

Solar Almanac 2031 — Sun GHA & Decl (UT) — 01 Jan to 20 Jan

UT	01 Jan	02 Jan	03 Jan	04 Jan	05 Jan	06 Jan	07 Jan	08 Jan	09 Jan	10 Jan
00	179° 11.7' 23° 01.8' S	179° 04.6' 22° 56.8' S	178° 57.6' 22° 51.4' S	178° 50.7' 22° 45.5' S	178° 43.9' 22° 39.2' S	178° 37.3' 22° 32.4' S	178° 30.7' 22° 25.1' S	178° 24.3' 22° 17.5' S	178° 18.0' 22° 09.4' S	178° 11.8' 22° 00.8' S
01	194° 11.4' 23° 01.6' S	194° 04.3' 22° 56.6' S	193° 57.3' 22° 51.2' S	193° 50.4' 22° 45.2' S	193° 43.7' 22° 38.9' S	193° 37.0' 22° 32.1' S	193° 30.4' 22° 24.8' S	193° 24.0' 22° 17.1' S	193° 17.7' 22° 09.0' S	193° 11.5' 22° 00.4' S
02	209° 11.1' 23° 01.4' S	209° 04.0' 22° 56.4' S	208° 57.0' 22° 50.9' S	208° 50.2' 22° 45.0' S	208° 43.4' 22° 38.6' S	208° 36.7' 22° 31.8' S	208° 30.2' 22° 24.5' S	208° 23.7' 22° 16.8' S	208° 17.4' 22° 08.7' S	208° 11.3' 22° 00.1' S
03	224° 10.8' 23° 01.2' S	224° 03.7' 22° 56.2' S	223° 56.7' 22° 50.7' S	223° 49.9' 22° 44.7' S	223° 43.1' 22° 38.3' S	223° 36.4' 22° 31.5' S	223° 29.9' 22° 24.2' S	223° 23.5' 22° 16.5' S	223° 17.2' 22° 08.3' S	223° 11.0' 21° 59.7' S
04	239° 10.5' 23° 01.0' S	239° 03.4' 22° 56.0' S	238° 56.5' 22° 50.4' S	238° 49.6' 22° 44.5' S	238° 42.8' 22° 38.1' S	238° 36.2' 22° 31.2' S	238° 29.6' 22° 23.9' S	238° 23.2' 22° 16.1' S	238° 16.9' 22° 08.0' S	238° 10.8' 21° 59.3' S
05	254° 10.2' 23° 00.8' S	254° 03.1' 22° 55.7' S	253° 56.2' 22° 50.2' S	253° 49.3' 22° 44.2' S	253° 42.5' 22° 37.8' S	253° 35.9' 22° 30.9' S	253° 29.4' 22° 23.6' S	253° 22.9' 22° 15.8' S	253° 16.7' 22° 07.6' S	253° 10.5' 21° 59.0' S
06	269° 09.9' 23° 00.6' S	269° 02.8' 22° 55.5' S	268° 55.9' 22° 50.0' S	268° 49.0' 22° 44.0' S	268° 42.3' 22° 37.5' S	268° 35.6' 22° 30.6' S	268° 29.1' 22° 23.3' S	268° 22.7' 22° 15.5' S	268° 16.4' 22° 07.3' S	268° 10.3' 21° 58.6' S
07	284° 09.6' 23° 00.4' S	284° 02.5' 22° 55.3' S	283° 55.6' 22° 49.7' S	283° 48.7' 22° 43.7' S	283° 42.0' 22° 37.2' S	283° 35.3' 22° 30.3' S	283° 28.8' 22° 22.9' S	283° 22.4' 22° 15.1' S	283° 16.1' 22° 06.9' S	283° 10.0' 21° 58.2' S
08	299° 09.3' 23° 00.2' S	299° 02.3' 22° 55.1' S	298° 55.3' 22° 49.5' S	298° 48.5' 22° 43.4' S	298° 41.7' 22° 36.9' S	298° 35.1' 22° 30.0' S	298° 28.5' 22° 22.6' S	298° 22.1' 22° 14.8' S	298° 15.9' 22° 06.6' S	298° 09.7' 21° 57.9' S
09	314° 09.0' 23° 00.0' S	314° 02.0' 22° 54.8' S	313° 55.0' 22° 49.2' S	313° 48.2' 22° 43.2' S	313° 41.4' 22° 36.7' S	313° 34.8' 22° 29.7' S	313° 28.3' 22° 22.3' S	313° 21.9' 22° 14.5' S	313° 15.6' 22° 06.2' S	313° 09.5' 21° 57.5' S
10	329° 08.7' 22° 59.8' S	329° 01.7' 22° 54.6' S	328° 54.7' 22° 49.0' S	328° 47.9' 22° 42.9' S	328° 41.1' 22° 36.4' S	328° 34.5' 22° 29.4' S	328° 28.0' 22° 22.0' S	328° 21.6' 22° 14.1' S	328° 15.4' 22° 05.8' S	328° 09.2' 21° 57.1' S
11	344° 08.4' 22° 59.6' S	344° 01.4' 22° 54.4' S	343° 54.4' 22° 48.7' S	343° 47.6' 22° 42.7' S	343° 40.9' 22° 36.1' S	343° 34.2' 22° 29.1' S	343° 27.7' 22° 21.7' S	343° 21.4' 22° 13.8' S	343° 15.1' 22° 05.5' S	343° 09.0' 21° 56.7' S
12	359° 08.1' 22° 59.4' S	359° 01.1' 22° 54.2' S	358° 54.2' 22° 48.5' S	358° 47.3' 22° 42.4' S	358° 40.6' 22° 35.8' S	358° 34.0' 22° 28.8' S	358° 27.5' 22° 21.4' S	358° 21.1' 22° 13.5' S	358° 14.8' 22° 05.1' S	358° 08.7' 21° 56.4' S
13	014° 07.8' 22° 59.2' S	014° 00.8' 22° 53.9' S	013° 53.9' 22° 48.3' S	013° 47.0' 22° 42.1' S	013° 40.3' 22° 35.5' S	013° 33.7' 22° 28.5' S	013° 27.2' 22° 21.0' S	013° 20.8' 22° 13.1' S	013° 14.6' 22° 04.8' S	013° 08.5' 21° 56.0' S
14	029° 07.5' 22° 59.0' S	029° 00.5' 22° 53.7' S	028° 53.6' 22° 48.0' S	028° 46.8' 22° 41.9' S	028° 40.0' 22° 35.3' S	028° 33.4' 22° 28.2' S	028° 26.9' 22° 20.7' S	028° 20.6' 22° 12.8' S	028° 14.3' 22° 04.4' S	028° 08.2' 21° 55.6' S
15	044° 07.2' 22° 58.7' S	044° 00.2' 22° 53.5' S	043° 53.3' 22° 47.8' S	043° 46.5' 22° 41.6' S	043° 39.8' 22° 35.0' S	043° 33.2' 22° 27.9' S	043° 26.7' 22° 20.4' S	043° 20.3' 22° 12.4' S	043° 14.1' 22° 04.1' S	043° 08.0' 21° 55.2' S
16	059° 06.9' 22° 58.5' S	058° 59.9' 22° 53.3' S	058° 53.0' 22° 47.5' S	058° 46.2' 22° 41.3' S	058° 39.5' 22° 34.7' S	058° 32.9' 22° 27.6' S	058° 26.4' 22° 20.1' S	058° 20.0' 22° 12.1' S	058° 13.8' 22° 03.7' S	058° 07.7' 21° 54.9' S
17	074° 06.6' 22° 58.3' S	073° 59.6' 22° 53.0' S	073° 52.7' 22° 47.3' S	073° 45.9' 22° 41.1' S	073° 39.2' 22° 34.4' S	073° 32.6' 22° 27.3' S	073° 26.1' 22° 19.7' S	073° 19.8' 22° 11.8' S	073° 13.6' 22° 03.3' S	073° 07.5' 21° 54.5' S
18	089° 06.3' 22° 58.1' S	088° 59.3' 22° 52.8' S	088° 52.4' 22° 47.0' S	088° 45.6' 22° 40.8' S	088° 38.9' 22° 34.1' S	088° 32.3' 22° 27.0' S	088° 25.9' 22° 19.4' S	088° 19.5' 22° 11.4' S	088° 13.3' 22° 03.0' S	088° 07.2' 21° 54.1' S
19	104° 06.1' 22° 57.9' S	103° 59.1' 22° 52.6' S	103° 52.2' 22° 46.8' S	103° 45.3' 22° 40.5' S	103° 38.6' 22° 33.8' S	103° 32.1' 22° 26.7' S	103° 25.6' 22° 19.1' S	103° 19.3' 22° 11.1' S	103° 13.1' 22° 02.6' S	103° 07.0' 21° 53.7' S
20	119° 05.8' 22° 57.7' S	118° 58.8' 22° 52.3' S	118° 51.9' 22° 46.5' S	118° 45.1' 22° 40.2' S	118° 38.4' 22° 33.5' S	118° 31.8' 22° 26.4' S	118° 25.3' 22° 18.8' S	118° 19.0' 22° 10.7' S	118° 12.8' 22° 02.3' S	118° 06.7' 21° 53.4' S
21	134° 05.5' 22° 57.5' S	133° 58.5' 22° 52.1' S	133° 51.6' 22° 46.3' S	133° 44.8' 22° 40.0' S	133° 38.1' 22° 33.2' S	133° 31.5' 22° 26.1' S	133° 25.1' 22° 18.4' S	133° 18.7' 22° 10.4' S	133° 12.5' 22° 01.9' S	133° 06.5' 21° 53.0' S
22	149° 05.2' 22° 57.3' S	148° 58.2' 22° 51.9' S	148° 51.3' 22° 46.0' S	148° 44.5' 22° 39.7' S	148° 37.8' 22° 33.0' S	148° 31.2' 22° 25.8' S	148° 24.8' 22° 18.1' S	148° 18.5' 22° 10.0' S	148° 12.3' 22° 01.5' S	148° 06.2' 21° 52.6' S
23	164° 04.9' 22° 57.0' S	163° 57.9' 22° 51.6' S	163° 51.0' 22° 45.8' S	163° 44.2' 22° 39.4' S	163° 37.5' 22° 32.7' S	163° 31.0' 22° 25.4' S	163° 24.5' 22° 17.8' S	163° 18.2' 22° 09.7' S	163° 12.0' 22° 01.2' S	163° 06.0' 21° 52.2' S

UT	11 Jan	12 Jan	13 Jan	14 Jan	15 Jan	16 Jan	17 Jan	18 Jan	19 Jan	20 Jan
00	178° 05.7' 21° 51.8' S	177° 59.8' 21° 42.4' S	177° 54.1' 21° 32.6' S	177° 48.5' 21° 22.4' S	177° 43.0' 21° 11.7' S	177° 37.8' 21° 00.6' S	177° 32.6' 20° 49.2' S	177° 27.7' 20° 37.3' S	177° 22.9' 20° 25.0' S	177° 18.3' 20° 12.4' S
01	193° 05.5' 21° 51.4' S	192° 59.6' 21° 42.0' S	192° 53.8' 21° 32.2' S	192° 48.3' 21° 21.9' S	192° 42.8' 21° 11.3' S	192° 37.5' 21° 00.2' S	192° 32.4' 20° 48.7' S	192° 27.5' 20° 36.8' S	192° 22.7' 20° 24.5' S	192° 18.1' 20° 11.9' S
02	208° 05.2' 21° 51.1' S	207° 59.3' 21° 41.6' S	207° 53.6' 21° 31.8' S	207° 48.0' 21° 21.5' S	207° 42.6' 21° 10.8' S	207° 37.3' 20° 59.7' S	207° 32.2' 20° 48.2' S	207° 27.3' 20° 36.3' S	207° 22.5' 20° 24.0' S	207° 17.9' 20° 11.3' S
03	223° 05.0' 21° 50.7' S	222° 59.1' 21° 41.2' S	222° 53.4' 21° 31.3' S	222° 47.8' 21° 21.0' S	222° 42.4' 21° 10.3' S	222° 37.1' 20° 59.2' S	222° 32.0' 20° 47.7' S	222° 27.1' 20° 35.8' S	222° 22.3' 20° 23.5' S	222° 17.7' 20° 10.8' S
04	238° 04.7' 21° 50.3' S	237° 58.9' 21° 40.8' S	237° 53.1' 21° 30.9' S	237° 47.6' 21° 20.6' S	237° 42.1' 21° 09.9' S	237° 36.9' 20° 58.8' S	237° 31.8' 20° 47.2' S	237° 26.9' 20° 35.3' S	237° 22.1' 20° 23.0' S	237° 17.6' 20° 10.3' S
05	253° 04.5' 21° 49.9' S	252° 58.6' 21° 40.4' S	252° 52.9' 21° 30.5' S	252° 47.3' 21° 20.2' S	252° 41.9' 21° 09.4' S	252° 36.7' 20° 58.3' S	252° 31.6' 20° 46.7' S	252° 26.7' 20° 34.8' S	252° 21.9' 20° 22.4' S	252° 17.4' 20° 09.7' S
06	268° 04.2' 21° 49.5' S	267° 58.4' 21° 40.0' S	267° 52.7' 21° 30.1' S	267° 47.1' 21° 19.7' S	267° 41.7' 21° 09.0' S	267° 36.5' 20° 57.8' S	267° 31.4' 20° 46.2' S	267° 26.5' 20° 34.3' S	267° 21.7' 20° 21.9' S	267° 17.2' 20° 09.2' S
07	283° 04.0' 21° 49.1' S	282° 58.1' 21° 39.6' S	282° 52.4' 21° 29.7' S	282° 46.9' 21° 19.3' S	282° 41.5' 21° 08.5' S	282° 36.2' 20° 57.3' S	282° 31.2' 20° 45.8' S	282° 26.3' 20° 33.8' S	282° 21.5' 20° 21.4' S	282° 17.0' 20° 08.6' S
08	298° 03.8' 21° 48.7' S	297° 57.9' 21° 39.2' S	297° 52.2' 21° 29.2' S	297° 46.6' 21° 18.9' S	297° 41.3' 21° 08.1' S	297° 36.0' 20° 56.9' S	297° 31.0' 20° 45.3' S	297° 26.1' 20° 33.3' S	297° 21.4' 20° 20.9' S	297° 16.8' 20° 08.1' S
09	313° 03.5' 21° 48.4' S	312° 57.7' 21° 38.8' S	312° 52.0' 21° 28.8' S	312° 46.4' 21° 18.4' S	312° 41.0' 21° 07.6' S	312° 35.8' 20° 56.4' S	312° 30.8' 20° 44.8' S	312° 25.9' 20° 32.8' S	312° 21.2' 20° 20.4' S	312° 16.6' 20° 07.6' S
10	328° 03.3' 21° 48.0' S	327° 57.4' 21° 38.4' S	327° 51.7' 21° 28.4' S	327° 46.2' 21° 18.0' S	327° 40.8' 21° 07.1' S	327° 35.6' 20° 55.9' S	327° 30.6' 20° 44.3' S	327° 25.7' 20° 32.2' S	327° 21.0' 20° 19.8' S	327° 16.4' 20° 07.0' S
11	343° 03.0' 21° 47.6' S	342° 57.2' 21° 38.0' S	342° 51.5' 21° 28.0' S	342° 46.0' 21° 17.5' S	342° 40.6' 21° 06.7' S	342° 35.4' 20° 55.4' S	342° 30.3' 20° 43.8' S	342° 25.5' 20° 31.7' S	342° 20.8' 20° 19.3' S	342° 16.3' 20° 06.5' S
12	358° 02.8' 21° 47.2' S	357° 56.9' 21° 37.6' S	357° 51.3' 21° 27.5' S	357° 45.7' 21° 17.1' S	357° 40.4' 21° 06.2' S	357° 35.2' 20° 55.0' S	357° 30.1' 20° 43.3' S	357° 25.3' 20° 31.2' S	357° 20.6' 20° 18.8' S	357° 16.1' 20° 05.9' S
13	013° 02.5' 21° 46.8' S	012° 56.7' 21° 37.2' S	012° 51.0' 21° 27.1' S	012° 45.5' 21° 16.6' S	012° 40.2' 21° 05.8' S	012° 35.0' 20° 54.5' S	012° 29.9' 20° 42.8' S	012° 25.1' 20° 30.7' S	012° 20.4' 20° 18.2' S	012° 15.9' 20° 05.4' S
14	028° 02.3' 21° 46.4' S	027° 56.5' 21° 36.7' S	027° 50.8' 21° 26.7' S	027° 45.3' 21° 16.2' S	027° 39.9' 21° 05.3' S	027° 34.7' 20° 54.0' S	027° 29.7' 20° 42.3' S	027° 24.9' 20° 30.2' S	027° 20.2' 20° 17.7' S	027° 15.7' 20° 04.9' S
15	043° 02.0' 21° 46.0' S	042° 56.2' 21° 36.3' S	042° 50.6' 21° 26.2' S	042° 45.1' 21° 15.7' S	042° 39.7' 21° 04.8' S	042° 34.5' 20° 53.5' S	042° 29.5' 20° 41.8' S	042° 24.7' 20° 29.7' S	042° 20.0' 20° 17.2' S	042° 15.5' 20° 04.3' S
16	058° 01.8' 21° 45.6' S	057° 56.0' 21° 35.9' S	057°							

Solar Almanac 2031 — Sun GHA & Decl (UT) — 21 Jan to 09 Feb

UT	21 Jan	22 Jan	23 Jan	24 Jan	25 Jan	26 Jan	27 Jan	28 Jan	29 Jan	30 Jan
00	177° 13.9' 19° 59.4' S	177° 09.7' 19° 46.0' S	177° 05.6' 19° 32.2' S	177° 01.8' 19° 18.1' S	176° 58.1' 19° 03.6' S	176° 54.7' 18° 48.8' S	176° 51.4' 18° 33.6' S	176° 48.4' 18° 18.1' S	176° 45.5' 18° 02.3' S	176° 42.9' 17° 46.1' S
01	192° 13.7' 19° 58.8' S	192° 09.5' 19° 45.4' S	192° 05.4' 19° 31.6' S	192° 01.6' 19° 17.5' S	191° 58.0' 19° 03.0' S	191° 54.5' 18° 48.1' S	191° 51.3' 18° 33.0' S	191° 48.2' 18° 17.4' S	191° 45.4' 18° 01.6' S	191° 42.8' 17° 45.4' S
02	207° 13.5' 19° 58.3' S	207° 09.3' 19° 44.8' S	207° 05.3' 19° 31.1' S	207° 01.4' 19° 16.9' S	206° 57.8' 19° 02.4' S	206° 54.4' 18° 47.5' S	206° 51.1' 18° 32.3' S	206° 48.1' 18° 16.8' S	206° 45.3' 18° 00.9' S	206° 42.7' 17° 44.7' S
03	222° 13.3' 19° 57.7' S	222° 09.1' 19° 44.3' S	222° 05.1' 19° 30.5' S	222° 01.3' 19° 16.3' S	221° 57.7' 19° 01.8' S	221° 54.2' 18° 46.9' S	221° 51.0' 18° 31.7' S	221° 48.0' 18° 16.1' S	221° 45.2' 17° 59.6' S	221° 42.6' 17° 44.0' S
04	237° 13.2' 19° 57.2' S	237° 09.0' 19° 43.7' S	237° 05.0' 19° 29.9' S	237° 01.1' 19° 15.7' S	236° 57.5' 19° 01.2' S	236° 54.1' 18° 46.3' S	236° 50.9' 18° 31.0' S	236° 47.9' 18° 15.5' S	236° 45.1' 17° 59.6' S	236° 42.5' 17° 43.4' S
05	252° 13.0' 19° 56.6' S	252° 08.8' 19° 43.1' S	252° 04.8' 19° 29.3' S	252° 01.0' 19° 15.1' S	251° 57.4' 19° 00.5' S	251° 54.0' 18° 45.6' S	251° 50.7' 18° 30.4' S	251° 47.7' 18° 14.8' S	251° 45.0' 17° 58.9' S	251° 42.4' 17° 42.7' S
06	267° 12.8' 19° 56.1' S	267° 08.6' 19° 42.6' S	267° 04.6' 19° 28.7' S	267° 00.8' 19° 14.5' S	266° 57.2' 18° 59.9' S	266° 53.8' 18° 45.0' S	266° 50.6' 18° 29.8' S	266° 47.6' 18° 14.2' S	266° 44.8' 17° 58.2' S	266° 42.3' 17° 42.0' S
07	282° 12.6' 19° 55.5' S	282° 08.5' 19° 42.0' S	282° 04.5' 19° 28.1' S	282° 00.7' 19° 13.9' S	281° 57.1' 18° 59.3' S	281° 53.7' 18° 44.4' S	281° 50.5' 18° 29.1' S	281° 47.5' 18° 13.5' S	281° 44.7' 17° 57.6' S	281° 42.2' 17° 41.3' S
08	297° 12.5' 19° 55.0' S	297° 08.3' 19° 41.4' S	297° 04.3' 19° 27.5' S	297° 00.5' 19° 13.3' S	296° 56.9' 18° 58.7' S	296° 53.5' 18° 43.8' S	296° 50.4' 18° 28.5' S	296° 47.4' 18° 12.8' S	296° 44.6' 17° 56.9' S	296° 42.1' 17° 40.6' S
09	312° 12.3' 19° 54.4' S	312° 08.1' 19° 40.9' S	312° 04.1' 19° 27.0' S	312° 00.4' 19° 12.7' S	311° 56.8' 18° 58.1' S	311° 53.4' 18° 43.1' S	311° 50.2' 18° 27.8' S	311° 47.3' 18° 12.2' S	311° 44.5' 17° 56.2' S	311° 42.0' 17° 39.9' S
10	327° 12.1' 19° 53.8' S	327° 07.9' 19° 40.3' S	327° 04.0' 19° 26.4' S	327° 00.2' 19° 12.1' S	326° 56.6' 18° 57.5' S	326° 53.3' 18° 42.5' S	326° 50.1' 18° 27.2' S	326° 47.1' 18° 11.5' S	326° 44.4' 17° 55.6' S	326° 41.9' 17° 39.3' S
11	342° 11.9' 19° 53.3' S	342° 07.8' 19° 39.7' S	342° 03.8' 19° 25.8' S	342° 00.1' 19° 11.5' S	341° 56.5' 18° 56.9' S	341° 53.1' 18° 41.9' S	341° 50.0' 18° 26.5' S	341° 47.0' 18° 10.9' S	341° 44.3' 17° 54.9' S	341° 41.7' 17° 38.6' S
12	357° 11.7' 19° 52.7' S	357° 07.6' 19° 39.1' S	357° 03.7' 19° 25.2' S	356° 59.9' 19° 10.9' S	356° 56.4' 18° 56.2' S	356° 53.0' 18° 41.2' S	356° 49.9' 18° 25.9' S	356° 46.9' 18° 10.2' S	356° 44.2' 17° 54.2' S	356° 41.6' 17° 37.9' S
13	012° 11.6' 19° 52.2' S	012° 07.4' 19° 38.6' S	012° 03.5' 19° 24.6' S	011° 59.8' 19° 10.3' S	011° 56.2' 18° 55.6' S	011° 52.9' 18° 40.6' S	011° 49.7' 18° 25.2' S	011° 46.8' 18° 09.6' S	011° 44.1' 17° 53.5' S	011° 41.5' 17° 37.2' S
14	027° 11.4' 19° 51.6' S	027° 07.3' 19° 38.0' S	027° 03.3' 19° 24.0' S	026° 59.6' 19° 09.7' S	026° 56.1' 18° 55.0' S	026° 52.7' 18° 40.0' S	026° 49.6' 18° 24.6' S	026° 46.7' 18° 08.8' S	026° 44.0' 17° 52.9' S	026° 41.4' 17° 36.5' S
15	042° 11.2' 19° 51.1' S	042° 07.1' 19° 37.4' S	042° 03.2' 19° 23.4' S	041° 59.5' 19° 09.1' S	041° 55.9' 18° 54.4' S	041° 52.6' 18° 39.3' S	041° 49.5' 18° 23.9' S	041° 46.6' 18° 08.2' S	041° 43.8' 17° 52.2' S	041° 41.3' 17° 35.8' S
16	057° 11.0' 19° 50.5' S	057° 06.9' 19° 36.8' S	057° 03.0' 19° 22.8' S	056° 59.3' 19° 08.5' S	056° 55.8' 18° 53.8' S	056° 52.5' 18° 38.7' S	056° 49.3' 18° 23.3' S	056° 46.4' 18° 07.6' S	056° 43.7' 17° 51.5' S	056° 41.2' 17° 35.1' S
17	072° 10.9' 19° 49.9' S	072° 06.8' 19° 36.3' S	072° 02.9' 19° 22.2' S	071° 59.1' 19° 07.9' S	071° 55.6' 18° 53.1' S	071° 52.3' 18° 38.1' S	071° 49.2' 18° 22.6' S	071° 46.3' 18° 06.9' S	071° 43.6' 17° 50.8' S	071° 41.1' 17° 34.5' S
18	087° 10.7' 19° 49.4' S	087° 06.6' 19° 35.7' S	087° 02.7' 19° 21.7' S	086° 59.0' 19° 07.3' S	086° 55.5' 18° 52.5' S	086° 52.2' 18° 37.4' S	086° 49.1' 18° 22.0' S	086° 46.2' 18° 06.2' S	086° 43.5' 17° 50.2' S	086° 41.0' 17° 33.8' S
19	102° 10.5' 19° 48.8' S	102° 06.4' 19° 35.1' S	102° 02.5' 19° 21.1' S	101° 58.8' 19° 06.7' S	101° 55.4' 18° 51.9' S	101° 52.1' 18° 36.8' S	101° 49.0' 18° 21.3' S	101° 46.1' 18° 05.6' S	101° 43.4' 17° 49.5' S	101° 40.9' 17° 33.1' S
20	117° 10.3' 19° 48.2' S	117° 06.3' 19° 34.5' S	117° 02.4' 19° 20.5' S	116° 58.7' 19° 06.0' S	116° 55.2' 18° 51.3' S	116° 51.9' 18° 36.2' S	116° 48.8' 18° 20.7' S	116° 46.0' 18° 04.9' S	116° 43.3' 17° 48.8' S	116° 40.9' 17° 32.4' S
21	132° 10.2' 19° 47.7' S	132° 06.1' 19° 34.0' S	132° 02.2' 19° 19.9' S	131° 58.5' 19° 05.4' S	131° 55.1' 18° 50.6' S	131° 51.8' 18° 35.5' S	131° 48.7' 18° 20.0' S	131° 45.9' 18° 04.3' S	131° 43.2' 17° 48.1' S	131° 40.8' 17° 31.7' S
22	147° 10.0' 19° 47.1' S	147° 05.9' 19° 33.4' S	147° 02.1' 19° 19.3' S	146° 58.4' 19° 04.8' S	146° 54.9' 18° 50.0' S	146° 51.7' 18° 34.9' S	146° 48.6' 18° 19.4' S	146° 45.7' 18° 03.6' S	146° 43.1' 17° 47.5' S	146° 40.7' 17° 31.0' S
23	162° 09.8' 19° 46.5' S	162° 05.8' 19° 32.8' S	162° 01.9' 19° 18.7' S	161° 58.3' 19° 04.2' S	161° 54.8' 18° 49.4' S	161° 51.5' 18° 34.2' S	161° 48.5' 18° 18.7' S	161° 45.6' 18° 02.9' S	161° 43.0' 17° 46.8' S	161° 40.6' 17° 30.3' S

	31 Jan	01 Feb	02 Feb	03 Feb	04 Feb	05 Feb	06 Feb	07 Feb	08 Feb	09 Feb
00	176° 40.5' 17° 29.6' S	176° 38.2' 17° 12.8' S	176° 36.2' 16° 55.7' S	176° 34.4' 16° 38.4' S	176° 32.9' 16° 20.7' S	176° 31.5' 15° 02.7' S	176° 30.3' 15° 44.5' S	176° 29.3' 15° 26.0' S	176° 28.5' 15° 07.2' S	176° 27.9' 14° 48.2' S
01	191° 40.4' 17° 28.9' S	191° 38.2' 17° 12.1' S	191° 36.2' 16° 55.0' S	191° 34.4' 16° 37.6' S	191° 32.8' 16° 19.9' S	191° 31.4' 16° 02.0' S	191° 30.2' 15° 43.7' S	191° 29.3' 15° 25.2' S	191° 28.5' 15° 06.4' S	191° 27.9' 14° 47.4' S
02	206° 40.3' 17° 28.2' S	206° 38.1' 17° 11.4' S	206° 36.1' 16° 54.3' S	206° 34.3' 16° 36.9' S	206° 32.7' 16° 19.2' S	206° 31.4' 16° 01.2' S	206° 30.2' 15° 43.0' S	206° 29.2' 15° 24.4' S	206° 28.5' 15° 05.7' S	206° 27.9' 14° 46.6' S
03	221° 40.2' 17° 27.5' S	221° 38.0' 17° 10.7' S	221° 36.0' 16° 53.6' S	221° 34.2' 16° 36.2' S	221° 32.7' 16° 18.5' S	221° 31.3' 16° 00.5' S	221° 30.1' 15° 42.2' S	221° 29.2' 15° 23.7' S	221° 28.4' 15° 04.9' S	221° 27.9' 14° 45.8' S
04	236° 40.1' 17° 26.8' S	236° 37.9' 17° 10.0' S	236° 35.9' 16° 52.9' S	236° 34.2' 16° 35.4' S	236° 32.6' 16° 17.7' S	236° 31.3' 15° 59.7' S	236° 30.1' 15° 41.4' S	236° 29.2' 15° 22.9' S	236° 28.4' 15° 04.1' S	236° 27.9' 14° 45.0' S
05	251° 40.0' 17° 26.1' S	251° 37.8' 17° 09.3' S	251° 35.8' 16° 52.1' S	251° 34.1' 16° 34.7' S	251° 32.5' 16° 17.0' S	251° 31.2' 15° 58.9' S	251° 30.1' 15° 40.7' S	251° 29.1' 15° 22.1' S	251° 28.4' 15° 03.3' S	251° 27.8' 14° 44.2' S
06	266° 39.9' 17° 25.4' S	266° 37.7' 17° 08.6' S	266° 35.8' 16° 51.4' S	266° 34.0' 16° 34.0' S	266° 32.5' 16° 16.2' S	266° 31.2' 15° 58.2' S	266° 30.0' 15° 39.9' S	266° 29.1' 15° 21.3' S	266° 28.4' 15° 02.5' S	266° 27.8' 14° 43.4' S
07	281° 39.8' 17° 24.7' S	281° 37.6' 17° 07.9' S	281° 35.7' 16° 50.7' S	281° 34.0' 16° 33.2' S	281° 32.4' 16° 15.5' S	281° 31.1' 15° 57.4' S	281° 30.0' 15° 39.1' S	281° 29.1' 15° 20.5' S	281° 28.3' 15° 01.7' S	281° 27.8' 14° 42.6' S
08	296° 39.7' 17° 24.1' S	296° 37.6' 17° 07.2' S	296° 35.6' 16° 50.0' S	296° 33.9' 16° 32.5' S	296° 32.4' 16° 14.7' S	296° 31.0' 15° 56.7' S	296° 29.9' 15° 38.4' S	296° 29.0' 15° 19.8' S	296° 28.3' 15° 00.9' S	296° 27.8' 14° 41.8' S
09	311° 39.6' 17° 23.4' S	311° 37.5' 17° 06.5' S	311° 35.5' 16° 49.3' S	311° 33.8' 16° 31.8' S	311° 32.3' 16° 14.0' S	311° 31.0' 15° 55.9' S	311° 29.9' 15° 37.6' S	311° 29.0' 15° 19.0' S	311° 28.3' 15° 00.1' S	311° 27.8' 14° 41.0' S
10	326° 39.5' 17° 22.7' S	326° 37.4' 17° 05.7' S	326° 35.5' 16° 48.5' S	326° 33.8' 16° 31.0' S	326° 32.2' 16° 13.2' S	326° 30.9' 15° 55.2' S	326° 29.8' 15° 36.8' S	326° 29.0' 15° 18.2' S	326° 28.3' 14° 59.3' S	326° 27.8' 14° 40.2' S
11	341° 39.4' 17° 22.0' S	341° 37.3' 17° 05.0' S	341° 35.4' 16° 47.8' S	341° 33.7' 16° 30.3' S	341° 32.2' 16° 12.5' S	341° 30.9' 15° 54.4' S	341° 29.8' 15° 36.0' S	341° 28.9' 15° 17.4' S	341° 28.2' 14° 58.5' S	341° 27.7' 14° 39.4' S
12	356° 39.3' 17° 21.3' S	356° 37.2' 17° 04.3' S	356° 35.3' 16° 47.1' S	356° 33.6' 16° 29.6' S	356° 32.1' 16° 11.7' S	356° 30.8' 15° 53.6' S	356° 29.8' 15° 35.3' S	356° 28.9' 15° 16.6' S	356° 28.2' 14° 57.7' S	356° 27.7' 14° 38.6' S
13	011° 39.2' 17° 20.6' S	011° 37.1' 17° 03.6' S	011° 35.2' 16° 46.4' S	011° 33.6' 16° 28.8' S	011° 32.1' 16° 11.0' S	011° 30.8' 15° 52.9' S	011° 29.7' 15° 34.5' S	011° 28.9' 15° 15.9' S	011° 28.2' 14° 57.0' S	011° 27.7' 14° 37.8' S
14	026° 39.1' 17° 19.9' S	026° 37.1' 17° 02.9' S	026° 35.2' 16° 45.6' S	026° 33.5' 16° 28.1' S	026° 32.0' 16° 10.2' S	026° 30.8' 15° 52.1' S	026° 29.7' 15° 33.7' S	026° 28.8' 15° 15.1' S	026° 28.2' 14° 56.2' S	026° 27.7' 14° 37.0' S
15	041° 39.1' 17° 19.2' S	041° 37.0' 17° 02.2' S	041° 35.1' 16° 44.9' S	041° 33.4' 16° 27.3' S	041° 32.0' 16° 09.5' S	041° 30.7' 15° 51.4' S	041° 29.6' 15° 33.0' S	041° 28.8' 15° 14.3' S	041° 28.1' 14° 55.4' S	041° 27.7' 14° 36.2' S
16	056° 39.0' 17° 18.5' S	056° 36.9' 17° 01.5' S	056° 35.0' 16° 44.2' S	056° 33.4' 16° 26.6' S	056° 31.9' 16° 08.7' S	056° 30.7' 15° 50.6' S	056° 29.6' 15° 32.2' S	056° 28.8' 15° 13.5' S	056° 28.1' 14° 54.6' S	056° 27.7' 14° 35.4' S
17	071° 38.9' 17° 17.8' S	071° 36.8' 17° 00.8' S	071° 34.9' 16° 43.5' S	071° 33.3' 16° 25.9' S	071° 31.8' 16° 08.0' S	071° 30.6' 15° 49.8' S	071° 29.6' 15° 31.4' S	071° 28.7' 15° 12.7' S	071° 28.1' 14° 53.8' S	071° 27.6' 14° 34.6' S
18	086° 38.8' 17° 17.1' S	086° 36.7' 17° 00.0' S	086° 34.9' 16° 42.7' S	086° 33.2' 16° 25.1' S	086° 31.8' 16° 07.2' S	086° 30.6' 15° 49.1' S	086° 29.5' 15° 30.6' S	086° 28.7' 15° 11.9' S	086° 28.1' 14° 53.0' S	086° 27.6' 14° 33.8' S
19	101° 38.7' 17° 16.3' S	101° 36.6' 16° 59.3' S	101° 34.8' 16° 42.0' S	101° 33.2' 16° 24.4' S	101° 31.7' 16° 06.5' S	101° 30.5' 15° 48.3' S	101° 29.5' 15° 29.9' S	101° 28.7' 15° 11.2' S	101° 28.0' 14° 52.2' S	101° 27.6' 14° 33.0' S
20	116° 38.6' 17° 15.6' S	116° 36.6' 16° 58.6' S	116° 34.7' 16° 41.3' S	116° 33.1' 16° 23.6' S	116° 31.7' 16° 05.7' S	116° 30.5' 15° 47.5' S	116° 29.5' 15° 29.1' S	116° 28.6' 15° 10.4' S	116° 28.0' 14° 51.4' S	116° 27.6' 14° 32.2' S
21	131° 38.5' 17° 14.9' S	131° 36.5' 16° 57.9' S	131° 34.7' 16° 40.5' S	131° 33.0' 16° 22.9' S	131° 31.6' 16° 05.0' S	131° 30.4' 15° 46.8' S	131° 29.4' 15° 28.3' S	131° 28.6' 15° 09.6' S	131° 28.0' 14° 50.6' S	131° 27.6' 14° 31.4' S
22	146° 38.4' 17° 14.2' S	146° 36.4' 16° 57.2' S	146° 34.6' 16° 39.8' S	146° 33.0' 16° 22.2' S	146° 31.6' 16° 04.2' S	146° 30.4' 15° 46.0' S	146° 29.4' 15° 27.5' S	146° 28.6' 15° 08.8' S	146° 28.0' 14° 49.8' S	146° 27.6' 14° 30.6' S
23	161° 38.3' 17° 13.5' S	161° 36.3' 16° 56.5' S	161° 34.5' 16° 39.1' S	161° 32.9' 16° 21.4' S	161° 31.5' 16° 03.5' S	161° 30.3' 15° 45.3' S	161° 29.3' 15° 26.8' S	161° 28.6' 15° 08.0' S	161° 28.0' 14° 49.0' S	161° 27.6' 14° 29.7' S

Solar Almanac 2031 — Sun GHA & Decl (UT) — 10 Feb to 01 Mar

UT	10 Feb	11 Feb	12 Feb	13 Feb	14 Feb	15 Feb	16 Feb	17 Feb	18 Feb	19 Feb
00	176° 27.6' 14° 28.9' S	176° 27.4' 14° 09.4' S	176° 27.4' 13° 49.7' S	176° 27.5' 13° 29.7' S	176° 27.9' 13° 09.5' S	176° 28.4' 12° 49.1' S	176° 29.2' 12° 28.4' S	176° 30.1' 12° 07.6' S	176° 31.1' 11° 46.6' S	176° 32.4' 11° 25.4' S
01	191° 27.5' 14° 28.1' S	191° 27.4' 14° 08.6' S	191° 27.4' 13° 48.8' S	191° 27.5' 13° 28.9' S	191° 27.9' 13° 08.6' S	191° 28.5' 12° 48.2' S	191° 29.2' 12° 27.6' S	191° 30.1' 12° 06.7' S	191° 31.2' 11° 45.7' S	191° 32.4' 11° 24.5' S
02	206° 27.5' 14° 27.3' S	206° 27.4' 14° 07.8' S	206° 27.4' 13° 48.0' S	206° 27.6' 13° 28.0' S	206° 27.9' 13° 07.8' S	206° 28.5' 12° 47.4' S	206° 29.2' 12° 26.7' S	206° 30.1' 12° 05.9' S	206° 31.2' 11° 44.8' S	206° 32.5' 11° 23.6' S
03	221° 27.5' 14° 26.5' S	221° 27.3' 14° 07.0' S	221° 27.4' 13° 47.2' S	221° 27.6' 13° 27.2' S	221° 28.0' 13° 06.9' S	221° 28.5' 12° 46.5' S	221° 29.3' 12° 25.8' S	221° 30.2' 12° 05.0' S	221° 31.3' 11° 43.9' S	221° 32.5' 11° 22.7' S
04	236° 27.5' 14° 25.7' S	236° 27.3' 14° 06.1' S	236° 27.4' 13° 46.4' S	236° 27.6' 13° 26.3' S	236° 28.0' 13° 06.1' S	236° 28.6' 12° 45.6' S	236° 29.3' 12° 25.0' S	236° 30.2' 12° 04.1' S	236° 31.3' 11° 43.1' S	236° 32.6' 11° 21.8' S
05	251° 27.5' 14° 24.9' S	251° 27.3' 14° 05.3' S	251° 27.4' 13° 45.5' S	251° 27.6' 13° 25.5' S	251° 28.0' 13° 05.3' S	251° 28.6' 12° 44.8' S	251° 29.3' 12° 24.1' S	251° 30.3' 12° 03.2' S	251° 31.4' 11° 42.2' S	251° 32.6' 11° 20.9' S
06	266° 27.5' 14° 24.1' S	266° 27.3' 14° 04.5' S	266° 27.4' 13° 44.7' S	266° 27.6' 13° 24.7' S	266° 28.0' 13° 04.4' S	266° 28.6' 12° 43.9' S	266° 29.4' 12° 23.3' S	266° 30.3' 12° 02.4' S	266° 31.4' 11° 41.3' S	266° 32.7' 11° 20.0' S
07	281° 27.5' 14° 23.3' S	281° 27.3' 14° 03.7' S	281° 27.4' 13° 43.9' S	281° 27.6' 13° 23.8' S	281° 28.0' 13° 03.6' S	281° 28.6' 12° 43.1' S	281° 29.4' 12° 22.4' S	281° 30.4' 12° 01.5' S	281° 31.5' 11° 40.4' S	281° 32.8' 11° 19.1' S
08	296° 27.5' 14° 22.5' S	296° 27.3' 14° 02.9' S	296° 27.4' 13° 43.0' S	296° 27.6' 13° 23.0' S	296° 28.1' 13° 02.7' S	296° 28.7' 12° 42.2' S	296° 29.4' 12° 21.5' S	296° 30.4' 12° 00.6' S	296° 31.5' 11° 39.5' S	296° 32.8' 11° 18.3' S
09	311° 27.5' 14° 21.6' S	311° 27.3' 14° 02.0' S	311° 27.4' 13° 42.2' S	311° 27.7' 13° 22.1' S	311° 28.1' 13° 01.9' S	311° 28.7' 12° 41.4' S	311° 29.5' 12° 20.7' S	311° 30.5' 11° 59.7' S	311° 31.6' 11° 38.7' S	311° 32.9' 11° 17.4' S
10	326° 27.4' 14° 20.8' S	326° 27.3' 14° 01.2' S	326° 27.4' 13° 41.4' S	326° 27.7' 13° 21.3' S	326° 28.1' 13° 01.0' S	326° 28.7' 12° 40.5' S	326° 29.5' 12° 19.8' S	326° 30.5' 11° 58.9' S	326° 31.6' 11° 37.8' S	326° 32.9' 11° 16.5' S
11	341° 27.4' 14° 20.0' S	341° 27.3' 14° 00.4' S	341° 27.4' 13° 40.5' S	341° 27.7' 13° 20.5' S	341° 28.1' 13° 00.2' S	341° 28.8' 12° 39.6' S	341° 29.6' 12° 18.9' S	341° 30.5' 11° 58.0' S	341° 31.7' 11° 36.9' S	341° 33.0' 11° 15.6' S
12	356° 27.4' 14° 19.2' S	356° 27.3' 13° 59.6' S	356° 27.4' 13° 39.7' S	356° 27.7' 13° 19.6' S	356° 28.1' 12° 59.3' S	356° 28.8' 12° 38.8' S	356° 29.6' 12° 18.1' S	356° 30.6' 11° 57.1' S	356° 31.7' 11° 36.0' S	356° 33.0' 11° 14.7' S
13	011° 27.4' 14° 18.4' S	011° 27.3' 13° 58.8' S	011° 27.4' 13° 38.9' S	011° 27.7' 13° 18.8' S	011° 28.2' 12° 58.5' S	011° 28.8' 12° 37.9' S	011° 29.6' 12° 17.2' S	011° 30.6' 11° 56.2' S	011° 31.8' 11° 35.1' S	011° 33.1' 11° 13.8' S
14	026° 27.4' 14° 17.6' S	026° 27.3' 13° 57.9' S	026° 27.4' 13° 38.0' S	026° 27.7' 13° 17.9' S	026° 28.2' 12° 57.6' S	026° 28.8' 12° 37.1' S	026° 29.7' 12° 16.3' S	026° 30.7' 11° 55.4' S	026° 31.8' 11° 34.2' S	026° 33.2' 11° 12.9' S
15	041° 27.4' 14° 16.8' S	041° 27.3' 13° 57.1' S	041° 27.4' 13° 37.2' S	041° 27.7' 13° 17.1' S	041° 28.2' 12° 56.8' S	041° 28.9' 12° 36.2' S	041° 29.7' 12° 15.4' S	041° 30.7' 11° 54.5' S	041° 31.9' 11° 33.3' S	041° 33.2' 11° 12.0' S
16	056° 27.4' 14° 16.0' S	056° 27.3' 13° 56.3' S	056° 27.5' 13° 36.4' S	056° 27.8' 13° 16.2' S	056° 28.2' 12° 55.9' S	056° 28.9' 12° 35.3' S	056° 29.7' 12° 14.6' S	056° 30.8' 11° 53.6' S	056° 31.9' 11° 32.5' S	056° 33.3' 11° 11.1' S
17	071° 27.4' 14° 15.1' S	071° 27.3' 13° 55.5' S	071° 27.5' 13° 35.5' S	071° 27.8' 13° 15.4' S	071° 28.3' 12° 55.0' S	071° 28.9' 12° 34.5' S	071° 29.8' 12° 13.7' S	071° 30.8' 11° 52.7' S	071° 32.0' 11° 31.6' S	071° 33.3' 11° 10.2' S
18	086° 27.4' 14° 14.3' S	086° 27.3' 13° 54.6' S	086° 27.5' 13° 34.7' S	086° 27.8' 13° 14.6' S	086° 28.3' 12° 54.2' S	086° 29.0' 12° 33.6' S	086° 29.8' 12° 12.8' S	086° 30.8' 11° 51.9' S	086° 32.0' 11° 30.7' S	086° 33.4' 11° 09.3' S
19	101° 27.4' 14° 13.5' S	101° 27.3' 13° 53.8' S	101° 27.5' 13° 33.9' S	101° 27.8' 13° 13.7' S	101° 28.3' 12° 53.3' S	101° 29.0' 12° 32.8' S	101° 29.9' 12° 12.0' S	101° 30.9' 11° 51.0' S	101° 32.1' 11° 29.8' S	101° 33.5' 11° 08.4' S
20	116° 27.4' 14° 12.7' S	116° 27.3' 13° 53.0' S	116° 27.5' 13° 33.0' S	116° 27.8' 13° 12.9' S	116° 28.3' 12° 52.5' S	116° 29.0' 12° 31.9' S	116° 29.9' 12° 11.1' S	116° 30.9' 11° 50.1' S	116° 32.1' 11° 28.9' S	116° 33.5' 11° 07.6' S
21	131° 27.4' 14° 11.9' S	131° 27.3' 13° 52.2' S	131° 27.5' 13° 32.2' S	131° 27.8' 13° 12.0' S	131° 28.4' 12° 51.6' S	131° 29.1' 12° 31.0' S	131° 29.9' 12° 10.2' S	131° 31.0' 11° 49.2' S	131° 32.2' 11° 28.0' S	131° 33.6' 11° 06.7' S
22	146° 27.4' 14° 11.1' S	146° 27.3' 13° 51.3' S	146° 27.5' 13° 31.4' S	146° 27.9' 13° 11.2' S	146° 28.4' 12° 50.8' S	146° 29.1' 12° 30.2' S	146° 30.0' 12° 09.4' S	146° 31.0' 11° 48.3' S	146° 32.2' 11° 27.1' S	146° 33.6' 11° 05.8' S
23	161° 27.4' 14° 10.2' S	161° 27.4' 13° 50.5' S	161° 27.5' 13° 30.5' S	161° 27.9' 13° 10.3' S	161° 28.4' 12° 49.9' S	161° 29.1' 12° 29.3' S	161° 30.0' 12° 08.5' S	161° 31.1' 11° 47.5' S	161° 32.3' 11° 26.3' S	161° 33.7' 11° 04.9' S

UT	20 Feb	21 Feb	22 Feb	23 Feb	24 Feb	25 Feb	26 Feb	27 Feb	28 Feb	01 Mar
00	176° 33.8' 11° 04.0' S	176° 35.3' 10° 42.4' S	176° 37.0' 10° 20.7' S	176° 38.9' 09° 58.8' S	176° 41.0' 09° 36.7' S	176° 43.2' 09° 14.6' S	176° 45.5' 08° 52.2' S	176° 48.0' 08° 29.8' S	176° 50.6' 08° 07.2' S	176° 53.4' 07° 44.5' S
01	191° 33.8' 11° 03.1' S	191° 35.4' 10° 41.5' S	191° 37.1' 10° 19.8' S	191° 39.0' 09° 57.9' S	191° 41.1' 09° 35.8' S	191° 43.3' 09° 13.6' S	191° 45.6' 08° 51.3' S	191° 48.1' 08° 28.8' S	191° 50.7' 08° 06.3' S	191° 53.5' 07° 43.6' S
02	206° 33.9' 11° 02.2' S	206° 35.5' 10° 40.6' S	206° 37.2' 10° 18.9' S	206° 39.1' 09° 57.0' S	206° 41.1' 09° 34.9' S	206° 43.4' 09° 12.7' S	206° 45.7' 08° 50.4' S	206° 48.2' 08° 27.9' S	206° 50.8' 08° 05.3' S	206° 53.6' 07° 42.6' S
03	221° 33.9' 11° 01.3' S	221° 35.5' 10° 39.7' S	221° 37.3' 10° 18.0' S	221° 39.2' 09° 56.0' S	221° 41.2' 09° 34.0' S	221° 43.4' 09° 11.8' S	221° 45.8' 08° 49.4' S	221° 48.3' 08° 27.0' S	221° 51.0' 08° 04.4' S	221° 53.7' 07° 41.7' S
04	236° 34.0' 11° 00.4' S	236° 35.6' 10° 38.8' S	236° 37.4' 10° 17.0' S	236° 39.3' 09° 55.1' S	236° 41.3' 09° 33.1' S	236° 43.5' 09° 10.8' S	236° 45.9' 08° 48.5' S	236° 48.4' 08° 26.0' S	236° 51.1' 08° 03.4' S	236° 53.9' 07° 40.7' S
05	251° 34.1' 10° 59.5' S	251° 35.7' 10° 37.9' S	251° 37.4' 10° 16.1' S	251° 39.3' 09° 54.2' S	251° 41.4' 09° 32.1' S	251° 43.6' 09° 09.9' S	251° 46.0' 08° 47.6' S	251° 48.5' 08° 25.1' S	251° 51.2' 08° 02.5' S	251° 54.0' 07° 39.8' S
06	266° 34.1' 10° 58.6' S	266° 35.7' 10° 37.0' S	266° 37.5' 10° 15.2' S	266° 39.4' 09° 53.3' S	266° 41.5' 09° 31.2' S	266° 43.7' 09° 09.0' S	266° 46.1' 08° 46.6' S	266° 48.6' 08° 24.1' S	266° 51.3' 08° 01.5' S	266° 54.1' 07° 38.8' S
07	281° 34.2' 10° 57.7' S	281° 35.8' 10° 36.1' S	281° 37.6' 10° 14.3' S	281° 39.5' 09° 52.4' S	281° 41.6' 09° 30.3' S	281° 43.8' 09° 08.1' S	281° 46.2' 08° 45.7' S	281° 48.7' 08° 23.2' S	281° 51.4' 08° 00.6' S	281° 54.2' 07° 37.9' S
08	296° 34.3' 10° 56.8' S	296° 35.9' 10° 35.2' S	296° 37.7' 10° 13.4' S	296° 39.6' 09° 51.5' S	296° 41.7' 09° 29.4' S	296° 43.9' 09° 07.1' S	296° 46.3' 08° 44.8' S	296° 48.9' 08° 22.3' S	296° 51.5' 07° 59.7' S	296° 54.3' 07° 36.9' S
09	311° 34.3' 10° 55.9' S	311° 36.0' 10° 34.3' S	311° 37.7' 10° 12.5' S	311° 39.7' 09° 50.5' S	311° 41.8' 09° 28.4' S	311° 44.0' 09° 06.2' S	311° 46.4' 08° 43.8' S	311° 49.0' 08° 21.3' S	311° 51.6' 07° 58.7' S	311° 54.5' 07° 36.0' S
10	326° 34.4' 10° 55.0' S	326° 36.0' 10° 33.4' S	326° 37.8' 10° 11.6' S	326° 39.8' 09° 49.6' S	326° 41.9' 09° 27.5' S	326° 44.1' 09° 05.3' S	326° 46.5' 08° 42.9' S	326° 49.1' 08° 20.4' S	326° 51.8' 07° 57.8' S	326° 54.6' 07° 35.0' S
11	341° 34.5' 10° 54.1' S	341° 36.1' 10° 32.5' S	341° 37.9' 10° 10.7' S	341° 39.8' 09° 48.7' S	341° 42.0' 09° 26.6' S	341° 44.2' 09° 04.3' S	341° 46.6' 08° 42.0' S	341° 49.2' 08° 19.4' S	341° 51.9' 07° 56.8' S	341° 54.7' 07° 34.1' S
12	356° 34.5' 10° 53.2' S	356° 36.2' 10° 31.6' S	356° 38.0' 10° 09.8' S	356° 39.9' 09° 47.8' S	356° 42.0' 09° 25.7' S	356° 44.3' 09° 03.4' S	356° 46.7' 08° 41.0' S	356° 49.3' 08° 18.5' S	356° 52.0' 07° 55.9' S	356° 54.8' 07° 33.1' S
13	011° 34.6' 10° 52.3' S	011° 36.2' 10° 30.7' S	011° 38.0' 10° 08.8' S	011° 40.0' 09° 46.9' S	011° 42.1' 09° 24.7' S	011° 44.4' 09° 02.5' S	011° 46.8' 08° 40.1' S	011° 49.4' 08° 17.6' S	011° 52.1' 07° 54.9' S	011° 54.9' 07° 32.2' S
14	026° 34.7' 10° 51.4' S	026° 36.3' 10° 29.8' S	026° 38.1' 10° 07.9' S	026° 40.1' 09° 45.9' S	026° 42.2' 09° 23.8' S	026° 44.5' 09° 01.6' S	026° 46.9' 08° 39.2' S	026° 49.5' 08° 16.6' S	026° 52.2' 07° 54.0' S	026° 55.1' 07° 31.2' S
15	041° 34.7' 10° 50.5' S	041° 36.4' 10° 28.8' S	041° 38.2' 10° 07.0' S	041° 40.2' 09° 45.0' S	041° 42.3' 09° 22.9' S	041° 44.6' 09° 00.6' S	041° 47.0' 08° 38.2' S	041° 49.6' 08° 15.7' S	041° 52.3' 07° 53.0' S	041° 55.2' 07° 30.3' S
16	056° 34.8' 10° 49.6' S	056° 36.5' 10° 27.9' S	056°							

Solar Almanac 2031 — Sun GHA & Decl (UT) — 02 Mar to 21 Mar

UT	02 Mar	03 Mar	04 Mar	05 Mar	06 Mar	07 Mar	08 Mar	09 Mar	10 Mar	11 Mar
00	176° 56,3' 07° 21,7' S	176° 59,3' 06° 58,8' S	177° 02,5' 06° 35,8' S	177° 05,7' 06° 12,7' S	177° 09,1' 05° 49,5' S	177° 12,6' 05° 26,2' S	177° 16,2' 05° 02,9' S	177° 19,9' 04° 39,5' S	177° 23,7' 04° 16,1' S	177° 27,5' 03° 52,5' S
01	191° 56,4' 07° 20,8' S	191° 59,4' 06° 57,8' S	192° 02,6' 06° 34,8' S	192° 05,9' 06° 11,7' S	192° 09,2' 05° 48,5' S	192° 12,7' 05° 25,3' S	192° 16,3' 05° 01,9' S	192° 20,0' 04° 38,5' S	192° 23,8' 04° 15,1' S	192° 27,7' 03° 51,6' S
02	206° 56,5' 07° 19,8' S	206° 59,6' 06° 56,9' S	207° 02,7' 06° 33,9' S	207° 06,0' 06° 10,8' S	207° 09,4' 05° 47,6' S	207° 12,9' 05° 24,3' S	207° 16,5' 05° 01,0' S	207° 20,2' 04° 37,6' S	207° 24,0' 04° 14,1' S	207° 27,8' 03° 50,6' S
03	221° 56,7' 07° 18,8' S	221° 59,7' 06° 55,9' S	222° 02,9' 06° 32,9' S	222° 06,1' 06° 09,8' S	222° 09,5' 05° 46,6' S	222° 13,0' 05° 23,3' S	222° 16,6' 05° 00,0' S	222° 20,3' 04° 36,6' S	222° 24,1' 04° 13,1' S	222° 28,0' 03° 49,6' S
04	236° 56,8' 07° 17,9' S	236° 59,8' 06° 55,0' S	237° 03,0' 06° 31,9' S	237° 06,3' 06° 08,8' S	237° 09,7' 05° 45,6' S	237° 13,2' 05° 22,4' S	237° 16,8' 04° 59,0' S	237° 20,5' 04° 34,6' S	237° 24,3' 04° 12,1' S	237° 28,2' 03° 48,6' S
05	251° 56,9' 07° 16,9' S	252° 00,0' 06° 54,0' S	252° 03,1' 06° 31,0' S	252° 06,4' 06° 07,9' S	252° 09,8' 05° 44,7' S	252° 13,3' 05° 21,4' S	252° 16,9' 04° 58,0' S	252° 20,7' 04° 34,6' S	252° 24,5' 04° 11,2' S	252° 28,3' 03° 47,6' S
06	266° 57,0' 07° 16,0' S	267° 00,1' 06° 53,1' S	267° 03,3' 06° 30,0' S	267° 06,6' 06° 06,9' S	267° 10,0' 05° 43,7' S	267° 13,5' 05° 20,4' S	267° 17,1' 04° 57,1' S	267° 20,8' 04° 33,7' S	267° 24,6' 04° 10,2' S	267° 28,5' 03° 46,6' S
07	281° 57,2' 07° 15,0' S	282° 00,2' 06° 52,1' S	282° 03,4' 06° 29,1' S	282° 06,7' 06° 05,9' S	282° 10,1' 05° 42,7' S	282° 13,6' 05° 19,4' S	282° 17,3' 04° 56,1' S	282° 21,0' 04° 32,7' S	282° 24,8' 04° 09,2' S	282° 28,7' 03° 45,7' S
08	296° 57,3' 07° 14,1' S	297° 00,3' 06° 51,1' S	297° 03,5' 06° 28,1' S	297° 06,8' 06° 05,0' S	297° 10,3' 05° 41,8' S	297° 13,8' 05° 18,5' S	297° 17,4' 04° 55,1' S	297° 21,1' 04° 31,7' S	297° 24,9' 04° 08,2' S	297° 28,8' 03° 44,7' S
09	311° 57,4' 07° 13,1' S	312° 00,5' 06° 50,2' S	312° 03,7' 06° 27,1' S	312° 07,0' 06° 04,0' S	312° 10,4' 05° 40,8' S	312° 13,9' 05° 17,5' S	312° 17,6' 04° 54,1' S	312° 21,3' 04° 30,7' S	312° 25,1' 04° 07,2' S	312° 29,0' 03° 43,7' S
10	326° 57,5' 07° 12,2' S	327° 00,6' 06° 49,2' S	327° 03,8' 06° 26,2' S	327° 07,1' 06° 03,0' S	327° 10,5' 05° 39,8' S	327° 14,1' 05° 16,5' S	327° 17,7' 04° 53,2' S	327° 21,4' 04° 29,7' S	327° 25,3' 04° 06,3' S	327° 29,2' 03° 42,7' S
11	341° 57,7' 07° 11,2' S	342° 00,7' 06° 48,3' S	342° 03,9' 06° 25,2' S	342° 07,3' 06° 02,1' S	342° 10,7' 05° 38,9' S	342° 14,2' 05° 15,6' S	342° 17,9' 04° 52,2' S	342° 21,6' 04° 28,8' S	342° 25,4' 04° 05,3' S	342° 29,3' 03° 41,7' S
12	356° 57,8' 07° 10,3' S	357° 00,9' 06° 47,3' S	357° 04,1' 06° 24,2' S	357° 07,4' 06° 01,1' S	357° 10,8' 05° 37,9' S	357° 14,4' 05° 14,6' S	357° 18,0' 04° 51,2' S	357° 21,8' 04° 27,8' S	357° 25,6' 04° 04,3' S	357° 29,5' 03° 40,8' S
13	011° 57,9' 07° 09,3' S	012° 01,0' 06° 46,3' S	012° 04,2' 06° 23,3' S	012° 07,5' 06° 00,1' S	012° 11,0' 05° 36,9' S	012° 14,5' 05° 13,6' S	012° 18,2' 04° 50,2' S	012° 21,9' 04° 26,8' S	012° 25,7' 04° 03,3' S	012° 29,6' 03° 39,8' S
14	026° 58,0' 07° 08,4' S	027° 01,1' 06° 45,4' S	027° 04,3' 06° 22,3' S	027° 07,7' 05° 59,2' S	027° 11,1' 05° 35,9' S	027° 14,7' 05° 12,6' S	027° 18,3' 04° 49,3' S	027° 22,1' 04° 25,8' S	027° 25,9' 04° 02,3' S	027° 29,8' 03° 38,8' S
15	041° 58,2' 07° 07,4' S	042° 01,3' 06° 44,4' S	042° 04,5' 06° 21,4' S	042° 07,8' 05° 58,2' S	042° 11,3' 05° 35,0' S	042° 14,8' 05° 11,7' S	042° 18,5' 04° 48,3' S	042° 22,2' 04° 24,9' S	042° 26,1' 04° 01,4' S	042° 30,0' 03° 37,8' S
16	056° 58,3' 07° 06,4' S	057° 01,4' 06° 43,5' S	057° 04,6' 06° 20,4' S	057° 08,0' 05° 57,2' S	057° 11,4' 05° 34,0' S	057° 15,0' 05° 10,7' S	057° 18,6' 04° 47,3' S	057° 22,4' 04° 23,9' S	057° 26,2' 04° 00,4' S	057° 30,1' 03° 36,8' S
17	071° 58,4' 07° 05,5' S	072° 01,5' 06° 42,5' S	072° 04,8' 06° 19,4' S	072° 08,1' 05° 56,3' S	072° 11,6' 05° 33,0' S	072° 15,1' 05° 09,7' S	072° 18,8' 04° 46,3' S	072° 22,5' 04° 22,9' S	072° 26,4' 03° 59,4' S	072° 30,3' 03° 35,9' S
18	086° 58,5' 07° 04,5' S	087° 01,7' 06° 41,5' S	087° 04,9' 06° 18,5' S	087° 08,3' 05° 55,3' S	087° 11,7' 05° 32,1' S	087° 15,3' 05° 08,7' S	087° 18,9' 04° 45,4' S	087° 22,6' 04° 21,9' S	087° 26,5' 03° 58,4' S	087° 30,5' 03° 34,9' S
19	101° 58,7' 07° 03,6' S	102° 01,8' 06° 40,6' S	102° 05,0' 06° 17,5' S	102° 08,4' 05° 54,3' S	102° 11,9' 05° 31,1' S	102° 15,4' 05° 07,8' S	102° 19,1' 04° 44,4' S	102° 22,9' 04° 20,9' S	102° 26,7' 03° 57,4' S	102° 30,6' 03° 33,9' S
20	116° 58,8' 07° 02,6' S	117° 01,9' 06° 39,6' S	117° 05,2' 06° 16,5' S	117° 08,5' 05° 53,4' S	117° 12,0' 05° 30,1' S	117° 15,6' 05° 06,8' S	117° 19,3' 04° 43,4' S	117° 23,0' 04° 20,0' S	117° 26,9' 03° 56,5' S	117° 30,8' 03° 32,9' S
21	131° 58,9' 07° 01,7' S	132° 02,1' 06° 38,7' S	132° 05,3' 06° 15,6' S	132° 08,7' 05° 52,4' S	132° 12,2' 05° 29,2' S	132° 15,7' 05° 05,8' S	132° 19,4' 04° 42,4' S	132° 23,2' 04° 19,0' S	132° 27,0' 03° 55,5' S	132° 31,0' 03° 31,9' S
22	146° 59,1' 07° 00,7' S	147° 02,2' 06° 37,7' S	147° 05,4' 06° 14,8' S	147° 08,8' 05° 51,4' S	147° 12,3' 05° 28,2' S	147° 15,9' 05° 04,9' S	147° 19,6' 04° 41,5' S	147° 23,3' 04° 18,0' S	147° 27,2' 03° 54,5' S	147° 31,1' 03° 30,9' S
23	161° 59,2' 06° 59,7' S	162° 02,3' 06° 36,7' S	162° 05,6' 06° 13,7' S	162° 09,0' 05° 50,5' S	162° 12,4' 05° 27,2' S	162° 16,0' 05° 03,9' S	162° 19,7' 04° 40,5' S	162° 23,5' 04° 17,0' S	162° 27,4' 03° 53,5' S	162° 31,3' 03° 30,0' S

UT	12 Mar	13 Mar	14 Mar	15 Mar	16 Mar	17 Mar	18 Mar	19 Mar	20 Mar	21 Mar
00	177° 31,5' 03° 29,0' S	177° 35,5' 03° 05,4' S	177° 39,6' 02° 41,7' S	177° 43,7' 02° 18,1' S	177° 47,9' 01° 54,4' S	177° 52,2' 01° 30,6' S	177° 56,5' 01° 06,9' S	178° 00,8' 00° 43,2' S	178° 05,2' 00° 19,4' S	178° 09,6' 00° 04,3' N
01	192° 31,6' 03° 28,0' S	192° 35,6' 03° 04,4' S	192° 39,7' 02° 40,7' S	192° 43,9' 02° 17,1' S	192° 48,1' 01° 53,4' S	192° 52,3' 01° 29,6' S	192° 56,6' 01° 05,9' S	193° 01,0' 00° 42,2' S	193° 05,3' 00° 18,5' S	193° 09,8' 00° 05,3' N
02	207° 31,8' 03° 27,0' S	207° 35,8' 03° 03,4' S	207° 39,9' 02° 39,8' S	207° 44,1' 02° 16,1' S	207° 48,3' 01° 52,4' S	207° 52,5' 01° 28,7' S	207° 56,8' 01° 04,9' S	208° 01,2' 00° 41,2' S	208° 05,5' 00° 17,5' S	208° 09,9' 00° 06,3' N
03	222° 32,0' 03° 26,0' S	222° 36,0' 03° 02,4' S	222° 40,1' 02° 38,8' S	222° 44,2' 02° 15,1' S	222° 48,4' 01° 51,4' S	222° 52,7' 01° 27,7' S	222° 57,0' 01° 03,9' S	223° 01,3' 00° 40,2' S	223° 05,7' 00° 16,5' S	223° 10,1' 00° 07,2' N
04	237° 32,1' 03° 25,0' S	237° 36,2' 03° 01,4' S	237° 40,2' 02° 37,8' S	237° 44,4' 02° 14,1' S	237° 48,6' 01° 50,4' S	237° 52,9' 01° 26,7' S	237° 57,2' 01° 03,0' S	238° 01,5' 00° 39,2' S	238° 05,9' 00° 15,5' S	238° 10,3' 00° 08,2' N
05	252° 32,3' 03° 24,1' S	252° 36,3' 03° 00,4' S	252° 40,4' 02° 36,8' S	252° 44,6' 02° 13,1' S	252° 48,8' 01° 49,4' S	252° 53,0' 01° 25,7' S	252° 57,4' 01° 02,0' S	253° 01,7' 00° 38,2' S	253° 06,1' 00° 14,5' S	253° 10,5' 00° 09,2' N
06	267° 32,5' 03° 23,1' S	267° 36,5' 02° 59,5' S	267° 40,6' 02° 35,8' S	267° 44,8' 02° 12,1' S	267° 49,0' 01° 48,4' S	267° 53,2' 01° 24,7' S	267° 57,5' 01° 01,0' S	268° 01,9' 00° 37,2' S	268° 06,3' 00° 13,5' S	268° 10,7' 00° 10,2' N
07	282° 32,6' 03° 22,1' S	282° 36,7' 02° 58,5' S	282° 40,8' 02° 34,8' S	282° 44,9' 02° 11,1' S	282° 49,1' 01° 47,4' S	282° 53,4' 01° 23,7' S	282° 57,7' 01° 00,0' S	283° 02,1' 00° 36,3' S	283° 06,4' 00° 12,5' S	283° 10,9' 00° 11,2' N
08	297° 32,8' 03° 21,1' S	297° 36,8' 02° 57,5' S	297° 40,9' 02° 33,8' S	297° 45,1' 02° 10,2' S	297° 49,3' 01° 46,5' S	297° 53,6' 01° 22,7' S	297° 57,9' 00° 59,0' S	298° 02,2' 00° 35,3' S	298° 06,6' 00° 11,5' S	298° 11,0' 00° 12,2' N
09	312° 33,0' 03° 20,1' S	312° 37,0' 02° 56,5' S	312° 41,1' 02° 32,9' S	312° 45,3' 02° 09,2' S	312° 49,5' 01° 45,5' S	312° 53,8' 01° 21,7' S	312° 58,1' 00° 58,0' S	313° 02,4' 00° 34,3' S	313° 06,8' 00° 10,5' S	313° 11,2' 00° 13,2' N
10	327° 33,1' 03° 19,1' S	327° 37,2' 02° 55,5' S	327° 41,3' 02° 31,9' S	327° 45,4' 02° 08,2' S	327° 49,7' 01° 44,5' S	327° 53,9' 01° 20,8' S	327° 58,3' 00° 57,0' S	328° 02,6' 00° 33,3' S	328° 07,0' 00° 09,6' S	328° 11,4' 00° 14,2' N
11	342° 33,3' 03° 18,2' S	342° 37,3' 02° 54,5' S	342° 41,5' 02° 30,9' S	342° 45,6' 02° 07,2' S	342° 49,8' 01° 43,5' S	342° 54,1' 01° 19,8' S	342° 58,4' 00° 56,0' S	343° 02,8' 00° 32,3' S	343° 07,2' 00° 08,6' S	343° 11,6' 00° 15,1' N
12	357° 33,5' 03° 17,2' S	357° 37,5' 02° 53,6' S	357° 41,6' 02° 29,9' S	357° 45,8' 02° 06,2' S	357° 50,0' 01° 42,5' S	357° 54,3' 01° 18,8' S	357° 58,6' 00° 55,0' S	358° 03,0' 00° 31,3' S	358° 07,4' 00° 07,6' S	358° 11,8' 00° 16,1' N
13	012° 33,6' 03° 16,2' S	012° 37,7' 02° 52,6' S	012° 41,8' 02° 28,9' S	012° 46,0' 02° 05,2' S	012° 50,2' 01° 41,5' S	012° 54,5' 01° 17,8' S	012° 58,8' 00° 54,1' S	013° 03,2' 00° 30,3' S	013° 07,5' 00° 06,6' S	013° 12,0' 00° 17,1' N
14	027° 33,8' 03° 15,2' S	027° 37,9' 02° 51,6' S	027° 42,0' 02° 27,9' S	027° 46,2' 02° 04,2' S	027° 50,4' 01° 40,5' S	027° 54,7' 01° 16,8' S	027° 59,0' 00° 53,1' S	028° 03,3' 00° 29,3' S	028° 07,7' 00° 05,6' S	028° 12,1' 00° 18,1' N
15	042° 34,0' 03° 14,2' S	042° 38,0' 02° 50,6' S	042° 42,1' 02° 26,9' S	042° 46,3' 02° 03,2' S	042° 50,6' 01° 39,5' S	042° 54,8' 01° 15,8' S	042° 59,2' 00° 52,1' S	043° 03,5' 00° 28,3' S	043° 07,9' 00° 04,6' S	043° 12,3' 00° 19,1' N
16	057° 34,1' 03° 13,2' S	057° 38,2' 02° 49,6' S	057° 42,3' 02° 25,9' S	057° 46,5' 02° 02,3' S	057° 50,7' 01° 38,5' S	057° 55,0' 01° 14,8' S	057° 59,3' 00° 51,1' S	058° 03,7' 00° 27,4' S	058° 08,1' 00° 03,6' S	058° 12,5' 00° 20,1' N
17	072° 34,3' 03° 12,3' S	072° 38,4' 02° 48,6' S	072° 42,5' 02° 25,0' S	072° 46,7' 02° 01,3' S	072° 50,9' 01° 37,6' S	072° 55,2' 01° 13,8' S	072° 59,5' 00° 50,1' S	073° 03,9' 00° 26,4' S	073° 08,3' 00° 02,6' S	073° 12,7' 00° 21,1' N
18	087° 34,5' 03° 11,3' S	087° 38,5' 02° 47,6' S	087° 42,7' 02° 24,0' S	087° 46,9' 02° 00,3' S	087° 51,1' 01° 36,6' S	087° 55,4' 01° 12,8' S	087° 59,7' 00° 49,1' S	088° 04,1' 00° 25,4' S	088° 08,5' 00° 01,7' S	088° 12,9' 00° 22,1' N
19	102° 34,6' 03° 10,3' S	102° 38,7' 02° 46,7' S	102° 42,8' 02° 23,0' S	102° 47,0' 01° 59,3' S	102° 51,3' 01° 35,6' S	102° 55,6' 01° 11,9' S	102° 59,9' 00° 48,1' S	103° 04,2' 00° 24,4' S	103° 08,6' 00° 00,7' S	103° 13,1' 00° 23,0' N
20	117° 34,8' 03° 09,3' S	117° 38,9' 02° 45,7' S	117° 43,0' 02° 22,0' S	117° 47,2' 01° 58,3' S	117° 51,4' 01° 34,6' S	117° 55,7' 01° 10,9' S	118° 00,1' 00° 47,1' S	118° 04,4' 00° 23,4' S	118° 08,8' 00° 00,3' N	118° 13,3' 00° 24,0' N
21	132° 35,0' 03° 08,3' S	132° 39,0' 02° 44,7' S	132° 43,2' 02° 21,0' S	132° 47,4' 01° 57,3' S	132° 51,6' 01° 33,6' S	132° 55,9' 01° 09,9' S	133° 00,2' 00° 46,1' S	133° 04,6' 00° 22,4' S	133° 09,0' 00° 01,3' N	133° 13,4' 00° 25,0' N
22	147° 35,1' 03° 07,3' S	147° 39,2' 02° 43,7' S	147° 43,4' 02° 20,0' S	147° 47,6' 01° 56,3' S	147° 51,8' 01° 32,6' S	147° 56,1' 01° 08,9' S	148° 00,4' 00° 45,2' S	148° 04,8' 00° 21,4' S	148° 09,2' 00° 02,3' N	148° 13,6' 00° 26,0' N
23	162° 35,3' 03° 06,4' S	162° 39,4' 02° 42,7' S	162° 43,5' 02° 19,0' S	162° 47,7' 01° 55,3' S	162° 52,0' 01° 31,6' S	162° 56,3' 01° 07,9' S	163° 00,6' 00° 44,2' S	163° 05,0' 00° 20,4' S	163° 09,4' 00° 03,3' N	163° 13,8' 00° 27,0' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 22 Mar to 10 Apr

UT	22 Mar	23 Mar	24 Mar	25 Mar	26 Mar	27 Mar	28 Mar	29 Mar	30 Mar	31 Mar
00	178° 14.0' 00° 28.0' N	178° 18.5' 00° 51.7' N	178° 22.9' 01° 15.3' N	178° 27.4' 01° 39.0' N	178° 31.9' 02° 02.6' N	178° 36.4' 02° 26.1' N	178° 40.9' 02° 49.6' N	178° 45.4' 03° 13.0' N	178° 49.9' 03° 36.4' N	178° 54.4' 03° 59.7' N
01	193° 14.2' 00° 29.0' N	193° 18.6' 00° 52.7' N	193° 23.1' 01° 16.3' N	193° 27.6' 01° 39.9' N	193° 32.1' 02° 03.5' N	193° 36.6' 02° 27.1' N	193° 41.1' 02° 50.6' N	193° 45.6' 03° 14.0' N	193° 50.1' 03° 37.4' N	193° 54.6' 04° 00.7' N
02	208° 14.4' 00° 30.0' N	208° 18.8' 00° 53.6' N	208° 23.3' 01° 17.3' N	208° 27.8' 01° 40.9' N	208° 32.3' 02° 04.5' N	208° 36.8' 02° 28.1' N	208° 41.3' 02° 51.5' N	208° 45.8' 03° 15.0' N	208° 50.3' 03° 38.3' N	208° 54.8' 04° 01.6' N
03	223° 14.6' 00° 30.9' N	223° 19.0' 00° 54.6' N	223° 23.5' 01° 18.3' N	223° 28.0' 01° 41.9' N	223° 32.5' 02° 05.5' N	223° 37.0' 02° 29.0' N	223° 41.5' 03° 02.5' N	223° 46.0' 03° 26.0' N	223° 50.5' 03° 49.3' N	223° 55.0' 04° 02.6' N
04	238° 14.7' 00° 31.9' N	238° 19.2' 00° 55.6' N	238° 23.7' 01° 19.3' N	238° 28.2' 01° 42.9' N	238° 32.7' 02° 06.5' N	238° 37.2' 02° 30.0' N	238° 41.7' 02° 53.5' N	238° 46.2' 03° 16.9' N	238° 50.7' 03° 40.3' N	238° 55.2' 04° 03.6' N
05	253° 14.9' 00° 32.9' N	253° 19.4' 00° 56.6' N	253° 23.9' 01° 20.3' N	253° 28.4' 01° 43.9' N	253° 32.9' 02° 07.5' N	253° 37.4' 02° 31.0' N	253° 41.9' 02° 54.5' N	253° 46.4' 03° 17.9' N	253° 50.9' 03° 41.3' N	253° 55.4' 04° 04.5' N
06	268° 15.1' 00° 33.9' N	268° 19.6' 00° 57.6' N	268° 24.0' 01° 21.2' N	268° 28.5' 01° 44.9' N	268° 33.0' 02° 08.4' N	268° 37.6' 02° 32.0' N	268° 42.1' 02° 55.5' N	268° 46.6' 03° 18.9' N	268° 51.1' 03° 42.2' N	268° 55.6' 04° 05.5' N
07	283° 15.3' 00° 34.9' N	283° 19.8' 00° 58.6' N	283° 24.2' 01° 22.2' N	283° 28.7' 01° 45.9' N	283° 33.2' 02° 09.4' N	283° 37.7' 02° 33.0' N	283° 42.2' 02° 56.4' N	283° 46.8' 03° 19.9' N	283° 51.3' 03° 43.2' N	283° 55.7' 04° 06.5' N
08	298° 15.5' 00° 35.9' N	298° 19.9' 00° 59.6' N	298° 24.4' 01° 23.2' N	298° 28.9' 01° 46.8' N	298° 33.4' 02° 10.4' N	298° 37.9' 02° 33.9' N	298° 42.4' 02° 57.4' N	298° 46.9' 03° 20.8' N	298° 51.4' 03° 44.2' N	298° 55.9' 04° 07.5' N
09	313° 15.7' 00° 36.9' N	313° 20.1' 01° 00.6' N	313° 24.6' 01° 24.2' N	313° 29.1' 01° 47.8' N	313° 33.6' 02° 11.4' N	313° 38.1' 02° 34.9' N	313° 42.6' 02° 58.4' N	313° 47.1' 03° 21.8' N	313° 51.6' 03° 45.1' N	313° 56.1' 04° 08.4' N
10	328° 15.9' 00° 37.9' N	328° 20.3' 01° 01.5' N	328° 24.8' 01° 25.2' N	328° 29.3' 01° 48.8' N	328° 33.8' 02° 12.4' N	328° 38.3' 02° 35.9' N	328° 42.8' 02° 59.4' N	328° 47.3' 03° 22.8' N	328° 51.8' 03° 46.1' N	328° 56.3' 04° 09.4' N
11	343° 16.0' 00° 38.8' N	343° 20.5' 01° 02.5' N	343° 25.0' 01° 26.2' N	343° 29.5' 01° 49.8' N	343° 34.0' 02° 13.4' N	343° 38.5' 02° 36.9' N	343° 43.0' 03° 00.3' N	343° 47.5' 03° 23.7' N	343° 52.0' 03° 47.1' N	343° 56.5' 04° 10.4' N
12	358° 16.2' 00° 39.8' N	358° 20.7' 01° 03.5' N	358° 25.2' 01° 27.2' N	358° 29.7' 01° 50.8' N	358° 34.2' 02° 14.3' N	358° 38.7' 02° 37.9' N	358° 43.2' 03° 01.3' N	358° 47.7' 03° 24.7' N	358° 52.2' 03° 48.1' N	358° 56.7' 04° 11.3' N
13	013° 16.4' 00° 40.8' N	013° 20.9' 01° 04.5' N	013° 25.4' 01° 28.1' N	013° 29.9' 01° 51.7' N	013° 34.4' 02° 15.3' N	013° 38.9' 02° 38.8' N	013° 43.4' 03° 02.3' N	013° 47.9' 03° 25.7' N	013° 52.4' 03° 49.0' N	013° 56.9' 04° 12.3' N
14	028° 16.6' 00° 41.8' N	028° 21.1' 01° 05.5' N	028° 25.5' 01° 29.1' N	028° 30.0' 01° 52.7' N	028° 34.5' 02° 16.3' N	028° 39.1' 02° 39.8' N	028° 43.6' 03° 03.3' N	028° 48.1' 03° 26.7' N	028° 52.6' 03° 50.0' N	028° 57.0' 04° 13.3' N
15	043° 16.8' 00° 42.8' N	043° 21.2' 01° 06.5' N	043° 25.7' 01° 30.1' N	043° 30.2' 01° 53.7' N	043° 34.7' 02° 17.3' N	043° 39.2' 02° 40.8' N	043° 43.8' 03° 04.2' N	043° 48.3' 03° 27.6' N	043° 52.7' 03° 51.0' N	043° 57.2' 04° 14.2' N
16	058° 17.0' 00° 43.8' N	058° 21.4' 01° 07.5' N	058° 25.9' 01° 31.1' N	058° 30.4' 01° 54.7' N	058° 34.9' 02° 18.3' N	058° 39.4' 02° 41.8' N	058° 43.9' 03° 05.2' N	058° 48.4' 03° 28.6' N	058° 52.9' 03° 51.9' N	058° 57.4' 04° 15.2' N
17	073° 17.2' 00° 44.8' N	073° 21.6' 01° 08.4' N	073° 26.1' 01° 32.1' N	073° 30.6' 01° 55.7' N	073° 35.1' 02° 19.2' N	073° 39.6' 02° 42.7' N	073° 44.1' 03° 06.2' N	073° 48.6' 03° 29.6' N	073° 53.1' 03° 52.9' N	073° 57.6' 04° 16.2' N
18	088° 17.3' 00° 45.8' N	088° 21.8' 01° 09.4' N	088° 26.3' 01° 33.1' N	088° 30.8' 01° 56.7' N	088° 35.3' 02° 20.2' N	088° 39.8' 02° 43.7' N	088° 44.3' 03° 07.2' N	088° 48.8' 03° 30.6' N	088° 53.3' 03° 53.9' N	088° 57.8' 04° 17.1' N
19	103° 17.5' 00° 46.7' N	103° 22.0' 01° 10.4' N	103° 26.5' 01° 34.0' N	103° 31.0' 01° 57.6' N	103° 35.5' 02° 21.2' N	103° 40.0' 02° 44.7' N	103° 44.5' 03° 08.2' N	103° 49.0' 03° 31.5' N	103° 53.5' 03° 54.9' N	103° 58.0' 04° 18.1' N
20	118° 17.7' 00° 47.7' N	118° 22.2' 01° 11.4' N	118° 26.7' 01° 35.0' N	118° 31.2' 01° 58.6' N	118° 35.7' 02° 22.2' N	118° 40.2' 02° 45.7' N	118° 44.7' 03° 09.1' N	118° 49.2' 03° 32.5' N	118° 53.7' 03° 55.8' N	118° 58.2' 04° 19.1' N
21	133° 17.9' 00° 48.7' N	133° 22.4' 01° 12.4' N	133° 26.9' 01° 36.0' N	133° 31.4' 01° 59.6' N	133° 35.9' 02° 23.2' N	133° 40.4' 02° 46.7' N	133° 44.9' 03° 10.1' N	133° 49.4' 03° 33.5' N	133° 53.9' 03° 56.8' N	133° 58.3' 04° 20.0' N
22	148° 18.1' 00° 49.7' N	148° 22.6' 01° 13.4' N	148° 27.0' 01° 37.0' N	148° 31.5' 02° 00.6' N	148° 36.0' 02° 24.1' N	148° 40.6' 02° 47.6' N	148° 45.1' 03° 11.1' N	148° 49.6' 03° 34.5' N	148° 54.1' 03° 57.8' N	148° 58.5' 04° 21.0' N
23	163° 18.3' 00° 50.7' N	163° 22.7' 01° 14.4' N	163° 27.2' 01° 38.0' N	163° 31.7' 02° 01.6' N	163° 36.2' 02° 25.1' N	163° 40.7' 02° 48.6' N	163° 45.3' 03° 12.1' N	163° 49.8' 03° 35.4' N	163° 54.2' 03° 58.7' N	163° 58.7' 04° 22.0' N

UT	01 Apr	02 Apr	03 Apr	04 Apr	05 Apr	06 Apr	07 Apr	08 Apr	09 Apr	10 Apr
00	178° 58.9' 04° 22.9' N	179° 03.4' 04° 46.1' N	179° 07.8' 05° 09.1' N	179° 12.2' 05° 32.1' N	179° 16.5' 05° 55.0' N	179° 20.9' 06° 17.7' N	179° 25.1' 06° 40.4' N	179° 29.3' 07° 02.9' N	179° 33.5' 07° 25.4' N	179° 37.6' 07° 47.7' N
01	193° 59.1' 04° 23.9' N	194° 03.5' 04° 47.0' N	194° 08.0' 05° 10.1' N	194° 12.4' 05° 33.1' N	194° 16.7' 05° 55.9' N	194° 21.0' 06° 18.7' N	194° 25.3' 06° 41.3' N	194° 29.5' 07° 03.9' N	194° 33.7' 07° 26.3' N	194° 37.8' 07° 48.6' N
02	208° 59.3' 04° 24.9' N	209° 03.7' 04° 48.0' N	209° 08.2' 05° 11.1' N	209° 12.5' 05° 34.0' N	209° 16.9' 05° 56.9' N	209° 21.2' 06° 19.6' N	209° 25.5' 06° 42.3' N	209° 29.7' 07° 04.8' N	209° 33.9' 07° 27.2' N	209° 37.9' 07° 49.5' N
03	223° 59.5' 04° 25.8' N	224° 03.9' 04° 49.0' N	224° 08.3' 05° 12.0' N	224° 12.7' 05° 35.0' N	224° 17.1' 05° 57.8' N	224° 21.4' 06° 20.6' N	224° 25.7' 06° 43.2' N	224° 29.9' 07° 05.7' N	224° 34.0' 07° 28.2' N	224° 38.1' 07° 50.4' N
04	238° 59.6' 04° 26.8' N	239° 04.1' 04° 49.9' N	239° 08.5' 05° 13.0' N	239° 12.9' 05° 35.9' N	239° 17.3' 05° 58.8' N	239° 21.6' 06° 21.5' N	239° 25.8' 06° 44.2' N	239° 30.0' 07° 06.7' N	239° 34.2' 07° 29.1' N	239° 38.3' 07° 51.4' N
05	253° 59.8' 04° 27.8' N	254° 04.3' 04° 50.9' N	254° 08.7' 05° 13.9' N	254° 13.1' 05° 36.9' N	254° 17.4' 05° 59.7' N	254° 21.8' 06° 22.5' N	254° 26.0' 06° 45.1' N	254° 30.2' 07° 07.6' N	254° 34.4' 07° 30.0' N	254° 38.5' 07° 52.3' N
06	269° 00.0' 04° 28.7' N	269° 04.5' 04° 51.9' N	269° 08.9' 05° 14.9' N	269° 13.3' 05° 37.8' N	269° 17.6' 06° 00.7' N	269° 21.9' 06° 23.4' N	269° 26.2' 06° 46.0' N	269° 30.4' 07° 08.6' N	269° 34.5' 07° 30.9' N	269° 38.6' 07° 53.2' N
07	284° 00.2' 04° 29.7' N	284° 04.7' 04° 52.8' N	284° 09.1' 05° 15.8' N	284° 13.5' 05° 38.8' N	284° 17.8' 06° 01.6' N	284° 22.1' 06° 24.4' N	284° 26.4' 06° 47.0' N	284° 30.6' 07° 09.5' N	284° 34.7' 07° 31.9' N	284° 38.8' 07° 54.1' N
08	299° 00.4' 04° 30.7' N	299° 04.8' 04° 53.8' N	299° 09.3' 05° 16.8' N	299° 13.6' 05° 39.7' N	299° 18.0' 06° 02.6' N	299° 22.3' 06° 25.3' N	299° 26.5' 06° 47.9' N	299° 30.7' 07° 10.4' N	299° 34.9' 07° 32.8' N	299° 39.0' 07° 55.1' N
09	314° 00.6' 04° 31.6' N	314° 05.0' 04° 54.7' N	314° 09.4' 05° 17.8' N	314° 13.8' 05° 40.7' N	314° 18.2' 06° 03.5' N	314° 22.5' 06° 26.2' N	314° 26.7' 06° 48.9' N	314° 30.9' 07° 11.4' N	314° 35.1' 07° 33.7' N	314° 39.1' 07° 56.0' N
10	329° 00.8' 04° 32.6' N	329° 05.2' 04° 55.7' N	329° 09.6' 05° 18.7' N	329° 14.0' 05° 41.6' N	329° 18.3' 06° 04.5' N	329° 22.6' 06° 27.2' N	329° 26.9' 06° 49.8' N	329° 31.1' 07° 12.3' N	329° 35.2' 07° 34.7' N	329° 39.3' 07° 56.9' N
11	344° 00.9' 04° 33.6' N	344° 05.4' 04° 56.7' N	344° 09.8' 05° 19.7' N	344° 14.2' 05° 42.6' N	344° 18.5' 06° 05.4' N	344° 22.8' 06° 28.1' N	344° 27.1' 06° 50.7' N	344° 31.3' 07° 13.2' N	344° 35.4' 07° 35.6' N	344° 39.5' 07° 57.8' N
12	359° 01.1' 04° 34.5' N	359° 05.6' 04° 57.6' N	359° 10.0' 05° 20.6' N	359° 14.4' 05° 43.6' N	359° 18.7' 06° 06.4' N	359° 23.0' 06° 29.1' N	359° 27.2' 06° 51.7' N	359° 31.4' 07° 14.2' N	359° 35.6' 07° 36.5' N	359° 39.6' 07° 58.8' N
13	014° 01.3' 04° 35.5' N	014° 05.8' 04° 58.6' N	014° 10.2' 05° 21.6' N	014° 14.5' 05° 44.5' N	014° 18.9' 06° 07.3' N	014° 23.2' 06° 30.0' N	014° 27.4' 06° 52.6' N	014° 31.6' 07° 15.1' N	014° 35.7' 07° 37.5' N	014° 39.8' 07° 59.7' N
14	029° 01.5' 04° 36.4' N	029° 05.9' 04° 59.5' N	029° 10.4' 05° 22.5' N	029° 14.7' 05° 45.5' N	029° 19.1' 06° 08.3' N	029° 23.4' 06° 31.0' N	029° 27.6' 06° 53.6' N	029° 31.8' 07° 16.0' N	029° 35.9' 07° 38.4' N	029° 40.0' 08° 00.6' N
15	044° 01.7' 04° 37.4' N	044° 06.1' 05° 00.5' N	044° 10.5' 05° 23.5' N	044° 14.9' 05° 46.4' N	044° 19.2' 06° 09.2' N	044° 23.5' 06° 31.9' N	044° 27.8' 06° 54.5' N	044° 32.0' 07° 17.0' N	044° 36.1' 07° 39.3' N	044° 40.1' 08° 01.5' N
16	059° 01.9' 04° 38.4' N	059° 06.3' 05° 01.5' N	059° 10.7' 05° 24.5' N	059° 15.1' 05° 47.4' N	059° 19.4' 06° 10.2' N	059° 23.7' 06° 32.9' N	059° 27.9' 06° 55.4' N	059° 32.1' 07° 17.9' N	059° 36.3' 07° 40.2' N	059° 40.3' 08° 02.5' N
17	074° 02.1' 04° 39.3' N	074° 06.5' 05° 02.4' N	074° 10.9' 05° 25.4' N	074° 15.3' 05° 48.3' N	074° 19.6' 06° 11.1' N	074° 23.9' 06° 33.8' N	074° 28.1' 06° 56.4' N	074° 32.3' 07° 18.8' N	074° 36.4' 07° 41.2' N	074° 40.5' 08° 03.4' N
18	089° 02.2' 04° 40.3' N	089° 06.7' 05° 03.4' N	089° 11.1' 05° 26.4' N	089° 15.5' 05° 49.3' N	089° 19.8' 06° 12.1' N	089° 24.1' 06° 34.7' N	089° 28.3' 06° 57.3' N	089° 32.5' 07° 19.8' N	089° 36.6' 07° 42.1' N	089° 40.6' 08° 04.3' N
19	104° 02.4' 04° 41.3' N	104° 06.9' 05° 04.3' N	104° 11.3' 05° 27.3' N	104° 15.6' 05° 50.2' N	104° 20.0' 06° 13.0' N	104° 24.2' 06° 35.7' N	104° 28.5' 06° 58.3' N	104° 32.6' 07° 20.7' N	104° 36.8' 07° 43.0' N	104° 40.8' 08° 05.2' N
20	119° 02.6' 04° 42.2' N	119° 07.0' 05° 05.3' N	119° 11.4' 05° 28.3' N	119° 15.8' 05° 51.2' N	119° 20.1' 06° 14.0' N	119° 24.4' 06° 36.6' N	119° 28.7' 06° 59.2' N	119° 32.8' 07° 21.6' N	119° 36.9' 07° 44.0' N	119° 41.0' 08° 06.1' N
21	134° 02.8' 04° 43.2' N	134° 07.2' 05° 06.3' N	134° 11.6' 05° 29.2' N	134° 16.0' 05° 52.1' N	134° 20.3' 06° 14.9' N	134° 24.6' 06° 37.6' N	134° 28.8' 07° 00.1' N	134° 33.0' 07° 22.6' N	134° 37.1' 07° 44.9' N	134° 41.1' 08° 07.1' N
22	149° 03.0' 04° 44.2' N	149° 07.4' 05° 07.2' N	149° 11.8' 05° 30.2' N	149° 16.2' 05° 53.1' N	149° 20.5' 06° 15.8' N	149° 24.8' 06° 38.5' N	149° 29.0' 07° 01.1' N	149° 33.2' 07° 23.5' N	149° 37.3' 07° 45.8' N	149° 41.3' 08° 08.0' N
23	164° 03.2' 04° 45.1' N	164° 07.6' 05° 08.2' N	164° 12.0' 05° 31.1' N	164° 16.4' 05° 54.0' N	164° 20.7' 06° 16.8' N	164° 25.0' 06° 39.5' N	164° 29.2' 07° 02.0' N	164° 33.3' 07° 24.4' N	164° 37.4' 07° 46.7' N	164° 41.5' 08° 08.9' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 11 Apr to 30 Apr

UT	11 Apr	12 Apr	13 Apr	14 Apr	15 Apr	16 Apr	17 Apr	18 Apr	19 Apr	20 Apr
00	179° 41,6' 08° 09,8' N	179° 45,6' 08° 31,9' N	179° 49,5' 08° 53,8' N	179° 53,3' 09° 15,5' N	179° 57,0' 09° 37,1' N	180° 00,6' 09° 58,5' N	180° 04,1' 10° 19,8' N	180° 07,5' 10° 40,9' N	180° 10,9' 11° 01,8' N	180° 14,1' 11° 22,6' N
01	194° 41,8' 08° 10,8' N	194° 45,8' 08° 32,8' N	194° 49,6' 08° 54,7' N	194° 53,4' 09° 16,4' N	194° 57,1' 09° 38,0' N	195° 00,7' 09° 59,4' N	195° 04,3' 10° 20,7' N	195° 07,7' 10° 41,8' N	195° 11,0' 11° 02,7' N	195° 14,2' 11° 23,4' N
02	209° 42,0' 08° 11,7' N	209° 45,9' 08° 33,7' N	209° 49,8' 08° 55,6' N	209° 53,6' 09° 17,3' N	209° 57,3' 09° 38,9' N	210° 00,9' 10° 00,3' N	210° 04,4' 10° 21,6' N	210° 07,8' 10° 42,7' N	210° 11,1' 11° 03,6' N	210° 14,3' 11° 24,3' N
03	224° 42,1' 08° 12,6' N	224° 46,1' 08° 34,6' N	224° 50,0' 08° 56,5' N	224° 53,7' 09° 18,2' N	224° 57,4' 09° 39,8' N	225° 01,0' 10° 01,2' N	225° 04,5' 10° 22,5' N	225° 08,0' 10° 43,5' N	225° 11,3' 11° 04,4' N	225° 14,5' 11° 25,2' N
04	239° 42,3' 08° 13,5' N	239° 46,2' 08° 35,5' N	239° 50,1' 08° 57,4' N	239° 53,9' 09° 19,1' N	239° 57,6' 09° 40,7' N	240° 01,2' 10° 02,1' N	240° 04,7' 10° 23,3' N	240° 08,1' 10° 44,4' N	240° 11,4' 11° 05,3' N	240° 14,6' 11° 26,0' N
05	254° 42,5' 08° 14,4' N	254° 46,4' 08° 36,4' N	254° 50,3' 08° 58,3' N	254° 54,1' 09° 20,0' N	254° 57,7' 09° 41,6' N	255° 01,3' 10° 03,0' N	255° 04,8' 10° 24,2' N	255° 08,2' 10° 45,3' N	255° 11,5' 11° 06,2' N	255° 14,7' 11° 26,9' N
06	269° 42,6' 08° 15,4' N	269° 46,6' 08° 37,4' N	269° 50,4' 08° 59,2' N	269° 54,2' 09° 20,9' N	269° 57,9' 09° 42,5' N	270° 01,5' 10° 03,9' N	270° 05,0' 10° 25,1' N	270° 08,4' 10° 46,2' N	270° 11,7' 11° 07,0' N	270° 14,9' 11° 27,7' N
07	284° 42,8' 08° 16,3' N	284° 46,7' 08° 38,3' N	284° 50,6' 09° 00,1' N	284° 54,4' 09° 21,8' N	284° 58,0' 09° 43,4' N	285° 01,6' 10° 04,8' N	285° 05,1' 10° 26,0' N	285° 08,5' 10° 47,0' N	285° 11,8' 11° 07,9' N	285° 15,0' 11° 28,6' N
08	299° 43,0' 08° 17,2' N	299° 46,9' 08° 39,2' N	299° 50,8' 09° 01,0' N	299° 54,5' 09° 22,7' N	299° 58,2' 09° 44,3' N	300° 01,8' 10° 05,6' N	300° 05,3' 10° 26,9' N	300° 08,7' 10° 47,9' N	300° 11,9' 11° 08,8' N	300° 15,1' 11° 29,5' N
09	314° 43,1' 08° 18,1' N	314° 47,1' 08° 40,1' N	314° 50,9' 09° 01,9' N	314° 54,7' 09° 23,6' N	314° 58,3' 09° 45,2' N	315° 01,9' 10° 06,5' N	315° 05,4' 10° 27,7' N	315° 08,8' 10° 48,8' N	315° 12,1' 11° 09,6' N	315° 15,3' 11° 30,3' N
10	329° 43,3' 08° 19,0' N	329° 47,2' 08° 41,0' N	329° 51,1' 09° 02,8' N	329° 54,8' 09° 24,5' N	329° 58,5' 09° 46,1' N	330° 02,1' 10° 07,4' N	330° 05,6' 10° 28,6' N	330° 08,9' 10° 49,6' N	330° 12,2' 11° 10,5' N	330° 15,4' 11° 31,2' N
11	344° 43,5' 08° 19,9' N	344° 47,4' 08° 41,9' N	344° 51,2' 09° 03,7' N	344° 55,0' 09° 25,4' N	344° 58,6' 09° 46,9' N	345° 02,2' 10° 08,3' N	345° 05,7' 10° 29,5' N	345° 09,1' 10° 50,5' N	345° 12,3' 11° 11,4' N	345° 15,5' 11° 32,0' N
12	359° 43,6' 08° 20,9' N	359° 47,5' 08° 42,8' N	359° 51,4' 09° 04,7' N	359° 55,1' 09° 26,3' N	359° 58,8' 09° 47,8' N	000° 02,4' 10° 09,2' N	000° 05,8' 10° 30,4' N	000° 09,2' 10° 51,4' N	000° 12,5' 11° 12,2' N	000° 15,6' 11° 32,9' N
13	014° 43,8' 08° 21,8' N	014° 47,7' 08° 43,7' N	014° 51,5' 09° 05,6' N	014° 55,3' 09° 27,2' N	014° 58,9' 09° 48,7' N	015° 02,5' 10° 10,1' N	015° 06,0' 10° 31,3' N	015° 09,3' 10° 52,3' N	015° 12,6' 11° 13,1' N	015° 15,8' 11° 33,7' N
14	029° 44,0' 08° 22,7' N	029° 47,9' 08° 44,7' N	029° 51,7' 09° 06,5' N	029° 55,4' 09° 28,1' N	029° 59,1' 09° 49,6' N	030° 02,7' 10° 11,0' N	030° 06,1' 10° 32,1' N	030° 09,5' 10° 53,1' N	030° 12,7' 11° 14,0' N	030° 15,9' 11° 34,6' N
15	044° 44,1' 08° 23,6' N	044° 48,0' 08° 45,6' N	044° 51,9' 09° 07,4' N	044° 55,6' 09° 29,0' N	044° 59,2' 09° 50,5' N	045° 02,8' 10° 11,8' N	045° 06,3' 10° 33,0' N	045° 09,6' 10° 54,0' N	045° 12,9' 11° 14,8' N	045° 16,0' 11° 35,4' N
16	059° 44,3' 08° 24,5' N	059° 48,2' 08° 46,5' N	059° 52,0' 09° 08,3' N	059° 55,8' 09° 29,9' N	059° 59,4' 09° 51,4' N	060° 03,0' 10° 12,7' N	060° 06,4' 10° 33,9' N	060° 09,8' 10° 54,9' N	060° 13,0' 11° 15,7' N	060° 16,2' 11° 36,3' N
17	074° 44,5' 08° 25,5' N	074° 48,4' 08° 47,4' N	074° 52,2' 09° 09,2' N	074° 55,9' 09° 30,8' N	074° 59,5' 09° 52,3' N	075° 03,1' 10° 13,6' N	075° 06,5' 10° 34,8' N	075° 09,9' 10° 55,7' N	075° 13,1' 11° 16,5' N	075° 16,3' 11° 37,2' N
18	089° 44,6' 08° 26,4' N	089° 48,5' 08° 48,3' N	089° 52,3' 09° 10,1' N	089° 56,1' 09° 31,7' N	089° 59,7' 09° 53,2' N	090° 03,2' 10° 14,5' N	090° 06,7' 10° 35,6' N	090° 10,0' 10° 56,6' N	090° 13,3' 11° 17,4' N	090° 16,4' 11° 38,0' N
19	104° 44,8' 08° 27,3' N	104° 48,7' 08° 49,2' N	104° 52,5' 09° 11,0' N	104° 56,2' 09° 32,6' N	104° 59,8' 09° 54,1' N	105° 03,4' 10° 15,4' N	105° 06,8' 10° 36,5' N	105° 10,2' 10° 57,5' N	105° 13,4' 11° 18,3' N	105° 16,5' 11° 38,9' N
20	119° 44,9' 08° 28,2' N	119° 48,8' 08° 50,1' N	119° 52,6' 09° 11,9' N	119° 56,4' 09° 33,5' N	120° 00,0' 09° 55,0' N	120° 03,5' 10° 16,3' N	120° 07,0' 10° 37,4' N	120° 10,3' 10° 58,4' N	120° 13,5' 11° 19,1' N	120° 16,7' 11° 39,7' N
21	134° 45,1' 08° 29,1' N	134° 49,0' 08° 51,0' N	134° 52,8' 09° 12,8' N	134° 56,5' 09° 34,4' N	135° 00,1' 09° 55,9' N	135° 03,7' 10° 17,2' N	135° 07,1' 10° 38,3' N	135° 10,4' 10° 59,2' N	135° 13,7' 11° 20,0' N	135° 16,8' 11° 40,6' N
22	149° 45,3' 08° 30,0' N	149° 49,2' 08° 51,9' N	149° 53,0' 09° 13,7' N	149° 56,7' 09° 35,3' N	150° 00,3' 09° 56,8' N	150° 03,8' 10° 18,0' N	150° 07,3' 10° 39,2' N	150° 10,6' 11° 00,1' N	150° 13,8' 11° 20,9' N	150° 16,9' 11° 41,4' N
23	164° 45,4' 08° 31,0' N	164° 49,3' 08° 52,8' N	164° 53,1' 09° 14,6' N	164° 56,8' 09° 36,2' N	165° 00,4' 09° 57,6' N	165° 04,0' 10° 18,9' N	165° 07,4' 10° 40,0' N	165° 10,7' 11° 01,0' N	165° 13,9' 11° 21,7' N	165° 17,1' 11° 42,3' N

UT	21 Apr	22 Apr	23 Apr	24 Apr	25 Apr	26 Apr	27 Apr	28 Apr	29 Apr	30 Apr
00	180° 17,2' 11° 43,1' N	180° 20,2' 12° 03,5' N	180° 23,1' 12° 23,7' N	180° 25,9' 12° 43,6' N	180° 28,5' 13° 03,4' N	180° 31,1' 13° 22,9' N	180° 33,5' 13° 42,2' N	180° 35,8' 14° 01,3' N	180° 38,0' 14° 20,2' N	180° 40,0' 14° 38,8' N
01	195° 17,3' 11° 44,0' N	195° 20,3' 12° 04,3' N	195° 23,2' 12° 24,5' N	195° 26,0' 12° 44,4' N	195° 28,6' 13° 04,2' N	195° 31,2' 13° 23,7' N	195° 33,6' 13° 43,0' N	195° 35,9' 14° 02,1' N	195° 38,1' 14° 20,9' N	195° 40,1' 14° 39,5' N
02	210° 17,4' 11° 44,8' N	210° 20,4' 12° 05,2' N	210° 23,3' 12° 25,3' N	210° 26,1' 12° 45,3' N	210° 28,7' 13° 05,0' N	210° 31,3' 13° 24,5' N	210° 33,7' 13° 43,8' N	210° 36,0' 14° 02,9' N	210° 38,2' 14° 21,7' N	210° 40,2' 14° 40,3' N
03	225° 17,6' 11° 45,7' N	225° 20,6' 12° 06,0' N	225° 23,4' 12° 26,2' N	225° 26,2' 12° 46,1' N	225° 28,8' 13° 05,8' N	225° 31,4' 13° 25,3' N	225° 33,8' 13° 44,6' N	225° 36,1' 14° 03,7' N	225° 38,2' 14° 22,5' N	225° 40,3' 14° 41,1' N
04	240° 17,7' 11° 46,5' N	240° 20,7' 12° 06,9' N	240° 23,5' 12° 27,0' N	240° 26,3' 12° 46,9' N	240° 28,9' 13° 06,6' N	240° 31,5' 13° 26,1' N	240° 33,9' 13° 45,4' N	240° 36,2' 14° 04,5' N	240° 38,3' 14° 23,3' N	240° 40,4' 14° 41,9' N
05	255° 17,8' 11° 47,4' N	255° 20,8' 12° 07,7' N	255° 23,7' 12° 27,8' N	255° 26,4' 12° 47,8' N	255° 29,1' 13° 07,5' N	255° 31,6' 13° 26,9' N	255° 34,0' 13° 46,2' N	255° 36,3' 14° 05,3' N	255° 38,4' 14° 24,1' N	255° 40,4' 14° 42,6' N
06	270° 17,9' 11° 48,2' N	270° 20,9' 12° 08,6' N	270° 23,8' 12° 28,7' N	270° 26,5' 12° 48,6' N	270° 29,2' 13° 08,3' N	270° 31,7' 13° 27,8' N	270° 34,1' 13° 47,0' N	270° 36,4' 14° 06,0' N	270° 38,5' 14° 24,8' N	270° 40,5' 14° 43,4' N
07	285° 18,1' 11° 49,1' N	285° 21,0' 12° 09,4' N	285° 23,9' 12° 29,5' N	285° 26,6' 12° 49,4' N	285° 29,3' 13° 09,1' N	285° 31,8' 13° 28,6' N	285° 34,2' 13° 47,8' N	285° 36,4' 14° 06,8' N	285° 38,6' 14° 25,6' N	285° 40,6' 14° 44,2' N
08	300° 18,2' 11° 49,9' N	300° 21,2' 12° 10,2' N	300° 24,0' 12° 30,3' N	300° 26,8' 12° 50,2' N	300° 29,4' 13° 09,9' N	300° 31,9' 13° 29,4' N	300° 34,3' 13° 48,6' N	300° 36,5' 14° 07,6' N	300° 38,7' 14° 26,4' N	300° 40,7' 14° 44,9' N
09	315° 18,3' 11° 50,8' N	315° 21,3' 12° 11,1' N	315° 24,1' 12° 31,2' N	315° 26,9' 12° 51,1' N	315° 29,5' 13° 10,7' N	315° 32,0' 13° 30,2' N	315° 34,4' 13° 49,4' N	315° 36,6' 14° 08,4' N	315° 38,8' 14° 27,2' N	315° 40,8' 14° 45,7' N
10	330° 18,4' 11° 51,6' N	330° 21,4' 12° 11,9' N	330° 24,2' 12° 32,0' N	330° 27,0' 12° 51,9' N	330° 29,6' 13° 11,5' N	330° 32,1' 13° 31,0' N	330° 34,5' 13° 50,2' N	330° 36,7' 14° 09,2' N	330° 38,8' 14° 27,9' N	330° 40,9' 14° 46,5' N
11	345° 18,6' 11° 52,5' N	345° 21,5' 12° 12,8' N	345° 24,4' 12° 32,8' N	345° 27,1' 12° 52,7' N	345° 29,7' 13° 12,4' N	345° 32,2' 13° 31,8' N	345° 34,6' 13° 51,0' N	345° 36,8' 14° 10,0' N	345° 38,9' 14° 28,7' N	345° 40,9' 14° 47,2' N
12	000° 18,7' 11° 53,3' N	000° 21,6' 12° 13,6' N	000° 24,5' 12° 33,7' N	000° 27,2' 12° 53,5' N	000° 29,8' 13° 13,2' N	000° 32,3' 13° 32,6' N	000° 34,7' 13° 51,8' N	000° 36,9' 14° 10,8' N	000° 39,0' 14° 29,5' N	000° 41,0' 14° 48,0' N
13	015° 18,8' 11° 54,2' N	015° 21,8' 12° 14,4' N	015° 24,6' 12° 34,5' N	015° 27,3' 12° 54,3' N	015° 29,9' 13° 14,0' N	015° 32,4' 13° 33,4' N	015° 34,8' 13° 52,6' N	015° 37,0' 14° 11,5' N	015° 39,1' 14° 30,3' N	015° 41,1' 14° 48,8' N
14	030° 18,9' 11° 55,0' N	030° 21,9' 12° 15,3' N	030° 24,7' 12° 35,3' N	030° 27,4' 12° 55,2' N	030° 30,0' 13° 14,8' N	030° 32,5' 13° 34,2' N	030° 34,8' 13° 53,4' N	030° 37,1' 14° 12,3' N	030° 39,2' 14° 31,0' N	030° 41,2' 14° 49,5' N
15	045° 19,1' 11° 55,9' N	045° 22,0' 12° 16,1' N	045° 24,8' 12° 36,2' N	045° 27,5' 12° 56,0' N	045° 30,1' 13° 15,6' N	045° 32,6' 13° 35,0' N	045° 34,9' 13° 54,2' N	045° 37,2' 14° 13,1' N	045° 39,3' 14° 31,8' N	045° 41,3' 14° 50,3' N
16	060° 19,2' 11° 56,7' N	060° 22,1' 12° 17,0' N	060° 24,9' 12° 37,0' N	060° 27,6' 12° 56,8' N	060° 30,2' 13° 16,4' N	060° 32,7' 13° 35,8' N	060° 35,0' 13° 55,0' N	060° 37,3' 14° 13,9' N	060° 39,4' 14° 32,6' N	060° 41,3' 14° 51,1' N
17	075° 19,3' 11° 57,6' N	075° 22,2' 12° 17,8' N	075° 25,1' 12° 37,8' N	075° 27,7' 12° 57,6' N	075° 30,3' 13° 17,2' N	075° 32,8' 13° 36,6' N	075° 35,1' 13° 55,8' N	075° 37,4' 14° 14,7' N	075° 39,4' 14° 33,4' N	075° 41,4' 14° 51,8' N
18	090° 19,4' 11° 58,4' N	090° 22,4' 12° 18,6' N	090° 25,2' 12° 38,7' N	090° 27,9' 12° 58,5' N	090° 30,4' 13° 18,0' N	090° 32,9' 13° 37,4' N	090° 35,2' 13° 56,6' N	090° 37,4' 14° 15,5' N	090° 39,5' 14° 34,1' N	090° 41,5' 14° 52,6' N
19	105° 19,6' 11° 59,3' N	105° 22,5' 12° 19,5' N	105° 25,3' 12° 39,5' N	105° 28,0' 12° 59,3' N	105° 30,5' 13° 18,9' N	105° 33,0' 13° 38,2' N	105° 35,3' 13° 57,3' N	105° 37,5' 14° 16,3' N	105° 39,6' 14° 34,9' N	105° 41,6' 14° 53,3' N
20	120° 19,7' 12° 00,1' N	120° 22,6' 12° 20,3' N	120° 25,4' 12° 40,3' N	120° 28,1' 13° 00,1' N	120° 30,6' 13° 19,7' N	120° 33,1' 13° 39,0' N	120° 35,4' 13° 58,1' N	120° 37,6' 14° 17,0' N	120° 39,7' 14° 35,7' N	120° 41,7' 14° 54,1' N
21	135° 19,8' 12° 01,0' N	135° 22,7' 12° 21,2' N	135° 25,5' 12° 41,1' N	135° 28,2' 13° 00,9' N	135° 30,7' 13° 20,5' N	135° 33,2' 13° 39,8' N	135° 35,5' 13° 58,9' N	135° 37,7' 14° 17,8' N	135° 39,8' 14° 36,5' N	135° 41,7' 14° 54,9' N
22	150° 19,9' 12° 01,8' N	150° 22,8' 12° 22,0' N	150° 25,6' 12° 42,0' N	150° 28,3' 13° 01,7' N	150° 30,9' 13° 21,3' N	150° 33,3' 13° 40,6' N	150° 35,6' 13° 59,7' N	150° 37,8' 14° 18,6' N	150° 39,9' 14° 37,2' N	150° 41,8' 14° 55,6' N
23	165° 20,1' 12° 02,7' N	165° 23,0' 12° 22,8' N	165° 25,7' 12° 42,8' N	165° 28,4' 13° 02,6' N	165° 31,0' 13° 22,1' N	165° 33,4' 13° 41,4' N	165° 35,7' 14° 00,5' N	165° 37,9' 14° 19,4' N	165° 40,0' 14° 38,0' N	165° 41,9' 14° 56,4' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 01 May to 20 May

UT	01 May	02 May	03 May	04 May	05 May	06 May	07 May	08 May	09 May	10 May
00	180° 42.0' 14° 57.2' N	180° 43.8' 15° 15.3' N	180° 45.4' 15° 33.1' N	180° 47.0' 15° 50.8' N	180° 48.4' 16° 08.1' N	180° 49.6' 16° 25.2' N	180° 50.8' 16° 42.0' N	180° 51.8' 16° 58.5' N	180° 52.6' 17° 14.8' N	180° 53.3' 17° 30.7' N
01	195° 42.0' 14° 57.9' N	195° 43.8' 15° 16.0' N	195° 45.5' 15° 33.9' N	195° 47.0' 15° 51.5' N	195° 48.4' 16° 08.8' N	195° 49.7' 16° 25.9' N	195° 50.8' 16° 42.7' N	195° 51.8' 16° 59.2' N	195° 52.6' 17° 15.5' N	195° 53.3' 17° 31.4' N
02	210° 42.1' 14° 58.7' N	210° 43.9' 15° 16.8' N	210° 45.6' 15° 34.6' N	210° 47.1' 15° 52.2' N	210° 48.5' 16° 09.5' N	210° 49.7' 16° 26.6' N	210° 50.9' 16° 43.4' N	210° 51.8' 16° 59.9' N	210° 52.7' 17° 16.1' N	210° 53.4' 17° 32.1' N
03	225° 42.2' 14° 59.4' N	225° 44.0' 15° 17.5' N	225° 45.6' 15° 35.4' N	225° 47.2' 15° 52.9' N	225° 48.5' 16° 10.3' N	225° 49.8' 16° 27.3' N	225° 50.9' 16° 44.1' N	225° 51.9' 17° 00.6' N	225° 52.7' 17° 16.8' N	225° 53.4' 17° 32.7' N
04	240° 42.3' 15° 00.2' N	240° 44.1' 15° 18.3' N	240° 45.7' 15° 36.1' N	240° 47.2' 15° 53.7' N	240° 48.6' 16° 11.0' N	240° 49.8' 16° 28.0' N	240° 51.0' 16° 44.8' N	240° 51.9' 17° 01.3' N	240° 52.7' 17° 17.5' N	240° 53.4' 17° 33.4' N
05	255° 42.4' 15° 00.9' N	255° 44.1' 15° 19.0' N	255° 45.8' 15° 36.8' N	255° 47.3' 15° 54.4' N	255° 48.7' 16° 11.7' N	255° 49.9' 16° 28.7' N	255° 51.0' 16° 45.5' N	255° 52.0' 17° 01.9' N	255° 52.8' 17° 18.1' N	255° 53.4' 17° 34.0' N
06	270° 42.4' 15° 01.7' N	270° 44.2' 15° 19.8' N	270° 45.8' 15° 37.6' N	270° 47.3' 15° 55.1' N	270° 48.7' 16° 12.4' N	270° 49.9' 16° 29.4' N	270° 51.0' 16° 46.2' N	270° 52.0' 17° 02.6' N	270° 52.8' 17° 18.8' N	270° 53.5' 17° 34.7' N
07	285° 42.5' 15° 02.5' N	285° 44.3' 15° 20.5' N	285° 45.9' 15° 38.3' N	285° 47.4' 15° 55.8' N	285° 48.8' 16° 13.1' N	285° 50.0' 16° 30.1' N	285° 51.1' 16° 46.9' N	285° 52.0' 17° 03.3' N	285° 52.8' 17° 19.5' N	285° 53.5' 17° 35.3' N
08	300° 42.6' 15° 03.2' N	300° 44.3' 15° 21.3' N	300° 46.0' 15° 39.0' N	300° 47.5' 15° 56.6' N	300° 48.8' 16° 13.8' N	300° 50.0' 16° 30.8' N	300° 51.1' 16° 47.5' N	300° 52.1' 17° 04.0' N	300° 52.9' 17° 20.1' N	300° 53.5' 17° 36.0' N
09	315° 42.7' 15° 04.0' N	315° 44.4' 15° 22.0' N	315° 46.0' 15° 39.8' N	315° 47.5' 15° 57.3' N	315° 48.9' 16° 14.5' N	315° 50.1' 16° 31.5' N	315° 51.2' 16° 48.2' N	315° 52.1' 17° 04.7' N	315° 52.9' 17° 20.8' N	315° 53.5' 17° 36.7' N
10	330° 42.7' 15° 04.7' N	330° 44.5' 15° 22.8' N	330° 46.1' 15° 40.5' N	330° 47.6' 15° 58.0' N	330° 48.9' 16° 15.3' N	330° 50.1' 16° 32.2' N	330° 51.2' 16° 48.9' N	330° 52.1' 17° 05.3' N	330° 52.9' 17° 21.5' N	330° 53.6' 17° 37.3' N
11	345° 42.8' 15° 05.5' N	345° 44.5' 15° 23.5' N	345° 46.2' 15° 41.3' N	345° 47.6' 15° 58.7' N	345° 49.0' 16° 16.0' N	345° 50.2' 16° 32.9' N	345° 51.2' 16° 49.6' N	345° 52.2' 17° 06.0' N	345° 52.9' 17° 22.1' N	345° 53.6' 17° 38.0' N
12	000° 42.9' 15° 06.2' N	000° 44.6' 15° 24.2' N	000° 46.2' 15° 42.0' N	000° 47.7' 15° 59.5' N	000° 49.0' 16° 16.7' N	000° 50.2' 16° 33.6' N	000° 51.3' 16° 50.3' N	000° 52.2' 17° 06.7' N	000° 53.0' 17° 22.8' N	000° 53.6' 17° 38.6' N
13	015° 43.0' 15° 07.0' N	015° 44.7' 15° 25.0' N	015° 46.3' 15° 42.7' N	015° 47.8' 16° 00.2' N	015° 49.1' 16° 17.4' N	015° 50.3' 16° 34.3' N	015° 51.3' 16° 51.0' N	015° 52.2' 17° 07.4' N	015° 53.0' 17° 23.5' N	015° 53.6' 17° 39.3' N
14	030° 43.0' 15° 07.8' N	030° 44.8' 15° 25.7' N	030° 46.4' 15° 43.5' N	030° 47.8' 16° 00.9' N	030° 49.1' 16° 18.1' N	030° 50.3' 16° 35.0' N	030° 51.4' 16° 51.7' N	030° 52.3' 17° 08.1' N	030° 53.0' 17° 24.1' N	030° 53.6' 17° 39.9' N
15	045° 43.1' 15° 08.5' N	045° 44.8' 15° 26.5' N	045° 46.4' 15° 44.2' N	045° 47.9' 16° 01.6' N	045° 49.2' 16° 18.8' N	045° 50.4' 16° 35.7' N	045° 51.4' 16° 52.4' N	045° 52.3' 17° 08.7' N	045° 53.1' 17° 24.8' N	045° 53.7' 17° 40.6' N
16	060° 43.2' 15° 09.3' N	060° 44.9' 15° 27.2' N	060° 46.5' 15° 44.9' N	060° 47.9' 16° 02.4' N	060° 49.2' 16° 19.5' N	060° 50.4' 16° 36.4' N	060° 51.5' 16° 53.1' N	060° 52.3' 17° 09.4' N	060° 53.1' 17° 25.5' N	060° 53.7' 17° 41.2' N
17	075° 43.3' 15° 10.0' N	075° 45.0' 15° 28.0' N	075° 46.5' 15° 45.7' N	075° 48.0' 16° 03.1' N	075° 49.3' 16° 20.2' N	075° 50.5' 16° 37.1' N	075° 51.5' 16° 53.7' N	075° 52.4' 17° 10.1' N	075° 53.1' 17° 26.1' N	075° 53.7' 17° 41.9' N
18	090° 43.3' 15° 10.8' N	090° 45.0' 15° 28.7' N	090° 46.6' 15° 46.4' N	090° 48.0' 16° 03.8' N	090° 49.3' 16° 20.9' N	090° 50.5' 16° 37.8' N	090° 51.5' 16° 54.4' N	090° 52.4' 17° 10.7' N	090° 53.1' 17° 26.8' N	090° 53.7' 17° 42.5' N
19	105° 43.4' 15° 11.5' N	105° 45.1' 15° 29.4' N	105° 46.7' 15° 47.1' N	105° 48.1' 16° 04.5' N	105° 49.4' 16° 21.7' N	105° 50.6' 16° 38.5' N	105° 51.6' 16° 55.1' N	105° 52.4' 17° 11.4' N	105° 53.2' 17° 27.4' N	105° 53.8' 17° 43.2' N
20	120° 43.5' 15° 12.3' N	120° 45.2' 15° 30.2' N	120° 46.7' 15° 47.8' N	120° 48.2' 16° 05.2' N	120° 49.4' 16° 22.4' N	120° 50.6' 16° 39.2' N	120° 51.6' 16° 55.8' N	120° 52.5' 17° 12.1' N	120° 53.2' 17° 28.1' N	120° 53.8' 17° 43.8' N
21	135° 43.5' 15° 13.0' N	135° 45.2' 15° 30.9' N	135° 46.8' 15° 48.6' N	135° 48.2' 16° 06.0' N	135° 49.5' 16° 23.1' N	135° 50.6' 16° 39.9' N	135° 51.6' 16° 56.5' N	135° 52.5' 17° 12.8' N	135° 53.2' 17° 28.8' N	135° 53.8' 17° 44.5' N
22	150° 43.6' 15° 13.8' N	150° 45.3' 15° 31.7' N	150° 46.9' 15° 49.3' N	150° 48.3' 16° 06.7' N	150° 49.5' 16° 23.8' N	150° 50.7' 16° 40.6' N	150° 51.7' 16° 57.2' N	150° 52.5' 17° 13.4' N	150° 53.3' 17° 29.4' N	150° 53.8' 17° 45.1' N
23	165° 43.7' 15° 14.5' N	165° 45.4' 15° 32.4' N	165° 46.9' 15° 50.0' N	165° 48.3' 16° 07.4' N	165° 49.6' 16° 24.5' N	165° 50.7' 16° 41.3' N	165° 51.7' 16° 57.8' N	165° 52.6' 17° 14.1' N	165° 53.3' 17° 30.1' N	165° 53.8' 17° 45.8' N

UT	11 May	12 May	13 May	14 May	15 May	16 May	17 May	18 May	19 May	20 May
00	180° 53.9' 17° 46.4' N	180° 54.3' 18° 01.8' N	180° 54.5' 18° 16.9' N	180° 54.6' 18° 31.6' N	180° 54.6' 18° 46.1' N	180° 54.4' 19° 00.2' N	180° 54.1' 19° 14.0' N	180° 53.6' 19° 27.5' N	180° 53.0' 19° 40.7' N	180° 52.2' 19° 53.5' N
01	195° 53.9' 17° 47.1' N	195° 54.3' 18° 02.4' N	195° 54.5' 18° 17.5' N	195° 54.6' 18° 32.2' N	195° 54.6' 18° 46.7' N	195° 54.4' 19° 00.8' N	195° 54.1' 19° 14.6' N	195° 53.6' 19° 28.1' N	195° 53.0' 19° 41.2' N	195° 52.2' 19° 54.0' N
02	210° 53.9' 17° 47.7' N	210° 54.3' 18° 03.1' N	210° 54.5' 18° 18.1' N	210° 54.6' 18° 32.8' N	210° 54.6' 18° 47.3' N	210° 54.4' 19° 01.4' N	210° 54.0' 19° 15.1' N	210° 53.6' 19° 28.6' N	210° 52.9' 19° 41.7' N	210° 52.2' 19° 54.5' N
03	225° 53.9' 17° 48.3' N	225° 54.3' 18° 03.7' N	225° 54.5' 18° 18.7' N	225° 54.6' 18° 33.4' N	225° 54.6' 18° 47.8' N	225° 54.4' 19° 01.9' N	225° 54.0' 19° 15.7' N	225° 53.5' 19° 29.2' N	225° 52.9' 19° 42.3' N	225° 52.1' 19° 55.0' N
04	240° 53.9' 17° 49.0' N	240° 54.3' 18° 04.3' N	240° 54.6' 18° 19.3' N	240° 54.6' 18° 34.0' N	240° 54.6' 18° 48.4' N	240° 54.4' 19° 02.5' N	240° 54.0' 19° 16.3' N	240° 53.5' 19° 29.7' N	240° 52.9' 19° 42.8' N	240° 52.1' 19° 55.6' N
05	255° 54.0' 17° 49.6' N	255° 54.3' 18° 04.9' N	255° 54.6' 18° 20.0' N	255° 54.6' 18° 34.7' N	255° 54.6' 18° 49.0' N	255° 54.4' 19° 03.1' N	255° 54.0' 19° 16.8' N	255° 53.5' 19° 30.3' N	255° 52.8' 19° 43.3' N	255° 52.1' 19° 56.1' N
06	270° 54.0' 17° 50.3' N	270° 54.3' 18° 05.6' N	270° 54.6' 18° 20.6' N	270° 54.6' 18° 35.3' N	270° 54.6' 18° 49.6' N	270° 54.3' 19° 03.7' N	270° 54.0' 19° 17.4' N	270° 53.5' 19° 30.8' N	270° 52.8' 19° 43.9' N	270° 52.0' 19° 56.6' N
07	285° 54.0' 17° 50.9' N	285° 54.4' 18° 06.2' N	285° 54.6' 18° 21.2' N	285° 54.6' 18° 35.9' N	285° 54.6' 18° 50.2' N	285° 54.3' 19° 04.3' N	285° 54.0' 19° 18.0' N	285° 53.4' 19° 31.4' N	285° 52.8' 19° 44.4' N	285° 52.0' 19° 57.1' N
08	300° 54.0' 17° 51.6' N	300° 54.4' 18° 06.8' N	300° 54.6' 18° 21.8' N	300° 54.6' 18° 36.5' N	300° 54.6' 18° 50.8' N	300° 54.3' 19° 04.8' N	300° 53.9' 19° 18.5' N	300° 53.4' 19° 31.9' N	300° 52.8' 19° 45.0' N	300° 52.0' 19° 57.7' N
09	315° 54.0' 17° 52.2' N	315° 54.4' 18° 07.5' N	315° 54.6' 18° 22.4' N	315° 54.6' 18° 37.1' N	315° 54.5' 18° 51.4' N	315° 54.3' 19° 05.4' N	315° 53.9' 19° 19.1' N	315° 53.4' 19° 32.5' N	315° 52.7' 19° 45.5' N	315° 51.9' 19° 58.2' N
10	330° 54.0' 17° 52.9' N	330° 54.4' 18° 08.1' N	330° 54.6' 18° 23.0' N	330° 54.6' 18° 37.7' N	330° 54.5' 18° 52.0' N	330° 54.3' 19° 06.0' N	330° 53.9' 19° 19.7' N	330° 53.4' 19° 33.0' N	330° 52.7' 19° 46.0' N	330° 51.9' 19° 58.7' N
11	345° 54.1' 17° 53.5' N	345° 54.4' 18° 08.7' N	345° 54.6' 18° 23.7' N	345° 54.6' 18° 38.3' N	345° 54.5' 18° 52.6' N	345° 54.3' 19° 06.6' N	345° 53.9' 19° 20.2' N	345° 53.3' 19° 33.6' N	345° 52.7' 19° 46.6' N	345° 51.8' 19° 59.2' N
12	000° 54.1' 17° 54.1' N	000° 54.4' 18° 09.4' N	000° 54.6' 18° 24.3' N	000° 54.6' 18° 38.9' N	000° 54.5' 18° 53.2' N	000° 54.3' 19° 07.1' N	000° 53.9' 19° 20.8' N	000° 53.3' 19° 34.1' N	000° 52.6' 19° 47.1' N	000° 51.8' 19° 59.8' N
13	015° 54.1' 17° 54.8' N	015° 54.4' 18° 10.0' N	015° 54.6' 18° 24.9' N	015° 54.6' 18° 39.5' N	015° 54.5' 18° 53.8' N	015° 54.3' 19° 07.7' N	015° 53.8' 19° 21.4' N	015° 53.3' 19° 34.7' N	015° 52.6' 19° 47.6' N	015° 51.8' 20° 00.3' N
14	030° 54.1' 17° 55.4' N	030° 54.4' 18° 10.6' N	030° 54.6' 18° 25.5' N	030° 54.6' 18° 40.1' N	030° 54.5' 18° 54.3' N	030° 54.2' 19° 08.3' N	030° 53.8' 19° 21.9' N	030° 53.3' 19° 35.2' N	030° 52.6' 19° 48.2' N	030° 51.7' 20° 00.8' N
15	045° 54.1' 17° 56.1' N	045° 54.4' 18° 11.2' N	045° 54.6' 18° 26.1' N	045° 54.6' 18° 40.7' N	045° 54.5' 18° 54.9' N	045° 54.2' 19° 08.9' N	045° 53.8' 19° 22.5' N	045° 53.2' 19° 35.8' N	045° 52.5' 19° 48.7' N	045° 51.7' 20° 01.3' N
16	060° 54.1' 17° 56.7' N	060° 54.5' 18° 11.9' N	060° 54.6' 18° 26.7' N	060° 54.6' 18° 41.3' N	060° 54.5' 18° 55.5' N	060° 54.2' 19° 09.4' N	060° 53.8' 19° 23.0' N	060° 53.2' 19° 36.3' N	060° 52.5' 19° 49.2' N	060° 51.7' 20° 01.8' N
17	075° 54.2' 17° 57.3' N	075° 54.5' 18° 12.5' N	075° 54.6' 18° 27.3' N	075° 54.6' 18° 41.9' N	075° 54.5' 18° 56.1' N	075° 54.2' 19° 10.0' N	075° 53.8' 19° 23.6' N	075° 53.2' 19° 36.8' N	075° 52.5' 19° 49.8' N	075° 51.6' 20° 02.3' N
18	090° 54.2' 17° 58.0' N	090° 54.5' 18° 13.1' N	090° 54.6' 18° 28.0' N	090° 54.6' 18° 42.5' N	090° 54.5' 18° 56.7' N	090° 54.2' 19° 10.6' N	090° 53.7' 19° 24.2' N	090° 53.2' 19° 37.4' N	090° 52.4' 19° 50.3' N	090° 51.6' 20° 02.9' N
19	105° 54.2' 17° 58.6' N	105° 54.5' 18° 13.7' N	105° 54.6' 18° 28.6' N	105° 54.6' 18° 43.1' N	105° 54.5' 18° 57.3' N	105° 54.2' 19° 11.2' N	105° 53.7' 19° 24.7' N	105° 53.1' 19° 37.9' N	105° 52.4' 19° 50.8' N	105° 51.5' 20° 03.4' N
20	120° 54.2' 17° 59.2' N	120° 54.5' 18° 14.4' N	120° 54.6' 18° 29.2' N	120° 54.6' 18° 43.7' N	120° 54.5' 18° 57.9' N	120° 54.1' 19° 11.7' N	120° 53.7' 19° 25.3' N	120° 53.1' 19° 38.5' N	120° 52.4' 19° 51.4' N	120° 51.5' 20° 03.9' N
21	135° 54.2' 17° 59.9' N	135° 54.5' 18° 15.0' N	135° 54.6' 18° 29.8' N	135° 54.6' 18° 44.3' N	135° 54.4' 18° 58.4' N	135° 54.1' 19° 12.3' N	135° 53.7' 19° 25.8' N	135° 53.1' 19° 39.0' N	135° 52.3' 19° 51.9' N	135° 51.5' 20° 04.4' N
22	150° 54.2' 18° 00.5' N	150° 54.5' 18° 15.6' N	150° 54.6' 18° 30.4' N	150° 54.6' 18° 44.9' N	150° 54.4' 18° 59.0' N	150° 54.1' 19° 12.9' N	150° 53.7' 19° 26.4' N	150° 53.0' 19° 39.6' N	150° 52.3' 19° 52.4' N	150° 51.4' 20° 04.9' N
23	165° 54.3' 18° 01.1' N	165° 54.5' 18° 16.2' N	165° 54.6' 18° 31.0' N	165° 54.6' 18° 45.5' N	165° 54.4' 18° 59.6' N	165° 54.1' 19° 13.4' N	165° 53.6' 19° 26.9' N	165° 53.0' 19° 39.9' N	165° 52.3' 19° 52.9' N	165° 51.4' 20° 05.4' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 21 May to 09 Jun

UT	21 May	22 May	23 May	24 May	25 May	26 May	27 May	28 May	29 May	30 May
00	180° 51.3' 20° 06.0' N	180° 50.3' 20° 18.1' N	180° 49.2' 20° 29.9' N	180° 47.9' 20° 41.3' N	180° 46.5' 20° 52.4' N	180° 44.9' 21° 03.1' N	180° 43.3' 21° 13.5' N	180° 41.5' 21° 23.5' N	180° 39.6' 21° 33.1' N	180° 37.7' 21° 42.3' N
01	195° 51.3' 20° 06.5' N	195° 50.3' 20° 18.6' N	195° 49.1' 20° 30.4' N	195° 47.8' 20° 41.8' N	195° 46.4' 20° 52.9' N	195° 44.9' 21° 03.6' N	195° 43.2' 21° 13.9' N	195° 41.4' 21° 23.9' N	195° 39.6' 21° 33.5' N	195° 37.6' 21° 42.7' N
02	210° 51.3' 20° 07.0' N	210° 50.2' 20° 19.1' N	210° 49.1' 20° 30.8' N	210° 47.8' 20° 42.3' N	210° 46.3' 20° 53.3' N	210° 44.8' 21° 04.0' N	210° 43.1' 21° 14.3' N	210° 41.4' 21° 24.3' N	210° 39.5' 21° 33.9' N	210° 37.5' 21° 43.1' N
03	225° 51.2' 20° 07.5' N	225° 50.2' 20° 19.6' N	225° 49.0' 20° 31.3' N	225° 47.7' 20° 42.7' N	225° 46.3' 20° 53.8' N	225° 44.7' 21° 04.4' N	225° 43.1' 21° 14.7' N	225° 41.3' 21° 24.7' N	225° 39.4' 21° 34.3' N	225° 37.4' 21° 43.5' N
04	240° 51.2' 20° 08.0' N	240° 50.1' 20° 20.1' N	240° 49.0' 20° 31.8' N	240° 47.6' 20° 43.2' N	240° 46.2' 20° 54.2' N	240° 44.7' 21° 04.9' N	240° 43.0' 21° 15.2' N	240° 41.2' 21° 25.1' N	240° 39.3' 21° 34.7' N	240° 37.3' 21° 43.8' N
05	255° 51.1' 20° 08.5' N	255° 50.1' 20° 20.6' N	255° 48.9' 20° 32.3' N	255° 47.6' 20° 43.7' N	255° 46.2' 20° 54.7' N	255° 44.6' 21° 05.3' N	255° 42.9' 21° 15.6' N	255° 41.1' 21° 25.5' N	255° 39.2' 21° 35.0' N	255° 37.2' 21° 44.2' N
06	270° 51.1' 20° 09.0' N	270° 50.0' 20° 21.1' N	270° 48.9' 20° 32.8' N	270° 47.5' 20° 44.1' N	270° 46.1' 20° 55.1' N	270° 44.5' 21° 05.7' N	270° 42.8' 21° 16.0' N	270° 41.1' 21° 25.9' N	270° 39.2' 21° 35.4' N	270° 37.1' 21° 44.6' N
07	285° 51.1' 20° 09.5' N	285° 50.0' 20° 21.6' N	285° 48.8' 20° 33.3' N	285° 47.5' 20° 44.6' N	285° 46.0' 20° 55.6' N	285° 44.5' 21° 06.2' N	285° 42.8' 21° 16.4' N	285° 41.0' 21° 26.3' N	285° 39.1' 21° 35.8' N	285° 37.1' 21° 45.0' N
08	300° 51.0' 20° 10.0' N	300° 49.9' 20° 22.1' N	300° 48.7' 20° 33.7' N	300° 47.4' 20° 45.0' N	300° 46.0' 20° 56.0' N	300° 44.4' 21° 06.6' N	300° 42.7' 21° 16.8' N	300° 40.9' 21° 26.7' N	300° 39.0' 21° 36.2' N	300° 37.0' 21° 45.3' N
09	315° 51.0' 20° 10.5' N	315° 49.9' 20° 22.6' N	315° 48.7' 20° 34.2' N	315° 47.4' 20° 45.5' N	315° 45.9' 20° 56.5' N	315° 44.3' 21° 07.0' N	315° 42.6' 21° 17.3' N	315° 40.7' 21° 27.1' N	315° 38.9' 21° 36.6' N	315° 36.9' 21° 45.7' N
10	330° 50.9' 20° 11.1' N	330° 49.9' 20° 23.0' N	330° 48.6' 20° 34.7' N	330° 47.3' 20° 46.0' N	330° 45.8' 20° 56.9' N	330° 44.3' 21° 07.5' N	330° 42.6' 21° 17.7' N	330° 40.7' 21° 27.5' N	330° 38.8' 21° 37.0' N	330° 36.8' 21° 46.1' N
11	345° 50.9' 20° 11.6' N	345° 49.8' 20° 23.5' N	345° 48.6' 20° 35.2' N	345° 47.2' 20° 46.4' N	345° 45.8' 20° 57.4' N	345° 44.2' 21° 07.9' N	345° 42.5' 21° 18.1' N	345° 40.7' 21° 27.9' N	345° 38.7' 21° 37.4' N	345° 36.7' 21° 46.4' N
12	000° 50.8' 20° 12.1' N	000° 49.8' 20° 24.0' N	000° 48.5' 20° 35.6' N	000° 47.2' 20° 46.9' N	000° 45.7' 20° 57.8' N	000° 44.1' 21° 08.3' N	000° 42.4' 21° 18.5' N	000° 40.6' 21° 28.3' N	000° 38.7' 21° 37.8' N	000° 36.6' 21° 46.8' N
13	015° 50.8' 20° 12.6' N	015° 49.7' 20° 24.5' N	015° 48.5' 20° 36.1' N	015° 47.1' 20° 47.4' N	015° 45.6' 20° 58.2' N	015° 44.1' 21° 08.8' N	015° 42.3' 21° 18.9' N	015° 40.5' 21° 28.9' N	015° 38.6' 21° 38.1' N	015° 36.5' 21° 47.2' N
14	030° 50.8' 20° 13.1' N	030° 49.7' 20° 25.0' N	030° 48.4' 20° 36.6' N	030° 47.1' 20° 47.8' N	030° 45.6' 20° 58.7' N	030° 44.0' 21° 09.2' N	030° 42.3' 21° 19.3' N	030° 40.4' 21° 29.1' N	030° 38.5' 21° 38.5' N	030° 36.5' 21° 47.6' N
15	045° 50.7' 20° 13.6' N	045° 49.6' 20° 25.5' N	045° 48.4' 20° 37.1' N	045° 47.0' 20° 48.3' N	045° 45.5' 20° 59.1' N	045° 43.9' 21° 09.6' N	045° 42.2' 21° 19.8' N	045° 40.4' 21° 29.5' N	045° 38.4' 21° 38.9' N	045° 36.4' 21° 47.9' N
16	060° 50.7' 20° 14.1' N	060° 49.6' 20° 26.0' N	060° 48.3' 20° 37.5' N	060° 46.9' 20° 48.7' N	060° 45.5' 20° 59.6' N	060° 43.8' 21° 10.1' N	060° 42.1' 21° 20.2' N	060° 40.3' 21° 29.9' N	060° 38.3' 21° 39.3' N	060° 36.3' 21° 48.3' N
17	075° 50.6' 20° 14.6' N	075° 49.5' 20° 26.5' N	075° 48.3' 20° 38.0' N	075° 46.9' 20° 49.2' N	075° 45.4' 21° 00.0' N	075° 43.8' 21° 10.5' N	075° 42.0' 21° 20.6' N	075° 40.2' 21° 30.3' N	075° 38.2' 21° 39.7' N	075° 36.2' 21° 48.7' N
18	090° 50.6' 20° 15.1' N	090° 49.5' 20° 27.0' N	090° 48.2' 20° 38.5' N	090° 46.8' 20° 49.7' N	090° 45.3' 21° 00.5' N	090° 43.7' 21° 10.9' N	090° 42.0' 21° 21.0' N	090° 40.1' 21° 30.7' N	090° 38.2' 21° 40.1' N	090° 36.1' 21° 49.0' N
19	105° 50.5' 20° 15.6' N	105° 49.4' 20° 27.5' N	105° 48.2' 20° 39.0' N	105° 46.8' 20° 50.1' N	105° 45.3' 21° 00.9' N	105° 43.6' 21° 11.3' N	105° 41.9' 21° 21.4' N	105° 40.0' 21° 31.1' N	105° 38.1' 21° 40.4' N	105° 36.0' 21° 49.4' N
20	120° 50.5' 20° 16.1' N	120° 49.4' 20° 27.9' N	120° 48.1' 20° 39.4' N	120° 46.7' 20° 50.6' N	120° 45.2' 21° 01.4' N	120° 43.6' 21° 11.8' N	120° 41.8' 21° 21.8' N	120° 40.0' 21° 31.5' N	120° 38.0' 21° 40.8' N	120° 35.9' 21° 49.7' N
21	135° 50.5' 20° 16.6' N	135° 49.3' 20° 28.4' N	135° 48.0' 20° 39.9' N	135° 46.6' 20° 51.0' N	135° 45.1' 21° 01.8' N	135° 43.5' 21° 12.2' N	135° 41.7' 21° 22.2' N	135° 39.9' 21° 31.9' N	135° 37.9' 21° 41.2' N	135° 35.8' 21° 50.1' N
22	150° 50.4' 20° 17.1' N	150° 49.3' 20° 28.9' N	150° 48.0' 20° 40.4' N	150° 46.6' 20° 51.5' N	150° 45.1' 21° 02.2' N	150° 43.4' 21° 12.6' N	150° 41.7' 21° 22.6' N	150° 39.8' 21° 32.3' N	150° 37.8' 21° 41.6' N	150° 35.7' 21° 50.5' N
23	165° 50.4' 20° 17.6' N	165° 49.2' 20° 29.4' N	165° 47.9' 20° 40.8' N	165° 46.5' 20° 51.9' N	165° 45.0' 21° 02.7' N	165° 43.4' 21° 13.1' N	165° 41.6' 21° 23.1' N	165° 39.7' 21° 32.7' N	165° 37.7' 21° 42.0' N	165° 35.7' 21° 50.8' N
UT	31 May	01 Jun	02 Jun	03 Jun	04 Jun	05 Jun	06 Jun	07 Jun	08 Jun	09 Jun
00	180° 35.6' 21° 51.2' N	180° 33.4' 21° 59.7' N	180° 31.1' 22° 07.8' N	180° 28.7' 22° 15.5' N	180° 26.3' 22° 22.8' N	180° 23.7' 22° 29.8' N	180° 21.1' 22° 36.3' N	180° 18.4' 22° 42.5' N	180° 15.6' 22° 48.2' N	180° 12.7' 22° 53.6' N
01	195° 35.5' 21° 51.6' N	195° 33.3' 22° 00.0' N	195° 31.0' 22° 08.1' N	195° 28.6' 22° 15.8' N	195° 26.2' 22° 23.1' N	195° 23.6' 22° 30.1' N	195° 21.0' 22° 36.6' N	195° 18.3' 22° 42.7' N	195° 15.5' 22° 48.4' N	195° 12.6' 22° 53.8' N
02	210° 35.4' 21° 51.9' N	210° 33.2' 22° 00.4' N	210° 30.9' 22° 08.4' N	210° 28.5' 22° 16.1' N	210° 26.1' 22° 23.4' N	210° 23.5' 22° 30.3' N	210° 20.9' 22° 36.8' N	210° 18.1' 22° 43.0' N	210° 15.4' 22° 48.7' N	210° 12.5' 22° 54.0' N
03	225° 35.3' 21° 52.3' N	225° 33.1' 22° 00.7' N	225° 30.8' 22° 08.8' N	225° 28.4' 22° 16.4' N	225° 26.0' 22° 23.7' N	225° 23.4' 22° 30.6' N	225° 20.8' 22° 37.1' N	225° 18.0' 22° 43.2' N	225° 15.2' 22° 48.9' N	225° 12.4' 22° 54.2' N
04	240° 35.2' 21° 52.6' N	240° 33.0' 22° 01.1' N	240° 30.7' 22° 09.1' N	240° 28.3' 22° 16.8' N	240° 25.8' 22° 24.0' N	240° 23.3' 22° 30.9' N	240° 20.6' 22° 37.4' N	240° 17.9' 22° 43.5' N	240° 15.1' 22° 49.1' N	240° 12.2' 22° 54.4' N
05	255° 35.1' 21° 53.0' N	255° 32.9' 22° 01.4' N	255° 30.6' 22° 09.4' N	255° 28.2' 22° 17.1' N	255° 25.7' 22° 24.3' N	255° 23.2' 22° 31.2' N	255° 20.5' 22° 37.6' N	255° 17.8' 22° 43.7' N	255° 15.0' 22° 49.4' N	255° 12.1' 22° 54.6' N
06	270° 35.0' 21° 53.4' N	270° 32.8' 22° 01.7' N	270° 30.5' 22° 09.8' N	270° 28.1' 22° 17.4' N	270° 25.6' 22° 24.6' N	270° 23.1' 22° 31.4' N	270° 20.4' 22° 37.9' N	270° 17.7' 22° 43.9' N	270° 14.9' 22° 49.6' N	270° 12.0' 22° 54.8' N
07	285° 34.9' 21° 53.7' N	285° 32.7' 22° 02.1' N	285° 30.4' 22° 10.1' N	285° 28.0' 22° 17.7' N	285° 25.5' 22° 24.9' N	285° 23.0' 22° 31.7' N	285° 20.3' 22° 38.2' N	285° 17.6' 22° 44.2' N	285° 14.8' 22° 49.8' N	285° 11.9' 22° 55.1' N
08	300° 34.9' 21° 54.1' N	300° 32.6' 22° 02.4' N	300° 30.3' 22° 10.4' N	300° 27.9' 22° 18.0' N	300° 25.4' 22° 25.2' N	300° 22.8' 22° 32.0' N	300° 20.2' 22° 38.4' N	300° 17.5' 22° 44.4' N	300° 14.6' 22° 50.0' N	300° 11.8' 22° 55.3' N
09	315° 34.8' 21° 54.4' N	315° 32.5' 22° 02.8' N	315° 30.2' 22° 10.7' N	315° 27.8' 22° 18.3' N	315° 25.3' 22° 25.5' N	315° 22.7' 22° 32.3' N	315° 20.1' 22° 38.7' N	315° 17.3' 22° 44.7' N	315° 14.5' 22° 50.3' N	315° 11.6' 22° 55.5' N
10	330° 34.7' 21° 54.8' N	330° 32.4' 22° 03.1' N	330° 30.1' 22° 11.1' N	330° 27.7' 22° 18.6' N	330° 25.2' 22° 25.8' N	330° 22.6' 22° 32.6' N	330° 20.0' 22° 38.9' N	330° 17.2' 22° 44.9' N	330° 14.4' 22° 50.5' N	330° 11.5' 22° 55.7' N
11	345° 34.6' 21° 55.1' N	345° 32.4' 22° 03.4' N	345° 30.0' 22° 11.4' N	345° 27.6' 22° 18.9' N	345° 25.1' 22° 26.1' N	345° 22.5' 22° 32.8' N	345° 19.9' 22° 39.2' N	345° 17.1' 22° 45.2' N	345° 14.3' 22° 50.7' N	345° 11.4' 22° 55.9' N
12	000° 34.5' 21° 55.5' N	000° 32.3' 22° 03.8' N	000° 29.9' 22° 11.7' N	000° 27.5' 22° 19.2' N	000° 25.0' 22° 26.4' N	000° 22.4' 22° 33.1' N	000° 19.7' 22° 39.4' N	000° 17.0' 22° 45.4' N	000° 14.2' 22° 50.9' N	000° 11.3' 22° 56.1' N
13	015° 34.4' 21° 55.8' N	015° 32.2' 22° 04.1' N	015° 29.8' 22° 12.0' N	015° 27.4' 22° 19.5' N	015° 24.9' 22° 26.6' N	015° 22.3' 22° 33.4' N	015° 19.6' 22° 39.7' N	015° 16.9' 22° 45.6' N	015° 14.0' 22° 51.2' N	015° 11.2' 22° 56.3' N
14	030° 34.3' 21° 56.2' N	030° 32.1' 22° 04.5' N	030° 29.7' 22° 12.3' N	030° 27.3' 22° 19.8' N	030° 24.8' 22° 26.9' N	030° 22.2' 22° 33.6' N	030° 19.5' 22° 40.0' N	030° 16.8' 22° 45.9' N	030° 13.9' 22° 51.4' N	030° 11.0' 22° 56.5' N
15	045° 34.2' 21° 56.5' N	045° 32.0' 22° 04.8' N	045° 29.6' 22° 12.7' N	045° 27.2' 22° 20.1' N	045° 24.7' 22° 27.2' N	045° 22.1' 22° 33.9' N	045° 19.4' 22° 40.2' N	045° 16.6' 22° 46.1' N	045° 13.8' 22° 51.6' N	045° 10.9' 22° 56.7' N
16	060° 34.1' 21° 56.9' N	060° 31.9' 22° 05.1' N	060° 29.5' 22° 13.0' N	060° 27.1' 22° 20.4' N	060° 24.6' 22° 27.5' N	060° 22.0' 22° 34.2' N	060° 19.3' 22° 40.5' N	060° 16.5' 22° 46.3' N	060° 13.7' 22° 51.8' N	060° 10.8' 22° 56.9' N
17	075° 34.0' 21° 57.3' N	075° 31.8' 22° 05.5' N	075° 29.4' 22° 13.3' N	075° 27.0' 22° 20.7' N	075° 24.5' 22° 27.8' N	075° 21.9' 22° 34.5' N	075° 19.2' 22° 40.7' N	075° 16.4' 22° 46.6' N	075° 13.6' 22° 52.0' N	075° 10.7' 22° 57.1' N
18	090° 33.9' 21° 57.6' N	090° 31.7' 22° 05.8' N	090° 29.3' 22° 13.6' N	090° 26.9' 22° 21.0' N	090° 24.4' 22° 28.1' N	090° 21.8' 22° 34.7' N	090° 19.1' 22° 41.0' N	090° 16.3' 22° 46.8' N	090° 13.5' 22° 52.3' N	090° 10.5' 22° 57.3' N
19	105° 33.8' 21° 58.0' N</									

Solar Almanac 2031 — Sun GHA & Decl (UT) — 10 Jun to 29 Jun

UT	10 Jun	11 Jun	12 Jun	13 Jun	14 Jun	15 Jun	16 Jun	17 Jun	18 Jun	19 Jun
00	180° 09,8' 22° 58,5' N	180° 06,8' 23° 03,1' N	180° 03,8' 23° 07,2' N	180° 00,7' 23° 10,9' N	179° 57,5' 23° 14,2' N	179° 54,3' 23° 17,2' N	179° 51,1' 23° 19,6' N	179° 47,9' 23° 21,7' N	179° 44,6' 23° 23,4' N	179° 41,3' 23° 24,7' N
01	195° 09,7' 22° 58,7' N	195° 06,7' 23° 03,2' N	195° 03,6' 23° 07,4' N	195° 00,5' 23° 11,1' N	194° 57,4' 23° 14,4' N	194° 54,2' 23° 17,3' N	194° 51,0' 23° 19,7' N	194° 47,7' 23° 21,8' N	194° 44,5' 23° 23,5' N	194° 41,2' 23° 24,7' N
02	210° 09,6' 22° 58,9' N	210° 06,6' 23° 03,4' N	210° 03,5' 23° 07,5' N	210° 00,4' 23° 11,2' N	209° 57,3' 23° 14,5' N	209° 54,1' 23° 17,4' N	209° 50,8' 23° 19,8' N	209° 47,6' 23° 21,9' N	209° 44,3' 23° 23,5' N	209° 41,0' 23° 24,8' N
03	225° 09,4' 22° 59,1' N	225° 06,4' 23° 03,6' N	225° 03,4' 23° 07,7' N	225° 00,3' 23° 11,4' N	224° 57,1' 23° 14,6' N	224° 53,9' 23° 17,5' N	224° 50,7' 23° 19,9' N	224° 47,5' 23° 22,0' N	224° 44,2' 23° 23,6' N	224° 40,9' 23° 24,8' N
04	240° 09,3' 22° 59,3' N	240° 06,3' 23° 03,8' N	240° 03,3' 23° 07,8' N	240° 00,1' 23° 11,5' N	239° 57,0' 23° 14,8' N	239° 53,8' 23° 17,6' N	239° 50,6' 23° 20,0' N	239° 47,3' 23° 22,0' N	239° 44,0' 23° 23,6' N	239° 40,8' 23° 24,8' N
05	255° 09,2' 22° 59,5' N	255° 06,2' 23° 04,0' N	255° 03,1' 23° 08,0' N	255° 00,0' 23° 11,6' N	254° 56,9' 23° 14,9' N	254° 53,7' 23° 17,7' N	254° 50,4' 23° 20,1' N	254° 47,2' 23° 22,1' N	254° 43,9' 23° 23,7' N	254° 40,6' 23° 24,9' N
06	270° 09,1' 22° 59,7' N	270° 06,1' 23° 04,1' N	270° 03,0' 23° 08,2' N	269° 59,9' 23° 11,8' N	269° 56,7' 23° 15,0' N	269° 53,5' 23° 17,8' N	269° 50,3' 23° 20,2' N	269° 47,0' 23° 22,2' N	269° 43,8' 23° 23,8' N	269° 40,5' 23° 24,9' N
07	285° 08,9' 22° 59,9' N	285° 05,9' 23° 04,3' N	285° 02,9' 23° 08,3' N	284° 59,8' 23° 11,9' N	284° 56,6' 23° 15,1' N	284° 53,4' 23° 17,9' N	284° 50,2' 23° 20,3' N	284° 46,9' 23° 22,3' N	284° 43,6' 23° 23,8' N	284° 40,3' 23° 25,0' N
08	300° 08,8' 23° 00,1' N	300° 05,8' 23° 04,5' N	300° 02,7' 23° 08,5' N	299° 59,6' 23° 12,1' N	299° 56,5' 23° 15,3' N	299° 53,3' 23° 18,0' N	299° 50,0' 23° 20,4' N	299° 46,8' 23° 22,3' N	299° 43,5' 23° 23,9' N	299° 40,2' 23° 25,0' N
09	315° 08,7' 23° 00,3' N	315° 05,7' 23° 04,7' N	315° 02,6' 23° 08,6' N	314° 59,5' 23° 12,2' N	314° 56,3' 23° 15,4' N	314° 53,1' 23° 18,1' N	314° 49,9' 23° 20,5' N	314° 46,6' 23° 22,4' N	314° 43,4' 23° 23,9' N	314° 40,1' 23° 25,0' N
10	330° 08,6' 23° 00,5' N	330° 05,6' 23° 04,8' N	330° 02,5' 23° 08,8' N	329° 59,4' 23° 12,4' N	329° 56,2' 23° 15,5' N	329° 53,0' 23° 18,2' N	329° 49,8' 23° 20,6' N	329° 46,5' 23° 22,5' N	329° 43,2' 23° 24,0' N	329° 39,9' 23° 25,1' N
11	345° 08,4' 23° 00,6' N	345° 05,4' 23° 05,0' N	345° 02,4' 23° 09,0' N	344° 59,2' 23° 12,5' N	344° 56,1' 23° 15,6' N	344° 52,9' 23° 18,3' N	344° 49,6' 23° 20,7' N	344° 46,4' 23° 22,6' N	344° 43,1' 23° 24,0' N	344° 39,8' 23° 25,1' N
12	000° 08,3' 23° 00,8' N	000° 05,3' 23° 05,2' N	000° 02,2' 23° 09,1' N	359° 59,1' 23° 12,6' N	359° 55,9' 23° 15,7' N	359° 52,7' 23° 18,5' N	359° 49,5' 23° 20,7' N	359° 46,2' 23° 22,6' N	359° 43,0' 23° 24,1' N	359° 39,7' 23° 25,1' N
13	015° 08,2' 23° 01,0' N	015° 05,2' 23° 05,3' N	015° 02,1' 23° 09,3' N	014° 59,0' 23° 12,8' N	014° 55,8' 23° 15,9' N	014° 52,6' 23° 18,6' N	014° 49,4' 23° 20,8' N	014° 46,1' 23° 22,8' N	014° 42,8' 23° 24,1' N	014° 39,5' 23° 25,2' N
14	030° 08,1' 23° 01,2' N	030° 05,0' 23° 05,5' N	030° 02,0' 23° 09,4' N	029° 58,8' 23° 12,9' N	029° 55,7' 23° 16,0' N	029° 52,5' 23° 18,7' N	029° 49,2' 23° 20,9' N	029° 46,0' 23° 22,9' N	029° 42,7' 23° 24,2' N	029° 39,4' 23° 25,2' N
15	045° 07,9' 23° 01,4' N	045° 04,9' 23° 05,7' N	045° 01,8' 23° 09,6' N	044° 58,7' 23° 13,0' N	044° 55,5' 23° 16,1' N	044° 52,3' 23° 18,8' N	044° 49,1' 23° 21,0' N	044° 45,8' 23° 22,8' N	044° 42,5' 23° 24,2' N	044° 39,3' 23° 25,2' N
16	060° 07,8' 23° 01,6' N	060° 04,8' 23° 05,9' N	060° 01,7' 23° 09,7' N	059° 58,6' 23° 13,2' N	059° 55,4' 23° 16,2' N	059° 52,2' 23° 18,9' N	059° 49,0' 23° 21,1' N	059° 45,7' 23° 22,9' N	059° 42,4' 23° 24,3' N	059° 39,1' 23° 25,3' N
17	075° 07,7' 23° 01,8' N	075° 04,7' 23° 06,0' N	075° 01,6' 23° 09,9' N	074° 58,4' 23° 13,3' N	074° 55,3' 23° 16,3' N	074° 52,1' 23° 19,0' N	074° 48,8' 23° 21,2' N	074° 45,5' 23° 23,0' N	074° 42,3' 23° 24,3' N	074° 39,0' 23° 25,3' N
18	090° 07,6' 23° 02,0' N	090° 04,5' 23° 06,2' N	090° 01,4' 23° 10,0' N	089° 58,3' 23° 13,5' N	089° 55,1' 23° 16,5' N	089° 51,9' 23° 19,1' N	089° 48,7' 23° 21,3' N	089° 45,4' 23° 23,0' N	089° 42,1' 23° 24,4' N	089° 38,8' 23° 25,3' N
19	105° 07,4' 23° 02,1' N	105° 04,4' 23° 06,4' N	105° 01,3' 23° 10,2' N	104° 58,2' 23° 13,6' N	104° 55,0' 23° 16,6' N	104° 51,8' 23° 19,2' N	104° 48,5' 23° 21,3' N	104° 45,3' 23° 23,1' N	104° 42,0' 23° 24,4' N	104° 38,7' 23° 25,4' N
20	120° 07,3' 23° 02,3' N	120° 04,3' 23° 06,5' N	120° 01,2' 23° 10,3' N	119° 58,0' 23° 13,7' N	119° 54,9' 23° 16,7' N	119° 51,7' 23° 19,3' N	119° 48,4' 23° 21,4' N	119° 45,1' 23° 23,2' N	119° 41,9' 23° 24,5' N	119° 38,6' 23° 25,4' N
21	135° 07,2' 23° 02,5' N	135° 04,2' 23° 06,7' N	135° 01,1' 23° 10,5' N	134° 57,9' 23° 13,8' N	134° 54,7' 23° 16,8' N	134° 51,5' 23° 19,4' N	134° 48,3' 23° 21,5' N	134° 45,0' 23° 23,2' N	134° 41,7' 23° 24,6' N	134° 38,4' 23° 25,4' N
22	150° 07,1' 23° 02,7' N	150° 04,0' 23° 06,9' N	150° 00,9' 23° 10,6' N	149° 57,8' 23° 14,0' N	149° 54,6' 23° 16,9' N	149° 51,4' 23° 19,5' N	149° 48,1' 23° 21,6' N	149° 44,9' 23° 23,3' N	149° 41,6' 23° 24,6' N	149° 38,3' 23° 25,5' N
23	165° 06,9' 23° 02,9' N	165° 03,9' 23° 07,0' N	165° 00,8' 23° 10,8' N	164° 57,7' 23° 14,1' N	164° 54,5' 23° 17,0' N	164° 51,2' 23° 19,6' N	164° 48,0' 23° 21,7' N	164° 44,7' 23° 23,3' N	164° 41,4' 23° 24,6' N	164° 38,2' 23° 25,5' N

UT	20 Jun	21 Jun	22 Jun	23 Jun	24 Jun	25 Jun	26 Jun	27 Jun	28 Jun	29 Jun
00	179° 38,0' 23° 25,5' N	179° 34,7' 23° 26,0' N	179° 31,4' 23° 26,0' N	179° 28,2' 23° 25,6' N	179° 24,9' 23° 24,8' N	179° 21,7' 23° 23,6' N	179° 18,5' 23° 21,9' N	179° 15,3' 23° 19,9' N	179° 12,2' 23° 17,4' N	179° 09,1' 23° 14,6' N
01	194° 37,9' 23° 25,5' N	194° 34,6' 23° 26,0' N	194° 31,3' 23° 26,0' N	194° 28,0' 23° 25,6' N	194° 24,8' 23° 24,7' N	194° 21,5' 23° 23,5' N	194° 18,3' 23° 21,9' N	194° 15,2' 23° 19,8' N	194° 12,1' 23° 17,3' N	194° 09,0' 23° 14,5' N
02	209° 37,7' 23° 25,6' N	209° 34,4' 23° 26,0' N	209° 31,2' 23° 26,0' N	209° 27,9' 23° 25,5' N	209° 24,6' 23° 24,7' N	209° 21,4' 23° 23,4' N	209° 18,2' 23° 21,8' N	209° 15,1' 23° 19,7' N	209° 11,9' 23° 17,2' N	209° 08,9' 23° 14,3' N
03	224° 37,6' 23° 25,6' N	224° 34,3' 23° 26,0' N	224° 31,0' 23° 25,9' N	224° 27,8' 23° 25,5' N	224° 24,5' 23° 24,6' N	224° 21,3' 23° 23,4' N	224° 18,1' 23° 21,7' N	224° 14,9' 23° 19,6' N	224° 11,8' 23° 17,1' N	224° 08,8' 23° 14,2' N
04	239° 37,5' 23° 25,6' N	239° 34,2' 23° 26,0' N	239° 30,9' 23° 25,9' N	239° 27,6' 23° 25,5' N	239° 24,4' 23° 24,6' N	239° 21,1' 23° 23,3' N	239° 17,9' 23° 21,6' N	239° 14,8' 23° 19,5' N	239° 11,7' 23° 17,0' N	239° 08,6' 23° 14,1' N
05	254° 37,3' 23° 25,6' N	254° 34,0' 23° 26,0' N	254° 30,8' 23° 25,9' N	254° 27,5' 23° 25,4' N	254° 24,2' 23° 24,6' N	254° 21,0' 23° 23,3' N	254° 17,8' 23° 21,5' N	254° 14,7' 23° 19,4' N	254° 11,6' 23° 16,9' N	254° 08,5' 23° 13,9' N
06	269° 37,2' 23° 25,7' N	269° 33,9' 23° 26,0' N	269° 30,6' 23° 25,9' N	269° 27,3' 23° 25,4' N	269° 24,1' 23° 24,5' N	269° 20,9' 23° 23,2' N	269° 17,7' 23° 21,5' N	269° 14,5' 23° 19,3' N	269° 11,4' 23° 16,8' N	269° 08,4' 23° 13,8' N
07	284° 37,1' 23° 25,7' N	284° 33,8' 23° 26,0' N	284° 30,5' 23° 25,9' N	284° 27,2' 23° 25,4' N	284° 24,0' 23° 24,5' N	284° 20,7' 23° 23,1' N	284° 17,6' 23° 21,4' N	284° 14,4' 23° 19,2' N	284° 11,3' 23° 16,7' N	284° 08,3' 23° 13,7' N
08	299° 36,9' 23° 25,7' N	299° 33,6' 23° 26,0' N	299° 30,3' 23° 25,9' N	299° 27,1' 23° 25,4' N	299° 23,8' 23° 24,4' N	299° 20,6' 23° 23,1' N	299° 17,4' 23° 21,3' N	299° 14,3' 23° 19,1' N	299° 11,2' 23° 16,5' N	299° 08,1' 23° 13,5' N
09	314° 36,8' 23° 25,7' N	314° 33,5' 23° 26,0' N	314° 30,2' 23° 25,9' N	314° 26,9' 23° 25,3' N	314° 23,7' 23° 24,4' N	314° 20,5' 23° 23,0' N	314° 17,3' 23° 21,2' N	314° 14,1' 23° 19,0' N	314° 11,1' 23° 16,4' N	314° 08,0' 23° 13,4' N
10	329° 36,6' 23° 25,7' N	329° 33,4' 23° 26,0' N	329° 30,1' 23° 25,9' N	329° 26,8' 23° 25,3' N	329° 23,6' 23° 24,3' N	329° 20,3' 23° 22,9' N	329° 17,2' 23° 21,1' N	329° 14,0' 23° 18,9' N	329° 10,9' 23° 16,3' N	329° 07,9' 23° 13,3' N
11	344° 36,5' 23° 25,8' N	344° 33,2' 23° 26,0' N	344° 29,9' 23° 25,8' N	344° 26,7' 23° 25,3' N	344° 23,4' 23° 24,3' N	344° 20,2' 23° 22,9' N	344° 17,0' 23° 21,0' N	344° 13,9' 23° 18,8' N	344° 10,8' 23° 16,2' N	344° 07,8' 23° 13,1' N
12	359° 36,4' 23° 25,8' N	359° 33,1' 23° 26,0' N	359° 29,8' 23° 25,8' N	359° 26,5' 23° 25,2' N	359° 23,3' 23° 24,2' N	359° 20,1' 23° 22,8' N	359° 16,9' 23° 21,0' N	359° 13,8' 23° 18,7' N	359° 10,7' 23° 16,1' N	359° 07,6' 23° 13,0' N
13	014° 36,2' 23° 25,8' N	014° 32,9' 23° 26,0' N	014° 29,7' 23° 25,8' N	014° 26,4' 23° 25,2' N	014° 23,2' 23° 24,2' N	014° 19,9' 23° 22,7' N	014° 16,8' 23° 20,9' N	014° 13,6' 23° 18,6' N	014° 10,5' 23° 15,9' N	014° 07,5' 23° 12,9' N
14	029° 36,1' 23° 25,8' N	029° 32,8' 23° 26,0' N	029° 29,5' 23° 25,8' N	029° 26,3' 23° 25,2' N	029° 23,0' 23° 24,1' N	029° 19,8' 23° 22,7' N	029° 16,6' 23° 20,8' N	029° 13,5' 23° 18,5' N	029° 10,4' 23° 15,8' N	029° 07,4' 23° 12,7' N
15	044° 36,0' 23° 25,8' N	044° 32,7' 23° 26,0' N	044° 29,4' 23° 25,8' N	044° 26,1' 23° 25,1' N	044° 22,9' 23° 24,1' N	044° 19,7' 23° 22,6' N	044° 16,5' 23° 20,7' N	044° 13,4' 23° 18,4' N	044° 10,3' 23° 15,7' N	044° 07,3' 23° 12,6' N
16	059° 35,8' 23° 25,9' N	059° 32,5' 23° 26,0' N	059° 29,2' 23° 25,8' N	059° 26,0' 23° 25,1' N	059° 22,7' 23° 24,0' N	059° 19,5' 23° 22,5' N	059° 16,4' 23° 20,6' N	059° 13,2' 23° 18,3' N	059° 10,2' 23° 15,6' N	059° 07,1' 23° 12,5' N
17	074° 35,7' 23° 25,9' N	074° 32,4' 23° 26,0' N	074° 29,1' 23° 25,7' N	074° 25,9' 23° 25,1' N	074° 22,6' 23° 24,0' N	074° 19,4' 23° 22,4' N	074° 16,2' 23° 20,5' N	074° 13,1' 23° 18,2' N	074° 10,0' 23° 15,5' N	074° 07,0' 23° 12,3' N
18	089° 35,5' 23° 25,9' N	089° 32,3' 23° 26,0' N	089° 29,0' 23° 25,7' N	089° 25,7' 23° 25,0' N	089° 22,5' 23° 23,9' N	089° 19,3' 23° 22,4' N	089° 16,1' 23° 20,4' N	089° 13,0' 23° 18,1' N	089° 09,9' 23° 15,3' N	089° 06,9' 23° 12,2' N
19	104° 35,4' 23° 25,9' N	104° 32,1' 23° 26,0' N	104° 28,8' 23° 25,7' N	104° 25,6' 23° 25,0' N	104° 22,3' 23° 23,8' N	104° 19,1' 23° 22,3' N	104° 16,0' 23° 20,3' N	104° 12,9' 23° 18,0' N	104° 09,8' 23° 15,2' N	104° 06,8' 23° 12,0' N
20	119° 35,3' 23° 25,9' N	119° 32,0' 23° 26,0' N	119° 28,7' 23° 25,7' N	119° 25,4' 23° 24,9' N	119° 22,2' 23° 23,8' N	119° 19,0' 23° 22,2' N	119° 15,8' 23° 20,3' N	119° 12,7' 23° 17,9' N	119° 09,7' 23° 15,1' N	119° 06,6' 23° 11,9' N
21	134° 35,1' 23° 25,9' N	134° 31,8' 23° 26,0' N	134° 28,6' 23° 24,9' N	134° 25,3' 23° 24,9' N	134° 22,1' 23° 23,7' N	134° 18,9' 23° 22,2' N	134° 15,7' 23° 20,2' N	134° 12,6' 23° 17,8' N	134° 09,5' 23° 15,0' N	134° 06,5' 23° 11,8' N
22	149° 35,0' 23° 25,9' N	149° 31,7' 23° 26,0' N	149° 28,4' 23° 24,9' N	149° 25,2' 23° 24,9' N	149° 21,9' 23° 23,7' N	149° 18,7' 23° 22,1' N	149° 15,6' 23° 20,1' N	149° 12,5' 23° 17,7' N	149° 09,4' 23° 14,8' N	149° 06,4' 23° 11,6' N
23	164° 34,9' 23° 25,9' N	164° 31,6' 23° 26,0' N	164° 28,3' 23° 24,8' N	164° 25,0' 23° 24,8' N	164° 21,8' 23° 23,6' N	164° 18,6' 23° 22,0' N	164° 15,5' 23° 20,0' N	164° 12,3' 23° 17,6' N	164° 09,3' 23° 14,7' N	164° 06,3' 23° 11,5' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 30 Jun to 19 Jul

UT	30 Jun	01 Jul	02 Jul	03 Jul	04 Jul	05 Jul	06 Jul	07 Jul	08 Jul	09 Jul
00	179° 06,1' N 23° 11,3' N	179° 03,2' N 23° 07,7' N	179° 00,3' N 23° 03,6' N	178° 57,5' N 22° 59,1' N	178° 54,8' N 22° 54,2' N	178° 52,1' N 22° 48,9' N	178° 49,6' N 22° 43,3' N	178° 47,1' N 22° 37,2' N	178° 44,7' N 22° 30,8' N	178° 42,4' N 22° 23,9' N
01	194° 06,0' N 23° 11,2' N	194° 03,1' N 23° 07,5' N	194° 00,2' N 23° 03,4' N	193° 57,4' N 22° 58,9' N	193° 54,7' N 22° 54,0' N	193° 52,0' N 22° 48,7' N	193° 49,5' N 22° 43,0' N	193° 47,0' N 22° 37,0' N	193° 44,6' N 22° 30,5' N	193° 42,3' N 22° 23,6' N
02	209° 05,9' N 23° 11,0' N	209° 03,0' N 23° 07,3' N	209° 00,1' N 23° 03,2' N	208° 57,3' N 22° 58,7' N	208° 54,6' N 22° 53,8' N	208° 51,9' N 22° 48,5' N	208° 49,4' N 22° 42,8' N	208° 46,9' N 22° 36,7' N	208° 44,5' N 22° 30,2' N	208° 42,2' N 22° 23,3' N
03	224° 05,8' N 23° 10,9' N	224° 02,8' N 23° 07,2' N	224° 00,0' N 23° 03,0' N	223° 57,2' N 22° 58,5' N	223° 54,5' N 22° 53,6' N	223° 51,8' N 22° 48,3' N	223° 49,3' N 22° 42,5' N	223° 46,8' N 22° 36,4' N	223° 44,4' N 22° 29,9' N	223° 42,1' N 22° 23,0' N
04	239° 05,6' N 23° 10,7' N	239° 02,7' N 23° 07,0' N	238° 59,8' N 23° 02,9' N	238° 57,1' N 22° 58,3' N	238° 54,3' N 22° 53,4' N	238° 51,7' N 22° 48,0' N	238° 49,2' N 22° 42,3' N	238° 46,7' N 22° 36,2' N	238° 44,3' N 22° 29,6' N	238° 42,0' N 22° 22,7' N
05	254° 05,5' N 23° 10,6' N	254° 02,6' N 23° 06,8' N	253° 59,7' N 23° 02,7' N	253° 56,9' N 22° 58,1' N	253° 54,2' N 22° 53,2' N	253° 51,6' N 22° 47,8' N	253° 49,0' N 22° 42,0' N	253° 46,6' N 22° 35,9' N	253° 44,2' N 22° 29,4' N	253° 41,9' N 22° 22,4' N
06	269° 05,4' N 23° 10,4' N	269° 02,5' N 23° 06,7' N	268° 59,6' N 23° 02,5' N	268° 56,8' N 22° 57,9' N	268° 54,1' N 22° 52,9' N	268° 51,5' N 22° 47,6' N	268° 48,9' N 22° 41,8' N	268° 46,5' N 22° 35,6' N	268° 44,1' N 22° 29,1' N	268° 41,8' N 22° 22,1' N
07	284° 05,3' N 23° 10,3' N	284° 02,4' N 23° 06,5' N	283° 59,5' N 23° 02,3' N	283° 56,7' N 22° 57,7' N	283° 54,0' N 22° 52,7' N	283° 51,4' N 22° 47,3' N	283° 48,8' N 22° 41,5' N	283° 46,4' N 22° 35,4' N	283° 44,0' N 22° 28,8' N	283° 41,8' N 22° 21,8' N
08	299° 05,2' N 23° 10,1' N	299° 02,2' N 23° 06,3' N	298° 59,4' N 23° 02,1' N	298° 56,6' N 22° 57,5' N	298° 53,9' N 22° 52,5' N	298° 51,3' N 22° 47,1' N	298° 48,7' N 22° 41,3' N	298° 46,3' N 22° 35,1' N	298° 43,9' N 22° 28,5' N	298° 41,7' N 22° 21,5' N
09	314° 05,0' N 23° 10,0' N	314° 02,1' N 23° 06,2' N	313° 59,3' N 23° 01,9' N	313° 56,5' N 22° 57,3' N	313° 53,8' N 22° 52,3' N	313° 51,2' N 22° 46,9' N	313° 48,6' N 22° 41,0' N	313° 46,2' N 22° 34,8' N	313° 43,8' N 22° 28,2' N	313° 41,6' N 22° 21,2' N
10	329° 04,9' N 23° 09,8' N	329° 02,0' N 23° 06,0' N	328° 59,1' N 23° 01,8' N	328° 56,4' N 22° 57,1' N	328° 53,7' N 22° 52,1' N	328° 51,1' N 22° 46,6' N	328° 48,5' N 22° 40,8' N	328° 46,1' N 22° 34,6' N	328° 43,7' N 22° 27,9' N	328° 41,5' N 22° 20,9' N
11	344° 04,8' N 23° 09,7' N	344° 01,9' N 23° 05,8' N	343° 59,0' N 23° 01,6' N	343° 56,3' N 22° 56,9' N	343° 53,6' N 22° 51,9' N	343° 50,9' N 22° 46,4' N	343° 48,4' N 22° 40,5' N	343° 46,0' N 22° 34,3' N	343° 43,6' N 22° 27,7' N	343° 41,4' N 22° 20,6' N
12	359° 04,7' N 23° 09,5' N	359° 01,8' N 23° 05,7' N	358° 58,9' N 23° 01,4' N	358° 56,1' N 22° 56,7' N	358° 53,5' N 22° 51,6' N	358° 50,8' N 22° 46,2' N	358° 48,3' N 22° 40,3' N	358° 45,9' N 22° 34,0' N	358° 43,5' N 22° 27,4' N	358° 41,3' N 22° 20,3' N
13	014° 04,5' N 23° 09,4' N	014° 01,6' N 23° 05,5' N	013° 58,8' N 23° 01,2' N	013° 56,0' N 22° 56,5' N	013° 53,3' N 22° 51,4' N	013° 50,7' N 22° 45,9' N	013° 48,2' N 22° 40,0' N	013° 45,8' N 22° 33,8' N	013° 43,4' N 22° 27,1' N	013° 41,2' N 22° 20,2' N
14	029° 04,4' N 23° 09,2' N	029° 01,5' N 23° 05,3' N	028° 58,7' N 23° 01,0' N	028° 55,9' N 22° 56,3' N	028° 53,2' N 22° 51,2' N	028° 50,6' N 22° 45,7' N	028° 48,1' N 22° 39,8' N	028° 45,7' N 22° 33,5' N	028° 43,3' N 22° 26,8' N	028° 41,1' N 22° 19,7' N
15	044° 04,3' N 23° 09,1' N	044° 01,4' N 23° 05,2' N	043° 58,6' N 23° 00,8' N	043° 55,8' N 22° 56,1' N	043° 53,1' N 22° 51,0' N	043° 50,5' N 22° 45,5' N	043° 48,0' N 22° 39,5' N	043° 45,6' N 22° 33,2' N	043° 43,3' N 22° 26,5' N	043° 41,0' N 22° 19,4' N
16	059° 04,2' N 23° 08,9' N	059° 01,3' N 23° 05,0' N	058° 58,4' N 23° 00,6' N	058° 55,7' N 22° 55,9' N	058° 53,0' N 22° 50,8' N	058° 50,4' N 22° 45,2' N	058° 47,9' N 22° 39,3' N	058° 45,5' N 22° 32,9' N	058° 43,2' N 22° 26,2' N	058° 40,9' N 22° 19,1' N
17	074° 04,0' N 23° 08,8' N	074° 01,2' N 23° 04,8' N	073° 58,3' N 23° 00,4' N	073° 55,6' N 22° 55,7' N	073° 52,9' N 22° 50,5' N	073° 50,3' N 22° 45,0' N	073° 47,8' N 22° 39,0' N	073° 45,4' N 22° 32,7' N	073° 43,1' N 22° 25,9' N	073° 40,8' N 22° 18,8' N
18	089° 03,9' N 23° 08,6' N	089° 01,0' N 23° 04,6' N	088° 58,2' N 23° 00,3' N	088° 55,5' N 22° 55,5' N	088° 52,8' N 22° 50,3' N	088° 50,2' N 22° 44,7' N	088° 47,7' N 22° 38,8' N	088° 45,3' N 22° 32,4' N	088° 43,0' N 22° 25,7' N	088° 40,7' N 22° 18,5' N
19	104° 03,8' N 23° 08,4' N	104° 00,9' N 23° 04,5' N	103° 58,1' N 23° 00,1' N	103° 55,3' N 22° 55,3' N	103° 52,7' N 22° 50,1' N	103° 50,1' N 22° 44,5' N	103° 47,6' N 22° 38,5' N	103° 45,2' N 22° 32,1' N	103° 42,9' N 22° 25,4' N	103° 40,7' N 22° 18,2' N
20	119° 03,7' N 23° 08,3' N	119° 00,8' N 23° 04,3' N	118° 58,0' N 23° 00,3' N	118° 55,2' N 22° 55,1' N	118° 52,6' N 22° 49,9' N	118° 50,0' N 22° 44,2' N	118° 47,5' N 22° 38,2' N	118° 45,1' N 22° 31,9' N	118° 42,8' N 22° 25,1' N	118° 40,6' N 22° 17,9' N
21	134° 03,6' N 23° 08,1' N	134° 00,7' N 23° 04,1' N	133° 57,9' N 22° 59,7' N	133° 55,1' N 22° 54,9' N	133° 52,5' N 22° 49,6' N	133° 49,9' N 22° 44,0' N	133° 47,4' N 22° 38,0' N	133° 45,0' N 22° 31,6' N	133° 42,7' N 22° 25,2' N	133° 40,5' N 22° 17,6' N
22	149° 03,4' N 23° 08,0' N	149° 00,6' N 23° 03,9' N	148° 57,7' N 22° 59,5' N	148° 55,0' N 22° 54,6' N	148° 52,4' N 22° 49,4' N	148° 49,8' N 22° 43,8' N	148° 47,3' N 22° 37,7' N	148° 44,9' N 22° 31,3' N	148° 42,6' N 22° 24,5' N	148° 40,4' N 22° 17,3' N
23	164° 03,3' N 23° 07,8' N	164° 00,4' N 23° 03,8' N	163° 57,6' N 22° 59,3' N	163° 54,9' N 22° 54,4' N	163° 52,2' N 22° 49,2' N	163° 49,7' N 22° 43,5' N	163° 47,2' N 22° 37,5' N	163° 44,8' N 22° 31,0' N	163° 42,5' N 22° 24,2' N	163° 40,3' N 22° 17,0' N

UT	10 Jul	11 Jul	12 Jul	13 Jul	14 Jul	15 Jul	16 Jul	17 Jul	18 Jul	19 Jul
00	178° 40,2' N 22° 16,7' N	178° 38,1' N 22° 09,0' N	178° 36,1' N 22° 01,0' N	178° 34,2' N 21° 52,7' N	178° 32,5' N 21° 43,9' N	178° 30,8' N 21° 34,8' N	178° 29,3' N 21° 25,3' N	178° 27,9' N 21° 15,4' N	178° 26,6' N 21° 05,2' N	178° 25,4' N 20° 54,6' N
01	193° 40,1' N 22° 16,4' N	193° 38,0' N 22° 08,7' N	193° 36,0' N 22° 00,7' N	193° 34,1' N 21° 52,3' N	193° 32,4' N 21° 43,5' N	193° 30,7' N 21° 34,4' N	193° 29,2' N 21° 24,9' N	193° 27,8' N 21° 14,9' N	193° 26,5' N 21° 04,8' N	193° 25,4' N 20° 54,2' N
02	208° 40,0' N 22° 16,0' N	208° 37,9' N 22° 16,0' N	208° 35,9' N 22° 00,4' N	208° 34,1' N 21° 51,9' N	208° 32,3' N 21° 43,2' N	208° 30,7' N 21° 34,0' N	208° 29,1' N 21° 24,5' N	208° 27,7' N 21° 14,6' N	208° 26,5' N 21° 04,3' N	208° 25,3' N 20° 53,7' N
03	223° 39,9' N 22° 15,7' N	223° 37,8' N 22° 08,1' N	223° 35,9' N 22° 00,0' N	223° 34,0' N 21° 51,6' N	223° 32,2' N 21° 42,8' N	223° 30,6' N 21° 33,6' N	223° 29,1' N 21° 24,1' N	223° 27,7' N 21° 14,2' N	223° 26,4' N 21° 03,9' N	223° 25,3' N 20° 53,3' N
04	238° 39,8' N 22° 15,4' N	238° 37,8' N 22° 07,7' N	238° 35,8' N 21° 59,7' N	238° 33,9' N 21° 51,2' N	238° 32,2' N 21° 42,4' N	238° 30,5' N 21° 33,2' N	238° 29,0' N 21° 23,7' N	238° 27,6' N 21° 13,7' N	238° 26,4' N 21° 03,5' N	238° 25,3' N 20° 52,8' N
05	253° 39,8' N 22° 15,1' N	253° 37,7' N 22° 07,4' N	253° 35,7' N 21° 59,3' N	253° 33,8' N 21° 50,9' N	253° 32,1' N 21° 42,0' N	253° 30,5' N 21° 32,8' N	253° 29,0' N 21° 23,3' N	253° 27,6' N 21° 13,3' N	253° 26,3' N 21° 03,0' N	253° 25,2' N 20° 52,4' N
06	268° 39,7' N 22° 14,8' N	268° 37,6' N 22° 07,1' N	268° 35,6' N 21° 59,0' N	268° 33,8' N 21° 50,5' N	268° 32,0' N 21° 41,7' N	268° 30,4' N 21° 32,4' N	268° 28,9' N 21° 22,8' N	268° 27,5' N 21° 12,9' N	268° 26,3' N 21° 02,6' N	268° 25,2' N 20° 51,9' N
07	283° 39,6' N 22° 14,5' N	283° 37,5' N 22° 06,8' N	283° 35,5' N 21° 58,6' N	283° 33,7' N 21° 50,1' N	283° 32,0' N 21° 41,3' N	283° 30,3' N 21° 32,0' N	283° 28,8' N 21° 22,4' N	283° 27,5' N 21° 12,5' N	283° 26,2' N 21° 02,1' N	283° 25,1' N 20° 51,5' N
08	298° 39,5' N 22° 14,2' N	298° 37,4' N 22° 06,4' N	298° 35,5' N 21° 58,3' N	298° 33,6' N 21° 49,8' N	298° 31,9' N 21° 40,9' N	298° 30,3' N 21° 31,7' N	298° 28,8' N 21° 22,0' N	298° 27,4' N 21° 12,0' N	298° 26,2' N 21° 01,7' N	298° 25,1' N 20° 51,0' N
09	313° 39,4' N 22° 13,9' N	313° 37,3' N 22° 06,1' N	313° 35,4' N 21° 57,9' N	313° 33,5' N 21° 49,4' N	313° 31,8' N 21° 40,5' N	313° 30,2' N 21° 31,3' N	313° 28,7' N 21° 21,6' N	313° 27,4' N 21° 11,6' N	313° 26,1' N 21° 01,3' N	313° 25,0' N 20° 50,6' N
10	328° 39,3' N 22° 13,5' N	328° 37,3' N 22° 05,8' N	328° 35,3' N 21° 57,6' N	328° 33,5' N 21° 49,1' N	328° 31,8' N 21° 40,1' N	328° 30,1' N 21° 30,9' N	328° 28,7' N 21° 21,2' N	328° 27,3' N 21° 11,2' N	328° 26,1' N 21° 00,8' N	328° 25,0' N 20° 50,1' N
11	343° 39,2' N 22° 13,2' N	343° 37,2' N 22° 05,4' N	343° 35,2' N 21° 57,2' N	343° 33,4' N 21° 48,7' N	343° 31,7' N 21° 39,8' N	343° 30,1' N 21° 30,5' N	343° 28,6' N 21° 20,8' N	343° 27,3' N 21° 10,8' N	343° 26,0' N 21° 00,4' N	343° 25,0' N 20° 49,6' N
12	358° 39,1' N 22° 12,9' N	358° 37,1' N 22° 05,1' N	358° 35,2' N 21° 56,9' N	358° 33,3' N 21° 48,3' N	358° 31,6' N 21° 39,4' N	358° 30,0' N 21° 30,1' N	358° 28,5' N 21° 20,4' N	358° 27,2' N 21° 10,4' N	358° 26,0' N 20° 59,9' N	358° 24,9' N 20° 49,2' N
13	013° 39,1' N 22° 12,6' N	013° 37,0' N 22° 04,8' N	013° 35,1' N 21° 56,6' N	013° 33,3' N 21° 48,0' N	013° 31,5' N 21° 39,0' N	013° 30,0' N 21° 29,7' N	013° 28,5' N 21° 20,0' N	013° 27,2' N 21° 09,9' N	013° 25,9' N 20° 59,5' N	013° 24,9' N 20° 48,7' N
14	028° 39,0' N 22° 12,3' N	028° 36,9' N 22° 04,4' N	028° 35,0' N 21° 56,2' N	028° 33,2' N 21° 47,6' N	028° 31,5' N 21° 38,6' N	028° 29,9' N 21° 29,3' N	028° 28,4' N 21° 19,6' N	028° 27,1' N 21° 09,5' N	028° 25,9' N 20° 59,1' N	028° 24,8' N 20° 48,3' N
15	043° 38,9' N 22° 11,9' N	043° 36,8' N 22° 04,1' N	043° 34,9' N 21° 55,8' N	043° 33,1' N 21° 47,2' N	043° 31,4' N 21° 38,2' N	043° 29,8' N 21° 28,9' N	043° 28,4' N 21° 19,2' N	043° 27,0' N 21° 09,1' N	043° 25,8' N 20° 58,6' N	043° 24,8' N 20° 47,8' N
16	058° 38,8' N 22° 11,6' N	058° 36,8' N 22° 03,8' N	058° 34,8' N 21° 55,5' N	058° 33,0' N 21° 46,9' N	058° 31,3' N 21° 37,9' N	058° 29,8' N 21° 28,5' N	058° 28,3' N 21° 18,7' N	058° 27,0' N 21° 08,6' N	058° 25,8' N 20° 58,2' N	058° 24,7' N 20° 47,4' N
17	073° 38,7' N 22° 11,3' N	073° 36,7' N 22° 03,4' N	073° 34,8' N 21° 55,1' N	073° 33,0' N 21° 46,5' N	073° 31,3' N 21° 37,5' N	073° 29,7' N 21° 28,1' N	073			

Solar Almanac 2031 — Sun GHA & Decl (UT) — 20 Jul to 08 Aug

UT	20 Jul	21 Jul	22 Jul	23 Jul	24 Jul	25 Jul	26 Jul	27 Jul	28 Jul	29 Jul
00	178° 24.4' 20° 43.7' N	178° 23.6' 20° 32.4' N	178° 22.8' 20° 20.8' N	178° 22.2' 20° 08.8' N	178° 21.8' 19° 56.5' N	178° 21.5' 19° 43.9' N	178° 21.4' 19° 30.9' N	178° 21.4' 19° 17.6' N	178° 21.6' 19° 04.1' N	178° 21.9' 18° 50.1' N
01	193° 24.4' 20° 43.2' N	193° 23.5' 20° 31.9' N	193° 22.8' 20° 20.3' N	193° 22.2' 20° 08.3' N	193° 21.8' 19° 56.0' N	193° 21.5' 19° 43.4' N	193° 21.4' 19° 30.4' N	193° 21.4' 19° 17.1' N	193° 21.6' 19° 03.5' N	193° 21.9' 18° 49.6' N
02	208° 24.3' 20° 42.8' N	208° 23.5' 20° 31.4' N	208° 22.8' 20° 19.8' N	208° 22.2' 20° 07.8' N	208° 21.8' 19° 55.5' N	208° 21.5' 19° 42.8' N	208° 21.4' 19° 29.8' N	208° 21.4' 19° 16.5' N	208° 21.6' 19° 02.9' N	208° 21.9' 18° 49.0' N
03	223° 24.3' 20° 42.3' N	223° 23.5' 20° 31.0' N	223° 22.7' 20° 19.3' N	223° 22.2' 20° 07.3' N	223° 21.8' 19° 55.0' N	223° 21.5' 19° 42.3' N	223° 21.4' 19° 29.3' N	223° 21.4' 19° 16.0' N	223° 21.6' 19° 02.3' N	223° 22.0' 18° 48.4' N
04	238° 24.3' 20° 41.8' N	238° 23.4' 20° 30.5' N	238° 22.7' 20° 18.8' N	238° 22.2' 20° 06.8' N	238° 21.7' 19° 54.4' N	238° 21.5' 19° 41.8' N	238° 21.4' 19° 28.7' N	238° 21.4' 19° 15.4' N	238° 21.6' 19° 01.8' N	238° 22.0' 18° 47.8' N
05	253° 24.2' 20° 41.4' N	253° 23.4' 20° 30.0' N	253° 22.7' 20° 18.3' N	253° 22.1' 20° 06.3' N	253° 21.7' 19° 53.9' N	253° 21.5' 19° 41.2' N	253° 21.4' 19° 28.2' N	253° 21.4' 19° 14.8' N	253° 21.6' 19° 01.2' N	253° 22.0' 18° 47.2' N
06	268° 24.2' 20° 40.9' N	268° 23.5' 20° 29.5' N	268° 22.7' 20° 17.8' N	268° 22.1' 20° 05.8' N	268° 21.7' 19° 53.4' N	268° 21.5' 19° 40.7' N	268° 21.4' 19° 27.6' N	268° 21.4' 19° 14.3' N	268° 21.7' 19° 00.6' N	268° 22.0' 18° 46.6' N
07	283° 24.2' 20° 40.4' N	283° 23.3' 20° 29.1' N	283° 22.6' 20° 17.3' N	283° 22.1' 20° 05.3' N	283° 21.7' 19° 52.9' N	283° 21.5' 19° 40.1' N	283° 21.4' 19° 27.1' N	283° 21.4' 19° 13.7' N	283° 21.7' 19° 00.0' N	283° 22.0' 18° 46.0' N
08	298° 24.1' 20° 40.0' N	298° 23.3' 20° 28.6' N	298° 22.6' 20° 16.8' N	298° 22.1' 20° 04.8' N	298° 21.7' 19° 52.3' N	298° 21.5' 19° 39.6' N	298° 21.4' 19° 26.5' N	298° 21.4' 19° 13.2' N	298° 21.7' 18° 59.4' N	298° 22.1' 18° 45.4' N
09	313° 24.1' 20° 39.5' N	313° 23.3' 20° 28.1' N	313° 22.6' 20° 16.3' N	313° 22.1' 20° 04.2' N	313° 21.7' 19° 51.8' N	313° 21.5' 19° 39.1' N	313° 21.4' 19° 26.0' N	313° 21.5' 19° 12.6' N	313° 21.7' 18° 58.9' N	313° 22.1' 18° 44.8' N
10	328° 24.0' 20° 39.0' N	328° 23.2' 20° 27.6' N	328° 22.6' 20° 15.8' N	328° 22.0' 20° 03.7' N	328° 21.7' 19° 51.3' N	328° 21.4' 19° 38.5' N	328° 21.4' 19° 25.4' N	328° 21.5' 19° 12.0' N	328° 21.7' 18° 58.3' N	328° 22.1' 18° 44.3' N
11	343° 24.0' 20° 38.6' N	343° 23.2' 20° 27.1' N	343° 22.5' 20° 15.3' N	343° 22.0' 20° 03.2' N	343° 21.7' 19° 50.8' N	343° 21.4' 19° 38.0' N	343° 21.4' 19° 24.9' N	343° 21.5' 19° 11.5' N	343° 21.7' 18° 57.7' N	343° 22.1' 18° 43.7' N
12	358° 24.0' 20° 38.1' N	358° 23.2' 20° 26.6' N	358° 22.5' 20° 14.8' N	358° 22.0' 20° 02.7' N	358° 21.6' 19° 50.2' N	358° 21.4' 19° 37.4' N	358° 21.4' 19° 24.3' N	358° 21.5' 19° 10.9' N	358° 21.7' 18° 57.1' N	358° 22.1' 18° 43.1' N
13	013° 23.9' 20° 37.6' N	013° 23.1' 20° 26.2' N	013° 22.5' 20° 14.3' N	013° 22.0' 20° 02.2' N	013° 21.6' 19° 49.7' N	013° 21.4' 19° 36.9' N	013° 21.4' 19° 23.8' N	013° 21.5' 19° 10.3' N	013° 21.7' 18° 56.6' N	013° 22.2' 18° 42.5' N
14	028° 23.9' 20° 37.1' N	028° 23.1' 20° 25.7' N	028° 22.5' 20° 13.8' N	028° 22.0' 20° 01.7' N	028° 21.6' 19° 49.2' N	028° 21.4' 19° 36.4' N	028° 21.4' 19° 23.2' N	028° 21.5' 19° 09.8' N	028° 21.8' 18° 56.0' N	028° 22.2' 18° 41.9' N
15	043° 23.9' 20° 36.7' N	043° 23.1' 20° 25.2' N	043° 22.4' 20° 13.3' N	043° 22.0' 20° 01.2' N	043° 21.6' 19° 48.7' N	043° 21.4' 19° 35.8' N	043° 21.4' 19° 22.7' N	043° 21.5' 19° 09.2' N	043° 21.8' 18° 55.4' N	043° 22.2' 18° 41.3' N
16	058° 23.8' 20° 36.2' N	058° 23.1' 20° 24.7' N	058° 22.4' 20° 12.8' N	058° 21.9' 20° 00.7' N	058° 21.6' 19° 48.1' N	058° 21.4' 19° 35.3' N	058° 21.4' 19° 22.1' N	058° 21.5' 19° 08.6' N	058° 21.8' 18° 54.8' N	058° 22.2' 18° 40.7' N
17	073° 23.8' 20° 35.7' N	073° 23.0' 20° 24.2' N	073° 22.4' 20° 12.3' N	073° 21.9' 20° 00.1' N	073° 21.6' 19° 47.6' N	073° 21.4' 19° 34.7' N	073° 21.4' 19° 21.6' N	073° 21.5' 19° 08.1' N	073° 21.8' 18° 54.2' N	073° 22.2' 18° 40.1' N
18	088° 23.8' 20° 35.3' N	088° 23.0' 20° 23.7' N	088° 22.4' 20° 11.8' N	088° 21.9' 19° 59.6' N	088° 21.6' 19° 47.1' N	088° 21.4' 19° 34.2' N	088° 21.4' 19° 21.0' N	088° 21.5' 19° 07.5' N	088° 21.8' 18° 53.6' N	088° 22.3' 18° 39.5' N
19	103° 23.7' 20° 34.8' N	103° 23.0' 20° 23.2' N	103° 22.4' 20° 11.3' N	103° 21.9' 19° 59.1' N	103° 21.6' 19° 46.5' N	103° 21.4' 19° 33.7' N	103° 21.4' 19° 20.4' N	103° 21.5' 19° 06.9' N	103° 21.8' 18° 53.1' N	103° 22.3' 18° 38.9' N
20	118° 23.7' 20° 34.3' N	118° 22.9' 20° 22.7' N	118° 22.3' 20° 10.8' N	118° 21.9' 19° 58.6' N	118° 21.6' 19° 46.0' N	118° 21.4' 19° 33.1' N	118° 21.4' 19° 19.9' N	118° 21.5' 19° 06.3' N	118° 21.8' 18° 52.5' N	118° 22.3' 18° 38.3' N
21	133° 23.7' 20° 33.8' N	133° 22.9' 20° 22.3' N	133° 22.3' 20° 10.3' N	133° 21.9' 19° 58.1' N	133° 21.5' 19° 45.5' N	133° 21.4' 19° 32.6' N	133° 21.4' 19° 19.3' N	133° 21.6' 19° 05.8' N	133° 21.9' 18° 51.9' N	133° 22.3' 18° 37.7' N
22	148° 23.6' 20° 33.4' N	148° 22.9' 20° 21.8' N	148° 22.3' 20° 09.8' N	148° 21.8' 19° 57.6' N	148° 21.5' 19° 45.0' N	148° 21.4' 19° 32.0' N	148° 21.4' 19° 18.8' N	148° 21.6' 19° 05.2' N	148° 21.9' 18° 51.3' N	148° 22.4' 18° 37.1' N
23	163° 23.6' 20° 32.9' N	163° 22.9' 20° 21.3' N	163° 22.3' 20° 09.3' N	163° 21.8' 19° 57.0' N	163° 21.5' 19° 44.4' N	163° 21.4' 19° 31.5' N	163° 21.4' 19° 18.2' N	163° 21.6' 19° 04.6' N	163° 21.9' 18° 50.7' N	163° 22.4' 18° 36.5' N

UT	30 Jul	31 Jul	01 Aug	02 Aug	03 Aug	04 Aug	05 Aug	06 Aug	07 Aug	08 Aug
00	178° 22.4' 18° 35.9' N	178° 23.0' 18° 21.4' N	178° 23.8' 18° 06.6' N	178° 24.8' 17° 51.5' N	178° 25.9' 17° 36.1' N	178° 27.2' 17° 20.4' N	178° 28.6' 17° 04.4' N	178° 30.1' 16° 48.1' N	178° 31.8' 16° 31.6' N	178° 33.7' 16° 14.8' N
01	193° 22.4' 18° 35.3' N	193° 23.1' 18° 20.8' N	193° 23.9' 18° 06.0' N	193° 24.8' 17° 50.8' N	193° 26.0' 17° 35.4' N	193° 27.2' 17° 19.7' N	193° 28.6' 17° 03.7' N	193° 30.2' 16° 47.5' N	193° 31.9' 16° 30.9' N	193° 33.8' 16° 14.1' N
02	208° 22.4' 18° 34.7' N	208° 23.1' 18° 20.2' N	208° 23.9' 18° 05.3' N	208° 24.9' 17° 50.2' N	208° 26.0' 17° 34.8' N	208° 27.3' 17° 19.0' N	208° 28.7' 17° 03.0' N	208° 30.3' 16° 46.8' N	208° 32.0' 16° 30.2' N	208° 33.8' 16° 13.4' N
03	223° 22.5' 18° 34.1' N	223° 23.1' 18° 19.6' N	223° 24.0' 18° 04.7' N	223° 24.9' 17° 49.6' N	223° 26.1' 17° 34.1' N	223° 27.3' 17° 18.4' N	223° 28.8' 17° 02.4' N	223° 30.3' 16° 46.1' N	223° 32.1' 16° 29.5' N	223° 33.9' 16° 12.7' N
04	238° 22.5' 18° 33.5' N	238° 23.2' 18° 18.9' N	238° 24.0' 18° 04.1' N	238° 25.0' 17° 48.9' N	238° 26.1' 17° 33.5' N	238° 27.4' 17° 17.7' N	238° 28.8' 17° 01.7' N	238° 30.4' 16° 45.4' N	238° 32.1' 16° 28.8' N	238° 34.0' 16° 12.0' N
05	253° 22.5' 18° 32.9' N	253° 23.2' 18° 18.3' N	253° 24.0' 18° 03.5' N	253° 25.0' 17° 48.3' N	253° 26.2' 17° 32.8' N	253° 27.4' 17° 17.1' N	253° 28.9' 17° 01.0' N	253° 30.5' 16° 44.7' N	253° 32.2' 16° 28.1' N	253° 34.1' 16° 11.3' N
06	268° 22.5' 18° 32.3' N	268° 23.2' 18° 17.7' N	268° 24.1' 18° 02.8' N	268° 25.1' 17° 47.6' N	268° 26.2' 17° 32.2' N	268° 27.5' 17° 16.4' N	268° 28.9' 17° 00.3' N	268° 30.5' 16° 44.0' N	268° 32.3' 16° 27.4' N	268° 34.2' 16° 10.6' N
07	283° 22.6' 18° 31.7' N	283° 23.3' 18° 17.1' N	283° 24.1' 18° 02.2' N	283° 25.1' 17° 47.0' N	283° 26.3' 17° 31.5' N	283° 27.6' 17° 15.7' N	283° 29.0' 16° 59.7' N	283° 30.6' 16° 43.3' N	283° 32.4' 16° 26.7' N	283° 34.2' 16° 09.9' N
08	298° 22.6' 18° 31.1' N	298° 23.3' 18° 16.5' N	298° 24.1' 18° 01.6' N	298° 25.1' 17° 46.4' N	298° 26.3' 17° 30.9' N	298° 27.6' 17° 15.1' N	298° 29.1' 16° 59.0' N	298° 30.7' 16° 42.7' N	298° 32.4' 16° 25.9' N	298° 34.3' 16° 09.2' N
09	313° 22.6' 18° 30.5' N	313° 23.3' 18° 15.9' N	313° 24.2' 18° 00.9' N	313° 25.2' 17° 45.7' N	313° 26.4' 17° 30.2' N	313° 27.7' 17° 14.4' N	313° 29.1' 16° 58.3' N	313° 30.8' 16° 42.0' N	313° 32.5' 16° 25.3' N	313° 34.4' 16° 08.5' N
10	328° 22.6' 18° 29.9' N	328° 23.4' 18° 15.3' N	328° 24.2' 18° 00.3' N	328° 25.2' 17° 45.1' N	328° 26.4' 17° 29.5' N	328° 27.7' 17° 13.7' N	328° 29.2' 16° 57.6' N	328° 30.8' 16° 41.3' N	328° 32.6' 16° 24.6' N	328° 34.5' 16° 07.7' N
11	343° 22.7' 18° 29.3' N	343° 23.4' 18° 14.6' N	343° 24.3' 17° 59.7' N	343° 25.3' 17° 44.4' N	343° 26.5' 17° 28.9' N	343° 27.8' 17° 13.1' N	343° 29.3' 16° 57.0' N	343° 30.9' 16° 40.6' N	343° 32.7' 16° 23.9' N	343° 34.6' 16° 07.0' N
12	358° 22.7' 18° 28.7' N	358° 23.4' 18° 14.0' N	358° 24.3' 17° 59.1' N	358° 25.3' 17° 43.8' N	358° 26.5' 17° 28.2' N	358° 27.8' 17° 12.4' N	358° 29.3' 16° 56.3' N	358° 31.0' 16° 39.9' N	358° 32.7' 16° 23.2' N	358° 34.7' 16° 06.3' N
13	013° 22.7' 18° 28.1' N	013° 23.5' 18° 13.4' N	013° 24.3' 17° 58.4' N	013° 25.4' 17° 43.2' N	013° 26.6' 17° 27.6' N	013° 27.9' 17° 11.7' N	013° 29.4' 16° 55.6' N	013° 31.0' 16° 39.2' N	013° 32.8' 16° 22.5' N	013° 34.7' 16° 05.6' N
14	028° 22.8' 18° 27.5' N	028° 23.5' 18° 12.8' N	028° 24.4' 17° 57.8' N	028° 25.4' 17° 42.5' N	028° 26.6' 17° 26.9' N	028° 28.0' 17° 11.1' N	028° 29.5' 16° 54.9' N	028° 31.1' 16° 38.5' N	028° 32.9' 16° 21.8' N	028° 34.8' 16° 04.9' N
15	043° 22.8' 18° 26.9' N	043° 23.5' 18° 12.2' N	043° 24.4' 17° 57.2' N	043° 25.5' 17° 41.9' N	043° 26.7' 17° 26.3' N	043° 28.0' 17° 10.4' N	043° 29.5' 16° 54.3' N	043° 31.2' 16° 37.8' N	043° 33.0' 16° 21.1' N	043° 34.9' 16° 04.2' N
16	058° 22.8' 18° 26.3' N	058° 23.6' 18° 11.6' N	058° 24.5' 17° 56.5' N	058° 25.5' 17° 41.2' N	058° 26.7' 17° 25.6' N	058° 28.1' 17° 09.7' N	058° 29.6' 16° 53.6' N	058° 31.3' 16° 37.1' N	058° 33.1' 16° 20.4' N	058° 35.0' 16° 03.5' N
17	073° 22.8' 18° 25.7' N	073° 23.6' 18° 10.9' N	073° 24.5' 17° 55.9' N	073° 25.6' 17° 40.6' N	073° 26.8' 17° 25.0' N	073° 28.1' 17° 09.1' N	073° 29.7' 16° 52.9' N	073° 31.3' 16° 36.5' N	073° 33.1' 16° 19.7' N	073° 35.1' 16° 02.8' N
18	088° 22.9' 18° 25.1' N	088° 23.6' 18° 10.3' N	088° 24.5' 17° 55.3' N	088° 25.6' 17° 39.9' N	088° 26.8' 17° 24.3' N	088° 28.2' 17° 08.4' N	088° 29.7' 16° 52.2' N	088° 31.4' 16° 35.8' N	088° 33.2' 16° 19.0' N	088° 35.2' 16° 02.1' N
19	103° 22.9' 18° 24.4' N	103° 23.7' 18° 09.7' N	103° 24.6' 17° 54.6' N	103° 25.7' 17° 39.3' N	103° 26.9' 17° 23.7' N	103° 28.3' 17° 07.7' N	103° 29.8' 16° 51.5' N	103° 31.5' 16° 35.1' N	103° 33.3' 16° 18.3' N	103° 35.2' 16° 01.3' N
20	118° 22.9' 18° 23.8' N	118° 23.7' 18° 09.1' N	118° 24.6' 17° 54.0' N	118° 25.7' 17° 38.6' N	118° 26.9' 17° 23.0' N	118° 28.3' 17° 07.1' N	118° 29.9' 16° 50.9' N	118° 31.5' 16° 34.4' N	118° 33.4' 16° 17.6' N	118° 35.3' 16° 00.6' N
21	133° 23.0' 18° 23.2' N	133° 23.7' 18° 08.4' N	133° 24.7' 17° 53.4' N	133° 25.8' 17° 38.0' N	133° 27.0' 17° 22.3' N	133° 28.4' 17° 06.4' N	133° 29.9' 16° 50.2' N	133° 31.6' 16° 33.7' N	133° 33.4' 16° 16.9' N	133° 35.4' 15° 59.9' N
22	148° 23.0' 18° 22.6' N	148° 23.8' 18° 07.8' N	148° 24.7' 17° 52.7' N	148° 25.8' 17° 37.3' N	148° 27.1' 17° 21.7' N	148° 28.5' 17° 05.7' N	148° 30.0' 16° 49.5' N	148° 31.7' 16° 33.0' N	148° 33.5' 16° 16.2' N	148° 35.5' 15° 59.2' N
23	163° 23.0' 18° 22.0' N	163° 23.8' 18° 07.2' N	163° 24.8' 17° 52.1' N	163° 25.9' 17° 36.7' N	163° 27.1' 17° 21.0' N	163° 28.5' 17° 05.1' N	163° 30.1' 16° 48.8' N	163° 31.8' 16° 32.3' N	163° 33.6' 16° 15.5' N	163° 35.6' 15° 58.5' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 09 Aug to 28 Aug

UT	09 Aug	10 Aug	11 Aug	12 Aug	13 Aug	14 Aug	15 Aug	16 Aug	17 Aug	18 Aug
00	178° 35,7' 15° 57,8' N	178° 37,8' 15° 40,5' N	178° 40,1' 15° 22,9' N	178° 42,5' 15° 05,1' N	178° 45,0' 14° 47,0' N	178° 47,7' 14° 28,7' N	178° 50,5' 14° 10,2' N	178° 53,5' 13° 51,5' N	178° 56,5' 13° 32,5' N	178° 59,7' 13° 13,3' N
01	193° 35,8' 15° 57,0' N	193° 37,9' 15° 39,7' N	193° 40,2' 15° 22,2' N	193° 42,6' 15° 04,3' N	193° 45,1' 14° 46,3' N	193° 47,8' 14° 28,0' N	193° 50,6' 14° 09,4' N	193° 53,6' 13° 50,7' N	193° 56,7' 13° 31,7' N	193° 59,9' 13° 12,5' N
02	208° 35,8' 15° 56,3' N	208° 38,0' 15° 39,0' N	208° 40,3' 15° 21,4' N	208° 42,7' 15° 03,6' N	208° 45,2' 14° 45,5' N	208° 47,9' 14° 27,2' N	208° 50,8' 14° 08,7' N	208° 53,7' 13° 49,9' N	208° 56,8' 13° 30,9' N	209° 00,0' 13° 11,7' N
03	223° 35,9' 15° 55,6' N	223° 38,1' 15° 38,3' N	223° 40,4' 15° 20,7' N	223° 42,8' 15° 02,8' N	223° 45,4' 14° 44,8' N	223° 48,1' 14° 26,4' N	223° 50,9' 14° 07,9' N	223° 53,8' 13° 49,1' N	223° 56,9' 13° 30,1' N	224° 00,2' 13° 10,9' N
04	238° 36,0' 15° 54,9' N	238° 38,2' 15° 37,5' N	238° 40,5' 15° 19,9' N	238° 42,9' 15° 02,1' N	238° 45,5' 14° 44,0' N	238° 48,2' 14° 25,7' N	238° 51,0' 14° 07,1' N	238° 54,0' 13° 48,3' N	238° 57,1' 13° 29,3' N	239° 00,3' 13° 10,1' N
05	253° 36,1' 15° 54,2' N	253° 38,3' 15° 36,8' N	253° 40,6' 15° 19,2' N	253° 43,0' 15° 01,3' N	253° 45,6' 14° 43,2' N	253° 48,3' 14° 24,9' N	253° 51,1' 14° 06,3' N	253° 54,1' 13° 47,5' N	253° 57,2' 13° 28,5' N	254° 00,4' 13° 09,3' N
06	268° 36,2' 15° 53,5' N	268° 38,4' 15° 36,1' N	268° 40,7' 15° 18,5' N	268° 43,1' 15° 00,6' N	268° 45,7' 14° 42,5' N	268° 48,4' 14° 24,1' N	268° 51,2' 14° 05,6' N	268° 54,2' 13° 46,8' N	268° 57,3' 13° 27,7' N	269° 00,6' 13° 08,5' N
07	283° 36,3' 15° 52,7' N	283° 38,5' 15° 35,4' N	283° 40,8' 15° 17,7' N	283° 43,2' 14° 59,8' N	283° 45,8' 14° 41,7' N	283° 48,5' 14° 23,4' N	283° 51,4' 14° 04,8' N	283° 54,4' 13° 46,0' N	283° 57,5' 13° 26,9' N	284° 00,7' 13° 07,7' N
08	298° 36,4' 15° 52,0' N	298° 38,5' 15° 34,6' N	298° 40,9' 15° 17,0' N	298° 43,3' 14° 59,1' N	298° 45,9' 14° 41,0' N	298° 48,6' 14° 22,6' N	298° 51,5' 14° 04,0' N	298° 54,5' 13° 45,2' N	298° 57,6' 13° 26,1' N	299° 00,8' 13° 06,9' N
09	313° 36,5' 15° 51,3' N	313° 38,6' 15° 33,9' N	313° 41,0' 15° 16,2' N	313° 43,4' 14° 58,3' N	313° 46,0' 14° 40,2' N	313° 48,8' 14° 21,8' N	313° 51,6' 14° 03,2' N	313° 54,4' 13° 44,4' N	313° 57,7' 13° 25,3' N	314° 01,0' 13° 06,1' N
10	328° 36,5' 15° 50,6' N	328° 38,7' 15° 33,2' N	328° 41,1' 15° 15,5' N	328° 43,5' 14° 57,6' N	328° 46,1' 14° 39,4' N	328° 48,9' 14° 21,0' N	328° 51,7' 14° 02,4' N	328° 54,6' 13° 43,6' N	328° 57,9' 13° 24,5' N	329° 01,1' 13° 05,3' N
11	343° 36,6' 15° 49,9' N	343° 38,8' 15° 32,4' N	343° 41,2' 15° 14,8' N	343° 43,6' 14° 56,8' N	343° 46,2' 14° 38,7' N	343° 49,0' 14° 20,3' N	343° 51,9' 14° 01,7' N	343° 54,9' 13° 42,8' N	343° 58,0' 13° 23,7' N	344° 01,3' 13° 04,5' N
12	358° 36,7' 15° 49,1' N	358° 38,9' 15° 31,7' N	358° 41,3' 15° 14,0' N	358° 43,7' 14° 56,1' N	358° 46,4' 14° 37,9' N	358° 49,1' 14° 19,5' N	358° 52,0' 14° 00,9' N	358° 55,0' 13° 42,0' N	358° 58,1' 13° 22,9' N	359° 01,4' 13° 03,7' N
13	013° 36,8' 15° 48,4' N	013° 39,0' 15° 31,0' N	013° 41,4' 15° 13,3' N	013° 43,8' 14° 55,3' N	013° 46,5' 14° 37,1' N	013° 49,2' 14° 18,7' N	013° 52,1' 14° 00,1' N	013° 55,1' 13° 41,2' N	013° 58,3' 13° 22,1' N	014° 01,5' 13° 02,9' N
14	028° 36,9' 15° 47,7' N	028° 39,1' 15° 30,2' N	028° 41,5' 15° 12,5' N	028° 44,0' 14° 54,6' N	028° 46,6' 14° 36,4' N	028° 49,3' 14° 18,0' N	028° 52,2' 14° 05,3' N	028° 55,2' 13° 40,4' N	028° 58,4' 13° 21,3' N	029° 01,7' 13° 02,0' N
15	043° 37,0' 15° 47,0' N	043° 39,2' 15° 29,5' N	043° 41,6' 15° 11,8' N	043° 44,1' 14° 53,8' N	043° 46,7' 14° 35,6' N	043° 49,5' 14° 17,2' N	043° 52,4' 13° 58,5' N	043° 55,4' 13° 39,6' N	043° 58,5' 13° 20,5' N	044° 01,8' 13° 01,2' N
16	058° 37,1' 15° 46,3' N	058° 39,3' 15° 28,8' N	058° 41,7' 15° 11,0' N	058° 44,2' 14° 53,1' N	058° 46,8' 14° 34,9' N	058° 49,6' 14° 16,4' N	058° 52,5' 13° 57,7' N	058° 55,5' 13° 38,9' N	058° 58,7' 13° 19,7' N	059° 02,0' 13° 00,4' N
17	073° 37,2' 15° 45,5' N	073° 39,4' 15° 28,0' N	073° 41,8' 15° 10,3' N	073° 44,3' 14° 52,3' N	073° 46,9' 14° 34,1' N	073° 49,7' 14° 15,6' N	073° 52,6' 13° 57,0' N	073° 55,6' 13° 38,1' N	073° 58,8' 13° 18,9' N	074° 02,1' 12° 59,6' N
18	088° 37,3' 15° 44,8' N	088° 39,5' 15° 27,3' N	088° 41,9' 15° 09,6' N	088° 44,4' 14° 51,6' N	088° 47,0' 14° 33,3' N	088° 49,8' 14° 14,9' N	088° 52,7' 13° 56,2' N	088° 55,8' 13° 37,3' N	088° 58,9' 13° 18,1' N	089° 02,2' 12° 58,8' N
19	103° 37,3' 15° 44,1' N	103° 39,6' 15° 26,6' N	103° 42,0' 15° 08,8' N	103° 44,5' 14° 50,8' N	103° 47,1' 14° 32,6' N	103° 49,9' 14° 14,1' N	103° 52,8' 13° 55,4' N	103° 55,9' 13° 36,5' N	103° 59,1' 13° 17,3' N	104° 02,4' 12° 58,0' N
20	118° 37,4' 15° 43,4' N	118° 39,7' 15° 25,8' N	118° 42,1' 15° 08,1' N	118° 44,6' 14° 50,1' N	118° 47,3' 14° 31,8' N	118° 50,0' 14° 13,3' N	118° 53,0' 13° 54,6' N	118° 56,0' 13° 35,7' N	118° 59,2' 13° 16,5' N	119° 02,5' 12° 57,2' N
21	133° 37,5' 15° 42,6' N	133° 39,8' 15° 25,1' N	133° 42,2' 15° 07,3' N	133° 44,7' 14° 49,3' N	133° 47,4' 14° 31,0' N	133° 50,2' 14° 12,5' N	133° 53,1' 13° 53,8' N	133° 56,2' 13° 34,9' N	133° 59,3' 13° 15,7' N	134° 02,7' 12° 56,4' N
22	148° 37,6' 15° 41,9' N	148° 39,9' 15° 24,4' N	148° 42,3' 15° 06,6' N	148° 44,8' 14° 48,5' N	148° 47,5' 14° 30,3' N	148° 50,3' 14° 11,8' N	148° 53,2' 13° 53,0' N	148° 56,3' 13° 34,1' N	148° 59,5' 13° 14,9' N	149° 02,8' 12° 55,6' N
23	163° 37,7' 15° 41,2' N	163° 40,0' 15° 23,6' N	163° 42,4' 15° 05,8' N	163° 44,9' 14° 47,8' N	163° 47,6' 14° 29,5' N	163° 50,4' 14° 11,0' N	163° 53,3' 13° 52,3' N	163° 56,4' 13° 33,3' N	163° 59,6' 13° 14,1' N	164° 02,9' 12° 54,8' N

UT	19 Aug	20 Aug	21 Aug	22 Aug	23 Aug	24 Aug	25 Aug	26 Aug	27 Aug	28 Aug
00	179° 03.1' 12° 53.9' N	179° 06.5' 12° 34.3' N	179° 10.1' 12° 14.6' N	179° 13.8' 11° 54.6' N	179° 17.6' 11° 34.4' N	179° 21.5' 11° 14.1' N	179° 25.6' 10° 53.5' N	179° 29.7' 10° 32.8' N	179° 34.0' 10° 12.0' N	179° 38.3' 09° 50.9' N
01	194° 03.2' 12° 53.1' N	194° 06.7' 12° 33.5' N	194° 10.3' 12° 13.7' N	194° 14.0' 11° 53.7' N	194° 17.8' 11° 33.6' N	194° 21.7' 11° 13.2' N	194° 25.7' 10° 52.7' N	194° 29.9' 10° 32.0' N	194° 34.2' 10° 11.1' N	194° 38.5' 09° 50.1' N
02	209° 03.4' 12° 52.3' N	209° 06.8' 12° 32.7' N	209° 10.4' 12° 12.9' N	209° 14.1' 11° 52.9' N	209° 17.9' 11° 32.7' N	209° 21.9' 11° 12.4' N	209° 25.9' 10° 51.8' N	209° 30.1' 10° 31.1' N	209° 34.3' 10° 10.2' N	209° 38.7' 09° 49.2' N
03	224° 03.5' 12° 51.5' N	224° 07.0' 12° 31.9' N	224° 10.6' 12° 12.1' N	224° 14.3' 11° 52.1' N	224° 18.1' 11° 31.9' N	224° 22.0' 11° 11.5' N	224° 26.1' 10° 50.9' N	224° 30.2' 10° 30.2' N	224° 34.5' 10° 09.3' N	224° 38.9' 09° 48.3' N
04	239° 03.6' 12° 50.7' N	239° 07.1' 12° 31.1' N	239° 10.7' 12° 11.2' N	239° 14.4' 11° 51.2' N	239° 18.3' 11° 31.0' N	239° 22.2' 11° 10.6' N	239° 26.3' 10° 50.1' N	239° 30.4' 10° 29.4' N	239° 34.7' 10° 08.5' N	239° 39.1' 09° 47.4' N
05	254° 03.8' 12° 49.9' N	254° 07.3' 12° 30.2' N	254° 10.9' 12° 10.4' N	254° 14.6' 11° 50.4' N	254° 18.4' 11° 30.2' N	254° 22.4' 11° 09.8' N	254° 26.4' 10° 49.2' N	254° 30.6' 10° 28.5' N	254° 34.9' 10° 07.6' N	254° 39.2' 09° 46.5' N
06	269° 03.9' 12° 49.1' N	269° 07.4' 12° 29.4' N	269° 11.0' 12° 09.6' N	269° 14.7' 11° 49.6' N	269° 18.6' 11° 29.3' N	269° 22.5' 11° 08.9' N	269° 26.6' 10° 48.4' N	269° 30.8' 10° 27.6' N	269° 35.1' 10° 06.7' N	269° 39.4' 09° 45.7' N
07	284° 04.1' 12° 48.2' N	284° 07.6' 12° 28.6' N	284° 11.2' 12° 08.7' N	284° 14.9' 11° 48.7' N	284° 18.7' 11° 28.5' N	284° 22.7' 11° 08.1' N	284° 26.8' 10° 47.5' N	284° 31.0' 10° 26.8' N	284° 35.2' 10° 05.9' N	284° 39.6' 09° 44.8' N
08	299° 04.2' 12° 47.4' N	299° 07.7' 12° 27.8' N	299° 11.3' 12° 07.9' N	299° 15.1' 11° 47.9' N	299° 18.9' 11° 27.6' N	299° 22.9' 11° 07.2' N	299° 26.9' 10° 46.6' N	299° 31.1' 10° 25.9' N	299° 35.4' 10° 05.0' N	299° 39.8' 09° 43.9' N
09	314° 04.4' 12° 46.6' N	314° 07.9' 12° 26.9' N	314° 11.5' 12° 07.1' N	314° 15.2' 11° 47.0' N	314° 19.1' 11° 26.8' N	314° 23.0' 11° 06.4' N	314° 27.1' 10° 45.8' N	314° 31.3' 10° 25.0' N	314° 35.6' 10° 04.1' N	314° 40.0' 09° 43.0' N
10	329° 04.5' 12° 45.8' N	329° 08.0' 12° 26.1' N	329° 11.6' 12° 06.3' N	329° 15.4' 11° 46.2' N	329° 19.2' 11° 25.9' N	329° 23.2' 11° 05.5' N	329° 27.3' 10° 44.9' N	329° 31.5' 10° 24.2' N	329° 35.8' 10° 03.2' N	329° 40.2' 09° 42.1' N
11	344° 04.6' 12° 45.0' N	344° 08.2' 12° 25.3' N	344° 11.8' 12° 05.4' N	344° 15.5' 11° 45.4' N	344° 19.4' 11° 25.1' N	344° 23.4' 11° 04.7' N	344° 27.5' 10° 44.1' N	344° 31.7' 10° 23.3' N	344° 36.0' 10° 02.4' N	344° 40.4' 09° 41.3' N
12	359° 04.8' 12° 44.2' N	359° 08.3' 12° 24.5' N	359° 11.9' 12° 04.6' N	359° 15.7' 11° 44.5' N	359° 19.6' 11° 24.3' N	359° 23.5' 11° 03.8' N	359° 27.6' 10° 43.2' N	359° 31.8' 10° 22.4' N	359° 36.1' 10° 01.5' N	359° 40.5' 09° 40.4' N
13	014° 04.9' 12° 43.4' N	014° 08.5' 12° 23.7' N	014° 12.1' 12° 03.8' N	014° 15.9' 11° 43.7' N	014° 19.7' 11° 23.4' N	014° 23.7' 11° 03.0' N	014° 27.8' 10° 42.3' N	014° 32.0' 10° 21.5' N	014° 36.3' 10° 00.6' N	014° 40.7' 09° 39.5' N
14	029° 05.1' 12° 42.5' N	029° 08.6' 12° 22.8' N	029° 12.2' 12° 02.9' N	029° 16.0' 11° 42.8' N	029° 19.9' 11° 22.6' N	029° 23.9' 11° 02.1' N	029° 28.0' 10° 41.5' N	029° 32.2' 10° 20.7' N	029° 36.5' 9° 59.7' N	029° 40.9' 9° 38.6' N
15	044° 05.2' 12° 41.7' N	044° 08.8' 12° 22.0' N	044° 12.4' 12° 02.1' N	044° 16.2' 11° 42.0' N	044° 20.1' 11° 21.7' N	044° 24.1' 11° 01.2' N	044° 28.2' 10° 40.6' N	044° 32.4' 10° 19.8' N	044° 36.7' 9° 58.8' N	044° 41.1' 9° 37.7' N
16	059° 05.4' 12° 40.9' N	059° 08.9' 12° 21.2' N	059° 12.6' 12° 01.3' N	059° 16.3' 11° 41.1' N	059° 20.2' 11° 20.9' N	059° 24.2' 11° 00.4' N	059° 28.3' 10° 39.7' N	059° 32.5' 10° 18.9' N	059° 36.9' 9° 57.8' N	059° 41.3' 9° 36.8' N
17	074° 05.5' 12° 40.1' N	074° 09.1' 12° 20.4' N	074° 12.7' 12° 00.4' N	074° 16.5' 11° 40.3' N	074° 20.4' 11° 20.0' N	074° 24.4' 10° 59.5' N	074° 28.5' 10° 38.9' N	074° 32.7' 10° 18.1' N	074° 37.0' 9° 57.1' N	074° 41.5' 9° 36.0' N
18	089° 05.7' 12° 39.3' N	089° 09.2' 12° 19.5' N	089° 12.9' 11° 59.6' N	089° 16.6' 11° 39.5' N	089° 20.5' 11° 19.2' N	089° 24.6' 10° 58.7' N	089° 28.7' 10° 38.0' N	089° 32.9' 10° 17.2' N	089° 37.2' 9° 56.2' N	089° 41.7' 9° 35.1' N
19	104° 05.8' 12° 38.4' N	104° 09.4' 12° 18.7' N	104° 13.0' 11° 58.8' N	104° 16.8' 11° 38.6' N	104° 20.7' 11° 18.3' N	104° 24.7' 10° 57.8' N	104° 28.9' 10° 37.2' N	104° 33.1' 10° 16.3' N	104° 37.4' 9° 55.3' N	104° 41.8' 9° 34.2' N
20	119° 05.9' 12° 37.6' N	119° 09.5' 12° 17.9' N	119° 13.2' 11° 57.9' N	119° 17.0' 11° 37.8' N	119° 20.9' 11° 17.5' N	119° 24.9' 10° 57.0' N	119° 29.0' 10° 36.3' N	119° 33.3' 10° 15.5' N	119° 37.6' 9° 54.5' N	119° 42.0' 9° 33.3' N
21	134° 06.1' 12° 36.8' N	134° 09.7' 12° 17.0' N	134° 13.3' 11° 57.1' N	134° 17.1' 11° 36.9' N	134° 21.0' 11° 16.6' N	134° 25.1' 10° 56.1' N	134° 29.2' 10° 35.4' N	134° 33.4' 10° 14.6' N	134° 37.8' 9° 53.6' N	134° 42.2' 9° 32.4' N
22	149° 06.2' 12° 36.0' N	149° 09.8' 12° 16.2' N	149° 13.5' 11° 56.2' N	149° 17.3' 11° 36.1' N	149° 21.2' 11° 15.8' N	149° 25.2' 10° 55.2' N	149° 29.4' 10° 34.6' N	149° 33.6' 10° 13.7' N	149° 38.0' 9° 52.7' N	149° 42.4' 9° 31.5' N
23	164° 06.4' 12° 35.2' N	164° 10.0' 12° 15.4' N	164° 13.6' 11° 55.4' N	164° 17.5' 11° 35.3' N	164° 21.4' 11° 14.9' N	164° 25.4' 10° 54.4' N	164° 29.5' 10° 33.7' N	164° 33.8' 10° 12.8' N	164° 38.1' 9° 51.8' N	164° 42.6' 9° 30.7' N

Solar Almanac 2031 — Sun GHA & Decl (UT) — 29 Aug to 17 Sep

UT	29 Aug	30 Aug	31 Aug	01 Sep	02 Sep	03 Sep	04 Sep	05 Sep	06 Sep	07 Sep
00	179° 42,8' 09° 29,8' N	179° 47,3' 09° 08,4' N	179° 51,9' 08° 47,0' N	179° 56,7' 08° 25,4' N	180° 01,4' 08° 03,6' N	180° 06,3' 07° 41,7' N	180° 11,2' 07° 19,7' N	180° 16,2' 06° 57,6' N	180° 21,3' 06° 35,4' N	180° 26,4' 06° 13,0' N
01	194° 43,0' 09° 28,9' N	194° 47,5' 09° 07,5' N	194° 52,1' 08° 46,1' N	194° 56,9' 08° 24,5' N	195° 01,6' 08° 02,7' N	195° 06,5' 07° 40,8' N	195° 11,4' 07° 18,8' N	195° 16,4' 06° 56,7' N	195° 21,5' 06° 34,4' N	195° 26,6' 06° 12,1' N
02	209° 43,1' 09° 28,0' N	209° 47,7' 09° 06,7' N	209° 52,3' 08° 45,2' N	209° 57,1' 08° 23,5' N	210° 01,8' 08° 01,8' N	210° 06,7' 07° 39,9' N	210° 11,6' 07° 17,9' N	210° 16,6' 06° 55,8' N	210° 21,7' 06° 33,5' N	210° 26,8' 06° 11,2' N
03	224° 43,3' 09° 27,1' N	224° 47,9' 09° 05,8' N	224° 52,5' 08° 44,3' N	224° 57,3' 08° 22,6' N	225° 02,0' 08° 00,9' N	225° 06,9' 07° 39,0' N	225° 11,9' 07° 17,0' N	225° 16,8' 06° 54,8' N	225° 21,9' 06° 32,6' N	225° 27,0' 06° 10,2' N
04	239° 43,5' 09° 26,2' N	239° 48,1' 09° 04,9' N	239° 52,7' 08° 43,4' N	239° 57,4' 08° 21,7' N	240° 02,2' 08° 00,0' N	240° 07,1' 07° 38,1' N	240° 12,1' 07° 16,0' N	240° 17,1' 06° 53,9' N	240° 22,1' 06° 31,7' N	240° 27,2' 06° 09,3' N
05	254° 43,7' 09° 25,3' N	254° 48,3' 09° 04,0' N	254° 52,9' 08° 42,5' N	254° 57,6' 08° 20,8' N	255° 02,5' 07° 59,1' N	255° 07,3' 07° 37,2' N	255° 12,3' 07° 15,1' N	255° 17,3' 06° 53,0' N	255° 22,3' 06° 30,7' N	255° 27,4' 06° 08,4' N
06	269° 43,9' 09° 24,4' N	269° 48,5' 09° 03,1' N	269° 53,1' 08° 41,6' N	269° 57,8' 08° 19,9' N	270° 02,7' 07° 58,2' N	270° 07,5' 07° 36,2' N	270° 12,5' 07° 14,2' N	270° 17,5' 06° 52,1' N	270° 22,5' 06° 29,8' N	270° 27,6' 06° 07,4' N
07	284° 44,1' 09° 23,6' N	284° 48,7' 09° 02,2' N	284° 53,3' 08° 40,7' N	284° 58,0' 08° 19,0' N	285° 02,9' 07° 57,2' N	285° 07,7' 07° 35,3' N	285° 12,7' 07° 13,3' N	285° 17,7' 06° 51,1' N	285° 22,7' 06° 28,9' N	285° 27,8' 06° 06,5' N
08	299° 44,3' 09° 22,7' N	299° 48,8' 09° 01,3' N	299° 53,5' 08° 39,8' N	299° 58,2' 08° 18,1' N	300° 03,1' 07° 56,3' N	300° 07,9' 07° 34,4' N	300° 12,9' 07° 12,4' N	300° 17,9' 06° 50,2' N	300° 23,0' 06° 27,9' N	300° 28,1' 06° 05,5' N
09	314° 44,5' 09° 21,8' N	314° 49,0' 09° 00,4' N	314° 53,7' 08° 38,9' N	314° 58,4' 08° 17,2' N	315° 03,3' 07° 55,4' N	315° 08,1' 07° 33,5' N	315° 13,1' 07° 11,4' N	315° 18,1' 06° 49,3' N	315° 23,2' 06° 27,0' N	315° 28,3' 06° 04,6' N
10	329° 44,7' 09° 20,9' N	329° 49,2' 08° 59,5' N	329° 53,9' 08° 38,0' N	330° 03,5' 08° 16,3' N	330° 03,5' 07° 54,5' N	330° 08,3' 07° 32,6' N	330° 13,3' 07° 10,5' N	330° 18,3' 06° 48,4' N	330° 23,4' 06° 26,1' N	330° 28,5' 06° 03,7' N
11	344° 44,8' 09° 20,0' N	344° 49,4' 08° 58,6' N	344° 54,1' 08° 37,1' N	344° 58,8' 08° 15,4' N	345° 03,7' 07° 53,6' N	345° 08,6' 07° 31,7' N	345° 13,5' 07° 09,6' N	345° 18,5' 06° 47,4' N	345° 23,6' 06° 25,1' N	345° 28,7' 06° 02,7' N
12	359° 45,0' 09° 19,1' N	359° 49,6' 08° 57,7' N	359° 54,3' 08° 36,2' N	359° 59,0' 08° 14,5' N	000° 03,9' 07° 52,7' N	000° 08,8' 07° 30,7' N	000° 13,7' 07° 08,7' N	000° 18,7' 06° 46,5' N	000° 23,8' 06° 24,2' N	000° 28,9' 06° 01,8' N
13	014° 45,2' 09° 18,2' N	014° 49,8' 08° 56,8' N	014° 54,5' 08° 35,3' N	014° 59,2' 08° 13,6' N	015° 04,1' 07° 51,8' N	015° 09,0' 07° 29,8' N	015° 13,9' 07° 07,8' N	015° 18,9' 06° 45,6' N	015° 24,0' 06° 23,3' N	015° 29,1' 06° 00,9' N
14	029° 45,4' 09° 17,3' N	029° 50,0' 08° 55,9' N	029° 54,7' 08° 34,4' N	029° 59,4' 08° 12,7' N	030° 04,3' 07° 50,9' N	030° 09,2' 07° 28,9' N	030° 14,1' 07° 06,8' N	030° 19,2' 06° 44,6' N	030° 24,2' 06° 22,3' N	030° 29,3' 05° 59,9' N
15	044° 45,6' 09° 16,5' N	044° 50,2' 08° 55,0' N	044° 54,9' 08° 33,5' N	044° 59,6' 08° 11,8' N	045° 04,5' 07° 49,9' N	045° 09,4' 07° 28,0' N	045° 14,3' 07° 05,9' N	045° 19,4' 06° 43,7' N	045° 24,4' 06° 21,4' N	045° 29,6' 05° 59,0' N
16	059° 45,8' 09° 15,6' N	059° 50,4' 08° 54,1' N	059° 55,1' 08° 32,6' N	059° 59,8' 08° 10,9' N	060° 04,7' 07° 49,0' N	060° 09,6' 07° 27,1' N	060° 14,5' 07° 05,0' N	060° 19,4' 06° 42,8' N	060° 24,6' 06° 20,5' N	060° 29,8' 05° 58,1' N
17	074° 46,0' 09° 14,7' N	074° 50,6' 08° 53,2' N	074° 55,3' 08° 31,7' N	075° 00,0' 08° 10,0' N	075° 04,9' 07° 48,1' N	075° 09,8' 07° 26,2' N	075° 14,8' 07° 04,1' N	075° 19,8' 06° 41,9' N	075° 24,9' 06° 19,5' N	075° 30,0' 05° 57,1' N
18	089° 46,2' 09° 13,8' N	089° 50,8' 08° 52,3' N	089° 55,5' 08° 30,8' N	090° 00,2' 08° 09,1' N	090° 05,1' 07° 47,2' N	090° 10,0' 07° 25,2' N	090° 15,0' 07° 03,1' N	090° 20,0' 06° 40,9' N	090° 25,1' 06° 18,6' N	090° 30,2' 05° 56,2' N
19	104° 46,4' 09° 12,9' N	104° 51,0' 08° 51,5' N	104° 55,7' 08° 29,9' N	105° 00,4' 08° 08,1' N	105° 05,3' 07° 46,3' N	105° 10,2' 07° 24,3' N	105° 15,2' 07° 02,2' N	105° 20,2' 06° 40,0' N	105° 25,3' 06° 17,7' N	105° 30,4' 05° 55,3' N
20	119° 46,6' 09° 12,0' N	119° 51,2' 08° 50,6' N	119° 55,9' 08° 29,0' N	120° 00,6' 08° 07,2' N	120° 05,5' 07° 45,4' N	120° 10,4' 07° 23,4' N	120° 15,4' 07° 01,3' N	120° 20,4' 06° 39,1' N	120° 25,5' 06° 16,8' N	120° 30,6' 05° 54,3' N
21	134° 46,7' 09° 11,1' N	134° 51,4' 08° 49,7' N	134° 56,1' 08° 28,1' N	135° 00,8' 08° 06,3' N	135° 05,7' 07° 44,5' N	135° 10,6' 07° 22,5' N	135° 15,6' 07° 00,4' N	135° 20,6' 06° 38,2' N	135° 25,7' 06° 15,8' N	135° 30,8' 05° 53,4' N
22	149° 46,9' 09° 10,2' N	149° 51,6' 08° 48,8' N	149° 56,3' 08° 27,2' N	150° 01,0' 08° 05,4' N	150° 05,9' 07° 43,6' N	150° 10,8' 07° 21,6' N	150° 15,8' 06° 59,5' N	150° 20,8' 06° 37,2' N	150° 25,9' 06° 14,9' N	150° 31,1' 05° 52,4' N
23	164° 47,1' 09° 09,3' N	164° 51,8' 08° 47,9' N	164° 56,5' 08° 26,3' N	165° 01,2' 08° 04,5' N	165° 06,1' 07° 42,6' N	165° 11,0' 07° 20,6' N	165° 16,0' 06° 58,5' N	165° 21,0' 06° 36,3' N	165° 26,1' 06° 14,0' N	165° 31,3' 05° 51,5' N
UT	08 Sep	09 Sep	10 Sep	11 Sep	12 Sep	13 Sep	14 Sep	15 Sep	16 Sep	17 Sep
00	180° 31,5' 05° 50,6' N	180° 36,7' 05° 28,0' N	180° 41,9' 05° 05,4' N	180° 47,1' 04° 42,6' N	180° 52,4' 04° 19,8' N	180° 57,7' 03° 56,9' N	181° 03,0' 03° 34,0' N	181° 08,3' 03° 11,0' N	181° 13,7' 02° 47,9' N	181° 19,0' 02° 24,7' N
01	195° 31,7' 05° 49,6' N	195° 36,9' 05° 27,1' N	195° 42,1' 05° 04,4' N	195° 47,3' 04° 41,7' N	195° 52,6' 04° 18,9' N	195° 57,9' 03° 56,0' N	196° 03,2' 03° 33,0' N	196° 08,6' 03° 10,0' N	196° 13,9' 02° 46,9' N	196° 19,3' 02° 23,8' N
02	210° 31,9' 05° 48,7' N	210° 37,1' 05° 26,1' N	210° 42,3' 05° 03,5' N	210° 47,6' 04° 40,7' N	210° 52,8' 04° 17,9' N	210° 58,1' 03° 55,0' N	211° 03,5' 03° 32,1' N	211° 08,8' 03° 09,1' N	211° 14,1' 02° 45,9' N	211° 19,5' 02° 22,8' N
03	225° 32,1' 05° 47,8' N	225° 37,3' 05° 25,2' N	225° 42,5' 05° 02,5' N	225° 47,8' 04° 39,8' N	225° 53,1' 04° 17,0' N	225° 58,4' 03° 54,1' N	226° 03,7' 03° 31,1' N	226° 09,0' 03° 08,1' N	226° 14,4' 02° 45,0' N	226° 19,7' 02° 21,8' N
04	240° 32,3' 05° 46,8' N	240° 37,5' 05° 24,3' N	240° 42,8' 05° 01,6' N	240° 48,0' 04° 38,8' N	240° 53,3' 04° 16,0' N	240° 58,6' 03° 53,1' N	241° 03,9' 03° 30,1' N	241° 09,2' 03° 07,1' N	241° 14,6' 02° 44,0' N	241° 19,9' 02° 20,9' N
05	255° 32,6' 05° 45,9' N	255° 37,8' 05° 23,3' N	255° 43,0' 05° 00,6' N	255° 48,2' 04° 37,9' N	255° 53,5' 04° 15,1' N	255° 58,8' 03° 52,2' N	256° 04,1' 03° 29,2' N	256° 09,5' 03° 06,2' N	256° 14,8' 02° 43,1' N	256° 20,1' 02° 19,9' N
06	270° 32,8' 05° 44,9' N	270° 38,0' 05° 22,4' N	270° 43,2' 04° 59,7' N	270° 48,4' 04° 36,9' N	270° 53,7' 04° 14,1' N	270° 59,0' 03° 51,2' N	271° 04,3' 03° 28,2' N	271° 09,7' 03° 05,2' N	271° 15,0' 02° 42,1' N	271° 20,4' 02° 18,9' N
07	285° 33,0' 05° 44,0' N	285° 38,2' 05° 21,4' N	285° 43,4' 04° 58,8' N	285° 48,7' 04° 36,0' N	285° 53,9' 04° 13,2' N	285° 59,2' 03° 50,3' N	286° 04,6' 03° 27,3' N	286° 09,9' 03° 04,2' N	286° 15,2' 02° 41,1' N	286° 20,6' 02° 18,0' N
08	300° 33,2' 05° 43,1' N	300° 38,4' 05° 20,5' N	300° 43,6' 04° 57,8' N	300° 48,9' 04° 35,0' N	300° 54,2' 04° 12,2' N	300° 59,5' 03° 49,3' N	301° 04,8' 03° 26,3' N	301° 10,1' 03° 03,3' N	301° 15,5' 02° 40,2' N	301° 20,8' 02° 17,0' N
09	315° 33,4' 05° 42,1' N	315° 38,6' 05° 19,5' N	315° 43,8' 04° 56,9' N	315° 49,1' 04° 34,1' N	315° 54,4' 04° 11,3' N	315° 59,7' 03° 48,3' N	316° 05,0' 03° 25,4' N	316° 10,3' 03° 02,3' N	316° 15,7' 02° 39,2' N	316° 21,0' 02° 16,0' N
10	330° 33,6' 05° 41,2' N	330° 38,8' 05° 18,6' N	330° 44,1' 04° 55,9' N	330° 49,3' 04° 33,1' N	330° 54,6' 04° 10,3' N	330° 59,9' 03° 47,4' N	331° 05,2' 03° 24,4' N	331° 10,6' 03° 01,3' N	331° 15,9' 02° 38,2' N	331° 21,3' 02° 15,1' N
11	345° 33,9' 05° 40,2' N	345° 39,1' 05° 17,7' N	345° 44,3' 04° 55,0' N	345° 49,5' 04° 32,2' N	345° 54,8' 04° 09,3' N	346° 00,1' 03° 46,4' N	346° 05,5' 03° 23,4' N	346° 10,8' 03° 00,4' N	346° 16,1' 02° 37,3' N	346° 21,5' 02° 14,1' N
12	000° 34,1' 05° 39,3' N	000° 39,3' 05° 16,7' N	000° 44,5' 04° 54,0' N	000° 49,8' 04° 31,2' N	000° 55,0' 04° 08,4' N	001° 00,4' 03° 45,5' N	001° 05,7' 03° 22,5' N	001° 11,0' 02° 59,4' N	001° 16,4' 02° 36,3' N	001° 21,7' 02° 13,1' N
13	015° 34,3' 05° 38,4' N	015° 39,5' 05° 15,8' N	015° 44,7' 04° 53,1' N	015° 50,0' 04° 30,3' N	015° 55,3' 04° 07,4' N	016° 00,6' 03° 44,5' N	016° 05,9' 03° 21,5' N	016° 11,2' 02° 58,5' N	016° 16,6' 02° 35,3' N	016° 21,9' 02° 12,2' N
14	030° 34,5' 05° 37,4' N	030° 39,7' 05° 14,8' N	030° 44,9' 04° 52,1' N	030° 50,2' 04° 29,3' N	030° 55,5' 04° 06,5' N	031° 00,8' 03° 43,6' N	031° 06,1' 03° 20,6' N	031° 11,5' 02° 57,5' N	031° 16,8' 02° 34,4' N	031° 22,1' 02° 11,2' N
15	045° 34,7' 05° 36,5' N	045° 39,9' 05° 13,9' N	045° 45,2' 04° 51,2' N	045° 50,4' 04° 28,4' N	045° 55,7' 04° 05,5' N	046° 01,0' 03° 42,6' N	046° 06,3' 03° 19,6' N	046° 11,7' 02° 56,5' N	046° 17,0' 02° 33,4' N	046° 22,4' 02° 10,2' N
16	060° 34,9' 05° 35,5' N	060° 40,1' 05° 12,9' N	060° 45,							

Solar Almanac 2031 — Sun GHA & Decl (UT) — 18 Sep to 07 Oct

UT	18 Sep	19 Sep	20 Sep	21 Sep	22 Sep	23 Sep	24 Sep	25 Sep	26 Sep	27 Sep
00	181° 24.4' 02° 01.5' N	181° 29.7' 01° 38.3' N	181° 35.1' 01° 15.1' N	181° 40.4' 00° 51.8' N	181° 45.7' 00° 28.5' N	181° 51.0' 00° 05.1' N	181° 56.3' 00° 18.2' S	182° 01.5' 00° 41.6' S	182° 06.7' 01° 04.9' S	182° 11.9' 01° 28.3' S
01	196° 24.6' 02° 00.6' N	196° 29.9' 01° 37.4' N	196° 35.3' 01° 14.1' N	196° 40.6' 00° 50.8' N	196° 45.9' 00° 27.5' N	196° 51.2' 00° 04.1' N	197° 56.5' 00° 19.2' S	197° 01.7' 00° 42.6' S	197° 06.9' 01° 05.9' S	197° 12.1' 01° 29.3' S
02	211° 24.8' 01° 59.6' N	211° 30.2' 01° 36.4' N	211° 35.5' 01° 13.1' N	211° 40.8' 00° 49.8' N	211° 46.1' 00° 26.5' N	211° 51.4' 00° 03.2' N	211° 56.7' 00° 20.2' S	212° 01.9' 00° 43.5' S	212° 07.1' 01° 06.9' S	212° 12.3' 01° 30.2' S
03	226° 25.0' 01° 58.6' N	226° 30.4' 01° 35.4' N	226° 35.7' 01° 12.2' N	226° 41.0' 00° 48.9' N	226° 46.4' 00° 25.5' N	226° 51.6' 00° 02.2' N	226° 56.9' 00° 21.1' S	227° 02.1' 00° 44.5' S	227° 07.3' 01° 07.9' S	227° 12.5' 01° 31.2' S
04	241° 25.3' 01° 57.7' N	241° 30.6' 01° 34.4' N	241° 35.9' 01° 11.2' N	241° 41.3' 00° 47.9' N	241° 46.6' 00° 24.6' N	241° 51.9' 00° 01.2' N	241° 57.1' 00° 22.1' S	242° 02.4' 00° 45.5' S	242° 07.6' 01° 08.8' S	242° 12.7' 01° 32.2' S
05	256° 25.5' 01° 56.7' N	256° 30.8' 01° 33.5' N	256° 36.2' 01° 10.2' N	256° 41.5' 00° 46.9' N	256° 46.8' 00° 23.6' N	256° 52.1' 00° 00.3' N	256° 57.3' 00° 23.1' S	257° 02.6' 00° 46.5' S	257° 07.8' 01° 09.8' S	257° 12.9' 01° 33.2' S
06	271° 25.7' 01° 55.7' N	271° 31.1' 01° 32.5' N	271° 36.4' 01° 09.2' N	271° 41.7' 00° 45.9' N	271° 47.0' 00° 22.6' N	271° 52.3' 00° 00.7' S	271° 57.6' 00° 24.1' S	272° 02.8' 00° 47.4' S	272° 08.0' 01° 10.8' S	272° 13.1' 01° 34.1' S
07	286° 25.9' 01° 54.8' N	286° 31.3' 01° 31.5' N	286° 36.6' 01° 08.3' N	286° 41.9' 00° 45.0' N	286° 47.2' 00° 21.6' N	286° 52.5' 00° 01.7' S	286° 57.8' 00° 25.0' S	287° 03.0' 00° 48.4' S	287° 08.2' 01° 11.8' S	287° 13.4' 01° 35.1' S
08	301° 26.2' 01° 53.8' N	301° 31.5' 01° 30.6' N	301° 36.8' 01° 07.3' N	301° 42.2' 00° 44.0' N	301° 47.5' 00° 20.7' N	301° 52.7' 00° 02.7' S	301° 58.0' 00° 26.0' S	302° 03.2' 00° 49.4' S	302° 08.4' 01° 12.7' S	302° 13.6' 01° 36.1' S
09	316° 26.4' 01° 52.8' N	316° 31.7' 01° 29.6' N	316° 37.1' 01° 06.3' N	316° 42.4' 00° 43.0' N	316° 47.7' 00° 19.7' N	316° 53.0' 00° 03.6' S	316° 58.2' 00° 27.0' S	317° 03.4' 00° 50.3' S	317° 08.6' 01° 13.7' S	317° 13.8' 01° 37.0' S
10	331° 26.6' 01° 51.9' N	331° 31.9' 01° 28.6' N	331° 37.3' 01° 05.4' N	331° 42.6' 00° 42.1' N	331° 47.9' 00° 18.7' N	331° 53.2' 00° 04.6' S	331° 58.4' 00° 28.0' S	332° 03.7' 00° 51.3' S	332° 08.9' 01° 14.7' S	332° 14.0' 01° 38.0' S
11	346° 26.8' 01° 50.9' N	346° 32.2' 01° 27.7' N	346° 37.5' 01° 04.4' N	346° 42.8' 00° 41.1' N	346° 48.1' 00° 17.8' N	346° 53.4' 00° 05.6' S	346° 58.7' 00° 28.9' S	347° 03.9' 00° 52.3' S	347° 09.1' 01° 15.6' S	347° 14.2' 01° 39.0' S
12	001° 27.0' 01° 49.9' N	001° 32.4' 01° 26.7' N	001° 37.7' 01° 03.4' N	001° 43.0' 00° 40.1' N	001° 48.3' 00° 16.8' N	001° 53.6' 00° 06.6' S	001° 58.9' 00° 29.9' S	002° 04.1' 00° 53.3' S	002° 09.3' 01° 16.6' S	002° 14.4' 01° 40.0' S
13	016° 27.3' 01° 49.0' N	016° 32.6' 01° 25.7' N	016° 37.9' 01° 02.4' N	016° 43.3' 00° 39.1' N	016° 48.6' 00° 15.8' N	016° 53.8' 00° 07.5' S	016° 59.1' 00° 30.9' S	017° 04.3' 00° 54.2' S	017° 09.5' 01° 17.6' S	017° 14.6' 01° 40.9' S
14	031° 27.5' 01° 48.0' N	031° 32.8' 01° 24.8' N	031° 38.2' 01° 01.5' N	031° 43.5' 00° 38.2' N	031° 48.8' 00° 14.8' N	031° 54.1' 00° 08.5' S	031° 59.3' 00° 31.9' S	032° 04.5' 00° 55.2' S	032° 09.7' 01° 18.6' S	032° 14.8' 01° 41.9' S
15	046° 27.7' 01° 47.0' N	046° 33.1' 01° 23.8' N	046° 38.4' 01° 00.5' N	046° 43.7' 00° 37.2' N	046° 49.0' 00° 13.9' N	046° 54.3' 00° 09.5' S	046° 59.5' 00° 32.8' S	047° 04.7' 00° 56.2' S	047° 09.9' 01° 19.5' S	047° 15.1' 01° 42.9' S
16	061° 27.9' 01° 46.1' N	061° 33.3' 01° 22.8' N	061° 38.6' 00° 59.5' N	061° 43.9' 00° 36.2' N	061° 49.2' 00° 12.9' N	061° 54.5' 00° 10.4' S	061° 59.7' 00° 33.8' S	062° 05.0' 00° 57.2' S	062° 10.1' 01° 20.5' S	062° 15.3' 01° 43.9' S
17	076° 28.2' 01° 45.1' N	076° 33.5' 01° 21.8' N	076° 38.8' 00° 58.6' N	076° 44.1' 00° 35.3' N	076° 49.4' 00° 11.9' N	077° 54.7' 00° 11.4' S	077° 00.0' 00° 34.8' S	077° 05.2' 00° 58.1' S	077° 10.4' 01° 21.5' S	077° 15.5' 01° 44.8' S
18	091° 28.4' 01° 44.1' N	091° 33.7' 01° 20.9' N	091° 39.1' 00° 57.6' N	091° 44.4' 00° 34.3' N	091° 49.7' 00° 11.0' N	091° 54.9' 00° 12.4' S	092° 00.2' 00° 35.7' S	092° 05.4' 00° 59.1' S	092° 10.6' 01° 22.5' S	092° 15.7' 01° 45.8' S
19	106° 28.6' 01° 43.2' N	106° 33.9' 01° 19.9' N	106° 39.3' 00° 56.6' N	106° 44.6' 00° 33.3' N	106° 49.9' 00° 10.0' N	106° 55.2' 00° 13.4' S	107° 00.4' 00° 36.7' S	107° 05.6' 01° 00.1' S	107° 10.8' 01° 23.4' S	107° 15.9' 01° 46.8' S
20	121° 28.8' 01° 42.2' N	121° 34.2' 01° 18.9' N	121° 39.5' 00° 55.7' N	121° 44.8' 00° 32.3' N	121° 50.1' 00° 09.0' N	122° 55.4' 00° 14.3' S	122° 00.6' 00° 37.7' S	122° 05.8' 01° 01.0' S	122° 11.0' 01° 24.4' S	122° 16.1' 01° 47.7' S
21	136° 29.1' 01° 41.2' N	136° 34.4' 01° 18.0' N	136° 39.7' 00° 54.7' N	136° 45.0' 00° 31.4' N	136° 50.3' 00° 08.0' N	136° 55.6' 00° 15.3' S	137° 00.8' 00° 38.7' S	137° 06.0' 01° 02.0' S	137° 11.2' 01° 25.4' S	137° 16.3' 01° 48.7' S
22	151° 29.3' 01° 40.3' N	151° 34.6' 01° 17.0' N	151° 39.9' 00° 53.7' N	151° 45.3' 00° 30.4' N	151° 50.5' 00° 07.1' N	151° 55.8' 00° 16.3' S	152° 01.1' 00° 39.6' S	152° 06.3' 01° 03.0' S	152° 11.4' 01° 26.3' S	152° 16.6' 01° 49.7' S
23	166° 29.5' 01° 39.3' N	166° 34.8' 01° 16.0' N	166° 40.2' 00° 52.7' N	166° 45.5' 00° 29.4' N	166° 50.8' 00° 06.1' N	166° 56.0' 00° 17.3' S	167° 01.3' 00° 40.6' S	167° 06.5' 01° 04.0' S	167° 11.6' 01° 27.3' S	167° 16.8' 01° 50.7' S

UT	28 Sep	29 Sep	30 Sep	01 Oct	02 Oct	03 Oct	04 Oct	05 Oct	06 Oct	07 Oct
00	182° 17.0' 01° 51.6' S	182° 22.0' 02° 15.0' S	182° 27.1' 02° 38.3' S	182° 32.0' 03° 01.5' S	182° 36.9' 03° 24.8' S	182° 41.7' 03° 48.0' S	182° 46.4' 04° 11.2' S	182° 51.0' 04° 34.3' S	182° 55.6' 04° 57.4' S	183° 00.0' 05° 20.4' S
01	197° 17.2' 01° 52.6' S	197° 22.3' 02° 15.9' S	197° 27.3' 02° 39.2' S	197° 32.2' 03° 02.5' S	197° 37.1' 03° 25.8' S	197° 41.9' 03° 49.0' S	197° 46.6' 04° 12.1' S	197° 51.2' 04° 35.3' S	197° 55.7' 04° 58.3' S	198° 00.2' 05° 21.3' S
02	212° 17.4' 01° 53.6' S	212° 22.5' 02° 16.9' S	212° 27.5' 02° 40.2' S	212° 32.4' 03° 03.5' S	212° 37.3' 03° 26.7' S	212° 42.1' 03° 49.9' S	212° 46.8' 04° 13.1' S	212° 51.4' 04° 36.2' S	212° 55.9' 04° 59.3' S	213° 00.4' 05° 22.3' S
03	227° 17.6' 01° 54.5' S	227° 22.7' 02° 17.9' S	227° 27.7' 02° 41.2' S	227° 32.6' 03° 04.5' S	227° 37.5' 03° 27.7' S	227° 42.3' 03° 50.9' S	227° 47.0' 04° 14.1' S	227° 51.6' 04° 37.2' S	227° 56.1' 05° 00.2' S	228° 00.5' 05° 23.2' S
04	242° 17.8' 01° 55.5' S	242° 22.9' 02° 18.8' S	242° 27.9' 02° 42.1' S	242° 32.8' 03° 05.4' S	242° 37.7' 03° 28.7' S	242° 42.5' 03° 51.9' S	242° 47.2' 04° 15.0' S	242° 51.8' 04° 38.1' S	242° 56.3' 05° 01.2' S	243° 00.7' 05° 24.2' S
05	257° 18.0' 01° 56.5' S	257° 23.1' 02° 19.8' S	257° 28.1' 02° 43.1' S	257° 33.0' 03° 06.4' S	257° 37.9' 03° 29.6' S	257° 42.7' 03° 52.8' S	257° 47.4' 04° 16.0' S	257° 52.0' 04° 39.1' S	257° 56.5' 05° 02.2' S	258° 00.9' 05° 25.1' S
06	272° 18.2' 01° 57.5' S	272° 23.3' 02° 20.8' S	272° 28.3' 02° 44.1' S	272° 33.2' 03° 07.4' S	272° 38.1' 03° 30.6' S	272° 42.9' 03° 53.8' S	272° 47.6' 04° 17.0' S	272° 52.2' 04° 40.1' S	272° 56.7' 05° 03.1' S	273° 01.1' 05° 26.1' S
07	287° 18.5' 01° 58.4' S	287° 23.5' 02° 21.8' S	287° 28.5' 02° 45.1' S	287° 33.4' 03° 08.3' S	287° 38.3' 03° 31.6' S	287° 43.1' 03° 54.8' S	287° 47.8' 04° 17.9' S	287° 52.4' 04° 41.0' S	287° 56.9' 05° 04.1' S	288° 01.3' 05° 27.1' S
08	302° 18.7' 01° 59.4' S	302° 23.7' 02° 22.7' S	302° 28.7' 02° 46.0' S	302° 33.6' 03° 09.3' S	302° 38.5' 03° 32.5' S	302° 43.3' 03° 55.7' S	302° 47.9' 04° 18.9' S	302° 52.5' 04° 42.0' S	302° 57.1' 05° 05.0' S	303° 01.5' 05° 28.0' S
09	317° 18.9' 02° 00.4' S	317° 23.9' 02° 23.7' S	317° 28.9' 02° 47.0' S	317° 33.8' 03° 10.3' S	317° 38.7' 03° 33.5' S	317° 43.5' 03° 56.7' S	317° 48.1' 04° 19.8' S	317° 52.7' 04° 42.9' S	317° 57.2' 05° 06.0' S	318° 01.6' 05° 29.0' S
10	332° 19.1' 02° 01.4' S	332° 24.1' 02° 24.7' S	332° 29.1' 02° 48.0' S	332° 34.0' 03° 11.2' S	332° 38.9' 03° 34.5' S	332° 43.7' 03° 57.7' S	332° 48.3' 04° 20.8' S	332° 52.9' 04° 43.9' S	332° 57.4' 05° 07.0' S	333° 01.8' 05° 29.9' S
11	347° 19.3' 02° 02.3' S	347° 24.3' 02° 25.6' S	347° 29.3' 02° 48.9' S	347° 34.2' 03° 12.2' S	347° 39.1' 03° 35.4' S	347° 43.8' 03° 58.6' S	347° 48.5' 04° 21.8' S	347° 53.1' 04° 44.9' S	347° 57.6' 05° 07.9' S	348° 02.0' 05° 30.9' S
12	002° 19.5' 02° 03.3' S	002° 24.6' 02° 26.6' S	002° 29.5' 02° 49.9' S	002° 34.4' 03° 13.2' S	002° 39.3' 03° 36.4' S	002° 44.0' 03° 59.6' S	002° 48.7' 04° 22.7' S	002° 53.3' 04° 45.8' S	002° 57.8' 05° 08.9' S	003° 02.2' 05° 31.8' S
13	017° 19.7' 02° 04.3' S	017° 24.8' 02° 27.6' S	017° 29.7' 02° 50.9' S	017° 34.6' 03° 14.1' S	017° 39.5' 03° 37.4' S	017° 44.2' 04° 00.6' S	017° 48.9' 04° 23.7' S	017° 53.5' 04° 46.8' S	017° 58.0' 05° 09.8' S	018° 02.4' 05° 32.8' S
14	032° 19.9' 02° 05.2' S	032° 25.0' 02° 28.6' S	032° 29.9' 02° 51.8' S	032° 34.9' 03° 15.1' S	032° 39.7' 03° 38.3' S	032° 44.4' 04° 01.5' S	032° 49.1' 04° 24.7' S	032° 53.7' 04° 47.8' S	032° 58.2' 05° 10.8' S	033° 02.5' 05° 33.8' S
15	047° 20.1' 02° 06.2' S	047° 25.2' 02° 29.5' S	047° 30.2' 02° 52.8' S	047° 35.1' 03° 16.1' S	047° 39.9' 03° 39.3' S	047° 44.6' 04° 02.5' S	047° 49.3' 04° 25.6' S	047° 53.9' 04° 48.7' S	047° 58.3' 05° 11.7' S	048° 02.7' 05° 34.7' S
16	062° 20.4' 02° 07.2' S	062° 25.4' 02° 30.5' S	062°							

Solar Almanac 2031 — Sun GHA & Decl (UT) — 08 Oct to 27 Oct

UT	08 Oct	09 Oct	10 Oct	11 Oct	12 Oct	13 Oct	14 Oct	15 Oct	16 Oct	17 Oct
00	183° 04.3' 05° 43.3' S	183° 08.6' 06° 06.2' S	183° 12.7' 06° 29.0' S	183° 16.7' 06° 51.7' S	183° 20.5' 07° 14.3' S	183° 24.3' 07° 36.8' S	183° 27.9' 07° 59.2' S	183° 31.4' 08° 21.5' S	183° 34.7' 08° 43.7' S	183° 37.9' 09° 05.8' S
01	198° 04.5' 05° 44.3' S	198° 08.7' 06° 07.1' S	198° 12.8' 06° 29.9' S	198° 16.8' 06° 52.6' S	198° 20.7' 07° 15.2' S	198° 24.4' 07° 37.7' S	198° 28.0' 08° 00.1' S	198° 31.5' 08° 22.4' S	198° 34.8' 08° 44.6' S	198° 38.0' 09° 06.7' S
02	213° 04.7' 05° 45.2' S	213° 08.9' 06° 08.1' S	213° 13.0' 06° 30.9' S	213° 17.0' 06° 53.6' S	213° 20.8' 07° 16.2' S	213° 24.6' 07° 38.7' S	213° 28.2' 08° 01.1' S	213° 31.6' 08° 23.4' S	213° 35.0' 08° 45.5' S	213° 38.1' 09° 07.6' S
03	228° 04.9' 05° 46.2' S	228° 09.1' 06° 09.0' S	228° 13.2' 06° 31.8' S	228° 17.1' 06° 54.5' S	228° 21.0' 07° 17.1' S	228° 24.7' 07° 39.6' S	228° 28.3' 08° 02.0' S	228° 31.8' 08° 24.2' S	228° 35.1' 08° 46.5' S	228° 38.3' 09° 08.5' S
04	243° 05.0' 05° 47.1' S	243° 09.2' 06° 10.0' S	243° 13.3' 06° 32.8' S	243° 17.3' 06° 55.4' S	243° 21.2' 07° 18.0' S	243° 24.9' 07° 40.5' S	243° 28.5' 08° 02.9' S	243° 31.9' 08° 25.2' S	243° 35.2' 08° 47.4' S	243° 38.4' 09° 09.4' S
05	258° 05.2' 05° 48.1' S	258° 09.4' 06° 10.9' S	258° 13.5' 06° 33.7' S	258° 17.5' 06° 56.4' S	258° 21.3' 07° 19.0' S	258° 25.0' 07° 41.5' S	258° 28.6' 08° 03.9' S	258° 32.1' 08° 26.1' S	258° 35.4' 08° 48.3' S	258° 38.5' 09° 10.3' S
06	273° 05.4' 05° 49.0' S	273° 09.6' 06° 11.9' S	273° 13.7' 06° 34.6' S	273° 17.6' 06° 57.3' S	273° 21.5' 07° 19.9' S	273° 25.2' 07° 42.4' S	273° 28.8' 08° 04.8' S	273° 32.2' 08° 27.1' S	273° 35.5' 08° 49.2' S	273° 38.7' 09° 11.2' S
07	288° 05.6' 05° 50.0' S	288° 09.8' 06° 12.8' S	288° 13.8' 06° 35.6' S	288° 17.8' 06° 58.3' S	288° 21.6' 07° 20.9' S	288° 25.3' 07° 43.3' S	288° 28.9' 08° 05.7' S	288° 32.3' 08° 28.0' S	288° 35.6' 08° 50.1' S	288° 38.8' 09° 12.2' S
08	303° 05.8' 05° 50.9' S	303° 09.9' 06° 13.8' S	303° 14.0' 06° 36.5' S	303° 18.0' 06° 59.2' S	303° 21.8' 07° 21.8' S	303° 25.5' 07° 44.3' S	303° 29.1' 08° 06.7' S	303° 32.5' 08° 28.9' S	303° 35.8' 08° 51.1' S	303° 38.9' 09° 13.1' S
09	318° 05.9' 05° 51.9' S	318° 10.1' 06° 14.7' S	318° 14.2' 06° 37.5' S	318° 18.1' 07° 00.2' S	318° 21.9' 07° 22.7' S	318° 25.6' 07° 45.2' S	318° 29.2' 08° 07.6' S	318° 32.6' 08° 29.8' S	318° 35.9' 08° 52.0' S	318° 39.0' 09° 14.0' S
10	333° 06.1' 05° 52.8' S	333° 10.3' 06° 15.7' S	333° 14.3' 06° 38.4' S	333° 18.3' 07° 01.1' S	333° 22.1' 07° 23.7' S	333° 25.8' 07° 46.1' S	333° 29.3' 08° 08.5' S	333° 32.8' 08° 30.8' S	333° 36.0' 08° 52.9' S	333° 39.2' 09° 14.9' S
11	348° 06.3' 05° 53.8' S	348° 10.5' 06° 16.6' S	348° 14.5' 06° 39.4' S	348° 18.4' 07° 02.0' S	348° 22.3' 07° 24.6' S	348° 25.9' 07° 47.1' S	348° 29.5' 08° 09.4' S	348° 32.9' 08° 31.7' S	348° 36.2' 08° 53.8' S	348° 39.3' 09° 15.8' S
12	003° 06.5' 05° 54.7' S	003° 10.6' 06° 17.6' S	003° 14.7' 06° 40.3' S	003° 18.6' 07° 03.0' S	003° 22.4' 07° 25.6' S	003° 26.1' 07° 48.0' S	003° 29.6' 08° 10.4' S	003° 33.0' 08° 32.6' S	003° 36.3' 08° 54.7' S	003° 39.4' 09° 16.7' S
13	018° 06.6' 05° 55.7' S	018° 10.8' 06° 18.5' S	018° 14.8' 06° 41.3' S	018° 18.8' 07° 03.9' S	018° 22.6' 07° 26.5' S	018° 26.2' 07° 48.9' S	018° 29.8' 08° 11.3' S	018° 33.2' 08° 33.5' S	018° 36.4' 08° 55.7' S	018° 39.5' 09° 17.6' S
14	033° 06.8' 05° 56.7' S	033° 11.0' 06° 19.5' S	033° 15.0' 06° 42.2' S	033° 18.9' 07° 04.9' S	033° 22.7' 07° 27.4' S	033° 26.4' 07° 49.9' S	033° 29.9' 08° 12.2' S	033° 33.3' 08° 34.5' S	033° 36.6' 08° 56.6' S	033° 39.7' 09° 18.6' S
15	048° 07.0' 05° 57.6' S	048° 11.1' 06° 20.4' S	048° 15.2' 06° 43.2' S	048° 19.1' 07° 05.8' S	048° 22.9' 07° 28.4' S	048° 26.5' 07° 50.8' S	048° 30.1' 08° 13.2' S	048° 33.5' 08° 35.4' S	048° 36.7' 08° 57.5' S	048° 39.8' 09° 19.5' S
16	063° 07.2' 05° 58.6' S	063° 11.3' 06° 21.4' S	063° 15.3' 06° 44.1' S	063° 19.3' 07° 06.8' S	063° 23.0' 07° 29.3' S	063° 26.7' 07° 51.7' S	063° 30.2' 08° 14.1' S	063° 33.6' 08° 36.3' S	063° 36.8' 08° 58.4' S	063° 39.9' 09° 20.4' S
17	078° 07.3' 05° 59.5' S	078° 11.5' 06° 22.3' S	078° 15.5' 06° 45.1' S	078° 19.4' 07° 07.7' S	078° 23.2' 07° 30.2' S	078° 26.8' 07° 52.7' S	078° 30.4' 08° 15.0' S	078° 33.7' 08° 37.2' S	078° 37.0' 08° 59.3' S	078° 40.1' 09° 21.3' S
18	093° 07.5' 06° 00.5' S	093° 11.7' 06° 23.3' S	093° 15.7' 06° 46.0' S	093° 19.6' 07° 08.6' S	093° 23.3' 07° 31.2' S	093° 27.0' 07° 53.6' S	093° 30.5' 08° 15.9' S	093° 33.9' 08° 38.2' S	093° 37.1' 09° 00.3' S	093° 40.2' 09° 22.2' S
19	108° 07.7' 06° 01.4' S	108° 11.8' 06° 24.2' S	108° 15.8' 06° 46.9' S	108° 19.7' 07° 09.6' S	108° 23.5' 07° 32.1' S	108° 27.1' 07° 54.5' S	108° 30.6' 08° 16.9' S	108° 34.0' 08° 39.1' S	108° 37.2' 09° 01.2' S	108° 40.3' 09° 23.1' S
20	123° 07.9' 06° 02.4' S	123° 12.0' 06° 25.2' S	123° 16.0' 06° 47.9' S	123° 19.9' 07° 10.5' S	123° 23.7' 07° 33.1' S	123° 27.3' 07° 55.5' S	123° 30.8' 08° 17.8' S	123° 34.1' 08° 40.0' S	123° 37.4' 09° 02.1' S	123° 40.4' 09° 24.0' S
21	138° 08.0' 06° 03.3' S	138° 12.2' 06° 26.1' S	138° 16.2' 06° 48.8' S	138° 20.1' 07° 11.5' S	138° 23.8' 07° 34.0' S	138° 27.4' 07° 56.4' S	138° 30.9' 08° 18.7' S	138° 34.3' 08° 40.9' S	138° 37.5' 09° 03.0' S	138° 40.6' 09° 25.0' S
22	153° 08.2' 06° 04.3' S	153° 12.3' 06° 27.1' S	153° 16.3' 06° 49.8' S	153° 20.2' 07° 12.4' S	153° 24.0' 07° 34.9' S	153° 27.6' 07° 57.3' S	153° 31.1' 08° 19.7' S	153° 34.4' 08° 41.8' S	153° 37.6' 09° 03.9' S	153° 40.7' 09° 25.9' S
23	168° 08.4' 06° 05.2' S	168° 12.5' 06° 28.0' S	168° 16.5' 06° 50.7' S	168° 20.4' 07° 13.3' S	168° 24.1' 07° 35.9' S	168° 27.7' 07° 58.3' S	168° 31.2' 08° 20.6' S	168° 34.6' 08° 42.8' S	168° 37.8' 09° 04.8' S	168° 40.8' 09° 26.8' S

UT	18 Oct	19 Oct	20 Oct	21 Oct	22 Oct	23 Oct	24 Oct	25 Oct	26 Oct	27 Oct
00	183° 40.9' 09° 27.7' S	183° 43.8' 09° 49.5' S	183° 46.6' 10° 11.1' S	183° 49.2' 10° 32.6' S	183° 51.6' 10° 54.0' S	183° 53.9' 11° 15.2' S	183° 56.0' 11° 36.2' S	183° 57.9' 11° 57.0' S	183° 59.6' 12° 17.6' S	184° 01.2' 12° 38.1' S
01	198° 41.0' 09° 28.6' S	198° 43.9' 09° 50.4' S	198° 46.7' 10° 12.0' S	198° 49.3' 10° 33.5' S	198° 51.7' 10° 54.9' S	198° 53.9' 11° 16.0' S	198° 56.0' 11° 37.0' S	198° 58.0' 11° 57.9' S	198° 59.7' 12° 18.5' S	199° 01.3' 12° 38.9' S
02	213° 41.2' 09° 29.5' S	213° 44.1' 09° 51.3' S	213° 46.8' 10° 12.9' S	213° 49.4' 10° 34.4' S	213° 51.8' 10° 55.7' S	213° 54.0' 11° 16.9' S	213° 56.1' 11° 37.9' S	213° 58.0' 11° 58.7' S	213° 59.8' 12° 19.4' S	214° 01.4' 12° 39.8' S
03	228° 41.3' 09° 30.4' S	228° 44.2' 09° 52.2' S	228° 46.9' 10° 13.8' S	228° 49.5' 10° 35.3' S	228° 51.9' 10° 56.6' S	228° 54.1' 11° 17.8' S	228° 56.2' 11° 38.8' S	228° 58.1' 11° 59.6' S	228° 59.9' 12° 20.2' S	229° 01.4' 12° 40.6' S
04	243° 41.4' 09° 31.3' S	243° 44.3' 09° 53.1' S	243° 47.0' 10° 14.7' S	243° 49.6' 10° 36.2' S	243° 52.0' 10° 57.5' S	243° 54.2' 11° 18.7' S	243° 56.3' 11° 39.6' S	243° 58.2' 12° 00.4' S	243° 59.9' 12° 21.1' S	244° 01.5' 12° 41.5' S
05	258° 41.5' 09° 32.2' S	258° 44.4' 09° 54.0' S	258° 47.1' 10° 15.6' S	258° 49.7' 10° 37.1' S	258° 52.1' 10° 58.4' S	258° 54.3' 11° 19.5' S	258° 56.4' 11° 40.5' S	258° 58.3' 12° 01.3' S	259° 00.0' 12° 21.9' S	259° 01.5' 12° 42.3' S
06	273° 41.7' 09° 33.1' S	273° 44.5' 09° 54.9' S	273° 47.2' 10° 16.5' S	273° 49.8' 10° 38.0' S	273° 52.2' 10° 59.3' S	273° 54.4' 11° 20.4' S	273° 56.5' 11° 41.4' S	273° 58.3' 12° 02.2' S	274° 00.1' 12° 22.8' S	274° 01.6' 12° 43.2' S
07	288° 41.8' 09° 34.1' S	288° 44.6' 09° 55.8' S	288° 47.3' 10° 17.4' S	288° 49.9' 10° 38.9' S	288° 52.3' 11° 00.2' S	288° 54.5' 11° 21.3' S	288° 56.5' 11° 42.3' S	288° 58.4' 12° 03.0' S	289° 00.1' 12° 23.6' S	289° 01.7' 12° 44.0' S
08	303° 41.9' 09° 35.0' S	303° 44.8' 09° 56.7' S	303° 47.4' 10° 18.3' S	303° 50.0' 10° 39.8' S	303° 52.4' 11° 01.0' S	303° 54.6' 11° 22.2' S	303° 56.6' 11° 43.1' S	303° 58.5' 12° 03.9' S	304° 00.2' 12° 24.5' S	304° 01.7' 12° 44.9' S
09	318° 42.0' 09° 35.9' S	318° 44.9' 09° 57.6' S	318° 47.6' 10° 19.2' S	318° 50.1' 10° 40.7' S	318° 52.5' 11° 01.9' S	318° 54.7' 11° 23.0' S	318° 56.7' 11° 44.0' S	318° 58.6' 12° 04.8' S	319° 00.3' 12° 25.3' S	319° 01.8' 12° 45.7' S
10	333° 42.2' 09° 36.8' S	333° 45.0' 09° 58.5' S	333° 47.7' 10° 20.1' S	333° 50.2' 10° 41.5' S	333° 52.5' 11° 02.8' S	333° 54.7' 11° 23.9' S	333° 56.8' 11° 44.9' S	333° 58.6' 12° 05.6' S	334° 00.3' 12° 26.2' S	334° 01.8' 12° 46.6' S
11	348° 42.3' 09° 37.7' S	348° 45.1' 09° 59.4' S	348° 47.8' 10° 21.0' S	348° 50.3' 10° 42.4' S	348° 52.6' 11° 03.7' S	348° 54.8' 11° 24.8' S	348° 56.9' 11° 45.7' S	348° 58.7' 12° 06.5' S	349° 00.4' 12° 27.0' S	349° 01.9' 12° 47.4' S
12	003° 42.4' 09° 38.6' S	003° 45.2' 10° 00.3' S	003° 47.9' 10° 21.9' S	003° 50.4' 10° 43.3' S	003° 52.7' 11° 04.6' S	003° 54.9' 11° 25.7' S	003° 56.9' 11° 46.6' S	003° 58.8' 12° 07.3' S	004° 00.5' 12° 27.9' S	004° 02.0' 12° 48.3' S
13	018° 42.5' 09° 39.5' S	018° 45.3' 10° 01.2' S	018° 48.0' 10° 22.8' S	018° 50.5' 10° 44.2' S	018° 52.8' 11° 05.5' S	018° 55.0' 11° 26.6' S	018° 57.0' 11° 47.5' S	018° 58.9' 12° 08.2' S	019° 00.5' 12° 28.7' S	019° 02.0' 12° 49.1' S
14	033° 42.6' 09° 40.4' S	033° 45.4' 10° 02.1' S	033° 48.1' 10° 23.7' S	033° 50.6' 10° 45.1' S	033° 52.9' 11° 06.3' S	033° 55.1' 11° 27.4' S	033° 57.1' 11° 48.3' S	033° 58.9' 12° 09.1' S	034° 00.6' 12° 29.6' S	034° 02.1' 12° 49.9' S
15	048° 42.8' 09° 41.3' S	048° 45.6' 10° 03.0' S	048° 48.2' 10° 24.6' S	048° 50.7' 10° 46.0' S	048° 53.0' 11° 07.2' S	048° 55.2' 11° 28.3' S	048° 57.2' 11° 49.2' S	048° 59.0' 12° 09.9' S	049° 00.7' 12° 30.4' S	049° 02.1' 12° 50.8' S
16	063° 42.9' 09° 42.2' S	063° 45.7' 10° 03.9' S	063° 48.3' 10° 25.5' S	063° 50.8' 10° 46.9' S	063° 53.1' 11° 08.1' S	063° 55.3' 11° 29.2' S	063° 57.3' 11° 50.1' S	063° 59.1' 12° 10.8' S	064° 00.7' 12° 31.3' S	064° 02.2' 12° 51.6' S
17	078° 43.0' 09° 43.1' S	078° 45.8' 09° 44.8' S	078° 48.4' 10° 26.4' S	078° 50.9' 10° 47.8' S	078° 53.2' 11° 09.0' S	078° 55.4' 11° 30.1' S	078° 57.3' 11° 50.9' S	078° 59.2' 12° 11.6' S	079° 00.8' 12° 32.2' S	079° 02.2' 12° 52.5' S
18	093° 43.1' 09° 44.0' S	093° 45.9' 10° 05.7' S	093° 48.5' 10° 27.3' S	093° 51.0' 10° 48.7' S	093° 53.3' 11° 09.9' S	093° 55.4' 11° 30.9' S	093° 57.4' 11° 51.8' S	093° 59.2' 12° 12.5' S	094° 00.9' 12° 33.0' S	094° 02.3' 12° 53.3' S
19	108° 43.2' 09° 44.9' S	108° 46.0' 10° 06.6' S	108° 48.6' 10° 28.2' S	108° 51.1' 10° 49.5' S	108° 53.4' 11° 10.8' S	108° 55.5' 11° 31.8' S	108° 57.5' 11° 52.7' S	108° 59.3' 12° 13.4' S	109° 00.9' 12° 33.9' S	109° 02.4' 12° 54.2' S
20	123° 43.4' 09° 45.9' S	123° 46.1' 10° 07.5' S	123° 48.7' 10° 29.1' S	123° 51.2' 10° 50.4' S	123° 53.5' 11° 11.6' S	123° 55.6' 11° 32.7' S	123° 57.6' 11° 53.5' S	123° 59.4' 12° 14.2' S	124° 01.0' 12° 34.7' S	124° 02.4' 12° 55.0' S
21	138° 43.5' 09° 46.8' S	138° 46.2' 10° 08.4' S	138° 48.8' 10° 29.9' S	138° 51.3' 10° 51.3' S	138° 53.6' 11° 12.5' S	138° 55.7' 11° 33.5' S	138° 57.7' 11° 54.4' S	138° 59.4' 12° 15.1' S	139° 01.0' 12° 35.6' S	139° 02.5' 12° 55.8' S
22	153° 43.6' 09° 47.7' S	153° 46.3' 10° 09.3' S	153° 48.9' 10° 30.8' S	153° 51.4' 10° 52.2' S	153° 53.7' 11° 13.4' S	153° 55.8' 11° 34.4' S	153° 57.7' 11° 55.3' S	153° 59.5' 12° 15.9' S	154° 01.1' 12° 36.4' S	154° 02.5' 12° 56.7' S
23	168° 43.7' 09° 48.6' S	168° 46.5' 10° 10.2' S	168° 49.1' 10° 31.7' S	168° 51.5' 10° 53.1' S	168° 53.8' 11° 14.3' S	168° 55.9' 11° 35.3' S	168° 57.8' 11° 56.1' S	168° 59.6' 12° 16.8' S	169° 01.2' 12° 37.3' S	169° 02.6' 12° 57.5' S

Solar Almanac 2031 — Sun GHA & Decl (UT) — 28 Oct to 16 Nov

UT	28 Oct	29 Oct	30 Oct	31 Oct	01 Nov	02 Nov	03 Nov	04 Nov	05 Nov	06 Nov
00	184° 02.6' 12° 58.4' S	184° 03.9' 13° 18.4' S	184° 04.9' 13° 38.3' S	184° 05.7' 13° 57.9' S	184° 06.4' 14° 17.3' S	184° 06.8' 14° 36.5' S	184° 07.0' 14° 55.5' S	184° 07.1' 15° 14.2' S	184° 06.9' 15° 32.6' S	184° 06.5' 15° 50.8' S
01	199° 02.7' 12° 59.2' S	199° 03.9' 13° 19.3' S	199° 04.9' 13° 39.1' S	199° 05.7' 13° 58.7' S	199° 06.4' 14° 18.1' S	199° 06.8' 14° 37.3' S	199° 07.0' 14° 56.2' S	199° 07.0' 15° 17.3' S	199° 06.9' 15° 35.7' S	199° 06.5' 15° 51.6' S
02	214° 02.7' 13° 00.0' S	214° 03.9' 13° 20.1' S	214° 05.0' 13° 39.9' S	214° 05.8' 13° 59.5' S	214° 06.4' 14° 18.9' S	214° 06.8' 14° 38.1' S	214° 07.0' 14° 57.0' S	214° 07.0' 15° 15.7' S	214° 06.8' 15° 34.2' S	214° 06.4' 15° 52.3' S
03	229° 02.8' 13° 00.9' S	229° 04.0' 13° 20.9' S	229° 05.0' 13° 40.7' S	229° 05.8' 14° 00.3' S	229° 06.4' 14° 19.7' S	229° 06.8' 14° 38.9' S	229° 07.0' 14° 57.8' S	229° 07.0' 15° 16.5' S	229° 06.8' 15° 34.9' S	229° 06.4' 15° 53.1' S
04	244° 02.8' 13° 01.7' S	244° 04.0' 13° 21.7' S	244° 05.0' 13° 41.6' S	244° 05.8' 14° 01.2' S	244° 06.4' 14° 20.5' S	244° 06.8' 14° 39.7' S	244° 07.0' 14° 58.6' S	244° 07.0' 15° 17.3' S	244° 06.8' 15° 35.7' S	244° 06.4' 15° 53.9' S
05	259° 02.9' 13° 02.6' S	259° 04.1' 13° 22.6' S	259° 05.1' 13° 42.4' S	259° 05.9' 14° 02.0' S	259° 06.5' 14° 21.3' S	259° 06.9' 14° 40.5' S	259° 07.0' 14° 59.4' S	259° 07.0' 15° 18.0' S	259° 06.8' 15° 36.4' S	259° 06.4' 15° 54.6' S
06	274° 03.0' 13° 03.4' S	274° 04.1' 13° 23.4' S	274° 05.1' 13° 43.2' S	274° 05.9' 14° 02.8' S	274° 06.5' 14° 22.1' S	274° 06.9' 14° 41.3' S	274° 07.0' 15° 00.2' S	274° 07.0' 15° 18.8' S	274° 06.8' 15° 37.2' S	274° 06.4' 15° 55.4' S
07	289° 03.0' 13° 04.2' S	289° 04.2' 13° 24.2' S	289° 05.1' 13° 44.0' S	289° 05.9' 14° 03.6' S	289° 06.5' 14° 22.9' S	289° 06.9' 14° 42.1' S	289° 07.1' 15° 00.9' S	289° 07.0' 15° 19.6' S	289° 06.8' 15° 38.0' S	289° 06.3' 15° 56.1' S
08	304° 03.1' 13° 05.1' S	304° 04.2' 13° 25.1' S	304° 05.2' 13° 44.8' S	304° 05.9' 14° 04.4' S	304° 06.5' 14° 23.7' S	304° 06.9' 14° 42.9' S	304° 07.1' 15° 01.7' S	304° 07.0' 15° 20.4' S	304° 06.8' 15° 38.7' S	304° 06.3' 15° 56.9' S
09	319° 03.1' 13° 05.9' S	319° 04.3' 13° 25.9' S	319° 05.2' 13° 45.7' S	319° 06.0' 14° 05.2' S	319° 06.5' 14° 24.5' S	319° 06.9' 14° 43.6' S	319° 07.1' 15° 02.5' S	319° 07.0' 15° 21.1' S	319° 06.8' 15° 39.5' S	319° 06.3' 15° 57.6' S
10	334° 03.2' 13° 06.7' S	334° 04.3' 13° 26.7' S	334° 05.2' 13° 46.5' S	334° 06.0' 14° 06.0' S	334° 06.6' 14° 25.3' S	334° 06.9' 14° 44.4' S	334° 07.1' 15° 03.3' S	334° 07.0' 15° 21.9' S	334° 06.7' 15° 40.3' S	334° 06.3' 15° 58.4' S
11	349° 03.2' 13° 07.6' S	349° 04.3' 13° 27.5' S	349° 05.3' 13° 47.3' S	349° 06.0' 14° 06.8' S	349° 06.6' 14° 26.1' S	349° 06.9' 14° 45.2' S	349° 07.1' 15° 04.1' S	349° 07.0' 15° 22.7' S	349° 06.7' 15° 41.0' S	349° 06.2' 15° 59.1' S
12	004° 03.3' 13° 08.4' S	004° 04.4' 13° 28.4' S	004° 05.3' 13° 48.1' S	004° 06.1' 14° 07.6' S	004° 06.6' 14° 26.9' S	004° 06.9' 14° 46.0' S	004° 07.1' 15° 04.8' S	004° 07.0' 15° 23.4' S	004° 06.7' 15° 41.8' S	004° 06.2' 15° 59.8' S
13	019° 03.3' 13° 09.3' S	019° 04.4' 13° 29.2' S	019° 05.4' 13° 48.9' S	019° 06.1' 14° 08.5' S	019° 06.6' 14° 27.7' S	019° 06.9' 14° 46.8' S	019° 07.1' 15° 05.6' S	019° 07.0' 15° 24.2' S	019° 06.7' 15° 42.5' S	019° 06.2' 16° 00.6' S
14	034° 03.4' 13° 10.1' S	034° 04.5' 13° 30.0' S	034° 05.4' 13° 49.8' S	034° 06.1' 14° 09.3' S	034° 06.6' 14° 28.5' S	034° 07.0' 14° 47.6' S	034° 07.1' 15° 06.4' S	034° 07.0' 15° 25.0' S	034° 06.7' 15° 43.3' S	034° 06.2' 16° 01.3' S
15	049° 03.4' 13° 10.9' S	049° 04.5' 13° 30.9' S	049° 05.4' 13° 50.6' S	049° 06.1' 14° 10.1' S	049° 06.6' 14° 29.3' S	049° 07.0' 14° 48.4' S	049° 07.1' 15° 07.2' S	049° 07.0' 15° 25.7' S	049° 06.7' 15° 44.0' S	049° 06.1' 16° 02.1' S
16	064° 03.5' 13° 11.8' S	064° 04.6' 13° 31.7' S	064° 05.5' 13° 51.4' S	064° 06.2' 14° 10.9' S	064° 06.7' 14° 30.1' S	064° 07.0' 14° 49.2' S	064° 07.1' 15° 08.0' S	064° 07.0' 15° 26.5' S	064° 06.6' 15° 44.8' S	064° 06.1' 16° 02.8' S
17	079° 03.5' 13° 12.6' S	079° 04.6' 13° 32.5' S	079° 05.5' 13° 52.2' S	079° 06.2' 14° 11.7' S	079° 06.7' 14° 30.9' S	079° 07.0' 14° 50.0' S	079° 07.1' 15° 08.7' S	079° 06.9' 15° 27.3' S	079° 06.6' 15° 45.6' S	079° 06.1' 16° 03.6' S
18	094° 03.6' 13° 13.4' S	094° 04.6' 13° 33.3' S	094° 05.5' 13° 53.0' S	094° 06.2' 14° 12.5' S	094° 06.7' 14° 31.7' S	094° 07.0' 14° 50.7' S	094° 07.1' 15° 09.5' S	094° 06.9' 15° 28.0' S	094° 06.6' 15° 46.3' S	094° 06.0' 16° 04.3' S
19	109° 03.6' 13° 14.3' S	109° 04.7' 13° 34.2' S	109° 05.6' 13° 53.8' S	109° 06.2' 14° 13.3' S	109° 06.7' 14° 32.5' S	109° 07.0' 14° 51.5' S	109° 07.1' 15° 10.3' S	109° 06.9' 15° 28.8' S	109° 06.6' 15° 47.1' S	109° 06.0' 16° 05.1' S
20	124° 03.7' 13° 15.1' S	124° 04.7' 13° 35.0' S	124° 05.6' 13° 54.7' S	124° 06.3' 14° 14.1' S	124° 06.7' 14° 33.3' S	124° 07.0' 14° 52.3' S	124° 07.1' 15° 11.1' S	124° 06.9' 15° 29.6' S	124° 06.6' 15° 47.8' S	124° 06.0' 16° 05.8' S
21	139° 03.7' 13° 15.9' S	139° 04.8' 13° 35.8' S	139° 05.6' 13° 55.5' S	139° 06.3' 14° 14.9' S	139° 06.7' 14° 34.1' S	139° 07.0' 14° 53.1' S	139° 07.1' 15° 11.8' S	139° 06.9' 15° 30.3' S	139° 06.5' 15° 48.6' S	139° 06.0' 16° 06.6' S
22	154° 03.8' 13° 16.8' S	154° 04.8' 13° 36.6' S	154° 05.7' 13° 56.3' S	154° 06.3' 14° 15.7' S	154° 06.8' 14° 34.9' S	154° 07.0' 14° 53.9' S	154° 07.1' 15° 12.6' S	154° 06.9' 15° 31.1' S	154° 06.5' 15° 49.3' S	154° 05.9' 16° 07.3' S
23	169° 03.8' 13° 17.6' S	169° 04.8' 13° 37.4' S	169° 05.7' 13° 57.1' S	169° 06.3' 14° 16.5' S	169° 06.8' 14° 35.7' S	169° 07.0' 14° 54.7' S	169° 07.1' 15° 13.4' S	169° 06.9' 15° 31.9' S	169° 06.5' 15° 50.1' S	169° 05.9' 16° 08.0' S

UT	07 Nov	08 Nov	09 Nov	10 Nov	11 Nov	12 Nov	13 Nov	14 Nov	15 Nov	16 Nov
00	184° 05.9' 16° 08.8' S	184° 05.1' 16° 26.5' S	184° 04.0' 16° 43.9' S	184° 02.8' 17° 01.0' S	184° 01.3' 17° 17.8' S	183° 59.6' 17° 34.3' S	183° 57.7' 17° 50.6' S	183° 55.6' 18° 06.5' S	183° 53.3' 18° 22.1' S	183° 50.8' 18° 37.4' S
01	199° 05.8' 16° 09.5' S	199° 05.0' 16° 27.2' S	199° 04.0' 16° 44.6' S	199° 02.7' 17° 01.7' S	199° 01.3' 17° 18.5' S	198° 59.6' 17° 35.0' S	198° 57.7' 17° 51.2' S	198° 55.5' 18° 07.2' S	198° 53.2' 18° 22.7' S	198° 50.7' 18° 38.0' S
02	214° 05.8' 16° 10.3' S	214° 05.0' 16° 27.9' S	214° 03.9' 16° 45.3' S	214° 02.7' 17° 02.4' S	214° 01.2' 17° 19.2' S	213° 59.5' 17° 35.7' S	213° 57.6' 18° 07.8' S	213° 55.4' 18° 23.4' S	213° 53.1' 18° 38.6' S	213° 50.6' 18° 53.6' S
03	229° 05.8' 16° 11.0' S	229° 04.9' 16° 28.7' S	229° 03.9' 16° 46.0' S	229° 02.6' 17° 03.1' S	229° 01.1' 17° 19.9' S	228° 59.4' 17° 36.4' S	228° 57.5' 17° 52.6' S	228° 55.4' 18° 08.5' S	228° 53.0' 18° 24.0' S	228° 50.4' 18° 39.3' S
04	244° 05.8' 16° 11.8' S	244° 04.9' 16° 29.4' S	244° 03.8' 16° 46.7' S	244° 02.6' 17° 03.8' S	244° 01.1' 17° 20.6' S	243° 59.3' 17° 37.1' S	243° 57.4' 17° 53.3' S	243° 55.2' 18° 09.1' S	243° 52.9' 18° 24.7' S	243° 50.3' 18° 39.9' S
05	259° 05.7' 16° 12.5' S	259° 04.9' 16° 30.1' S	259° 03.8' 16° 47.5' S	259° 02.5' 17° 04.5' S	259° 01.0' 17° 21.3' S	258° 55.2' 17° 37.8' S	258° 53.3' 17° 53.9' S	258° 51.2' 18° 09.8' S	258° 48.8' 18° 25.3' S	258° 46.0' 18° 40.5' S
06	274° 05.7' 16° 13.2' S	274° 04.8' 16° 30.8' S	274° 03.7' 16° 48.2' S	274° 02.4' 17° 05.2' S	274° 00.9' 17° 22.0' S	273° 59.2' 17° 38.4' S	273° 57.2' 17° 54.6' S	273° 55.1' 18° 10.4' S	273° 52.7' 18° 26.0' S	273° 50.1' 18° 41.2' S
07	289° 05.7' 16° 14.0' S	289° 04.8' 16° 31.6' S	289° 03.7' 16° 48.9' S	289° 02.4' 17° 05.9' S	289° 00.9' 17° 22.7' S	288° 59.1' 17° 39.1' S	288° 57.1' 17° 55.3' S	288° 55.0' 18° 11.1' S	288° 52.6' 18° 26.6' S	288° 50.0' 18° 41.8' S
08	304° 05.6' 16° 14.7' S	304° 04.7' 16° 32.3' S	304° 03.6' 16° 49.6' S	304° 02.3' 17° 06.6' S	304° 00.8' 17° 23.4' S	303° 59.0' 17° 39.8' S	303° 57.1' 17° 55.9' S	303° 54.9' 18° 11.7' S	303° 52.5' 18° 27.2' S	303° 49.9' 18° 42.4' S
09	319° 05.6' 16° 15.4' S	319° 04.7' 16° 33.0' S	319° 03.6' 16° 50.3' S	319° 02.3' 17° 07.3' S	319° 00.7' 17° 24.0' S	318° 59.0' 17° 40.5' S	318° 57.0' 17° 56.6' S	318° 54.8' 18° 12.4' S	318° 52.4' 18° 27.9' S	318° 49.8' 18° 43.0' S
10	334° 05.6' 16° 16.2' S	334° 04.7' 16° 33.7' S	334° 03.5' 16° 51.0' S	334° 02.2' 17° 08.0' S	334° 00.6' 17° 24.7' S	333° 58.9' 17° 41.1' S	333° 56.9' 17° 57.3' S	333° 54.7' 18° 13.0' S	333° 52.3' 18° 28.5' S	333° 49.7' 18° 43.7' S
11	349° 05.5' 16° 16.9' S	349° 04.6' 16° 34.5' S	349° 03.5' 16° 51.7' S	349° 02.1' 17° 08.7' S	349° 00.6' 17° 25.4' S	348° 58.8' 17° 41.8' S	348° 56.8' 17° 57.9' S	348° 54.6' 18° 13.7' S	348° 52.2' 18° 29.2' S	348° 49.5' 18° 44.3' S
12	004° 05.5' 16° 17.7' S	004° 04.6' 16° 35.2' S	004° 03.4' 16° 52.5' S	004° 02.1' 17° 09.4' S	004° 00.5' 17° 26.1' S	003° 58.7' 17° 42.5' S	003° 56.7' 17° 58.6' S	003° 54.5' 18° 14.3' S	003° 52.1' 18° 29.8' S	003° 49.4' 18° 44.9' S
13	019° 05.5' 16° 18.4' S	019° 04.5' 16° 35.9' S	019° 03.4' 16° 53.2' S	019° 02.0' 17° 10.1' S	019° 00.4' 17° 26.8' S	018° 58.6' 17° 43.2' S	018° 56.6' 17° 59.2' S	018° 54.4' 18° 15.0' S	018° 52.0' 18° 30.4' S	018° 49.3' 18° 45.5' S
14	034° 05.4' 16° 19.1' S	034° 04.5' 16° 36.6' S	034° 03.3' 16° 53.9' S	034° 02.0' 17° 10.8' S	034° 00.4' 17° 27.5' S	033° 58.6' 17° 43.9' S	033° 56.5' 17° 59.9' S	033° 54.3' 18° 15.6' S	033° 51.9' 18° 31.1' S	033° 49.2' 18° 46.2' S
15	049° 05.4' 16° 19.9' S	049° 04.4' 16° 37.4' S	049° 03.3' 16° 54.6' S	049° 01.9' 17° 11.5' S	049° 00.3' 17° 28.2' S	048° 58.5' 17° 44.5' S	048° 56.4' 18° 00.6' S	048° 54.2' 18° 16.3' S	048° 51.7' 18° 31.7' S	048° 49.1' 18° 46.8' S
16	064° 05.4' 16° 20.6' S	064° 04.4' 16° 38.1' S	064° 03.2' 16° 55.3' S	064° 01.8' 17° 12.2' S	064° 00.2' 17° 28.9' S	063° 58.4' 17° 45.2' S	063° 56.4' 18° 01.2' S	063° 54.1' 18° 16.9' S	063° 51.6' 18° 32.3' S	063° 49.0' 18° 47.4' S
17	079° 05.3' 16° 21.3' S	079° 04.4' 16° 38.8' S	079° 03.2' 16° 56.0' S	079° 01.8' 17° 12.9' S	079° 00.2' 17° 29.6' S	078° 58.3' 17° 45.9' S	078° 56.3' 18° 01.9' S	078° 54.0' 18° 17.6' S	078° 51.5' 18° 33.0' S	078° 48.8' 18° 48.0' S
18	094° 05.3' 16° 22.1' S	094° 04.3' 16° 39.5' S	094° 03.1' 16° 56.7' S	094° 01.7' 17° 13.6' S	094° 00.1' 17° 30.2' S	093° 58.2' 17° 46.6' S	093° 56.2' 18° 02.5' S	093° 53.9' 18° 18.2' S	093° 51.4' 18° 33.6' S	093° 48.7' 18° 48.6' S
19	109° 05.2' 16° 22.									

Solar Almanac 2031 — Sun GHA & Decl (UT) — 17 Nov to 06 Dec

UT	17 Nov	18 Nov	19 Nov	20 Nov	21 Nov	22 Nov	23 Nov	24 Nov	25 Nov	26 Nov
00	183° 48.0' 18° 52.3' S	183° 45.1' 19° 07.0' S	183° 41.9' 19° 21.2' S	183° 38.6' 19° 35.2' S	183° 35.0' 19° 48.7' S	183° 31.3' 20° 02.0' S	183° 27.3' 20° 14.8' S	183° 23.2' 20° 27.3' S	183° 18.8' 20° 39.4' S	183° 14.3' 20° 51.1' S
01	198° 47.9' 18° 53.0' S	198° 44.9' 19° 07.6' S	198° 41.8' 19° 21.8' S	198° 38.4' 19° 35.7' S	198° 34.9' 19° 49.3' S	198° 31.1' 20° 02.5' S	198° 27.1' 20° 15.3' S	198° 23.0' 20° 27.8' S	198° 18.7' 20° 39.9' S	198° 14.1' 20° 51.6' S
02	213° 47.8' 18° 53.6' S	213° 44.8' 19° 08.2' S	213° 41.6' 19° 22.4' S	213° 38.3' 19° 36.3' S	213° 34.7' 19° 49.9' S	213° 30.9' 20° 03.0' S	213° 27.0' 20° 15.9' S	213° 22.8' 20° 28.3' S	213° 18.5' 20° 40.4' S	213° 13.9' 20° 52.0' S
03	228° 47.7' 18° 54.2' S	228° 44.7' 19° 08.8' S	228° 41.5' 19° 23.0' S	228° 38.1' 19° 36.9' S	228° 34.5' 19° 50.4' S	228° 30.8' 20° 03.6' S	228° 26.8' 20° 16.4' S	228° 22.6' 20° 28.8' S	228° 18.3' 20° 40.8' S	228° 13.7' 20° 52.5' S
04	243° 47.5' 18° 54.8' S	243° 44.6' 19° 09.4' S	243° 41.4' 19° 23.6' S	243° 38.0' 19° 37.5' S	243° 34.4' 19° 51.0' S	243° 30.6' 20° 04.1' S	243° 26.6' 20° 16.9' S	243° 22.5' 20° 29.3' S	243° 18.1' 20° 41.3' S	243° 13.6' 20° 53.0' S
05	258° 47.4' 18° 55.4' S	258° 44.4' 19° 10.0' S	258° 41.2' 19° 24.2' S	258° 37.8' 19° 38.0' S	258° 34.2' 19° 51.5' S	258° 30.4' 20° 04.7' S	258° 26.5' 20° 17.4' S	258° 22.3' 20° 29.8' S	258° 17.9' 20° 41.8' S	258° 13.4' 20° 53.5' S
06	273° 47.3' 18° 56.0' S	273° 44.3' 19° 10.6' S	273° 41.1' 19° 24.8' S	273° 37.7' 19° 38.6' S	273° 34.1' 19° 52.1' S	273° 30.3' 20° 05.2' S	273° 26.3' 20° 18.0' S	273° 22.1' 20° 30.3' S	273° 17.7' 20° 42.3' S	273° 13.2' 20° 53.9' S
07	288° 47.2' 18° 56.6' S	288° 44.2' 19° 11.2' S	288° 41.0' 19° 25.3' S	288° 37.5' 19° 39.2' S	288° 33.9' 19° 52.6' S	288° 30.1' 20° 05.7' S	288° 26.1' 20° 18.5' S	288° 21.9' 20° 30.8' S	288° 17.5' 20° 42.8' S	288° 13.0' 20° 54.4' S
08	303° 47.1' 18° 57.3' S	303° 44.0' 19° 11.8' S	303° 40.8' 19° 25.9' S	303° 37.4' 19° 39.7' S	303° 33.8' 19° 53.2' S	303° 30.0' 20° 06.3' S	303° 25.9' 20° 19.0' S	303° 21.7' 20° 31.3' S	303° 17.4' 20° 43.3' S	303° 12.8' 20° 54.9' S
09	318° 46.9' 18° 57.9' S	318° 43.9' 19° 12.4' S	318° 40.7' 19° 26.5' S	318° 37.3' 19° 40.3' S	318° 33.6' 19° 53.7' S	318° 29.8' 20° 06.8' S	318° 25.8' 20° 19.5' S	318° 21.6' 20° 31.8' S	318° 17.2' 20° 43.8' S	318° 12.6' 20° 55.4' S
10	333° 46.8' 18° 58.5' S	333° 43.8' 19° 13.0' S	333° 40.5' 19° 27.1' S	333° 37.1' 19° 40.9' S	333° 33.5' 19° 54.3' S	333° 29.6' 20° 07.4' S	333° 25.6' 20° 20.0' S	333° 21.4' 20° 32.4' S	333° 17.0' 20° 44.3' S	333° 12.4' 20° 55.8' S
11	348° 46.7' 18° 59.1' S	348° 43.7' 19° 13.5' S	348° 40.4' 19° 27.7' S	348° 37.0' 19° 41.4' S	348° 33.3' 19° 54.8' S	348° 29.5' 20° 07.9' S	348° 25.4' 20° 20.6' S	348° 21.2' 20° 32.9' S	348° 16.8' 20° 44.8' S	348° 12.2' 20° 56.3' S
12	003° 46.6' 18° 59.7' S	003° 43.5' 19° 14.1' S	003° 40.3' 19° 28.2' S	003° 36.8' 19° 42.0' S	003° 33.2' 19° 55.4' S	003° 29.3' 20° 08.4' S	003° 25.3' 20° 21.1' S	003° 21.0' 20° 33.4' S	003° 16.6' 20° 45.3' S	003° 12.0' 20° 56.8' S
13	018° 46.5' 19° 00.3' S	018° 43.4' 19° 14.7' S	018° 40.1' 19° 28.8' S	018° 36.7' 19° 42.6' S	018° 33.0' 19° 55.9' S	018° 29.1' 20° 09.0' S	018° 25.1' 20° 21.6' S	018° 20.8' 20° 33.9' S	018° 16.4' 20° 45.8' S	018° 11.8' 20° 57.3' S
14	033° 46.3' 19° 00.9' S	033° 43.3' 19° 15.3' S	033° 40.0' 19° 29.4' S	033° 36.5' 19° 43.1' S	033° 32.8' 19° 56.5' S	033° 29.0' 20° 09.5' S	033° 24.9' 20° 22.1' S	033° 20.7' 20° 34.4' S	033° 16.2' 20° 46.2' S	033° 11.6' 20° 57.7' S
15	048° 46.2' 19° 01.5' S	048° 43.1' 19° 15.9' S	048° 39.8' 19° 30.0' S	048° 36.4' 19° 43.7' S	048° 32.7' 19° 57.0' S	048° 28.8' 20° 10.0' S	048° 24.7' 20° 22.6' S	048° 20.5' 20° 34.9' S	048° 16.0' 20° 46.7' S	048° 11.4' 20° 58.2' S
16	063° 46.1' 19° 02.1' S	063° 43.0' 19° 16.5' S	063° 39.7' 19° 30.6' S	063° 36.2' 19° 44.3' S	063° 32.5' 19° 57.6' S	063° 28.6' 20° 10.6' S	063° 24.6' 20° 23.2' S	063° 20.3' 20° 35.4' S	063° 15.8' 20° 47.2' S	063° 11.2' 20° 58.7' S
17	078° 46.0' 19° 02.7' S	078° 42.9' 19° 17.1' S	078° 39.6' 19° 31.1' S	078° 36.1' 19° 44.8' S	078° 32.4' 19° 58.1' S	078° 28.5' 20° 11.1' S	078° 24.4' 20° 23.7' S	078° 20.1' 20° 35.9' S	078° 15.7' 20° 47.7' S	078° 11.0' 20° 59.1' S
18	093° 45.8' 19° 03.3' S	093° 42.7' 19° 17.7' S	093° 39.4' 19° 31.7' S	093° 35.9' 19° 45.4' S	093° 32.2' 19° 58.7' S	093° 28.3' 20° 11.6' S	093° 24.2' 20° 24.2' S	093° 19.9' 20° 36.4' S	093° 15.5' 20° 48.2' S	093° 10.8' 20° 59.6' S
19	108° 45.7' 19° 03.9' S	108° 42.6' 19° 18.3' S	108° 39.3' 19° 32.3' S	108° 35.8' 19° 45.9' S	108° 32.1' 19° 59.2' S	108° 28.1' 20° 12.2' S	108° 24.0' 20° 24.7' S	108° 19.8' 20° 36.9' S	108° 15.3' 20° 48.7' S	108° 10.6' 21° 00.1' S
20	123° 45.6' 19° 04.6' S	123° 42.5' 19° 18.9' S	123° 39.1' 19° 32.9' S	123° 35.6' 19° 46.5' S	123° 31.9' 19° 59.8' S	123° 28.0' 20° 12.7' S	123° 23.9' 20° 25.2' S	123° 19.6' 20° 37.4' S	123° 15.1' 20° 49.1' S	123° 10.4' 21° 00.5' S
21	138° 45.5' 19° 05.2' S	138° 42.3' 19° 19.5' S	138° 39.0' 19° 33.4' S	138° 35.5' 19° 47.1' S	138° 31.7' 20° 00.3' S	138° 27.8' 20° 13.2' S	138° 23.7' 20° 25.7' S	138° 19.4' 20° 37.9' S	138° 14.9' 20° 49.6' S	138° 10.2' 21° 01.0' S
22	153° 45.3' 19° 05.8' S	153° 42.2' 19° 20.1' S	153° 38.8' 19° 34.0' S	153° 35.3' 19° 47.6' S	153° 31.6' 20° 00.9' S	153° 27.6' 20° 13.7' S	153° 23.5' 20° 26.2' S	153° 19.2' 20° 38.4' S	153° 14.7' 20° 50.1' S	153° 10.0' 21° 01.5' S
23	168° 45.2' 19° 06.4' S	168° 42.1' 19° 20.7' S	168° 38.7' 19° 34.6' S	168° 35.2' 19° 48.2' S	168° 31.4' 20° 01.4' S	168° 27.5' 20° 14.3' S	168° 23.3' 20° 26.8' S	168° 19.0' 20° 38.9' S	168° 14.5' 20° 50.6' S	168° 09.8' 21° 01.9' S

UT	27 Nov	28 Nov	29 Nov	30 Nov	01 Dec	02 Dec	03 Dec	04 Dec	05 Dec	06 Dec
00	183° 09.6' 21° 02.4' S	183° 04.7' 21° 13.3' S	182° 59.7' 21° 23.8' S	182° 54.5' 21° 34.0' S	182° 49.1' 21° 43.7' S	182° 43.5' 21° 53.0' S	182° 37.8' 22° 01.9' S	182° 31.9' 22° 10.3' S	182° 25.8' 22° 18.3' S	182° 19.7' 22° 25.9' S
01	198° 09.4' 21° 02.9' S	198° 04.5' 21° 13.8' S	197° 59.5' 21° 24.3' S	197° 54.2' 21° 34.4' S	197° 48.8' 21° 44.1' S	197° 43.3' 21° 53.4' S	197° 37.5' 22° 02.2' S	197° 31.6' 22° 10.7' S	197° 25.6' 22° 18.7' S	197° 19.4' 22° 26.2' S
02	213° 09.2' 21° 03.3' S	213° 04.3' 21° 14.2' S	212° 59.3' 21° 24.7' S	212° 54.0' 21° 34.8' S	212° 48.6' 21° 44.5' S	212° 43.0' 21° 53.7' S	212° 37.3' 22° 02.6' S	212° 31.4' 22° 11.0' S	212° 25.3' 22° 19.0' S	212° 19.1' 22° 26.5' S
03	228° 09.0' 21° 03.8' S	228° 04.1' 21° 14.7' S	227° 59.0' 21° 25.1' S	227° 53.8' 21° 35.2' S	227° 48.4' 21° 44.9' S	227° 42.8' 21° 54.1' S	227° 37.0' 22° 02.9' S	227° 31.1' 22° 11.3' S	227° 25.1' 22° 19.3' S	227° 18.9' 22° 26.9' S
04	243° 08.8' 21° 04.2' S	243° 03.9' 21° 15.1' S	242° 58.8' 21° 25.6' S	242° 53.6' 21° 35.6' S	242° 48.1' 21° 45.3' S	242° 42.6' 21° 54.5' S	242° 36.8' 22° 03.3' S	242° 30.9' 22° 11.7' S	242° 24.8' 22° 19.6' S	242° 18.6' 22° 27.2' S
05	258° 08.6' 21° 04.7' S	258° 03.7' 21° 15.5' S	257° 58.6' 21° 26.0' S	257° 53.3' 21° 36.0' S	257° 47.9' 21° 45.7' S	257° 42.3' 21° 54.9' S	257° 36.6' 22° 03.7' S	257° 30.6' 22° 12.0' S	257° 24.6' 22° 20.0' S	257° 18.4' 22° 27.5' S
06	273° 08.4' 21° 05.2' S	273° 03.5' 21° 16.0' S	272° 58.4' 21° 26.4' S	272° 53.1' 21° 36.4' S	272° 47.7' 21° 46.0' S	272° 42.1' 21° 55.2' S	272° 36.3' 22° 04.0' S	272° 30.4' 22° 12.4' S	272° 24.3' 22° 20.3' S	272° 18.1' 22° 27.8' S
07	288° 08.2' 21° 05.6' S	288° 03.3' 21° 16.4' S	287° 58.2' 21° 26.8' S	287° 52.9' 21° 36.8' S	287° 47.5' 21° 46.4' S	287° 41.8' 21° 55.6' S	287° 36.1' 22° 04.4' S	287° 30.1' 22° 12.7' S	287° 24.1' 22° 20.6' S	287° 17.8' 22° 28.1' S
08	303° 08.0' 21° 06.1' S	303° 03.1' 21° 16.9' S	302° 58.0' 21° 27.3' S	302° 52.7' 21° 37.3' S	302° 47.2' 21° 46.8' S	302° 41.6' 21° 56.0' S	302° 35.8' 22° 04.7' S	302° 29.9' 22° 13.0' S	302° 23.8' 22° 20.9' S	302° 17.6' 22° 28.4' S
09	318° 07.8' 21° 06.5' S	318° 02.9' 21° 17.3' S	317° 57.8' 21° 27.7' S	317° 52.5' 21° 37.7' S	317° 47.0' 21° 47.2' S	317° 41.4' 21° 56.4' S	317° 35.6' 22° 05.1' S	317° 29.6' 22° 13.4' S	317° 23.5' 22° 21.2' S	317° 17.3' 22° 28.7' S
10	333° 07.6' 21° 07.0' S	333° 02.7' 21° 17.8' S	332° 57.5' 21° 28.1' S	332° 52.2' 21° 38.1' S	332° 46.8' 21° 47.6' S	332° 41.1' 21° 56.7' S	332° 35.3' 22° 05.4' S	332° 29.4' 22° 13.7' S	332° 23.3' 22° 21.6' S	332° 17.1' 22° 29.0' S
11	348° 07.4' 21° 07.5' S	348° 02.5' 21° 18.2' S	347° 57.3' 21° 28.5' S	347° 52.0' 21° 38.5' S	347° 46.5' 21° 48.0' S	347° 40.9' 21° 57.1' S	347° 35.1' 22° 05.8' S	347° 29.1' 22° 14.0' S	347° 23.0' 22° 21.9' S	347° 16.8' 22° 29.3' S
12	003° 07.2' 21° 07.9' S	003° 02.2' 21° 18.6' S	002° 57.1' 21° 29.0' S	002° 51.8' 21° 38.9' S	002° 46.3' 21° 48.4' S	002° 40.7' 21° 57.5' S	002° 34.8' 22° 06.1' S	002° 28.9' 22° 14.4' S	002° 22.8' 22° 22.2' S	002° 16.5' 22° 29.6' S
13	018° 07.0' 21° 08.4' S	018° 02.0' 21° 19.1' S	017° 56.9' 21° 29.4' S	017° 51.6' 21° 39.3' S	017° 46.1' 21° 48.8' S	017° 40.4' 21° 57.8' S	017° 34.6' 22° 06.5' S	017° 28.6' 22° 14.7' S	017° 22.5' 22° 22.5' S	017° 16.3' 22° 29.9' S
14	033° 06.8' 21° 08.8' S	033° 01.8' 21° 19.5' S	032° 56.7' 21° 29.8' S	032° 51.3' 21° 39.7' S	032° 45.8' 21° 49.2' S	032° 40.2' 21° 58.2' S	032° 34.4' 22° 06.8' S	032° 28.4' 22° 15.0' S	032° 22.3' 22° 22.8' S	032° 16.0' 22° 30.2' S
15	048° 06.6' 21° 09.3' S	048° 01.6' 21° 19.9' S	047° 56.4' 21° 30.2' S	047° 51.1' 21° 40.1' S	047° 45.6' 21° 49.5' S	047° 39.9' 21° 58.6' S	047° 34.1' 22° 07.2' S	047° 28.1' 22° 15.4' S	047° 22.0' 22° 23.1' S	047° 15.7' 22° 30.5' S
16	063° 06.4' 21° 09.7' S	063° 01.4' 21° 20.4' S	062° 56.2' 21° 30.6' S	062° 50.9' 21° 40.5' S	062° 45.4' 21° 49.9' S	062° 39.7' 21° 58.9' S	062° 33.9' 22° 07.5' S	062° 27.9' 22° 15.7' S	062° 21.7' 22° 23.5' S	062° 15.5' 22° 30.8' S
17	078° 06.2' 21° 10.2' S	078° 01.2' 21° 20.8' S	077° 56.0' 21° 31.1' S	077° 50.7' 21° 40.9' S	077° 45.1' 21° 50.3' S	077° 39.5' 21° 59.3' S	077° 33.6' 22° 07.9' S	077° 27.6' 22° 16.0' S	077° 21.5' 22° 23.8' S	077° 15.2' 22° 31.1' S
18	093° 06.0' 21° 10.6' S	093° 01.0' 21° 21.3' S	092° 55.8' 21° 31.5' S	092° 50.4' 21° 41.3' S	092° 44.9' 21° 50.7' S	092° 39.2' 21° 59.7' S	092° 33.4' 22° 08.2' S	092° 27.4' 22° 16.4' S	092° 21.2' 22° 24.1' S	092° 14.9' 22° 31.3' S
19	108° 05.8' 21° 11.									

Solar Almanac 2031 — Sun GHA & Decl (UT) — 07 Dec to 26 Dec

UT	07 Dec	08 Dec	09 Dec	10 Dec	11 Dec	12 Dec	13 Dec	14 Dec	15 Dec	16 Dec
00	182° 13.3' 22° 33.1' S	182° 06.9' 22° 39.8' S	182° 00.3' 22° 46.1' S	181° 53.6' 22° 51.9' S	181° 46.8' 22° 57.3' S	181° 39.9' 23° 02.2' S	181° 32.9' 23° 06.7' S	181° 25.8' 23° 10.7' S	181° 18.6' 23° 14.2' S	181° 11.4' 23° 17.3' S
01	197° 13.1' 22° 33.4' S	197° 06.6' 22° 40.1' S	197° 00.0' 22° 46.3' S	196° 53.3' 22° 52.1' S	196° 46.5' 22° 57.5' S	196° 39.6' 23° 02.4' S	196° 32.6' 23° 06.8' S	196° 25.5' 23° 10.8' S	196° 18.3' 23° 14.4' S	196° 11.1' 23° 17.4' S
02	212° 12.8' 22° 33.7' S	212° 06.4' 22° 40.4' S	211° 59.8' 22° 46.6' S	211° 53.1' 22° 52.4' S	211° 46.2' 22° 57.7' S	211° 39.3' 23° 02.6' S	211° 32.3' 23° 07.0' S	211° 25.2' 23° 11.0' S	211° 18.0' 23° 14.5' S	211° 10.8' 23° 17.5' S
03	227° 12.5' 22° 34.0' S	227° 06.1' 22° 40.6' S	226° 59.5' 22° 46.8' S	226° 52.8' 22° 52.6' S	226° 45.9' 22° 57.9' S	226° 39.0' 23° 02.8' S	226° 32.0' 23° 07.2' S	226° 24.9' 23° 11.1' S	226° 17.7' 23° 15.2' S	226° 10.5' 23° 17.7' S
04	242° 12.3' 22° 34.2' S	242° 05.8' 22° 40.9' S	241° 59.2' 22° 47.1' S	241° 52.5' 22° 52.8' S	241° 45.7' 22° 58.1' S	241° 38.7' 23° 03.0' S	241° 31.7' 23° 07.4' S	241° 24.6' 23° 11.3' S	241° 17.4' 23° 14.8' S	241° 10.2' 23° 17.8' S
05	257° 12.0' 22° 34.5' S	257° 05.5' 22° 41.2' S	256° 58.9' 22° 47.3' S	256° 52.2' 22° 53.1' S	256° 45.4' 22° 58.3' S	256° 38.4' 23° 03.2' S	256° 31.4' 23° 07.5' S	256° 24.3' 23° 11.5' S	256° 17.1' 23° 14.9' S	256° 09.8' 23° 17.9' S
06	272° 11.7' 22° 34.8' S	272° 05.3' 22° 41.4' S	271° 58.7' 22° 47.6' S	271° 51.9' 22° 53.3' S	271° 45.1' 22° 58.6' S	271° 38.1' 23° 03.4' S	271° 31.1' 23° 07.7' S	271° 24.0' 23° 11.6' S	271° 16.8' 23° 15.0' S	271° 09.5' 23° 18.0' S
07	287° 11.5' 22° 35.1' S	287° 05.0' 22° 41.7' S	286° 58.4' 22° 47.8' S	286° 51.6' 22° 53.5' S	286° 44.8' 22° 58.8' S	286° 37.9' 23° 03.6' S	286° 30.8' 23° 07.9' S	286° 23.7' 23° 11.8' S	286° 16.5' 23° 15.2' S	286° 09.2' 23° 18.1' S
08	302° 11.2' 22° 35.4' S	302° 04.7' 22° 42.0' S	301° 58.1' 22° 48.1' S	301° 51.4' 22° 53.8' S	301° 44.5' 22° 59.0' S	301° 37.6' 23° 03.7' S	301° 30.5' 23° 08.1' S	301° 23.4' 23° 11.9' S	301° 16.2' 23° 15.3' S	301° 08.9' 23° 18.2' S
09	317° 10.9' 22° 35.7' S	317° 04.4' 22° 42.2' S	316° 57.8' 22° 48.3' S	316° 51.1' 22° 54.0' S	316° 44.2' 22° 59.2' S	316° 37.3' 23° 03.9' S	316° 30.2' 23° 08.2' S	316° 23.1' 23° 12.1' S	316° 15.9' 23° 15.4' S	316° 08.6' 23° 18.3' S
10	332° 10.7' 22° 35.9' S	332° 04.2' 22° 42.5' S	331° 57.5' 22° 48.6' S	331° 50.8' 22° 54.2' S	331° 43.9' 22° 59.4' S	331° 37.0' 23° 04.1' S	331° 29.9' 23° 08.4' S	331° 22.8' 23° 12.2' S	331° 15.6' 23° 15.6' S	331° 08.3' 23° 18.4' S
11	347° 10.4' 22° 36.2' S	347° 03.9' 22° 42.7' S	346° 57.3' 22° 48.8' S	346° 50.5' 22° 54.4' S	346° 43.6' 22° 59.6' S	346° 36.7' 23° 04.3' S	346° 29.6' 23° 08.6' S	346° 22.5' 23° 12.4' S	346° 15.3' 23° 15.7' S	346° 08.0' 23° 18.6' S
12	002° 10.1' 22° 36.5' S	002° 03.6' 22° 43.0' S	001° 57.0' 22° 49.1' S	001° 50.2' 22° 54.7' S	001° 43.4' 22° 59.8' S	001° 36.4' 23° 04.5' S	001° 29.3' 23° 08.7' S	001° 22.2' 23° 12.5' S	001° 15.0' 23° 15.8' S	001° 07.7' 23° 18.7' S
13	017° 09.9' 22° 36.8' S	017° 03.3' 22° 43.3' S	016° 56.7' 22° 49.3' S	016° 49.9' 22° 54.9' S	016° 43.1' 23° 00.0' S	016° 36.1' 23° 04.7' S	016° 29.0' 23° 08.9' S	016° 21.9' 23° 12.9' S	016° 14.7' 23° 15.9' S	016° 07.4' 23° 18.8' S
14	032° 09.6' 22° 37.1' S	032° 03.1' 22° 43.5' S	031° 56.4' 22° 49.5' S	031° 49.7' 22° 55.1' S	031° 42.8' 23° 00.2' S	031° 35.8' 23° 04.9' S	031° 28.7' 23° 09.1' S	031° 21.6' 23° 12.8' S	031° 14.4' 23° 16.1' S	031° 07.1' 23° 18.9' S
15	047° 09.3' 22° 37.3' S	047° 02.8' 22° 43.8' S	046° 56.1' 22° 49.8' S	046° 49.4' 22° 55.3' S	046° 42.5' 23° 00.4' S	046° 35.5' 23° 05.0' S	046° 28.5' 23° 09.2' S	046° 21.3' 23° 12.9' S	046° 14.1' 23° 16.2' S	046° 06.8' 23° 19.0' S
16	062° 09.1' 22° 37.6' S	062° 02.5' 22° 44.0' S	061° 55.9' 22° 50.0' S	061° 49.1' 22° 55.5' S	061° 42.2' 23° 00.6' S	061° 35.2' 23° 05.2' S	061° 28.2' 23° 09.4' S	061° 21.0' 23° 13.1' S	061° 13.8' 23° 16.3' S	061° 06.5' 23° 19.1' S
17	077° 08.8' 22° 37.9' S	077° 02.2' 22° 44.3' S	076° 55.6' 22° 50.3' S	076° 48.8' 22° 55.8' S	076° 41.9' 23° 00.8' S	076° 34.9' 23° 05.4' S	076° 27.9' 23° 09.6' S	076° 20.7' 23° 13.2' S	076° 13.5' 23° 16.5' S	076° 06.2' 23° 19.2' S
18	092° 08.5' 22° 38.2' S	092° 02.0' 22° 44.6' S	091° 55.3' 22° 50.5' S	091° 48.5' 22° 56.0' S	091° 41.6' 23° 01.0' S	091° 34.6' 23° 05.6' S	091° 27.6' 23° 09.7' S	091° 20.4' 23° 13.4' S	091° 13.2' 23° 16.6' S	091° 05.9' 23° 19.3' S
19	107° 08.2' 22° 38.4' S	107° 01.7' 22° 44.8' S	106° 55.0' 22° 50.7' S	106° 48.2' 22° 56.2' S	106° 41.3' 23° 01.2' S	106° 34.3' 23° 05.8' S	106° 27.3' 23° 09.9' S	106° 20.1' 23° 13.5' S	106° 12.9' 23° 16.7' S	106° 05.6' 23° 19.4' S
20	122° 08.0' 22° 38.7' S	122° 01.4' 22° 45.1' S	121° 54.7' 22° 51.0' S	121° 47.9' 22° 56.4' S	121° 41.0' 23° 01.4' S	121° 34.1' 23° 06.0' S	121° 27.0' 23° 10.0' S	121° 19.8' 23° 13.7' S	121° 12.6' 23° 16.8' S	121° 05.3' 23° 19.5' S
21	137° 07.7' 22° 39.0' S	137° 01.1' 22° 45.3' S	136° 54.5' 22° 51.2' S	136° 47.7' 22° 56.6' S	136° 40.8' 23° 01.6' S	136° 33.8' 23° 06.1' S	136° 26.7' 23° 10.2' S	136° 19.5' 23° 13.9' S	136° 12.3' 23° 16.9' S	136° 05.0' 23° 19.6' S
22	152° 07.4' 22° 39.3' S	152° 00.9' 22° 45.6' S	151° 54.2' 22° 51.4' S	151° 47.4' 22° 56.9' S	151° 40.5' 23° 01.8' S	151° 33.5' 23° 06.3' S	151° 26.4' 23° 10.4' S	151° 19.2' 23° 13.9' S	151° 12.0' 23° 17.1' S	151° 04.7' 23° 19.7' S
23	167° 07.2' 22° 39.5' S	167° 00.6' 22° 45.8' S	166° 53.9' 22° 51.7' S	166° 47.1' 22° 57.1' S	166° 40.2' 23° 02.0' S	166° 33.2' 23° 06.5' S	166° 26.1' 23° 10.5' S	166° 18.9' 23° 14.1' S	166° 11.7' 23° 17.2' S	166° 04.4' 23° 19.8' S
UT	17 Dec	18 Dec	19 Dec	20 Dec	21 Dec	22 Dec	23 Dec	24 Dec	25 Dec	26 Dec
00	181° 04.1' 23° 19.9' S	180° 56.7' 23° 22.1' S	180° 49.3' 23° 23.8' S	180° 41.9' 23° 25.0' S	180° 34.5' 23° 25.7' S	180° 27.0' 23° 26.0' S	180° 19.6' 23° 25.8' S	180° 12.1' 23° 25.1' S	180° 04.7' 23° 24.0' S	179° 57.2' 23° 22.4' S
01	196° 03.8' 23° 20.0' S	195° 56.4' 23° 22.2' S	195° 49.0' 23° 23.8' S	195° 41.6' 23° 25.0' S	195° 34.2' 23° 25.7' S	195° 26.7' 23° 26.0' S	195° 19.3' 23° 25.8' S	195° 11.8' 23° 25.1' S	195° 04.4' 23° 23.9' S	194° 56.9' 23° 22.3' S
02	211° 03.5' 23° 20.1' S	210° 56.1' 23° 22.2' S	210° 48.7' 23° 23.9' S	210° 41.3' 23° 25.0' S	210° 33.9' 23° 25.8' S	210° 26.4' 23° 26.0' S	210° 18.9' 23° 25.8' S	210° 11.5' 23° 25.0' S	210° 04.1' 23° 23.9' S	209° 56.6' 23° 22.2' S
03	226° 03.1' 23° 20.2' S	225° 55.8' 23° 22.3' S	225° 48.4' 23° 23.9' S	225° 41.0' 23° 25.1' S	225° 33.5' 23° 25.8' S	225° 26.1' 23° 26.0' S	225° 18.6' 23° 25.7' S	225° 11.2' 23° 25.0' S	225° 03.7' 23° 23.8' S	224° 56.3' 23° 22.1' S
04	241° 02.8' 23° 20.3' S	240° 55.5' 23° 22.4' S	240° 48.1' 23° 24.0' S	240° 40.7' 23° 25.1' S	240° 33.2' 23° 25.8' S	240° 25.8' 23° 26.0' S	240° 18.3' 23° 25.7' S	240° 10.9' 23° 25.0' S	240° 03.4' 23° 23.8' S	239° 56.0' 23° 22.1' S
05	256° 02.5' 23° 20.4' S	255° 55.2' 23° 22.5' S	255° 47.8' 23° 24.0' S	255° 40.4' 23° 25.2' S	255° 32.9' 23° 25.8' S	255° 25.5' 23° 26.0' S	255° 18.0' 23° 25.7' S	255° 10.6' 23° 24.9' S	255° 03.1' 23° 23.7' S	254° 55.7' 23° 22.0' S
06	271° 02.2' 23° 20.5' S	270° 54.9' 23° 22.5' S	270° 47.5' 23° 24.1' S	270° 40.1' 23° 25.2' S	270° 32.6' 23° 25.8' S	270° 25.2' 23° 26.0' S	270° 17.7' 23° 25.7' S	270° 10.2' 23° 24.9' S	270° 02.8' 23° 23.6' S	269° 55.4' 23° 21.9' S
07	286° 01.9' 23° 20.6' S	285° 54.6' 23° 22.6' S	285° 47.2' 23° 24.2' S	285° 39.7' 23° 25.2' S	285° 32.3' 23° 25.9' S	285° 24.8' 23° 26.0' S	285° 17.4' 23° 25.6' S	285° 09.9' 23° 24.8' S	285° 02.5' 23° 23.6' S	284° 55.1' 23° 21.8' S
08	301° 01.6' 23° 20.7' S	300° 54.3' 23° 22.7' S	300° 46.9' 23° 24.2' S	300° 39.4' 23° 25.3' S	300° 32.0' 23° 25.9' S	300° 24.5' 23° 26.0' S	300° 17.1' 23° 25.6' S	300° 09.6' 23° 24.8' S	300° 02.2' 23° 23.5' S	299° 54.8' 23° 21.7' S
09	316° 01.3' 23° 20.8' S	315° 53.9' 23° 22.8' S	315° 46.5' 23° 24.3' S	315° 39.1' 23° 25.3' S	315° 31.7' 23° 25.9' S	315° 24.2' 23° 26.0' S	315° 16.8' 23° 25.8' S	315° 09.3' 23° 24.8' S	315° 01.9' 23° 23.4' S	314° 54.5' 23° 21.7' S
10	331° 01.0' 23° 20.9' S	330° 53.6' 23° 22.8' S	330° 46.2' 23° 24.3' S	330° 38.8' 23° 25.3' S	330° 31.4' 23° 25.9' S	330° 23.9' 23° 26.0' S	330° 16.5' 23° 25.6' S	330° 09.0' 23° 24.7' S	330° 01.6' 23° 23.4' S	329° 54.2' 23° 21.6' S
11	346° 00.7' 23° 21.0' S	345° 53.3' 23° 22.9' S	345° 45.9' 23° 24.4' S	345° 38.5' 23° 25.4' S	345° 31.1' 23° 25.9' S	345° 23.6' 23° 26.0' S	345° 16.1' 23° 25.5' S	345° 08.7' 23° 24.7' S	345° 01.3' 23° 23.3' S	344° 53.9' 23° 21.5' S
12	001° 00.4' 23° 21.1' S	000° 53.0' 23° 23.0' S	000° 45.6' 23° 24.4' S	000° 38.2' 23° 25.4' S	000° 30.7' 23° 25.9' S	000° 23.3' 23° 25.9' S	000° 15.8' 23° 25.5' S	000° 08.4' 23° 24.6' S	000° 01.0' 23° 23.2' S	359° 53.5' 23° 21.4' S
13	016° 00.1' 23° 21.1' S	015° 52.7' 23° 23.0' S	015° 45.3' 23° 24.5' S	015° 37.9' 23° 25.4' S	015° 30.4' 23° 25.9' S	015° 23.0' 23° 25.9' S	015° 15.5' 23° 25.5' S	015° 08.1' 23° 24.6' S	015° 00.6' 23° 23.2' S	014° 53.2' 23° 21.3' S
14	030° 59.8' 23° 21.2' S	030° 52.4' 23° 23.1' S	030° 45.0' 23° 24.5' S	030° 37.6' 23° 25.5' S	030° 30.1' 23° 25.9' S	030° 22.7' 23° 25.9' S	030° 15.2' 23° 25.5' S	030° 07.8' 23° 24.5' S	030° 00.3' 23° 23.1' S	029° 52.9' 23° 21.2' S
15	045° 59.5' 23° 21.3' S	045° 52.1' 23° 23.2' S	045° 44.7' 23° 24.6' S	045° 37.3' 23° 25.5' S	045° 29.8' 23° 25.9' S	045° 22.4' 23° 25.9' S	045° 14.9' 23° 25.4' S	045° 07.5' 23° 24.5' S	045° 00.0' 23° 23.0' S	044° 52.6' 23° 21.1' S
16	060° 59.2' 23° 21.4' S	060° 51.8' 23° 23.2' S	060° 44.							

Solar Almanac 2031 — Sun GHA & Decl (UT) — 27 Dec to 31 Dec

UT	27 Dec	28 Dec	29 Dec	30 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec
00	179° 49,9' 23° 20,3' S	179° 42,5' 23° 17,8' S	179° 35,2' 23° 14,7' S	179° 27,9' 23° 11,3' S	179° 20,7' 23° 07,3' S	179° 20,7' 23° 07,3' S	179° 20,7' 23° 07,3' S	179° 20,7' 23° 07,3' S	179° 20,7' 23° 07,3' S	179° 20,7' 23° 07,3' S
01	194° 49,5' 23° 20,2' S	194° 42,2' 23° 17,6' S	194° 34,9' 23° 14,6' S	194° 27,6' 23° 11,1' S	194° 20,4' 23° 07,2' S	194° 20,4' 23° 07,2' S	194° 20,4' 23° 07,2' S	194° 20,4' 23° 07,2' S	194° 20,4' 23° 07,2' S	194° 20,4' 23° 07,2' S
02	209° 49,2' 23° 20,1' S	209° 41,9' 23° 17,5' S	209° 34,6' 23° 14,5' S	209° 27,3' 23° 11,0' S	209° 20,1' 23° 07,0' S	209° 20,1' 23° 07,0' S	209° 20,1' 23° 07,0' S	209° 20,1' 23° 07,0' S	209° 20,1' 23° 07,0' S	209° 20,1' 23° 07,0' S
03	224° 48,9' 23° 20,0' S	224° 41,6' 23° 17,4' S	224° 34,3' 23° 14,3' S	224° 27,0' 23° 10,8' S	224° 19,8' 23° 06,8' S	224° 19,8' 23° 06,8' S	224° 19,8' 23° 06,8' S	224° 19,8' 23° 06,8' S	224° 19,8' 23° 06,8' S	224° 19,8' 23° 06,8' S
04	239° 48,6' 23° 19,9' S	239° 41,3' 23° 17,3' S	239° 34,0' 23° 14,2' S	239° 26,7' 23° 10,6' S	239° 19,5' 23° 06,6' S	239° 19,5' 23° 06,6' S	239° 19,5' 23° 06,6' S	239° 19,5' 23° 06,6' S	239° 19,5' 23° 06,6' S	239° 19,5' 23° 06,6' S
05	254° 48,3' 23° 19,8' S	254° 41,0' 23° 17,2' S	254° 33,7' 23° 14,1' S	254° 26,4' 23° 10,5' S	254° 19,2' 23° 06,4' S	254° 19,2' 23° 06,4' S	254° 19,2' 23° 06,4' S	254° 19,2' 23° 06,4' S	254° 19,2' 23° 06,4' S	254° 19,2' 23° 06,4' S
06	269° 48,0' 23° 19,7' S	269° 40,7' 23° 17,1' S	269° 33,4' 23° 13,9' S	269° 26,1' 23° 10,3' S	269° 18,9' 23° 06,3' S	269° 18,9' 23° 06,3' S	269° 18,9' 23° 06,3' S	269° 18,9' 23° 06,3' S	269° 18,9' 23° 06,3' S	269° 18,9' 23° 06,3' S
07	284° 47,7' 23° 19,6' S	284° 40,4' 23° 16,9' S	284° 33,0' 23° 13,8' S	284° 25,8' 23° 10,2' S	284° 18,6' 23° 06,1' S	284° 18,6' 23° 06,1' S	284° 18,6' 23° 06,1' S	284° 18,6' 23° 06,1' S	284° 18,6' 23° 06,1' S	284° 18,6' 23° 06,1' S
08	299° 47,4' 23° 19,5' S	299° 40,0' 23° 16,8' S	299° 32,7' 23° 13,6' S	299° 25,5' 23° 10,0' S	299° 18,3' 23° 05,9' S	299° 18,3' 23° 05,9' S	299° 18,3' 23° 05,9' S	299° 18,3' 23° 05,9' S	299° 18,3' 23° 05,9' S	299° 18,3' 23° 05,9' S
09	314° 47,1' 23° 19,4' S	314° 39,7' 23° 16,7' S	314° 32,4' 23° 13,5' S	314° 25,2' 23° 09,8' S	314° 18,0' 23° 05,7' S	314° 18,0' 23° 05,7' S	314° 18,0' 23° 05,7' S	314° 18,0' 23° 05,7' S	314° 18,0' 23° 05,7' S	314° 18,0' 23° 05,7' S
10	329° 46,8' 23° 19,3' S	329° 39,4' 23° 16,6' S	329° 32,1' 23° 13,4' S	329° 24,9' 23° 09,7' S	329° 17,7' 23° 05,5' S	329° 17,7' 23° 05,5' S	329° 17,7' 23° 05,5' S	329° 17,7' 23° 05,5' S	329° 17,7' 23° 05,5' S	329° 17,7' 23° 05,5' S
11	344° 46,5' 23° 19,2' S	344° 39,1' 23° 16,4' S	344° 31,8' 23° 13,2' S	344° 24,6' 23° 09,5' S	344° 17,4' 23° 05,4' S	344° 17,4' 23° 05,4' S	344° 17,4' 23° 05,4' S	344° 17,4' 23° 05,4' S	344° 17,4' 23° 05,4' S	344° 17,4' 23° 05,4' S
12	359° 46,2' 23° 19,1' S	359° 38,8' 23° 16,3' S	359° 31,5' 23° 13,1' S	359° 24,3' 23° 09,4' S	359° 17,1' 23° 05,2' S	359° 17,1' 23° 05,2' S	359° 17,1' 23° 05,2' S	359° 17,1' 23° 05,2' S	359° 17,1' 23° 05,2' S	359° 17,1' 23° 05,2' S
13	014° 45,9' 23° 19,0' S	014° 38,5' 23° 16,2' S	014° 31,2' 23° 12,9' S	014° 24,0' 23° 09,2' S	014° 16,8' 23° 05,0' S	014° 16,8' 23° 05,0' S	014° 16,8' 23° 05,0' S	014° 16,8' 23° 05,0' S	014° 16,8' 23° 05,0' S	014° 16,8' 23° 05,0' S
14	029° 45,6' 23° 18,9' S	029° 38,2' 23° 16,1' S	029° 30,9' 23° 12,8' S	029° 23,7' 23° 09,0' S	029° 16,5' 23° 04,8' S	029° 16,5' 23° 04,8' S	029° 16,5' 23° 04,8' S	029° 16,5' 23° 04,8' S	029° 16,5' 23° 04,8' S	029° 16,5' 23° 04,8' S
15	044° 45,2' 23° 18,8' S	044° 37,9' 23° 15,9' S	044° 30,6' 23° 12,6' S	044° 23,4' 23° 08,9' S	044° 16,2' 23° 04,6' S	044° 16,2' 23° 04,6' S	044° 16,2' 23° 04,6' S	044° 16,2' 23° 04,6' S	044° 16,2' 23° 04,6' S	044° 16,2' 23° 04,6' S
16	059° 44,9' 23° 18,7' S	059° 37,6' 23° 15,8' S	059° 30,3' 23° 12,5' S	059° 23,1' 23° 08,7' S	059° 15,9' 23° 04,4' S	059° 15,9' 23° 04,4' S	059° 15,9' 23° 04,4' S	059° 15,9' 23° 04,4' S	059° 15,9' 23° 04,4' S	059° 15,9' 23° 04,4' S
17	074° 44,6' 23° 18,6' S	074° 37,3' 23° 15,7' S	074° 30,0' 23° 12,3' S	074° 22,8' 23° 08,5' S	074° 15,6' 23° 04,3' S	074° 15,6' 23° 04,3' S	074° 15,6' 23° 04,3' S	074° 15,6' 23° 04,3' S	074° 15,6' 23° 04,3' S	074° 15,6' 23° 04,3' S
18	089° 44,3' 23° 18,4' S	089° 37,0' 23° 15,5' S	089° 29,7' 23° 12,2' S	089° 22,5' 23° 08,4' S	089° 15,3' 23° 04,1' S	089° 15,3' 23° 04,1' S	089° 15,3' 23° 04,1' S	089° 15,3' 23° 04,1' S	089° 15,3' 23° 04,1' S	089° 15,3' 23° 04,1' S
19	104° 44,0' 23° 18,3' S	104° 36,7' 23° 15,4' S	104° 29,4' 23° 12,0' S	104° 22,2' 23° 08,2' S	104° 15,0' 23° 03,9' S	104° 15,0' 23° 03,9' S	104° 15,0' 23° 03,9' S	104° 15,0' 23° 03,9' S	104° 15,0' 23° 03,9' S	104° 15,0' 23° 03,9' S
20	119° 43,7' 23° 18,2' S	119° 36,4' 23° 15,3' S	119° 29,1' 23° 11,9' S	119° 21,9' 23° 08,0' S	119° 14,7' 23° 03,7' S	119° 14,7' 23° 03,7' S	119° 14,7' 23° 03,7' S	119° 14,7' 23° 03,7' S	119° 14,7' 23° 03,7' S	119° 14,7' 23° 03,7' S
21	134° 43,4' 23° 18,1' S	134° 36,1' 23° 15,2' S	134° 28,8' 23° 11,7' S	134° 21,6' 23° 07,8' S	134° 14,4' 23° 03,5' S	134° 14,4' 23° 03,5' S	134° 14,4' 23° 03,5' S	134° 14,4' 23° 03,5' S	134° 14,4' 23° 03,5' S	134° 14,4' 23° 03,5' S
22	149° 43,1' 23° 18,0' S	149° 35,8' 23° 15,0' S	149° 28,5' 23° 11,6' S	149° 21,3' 23° 07,7' S	149° 14,1' 23° 03,3' S	149° 14,1' 23° 03,3' S	149° 14,1' 23° 03,3' S	149° 14,1' 23° 03,3' S	149° 14,1' 23° 03,3' S	149° 14,1' 23° 03,3' S
23	164° 42,8' 23° 17,9' S	164° 35,5' 23° 14,9' S	164° 28,2' 23° 11,4' S	164° 21,0' 23° 07,5' S	164° 13,8' 23° 03,1' S	164° 13,8' 23° 03,1' S	164° 13,8' 23° 03,1' S	164° 13,8' 23° 03,1' S	164° 13,8' 23° 03,1' S	164° 13,8' 23° 03,1' S