | -19.3° | 72° | -6.9° | 196.2° | 281.7° | -1.5° | 1.433 |
| 27 | 21:14 | -17.3° | -1.2° | 1.836 | 5.1" | 1.3 | 32.7° | 0.921 | 0.4" | -0.4° | -19.8° | 71° | -7.4° | 197.4° | 282.9° | -1.5° | 1.431 |
| 29 | 21:20 | -16.8° | -1.2° | 1.823 | 5.1" | 1.3 | 33.0° | 0.919 | 0.4" | -1.3° | -20.2° | 71° | -7.9° | 198.6° | 284.1° | -1.5° | 1.429 |
| 31 | 21:26 | -16.4° | -1.2° | 1.811 | 5.2" | 1.3 | 33.3° | 0.918 | 0.4" | -2.3° | -20.6° | 70° | -8.4° | 199.8° | 285.3° | -1.5° | 1.427 |

April 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|--------|-------|--------|--------|--------|-------|-------|
| 1 | 21:29 | -16.2° | -1.2° | 1.805 | 5.2" | 1.3 | 33.5° | 0.917 | 0.4" | -2.8° | -20.8° | 70° | -8.6° | 200.4° | 285.9° | -1.5° | 1.426 |
| 3 | 21:35 | -15.7° | -1.2° | 1.793 | 5.2" | 1.2 | 33.8° | 0.916 | 0.4" | -3.8° | -21.1° | 70° | -9.1° | 201.6° | 287.1° | -1.6° | 1.424 |
| 5 | 21:41 | -15.2° | -1.3° | 1.781 | 5.3" | 1.2 | 34.1° | 0.914 | 0.5" | -4.7° | -21.5° | 69° | -9.6° | 202.8° | 288.3° | -1.6° | 1.422 |
| 7 | 21:46 | -14.8° | -1.3° | 1.769 | 5.3" | 1.2 | 34.4° | 0.913 | 0.5" | -5.7° | -21.8° | 69° | -10.0° | 204.0° | 289.5° | -1.6° | 1.420 |
| 9 | 21:52 | -14.3° | -1.3° | 1.757 | 5.3" | 1.2 | 34.7° | 0.911 | 0.5" | -6.7° | -22.2° | 69° | -10.5° | 205.2° | 290.7° | -1.6° | 1.418 |
| 11 | 21:58 | -13.8° | -1.3° | 1.746 | 5.4" | 1.2 | 35.0° | 0.909 | 0.5" | -7.6° | -22.5° | 68° | -11.0° | 206.4° | 291.9° | -1.6° | 1.416 |
| 13 | 22:04 | -13.3° | -1.3° | 1.734 | 5.4" | 1.2 | 35.3° | 0.908 | 0.5" | -8.6° | -22.8° | 68° | -11.4° | 207.6° | 293.1° | -1.7° | 1.414 |
| 15 | 22:10 | -12.8° | -1.4° | 1.722 | 5.4" | 1.2 | 35.6° | 0.906 | 0.5" | -9.5° | -23.1° | 68° | -11.9° | 208.8° | 294.3° | -1.7° | 1.413 |
| 17 | 22:16 | -12.3° | -1.4° | 1.710 | 5.5" | 1.1 | 35.9° | 0.905 | 0.5" | -10.5° | -23.3° | 68° | -12.4° | 210.0° | 295.5° | -1.7° | 1.411 |
| 19 | 22:22 | -11.7° | -1.4° | 1.698 | 5.5" | 1.1 | 36.2° | 0.903 | 0.5" | -11.4° | -23.6° | 67° | -12.8° | 211.2° | 296.7° | -1.7° | 1.409 |
| 21 | 22:27 | -11.2° | -1.4° | 1.687 | 5.5" | 1.1 | 36.5° | 0.902 | 0.5" | -12.4° | -23.8° | 67° | -13.3° | 212.4° | 297.9° | -1.7° | 1.407 |
| 23 | 22:33 | -10.7° | -1.5° | 1.675 | 5.6" | 1.1 | 36.8° | 0.900 | 0.6" | -13.3° | -24.0° | 67° | -13.7° | 213.7° | 299.2° | -1.7° | 1.406 |
| 25 | 22:39 | -10.1° | -1.5° | 1.664 | 5.6" | 1.1 | 37.1° | 0.899 | 0.6" | -14.3° | -24.2° | 67° | -14.2° | 214.9° | 300.4° | -1.7° | 1.404 |
| 27 | 22:45 | -9.6° | -1.5° | 1.652 | 5.7" | 1.1 | 37.3° | 0.897 | 0.6" | -15.2° | -24.4° | 66° | -14.6° | 216.1° | 301.6° | -1.8° | 1.403 |
| 29 | 22:50 | -9.0° | -1.5° | 1.641 | 5.7" | 1.1 | 37.6° | 0.896 | 0.6" | -16.1° | -24.5° | 66° | -15.0° | 217.4° | 302.9° | -1.8° | 1.401 |

Mai 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|--------|-------|--------|--------|--------|-------|-------|
| 1 | 22:56 | -8.5° | -1.5° | 1.629 | 5.7" | 1.1 | 37.9° | 0.895 | 0.6" | -17.0° | -24.7° | 66° | -15.5° | 218.6° | 304.1° | -1.8° | 1.400 |
| 3 | 23:02 | -7.9° | -1.5° | 1.618 | 5.8" | 1.0 | 38.2° | 0.893 | 0.6" | -17.9° | -24.8° | 66° | -15.9° | 219.8° | 305.3° | -1.8° | 1.399 |
| 5 | 23:07 | -7.3° | -1.6° | 1.606 | 5.8" | 1.0 | 38.4° | 0.892 | 0.6" | -18.8° | -24.9° | 66° | -16.3° | 221.1° | 306.6° | -1.8° | 1.397 |
| 7 | 23:13 | -6.8° | -1.6° | 1.595 | 5.9" | 1.0 | 38.7° | 0.890 | 0.6" | -19.6° | -24.9° | 66° | -16.7° | 222.3° | 307.8° | -1.8° | 1.396 |
| 9 | 23:19 | -6.2° | -1.6° | 1.584 | 5.9" | 1.0 | 39.0° | 0.889 | 0.7" | -20.5° | -25.0° | 66° | -17.1° | 223.6° | 309.1° | -1.8° | 1.395 |
| 11 | 23:24 | -5.6° | -1.6° | 1.573 | 6.0" | 1.0 | 39.2° | 0.887 | 0.7" | -21.3° | -25.0° | 65° | -17.5° | 224.8° | 310.3° | -1.8° | 1.394 |
| 13 | 23:30 | -5.0° | -1.6° | 1.561 | 6.0" | 1.0 | 39.5° | 0.886 | 0.7" | -22.2° | -25.1° | 65° | -17.9° | 226.1° | 311.6° | -1.8° | 1.392 |
| 15 | 23:35 | -4.5° | -1.6° | 1.550 | 6.0" | 1.0 | 39.7° | 0.885 | 0.7" | -23.0° | -25.1° | 65° | -18.3° | 227.3° | 312.8° | -1.8° | 1.391 |
| 17 | 23:41 | -3.9° | -1.7° | 1.539 | 6.1" | 0.9 | 40.0° | 0.883 | 0.7" | -23.8° | -25.1° | 65° | -18.7° | 228.6° | 314.1° | -1.8° | 1.390 |
| 19 | 23:46 | -3.3° | -1.7° | 1.528 | 6.1" | 0.9 | 40.2° | 0.882 | 0.7" | -24.6° | -25.0° | 65° | -19.0° | 229.8° | 315.3° | -1.8° | 1.389 |
| 21 | 23:52 | -2.7° | -1.7° | 1.517 | 6.2" | 0.9 | 40.5° | 0.880 | 0.7" | -25.4° | -25.0° | 65° | -19.4° | 231.1° | 316.6° | -1.8° | 1.388 |
| 23 | 23:57 | -2.1° | -1.7° | 1.506 | 6.2" | 0.9 | 40.7° | 0.879 | 0.8" | -26.1° | -24.9° | 65° | -19.7° | 232.3° | 317.8° | -1.8° | 1.388 |
| 25 | 0:03 | -1.6° | -1.7° | 1.495 | 6.3" | 0.9 | 40.9° | 0.878 | 0.8" | -26.8° | -24.8° | 65° | -20.1° | 233.6° | 319.1° | -1.8° | 1.387 |
| 27 | 0:08 | -1.0° | -1.7° | 1.484 | 6.3" | 0.9 | 41.1° | 0.877 | 0.8" | -27.6° | -24.7° | 65° | -20.4° | 234.8° | -39.6° | -1.8° | 1.386 |
| 29 | 0:14 | -0.4° | -1.7° | 1.474 | 6.4" | 0.9 | 41.4° | 0.875 | 0.8" | -28.2° | -24.6° | 65° | -20.7° | 236.1° | -38.4° | -1.8° | 1.385 |
| 31 | 0:19 | 0.2° | -1.7° | 1.463 | 6.4" | 0.9 | 41.6° | 0.874 | 0.8" | -28.9° | -24.4° | 65° | -21.1° | 237.4° | -37.1° | -1.8° | 1.385 |

Juni 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|--------|-------|--------|--------|--------|-------|-------|
| 1 | 0:22 | 0.5° | -1.8° | 1.457 | 6.4" | 0.8 | 41.7° | 0.873 | 0.8" | -29.3° | -24.3° | 65° | -21.2° | 238.0° | -36.5° | -1.8° | 1.384 |
| 3 | 0:27 | 1.0° | -1.8° | 1.447 | 6.5" | 0.8 | 41.9° | 0.872 | 0.8" | -29.9° | -24.2° | 65° | -21.5° | 239.3° | -35.2° | -1.8° | 1.384 |
| 5 | 0:33 | 1.6° | -1.8° | 1.436 | 6.5" | 0.8 | 42.1° | 0.871 | 0.8" | -30.5° | -24.0° | 66° | -21.8° | 240.5° | -34.0° | -1.8° | 1.383 |
| 7 | 0:38 | 2.2° | -1.8° | 1.425 | 6.6" | 0.8 | 42.3° | 0.870 | 0.9" | -31.1° | -23.8° | 66° | -22.1° | 241.8° | -32.7° | -1.8° | 1.383 |
| 9 | 0:44 | 2.8° | -1.8° | 1.414 | 6.6" | 0.8 | 42.5° | 0.868 | 0.9" | -31.7° | -23.6° | 66° | -22.3° | 243.1° | -31.4° | -1.8° | 1.382 |
| 11 | 0:49 | 3.3° | -1.8° | 1.404 | 6.7" | 0.8 | 42.7° | 0.867 | 0.9" | -32.3° | -23.3° | 66° | -22.6° | 244.3° | -30.2° | -1.8° | 1.382 |
| 13 | 0:55 | 3.9° | -1.8° | 1.393 | 6.7" | 0.8 | 42.9° | 0.866 | 0.9" | -32.8° | -23.1° | 66° | -22.8° | 245.6° | -28.9° | -1.8° | 1.382 |
| 15 | 0:60 | 4.4° | -1.8° | 1.382 | 6.8" | 0.7 | 43.1° | 0.865 | 0.9" | -33.3° | -22.8° | 66° | -23.1° | 246.9° | -27.6° | -1.8° | 1.382 |
| 17 | 1:05 | 5.0° | -1.8° | 1.372 | 6.8" | 0.7 | 43.3° | 0.864 | 0.9" | -33.8° | -22.5° | 66° | -23.3° | 248.1° | -26.3° | -1.8° | 1.381 |
| 19 | 1:11 | 5.5° | -1.8° | 1.361 | 6.9" | 0.7 | 43.5° | 0.863 | 0.9" | -34.2° | -22.2° | 67° | -23.5° | 249.4° | -25.1° | -1.8° | 1.381 |
| 21 | 1:16 | 6.1° | -1.8° | 1.351 | 6.9" | 0.7 | 43.6° | 0.862 | 1.0" | -34.7° | -21.9° | 67° | -23.7° | 250.7° | -23.8° | -1.8° | 1.381 |
| 23 | 1:21 | 6.6° | -1.8° | 1.340 | 7.0" | 0.7 | 43.8° | 0.861 | 1.0" | -35.1° | -21.6° | 67° | -23.9° | 251.9° | -22.5° | -1.8° | 1.381 |
| 25 | 1:27 | 7.2° | -1.8° | 1.329 | 7.0" | 0.7 | 44.0° | 0.860 | 1.0" | -35.5° | -21.3° | 67° | -24.1° | 253.2° | -21.3° | -1.7° | 1.381 |
| 27 | 1:32 | 7.7° | -1.8° | 1.319 | 7.1" | 0.7 | 44.1° | 0.859 | 1.0" | -35.8° | -20.9° | 67° | -24.2° | 254.5° | -20.0° | -1.7° | 1.382 |
| 29 | 1:38 | 8.2° | -1.8° | 1.308 | 7.2" | 0.6 | 44.3° | 0.858 | 1.0" | -36.2° | -20.6° | 68° | -24.4° | 255.8° | -18.7° | -1.7° | 1.382 |

Juli 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_V | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|--------|-------|--------|--------|--------|-------|-------|
| 1 | 1:43 | 8.7° | -1.8° | 1.298 | 7.2" | 0.6 | 44.4° | 0.857 | 1.0" | -36.5° | -20.2° | 68° | -24.5° | 257.0° | -17.5° | -1.7° | 1.382 |
| 3 | 1:48 | 9.2° | -1.8° | 1.287 | 7.3" | 0.6 | 44.6° | 0.856 | 1.0" | -36.8° | -19.8° | 68° | -24.7° | 258.3° | -16.2° | -1.7° | 1.382 |
| 5 | 1:54 | 9.7° | -1.8° | 1.277 | 7.3" | 0.6 | 44.7° | 0.855 | 1.1" | -37.0° | -19.4° | 68° | -24.8° | 259.6° | -14.9° | -1.7° | 1.383 |
| 7 | 1:59 | 10.2° | -1.8° | 1.266 | 7.4" | 0.6 | 44.9° | 0.854 | 1.1" | -37.3° | -19.0° | 69° | -24.9° | 260.8° | -13.7° | -1.7° | 1.383 |
| 9 | 2:04 | 10.7° | -1.8° | 1.255 | 7.5" | 0.6 | 45.0° | 0.854 | 1.1" | -37.5° | -18.6° | 69° | -25.0° | 262.1° | -12.4° | -1.6° | 1.384 |
| 11 | 2:09 | 11.2° | -1.8° | 1.245 | 7.5" | 0.6 | 45.1° | 0.853 | 1.1" | -37.7° | -18.2° | 69° | -25.0° | 263.4° | -11.1° | -1.6° | 1.384 |
| 13 | 2:15 | 11.6° | -1.8° | 1.234 | 7.6" | 0.5 | 45.2° | 0.852 | 1.1" | -37.8° | -17.8° | 70° | -25.1° | 264.6° | -9.9° | -1.6° | 1.385 |
| 15 | 2:20 | 12.1° | -1.8° | 1.224 | 7.6" | 0.5 | 45.3° | 0.852 | 1.1" | -38.0° | -17.3° | 70° | -25.1° | 265.9° | -8.6° | -1.6° | 1.385 |
| 17 | 2:25 | 12.5° | -1.8° | 1.213 | 7.7" | 0.5 | 45.4° | 0.851 | 1.2" | -38.1° | -16.9° | 70° | -25.2° | 267.1° | -7.3° | -1.6° | 1.386 |
| 19 | 2:31 | 13.0° | -1.8° | 1.202 | 7.8" | 0.5 | 45.5° | 0.850 | 1.2" | -38.2° | -16.4° | 71° | -25.2° | 268.4° | -6.1° | -1.5° | 1.387 |
| 21 | 2:36 | 13.4° | -1.8° | 1.192 | 7.9" | 0.5 | 45.6° | 0.850 | 1.2" | -38.2° | -16.0° | 71° | -25.2° | 269.7° | -4.8° | -1.5° | 1.388 |
| 23 | 2:41 | 13.8° | -1.7° | 1.181 | 7.9" | 0.5 | 45.7° | 0.849 | 1.2" | -38.3° | -15.5° | 71° | -25.2° | 270.9° | -3.6° | -1.5° | 1.388 |
| 25 | 2:46 | 14.2° | -1.7° | 1.170 | 8.0" | 0.4 | 45.8° | 0.849 | 1.2" | -38.3° | -15.1° | 72° | -25.2° | 272.2° | -2.3° | -1.5° | 1.389 |
| 27 | 2:51 | 14.6° | -1.7° | 1.159 | 8.1" | 0.4 | 45.8° | 0.848 | 1.2" | -38.3° | -14.6° | 72° | -25.1° | 273.4° | -1.0° | -1.4° | 1.390 |
| 29 | 2:57 | 15.0° | -1.7° | 1.149 | 8.1" | 0.4 | 45.9° | 0.848 | 1.2" | -38.3° | -14.1° | 73° | -25.1° | 274.7° | 0.2° | -1.4° | 1.391 |
| 31 | 3:02 | 15.4° | -1.7° | 1.138 | 8.2" | 0.4 | 45.9° | 0.848 | 1.3" | -38.3° | -13.7° | 73° | -25.0° | 275.9° | 1.5° | -1.4° | 1.392 |

August 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_V | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|--------|-------|--------|--------|-------|-------|-------|
| 1 | 3:04 | 15.6° | -1.7° | 1.132 | 8.3" | 0.4 | 46.0° | 0.848 | 1.3" | -38.2° | -13.4° | 73° | -25.0° | 276.6° | 2.1° | -1.4° | 1.393 |
| 3 | 3:09 | 16.0° | -1.7° | 1.121 | 8.3" | 0.4 | 46.0° | 0.847 | 1.3" | -38.2° | -13.0° | 74° | -24.9° | 277.8° | 3.3° | -1.3° | 1.394 |
| 5 | 3:15 | 16.3° | -1.6° | 1.110 | 8.4" | 0.3 | 46.0° | 0.847 | 1.3" | -38.1° | -12.5° | 74° | -24.8° | 279.1° | 4.6° | -1.3° | 1.395 |
| 7 | 3:20 | 16.7° | -1.6° | 1.099 | 8.5" | 0.3 | 46.1° | 0.847 | 1.3" | -38.0° | -12.0° | 74° | -24.7° | 280.3° | 5.8° | -1.3° | 1.397 |
| 9 | 3:25 | 17.0° | -1.6° | 1.088 | 8.6" | 0.3 | 46.1° | 0.847 | 1.3" | -37.9° | -11.5° | 75° | -24.6° | 281.5° | 7.1° | -1.3° | 1.398 |
| 11 | 3:30 | 17.3° | -1.6° | 1.077 | 8.7" | 0.3 | 46.1° | 0.847 | 1.3" | -37.7° | -11.1° | 75° | -24.5° | 282.8° | 8.3° | -1.2° | 1.399 |
| 13 | 3:35 | 17.6° | -1.6° | 1.066 | 8.8" | 0.3 | 46.1° | 0.847 | 1.3" | -37.6° | -10.6° | 76° | -24.4° | 284.0° | 9.5° | -1.2° | 1.401 |
| 15 | 3:40 | 17.9° | -1.5° | 1.055 | 8.9" | 0.2 | 46.0° | 0.847 | 1.4" | -37.4° | -10.1° | 76° | -24.2° | 285.2° | 10.8° | -1.2° | 1.402 |
| 17 | 3:44 | 18.2° | -1.5° | 1.044 | 9.0" | 0.2 | 46.0° | 0.847 | 1.4" | -37.2° | -9.6° | 77° | -24.1° | 286.5° | 12.0° | -1.1° | 1.404 |
| 19 | 3:49 | 18.5° | -1.5° | 1.033 | 9.1" | 0.2 | 46.0° | 0.848 | 1.4" | -37.0° | -9.2° | 77° | -23.9° | 287.7° | 13.2° | -1.1° | 1.405 |
| 21 | 3:54 | 18.8° | -1.5° | 1.022 | 9.2" | 0.2 | 45.9° | 0.848 | 1.4" | -36.8° | -8.7° | 77° | -23.7° | 288.9° | 14.5° | -1.1° | 1.407 |
| 23 | 3:59 | 19.1° | -1.4° | 1.010 | 9.3" | 0.1 | 45.9° | 0.848 | 1.4" | -36.5° | -8.2° | 78° | -23.5° | 290.2° | 15.7° | -1.0° | 1.408 |
| 25 | 4:04 | 19.3° | -1.4° | 0.999 | 9.4" | 0.1 | 45.8° | 0.849 | 1.4" | -36.3° | -7.8° | 78° | -23.3° | 291.4° | 16.9° | -1.0° | 1.410 |
| 27 | 4:08 | 19.5° | -1.4° | 0.988 | 9.5" | 0.1 | 45.7° | 0.849 | 1.4" | -36.1° | -7.3° | 79° | -23.1° | 292.6° | 18.1° | -1.0° | 1.412 |
| 29 | 4:13 | 19.8° | -1.4° | 0.976 | 9.6" | 0.1 | 45.6° | 0.850 | 1.4" | -35.8° | -6.9° | 79° | -22.9° | 293.8° | 19.3° | -0.9° | 1.414 |
| 31 | 4:17 | 20.0° | -1.3° | 0.965 | 9.7" | 0.1 | 45.5° | 0.851 | 1.4" | -35.5° | -6.4° | 80° | -22.7° | 295.0° | 20.5° | -0.9° | 1.415 |

September 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_V | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|-------|-------|--------|--------|-------|-------|-------|
| 1 | 4:20 | 20.1° | -1.3° | 0.959 | 9.8" | 0.0 | 45.4° | 0.851 | 1.5" | -35.4° | -6.2° | 80° | -22.5° | 295.6° | 21.1° | -0.9° | 1.416 |
| 3 | 4:24 | 20.3° | -1.3° | 0.947 | 9.9" | 0.0 | 45.3° | 0.852 | 1.5" | -35.1° | -5.8° | 80° | -22.3° | 296.8° | 22.3° | -0.9° | 1.418 |
| 5 | 4:29 | 20.5° | -1.2° | 0.936 | 10.0" | 0.0 | 45.1° | 0.853 | 1.5" | -34.8° | -5.4° | 81° | -22.0° | 298.0° | 23.6° | -0.8° | 1.420 |
| 7 | 4:33 | 20.7° | -1.2° | 0.924 | 10.1" | 0.0 | 44.9° | 0.854 | 1.5" | -34.5° | -4.9° | 81° | -21.8° | 299.2° | 24.8° | -0.8° | 1.422 |
| 9 | 4:37 | 20.9° | -1.2° | 0.913 | 10.3" | -0.1 | 44.7° | 0.855 | 1.5" | -34.2° | -4.5° | 82° | -21.5° | 300.4° | 25.9° | -0.7° | 1.424 |
| 11 | 4:41 | 21.1° | -1.1° | 0.901 | 10.4" | -0.1 | 44.5° | 0.856 | 1.5" | -33.9° | -4.1° | 82° | -21.2° | 301.6° | 27.1° | -0.7° | 1.426 |
| 13 | 4:45 | 21.2° | -1.1° | 0.889 | 10.5" | -0.1 | 44.3° | 0.858 | 1.5" | -33.6° | -3.7° | 82° | -20.9° | 302.8° | 28.3° | -0.7° | 1.428 |
| 15 | 4:49 | 21.4° | -1.0° | 0.878 | 10.7" | -0.2 | 44.0° | 0.859 | 1.5" | -33.3° | -3.4° | 83° | -20.6° | 304.0° | 29.5° | -0.6° | 1.430 |
| 17 | 4:53 | 21.5° | -1.0° | 0.866 | 10.8" | -0.2 | 43.8° | 0.861 | 1.5" | -33.0° | -3.0° | 83° | -20.3° | 305.2° | 30.7° | -0.6° | 1.432 |
| 19 | 4:57 | 21.7° | -1.0° | 0.854 | 11.0" | -0.2 | 43.5° | 0.863 | 1.5" | -32.7° | -2.7° | 83° | -20.0° | 306.4° | 31.9° | -0.6° | 1.434 |
| 21 | 5:01 | 21.8° | -0.9° | 0.843 | 11.1" | -0.2 | 43.2° | 0.865 | 1.5" | -32.4° | -2.3° | 84° | -19.7° | 307.5° | 33.1° | -0.5° | 1.436 |
| 23 | 5:04 | 22.0° | -0.9° | 0.831 | 11.3" | -0.3 | 42.8° | 0.867 | 1.5" | -32.1° | -2.0° | 84° | -19.4° | 308.7° | 34.2° | -0.5° | 1.439 |
| 25 | 5:08 | 22.1° | -0.8° | 0.819 | 11.4" | -0.3 | 42.5° | 0.869 | 1.5" | -31.8° | -1.7° | 85° | -19.0° | 309.9° | 35.4° | -0.5° | 1.441 |
| 27 | 5:11 | 22.2° | -0.8° | 0.808 | 11.6" | -0.3 | 42.1° | 0.871 | 1.5" | -31.5° | -1.4° | 85° | -18.7° | 311.0° | 36.6° | -0.4° | 1.443 |
| 29 | 5:14 | 22.3° | -0.7° | 0.796 | 11.8" | -0.4 | 41.6° | 0.874 | 1.5" | -31.2° | -1.1° | 85° | -18.3° | 312.2° | 37.7° | -0.4° | 1.445 |

Oktober 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|-------|-------|--------|--------|-------|-------|-------|
| 1 | 5:17 | 22.4° | -0.6° | 0.784 | 11.9" | -0.4 | 41.2° | 0.876 | 1.5" | -30.9° | -0.8° | 85° | -18.0° | 313.4° | 38.9° | -0.3° | 1.448 |
| 3 | 5:20 | 22.5° | -0.6° | 0.773 | 12.1" | -0.4 | 40.7° | 0.879 | 1.5" | -30.7° | -0.6° | 86° | -17.6° | 314.5° | 40.0° | -0.3° | 1.450 |
| 5 | 5:23 | 22.6° | -0.5° | 0.761 | 12.3" | -0.5 | 40.2° | 0.882 | 1.5" | -30.4° | -0.3° | 86° | -17.2° | 315.7° | 41.2° | -0.3° | 1.452 |
| 7 | 5:25 | 22.7° | -0.5° | 0.750 | 12.5" | -0.5 | 39.6° | 0.885 | 1.4" | -30.2° | -0.1° | 86° | -16.9° | 316.8° | 42.3° | -0.2° | 1.455 |
| 9 | 5:28 | 22.8° | -0.4° | 0.739 | 12.7" | -0.6 | 39.1° | 0.888 | 1.4" | -29.9° | 0.1° | 86° | -16.5° | 317.9° | 43.5° | -0.2° | 1.457 |
| 11 | 5:30 | 22.9° | -0.3° | 0.727 | 12.9" | -0.6 | 38.4° | 0.892 | 1.4" | -29.7° | 0.2° | 87° | -16.1° | 319.1° | 44.6° | -0.2° | 1.460 |
| 13 | 5:32 | 23.0° | -0.3° | 0.716 | 13.1" | -0.6 | 37.8° | 0.895 | 1.4" | -29.5° | 0.4° | 87° | -15.7° | 320.2° | 45.7° | -0.1° | 1.462 |
| 15 | 5:34 | 23.1° | -0.2° | 0.705 | 13.3" | -0.7 | 37.1° | 0.899 | 1.3" | -29.3° | 0.5° | 87° | -15.4° | 321.4° | 46.9° | -0.1° | 1.464 |
| 17 | 5:35 | 23.2° | -0.1° | 0.695 | 13.5" | -0.7 | 36.3° | 0.903 | 1.3" | -29.2° | 0.6° | 87° | -15.0° | 322.5° | 48.0° | -0.1° | 1.467 |
| 19 | 5:37 | 23.3° | 0.0° | 0.684 | 13.7" | -0.8 | 35.6° | 0.907 | 1.3" | -29.0° | 0.7° | 87° | -14.6° | 323.6° | 49.1° | 0.0° | 1.469 |
| 21 | 5:38 | 23.4° | 0.0° | 0.673 | 13.9" | -0.8 | 34.7° | 0.911 | 1.2" | -28.9° | 0.8° | 87° | -14.2° | 324.7° | 50.2° | 0.0° | 1.472 |
| 23 | 5:39 | 23.5° | 0.1° | 0.663 | 14.1" | -0.8 | 33.8° | 0.915 | 1.2" | -28.8° | 0.8° | 87° | -13.8° | 325.8° | 51.4° | 0.1° | 1.474 |
| 25 | 5:40 | 23.6° | 0.2° | 0.653 | 14.3" | -0.9 | 32.9° | 0.920 | 1.2" | -28.7° | 0.8° | 87° | -13.4° | 327.0° | 52.5° | 0.1° | 1.477 |
| 27 | 5:40 | 23.6° | 0.3° | 0.643 | 14.5" | -0.9 | 31.9° | 0.924 | 1.1" | -28.6° | 0.8° | 87° | -12.9° | 328.1° | 53.6° | 0.1° | 1.480 |
| 29 | 5:41 | 23.7° | 0.4° | 0.634 | 14.8" | -1.0 | 30.9° | 0.929 | 1.0" | -28.6° | 0.8° | 87° | -12.5° | 329.2° | 54.7° | 0.2° | 1.482 |
| 31 | 5:41 | 23.8° | 0.5° | 0.625 | 15.0" | -1.0 | 29.8° | 0.934 | 1.0" | -28.6° | 0.7° | 87° | -12.1° | 330.3° | 55.8° | 0.2° | 1.485 |

November 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|-------|-------|--------|--------|-------|------|-------|
| 1 | 5:41 | 23.9° | 0.5° | 0.620 | 15.1" | -1.0 | 29.3° | 0.936 | 1.0" | -28.6° | 0.6° | 87° | -11.9° | 330.8° | 56.3° | 0.2° | 1.486 |
| 3 | 5:40 | 24.0° | 0.6° | 0.612 | 15.3" | -1.1 | 28.1° | 0.941 | 0.9" | -28.6° | 0.5° | 87° | -11.5° | 331.9° | 57.4° | 0.2° | 1.489 |
| 5 | 5:40 | 24.1° | 0.7° | 0.603 | 15.5" | -1.1 | 26.9° | 0.946 | 0.8" | -28.7° | 0.4° | 87° | -11.1° | 333.0° | 58.5° | 0.3° | 1.491 |
| 7 | 5:39 | 24.1° | 0.8° | 0.595 | 15.7" | -1.2 | 25.6° | 0.951 | 0.8" | -28.8° | 0.2° | 86° | -10.6° | 334.1° | 59.6° | 0.3° | 1.494 |
| 9 | 5:38 | 24.2° | 0.9° | 0.588 | 15.9" | -1.2 | 24.3° | 0.956 | 0.7" | -28.9° | 0.0° | 86° | -10.2° | 335.2° | 60.7° | 0.4° | 1.496 |
| 11 | 5:37 | 24.3° | 1.0° | 0.581 | 16.1" | -1.3 | 22.9° | 0.961 | 0.6" | -29.0° | -0.2° | 86° | -9.8° | 336.3° | 61.8° | 0.4° | 1.499 |
| 13 | 5:35 | 24.4° | 1.1° | 0.575 | 16.3" | -1.3 | 21.5° | 0.965 | 0.6" | -29.2° | -0.5° | 85° | -9.4° | 337.3° | 62.8° | 0.4° | 1.502 |
| 15 | 5:33 | 24.5° | 1.2° | 0.569 | 16.5" | -1.3 | 20.0° | 0.970 | 0.5" | -29.4° | -0.8° | 85° | -8.9° | 338.4° | 63.9° | 0.5° | 1.504 |
| 17 | 5:31 | 24.6° | 1.3° | 0.563 | 16.6" | -1.4 | 18.4° | 0.974 | 0.4" | -29.6° | -1.1° | 84° | -8.5° | 339.5° | 65.0° | 0.5° | 1.507 |
| 19 | 5:29 | 24.6° | 1.4° | 0.559 | 16.8" | -1.4 | 16.9° | 0.979 | 0.4" | -29.8° | -1.4° | 84° | -8.1° | 340.5° | 66.1° | 0.5° | 1.509 |
| 21 | 5:26 | 24.7° | 1.5° | 0.555 | 16.9" | -1.5 | 15.2° | 0.982 | 0.3" | -30.1° | -1.7° | 83° | -7.6° | 341.6° | 67.1° | 0.6° | 1.512 |
| 23 | 5:23 | 24.8° | 1.6° | 0.551 | 17.0" | -1.5 | 13.6° | 0.986 | 0.2" | -30.4° | -2.1° | 82° | -7.2° | 342.7° | 68.2° | 0.6° | 1.515 |
| 25 | 5:20 | 24.8° | 1.7° | 0.549 | 17.1" | -1.5 | 11.9° | 0.989 | 0.2" | -30.6° | -2.5° | 80° | -6.8° | 343.7° | 69.2° | 0.6° | 1.517 |
| 27 | 5:17 | 24.9° | 1.8° | 0.547 | 17.1" | -1.6 | 10.1° | 0.992 | 0.1" | -30.9° | -2.9° | 79° | -6.3° | 344.8° | 70.3° | 0.6° | 1.520 |
| 29 | 5:14 | 24.9° | 1.9° | 0.545 | 17.2" | -1.6 | 8.4° | 0.995 | 0.1" | -31.2° | -3.3° | 77° | -5.9° | 345.8° | 71.3° | 0.7° | 1.522 |

Dezember 2022 (0^h UT)

| Tag | α | δ | b_{geoz} | Δ | \emptyset | m_v | i | k | q | P | D_e | P_s | D_s | L_s | l | b | r |
|-----|----------|----------|-------------------|----------|-------------|-------|-------|-------|------|--------|-------|-------|-------|--------|-------|------|-------|
| 1 | 5:11 | 25.0° | 2.0° | 0.545 | 17.2" | -1.6 | 6.6° | 0.997 | 0.1" | -31.6° | -3.7° | 74° | -5.5° | 346.9° | 72.4° | 0.7° | 1.525 |
| 3 | 5:08 | 25.0° | 2.1° | 0.545 | 17.2" | -1.6 | 4.9° | 0.998 | 0.0" | -31.9° | -4.1° | 69° | -5.0° | 347.9° | 73.4° | 0.7° | 1.528 |
| 5 | 5:04 | 25.0° | 2.2° | 0.546 | 17.1" | -1.6 | 3.2° | 0.999 | 0.0" | -32.2° | -4.6° | 58° | -4.6° | 348.9° | 74.4° | 0.8° | 1.530 |
| 7 | 5:01 | 25.0° | 2.2° | 0.548 | 17.1" | -1.7 | 1.8° | 1.000 | 0.0" | -32.5° | -5.0° | 31° | -4.2° | 350.0° | 75.5° | 0.8° | 1.533 |
| 9 | 4:57 | 25.0° | 2.3° | 0.551 | 17.0" | -1.6 | 1.6° | 1.000 | 0.0" | -32.8° | -5.4° | -31° | -3.7° | 351.0° | 76.5° | 0.8° | 1.535 |
| 11 | 4:54 | 25.0° | 2.4° | 0.555 | 16.9" | -1.6 | 2.9° | 0.999 | 0.0" | -33.1° | -5.8° | -65° | -3.3° | 352.0° | 77.5° | 0.9° | 1.538 |
| 13 | 4:51 | 25.0° | 2.5° | 0.559 | 16.7" | -1.6 | 4.5° | 0.998 | 0.0" | -33.4° | -6.2° | -77° | -2.9° | 353.0° | 78.5° | 0.9° | 1.541 |
| 15 | 4:47 | 24.9° | 2.5° | 0.564 | 16.6" | -1.5 | 6.2° | 0.997 | 0.0" | -33.6° | -6.5° | -83° | -2.4° | 354.1° | 79.6° | 0.9° | 1.543 |
| 17 | 4:44 | 24.9° | 2.6° | 0.570 | 16.4" | -1.5 | 7.8° | 0.995 | 0.1" | -33.9° | -6.9° | -86° | -2.0° | 355.1° | 80.6° | 0.9° | 1.546 |
| 19 | 4:42 | 24.9° | 2.6° | 0.577 | 16.2" | -1.4 | 9.5° | 0.993 | 0.1" | -34.1° | -7.2° | -88° | -1.6° | 356.1° | 81.6° | 1.0° | 1.548 |
| 21 | 4:39 | 24.8° | 2.7° | 0.585 | 16.0" | -1.3 | 11.1° | 0.991 | 0.1" | -34.3° | -7.6° | -90° | -1.2° | 357.1° | 82.6° | 1.0° | 1.551 |
| 23 | 4:36 | 24.8° | 2.7° | 0.593 | 15.8" | -1.3 | 12.7° | 0.988 | 0.2" | -34.5° | -7.8° | 269° | -0.7° | 358.1° | 83.6° | 1.0° | 1.553 |
| 25 | 4:34 | 24.7° | 2.7° | 0.602 | 15.6" | -1.2 | 14.2° | 0.985 | 0.2" | -34.7° | -8.1° | 268° | -0.3° | 359.1° | 84.6° | 1.1° | 1.556 |
| 27 | 4:32 | 24.7° | 2.8° | 0.612 | 15.3" | -1.2 | 15.6° | 0.981 | 0.3" | -34.9° | -8.3° | 267° | 0.1° | 0.1° | 85.6° | 1.1° | 1.558 |
| 29 | 4:30 | 24.6° | 2.8° | 0.622 | 15.0" | -1.1 | 17.1° | 0.978 | 0.3" | -35.0° | -8.6° | 266° | 0.5° | 1.1° | 86.6° | 1.1° | 1.561 |
| 31 | 4:28 | 24.6° | 2.8° | 0.633 | 14.8" | -1.0 | 18.4° | 0.974 | 0.4" | -35.1° | -8.7° | 265° | 1.0° | 2.1° | 87.6° | 1.1° | 1.563 |

α δ $b_{\text{geoz.}}$... Rektaszension, Deklination
und geoz. ekliptikale Breite (Äquinotium des
Datums)

k ... beleuchteter Teil

P_s ... Positionswinkel des Sonnenlichtes

D_s ... Deklination der Sonne

Mit L_s wird der Beginn der Jahreszeiten bezogen auf die Nordhalbkugel definiert:

0° = Frühlingsanfang, 90° = Sommersanfang, 180° = Herbstanfang und 270° = Wintersanfang.

l , b und r ... heliozentrische Koordinaten

Δ ... Abstand von der Erde

\emptyset ... scheinbarer Durchmesser

D_e ... Deklination der Erde

L_s ... Länge der Sonne in der Bahnebene,
vom aufsteigenden Knoten der Bahnebene im
Äquator gemessen

m_v ... visuelle Helligkeit

q ... Breite des unbeleuchteten Teils

P ... Positionswinkel der Rotationsachse

i ... Phasenwinkel