



Ephemeriden für Sternfreunde

von Karl-Heinz Bücke

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Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Fr | 01. Jan. | 08 23 37 | 23 01 19 | 122.74 | 3.57 | 386.5 | 15.460 | 14.66 | -5.23 | -4.60 | 0.96 | 62.9 | 117.06 | -0.54 |
| Sa | 02. Jan. | 09 19 01 | 20 12 54 | 135.92 | 4.35 | 383.2 | 15.590 | 18.57 | -5.22 | -5.60 | 0.91 | 50.8 | 129.19 | -0.57 |
| So | 03. Jan. | 10 12 53 | 16 18 15 | 149.32 | 4.91 | 380.2 | 15.715 | 21.37 | -4.98 | -6.32 | 0.84 | 38.7 | 141.32 | -0.61 |
| Mo | 04. Jan. | 11 05 08 | 11 30 31 | 162.92 | 5.20 | 377.3 | 15.834 | 22.94 | -4.52 | -6.69 | 0.76 | 26.5 | 153.46 | -0.64 |
| Di | 05. Jan. | 11 56 11 | 06 04 46 | 176.70 | 5.20 | 374.7 | 15.947 | 23.26 | -3.87 | -6.68 | 0.66 | 14.4 | 165.60 | -0.67 |
| Mi | 06. Jan. | 12 46 49 | 00 17 08 | 190.65 | 4.89 | 372.3 | 16.050 | 22.37 | -3.06 | -6.28 | 0.55 | 2.2 | 177.76 | -0.70 |
| Do | 07. Jan. | 13 38 00 | - 05 35 24 | 204.75 | 4.29 | 370.2 | 16.140 | 20.32 | -2.12 | -5.49 | 0.43 | -9.9 | 189.91 | -0.74 |
| Fr | 08. Jan. | 14 30 46 | - 11 14 25 | 218.96 | 3.42 | 368.6 | 16.211 | 17.17 | -1.08 | -4.36 | 0.32 | -22.1 | 202.08 | -0.77 |
| Sa | 09. Jan. | 15 25 58 | - 16 19 43 | 233.27 | 2.33 | 367.6 | 16.254 | 12.96 | 0.04 | -2.95 | 0.22 | -34.3 | 214.25 | -0.80 |
| So | 10. Jan. | 16 24 07 | - 20 29 43 | 247.63 | 1.10 | 367.5 | 16.260 | 7.82 | 1.19 | -1.34 | 0.13 | -46.4 | 226.43 | -0.83 |
| Mo | 11. Jan. | 17 24 58 | - 23 23 47 | 261.97 | -0.20 | 368.3 | 16.222 | 1.98 | 2.31 | 0.35 | 0.06 | -58.6 | 238.61 | -0.86 |
| Di | 12. Jan. | 18 27 25 | - 24 46 20 | 276.22 | -1.48 | 370.3 | 16.135 | 355.87 | 3.35 | 2.00 | 0.02 | -70.8 | 250.80 | -0.89 |
| Mi | 13. Jan. | 19 29 37 | - 24 31 33 | 290.31 | -2.66 | 373.4 | 16.003 | 350.04 | 4.24 | 3.52 | 0.00 | -83.0 | 262.99 | -0.92 |
| Do | 14. Jan. | 20 29 42 | - 22 45 19 | 304.17 | -3.65 | 377.4 | 15.833 | 345.00 | 4.91 | 4.80 | 0.01 | 84.8 | 275.18 | -0.94 |
| Fr | 15. Jan. | 21 26 22 | - 19 42 53 | 317.72 | -4.41 | 382.0 | 15.639 | 341.10 | 5.30 | 5.78 | 0.04 | 72.6 | 287.37 | -0.96 |
| Sa | 16. Jan. | 22 19 09 | - 15 43 48 | 330.93 | -4.91 | 387.0 | 15.437 | 338.47 | 5.36 | 6.43 | 0.09 | 60.4 | 299.56 | -0.98 |
| So | 17. Jan. | 23 08 22 | - 11 07 23 | 343.80 | -5.15 | 392.0 | 15.242 | 337.07 | 5.08 | 6.74 | 0.16 | 48.3 | 311.74 | -1.00 |
| Mo | 18. Jan. | 23 54 45 | - 06 10 04 | 356.34 | -5.14 | 396.5 | 15.070 | 336.77 | 4.48 | 6.71 | 0.24 | 36.1 | 323.92 | -1.02 |
| Di | 19. Jan. | 00 39 15 | - 01 05 01 | 8.59 | -4.88 | 400.2 | 14.931 | 337.45 | 3.58 | 6.37 | 0.33 | 23.9 | 336.10 | -1.03 |
| Mi | 20. Jan. | 01 22 50 | 03 57 17 | 20.62 | -4.42 | 402.8 | 14.834 | 338.97 | 2.45 | 5.76 | 0.42 | 11.7 | 348.26 | -1.05 |
| Do | 21. Jan. | 02 06 28 | 08 47 57 | 32.50 | -3.77 | 404.2 | 14.783 | 341.27 | 1.17 | 4.91 | 0.51 | -0.4 | 0.43 | -1.06 |
| Fr | 22. Jan. | 02 51 03 | 13 18 26 | 44.32 | -2.96 | 404.2 | 14.781 | 344.31 | -0.20 | 3.85 | 0.61 | -12.6 | 12.58 | -1.07 |
| Sa | 23. Jan. | 03 37 24 | 17 19 37 | 56.17 | -2.02 | 403.0 | 14.825 | 348.05 | -1.54 | 2.63 | 0.70 | -24.7 | 24.74 | -1.09 |
| So | 24. Jan. | 04 26 10 | 20 41 03 | 68.13 | -0.99 | 400.6 | 14.913 | 352.44 | -2.79 | 1.29 | 0.78 | -36.9 | 36.88 | -1.10 |
| Mo | 25. Jan. | 05 17 40 | 23 10 56 | 80.28 | 0.10 | 397.3 | 15.037 | 357.39 | -3.85 | -0.13 | 0.85 | -49.0 | 49.02 | -1.12 |
| Di | 26. Jan. | 06 11 47 | 24 37 04 | 92.68 | 1.21 | 393.4 | 15.188 | 2.71 | -4.66 | -1.57 | 0.92 | -61.2 | 61.16 | -1.13 |
| Mi | 27. Jan. | 07 07 54 | 24 48 50 | 105.38 | 2.28 | 389.1 | 15.356 | 8.09 | -5.17 | -2.96 | 0.96 | -73.3 | 73.29 | -1.15 |
| Do | 28. Jan. | 08 04 56 | 23 39 55 | 118.40 | 3.26 | 384.8 | 15.528 | 13.13 | -5.33 | -4.23 | 0.99 | -85.4 | 85.42 | -1.17 |
| Fr | 29. Jan. | 09 01 40 | 21 10 34 | 131.75 | 4.08 | 380.8 | 15.692 | 17.42 | -5.16 | -5.29 | 1.00 | 82.5 | 97.55 | -1.18 |
| Sa | 30. Jan. | 09 57 11 | 17 28 05 | 145.38 | 4.69 | 377.3 | 15.837 | 20.63 | -4.69 | -6.08 | 0.98 | 70.3 | 109.68 | -1.20 |
| So | 31. Jan. | 10 51 03 | 12 45 33 | 159.24 | 5.03 | 374.4 | 15.957 | 22.59 | -3.97 | -6.52 | 0.94 | 58.2 | 121.81 | -1.22 |

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|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Mo | 01. Febr. | 11 43 25 | 07 19 45 | 173.28 | 5.08 | 372.4 | 16.046 | 23.25 | -3.07 | -6.57 | 0.88 | 46.1 | 133.94 | -1.24 |
| Di | 02. Febr. | 12 34 51 | 01 29 05 | 187.42 | 4.82 | 371.0 | 16.105 | 22.64 | -2.07 | -6.23 | 0.80 | 33.9 | 146.08 | -1.26 |
| Mi | 03. Febr. | 13 26 13 | - 04 27 30 | 201.59 | 4.26 | 370.3 | 16.136 | 20.85 | -1.05 | -5.49 | 0.70 | 21.8 | 158.22 | -1.28 |
| Do | 04. Febr. | 14 18 27 | - 10 10 58 | 215.75 | 3.45 | 370.1 | 16.143 | 17.96 | -0.06 | -4.43 | 0.59 | 9.6 | 170.38 | -1.30 |
| Fr | 05. Febr. | 15 12 25 | - 15 22 06 | 229.87 | 2.43 | 370.5 | 16.128 | 14.05 | 0.87 | -3.09 | 0.47 | -2.5 | 182.54 | -1.32 |
| Sa | 06. Febr. | 16 08 44 | - 19 41 43 | 243.93 | 1.26 | 371.2 | 16.094 | 9.22 | 1.72 | -1.56 | 0.36 | -14.7 | 194.70 | -1.34 |
| So | 07. Febr. | 17 07 28 | - 22 51 43 | 257.91 | 0.03 | 372.5 | 16.041 | 3.69 | 2.50 | 0.04 | 0.25 | -26.9 | 206.88 | -1.36 |
| Mo | 08. Febr. | 18 07 58 | - 24 37 30 | 271.81 | -1.20 | 374.2 | 15.967 | 357.78 | 3.18 | 1.64 | 0.16 | -39.1 | 219.06 | -1.38 |
| Di | 09. Febr. | 19 08 53 | - 24 51 14 | 285.60 | -2.34 | 376.5 | 15.871 | 351.95 | 3.76 | 3.13 | 0.09 | -51.2 | 231.25 | -1.40 |
| Mi | 10. Febr. | 20 08 35 | - 23 34 19 | 299.24 | -3.34 | 379.3 | 15.754 | 346.70 | 4.22 | 4.42 | 0.04 | -63.4 | 243.44 | -1.42 |
| Do | 11. Febr. | 21 05 42 | - 20 57 05 | 312.71 | -4.13 | 382.6 | 15.617 | 342.43 | 4.52 | 5.45 | 0.01 | -75.6 | 255.63 | -1.44 |
| Fr | 12. Febr. | 21 59 30 | - 17 15 51 | 325.97 | -4.68 | 386.3 | 15.467 | 339.36 | 4.62 | 6.17 | 0.00 | -87.8 | 267.83 | -1.45 |
| Sa | 13. Febr. | 22 49 57 | - 12 48 59 | 338.97 | -4.98 | 390.3 | 15.309 | 337.51 | 4.48 | 6.55 | 0.02 | 80.0 | 280.03 | -1.46 |
| So | 14. Febr. | 23 37 32 | - 07 53 55 | 351.71 | -5.02 | 394.2 | 15.156 | 336.81 | 4.07 | 6.60 | 0.05 | 67.8 | 292.22 | -1.47 |
| Mo | 15. Febr. | 00 22 59 | - 02 45 43 | 4.18 | -4.82 | 397.9 | 15.016 | 337.14 | 3.39 | 6.33 | 0.10 | 55.6 | 304.42 | -1.48 |
| Di | 16. Febr. | 01 07 12 | 02 23 10 | 16.40 | -4.40 | 401.0 | 14.901 | 338.37 | 2.46 | 5.77 | 0.17 | 43.4 | 316.61 | -1.49 |
| Mi | 17. Febr. | 01 51 02 | 07 22 17 | 28.41 | -3.78 | 403.2 | 14.818 | 340.41 | 1.31 | 4.97 | 0.25 | 31.2 | 328.79 | -1.49 |
| Do | 18. Febr. | 02 35 22 | 12 02 25 | 40.29 | -3.01 | 404.3 | 14.776 | 343.20 | -0.00 | 3.96 | 0.34 | 19.0 | 340.97 | -1.50 |
| Fr | 19. Febr. | 03 20 59 | 16 14 39 | 52.09 | -2.12 | 404.3 | 14.780 | 346.69 | -1.39 | 2.79 | 0.43 | 6.9 | 353.15 | -1.50 |
| Sa | 20. Febr. | 04 08 36 | 19 49 31 | 63.92 | -1.13 | 402.9 | 14.831 | 350.83 | -2.76 | 1.50 | 0.52 | -5.3 | 5.32 | -1.50 |
| So | 21. Febr. | 04 58 38 | 22 36 36 | 75.86 | -0.08 | 400.2 | 14.929 | 355.54 | -4.03 | 0.13 | 0.62 | -17.5 | 17.48 | -1.50 |
| Mo | 22. Febr. | 05 51 16 | 24 24 48 | 88.01 | 0.99 | 396.5 | 15.070 | 0.69 | -5.09 | -1.27 | 0.71 | -29.6 | 29.64 | -1.50 |
| Di | 23. Febr. | 06 46 10 | 25 03 21 | 100.45 | 2.04 | 391.8 | 15.249 | 6.03 | -5.86 | -2.63 | 0.79 | -41.8 | 41.79 | -1.50 |
| Mi | 24. Febr. | 07 42 34 | 24 23 57 | 113.24 | 3.01 | 386.6 | 15.453 | 11.20 | -6.26 | -3.90 | 0.87 | -53.9 | 53.94 | -1.50 |
| Do | 25. Febr. | 08 39 28 | 22 23 02 | 126.44 | 3.85 | 381.3 | 15.669 | 15.81 | -6.24 | -5.00 | 0.93 | -66.1 | 66.09 | -1.50 |
| Fr | 26. Febr. | 09 35 51 | 19 03 27 | 140.05 | 4.50 | 376.3 | 15.879 | 19.49 | -5.79 | -5.85 | 0.98 | -78.2 | 78.23 | -1.50 |
| Sa | 27. Febr. | 10 31 05 | 14 34 47 | 154.05 | 4.90 | 371.9 | 16.066 | 21.97 | -4.94 | -6.37 | 1.00 | 89.6 | 90.36 | -1.51 |
| So | 28. Febr. | 11 25 04 | 09 12 18 | 168.35 | 5.00 | 368.5 | 16.214 | 23.12 | -3.78 | -6.50 | 0.99 | 77.5 | 102.50 | -1.51 |

Mond 2021

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|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Mo | 01. Mär | 12 18 08 | 03 15 14 | 182.86 | 4.79 | 366.3 | 16.309 | 22.93 | -2.40 | -6.22 | 0.96 | 65.4 | 114.64 | -1.51 |
| Di | 02. Mär | 13 10 55 | - 02 54 57 | 197.46 | 4.26 | 365.5 | 16.349 | 21.47 | -0.95 | -5.53 | 0.91 | 53.2 | 126.78 | -1.51 |
| Mi | 03. Mär | 14 04 16 | - 08 55 57 | 212.04 | 3.46 | 365.8 | 16.335 | 18.81 | 0.45 | -4.48 | 0.83 | 41.1 | 138.93 | -1.51 |
| Do | 04. Mär | 14 58 58 | - 14 25 47 | 226.49 | 2.44 | 367.1 | 16.275 | 15.08 | 1.72 | -3.15 | 0.73 | 28.9 | 151.08 | -1.51 |
| Fr | 05. Mär | 15 55 34 | - 19 03 43 | 240.76 | 1.27 | 369.3 | 16.181 | 10.39 | 2.79 | -1.63 | 0.62 | 16.8 | 163.24 | -1.52 |
| Sa | 06. Mär | 16 54 07 | - 22 31 32 | 254.82 | 0.05 | 371.9 | 16.064 | 4.97 | 3.63 | -0.02 | 0.51 | 4.6 | 175.41 | -1.52 |
| So | 07. Mär | 17 54 07 | - 24 35 31 | 268.66 | -1.16 | 375.0 | 15.934 | 359.14 | 4.26 | 1.56 | 0.40 | -7.6 | 187.59 | -1.53 |
| Mo | 08. Mär | 18 54 23 | - 25 08 40 | 282.30 | -2.29 | 378.2 | 15.799 | 353.32 | 4.70 | 3.03 | 0.29 | -19.8 | 199.77 | -1.53 |
| Di | 09. Mär | 19 53 31 | - 24 12 06 | 295.74 | -3.27 | 381.5 | 15.662 | 347.99 | 4.95 | 4.31 | 0.20 | -32.0 | 211.96 | -1.54 |
| Mi | 10. Mär | 20 50 18 | - 21 54 42 | 308.99 | -4.05 | 384.8 | 15.526 | 343.52 | 5.03 | 5.34 | 0.12 | -44.2 | 224.16 | -1.54 |
| Do | 11. Mär | 21 44 01 | - 18 30 40 | 322.07 | -4.61 | 388.2 | 15.392 | 340.17 | 4.94 | 6.07 | 0.06 | -56.4 | 236.36 | -1.55 |
| Fr | 12. Mär | 22 34 36 | - 14 16 28 | 334.95 | -4.93 | 391.5 | 15.261 | 337.99 | 4.68 | 6.49 | 0.02 | -68.6 | 248.57 | -1.55 |
| Sa | 13. Mär | 23 22 26 | - 09 28 29 | 347.65 | -4.99 | 394.8 | 15.135 | 336.95 | 4.23 | 6.58 | 0.00 | -80.8 | 260.78 | -1.56 |
| So | 14. Mär | 00 08 11 | - 04 21 41 | 360.14 | -4.81 | 397.9 | 15.018 | 336.96 | 3.58 | 6.35 | 0.00 | 87.0 | 272.99 | -1.56 |
| Mo | 15. Mär | 00 52 37 | 00 50 45 | 12.43 | -4.41 | 400.6 | 14.914 | 337.90 | 2.72 | 5.82 | 0.02 | 74.8 | 285.20 | -1.55 |
| Di | 16. Mär | 01 36 32 | 05 57 16 | 24.54 | -3.82 | 402.9 | 14.829 | 339.69 | 1.66 | 5.05 | 0.06 | 62.6 | 297.41 | -1.55 |
| Mi | 17. Mär | 02 20 44 | 10 47 33 | 36.49 | -3.06 | 404.5 | 14.771 | 342.24 | 0.43 | 4.05 | 0.12 | 50.4 | 309.61 | -1.54 |
| Do | 18. Mär | 03 05 56 | 15 11 50 | 48.32 | -2.17 | 405.2 | 14.744 | 345.50 | -0.93 | 2.90 | 0.18 | 38.2 | 321.82 | -1.54 |
| Fr | 19. Mär | 03 52 47 | 19 00 32 | 60.11 | -1.19 | 404.9 | 14.756 | 349.42 | -2.34 | 1.62 | 0.26 | 26.0 | 334.01 | -1.53 |
| Sa | 20. Mär | 04 41 43 | 22 03 45 | 71.91 | -0.15 | 403.4 | 14.811 | 353.92 | -3.75 | 0.27 | 0.35 | 13.8 | 346.21 | -1.52 |
| So | 21. Mär | 05 32 55 | 24 11 25 | 83.83 | 0.90 | 400.7 | 14.910 | 358.88 | -5.04 | -1.10 | 0.44 | 1.6 | 358.40 | -1.50 |
| Mo | 22. Mär | 06 26 16 | 25 13 46 | 95.94 | 1.93 | 396.9 | 15.055 | 4.10 | -6.14 | -2.45 | 0.54 | -10.6 | 10.58 | -1.49 |
| Di | 23. Mär | 07 21 11 | 25 02 42 | 108.34 | 2.89 | 392.0 | 15.242 | 9.27 | -6.93 | -3.71 | 0.64 | -22.8 | 22.76 | -1.48 |
| Mi | 24. Mär | 08 16 55 | 23 33 18 | 121.11 | 3.74 | 386.4 | 15.464 | 14.05 | -7.34 | -4.82 | 0.73 | -34.9 | 34.93 | -1.46 |
| Do | 25. Mär | 09 12 39 | 20 45 18 | 134.33 | 4.42 | 380.3 | 15.709 | 18.07 | -7.29 | -5.71 | 0.82 | -47.1 | 47.09 | -1.45 |
| Fr | 26. Mär | 10 07 45 | 16 43 55 | 148.01 | 4.87 | 374.4 | 15.959 | 21.04 | -6.76 | -6.32 | 0.90 | -59.3 | 59.25 | -1.43 |
| Sa | 27. Mär | 11 02 02 | 11 39 51 | 162.15 | 5.05 | 369.0 | 16.192 | 22.75 | -5.76 | -6.55 | 0.96 | -71.4 | 71.41 | -1.41 |
| So | 28. Mär | 11 55 43 | 05 48 57 | 176.70 | 4.91 | 364.6 | 16.387 | 23.13 | -4.35 | -6.38 | 0.99 | -83.6 | 83.56 | -1.40 |
| Mo | 29. Mär | 12 49 22 | - 00 28 32 | 191.54 | 4.44 | 361.7 | 16.520 | 22.18 | -2.65 | -5.77 | 1.00 | 84.3 | 95.72 | -1.38 |
| Di | 30. Mär | 13 43 45 | - 06 48 58 | 206.53 | 3.66 | 360.4 | 16.580 | 19.93 | -0.83 | -4.76 | 0.98 | 72.1 | 107.87 | -1.36 |
| Mi | 31. Mär | 14 39 38 | - 12 46 52 | 221.51 | 2.63 | 360.8 | 16.562 | 16.48 | 0.97 | -3.42 | 0.93 | 60.0 | 120.02 | -1.35 |

Mond 2021

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|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Do | 01. April | 15 37 31 | - 17 56 49 | 236.34 | 1.43 | 362.7 | 16.473 | 11.94 | 2.61 | -1.86 | 0.86 | 47.8 | 132.19 | -1.33 |
| Fr | 02. April | 16 37 29 | - 21 56 10 | 250.92 | 0.14 | 365.9 | 16.328 | 6.55 | 3.98 | -0.19 | 0.76 | 35.6 | 144.35 | -1.32 |
| Sa | 03. April | 17 38 52 | - 24 28 06 | 265.19 | -1.12 | 370.0 | 16.148 | 0.63 | 5.03 | 1.46 | 0.66 | 23.5 | 156.53 | -1.30 |
| So | 04. April | 18 40 25 | - 25 24 21 | 279.12 | -2.29 | 374.6 | 15.950 | 354.66 | 5.76 | 2.98 | 0.55 | 11.3 | 168.71 | -1.29 |
| Mo | 05. April | 19 40 33 | - 24 46 29 | 292.73 | -3.30 | 379.3 | 15.751 | 349.13 | 6.17 | 4.30 | 0.44 | -0.9 | 180.90 | -1.28 |
| Di | 06. April | 20 38 01 | - 22 44 24 | 306.03 | -4.11 | 384.0 | 15.560 | 344.44 | 6.30 | 5.36 | 0.33 | -13.1 | 193.09 | -1.28 |
| Mi | 07. April | 21 32 07 | - 19 33 12 | 319.06 | -4.68 | 388.3 | 15.386 | 340.85 | 6.17 | 6.12 | 0.24 | -25.3 | 205.30 | -1.27 |
| Do | 08. April | 22 22 50 | - 15 29 32 | 331.85 | -5.01 | 392.3 | 15.232 | 338.44 | 5.81 | 6.56 | 0.16 | -37.5 | 217.51 | -1.26 |
| Fr | 09. April | 23 10 38 | - 10 49 22 | 344.43 | -5.09 | 395.8 | 15.097 | 337.15 | 5.25 | 6.67 | 0.09 | -49.7 | 229.73 | -1.26 |
| Sa | 10. April | 23 56 15 | - 05 46 00 | 356.83 | -4.93 | 398.8 | 14.982 | 336.90 | 4.51 | 6.47 | 0.04 | -61.9 | 241.95 | -1.25 |
| So | 11. April | 00 40 28 | - 00 35 05 | 9.07 | -4.54 | 401.4 | 14.886 | 337.59 | 3.59 | 5.97 | 0.01 | -74.2 | 254.17 | -1.24 |
| Mo | 12. April | 01 24 08 | 04 35 00 | 21.15 | -3.95 | 403.5 | 14.809 | 339.14 | 2.51 | 5.21 | 0.00 | -86.4 | 266.39 | -1.23 |
| Di | 13. April | 02 08 01 | 09 32 39 | 33.11 | -3.20 | 405.0 | 14.753 | 341.46 | 1.30 | 4.23 | 0.01 | 81.4 | 278.62 | -1.22 |
| Mi | 14. April | 02 52 50 | 14 07 34 | 44.97 | -2.30 | 405.9 | 14.720 | 344.51 | -0.03 | 3.07 | 0.03 | 69.2 | 290.85 | -1.20 |
| Do | 15. April | 03 39 10 | 18 09 30 | 56.77 | -1.31 | 406.1 | 14.713 | 348.24 | -1.44 | 1.79 | 0.07 | 56.9 | 303.07 | -1.19 |
| Fr | 16. April | 04 27 26 | 21 28 08 | 68.55 | -0.26 | 405.4 | 14.737 | 352.58 | -2.87 | 0.43 | 0.13 | 44.7 | 315.29 | -1.17 |
| Sa | 17. April | 05 17 49 | 23 53 20 | 80.36 | 0.80 | 403.8 | 14.795 | 357.40 | -4.26 | -0.96 | 0.20 | 32.5 | 327.51 | -1.15 |
| So | 18. April | 06 10 07 | 25 15 46 | 92.29 | 1.85 | 401.2 | 14.893 | 2.51 | -5.55 | -2.31 | 0.28 | 20.3 | 339.73 | -1.13 |
| Mo | 19. April | 07 03 51 | 25 27 56 | 104.39 | 2.82 | 397.5 | 15.031 | 7.66 | -6.64 | -3.58 | 0.37 | 8.1 | 351.93 | -1.10 |
| Di | 20. April | 07 58 18 | 24 25 16 | 116.76 | 3.69 | 392.8 | 15.209 | 12.50 | -7.46 | -4.72 | 0.47 | -4.1 | 4.14 | -1.08 |
| Mi | 21. April | 08 52 43 | 22 07 02 | 129.48 | 4.40 | 387.3 | 15.426 | 16.71 | -7.91 | -5.65 | 0.57 | -16.3 | 16.33 | -1.05 |
| Do | 22. April | 09 46 36 | 18 36 38 | 142.61 | 4.91 | 381.3 | 15.671 | 20.00 | -7.93 | -6.32 | 0.68 | -28.5 | 28.52 | -1.03 |
| Fr | 23. April | 10 39 46 | 14 01 30 | 156.21 | 5.16 | 375.0 | 15.933 | 22.17 | -7.47 | -6.66 | 0.77 | -40.7 | 40.71 | -1.00 |
| Sa | 24. April | 11 32 28 | 08 33 04 | 170.30 | 5.12 | 369.0 | 16.191 | 23.10 | -6.52 | -6.62 | 0.86 | -52.9 | 52.89 | -0.97 |
| So | 25. April | 12 25 17 | 02 26 52 | 184.83 | 4.76 | 363.8 | 16.421 | 22.73 | -5.13 | -6.15 | 0.93 | -65.1 | 65.06 | -0.94 |
| Mo | 26. April | 13 19 01 | - 03 57 06 | 199.73 | 4.06 | 360.0 | 16.598 | 21.07 | -3.39 | -5.26 | 0.98 | -77.2 | 77.23 | -0.91 |
| Di | 27. April | 14 14 33 | - 10 14 30 | 214.87 | 3.08 | 357.8 | 16.700 | 18.13 | -1.42 | -3.99 | 1.00 | -89.4 | 89.40 | -0.88 |
| Mi | 28. April | 15 12 38 | - 15 57 42 | 230.08 | 1.87 | 357.5 | 16.713 | 13.98 | 0.59 | -2.42 | 0.99 | 78.4 | 101.57 | -0.84 |
| Do | 29. April | 16 13 30 | - 20 38 42 | 245.21 | 0.53 | 359.1 | 16.637 | 8.76 | 2.51 | -0.69 | 0.95 | 66.3 | 113.74 | -0.81 |
| Fr | 30. April | 17 16 38 | - 23 53 28 | 260.10 | -0.83 | 362.4 | 16.485 | 2.80 | 4.18 | 1.06 | 0.88 | 54.1 | 125.91 | -0.79 |

Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Sa | 01. Mai | 18 20 34 | - 25 27 12 | 274.65 | -2.10 | 367.1 | 16.277 | 356.58 | 5.52 | 2.71 | 0.80 | 41.9 | 138.09 | -0.76 |
| So | 02. Mai | 19 23 23 | - 25 17 45 | 288.80 | -3.21 | 372.5 | 16.039 | 350.68 | 6.48 | 4.16 | 0.70 | 29.7 | 150.28 | -0.74 |
| Mo | 03. Mai | 20 23 18 | - 23 34 52 | 302.54 | -4.10 | 378.3 | 15.794 | 345.59 | 7.04 | 5.32 | 0.59 | 17.5 | 162.48 | -0.72 |
| Di | 04. Mai | 21 19 22 | - 20 35 45 | 315.88 | -4.74 | 384.0 | 15.558 | 341.64 | 7.22 | 6.16 | 0.48 | 5.3 | 174.68 | -0.70 |
| Mi | 05. Mai | 22 11 25 | - 16 39 42 | 328.86 | -5.12 | 389.4 | 15.345 | 338.92 | 7.06 | 6.65 | 0.38 | -6.9 | 186.89 | -0.68 |
| Do | 06. Mai | 22 59 59 | - 12 04 35 | 341.53 | -5.24 | 394.1 | 15.162 | 337.38 | 6.58 | 6.81 | 0.28 | -19.1 | 199.11 | -0.67 |
| Fr | 07. Mai | 23 45 53 | - 07 05 28 | 353.94 | -5.10 | 398.0 | 15.010 | 336.91 | 5.85 | 6.65 | 0.20 | -31.3 | 211.33 | -0.65 |
| Sa | 08. Mai | 00 30 04 | - 01 54 53 | 6.14 | -4.74 | 401.2 | 14.891 | 337.38 | 4.91 | 6.18 | 0.13 | -43.6 | 223.56 | -0.64 |
| So | 09. Mai | 01 13 28 | 03 16 17 | 18.19 | -4.17 | 403.6 | 14.803 | 338.71 | 3.79 | 5.45 | 0.07 | -55.8 | 235.79 | -0.62 |
| Mo | 10. Mai | 01 56 56 | 08 18 02 | 30.11 | -3.43 | 405.3 | 14.742 | 340.83 | 2.54 | 4.49 | 0.03 | -68.0 | 248.03 | -0.61 |
| Di | 11. Mai | 02 41 16 | 13 00 24 | 41.96 | -2.54 | 406.2 | 14.708 | 343.69 | 1.20 | 3.34 | 0.01 | -80.3 | 260.27 | -0.59 |
| Mi | 12. Mai | 03 27 06 | 17 13 08 | 53.76 | -1.54 | 406.5 | 14.698 | 347.24 | -0.21 | 2.05 | 0.00 | 87.5 | 272.51 | -0.57 |
| Do | 13. Mai | 04 14 54 | 20 45 30 | 65.54 | -0.48 | 406.1 | 14.712 | 351.42 | -1.63 | 0.68 | 0.01 | 75.3 | 284.75 | -0.55 |
| Fr | 14. Mai | 05 04 49 | 23 26 45 | 77.36 | 0.61 | 405.0 | 14.752 | 356.13 | -3.02 | -0.73 | 0.04 | 63.0 | 296.99 | -0.53 |
| Sa | 15. Mai | 05 56 42 | 25 06 56 | 89.25 | 1.68 | 403.2 | 14.818 | 1.19 | -4.34 | -2.11 | 0.09 | 50.8 | 309.23 | -0.50 |
| So | 16. Mai | 06 49 59 | 25 38 13 | 101.26 | 2.69 | 400.6 | 14.914 | 6.33 | -5.53 | -3.41 | 0.15 | 38.5 | 321.46 | -0.48 |
| Mo | 17. Mai | 07 43 53 | 24 56 07 | 113.44 | 3.59 | 397.2 | 15.042 | 11.24 | -6.53 | -4.58 | 0.23 | 26.3 | 333.69 | -0.45 |
| Di | 18. Mai | 08 37 35 | 23 00 16 | 125.87 | 4.34 | 393.0 | 15.203 | 15.58 | -7.29 | -5.56 | 0.32 | 14.1 | 345.92 | -0.42 |
| Mi | 19. Mai | 09 30 30 | 19 54 17 | 138.58 | 4.90 | 388.1 | 15.397 | 19.09 | -7.72 | -6.28 | 0.42 | 1.9 | 358.14 | -0.39 |
| Do | 20. Mai | 10 22 25 | 15 45 10 | 151.66 | 5.22 | 382.5 | 15.619 | 21.56 | -7.79 | -6.71 | 0.52 | -10.4 | 10.35 | -0.36 |
| Fr | 21. Mai | 11 13 34 | 10 42 35 | 165.15 | 5.27 | 376.7 | 15.860 | 22.88 | -7.45 | -6.78 | 0.63 | -22.6 | 22.56 | -0.33 |
| Sa | 22. Mai | 12 04 34 | 04 58 45 | 179.06 | 5.02 | 370.9 | 16.108 | 23.00 | -6.67 | -6.46 | 0.73 | -34.8 | 34.76 | -0.29 |
| So | 23. Mai | 12 56 16 | - 01 10 00 | 193.41 | 4.46 | 365.6 | 16.341 | 21.90 | -5.47 | -5.73 | 0.83 | -47.0 | 46.95 | -0.25 |
| Mo | 24. Mai | 13 49 41 | - 07 27 22 | 208.13 | 3.59 | 361.3 | 16.537 | 19.56 | -3.91 | -4.61 | 0.91 | -59.1 | 59.14 | -0.22 |
| Di | 25. Mai | 14 45 49 | - 13 26 24 | 223.15 | 2.46 | 358.4 | 16.670 | 15.99 | -2.09 | -3.15 | 0.97 | -71.3 | 71.32 | -0.18 |
| Mi | 26. Mai | 15 45 21 | - 18 40 14 | 238.32 | 1.14 | 357.3 | 16.721 | 11.25 | -0.12 | -1.45 | 1.00 | -83.5 | 83.51 | -0.14 |
| Do | 27. Mai | 16 48 16 | - 22 40 14 | 253.49 | -0.26 | 358.1 | 16.683 | 5.53 | 1.84 | 0.35 | 1.00 | 84.3 | 95.69 | -0.10 |
| Fr | 28. Mai | 17 53 27 | - 25 02 57 | 268.52 | -1.62 | 360.8 | 16.558 | 359.23 | 3.65 | 2.12 | 0.96 | 72.1 | 107.87 | -0.07 |
| Sa | 29. Mai | 18 58 51 | - 25 36 52 | 283.25 | -2.85 | 365.1 | 16.364 | 352.95 | 5.18 | 3.71 | 0.91 | 59.9 | 120.06 | -0.03 |
| So | 30. Mai | 20 02 04 | - 24 25 45 | 297.61 | -3.87 | 370.5 | 16.125 | 347.34 | 6.35 | 5.02 | 0.83 | 47.8 | 132.25 | -0.00 |
| Mo | 31. Mai | 21 01 25 | - 21 45 51 | 311.52 | -4.63 | 376.6 | 15.864 | 342.84 | 7.11 | 6.00 | 0.74 | 35.6 | 144.45 | 0.02 |

Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|------|
| Di | 01. Juni | 21 56 16 | - 17 59 11 | 324.99 | -5.10 | 382.8 | 15.607 | 339.64 | 7.43 | 6.61 | 0.64 | 23.4 | 156.65 | 0.05 |
| Mi | 02. Juni | 22 46 54 | - 13 27 19 | 338.04 | -5.29 | 388.8 | 15.369 | 337.73 | 7.33 | 6.86 | 0.53 | 11.1 | 168.86 | 0.07 |
| Do | 03. Juni | 23 34 10 | - 08 28 20 | 350.71 | -5.22 | 394.1 | 15.162 | 336.97 | 6.87 | 6.77 | 0.43 | -1.1 | 181.08 | 0.09 |
| Fr | 04. Juni | 00 19 05 | - 03 16 27 | 363.08 | -4.90 | 398.5 | 14.994 | 337.21 | 6.08 | 6.36 | 0.33 | -13.3 | 193.30 | 0.11 |
| Sa | 05. Juni | 01 02 44 | 01 57 01 | 15.20 | -4.37 | 401.9 | 14.866 | 338.34 | 5.04 | 5.67 | 0.25 | -25.5 | 205.53 | 0.12 |
| So | 06. Juni | 01 46 05 | 07 02 23 | 27.14 | -3.66 | 404.3 | 14.778 | 340.26 | 3.82 | 4.75 | 0.17 | -37.8 | 217.77 | 0.14 |
| Mo | 07. Juni | 02 30 02 | 11 50 26 | 38.98 | -2.79 | 405.7 | 14.727 | 342.92 | 2.47 | 3.63 | 0.10 | -50.0 | 230.01 | 0.16 |
| Di | 08. Juni | 03 15 21 | 16 11 37 | 50.77 | -1.82 | 406.2 | 14.708 | 346.29 | 1.06 | 2.37 | 0.05 | -62.3 | 242.26 | 0.17 |
| Mi | 09. Juni | 04 02 37 | 19 55 34 | 62.56 | -0.76 | 405.9 | 14.719 | 350.31 | -0.36 | 1.00 | 0.02 | -74.5 | 254.50 | 0.19 |
| Do | 10. Juni | 04 52 07 | 22 51 21 | 74.40 | 0.33 | 404.9 | 14.756 | 354.91 | -1.73 | -0.41 | 0.00 | -86.8 | 266.75 | 0.21 |
| Fr | 11. Juni | 05 43 46 | 24 48 13 | 86.31 | 1.42 | 403.3 | 14.815 | 359.91 | -3.02 | -1.81 | 0.00 | 81.0 | 279.00 | 0.23 |
| Sa | 12. Juni | 06 37 03 | 25 37 09 | 98.35 | 2.45 | 401.1 | 14.896 | 5.08 | -4.19 | -3.15 | 0.02 | 68.7 | 291.25 | 0.25 |
| So | 13. Juni | 07 31 08 | 25 12 36 | 110.55 | 3.38 | 398.4 | 14.997 | 10.09 | -5.18 | -4.35 | 0.06 | 56.5 | 303.50 | 0.28 |
| Mo | 14. Juni | 08 25 00 | 23 33 42 | 122.92 | 4.17 | 395.2 | 15.120 | 14.59 | -5.98 | -5.37 | 0.12 | 44.3 | 315.75 | 0.30 |
| Di | 15. Juni | 09 17 55 | 20 44 21 | 135.51 | 4.77 | 391.5 | 15.263 | 18.30 | -6.55 | -6.15 | 0.19 | 32.0 | 327.99 | 0.33 |
| Mi | 16. Juni | 10 09 31 | 16 52 14 | 148.36 | 5.15 | 387.3 | 15.428 | 21.00 | -6.86 | -6.63 | 0.28 | 19.8 | 340.23 | 0.35 |
| Do | 17. Juni | 10 59 52 | 12 07 33 | 161.49 | 5.27 | 382.7 | 15.613 | 22.60 | -6.87 | -6.78 | 0.37 | 7.5 | 352.46 | 0.38 |
| Fr | 18. Juni | 11 49 32 | 06 42 09 | 174.93 | 5.11 | 377.9 | 15.812 | 23.05 | -6.56 | -6.57 | 0.48 | -4.7 | 4.68 | 0.42 |
| Sa | 19. Juni | 12 39 21 | 00 49 28 | 188.71 | 4.65 | 373.0 | 16.018 | 22.35 | -5.92 | -5.98 | 0.59 | -16.9 | 16.90 | 0.45 |
| So | 20. Juni | 13 30 19 | - 05 14 45 | 202.84 | 3.91 | 368.4 | 16.218 | 20.51 | -4.96 | -5.01 | 0.70 | -29.1 | 29.11 | 0.48 |
| Mo | 21. Juni | 14 23 35 | - 11 11 31 | 217.28 | 2.91 | 364.5 | 16.393 | 17.51 | -3.70 | -3.70 | 0.80 | -41.3 | 41.31 | 0.52 |
| Di | 22. Juni | 15 20 08 | - 16 37 42 | 231.99 | 1.69 | 361.6 | 16.524 | 13.35 | -2.19 | -2.13 | 0.89 | -53.5 | 53.51 | 0.56 |
| Mi | 23. Juni | 16 20 29 | - 21 06 46 | 246.89 | 0.35 | 360.1 | 16.592 | 8.12 | -0.50 | -0.39 | 0.95 | -65.7 | 65.70 | 0.60 |
| Do | 24. Juni | 17 24 17 | - 24 12 17 | 261.86 | -1.02 | 360.3 | 16.585 | 2.07 | 1.25 | 1.38 | 0.99 | -77.9 | 77.89 | 0.63 |
| Fr | 25. Juni | 18 29 59 | - 25 34 27 | 276.76 | -2.31 | 362.1 | 16.500 | 355.70 | 2.95 | 3.05 | 1.00 | 89.9 | 90.08 | 0.67 |
| Sa | 26. Juni | 19 35 12 | - 25 06 50 | 291.47 | -3.43 | 365.6 | 16.343 | 349.67 | 4.47 | 4.49 | 0.98 | 77.7 | 102.27 | 0.70 |
| So | 27. Juni | 20 37 34 | - 22 58 33 | 305.87 | -4.31 | 370.3 | 16.133 | 344.56 | 5.69 | 5.62 | 0.93 | 65.5 | 114.46 | 0.73 |
| Mo | 28. Juni | 21 35 40 | - 19 29 55 | 319.87 | -4.90 | 376.0 | 15.891 | 340.75 | 6.54 | 6.38 | 0.86 | 53.3 | 126.65 | 0.76 |
| Di | 29. Juni | 22 29 12 | - 15 04 54 | 333.44 | -5.19 | 382.0 | 15.641 | 338.31 | 6.97 | 6.76 | 0.78 | 41.1 | 138.85 | 0.78 |
| Mi | 30. Juni | 23 18 46 | - 10 05 31 | 346.57 | -5.20 | 387.9 | 15.402 | 337.14 | 6.96 | 6.76 | 0.69 | 28.9 | 151.06 | 0.80 |

Mond 2021

| | 0h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|----------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|------|
| Do | 01. Juli | 00 05 19 | - 04 49 28 | 359.29 | -4.95 | 393.4 | 15.189 | 337.08 | 6.54 | 6.43 | 0.59 | 16.7 | 163.27 | 0.82 |
| Fr | 02. Juli | 00 49 57 | 00 29 44 | 11.68 | -4.48 | 398.0 | 15.014 | 337.96 | 5.77 | 5.81 | 0.49 | 4.5 | 175.49 | 0.83 |
| Sa | 03. Juli | 01 33 44 | 05 41 26 | 23.79 | -3.81 | 401.5 | 14.881 | 339.67 | 4.71 | 4.93 | 0.39 | -7.7 | 187.72 | 0.85 |
| So | 04. Juli | 02 17 40 | 10 36 30 | 35.71 | -2.98 | 403.9 | 14.792 | 342.13 | 3.45 | 3.86 | 0.30 | -19.9 | 199.95 | 0.86 |
| Mo | 05. Juli | 03 02 39 | 15 06 06 | 47.53 | -2.04 | 405.1 | 14.748 | 345.30 | 2.07 | 2.63 | 0.22 | -32.2 | 212.19 | 0.87 |
| Di | 06. Juli | 03 49 21 | 19 00 45 | 59.32 | -1.01 | 405.3 | 14.743 | 349.14 | 0.65 | 1.30 | 0.15 | -44.4 | 224.43 | 0.89 |
| Mi | 07. Juli | 04 38 16 | 22 10 06 | 71.14 | 0.06 | 404.4 | 14.774 | 353.59 | -0.73 | -0.09 | 0.09 | -56.7 | 236.67 | 0.90 |
| Do | 08. Juli | 05 29 30 | 24 23 22 | 83.06 | 1.14 | 402.8 | 14.835 | 358.51 | -2.02 | -1.49 | 0.04 | -68.9 | 248.92 | 0.91 |
| Fr | 09. Juli | 06 22 42 | 25 30 31 | 95.12 | 2.17 | 400.4 | 14.920 | 368 | -3.16 | -2.83 | 0.01 | -81.2 | 261.18 | 0.93 |
| Sa | 10. Juli | 07 17 05 | 25 24 17 | 107.37 | 3.12 | 397.7 | 15.024 | 8.80 | -4.11 | -4.06 | 0.00 | 86.6 | 273.43 | 0.94 |
| So | 11. Juli | 08 11 37 | 24 02 00 | 119.82 | 3.94 | 394.6 | 15.142 | 13.50 | -4.83 | -5.11 | 0.01 | 74.3 | 285.68 | 0.96 |
| Mo | 12. Juli | 09 05 20 | 21 26 26 | 132.49 | 4.57 | 391.3 | 15.270 | 17.46 | -5.33 | -5.93 | 0.04 | 62.1 | 297.93 | 0.97 |
| Di | 13. Juli | 09 57 37 | 17 45 18 | 145.38 | 4.99 | 387.8 | 15.405 | 20.43 | -5.59 | -6.47 | 0.09 | 49.8 | 310.18 | 0.99 |
| Mi | 14. Juli | 10 48 23 | 13 09 42 | 158.49 | 5.16 | 384.3 | 15.547 | 22.29 | -5.62 | -6.67 | 0.16 | 37.6 | 322.43 | 1.01 |
| Do | 15. Juli | 11 37 59 | 07 52 42 | 171.82 | 5.05 | 380.7 | 15.692 | 23.01 | -5.43 | -6.52 | 0.24 | 25.3 | 334.67 | 1.03 |
| Fr | 16. Juli | 12 27 07 | 02 08 23 | 185.38 | 4.66 | 377.2 | 15.840 | 22.59 | -5.02 | -6.01 | 0.34 | 13.1 | 346.90 | 1.05 |
| Sa | 17. Juli | 13 16 45 | - 03 47 59 | 199.15 | 3.99 | 373.7 | 15.987 | 21.07 | -4.40 | -5.14 | 0.45 | 0.9 | 359.13 | 1.08 |
| So | 18. Juli | 14 07 58 | - 09 39 32 | 213.14 | 3.08 | 370.5 | 16.125 | 18.47 | -3.59 | -3.95 | 0.57 | -11.3 | 11.34 | 1.11 |
| Mo | 19. Juli | 15 01 50 | - 15 06 51 | 227.34 | 1.97 | 367.8 | 16.246 | 14.77 | -2.58 | -2.50 | 0.68 | -23.6 | 23.56 | 1.13 |
| Di | 20. Juli | 15 59 07 | - 19 47 40 | 241.73 | 0.73 | 365.7 | 16.337 | 10.04 | -1.41 | -0.87 | 0.78 | -35.8 | 35.76 | 1.16 |
| Mi | 21. Juli | 17 00 01 | - 23 18 12 | 256.25 | -0.58 | 364.6 | 16.386 | 4.42 | -0.10 | 0.82 | 0.87 | -48.0 | 47.96 | 1.19 |
| Do | 22. Juli | 18 03 45 | - 25 17 03 | 270.85 | -1.85 | 364.7 | 16.382 | 358.25 | 1.29 | 2.47 | 0.94 | -60.2 | 60.15 | 1.22 |
| Fr | 23. Juli | 19 08 28 | - 25 31 15 | 285.42 | -3.00 | 366.1 | 16.319 | 352.10 | 2.67 | 3.96 | 0.98 | -72.3 | 72.34 | 1.25 |
| Sa | 24. Juli | 20 11 51 | - 24 01 12 | 299.88 | -3.94 | 368.8 | 16.199 | 346.59 | 3.95 | 5.18 | 1.00 | -84.5 | 84.53 | 1.27 |
| So | 25. Juli | 21 11 58 | - 21 00 37 | 314.10 | -4.62 | 372.7 | 16.030 | 342.21 | 5.01 | 6.05 | 0.99 | 83.3 | 96.72 | 1.30 |
| Mo | 26. Juli | 22 07 55 | - 16 51 19 | 328.00 | -5.00 | 377.5 | 15.828 | 339.19 | 5.77 | 6.55 | 0.95 | 71.1 | 108.91 | 1.32 |
| Di | 27. Juli | 22 59 47 | - 11 56 45 | 341.54 | -5.10 | 382.8 | 15.609 | 337.50 | 6.16 | 6.66 | 0.90 | 58.9 | 121.10 | 1.33 |
| Mi | 28. Juli | 23 48 15 | - 06 37 49 | 354.67 | -4.92 | 388.2 | 15.392 | 337.02 | 6.15 | 6.42 | 0.83 | 46.7 | 133.30 | 1.35 |
| Do | 29. Juli | 00 34 19 | - 01 11 15 | 7.41 | -4.49 | 393.2 | 15.194 | 337.58 | 5.75 | 5.86 | 0.74 | 34.5 | 145.50 | 1.36 |
| Fr | 30. Juli | 01 19 01 | 04 09 55 | 19.81 | -3.87 | 397.6 | 15.026 | 339.04 | 4.98 | 5.04 | 0.65 | 22.3 | 157.71 | 1.37 |
| Sa | 31. Juli | 02 03 23 | 09 15 19 | 31.94 | -3.08 | 401.1 | 14.898 | 341.28 | 3.93 | 4.00 | 0.55 | 10.1 | 169.92 | 1.37 |

Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|-----------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|------|
| So | 01. Aug. | 02 48 18 | 13 55 50 | 43.87 | -2.17 | 403.3 | 14.814 | 344.25 | 2.67 | 2.81 | 0.46 | -2.1 | 182.14 | 1.38 |
| Mo | 02. Aug. | 03 34 36 | 18 02 32 | 55.69 | -1.17 | 404.4 | 14.776 | 347.89 | 1.28 | 1.51 | 0.37 | -14.4 | 194.36 | 1.38 |
| Di | 03. Aug. | 04 22 52 | 21 25 58 | 67.49 | -0.13 | 404.1 | 14.784 | 352.15 | -0.12 | 0.15 | 0.28 | -26.6 | 206.59 | 1.39 |
| Mi | 04. Aug. | 05 13 23 | 23 56 02 | 79.36 | 0.93 | 402.8 | 14.834 | 356.93 | -1.47 | -1.22 | 0.20 | -38.8 | 218.83 | 1.39 |
| Do | 05. Aug. | 06 06 03 | 25 22 44 | 91.37 | 1.95 | 400.4 | 14.921 | 2.05 | -2.66 | -2.55 | 0.13 | -51.1 | 231.07 | 1.39 |
| Fr | 06. Aug. | 07 00 18 | 25 37 36 | 103.58 | 2.90 | 397.4 | 15.036 | 7.23 | -3.64 | -3.78 | 0.07 | -63.3 | 243.31 | 1.39 |
| Sa | 07. Aug. | 07 55 12 | 24 35 47 | 116.04 | 3.73 | 393.8 | 15.172 | 12.11 | -4.37 | -4.86 | 0.03 | -75.6 | 255.56 | 1.40 |
| So | 08. Aug. | 08 49 45 | 22 17 33 | 128.77 | 4.38 | 390.0 | 15.320 | 16.36 | -4.80 | -5.72 | 0.00 | -87.8 | 267.81 | 1.40 |
| Mo | 09. Aug. | 09 43 10 | 18 48 48 | 141.78 | 4.83 | 386.2 | 15.469 | 19.66 | -4.94 | -6.30 | 0.00 | 79.9 | 280.05 | 1.41 |
| Di | 10. Aug. | 10 35 06 | 14 20 06 | 155.04 | 5.03 | 382.7 | 15.614 | 21.86 | -4.82 | -6.55 | 0.02 | 67.7 | 292.30 | 1.41 |
| Mi | 11. Aug. | 11 25 41 | 09 05 15 | 168.54 | 4.95 | 379.4 | 15.747 | 22.89 | -4.46 | -6.44 | 0.07 | 55.5 | 304.54 | 1.42 |
| Do | 12. Aug. | 12 15 27 | 03 19 55 | 182.22 | 4.59 | 376.6 | 15.865 | 22.75 | -3.93 | -5.97 | 0.13 | 43.2 | 316.79 | 1.43 |
| Fr | 13. Aug. | 13 05 13 | -02 39 09 | 196.05 | 3.96 | 374.2 | 15.966 | 21.48 | -3.26 | -5.14 | 0.22 | 31.0 | 329.02 | 1.44 |
| Sa | 14. Aug. | 13 55 59 | -08 34 15 | 209.99 | 3.09 | 372.3 | 16.050 | 19.13 | -2.49 | -3.99 | 0.32 | 18.7 | 341.25 | 1.45 |
| So | 15. Aug. | 14 48 43 | -14 06 27 | 224.02 | 2.03 | 370.8 | 16.115 | 15.73 | -1.66 | -2.60 | 0.43 | 6.5 | 353.47 | 1.46 |
| Mo | 16. Aug. | 15 44 15 | -18 55 29 | 238.12 | 0.83 | 369.7 | 16.161 | 11.32 | -0.76 | -1.04 | 0.54 | -5.7 | 5.69 | 1.48 |
| Di | 17. Aug. | 16 42 57 | -22 40 20 | 252.28 | -0.41 | 369.2 | 16.184 | 6.04 | 0.18 | 0.59 | 0.66 | -17.9 | 17.89 | 1.49 |
| Mi | 18. Aug. | 17 44 25 | -25 01 34 | 266.47 | -1.64 | 369.3 | 16.181 | 0.14 | 1.16 | 2.18 | 0.76 | -30.1 | 30.09 | 1.51 |
| Do | 19. Aug. | 18 47 23 | -25 45 27 | 280.67 | -2.76 | 370.0 | 16.146 | 354.08 | 2.17 | 3.65 | 0.85 | -42.3 | 42.29 | 1.53 |
| Fr | 20. Aug. | 19 49 57 | -24 48 13 | 294.82 | -3.70 | 371.6 | 16.077 | 348.44 | 3.14 | 4.88 | 0.92 | -54.5 | 54.47 | 1.54 |
| Sa | 21. Aug. | 20 50 14 | -22 17 42 | 308.87 | -4.42 | 374.1 | 15.972 | 343.71 | 4.03 | 5.81 | 0.97 | -66.7 | 66.66 | 1.55 |
| So | 22. Aug. | 21 47 04 | -18 30 56 | 322.75 | -4.86 | 377.3 | 15.834 | 340.21 | 4.76 | 6.38 | 1.00 | -78.8 | 78.84 | 1.57 |
| Mo | 23. Aug. | 22 40 09 | -13 49 14 | 336.38 | -5.01 | 381.3 | 15.672 | 338.04 | 5.25 | 6.58 | 1.00 | 89.0 | 91.02 | 1.57 |
| Di | 24. Aug. | 23 29 55 | -08 33 51 | 349.71 | -4.88 | 385.6 | 15.494 | 337.12 | 5.44 | 6.41 | 0.97 | 76.8 | 103.20 | 1.58 |
| Mi | 25. Aug. | 00 17 06 | -03 03 24 | 362.71 | -4.50 | 390.1 | 15.315 | 337.30 | 5.29 | 5.91 | 0.93 | 64.6 | 115.38 | 1.58 |
| Do | 26. Aug. | 01 02 41 | 02 26 45 | 15.38 | -3.91 | 394.5 | 15.146 | 338.44 | 4.79 | 5.13 | 0.87 | 52.4 | 127.57 | 1.58 |
| Fr | 27. Aug. | 01 47 35 | 07 44 05 | 27.74 | -3.14 | 398.3 | 15.000 | 340.42 | 3.98 | 4.12 | 0.80 | 40.2 | 139.76 | 1.58 |
| Sa | 28. Aug. | 02 32 41 | 12 38 08 | 39.85 | -2.24 | 401.3 | 14.887 | 343.16 | 2.90 | 2.95 | 0.71 | 28.0 | 151.96 | 1.58 |
| So | 29. Aug. | 03 18 46 | 16 59 26 | 51.77 | -1.26 | 403.3 | 14.814 | 346.60 | 1.62 | 1.66 | 0.62 | 15.8 | 164.16 | 1.57 |
| Mo | 30. Aug. | 04 06 30 | 20 38 45 | 63.59 | -0.23 | 404.1 | 14.786 | 350.67 | 0.23 | 0.32 | 0.53 | 3.6 | 176.36 | 1.56 |
| Di | 31. Aug. | 04 56 13 | 23 26 44 | 75.40 | 0.81 | 403.6 | 14.805 | 355.28 | -1.17 | -1.04 | 0.43 | -8.6 | 188.57 | 1.55 |

Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|-----------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|------|
| Mi | 01. Sep. | 05 48 01 | 25 13 00 | 87.29 | 1.82 | 401.8 | 14.870 | 0.28 | -2.49 | -2.36 | 0.34 | -20.8 | 200.79 | 1.55 |
| Do | 02. Sep. | 06 41 33 | 25 52 07 | 99.35 | 2.77 | 398.9 | 14.978 | 5.44 | -3.63 | -3.59 | 0.25 | -33.0 | 213.01 | 1.54 |
| Fr | 03. Sep. | 07 36 05 | 25 15 04 | 111.65 | 3.60 | 395.1 | 15.122 | 10.44 | -4.51 | -4.68 | 0.17 | -45.2 | 225.24 | 1.53 |
| Sa | 04. Sep. | 08 30 45 | 23 20 49 | 124.25 | 4.28 | 390.7 | 15.293 | 14.93 | -5.07 | -5.57 | 0.10 | -57.5 | 237.47 | 1.52 |
| So | 05. Sep. | 09 24 45 | 20 12 18 | 137.21 | 4.76 | 386.0 | 15.479 | 18.60 | -5.27 | -6.20 | 0.05 | -69.7 | 249.70 | 1.51 |
| Mo | 06. Sep. | 10 17 37 | 15 57 26 | 150.51 | 4.99 | 381.4 | 15.667 | 21.21 | -5.11 | -6.51 | 0.01 | -81.9 | 261.94 | 1.50 |
| Di | 07. Sep. | 11 09 19 | 10 48 31 | 164.14 | 4.95 | 377.2 | 15.842 | 22.64 | -4.62 | -6.46 | 0.00 | 85.8 | 274.17 | 1.49 |
| Mi | 08. Sep. | 12 00 12 | 05 01 05 | 178.05 | 4.62 | 373.6 | 15.991 | 22.88 | -3.86 | -6.03 | 0.01 | 73.6 | 286.41 | 1.48 |
| Do | 09. Sep. | 12 50 58 | -01 06 47 | 192.16 | 4.01 | 371.0 | 16.105 | 21.92 | -2.90 | -5.23 | 0.05 | 61.4 | 298.65 | 1.48 |
| Fr | 10. Sep. | 13 42 28 | -07 15 19 | 206.39 | 3.14 | 369.3 | 16.179 | 19.83 | -1.85 | -4.09 | 0.11 | 49.1 | 310.88 | 1.47 |
| Sa | 11. Sep. | 14 35 37 | -13 03 24 | 220.66 | 2.07 | 368.5 | 16.212 | 16.64 | -0.77 | -2.69 | 0.19 | 36.9 | 323.10 | 1.47 |
| So | 12. Sep. | 15 31 09 | -18 09 19 | 234.92 | 0.86 | 368.6 | 16.210 | 12.42 | 0.29 | -1.12 | 0.29 | 24.7 | 335.32 | 1.47 |
| Mo | 13. Sep. | 16 29 26 | -22 11 48 | 249.12 | -0.39 | 369.3 | 16.177 | 7.29 | 1.27 | 0.51 | 0.40 | 12.5 | 347.53 | 1.46 |
| Di | 14. Sep. | 17 30 09 | -24 52 09 | 263.23 | -1.61 | 370.6 | 16.120 | 1.53 | 2.17 | 2.10 | 0.52 | 0.3 | 359.74 | 1.46 |
| Mi | 15. Sep. | 18 32 13 | -25 57 28 | 277.25 | -2.72 | 372.4 | 16.044 | 355.54 | 2.99 | 3.56 | 0.63 | -11.9 | 11.93 | 1.47 |
| Do | 16. Sep. | 19 33 58 | -25 23 48 | 291.15 | -3.67 | 374.5 | 15.953 | 349.84 | 3.71 | 4.80 | 0.74 | -24.1 | 24.12 | 1.47 |
| Fr | 17. Sep. | 20 33 43 | -23 17 15 | 304.93 | -4.39 | 377.0 | 15.848 | 344.94 | 4.33 | 5.75 | 0.83 | -36.3 | 36.31 | 1.47 |
| Sa | 18. Sep. | 21 30 21 | -19 52 08 | 318.56 | -4.85 | 379.8 | 15.730 | 341.16 | 4.81 | 6.35 | 0.90 | -48.5 | 48.48 | 1.47 |
| So | 19. Sep. | 22 23 32 | -15 27 10 | 332.02 | -5.04 | 383.0 | 15.601 | 338.63 | 5.13 | 6.60 | 0.96 | -60.7 | 60.66 | 1.46 |
| Mo | 20. Sep. | 23 13 31 | -10 21 51 | 345.27 | -4.95 | 386.4 | 15.463 | 337.33 | 5.23 | 6.49 | 0.99 | -72.8 | 72.83 | 1.46 |
| Di | 21. Sep. | 00 01 01 | -04 54 20 | 358.28 | -4.60 | 390.0 | 15.320 | 337.16 | 5.10 | 6.04 | 1.00 | -85.0 | 85.00 | 1.45 |
| Mi | 22. Sep. | 00 46 52 | 00 39 25 | 11.03 | -4.03 | 393.6 | 15.178 | 337.98 | 4.69 | 5.30 | 0.99 | 82.8 | 97.16 | 1.44 |
| Do | 23. Sep. | 01 31 57 | 06 05 40 | 23.52 | -3.27 | 397.1 | 15.046 | 339.67 | 4.01 | 4.31 | 0.96 | 70.7 | 109.33 | 1.43 |
| Fr | 24. Sep. | 02 17 05 | 11 12 28 | 35.77 | -2.37 | 400.2 | 14.930 | 342.16 | 3.07 | 3.14 | 0.91 | 58.5 | 121.50 | 1.42 |
| Sa | 25. Sep. | 03 03 00 | 15 49 06 | 47.81 | -1.38 | 402.6 | 14.840 | 345.37 | 1.91 | 1.85 | 0.85 | 46.3 | 133.68 | 1.40 |
| So | 26. Sep. | 03 50 20 | 19 45 36 | 59.70 | -0.33 | 404.2 | 14.783 | 349.24 | 0.59 | 0.49 | 0.78 | 34.1 | 145.86 | 1.38 |
| Mo | 27. Sep. | 04 39 27 | 22 52 25 | 71.50 | 0.72 | 404.6 | 14.766 | 353.69 | -0.82 | -0.88 | 0.69 | 22.0 | 158.04 | 1.36 |
| Di | 28. Sep. | 05 30 25 | 25 00 31 | 83.30 | 1.74 | 403.9 | 14.793 | 358.56 | -2.23 | -2.22 | 0.60 | 9.8 | 170.23 | 1.34 |
| Mi | 29. Sep. | 06 23 02 | 26 01 58 | 95.18 | 2.70 | 401.9 | 14.866 | 3.65 | -3.55 | -3.46 | 0.51 | -2.4 | 182.42 | 1.32 |
| Do | 30. Sep. | 07 16 42 | 25 50 48 | 107.23 | 3.55 | 398.7 | 14.985 | 8.68 | -4.69 | -4.58 | 0.41 | -14.6 | 194.62 | 1.30 |

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| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|------|
| Fr | 01. Okt. | 08 10 42 | 24 24 12 | 119.54 | 4.25 | 394.4 | 15.148 | 13.33 | -5.55 | -5.50 | 0.32 | -26.8 | 206.82 | 1.28 |
| Sa | 02. Okt. | 09 04 18 | 21 43 09 | 132.18 | 4.77 | 389.4 | 15.345 | 17.28 | -6.06 | -6.18 | 0.23 | -39.0 | 219.03 | 1.26 |
| So | 03. Okt. | 09 57 05 | 17 52 45 | 145.21 | 5.06 | 383.8 | 15.567 | 20.29 | -6.18 | -6.57 | 0.15 | -51.2 | 231.24 | 1.24 |
| Mo | 04. Okt. | 10 48 57 | 13 01 59 | 158.66 | 5.09 | 378.2 | 15.796 | 22.18 | -5.86 | -6.61 | 0.08 | -63.5 | 243.46 | 1.22 |
| Di | 05. Okt. | 11 40 13 | 07 23 34 | 172.52 | 4.82 | 373.1 | 16.016 | 22.89 | -5.15 | -6.27 | 0.03 | -75.7 | 255.68 | 1.20 |
| Mi | 06. Okt. | 12 31 30 | 01 13 44 | 186.74 | 4.25 | 368.7 | 16.205 | 22.39 | -4.08 | -5.53 | 0.00 | -87.9 | 267.90 | 1.17 |
| Do | 07. Okt. | 13 23 37 | - 05 07 44 | 201.24 | 3.40 | 365.5 | 16.345 | 20.69 | -2.75 | -4.43 | 0.00 | 79.9 | 280.13 | 1.15 |
| Fr | 08. Okt. | 14 17 28 | - 11 17 58 | 215.89 | 2.32 | 363.8 | 16.425 | 17.81 | -1.28 | -3.02 | 0.03 | 67.7 | 292.35 | 1.14 |
| Sa | 09. Okt. | 15 13 49 | - 16 51 57 | 230.60 | 1.07 | 363.4 | 16.440 | 13.80 | 0.21 | -1.41 | 0.09 | 55.4 | 304.56 | 1.12 |
| So | 10. Okt. | 16 13 01 | - 21 24 34 | 245.23 | -0.24 | 364.5 | 16.394 | 8.79 | 1.63 | 0.30 | 0.17 | 43.2 | 316.78 | 1.10 |
| Mo | 11. Okt. | 17 14 44 | - 24 33 44 | 259.71 | -1.53 | 366.6 | 16.298 | 3.02 | 2.90 | 1.97 | 0.26 | 31.0 | 328.98 | 1.08 |
| Di | 12. Okt. | 18 17 46 | - 26 04 36 | 273.99 | -2.70 | 369.6 | 16.167 | 356.94 | 3.98 | 3.50 | 0.37 | 18.8 | 341.18 | 1.07 |
| Mi | 13. Okt. | 19 20 20 | - 25 52 48 | 288.03 | -3.69 | 373.1 | 16.016 | 351.08 | 4.84 | 4.79 | 0.49 | 6.6 | 353.37 | 1.06 |
| Do | 14. Okt. | 20 20 40 | - 24 05 03 | 301.83 | -4.45 | 376.8 | 15.857 | 345.97 | 5.47 | 5.78 | 0.60 | -5.6 | 5.56 | 1.04 |
| Fr | 15. Okt. | 21 17 37 | - 20 56 20 | 315.38 | -4.94 | 380.6 | 15.698 | 341.95 | 5.87 | 6.43 | 0.70 | -17.7 | 17.74 | 1.03 |
| Sa | 16. Okt. | 22 10 52 | - 16 45 24 | 328.70 | -5.16 | 384.4 | 15.544 | 339.16 | 6.04 | 6.72 | 0.79 | -29.9 | 29.91 | 1.02 |
| So | 17. Okt. | 23 00 46 | - 11 51 09 | 341.79 | -5.10 | 388.0 | 15.399 | 337.59 | 5.99 | 6.65 | 0.87 | -42.1 | 42.07 | 1.00 |
| Mo | 18. Okt. | 23 48 02 | - 06 30 45 | 354.66 | -4.79 | 391.4 | 15.264 | 337.14 | 5.72 | 6.24 | 0.93 | -54.2 | 54.23 | 0.98 |
| Di | 19. Okt. | 00 33 36 | - 00 59 20 | 7.32 | -4.24 | 394.7 | 15.138 | 337.67 | 5.22 | 5.54 | 0.97 | -66.4 | 66.39 | 0.97 |
| Mi | 20. Okt. | 01 18 20 | 04 29 45 | 19.78 | -3.50 | 397.7 | 15.024 | 339.10 | 4.50 | 4.58 | 1.00 | -78.5 | 78.54 | 0.95 |
| Do | 21. Okt. | 02 03 06 | 09 44 21 | 32.04 | -2.60 | 400.4 | 14.922 | 341.33 | 3.58 | 3.42 | 1.00 | 89.3 | 90.70 | 0.92 |
| Fr | 22. Okt. | 02 48 38 | 14 33 07 | 44.13 | -1.60 | 402.7 | 14.838 | 344.32 | 2.47 | 2.12 | 0.98 | 77.1 | 102.85 | 0.90 |
| Sa | 23. Okt. | 03 35 32 | 18 45 07 | 56.07 | -0.53 | 404.4 | 14.774 | 347.99 | 1.20 | 0.74 | 0.95 | 65.0 | 115.01 | 0.87 |
| So | 24. Okt. | 04 24 09 | 22 09 57 | 67.90 | 0.55 | 405.4 | 14.737 | 352.26 | -0.18 | -0.66 | 0.90 | 52.8 | 127.16 | 0.85 |
| Mo | 25. Okt. | 05 14 35 | 24 37 59 | 79.69 | 1.60 | 405.6 | 14.733 | 357.02 | -1.60 | -2.02 | 0.84 | 40.7 | 139.32 | 0.82 |
| Di | 26. Okt. | 06 06 34 | 26 01 04 | 91.48 | 2.59 | 404.7 | 14.765 | 2.04 | -3.02 | -3.30 | 0.76 | 28.5 | 151.49 | 0.79 |
| Mi | 27. Okt. | 06 59 31 | 26 13 25 | 103.34 | 3.47 | 402.6 | 14.839 | 7.08 | -4.34 | -4.45 | 0.67 | 16.3 | 163.65 | 0.76 |
| Do | 28. Okt. | 07 52 44 | 25 12 22 | 115.37 | 4.22 | 399.5 | 14.957 | 11.82 | -5.48 | -5.42 | 0.58 | 4.2 | 175.83 | 0.73 |
| Fr | 29. Okt. | 08 45 30 | 22 58 47 | 127.64 | 4.79 | 395.2 | 15.119 | 15.95 | -6.38 | -6.16 | 0.49 | -8.0 | 188.01 | 0.71 |
| Sa | 30. Okt. | 09 37 24 | 19 36 45 | 140.22 | 5.14 | 389.9 | 15.322 | 19.25 | -6.94 | -6.63 | 0.39 | -20.2 | 200.19 | 0.68 |
| So | 31. Okt. | 10 28 22 | 15 13 13 | 153.20 | 5.25 | 384.0 | 15.558 | 21.53 | -7.11 | -6.77 | 0.29 | -32.4 | 212.38 | 0.65 |

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| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Mo | 01. Nov. | 11 18 44 | 09 57 43 | 166.61 | 5.08 | 377.8 | 15.814 | 22.71 | -6.84 | -6.56 | 0.20 | -44.6 | 224.58 | 0.62 |
| Di | 02. Nov. | 12 09 07 | 04 02 34 | 180.48 | 4.61 | 371.8 | 16.071 | 22.73 | -6.11 | -5.96 | 0.11 | -56.8 | 236.78 | 0.59 |
| Mi | 03. Nov. | 13 00 24 | - 02 16 17 | 194.78 | 3.85 | 366.4 | 16.306 | 21.56 | -4.97 | -4.98 | 0.05 | -69.0 | 248.98 | 0.56 |
| Do | 04. Nov. | 13 53 36 | - 08 38 29 | 209.46 | 2.82 | 362.2 | 16.494 | 19.19 | -3.48 | -3.64 | 0.01 | -81.2 | 261.19 | 0.53 |
| Fr | 05. Nov. | 14 49 39 | - 14 39 01 | 224.39 | 1.58 | 359.6 | 16.613 | 15.62 | -1.75 | -2.04 | 0.00 | 86.6 | 273.39 | 0.50 |
| Sa | 06. Nov. | 15 49 11 | - 19 49 29 | 239.45 | 0.21 | 358.8 | 16.650 | 10.88 | 0.10 | -0.28 | 0.02 | 74.4 | 285.60 | 0.47 |
| So | 07. Nov. | 16 52 04 | - 23 41 37 | 254.48 | -1.17 | 359.9 | 16.603 | 5.19 | 1.91 | 1.51 | 0.06 | 62.2 | 297.80 | 0.45 |
| Mo | 08. Nov. | 17 57 07 | - 25 53 14 | 269.35 | -2.45 | 362.5 | 16.482 | 358.95 | 3.58 | 3.17 | 0.14 | 50.0 | 310.00 | 0.42 |
| Di | 09. Nov. | 19 02 15 | - 26 14 24 | 283.95 | -3.55 | 366.4 | 16.305 | 352.76 | 4.99 | 4.59 | 0.23 | 37.8 | 322.20 | 0.39 |
| Mi | 10. Nov. | 20 05 10 | - 24 49 54 | 298.21 | -4.41 | 371.2 | 16.096 | 347.24 | 6.08 | 5.70 | 0.33 | 25.6 | 334.38 | 0.37 |
| Do | 11. Nov. | 21 04 15 | - 21 56 13 | 312.11 | -4.98 | 376.4 | 15.874 | 342.84 | 6.82 | 6.44 | 0.44 | 13.4 | 346.56 | 0.35 |
| Fr | 12. Nov. | 21 58 00 | - 17 54 58 | 325.63 | -5.26 | 381.6 | 15.658 | 339.73 | 7.20 | 6.80 | 0.55 | 1.3 | 358.74 | 0.33 |
| Sa | 13. Nov. | 22 49 44 | - 13 07 28 | 338.81 | -5.25 | 386.5 | 15.458 | 337.88 | 7.24 | 6.79 | 0.66 | -10.9 | 10.90 | 0.30 |
| So | 14. Nov. | 23 37 19 | - 07 52 02 | 351.68 | -4.97 | 391.0 | 15.280 | 337.18 | 6.96 | 6.44 | 0.75 | -23.1 | 23.06 | 0.28 |
| Mo | 15. Nov. | 00 22 47 | - 02 23 45 | 364.28 | -4.46 | 395.0 | 15.128 | 337.49 | 6.41 | 5.78 | 0.83 | -35.2 | 35.22 | 0.26 |
| Di | 16. Nov. | 01 07 08 | 03 04 46 | 16.65 | -3.75 | 398.3 | 15.001 | 338.69 | 5.61 | 4.86 | 0.90 | -47.4 | 47.37 | 0.23 |
| Mi | 17. Nov. | 01 51 21 | 08 22 13 | 28.84 | -2.88 | 401.1 | 14.898 | 340.69 | 4.62 | 3.73 | 0.95 | -59.5 | 59.51 | 0.20 |
| Do | 18. Nov. | 02 36 15 | 13 17 49 | 40.88 | -1.89 | 403.2 | 14.817 | 343.45 | 3.46 | 2.45 | 0.98 | -71.7 | 71.66 | 0.18 |
| Fr | 19. Nov. | 03 22 31 | 17 40 47 | 52.81 | -0.82 | 404.8 | 14.758 | 346.92 | 2.18 | 1.08 | 1.00 | -83.8 | 83.80 | 0.15 |
| Sa | 20. Nov. | 04 10 35 | 21 20 15 | 64.66 | 0.27 | 405.9 | 14.721 | 351.03 | 0.82 | -0.34 | 1.00 | 84.1 | 95.94 | 0.12 |
| So | 21. Nov. | 05 00 35 | 24 05 41 | 76.46 | 1.35 | 406.3 | 14.706 | 355.66 | -0.59 | -1.73 | 0.98 | 71.9 | 108.08 | 0.09 |
| Mo | 22. Nov. | 05 52 15 | 25 47 55 | 88.25 | 2.37 | 406.0 | 14.717 | 0.64 | -2.00 | -3.05 | 0.94 | 59.8 | 120.22 | 0.06 |
| Di | 23. Nov. | 06 44 59 | 26 20 20 | 100.08 | 3.30 | 404.9 | 14.757 | 5.69 | -3.36 | -4.24 | 0.89 | 47.6 | 132.36 | 0.03 |
| Mi | 24. Nov. | 07 37 57 | 25 40 01 | 112.00 | 4.08 | 402.9 | 14.829 | 10.51 | -4.63 | -5.25 | 0.82 | 35.5 | 144.51 | -0.00 |
| Do | 25. Nov. | 08 30 20 | 23 48 02 | 124.05 | 4.70 | 400.0 | 14.938 | 14.80 | -5.74 | -6.05 | 0.74 | 23.3 | 156.66 | -0.03 |
| Fr | 26. Nov. | 09 21 35 | 20 48 58 | 136.31 | 5.11 | 396.1 | 15.086 | 18.30 | -6.63 | -6.58 | 0.65 | 11.2 | 168.81 | -0.06 |
| Sa | 27. Nov. | 10 11 35 | 16 49 54 | 148.84 | 5.29 | 391.2 | 15.272 | 20.86 | -7.25 | -6.82 | 0.55 | -1.0 | 180.97 | -0.09 |
| So | 28. Nov. | 11 00 36 | 11 59 36 | 161.70 | 5.22 | 385.6 | 15.494 | 22.38 | -7.52 | -6.72 | 0.45 | -13.1 | 193.14 | -0.12 |
| Mo | 29. Nov. | 11 49 17 | 06 28 12 | 174.96 | 4.87 | 379.5 | 15.743 | 22.82 | -7.41 | -6.27 | 0.35 | -25.3 | 205.31 | -0.15 |
| Di | 30. Nov. | 12 38 30 | 00 27 47 | 188.66 | 4.24 | 373.3 | 16.006 | 22.17 | -6.87 | -5.45 | 0.25 | -37.5 | 217.49 | -0.18 |

Mond 2021

| | 0 ^h UT | Rekt. | Dekl. | ekl. L | ekl. B | Entf. | Halbm. | Posw. | L | B | k | Lgr. | Colong. | SubB |
|----|-------------------|----------|------------|--------|--------|-------|--------|--------|-------|-------|------|-------|---------|-------|
| Mi | 01. Dez. | 13 29 22 | - 05 46 19 | 202.81 | 3.33 | 367.4 | 16.262 | 20.39 | -5.89 | -4.28 | 0.16 | -49.7 | 229.68 | -0.22 |
| Do | 02. Dez. | 14 23 02 | - 11 54 07 | 217.38 | 2.19 | 362.4 | 16.486 | 17.42 | -4.52 | -2.79 | 0.08 | -61.9 | 241.87 | -0.25 |
| Fr | 03. Dez. | 15 20 31 | - 17 30 07 | 232.30 | 0.87 | 358.8 | 16.652 | 13.26 | -2.80 | -1.09 | 0.03 | -74.1 | 254.06 | -0.28 |
| Sa | 04. Dez. | 16 22 17 | - 22 04 27 | 247.46 | -0.53 | 357.0 | 16.737 | 7.95 | -0.86 | 0.72 | 0.00 | -86.3 | 266.26 | -0.31 |
| So | 05. Dez. | 17 27 47 | - 25 07 44 | 262.71 | -1.90 | 357.1 | 16.730 | 1.79 | 1.17 | 2.48 | 0.01 | 81.5 | 278.45 | -0.34 |
| Mo | 06. Dez. | 18 35 05 | - 26 19 09 | 277.87 | -3.12 | 359.3 | 16.631 | 355.32 | 3.13 | 4.06 | 0.04 | 69.4 | 290.65 | -0.37 |
| Di | 07. Dez. | 19 41 25 | - 25 34 02 | 292.79 | -4.11 | 363.1 | 16.456 | 349.27 | 4.87 | 5.34 | 0.10 | 57.2 | 302.84 | -0.39 |
| Mi | 08. Dez. | 20 44 19 | - 23 04 00 | 307.34 | -4.81 | 368.2 | 16.227 | 344.25 | 6.28 | 6.24 | 0.19 | 45.0 | 315.02 | -0.42 |
| Do | 09. Dez. | 21 42 27 | - 19 15 31 | 321.47 | -5.20 | 374.1 | 15.972 | 340.59 | 7.26 | 6.73 | 0.28 | 32.8 | 327.20 | -0.45 |
| Fr | 10. Dez. | 22 35 49 | - 14 31 23 | 335.14 | -5.27 | 380.2 | 15.715 | 338.32 | 7.79 | 6.82 | 0.39 | 20.6 | 339.38 | -0.47 |
| Sa | 11. Dez. | 23 25 10 | - 09 15 13 | 348.36 | -5.06 | 386.1 | 15.473 | 337.30 | 7.87 | 6.54 | 0.49 | 8.5 | 351.54 | -0.50 |
| So | 12. Dez. | 00 11 39 | - 03 44 44 | 361.18 | -4.59 | 391.6 | 15.259 | 337.36 | 7.54 | 5.93 | 0.60 | -3.7 | 370 | -0.52 |
| Mo | 13. Dez. | 00 56 23 | 01 46 25 | 376.66 | -3.92 | 396.2 | 15.080 | 338.35 | 6.85 | 5.06 | 0.69 | -15.9 | 386.65 | -0.54 |
| Di | 14. Dez. | 01 40 31 | 07 07 12 | 389.88 | -3.09 | 400.0 | 14.938 | 340.15 | 5.89 | 3.97 | 0.78 | -28.0 | 399.81 | -0.57 |
| Mi | 15. Dez. | 02 24 00 | 12 07 43 | 401.91 | -2.13 | 402.8 | 14.833 | 342.71 | 4.72 | 2.73 | 0.85 | -40.1 | 411.51 | -0.59 |
| Do | 16. Dez. | 03 10 38 | 16 38 12 | 412.80 | -1.09 | 404.8 | 14.761 | 345.98 | 3.40 | 1.38 | 0.91 | -52.3 | 423.29 | -0.62 |
| Fr | 17. Dez. | 03 58 02 | 20 28 27 | 420.62 | -0.01 | 405.9 | 14.720 | 349.91 | 2.01 | -0.02 | 0.96 | -64.4 | 435.42 | -0.65 |
| Sa | 18. Dez. | 04 47 28 | 23 27 56 | 426.41 | 1.07 | 406.3 | 14.705 | 354.41 | 0.59 | -1.41 | 0.99 | -76.6 | 447.55 | -0.67 |
| So | 19. Dez. | 05 38 49 | 25 26 44 | 430.22 | 2.10 | 406.1 | 14.714 | 359.32 | -0.81 | -2.74 | 1.00 | -88.7 | 459.69 | -0.70 |
| Mo | 20. Dez. | 06 31 32 | 26 16 53 | 433.08 | 3.04 | 405.2 | 14.746 | 364.39 | -2.14 | -3.95 | 0.99 | -79.2 | 471.82 | -0.72 |
| Di | 21. Dez. | 07 24 44 | 25 54 03 | 435.01 | 3.85 | 403.7 | 14.800 | 369.31 | -3.38 | -5.00 | 0.97 | -67.1 | 483.95 | -0.75 |
| Mi | 22. Dez. | 08 17 27 | 24 18 30 | 436.06 | 4.50 | 401.6 | 14.878 | 374.76 | -4.50 | -5.84 | 0.93 | -54.9 | 496.08 | -0.77 |
| Do | 23. Dez. | 09 08 56 | 21 34 53 | 436.25 | 4.95 | 398.8 | 14.980 | 380.47 | -5.47 | -6.42 | 0.87 | -42.8 | 508.22 | -0.80 |
| Fr | 24. Dez. | 09 58 51 | 17 51 09 | 435.62 | 5.18 | 395.4 | 15.110 | 386.25 | -6.25 | -6.71 | 0.80 | -30.6 | 520.35 | -0.82 |
| Sa | 25. Dez. | 10 47 20 | 13 17 01 | 434.20 | 5.17 | 391.3 | 15.268 | 392.03 | -6.80 | -6.69 | 0.71 | -18.5 | 532.50 | -0.85 |
| So | 26. Dez. | 11 34 53 | 08 03 02 | 431.05 | 4.90 | 386.6 | 15.455 | 397.77 | -7.10 | -6.33 | 0.62 | -6.4 | 544.65 | -0.87 |
| Mo | 27. Dez. | 12 22 22 | 02 20 32 | 426.20 | 4.37 | 381.4 | 15.667 | 403.47 | -7.11 | -5.63 | 0.51 | -5.8 | 556.80 | -0.89 |
| Di | 28. Dez. | 13 10 48 | - 03 37 47 | 420.71 | 3.59 | 375.9 | 15.896 | 409.13 | -6.77 | -4.61 | 0.40 | -18.0 | 568.97 | -0.92 |
| Mi | 29. Dez. | 14 01 23 | - 09 36 33 | 414.60 | 2.58 | 370.4 | 16.129 | 414.72 | -6.07 | -3.29 | 0.30 | -30.1 | 581.13 | -0.94 |
| Do | 30. Dez. | 14 55 19 | - 15 16 10 | 408.88 | 1.38 | 365.5 | 16.348 | 420.18 | -4.99 | -1.73 | 0.20 | -42.3 | 593.31 | -0.96 |
| Fr | 31. Dez. | 15 53 33 | - 20 11 51 | 403.53 | 0.06 | 361.5 | 16.529 | 425.51 | -3.55 | -0.02 | 0.11 | -54.5 | 605.49 | -0.99 |

Für ΔT wurde angenommen: 70 s.

Erklärung der Abkürzungen:

Rekt. Dekl. ... Rektaszension und Deklination zum Äquinotium des Datums, geozentrisch; Die Rektaszension kann bis zu $10''$ und die Deklination bis zu $4''$ abweichen.

ekl. L und ekl B ... ekliptikale Länge und Breite zum Äquinotium des Datums

Entf. ... Entfernung Erde-Mond (in 1000 km)

Posw. ... Positionswinkel der Achse

Halbm. ... scheinbarer Radius in Bogenminuten

L und B ... selenografische Länge und Breite der scheinbaren Mondmitte (Libration).

k ... beleuchteter Teil;

Lgr. ... Lichtgrenze

Colong. ... Colongitude (Selenografische Länge des Punktes auf dem Mondäquator, an dem gerade die Sonne aufgeht);

SubB ... selenografische Breite, bei der die Sonne im Zenit steht

Hinweise zur Orientierung auf dem Mond:

Selenografische Längen und Breiten werden in dem Quadranten, in dem sich das Mare Crisium befindet, positiv gezählt.

Das Mare Crisium befindet sich am östlichen Mondrand.

Karl-Heinz Bücke

2018-01-09