

# Custom Ephemeris

Compiled by: APS

Calculated by: JPL Horizons

Date: 2023-05-18

## 238P/Read

Discovered: 2005-10-24.32776

Orbital Period: 5.63 yrs.

Diameter: 0.6 km

Perihelion: 2022-06-05, 12:55:55.4 UT

Links:

[SBDB](#)

[MPC](#)

| Date        | UT    | JD        | AU     | RA           | Declination   | Latitude     | Longitude        | Rx |
|-------------|-------|-----------|--------|--------------|---------------|--------------|------------------|----|
| 2023-Jan-01 | 12:00 | 2459946.0 | 2.6263 | 59°17'30.23" | +21°11'47.98" | +0°44'18.85" | 1° Gem 33'54.98" | Rx |
| 2023-Jan-02 | 12:00 | 2459947.0 | 2.6285 | 59°13'29.84" | +21°11'14.43" | +0°44'31.61" | 1° Gem 30'08.68" | Rx |
| 2023-Jan-03 | 12:00 | 2459948.0 | 2.6306 | 59°09'54.88" | +21°10'45.24" | +0°44'43.89" | 1° Gem 26'46.48" | Rx |
| 2023-Jan-04 | 12:00 | 2459949.0 | 2.6328 | 59°06'45.39" | +21°10'20.45" | +0°44'55.70" | 1° Gem 23'48.43" | Rx |
| 2023-Jan-05 | 12:00 | 2459950.0 | 2.6350 | 59°04'01.36" | +21°10'00.11" | +0°45'07.04" | 1° Gem 21'14.53" | Rx |
| 2023-Jan-06 | 12:00 | 2459951.0 | 2.6372 | 59°01'42.78" | +21°09'44.23" | +0°45'17.92" | 1° Gem 19'04.77" | Rx |
| 2023-Jan-07 | 12:00 | 2459952.0 | 2.6394 | 58°59'49.60" | +21°09'32.83" | +0°45'28.35" | 1° Gem 17'19.11" | Rx |
| 2023-Jan-08 | 12:00 | 2459953.0 | 2.6416 | 58°58'21.76" | +21°09'25.93" | +0°45'38.35" | 1° Gem 15'57.52" | Rx |
| 2023-Jan-09 | 12:00 | 2459954.0 | 2.6437 | 58°57'19.20" | +21°09'23.54" | +0°45'47.91" | 1° Gem 14'59.92" | Rx |
| 2023-Jan-10 | 12:00 | 2459955.0 | 2.6459 | 58°56'41.85" | +21°09'25.63" | +0°45'57.06" | 1° Gem 14'26.26" | Rx |
| 2023-Jan-11 | 12:00 | 2459956.0 | 2.6482 | 58°56'29.63" | +21°09'32.22" | +0°46'05.80" | 1° Gem 14'16.45" | Rx |
| 2023-Jan-12 | 12:00 | 2459957.0 | 2.6504 | 58°56'42.45" | +21°09'43.30" | +0°46'14.15" | 1° Gem 14'30.42" |    |
| 2023-Jan-13 | 12:00 | 2459958.0 | 2.6526 | 58°57'20.21" | +21°09'58.84" | +0°46'22.11" | 1° Gem 15'08.09" |    |
| 2023-Jan-14 | 12:00 | 2459959.0 | 2.6548 | 58°58'22.84" | +21°10'18.84" | +0°46'29.70" | 1° Gem 16'09.35" |    |
| 2023-Jan-15 | 12:00 | 2459960.0 | 2.6570 | 58°59'50.21" | +21°10'43.28" | +0°46'36.94" | 1° Gem 17'34.11" |    |
| 2023-Jan-16 | 12:00 | 2459961.0 | 2.6593 | 59°01'42.23" | +21°11'12.15" | +0°46'43.83" | 1° Gem 19'22.27" |    |
| 2023-Jan-17 | 12:00 | 2459962.0 | 2.6615 | 59°03'58.76" | +21°11'45.43" | +0°46'50.39" | 1° Gem 21'33.70" |    |
| 2023-Jan-18 | 12:00 | 2459963.0 | 2.6637 | 59°06'39.68" | +21°12'23.10" | +0°46'56.64" | 1° Gem 24'08.27" |    |
| 2023-Jan-19 | 12:00 | 2459964.0 | 2.6660 | 59°09'44.81" | +21°13'05.14" | +0°47'02.58" | 1° Gem 27'05.82" |    |
| 2023-Jan-20 | 12:00 | 2459965.0 | 2.6682 | 59°13'13.96" | +21°13'51.51" | +0°47'08.23" | 1° Gem 30'26.16" |    |
| 2023-Jan-21 | 12:00 | 2459966.0 | 2.6705 | 59°17'06.92" | +21°14'42.15" | +0°47'13.61" | 1° Gem 34'09.08" |    |
| 2023-Jan-22 | 12:00 | 2459967.0 | 2.6728 | 59°21'23.45" | +21°15'37.01" | +0°47'18.73" | 1° Gem 38'14.34" |    |
| 2023-Jan-23 | 12:00 | 2459968.0 | 2.6750 | 59°26'03.31" | +21°16'35.99" | +0°47'23.59" | 1° Gem 42'41.71" |    |
| 2023-Jan-24 | 12:00 | 2459969.0 | 2.6773 | 59°31'06.28" | +21°17'39.01" | +0°47'28.21" | 1° Gem 47'30.96" |    |
| 2023-Jan-25 | 12:00 | 2459970.0 | 2.6796 | 59°36'32.14" | +21°18'45.99" | +0°47'32.59" | 1° Gem 52'41.85" |    |
| 2023-Jan-26 | 12:00 | 2459971.0 | 2.6818 | 59°42'20.65" | +21°19'56.85" | +0°47'36.74" | 1° Gem 58'14.15" |    |
| 2023-Jan-27 | 12:00 | 2459972.0 | 2.6841 | 59°48'31.55" | +21°21'11.50" | +0°47'40.66" | 2° Gem 04'07.60" |    |
| 2023-Jan-28 | 12:00 | 2459973.0 | 2.6864 | 59°55'04.57" | +21°22'29.87" | +0°47'44.37" | 2° Gem 10'21.92" |    |
| 2023-Jan-29 | 12:00 | 2459974.0 | 2.6887 | 60°01'59.40" | +21°23'51.87" | +0°47'47.86" | 2° Gem 16'56.83" |    |
| 2023-Jan-30 | 12:00 | 2459975.0 | 2.6910 | 60°09'15.76" | +21°25'17.40" | +0°47'51.14" | 2° Gem 23'52.00" |    |
| 2023-Jan-31 | 12:00 | 2459976.0 | 2.6933 | 60°16'53.30" | +21°26'46.38" | +0°47'54.23" | 2° Gem 31'07.13" |    |
| 2023-Feb-01 | 12:00 | 2459977.0 | 2.6956 | 60°24'51.73" | +21°28'18.70" | +0°47'57.11" | 2° Gem 38'41.90" |    |
| 2023-Feb-02 | 12:00 | 2459978.0 | 2.6979 | 60°33'10.71" | +21°29'54.26" | +0°47'59.80" | 2° Gem 46'35.98" |    |
| 2023-Feb-03 | 12:00 | 2459979.0 | 2.7002 | 60°41'49.93" | +21°31'32.96" | +0°48'02.31" | 2° Gem 54'49.05" |    |
| 2023-Feb-04 | 12:00 | 2459980.0 | 2.7025 | 60°50'49.07" | +21°33'14.68" | +0°48'04.64" | 3° Gem 03'20.80" |    |
| 2023-Feb-05 | 12:00 | 2459981.0 | 2.7048 | 61°00'07.83" | +21°34'59.32" | +0°48'06.79" | 3° Gem 12'10.91" |    |
| 2023-Feb-06 | 12:00 | 2459982.0 | 2.7072 | 61°09'45.92" | +21°36'46.77" | +0°48'08.78" | 3° Gem 21'19.09" |    |
| 2023-Feb-07 | 12:00 | 2459983.0 | 2.7095 | 61°19'43.04" | +21°38'36.92" | +0°48'10.61" | 3° Gem 30'45.04" |    |

|             |       |           |        |              |               |              |                   |  |
|-------------|-------|-----------|--------|--------------|---------------|--------------|-------------------|--|
| 2023-Feb-08 | 12:00 | 2459984.0 | 2.7118 | 61°29'58.92" | +21°40'29.65" | +0°48'12.29" | 3° Gem 40'28.50"  |  |
| 2023-Feb-09 | 12:00 | 2459985.0 | 2.7142 | 61°40'33.32" | +21°42'24.88" | +0°48'13.83" | 3° Gem 50'29.19"  |  |
| 2023-Feb-10 | 12:00 | 2459986.0 | 2.7165 | 61°51'25.97" | +21°44'22.49" | +0°48'15.22" | 4° Gem 00'46.85"  |  |
| 2023-Feb-11 | 12:00 | 2459987.0 | 2.7188 | 62°02'36.63" | +21°46'22.39" | +0°48'16.49" | 4° Gem 11'21.23"  |  |
| 2023-Feb-12 | 12:00 | 2459988.0 | 2.7212 | 62°14'05.07" | +21°48'24.48" | +0°48'17.64" | 4° Gem 22'12.11"  |  |
| 2023-Feb-13 | 12:00 | 2459989.0 | 2.7235 | 62°25'51.06" | +21°50'28.69" | +0°48'18.68" | 4° Gem 33'19.22"  |  |
| 2023-Feb-14 | 12:00 | 2459990.0 | 2.7259 | 62°37'54.34" | +21°52'34.92" | +0°48'19.61" | 4° Gem 44'42.34"  |  |
| 2023-Feb-15 | 12:00 | 2459991.0 | 2.7282 | 62°50'14.69" | +21°54'43.07" | +0°48'20.45" | 4° Gem 56'21.21"  |  |
| 2023-Feb-16 | 12:00 | 2459992.0 | 2.7306 | 63°02'51.83" | +21°56'53.07" | +0°48'21.20" | 5° Gem 08'15.56"  |  |
| 2023-Feb-17 | 12:00 | 2459993.0 | 2.7330 | 63°15'45.50" | +21°59'04.81" | +0°48'21.87" | 5° Gem 20'25.14"  |  |
| 2023-Feb-18 | 12:00 | 2459994.0 | 2.7353 | 63°28'55.43" | +22°01'18.18" | +0°48'22.46" | 5° Gem 32'49.65"  |  |
| 2023-Feb-19 | 12:00 | 2459995.0 | 2.7377 | 63°42'21.35" | +22°03'33.07" | +0°48'22.98" | 5° Gem 45'28.82"  |  |
| 2023-Feb-20 | 12:00 | 2459996.0 | 2.7401 | 63°56'02.99" | +22°05'49.35" | +0°48'23.45" | 5° Gem 58'22.39"  |  |
| 2023-Feb-21 | 12:00 | 2459997.0 | 2.7424 | 64°10'00.11" | +22°08'06.91" | +0°48'23.85" | 6° Gem 11'30.11"  |  |
| 2023-Feb-22 | 12:00 | 2459998.0 | 2.7448 | 64°24'12.50" | +22°10'25.63" | +0°48'24.19" | 6° Gem 24'51.73"  |  |
| 2023-Feb-23 | 12:00 | 2459999.0 | 2.7472 | 64°38'39.91" | +22°12'45.40" | +0°48'24.47" | 6° Gem 38'27.03"  |  |
| 2023-Feb-24 | 12:00 | 2460000.0 | 2.7496 | 64°53'22.09" | +22°15'06.13" | +0°48'24.70" | 6° Gem 52'15.75"  |  |
| 2023-Feb-25 | 12:00 | 2460001.0 | 2.7520 | 65°08'18.77" | +22°17'27.72" | +0°48'24.87" | 7° Gem 06'17.62"  |  |
| 2023-Feb-26 | 12:00 | 2460002.0 | 2.7544 | 65°23'29.69" | +22°19'50.06" | +0°48'24.99" | 7° Gem 20'32.36"  |  |
| 2023-Feb-27 | 12:00 | 2460003.0 | 2.7568 | 65°38'54.55" | +22°22'13.07" | +0°48'25.06" | 7° Gem 34'59.70"  |  |
| 2023-Feb-28 | 12:00 | 2460004.0 | 2.7591 | 65°54'33.06" | +22°24'36.62" | +0°48'25.08" | 7° Gem 49'39.34"  |  |
| 2023-Mar-01 | 12:00 | 2460005.0 | 2.7615 | 66°10'24.96" | +22°27'00.62" | +0°48'25.04" | 8° Gem 04'31.02"  |  |
| 2023-Mar-02 | 12:00 | 2460006.0 | 2.7640 | 66°26'29.96" | +22°29'24.96" | +0°48'24.96" | 8° Gem 19'34.45"  |  |
| 2023-Mar-03 | 12:00 | 2460007.0 | 2.7664 | 66°42'47.80" | +22°31'49.54" | +0°48'24.84" | 8° Gem 34'49.37"  |  |
| 2023-Mar-04 | 12:00 | 2460008.0 | 2.7688 | 66°59'18.22" | +22°34'14.24" | +0°48'24.67" | 8° Gem 50'15.53"  |  |
| 2023-Mar-05 | 12:00 | 2460009.0 | 2.7712 | 67°16'00.97" | +22°36'38.98" | +0°48'24.46" | 9° Gem 05'52.69"  |  |
| 2023-Mar-06 | 12:00 | 2460010.0 | 2.7736 | 67°32'55.83" | +22°39'03.63" | +0°48'24.21" | 9° Gem 21'40.60"  |  |
| 2023-Mar-07 | 12:00 | 2460011.0 | 2.7760 | 67°50'02.57" | +22°41'28.11" | +0°48'23.93" | 9° Gem 37'39.06"  |  |
| 2023-Mar-08 | 12:00 | 2460012.0 | 2.7784 | 68°07'20.99" | +22°43'52.32" | +0°48'23.62" | 9° Gem 53'47.85"  |  |
| 2023-Mar-09 | 12:00 | 2460013.0 | 2.7808 | 68°24'50.90" | +22°46'16.17" | +0°48'23.28" | 10° Gem 10'06.79" |  |
| 2023-Mar-10 | 12:00 | 2460014.0 | 2.7833 | 68°42'32.11" | +22°48'39.57" | +0°48'22.92" | 10° Gem 26'35.70" |  |
| 2023-Mar-11 | 12:00 | 2460015.0 | 2.7857 | 69°00'24.45" | +22°51'02.44" | +0°48'22.54" | 10° Gem 43'14.39" |  |
| 2023-Mar-12 | 12:00 | 2460016.0 | 2.7881 | 69°18'27.74" | +22°53'24.72" | +0°48'22.14" | 11° Gem 00'02.72" |  |
| 2023-Mar-13 | 12:00 | 2460017.0 | 2.7906 | 69°36'41.82" | +22°55'46.32" | +0°48'21.74" | 11° Gem 17'00.49" |  |
| 2023-Mar-14 | 12:00 | 2460018.0 | 2.7930 | 69°55'06.50" | +22°58'07.18" | +0°48'21.33" | 11° Gem 34'07.55" |  |
| 2023-Mar-15 | 12:00 | 2460019.0 | 2.7954 | 70°13'41.59" | +23°00'27.23" | +0°48'20.92" | 11° Gem 51'23.69" |  |
| 2023-Mar-16 | 12:00 | 2460020.0 | 2.7979 | 70°32'26.90" | +23°02'46.39" | +0°48'20.52" | 12° Gem 08'48.75" |  |
| 2023-Mar-17 | 12:00 | 2460021.0 | 2.8003 | 70°51'22.21" | +23°05'04.58" | +0°48'20.12" | 12° Gem 26'22.51" |  |
| 2023-Mar-18 | 12:00 | 2460022.0 | 2.8027 | 71°10'27.34" | +23°07'21.71" | +0°48'19.72" | 12° Gem 44'04.79" |  |
| 2023-Mar-19 | 12:00 | 2460023.0 | 2.8052 | 71°29'42.10" | +23°09'37.69" | +0°48'19.34" | 13° Gem 01'55.41" |  |
| 2023-Mar-20 | 12:00 | 2460024.0 | 2.8076 | 71°49'06.30" | +23°11'52.42" | +0°48'18.98" | 13° Gem 19'54.19" |  |
| 2023-Mar-21 | 12:00 | 2460025.0 | 2.8101 | 72°08'39.81" | +23°14'05.82" | +0°48'18.62" | 13° Gem 38'00.99" |  |
| 2023-Mar-22 | 12:00 | 2460026.0 | 2.8125 | 72°28'22.46" | +23°16'17.79" | +0°48'18.28" | 13° Gem 56'15.67" |  |
| 2023-Mar-23 | 12:00 | 2460027.0 | 2.8150 | 72°48'14.09" | +23°18'28.28" | +0°48'17.95" | 14° Gem 14'38.06" |  |
| 2023-Mar-24 | 12:00 | 2460028.0 | 2.8174 | 73°08'14.54" | +23°20'37.22" | +0°48'17.63" | 14° Gem 33'08.02" |  |
| 2023-Mar-25 | 12:00 | 2460029.0 | 2.8199 | 73°28'23.60" | +23°22'44.53" | +0°48'17.31" | 14° Gem 51'45.35" |  |

|             |       |           |        |              |               |              |                   |  |
|-------------|-------|-----------|--------|--------------|---------------|--------------|-------------------|--|
| 2023-Mar-26 | 12:00 | 2460030.0 | 2.8224 | 73°48'41.07" | +23°24'50.16" | +0°48'17.01" | 15° Gem 10'29.87" |  |
| 2023-Mar-27 | 12:00 | 2460031.0 | 2.8248 | 74°09'06.74" | +23°26'54.03" | +0°48'16.72" | 15° Gem 29'21.38" |  |
| 2023-Mar-28 | 12:00 | 2460032.0 | 2.8273 | 74°29'40.39" | +23°28'56.07" | +0°48'16.43" | 15° Gem 48'19.68" |  |
| 2023-Mar-29 | 12:00 | 2460033.0 | 2.8298 | 74°50'21.81" | +23°30'56.22" | +0°48'16.15" | 16° Gem 07'24.59" |  |
| 2023-Mar-30 | 12:00 | 2460034.0 | 2.8322 | 75°11'10.82" | +23°32'54.40" | +0°48'15.88" | 16° Gem 26'35.92" |  |
| 2023-Mar-31 | 12:00 | 2460035.0 | 2.8347 | 75°32'07.21" | +23°34'50.53" | +0°48'15.61" | 16° Gem 45'53.49" |  |
| 2023-Apr-01 | 12:00 | 2460036.0 | 2.8372 | 75°53'10.80" | +23°36'44.56" | +0°48'15.36" | 17° Gem 05'17.14" |  |
| 2023-Apr-02 | 12:00 | 2460037.0 | 2.8396 | 76°14'21.42" | +23°38'36.41" | +0°48'15.12" | 17° Gem 24'46.73" |  |
| 2023-Apr-03 | 12:00 | 2460038.0 | 2.8421 | 76°35'38.92" | +23°40'26.01" | +0°48'14.89" | 17° Gem 44'22.09" |  |
| 2023-Apr-04 | 12:00 | 2460039.0 | 2.8446 | 76°57'03.14" | +23°42'13.30" | +0°48'14.67" | 18° Gem 04'03.11" |  |
| 2023-Apr-05 | 12:00 | 2460040.0 | 2.8471 | 77°18'33.95" | +23°43'58.22" | +0°48'14.47" | 18° Gem 23'49.65" |  |
| 2023-Apr-06 | 12:00 | 2460041.0 | 2.8495 | 77°40'11.23" | +23°45'40.72" | +0°48'14.29" | 18° Gem 43'41.63" |  |
| 2023-Apr-07 | 12:00 | 2460042.0 | 2.8520 | 78°01'54.86" | +23°47'20.75" | +0°48'14.13" | 19° Gem 03'38.92" |  |
| 2023-Apr-08 | 12:00 | 2460043.0 | 2.8545 | 78°23'44.72" | +23°48'58.26" | +0°48'14.00" | 19° Gem 23'41.44" |  |
| 2023-Apr-09 | 12:00 | 2460044.0 | 2.8570 | 78°45'40.69" | +23°50'33.21" | +0°48'13.89" | 19° Gem 43'49.09" |  |
| 2023-Apr-10 | 12:00 | 2460045.0 | 2.8595 | 79°07'42.65" | +23°52'05.57" | +0°48'13.81" | 20° Gem 04'01.76" |  |
| 2023-Apr-11 | 12:00 | 2460046.0 | 2.8619 | 79°29'50.48" | +23°53'35.30" | +0°48'13.76" | 20° Gem 24'19.34" |  |
| 2023-Apr-12 | 12:00 | 2460047.0 | 2.8644 | 79°52'04.01" | +23°55'02.37" | +0°48'13.75" | 20° Gem 44'41.70" |  |
| 2023-Apr-13 | 12:00 | 2460048.0 | 2.8669 | 80°14'23.11" | +23°56'26.71" | +0°48'13.78" | 21° Gem 05'08.73" |  |
| 2023-Apr-14 | 12:00 | 2460049.0 | 2.8694 | 80°36'47.64" | +23°57'48.29" | +0°48'13.84" | 21° Gem 25'40.30" |  |
| 2023-Apr-15 | 12:00 | 2460050.0 | 2.8719 | 80°59'17.46" | +23°59'07.03" | +0°48'13.94" | 21° Gem 46'16.30" |  |
| 2023-Apr-16 | 12:00 | 2460051.0 | 2.8744 | 81°21'52.44" | +24°00'22.90" | +0°48'14.09" | 22° Gem 06'56.62" |  |
| 2023-Apr-17 | 12:00 | 2460052.0 | 2.8769 | 81°44'32.48" | +24°01'35.82" | +0°48'14.27" | 22° Gem 27'41.18" |  |
| 2023-Apr-18 | 12:00 | 2460053.0 | 2.8794 | 82°07'17.49" | +24°02'45.75" | +0°48'14.49" | 22° Gem 48'29.90" |  |
| 2023-Apr-19 | 12:00 | 2460054.0 | 2.8819 | 82°30'07.35" | +24°03'52.64" | +0°48'14.75" | 23° Gem 09'22.71" |  |
| 2023-Apr-20 | 12:00 | 2460055.0 | 2.8844 | 82°53'01.97" | +24°04'56.46" | +0°48'15.05" | 23° Gem 30'19.52" |  |
| 2023-Apr-21 | 12:00 | 2460056.0 | 2.8869 | 83°16'01.21" | +24°05'57.18" | +0°48'15.38" | 23° Gem 51'20.21" |  |
| 2023-Apr-22 | 12:00 | 2460057.0 | 2.8894 | 83°39'04.93" | +24°06'54.77" | +0°48'15.74" | 24° Gem 12'24.69" |  |
| 2023-Apr-23 | 12:00 | 2460058.0 | 2.8918 | 84°02'12.97" | +24°07'49.20" | +0°48'16.14" | 24° Gem 33'32.80" |  |
| 2023-Apr-24 | 12:00 | 2460059.0 | 2.8943 | 84°25'25.16" | +24°08'40.44" | +0°48'16.56" | 24° Gem 54'44.43" |  |
| 2023-Apr-25 | 12:00 | 2460060.0 | 2.8968 | 84°48'41.34" | +24°09'28.46" | +0°48'17.02" | 25° Gem 15'59.42" |  |
| 2023-Apr-26 | 12:00 | 2460061.0 | 2.8993 | 85°12'01.35" | +24°10'13.21" | +0°48'17.51" | 25° Gem 37'17.67" |  |
| 2023-Apr-27 | 12:00 | 2460062.0 | 2.9018 | 85°35'25.03" | +24°10'54.66" | +0°48'18.03" | 25° Gem 58'39.03" |  |
| 2023-Apr-28 | 12:00 | 2460063.0 | 2.9044 | 85°58'52.26" | +24°11'32.78" | +0°48'18.57" | 26° Gem 20'03.41" |  |
| 2023-Apr-29 | 12:00 | 2460064.0 | 2.9069 | 86°22'22.88" | +24°12'07.53" | +0°48'19.15" | 26° Gem 41'30.70" |  |
| 2023-Apr-30 | 12:00 | 2460065.0 | 2.9094 | 86°45'56.79" | +24°12'38.87" | +0°48'19.76" | 27° Gem 03'00.79" |  |
| 2023-May-01 | 12:00 | 2460066.0 | 2.9119 | 87°09'33.87" | +24°13'06.77" | +0°48'20.41" | 27° Gem 24'33.62" |  |
| 2023-May-02 | 12:00 | 2460067.0 | 2.9144 | 87°33'14.01" | +24°13'31.21" | +0°48'21.09" | 27° Gem 46'09.09" |  |
| 2023-May-03 | 12:00 | 2460068.0 | 2.9169 | 87°56'57.12" | +24°13'52.15" | +0°48'21.80" | 28° Gem 07'47.15" |  |
| 2023-May-04 | 12:00 | 2460069.0 | 2.9194 | 88°20'43.12" | +24°14'09.58" | +0°48'22.55" | 28° Gem 29'27.74" |  |
| 2023-May-05 | 12:00 | 2460070.0 | 2.9219 | 88°44'31.94" | +24°14'23.48" | +0°48'23.34" | 28° Gem 51'10.80" |  |
| 2023-May-06 | 12:00 | 2460071.0 | 2.9244 | 89°08'23.48" | +24°14'33.84" | +0°48'24.18" | 29° Gem 12'56.29" |  |
| 2023-May-07 | 12:00 | 2460072.0 | 2.9269 | 89°32'17.67" | +24°14'40.65" | +0°48'25.06" | 29° Gem 34'44.14" |  |
| 2023-May-08 | 12:00 | 2460073.0 | 2.9294 | 89°56'14.41" | +24°14'43.92" | +0°48'25.98" | 29° Gem 56'34.28" |  |
| 2023-May-09 | 12:00 | 2460074.0 | 2.9319 | 90°20'13.58" | +24°14'43.62" | +0°48'26.95" | 0° Can 18'26.64"  |  |
| 2023-May-10 | 12:00 | 2460075.0 | 2.9344 | 90°44'15.07" | +24°14'39.75" | +0°48'27.98" | 0° Can 40'21.13"  |  |

|             |       |           |        |              |               |              |                  |
|-------------|-------|-----------|--------|--------------|---------------|--------------|------------------|
| 2023-May-11 | 12:00 | 2460076.0 | 2.9369 | 91°08'18.77" | +24°14'32.28" | +0°48'29.05" | 1° Can 02'17.66" |
| 2023-May-12 | 12:00 | 2460077.0 | 2.9394 | 91°32'24.58" | +24°14'21.19" | +0°48'30.18" | 1° Can 24'16.17" |
| 2023-May-13 | 12:00 | 2460078.0 | 2.9420 | 91°56'32.41" | +24°14'06.46" | +0°48'31.36" | 1° Can 46'16.59" |
| 2023-May-14 | 12:00 | 2460079.0 | 2.9445 | 92°20'42.18" | +24°13'48.04" | +0°48'32.59" | 2° Can 08'18.87" |
| 2023-May-15 | 12:00 | 2460080.0 | 2.9470 | 92°44'53.83" | +24°13'25.92" | +0°48'33.87" | 2° Can 30'22.99" |
| 2023-May-16 | 12:00 | 2460081.0 | 2.9495 | 93°09'07.30" | +24°13'00.08" | +0°48'35.21" | 2° Can 52'28.90" |
| 2023-May-17 | 12:00 | 2460082.0 | 2.9520 | 93°33'22.51" | +24°12'30.52" | +0°48'36.59" | 3° Can 14'36.56" |
| 2023-May-18 | 12:00 | 2460083.0 | 2.9545 | 93°57'39.39" | +24°11'57.22" | +0°48'38.02" | 3° Can 36'45.91" |
| 2023-May-19 | 12:00 | 2460084.0 | 2.9570 | 94°21'57.82" | +24°11'20.19" | +0°48'39.49" | 3° Can 58'56.89" |
| 2023-May-20 | 12:00 | 2460085.0 | 2.9595 | 94°46'17.69" | +24°10'39.43" | +0°48'41.01" | 4° Can 21'09.40" |
| 2023-May-21 | 12:00 | 2460086.0 | 2.9620 | 95°10'38.88" | +24°09'54.94" | +0°48'42.57" | 4° Can 43'23.34" |
| 2023-May-22 | 12:00 | 2460087.0 | 2.9646 | 95°35'01.24" | +24°09'06.72" | +0°48'44.18" | 5° Can 05'38.63" |
| 2023-May-23 | 12:00 | 2460088.0 | 2.9671 | 95°59'24.65" | +24°08'14.76" | +0°48'45.83" | 5° Can 27'55.16" |
| 2023-May-24 | 12:00 | 2460089.0 | 2.9696 | 96°23'48.98" | +24°07'19.07" | +0°48'47.51" | 5° Can 50'12.83" |
| 2023-May-25 | 12:00 | 2460090.0 | 2.9721 | 96°48'14.12" | +24°06'19.62" | +0°48'49.25" | 6° Can 12'31.57" |
| 2023-May-26 | 12:00 | 2460091.0 | 2.9746 | 97°12'39.95" | +24°05'16.41" | +0°48'51.02" | 6° Can 34'51.30" |
| 2023-May-27 | 12:00 | 2460092.0 | 2.9771 | 97°37'06.38" | +24°04'09.44" | +0°48'52.84" | 6° Can 57'11.94" |
| 2023-May-28 | 12:00 | 2460093.0 | 2.9796 | 98°01'33.32" | +24°02'58.70" | +0°48'54.70" | 7° Can 19'33.43" |
| 2023-May-29 | 12:00 | 2460094.0 | 2.9821 | 98°26'00.69" | +24°01'44.18" | +0°48'56.61" | 7° Can 41'55.73" |
| 2023-May-30 | 12:00 | 2460095.0 | 2.9846 | 98°50'28.41" | +24°00'25.89" | +0°48'58.57" | 8° Can 04'18.79" |
| 2023-May-31 | 12:00 | 2460096.0 | 2.9871 | 99°14'56.42" | +23°59'03.83" | +0°49'00.57" | 8° Can 26'42.57" |