

Solar Almanac 2028 — 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° 13.5' 23° 03.3' S	179° 06.4' 22° 58.4' S	178° 59.4' 22° 53.1' S	178° 52.5' 22° 47.3' S	178° 45.7' 22° 41.1' S	178° 38.9' 22° 34.4' S	178° 32.3' 22° 27.3' S	178° 25.9' 22° 19.7' S	178° 19.5' 22° 11.7' S	178° 13.3' 22° 03.3' S
01	194° 13.2' 23° 03.1' S	194° 06.1' 22° 58.2' S	193° 59.1' 22° 52.8' S	193° 52.2' 22° 47.1' S	193° 45.4' 22° 40.8' S	193° 38.7' 22° 34.1' S	193° 32.1' 22° 27.0' S	193° 25.6' 22° 19.4' S	193° 19.2' 22° 11.4' S	193° 13.0' 22° 03.0' S
02	209° 12.9' 23° 02.9' S	209° 05.8' 22° 58.0' S	208° 58.8' 22° 52.6' S	208° 51.9' 22° 46.8' S	208° 45.1' 22° 40.5' S	208° 38.4' 22° 33.8' S	208° 31.8' 22° 26.7' S	208° 25.3' 22° 19.1' S	208° 19.0' 22° 11.1' S	208° 12.8' 22° 02.6' S
03	224° 12.6' 23° 02.7' S	224° 05.5' 22° 57.8' S	223° 58.5' 22° 52.4' S	223° 51.6' 22° 46.6' S	223° 44.8' 22° 40.3' S	223° 38.1' 22° 33.6' S	223° 31.5' 22° 26.4' S	223° 25.1' 22° 18.8' S	223° 18.7' 22° 10.7' S	223° 12.5' 22° 02.2' S
04	239° 12.3' 23° 02.5' S	239° 05.2' 22° 57.5' S	238° 58.2' 22° 52.2' S	238° 51.3' 22° 46.3' S	238° 44.5' 22° 40.0' S	238° 37.8' 22° 33.3' S	238° 31.2' 22° 26.1' S	238° 24.8' 22° 18.4' S	238° 18.5' 22° 10.4' S	238° 12.3' 22° 01.9' S
05	254° 12.0' 23° 02.3' S	254° 05.0' 22° 57.3' S	253° 58.0' 22° 51.9' S	253° 51.0' 22° 46.1' S	253° 44.2' 22° 39.7' S	253° 37.5' 22° 33.0' S	253° 31.0' 22° 25.8' S	253° 24.5' 22° 18.1' S	253° 18.2' 22° 10.0' S	253° 12.0' 22° 01.5' S
06	269° 11.7' 23° 02.1' S	269° 04.7' 22° 57.1' S	268° 57.7' 22° 51.7' S	268° 50.8' 22° 45.8' S	268° 44.0' 22° 39.5' S	268° 37.3' 22° 32.7' S	268° 30.7' 22° 25.5' S	268° 24.3' 22° 17.8' S	268° 17.9' 22° 09.7' S	268° 11.8' 22° 01.1' S
07	284° 11.5' 23° 01.9' S	284° 04.4' 22° 56.9' S	283° 57.4' 22° 51.4' S	283° 50.5' 22° 45.5' S	283° 43.7' 22° 39.2' S	283° 37.0' 22° 32.4' S	283° 30.4' 22° 25.1' S	283° 24.0' 22° 17.5' S	283° 17.7' 22° 09.3' S	283° 11.5' 22° 00.8' S
08	299° 11.2' 23° 01.7' S	299° 04.1' 22° 56.7' S	298° 57.1' 22° 51.2' S	298° 50.2' 22° 45.3' S	298° 43.4' 22° 38.9' S	298° 36.7' 22° 32.1' S	298° 30.2' 22° 24.8' S	298° 23.7' 22° 17.1' S	298° 17.4' 22° 09.0' S	298° 11.2' 22° 00.4' S
09	314° 10.9' 23° 01.5' S	314° 03.8' 22° 56.5' S	313° 56.8' 22° 51.0' S	313° 49.9' 22° 45.0' S	313° 43.1' 22° 38.6' S	313° 36.4' 22° 31.8' S	313° 29.9' 22° 24.5' S	313° 23.5' 22° 16.8' S	313° 17.2' 22° 08.6' S	313° 11.0' 22° 00.0' S
10	329° 10.6' 23° 01.3' S	329° 03.5' 22° 56.2' S	328° 56.5' 22° 50.7' S	328° 49.6' 22° 44.8' S	328° 42.8' 22° 38.4' S	328° 36.2' 22° 31.5' S	328° 29.6' 22° 24.2' S	328° 23.2' 22° 16.5' S	328° 16.9' 22° 08.3' S	328° 10.7' 21° 59.7' S
11	344° 10.3' 23° 01.1' S	344° 03.2' 22° 56.0' S	343° 56.2' 22° 50.5' S	343° 49.3' 22° 44.5' S	343° 42.6' 22° 38.1' S	343° 35.9' 22° 31.2' S	343° 29.3' 22° 23.9' S	343° 22.9' 22° 16.2' S	343° 16.6' 22° 07.9' S	343° 10.5' 21° 59.3' S
12	359° 10.0' 23° 00.9' S	359° 02.9' 22° 55.8' S	358° 55.9' 22° 50.3' S	358° 49.1' 22° 44.3' S	358° 42.3' 22° 37.8' S	358° 35.6' 22° 30.9' S	358° 29.1' 22° 23.6' S	358° 22.7' 22° 15.8' S	358° 16.4' 22° 07.6' S	358° 10.2' 21° 58.9' S
13	014° 09.7' 23° 00.7' S	014° 02.6' 22° 55.6' S	013° 55.6' 22° 50.0' S	013° 48.8' 22° 44.0' S	013° 42.0' 22° 37.5' S	013° 35.3' 22° 30.6' S	013° 28.8' 22° 23.3' S	013° 22.4' 22° 15.5' S	013° 16.1' 22° 07.2' S	013° 10.0' 21° 58.6' S
14	029° 09.4' 23° 00.5' S	029° 02.3' 22° 55.4' S	028° 55.4' 22° 49.8' S	028° 48.5' 22° 43.7' S	028° 41.7' 22° 37.3' S	028° 35.1' 22° 30.3' S	028° 28.5' 22° 22.9' S	028° 22.1' 22° 15.1' S	028° 15.9' 22° 06.9' S	028° 09.7' 21° 58.2' S
15	044° 09.1' 23° 00.3' S	044° 02.0' 22° 55.1' S	043° 55.1' 22° 49.5' S	043° 48.2' 22° 43.5' S	043° 41.4' 22° 37.0' S	043° 34.8' 22° 30.0' S	043° 28.3' 22° 22.6' S	043° 21.9' 22° 14.8' S	043° 15.6' 22° 06.5' S	043° 09.5' 21° 57.8' S
16	059° 08.8' 23° 00.1' S	059° 01.7' 22° 54.9' S	058° 54.8' 22° 49.3' S	058° 47.9' 22° 43.2' S	058° 41.2' 22° 36.7' S	058° 34.5' 22° 29.7' S	058° 28.0' 22° 22.3' S	058° 21.6' 22° 14.5' S	058° 15.3' 22° 06.2' S	058° 09.2' 21° 57.5' S
17	074° 08.5' 23° 00.0' S	074° 01.4' 22° 54.7' S	073° 54.5' 22° 49.0' S	073° 47.6' 22° 42.9' S	073° 40.9' 22° 36.4' S	073° 34.2' 22° 29.4' S	073° 27.7' 22° 22.0' S	073° 21.3' 22° 14.1' S	073° 15.1' 22° 05.8' S	073° 09.0' 21° 57.1' S
18	089° 08.2' 22° 59.7' S	089° 01.2' 22° 54.5' S	088° 54.2' 22° 48.8' S	088° 47.3' 22° 42.7' S	088° 40.6' 22° 36.1' S	088° 34.0' 22° 29.1' S	088° 27.5' 22° 21.7' S	088° 21.1' 22° 13.8' S	088° 14.8' 22° 05.5' S	088° 08.7' 21° 56.7' S
19	104° 07.9' 22° 59.4' S	104° 00.9' 22° 54.2' S	103° 53.9' 22° 48.5' S	103° 47.1' 22° 42.4' S	103° 40.3' 22° 35.8' S	103° 33.7' 22° 28.8' S	103° 27.2' 22° 21.4' S	103° 20.8' 22° 13.4' S	103° 14.6' 22° 05.1' S	103° 08.5' 21° 56.3' S
20	119° 07.6' 22° 59.2' S	119° 00.6' 22° 54.0' S	118° 53.6' 22° 48.3' S	118° 46.8' 22° 42.2' S	118° 40.0' 22° 35.6' S	118° 33.4' 22° 28.5' S	118° 26.9' 22° 21.0' S	118° 20.5' 22° 13.1' S	118° 14.3' 22° 04.7' S	118° 08.2' 21° 56.0' S
21	134° 07.3' 22° 59.0' S	134° 00.3' 22° 53.8' S	133° 53.3' 22° 48.1' S	133° 46.5' 22° 41.9' S	133° 39.8' 22° 35.3' S	133° 33.1' 22° 28.2' S	133° 26.7' 22° 20.7' S	133° 20.3' 22° 12.8' S	133° 14.1' 22° 04.4' S	133° 08.0' 21° 55.6' S
22	149° 07.0' 22° 58.8' S	149° 00.0' 22° 53.5' S	148° 53.1' 22° 47.8' S	148° 46.2' 22° 41.6' S	148° 39.5' 22° 35.0' S	148° 32.9' 22° 27.9' S	148° 26.4' 22° 20.4' S	148° 20.0' 22° 12.4' S	148° 13.8' 22° 04.0' S	148° 07.7' 21° 55.2' S
23	164° 06.7' 22° 58.6' S	163° 59.7' 22° 53.3' S	163° 52.8' 22° 47.6' S	163° 45.9' 22° 41.4' S	163° 39.2' 22° 34.7' S	163° 32.6' 22° 27.6' S	163° 26.1' 22° 20.1' S	163° 19.8' 22° 12.1' S	163° 13.5' 22° 03.7' S	163° 07.5' 21° 54.8' S

UT	11 Jan	12 Jan	13 Jan	14 Jan	15 Jan	16 Jan	17 Jan	18 Jan	19 Jan	20 Jan
00	178° 07.2' 21° 54.5' S	178° 01.3' 21° 45.2' S	177° 55.5' 21° 35.5' S	177° 49.9' 21° 25.3' S	177° 44.4' 21° 14.8' S	177° 39.1' 21° 03.8' S	177° 33.9' 20° 52.5' S	177° 28.9' 20° 40.7' S	177° 24.1' 20° 28.6' S	177° 19.5' 20° 16.1' S
01	193° 07.0' 21° 54.1' S	193° 01.0' 21° 44.8' S	192° 55.3' 21° 35.0' S	192° 49.6' 21° 24.9' S	192° 44.2' 21° 14.3' S	192° 38.9' 21° 03.4' S	192° 33.7' 20° 52.0' S	192° 28.7' 20° 40.2' S	192° 23.9' 20° 28.1' S	192° 19.3' 20° 15.5' S
02	208° 06.7' 21° 53.7' S	208° 00.8' 21° 44.4' S	207° 55.0' 21° 34.6' S	207° 49.4' 21° 24.5' S	207° 43.9' 21° 13.9' S	207° 38.6' 21° 02.9' S	207° 33.5' 20° 51.5' S	207° 28.5' 20° 39.7' S	207° 23.7' 20° 27.6' S	207° 19.1' 20° 15.0' S
03	223° 06.5' 21° 53.3' S	223° 00.5' 21° 44.0' S	222° 54.8' 21° 34.2' S	222° 49.2' 21° 24.0' S	222° 43.7' 21° 13.4' S	222° 38.4' 21° 02.4' S	222° 33.3' 20° 51.0' S	222° 28.3' 20° 39.2' S	222° 23.5' 20° 27.0' S	222° 18.9' 20° 14.5' S
04	238° 06.2' 21° 52.9' S	238° 00.3' 21° 43.6' S	237° 54.5' 21° 33.8' S	237° 48.9' 21° 23.6' S	237° 43.5' 21° 13.0' S	237° 38.2' 21° 02.0' S	237° 33.1' 20° 50.6' S	237° 28.1' 20° 38.7' S	237° 23.3' 20° 26.5' S	237° 18.7' 20° 13.9' S
05	253° 06.0' 21° 52.6' S	253° 00.1' 21° 43.2' S	252° 54.3' 21° 33.4' S	252° 48.7' 21° 23.2' S	252° 43.3' 21° 12.5' S	252° 38.0' 21° 01.5' S	252° 32.9' 20° 50.1' S	252° 27.9' 20° 38.2' S	252° 23.1' 20° 26.0' S	252° 18.6' 20° 13.4' S
06	268° 05.7' 21° 52.2' S	267° 59.8' 21° 42.8' S	267° 54.1' 21° 33.0' S	267° 48.5' 21° 22.7' S	267° 43.0' 21° 12.1' S	267° 37.8' 21° 01.0' S	267° 32.7' 20° 49.6' S	267° 27.7' 20° 37.7' S	267° 23.0' 20° 25.5' S	267° 18.4' 20° 12.9' S
07	283° 05.5' 21° 51.8' S	282° 59.6' 21° 42.4' S	282° 53.8' 21° 32.5' S	282° 48.2' 21° 22.3' S	282° 42.8' 21° 11.6' S	282° 37.6' 21° 00.6' S	282° 32.5' 20° 49.1' S	282° 27.5' 20° 37.2' S	282° 22.8' 20° 25.0' S	282° 18.2' 20° 12.3' S
08	298° 05.2' 21° 51.4' S	297° 59.3' 21° 42.0' S	297° 53.6' 21° 32.1' S	297° 48.0' 21° 21.9' S	297° 42.6' 21° 11.2' S	297° 37.3' 21° 00.1' S	297° 32.2' 20° 48.6' S	297° 27.3' 20° 36.7' S	297° 22.6' 20° 24.5' S	297° 18.0' 20° 11.8' S
09	313° 05.0' 21° 51.0' S	312° 59.1' 21° 41.6' S	312° 53.4' 21° 31.7' S	312° 47.8' 21° 21.4' S	312° 42.4' 21° 10.7' S	312° 37.1' 20° 59.6' S	312° 32.0' 20° 48.1' S	312° 27.1' 20° 36.2' S	312° 22.4' 20° 23.9' S	312° 17.8' 20° 11.3' S
10	328° 04.7' 21° 50.6' S	327° 58.8' 21° 41.2' S	327° 53.1' 21° 31.3' S	327° 47.6' 21° 21.0' S	327° 42.2' 21° 10.3' S	327° 36.9' 20° 59.2' S	327° 31.8' 20° 47.6' S	327° 26.9' 20° 35.7' S	327° 22.2' 20° 23.4' S	327° 17.6' 20° 10.7' S
11	343° 04.5' 21° 50.2' S	342° 58.6' 21° 40.8' S	342° 52.9' 21° 30.9' S	342° 47.3' 21° 20.6' S	342° 41.9' 21° 09.8' S	342° 36.7' 20° 58.7' S	342° 31.6' 20° 47.2' S	342° 26.7' 20° 35.2' S	342° 22.0' 20° 22.9' S	342° 17.4' 20° 10.2' S
12	358° 04.2' 21° 49.9' S	357° 58.4' 21° 40.4' S	357° 52.7' 21° 30.4' S	357° 47.1' 21° 20.1' S	357° 41.7' 21° 09.4' S	357° 36.5' 20° 58.2' S	357° 31.4' 20° 46.7' S	357° 26.5' 20° 34.7' S	357° 21.8' 20° 22.4' S	357° 17.2' 20° 09.6' S
13	013° 04.0' 21° 49.5' S	012° 58.1' 21° 40.0' S	012° 52.4' 21° 30.0' S	012° 46.9' 21° 19.7' S	012° 41.5' 21° 08.9' S	012° 36.3' 20° 57.7' S	012° 31.2' 20° 46.2' S	012° 26.3' 20° 34.2' S	012° 21.6' 20° 21.9' S	012° 17.1' 20° 09.1' S
14	028° 03.7' 21° 49.1' S	027° 57.9' 21° 39.6' S	027° 52.2' 21° 29.6' S	027° 46.6' 21° 19.2' S	027° 41.3' 21° 08.5' S	027° 36.0' 20° 57.3' S	027° 31.0' 20° 45.7' S	027° 26.1' 20° 33.7' S	027° 21.4' 20° 21.3' S	027° 16.9' 20° 08.6' S
15	043° 03.5' 21° 48.7' S	042° 57.6' 21° 39.1' S	042° 52.0' 21° 29.2' S	042° 46.4' 21° 18.8' S	042° 41.0' 21° 08.0' S	042° 35.8' 20° 56.8' S	042° 30.8' 20° 45.2' S	042° 25.9' 20° 33.2' S	042° 21.2' 20° 20.8' S	042° 16.7' 20° 08.0' S
16	058° 03.2' 21° 48.3' S	057° 57.4' 21° 38.7' S	057° 51.7' 21° 28.8' S	057° 46.2' 21° 18.4' S	057° 40.8' 21° 07.5' S	057° 35.6' 20° 56.3' S	057° 30.6' 20° 44.7' S	057° 25.7' 20° 32.7' S	057° 21.0' 20° 20.3' S	057° 16.5' 20° 07.5' S
17	073° 03.0' 21° 47.9' S	072° 57.2' 21° 38.3' S	072° 51.5' 21° 28.3' S	072° 46.0' 21° 17.9' S	072° 40.6' 21° 07.1' S	072° 35.4' 20° 55.8' S	072° 30.4' 20° 44.2' S	072° 25.5' 20° 32.2' S	072° 20.8' 20° 19.8' S	072° 16.3' 20° 06.9' S
18	088° 02.7' 21° 47.5' S	087° 56.9' 21° 37.9' S	087° 51.3' 21° 27.9' S	087° 45.7' 21° 17.5' S	087° 40.4' 21° 06.6' S	087° 35.2' 20° 55.4' S	087° 30.2' 20° 43.7' S	087° 25.3' 20° 31.7' S	087° 20.6' 20° 19.2' S	087° 16.1' 20° 06.4' S
19	103° 02.5' 21° 47.1' S	102° 56.7' 21° 37.5' S	102° 51.0' 21° 27.5' S	102° 45.5' 21° 17.0' S	102° 40.2' 21° 06.2' S	102° 35.0' 20° 54.9' S	102° 30.0' 20° 43.2' S	102° 25.1' 20° 31.2' S	102° 20.4' 20° 18.7' S	102° 16.0' 20° 05.9' S
20	118° 02.3' 21° 46.7' S	117° 56.4' 21° 37.1' S	117° 50.8' 21° 27.0' S	117° 45.3' 21° 16.6' S	117° 39.9' 21° 05.7' S	117° 34.8' 20° 54.4' S	117° 29.8' 20° 42.7' S	117° 24.9' 20° 30.6' S	117° 20.3' 20° 18.2' S	117° 15.8' 20° 05.3' S
21	133° 02.0' 21° 46.3' S	132° 56.2' 21° 36.7' S	132° 50.6' 21° 26.6' S	132° 45.1' 21° 16.1' S	132° 39.7' 21° 05.2' S	132° 34.6' 20° 53.9' S	132° 29.6' 20° 42.2' S	132° 24.7' 20° 30.1' S	132° 20.1' 20° 17.6' S	132° 15.6' 20° 04.8' S
22	148° 01.8' 21° 46.0' S	147° 56.0' 21° 36.3' S	147° 50.3' 21° 26.2' S	147° 44.8' 21° 15.7' S	147° 39.5' 21° 04.8' S	147° 34.3' 20° 53.5' S	147° 29.3' 20° 41.7' S	147° 24.5' 20° 29.6' S	147° 19.9' 20° 17.1' S	147° 15.4' 20° 04.2' S
23	163° 01.5' 21° 45.6' S	162° 55.7' 21° 35.9' S	162° 50.1' 21° 25.8' S	162° 44.6' 21° 15.2' S	162° 39.3' 21° 04.3' S	162° 34.1' 20° 53.0' S	162° 29.1' 20° 41.2' S	162° 24.3' 20° 29.1' S	162° 19.7' 20° 16.6' S	162° 15.2' 20° 03.7' S

Solar Almanac 2028 — 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° 15.0' 20° 03.1' S	177° 10.8' 19° 49.8' S	177° 06.7' 19° 36.2' S	177° 02.8' 19° 22.1' S	176° 59.1' 19° 07.8' S	176° 55.6' 18° 53.0' S	176° 52.3' 18° 37.9' S	176° 49.2' 18° 22.5' S	176° 46.3' 18° 06.8' S	176° 43.6' 17° 50.7' S
01	192° 14.9' 20° 02.6' S	192° 10.6' 19° 49.3' S	192° 06.5' 19° 35.6' S	192° 02.6' 19° 21.6' S	191° 58.9' 19° 07.2' S	191° 55.4' 18° 52.4' S	191° 52.1' 18° 37.3' S	191° 49.0' 18° 21.9' S	191° 46.1' 18° 06.1' S	191° 43.5' 17° 50.0' S
02	207° 14.7' 20° 02.0' S	207° 10.4' 19° 48.7' S	207° 06.3' 19° 35.0' S	207° 02.5' 19° 21.0' S	206° 58.8' 19° 06.5' S	206° 55.3' 18° 51.8' S	206° 52.0' 18° 36.7' S	206° 48.9' 18° 21.2' S	206° 46.0' 18° 05.4' S	206° 43.3' 17° 49.3' S
03	222° 14.5' 20° 01.5' S	222° 10.2' 19° 48.2' S	222° 06.2' 19° 34.4' S	222° 02.3' 19° 20.4' S	221° 58.6' 19° 05.9' S	221° 55.2' 18° 51.2' S	221° 51.9' 18° 36.0' S	221° 48.8' 18° 20.6' S	221° 45.9' 18° 04.8' S	221° 43.2' 17° 48.6' S
04	237° 14.3' 20° 01.0' S	237° 10.1' 19° 47.6' S	237° 06.0' 19° 33.9' S	237° 02.2' 19° 19.8' S	236° 58.5' 19° 05.3' S	236° 55.0' 18° 50.5' S	236° 51.7' 18° 35.4' S	236° 48.7' 18° 19.9' S	236° 45.8' 18° 04.1' S	236° 43.1' 17° 48.0' S
05	252° 14.1' 20° 00.4' S	252° 09.9' 19° 47.0' S	252° 05.9' 19° 33.3' S	252° 02.0' 19° 19.2' S	251° 58.3' 19° 04.7' S	251° 54.9' 18° 49.9' S	251° 51.6' 18° 34.8' S	251° 48.5' 18° 19.3' S	251° 45.7' 18° 03.4' S	251° 43.0' 17° 47.3' S
06	267° 14.0' 19° 59.9' S	267° 09.7' 19° 46.5' S	267° 05.7' 19° 32.7' S	267° 01.8' 19° 18.6' S	266° 58.2' 19° 04.1' S	266° 54.7' 18° 49.3' S	266° 51.5' 18° 34.1' S	266° 48.4' 18° 18.6' S	266° 45.6' 18° 02.8' S	266° 42.9' 17° 46.6' S
07	282° 13.8' 19° 59.3' S	282° 09.6' 19° 45.9' S	282° 05.5' 19° 32.1' S	282° 01.7' 19° 18.0' S	281° 58.0' 19° 03.5' S	281° 54.6' 18° 48.7' S	281° 51.3' 18° 33.5' S	281° 48.3' 18° 18.0' S	281° 45.5' 18° 02.1' S	281° 42.8' 17° 45.9' S
08	297° 13.6' 19° 58.7' S	297° 09.4' 19° 45.3' S	297° 05.4' 19° 31.5' S	297° 01.5' 19° 17.4' S	296° 57.9' 19° 02.9' S	296° 54.5' 18° 48.0' S	296° 51.2' 18° 32.8' S	296° 48.2' 18° 17.3' S	296° 45.3' 18° 01.4' S	296° 42.7' 17° 45.2' S
09	312° 13.4' 19° 58.2' S	312° 09.2' 19° 44.8' S	312° 05.2' 19° 31.0' S	312° 01.4' 19° 16.8' S	311° 57.7' 19° 02.3' S	311° 54.3' 18° 47.4' S	311° 51.1' 18° 32.2' S	311° 48.1' 18° 16.6' S	311° 45.2' 18° 00.8' S	311° 42.6' 17° 44.6' S
10	327° 13.2' 19° 57.6' S	327° 09.0' 19° 44.2' S	327° 05.0' 19° 30.4' S	327° 01.2' 19° 16.2' S	326° 57.6' 19° 01.7' S	326° 54.2' 18° 46.8' S	326° 51.0' 18° 31.5' S	326° 47.9' 18° 16.0' S	326° 45.1' 18° 00.1' S	326° 42.5' 17° 43.9' S
11	342° 13.1' 19° 57.1' S	342° 08.9' 19° 43.6' S	342° 04.9' 19° 29.8' S	342° 01.1' 19° 15.6' S	341° 57.5' 19° 01.0' S	341° 54.0' 18° 46.1' S	341° 50.8' 18° 30.9' S	341° 47.8' 18° 15.3' S	341° 45.0' 17° 59.4' S	341° 42.4' 17° 43.2' S
12	357° 12.9' 19° 56.5' S	357° 08.7' 19° 43.1' S	357° 04.7' 19° 29.2' S	357° 00.9' 19° 15.0' S	356° 57.3' 19° 00.4' S	356° 53.9' 18° 45.5' S	356° 50.7' 18° 30.3' S	356° 47.7' 18° 14.7' S	356° 44.9' 17° 58.8' S	356° 42.3' 17° 42.5' S
13	012° 12.7' 19° 56.0' S	012° 08.5' 19° 42.5' S	012° 04.5' 19° 28.6' S	012° 00.8' 19° 14.4' S	011° 57.2' 18° 59.8' S	011° 53.8' 18° 44.9' S	011° 50.6' 18° 29.6' S	011° 47.6' 18° 14.0' S	011° 44.8' 17° 58.1' S	011° 42.2' 17° 41.8' S
14	027° 12.5' 19° 55.4' S	027° 08.4' 19° 41.9' S	027° 04.4' 19° 28.0' S	027° 00.6' 19° 13.8' S	026° 57.0' 18° 59.0' S	026° 53.6' 18° 44.3' S	026° 50.4' 18° 29.0' S	026° 47.4' 18° 13.4' S	026° 44.7' 17° 57.4' S	026° 42.1' 17° 41.1' S
15	042° 12.3' 19° 54.9' S	042° 08.2' 19° 41.3' S	042° 04.2' 19° 27.5' S	042° 00.4' 19° 13.2' S	041° 56.9' 18° 58.6' S	041° 53.5' 18° 43.6' S	041° 50.3' 18° 28.3' S	041° 47.3' 18° 12.7' S	041° 44.6' 17° 56.7' S	041° 42.0' 17° 40.5' S
16	057° 12.2' 19° 54.3' S	057° 08.0' 19° 40.8' S	057° 04.1' 19° 26.9' S	057° 00.3' 19° 12.6' S	056° 56.7' 18° 58.0' S	056° 53.4' 18° 43.0' S	056° 50.2' 18° 27.7' S	056° 47.2' 18° 12.0' S	056° 44.4' 17° 56.1' S	056° 41.9' 17° 39.8' S
17	072° 12.0' 19° 53.8' S	072° 07.9' 19° 40.2' S	072° 03.9' 19° 26.3' S	072° 00.1' 19° 12.0' S	071° 56.6' 18° 57.4' S	071° 53.2' 18° 42.4' S	071° 50.0' 18° 27.0' S	071° 47.1' 18° 11.4' S	071° 44.3' 17° 55.4' S	071° 41.8' 17° 39.1' S
18	087° 11.8' 19° 53.2' S	087° 07.7' 19° 39.6' S	087° 03.7' 19° 25.7' S	087° 00.0' 19° 11.4' S	086° 56.4' 18° 56.7' S	086° 53.1' 18° 41.7' S	086° 49.9' 18° 26.4' S	086° 47.0' 18° 10.7' S	086° 44.2' 17° 54.7' S	086° 41.7' 17° 38.4' S
19	102° 11.6' 19° 52.6' S	102° 07.5' 19° 39.1' S	102° 03.6' 19° 25.1' S	101° 59.8' 19° 10.8' S	101° 56.3' 18° 56.1' S	101° 52.9' 18° 41.1' S	101° 49.8' 18° 25.8' S	101° 46.8' 18° 10.1' S	101° 44.1' 17° 54.1' S	101° 41.6' 17° 37.7' S
20	117° 11.5' 19° 52.1' S	117° 07.3' 19° 38.5' S	117° 03.4' 19° 24.5' S	116° 59.7' 19° 10.2' S	116° 56.1' 18° 55.5' S	116° 52.8' 18° 40.5' S	116° 49.7' 18° 25.1' S	116° 46.7' 18° 09.4' S	116° 44.0' 17° 53.4' S	116° 41.5' 17° 37.0' S
21	132° 11.3' 19° 51.5' S	132° 07.2' 19° 37.9' S	132° 03.3' 19° 23.9' S	131° 59.5' 19° 09.6' S	131° 56.0' 18° 54.9' S	131° 52.7' 18° 39.8' S	131° 49.5' 18° 24.5' S	131° 46.6' 18° 08.7' S	131° 43.9' 17° 52.7' S	131° 41.4' 17° 36.3' S
22	147° 11.1' 19° 51.0' S	147° 07.0' 19° 37.3' S	147° 03.1' 19° 23.3' S	146° 59.4' 19° 09.0' S	146° 55.9' 18° 54.3' S	146° 52.5' 18° 39.2' S	146° 49.4' 18° 23.8' S	146° 46.5' 18° 08.1' S	146° 43.8' 17° 52.0' S	146° 41.3' 17° 35.7' S
23	162° 10.9' 19° 50.4' S	162° 06.8' 19° 36.8' S	162° 02.9' 19° 22.7' S	161° 59.2' 19° 08.4' S	161° 55.7' 18° 53.6' S	161° 52.4' 18° 38.6' S	161° 49.3' 18° 23.2' S	161° 46.4' 18° 07.4' S	161° 43.7' 17° 51.4' S	161° 41.2' 17° 35.0' S

	31 Jan	01 Feb	02 Feb	03 Feb	04 Feb	05 Feb	06 Feb	07 Feb	08 Feb	09 Feb
00	176° 41.1' 17° 34.3' S	176° 38.8' 17° 17.6' S	176° 36.7' 17° 00.6' S	176° 34.8' 16° 43.2' S	176° 33.2' 16° 25.6' S	176° 31.7' 16° 07.7' S	176° 30.5' 15° 49.6' S	176° 29.4' 15° 31.2' S	176° 28.6' 15° 12.5' S	176° 28.0' 14° 53.5' S
01	191° 41.0' 17° 33.6' S	191° 38.7' 17° 16.9' S	191° 36.6' 16° 59.8' S	191° 34.8' 16° 42.5' S	191° 33.1' 16° 24.9' S	191° 31.7' 16° 07.0' S	191° 30.4' 15° 48.8' S	191° 29.4' 15° 30.4' S	191° 28.6' 15° 11.7' S	191° 28.0' 14° 52.7' S
02	206° 40.9' 17° 32.9' S	206° 38.6' 17° 16.2' S	206° 36.5' 16° 59.1' S	206° 34.7' 16° 41.8' S	206° 33.1' 16° 24.2' S	206° 31.6' 16° 06.2' S	206° 30.4' 15° 48.1' S	206° 29.4' 15° 29.6' S	206° 28.5' 15° 10.9' S	206° 27.9' 14° 51.9' S
03	221° 40.8' 17° 32.2' S	221° 38.5' 17° 15.5' S	221° 36.5' 16° 58.4' S	221° 34.6' 16° 41.1' S	221° 33.0' 16° 23.4' S	221° 31.6' 16° 05.5' S	221° 30.3' 15° 47.3' S	221° 29.3' 15° 28.8' S	221° 28.5' 15° 10.1' S	221° 27.9' 14° 51.1' S
04	236° 40.7' 17° 31.5' S	236° 38.4' 17° 14.8' S	236° 36.4' 16° 57.7' S	236° 34.6' 16° 40.3' S	236° 32.9' 16° 22.7' S	236° 31.5' 16° 04.7' S	236° 30.3' 15° 46.5' S	236° 29.3' 15° 28.1' S	236° 28.5' 15° 09.3' S	236° 27.9' 14° 50.3' S
05	251° 40.6' 17° 30.8' S	251° 38.3' 17° 14.0' S	251° 36.3' 16° 57.0' S	251° 34.5' 16° 39.6' S	251° 32.9' 16° 21.9' S	251° 31.5' 16° 04.0' S	251° 30.3' 15° 45.8' S	251° 29.3' 15° 27.3' S	251° 28.5' 15° 08.5' S	251° 27.9' 14° 49.5' S
06	266° 40.5' 17° 30.1' S	266° 38.2' 17° 13.3' S	266° 36.2' 16° 56.3' S	266° 34.4' 16° 38.9' S	266° 32.8' 16° 21.2' S	266° 31.4' 16° 03.2' S	266° 30.2' 15° 45.0' S	266° 29.2' 15° 26.5' S	266° 28.4' 15° 07.7' S	266° 27.8' 14° 48.7' S
07	281° 40.4' 17° 29.4' S	281° 38.2' 17° 12.6' S	281° 36.1' 16° 55.5' S	281° 34.3' 16° 38.1' S	281° 32.7' 16° 20.4' S	281° 31.3' 16° 02.5' S	281° 30.2' 15° 44.2' S	281° 29.2' 15° 25.7' S	281° 28.4' 15° 07.0' S	281° 27.8' 14° 47.9' S
08	296° 40.3' 17° 28.7' S	296° 38.1' 17° 11.9' S	296° 36.1' 16° 54.8' S	296° 34.3' 16° 37.4' S	296° 32.7' 16° 19.7' S	296° 31.3' 16° 01.7' S	296° 30.1' 15° 43.5' S	296° 29.1' 15° 24.9' S	296° 28.4' 15° 06.2' S	296° 27.8' 14° 47.1' S
09	311° 40.2' 17° 28.0' S	311° 38.0' 17° 11.2' S	311° 36.0' 16° 54.1' S	311° 34.2' 16° 36.7' S	311° 32.6' 16° 19.0' S	311° 31.2' 16° 01.0' S	311° 30.1' 15° 42.7' S	311° 29.1' 15° 24.2' S	311° 28.3' 15° 05.4' S	311° 27.8' 14° 46.3' S
10	326° 40.1' 17° 27.4' S	326° 37.9' 17° 10.5' S	326° 35.9' 16° 53.4' S	326° 34.1' 16° 35.9' S	326° 32.6' 16° 18.2' S	326° 31.2' 16° 00.2' S	326° 30.0' 15° 41.9' S	326° 29.1' 15° 23.4' S	326° 28.3' 15° 04.6' S	326° 27.8' 14° 45.5' S
11	341° 40.0' 17° 26.7' S	341° 37.8' 17° 09.8' S	341° 35.8' 16° 52.7' S	341° 34.1' 16° 35.2' S	341° 32.5' 16° 17.5' S	341° 31.1' 15° 59.5' S	341° 30.0' 15° 41.2' S	341° 29.0' 15° 22.6' S	341° 28.3' 15° 03.8' S	341° 27.7' 14° 44.7' S
12	356° 39.9' 17° 26.0' S	356° 37.7' 17° 09.1' S	356° 35.8' 16° 51.9' S	356° 34.0' 16° 34.5' S	356° 32.4' 16° 16.7' S	356° 31.1' 15° 58.7' S	356° 29.9' 15° 40.4' S	356° 29.0' 15° 21.8' S	356° 28.3' 15° 03.0' S	356° 27.7' 14° 43.9' S
13	011° 39.8' 17° 25.3' S	011° 37.6' 17° 08.4' S	011° 35.7' 16° 51.2' S	011° 33.9' 16° 33.7' S	011° 32.4' 16° 16.0' S	011° 31.0' 15° 57.9' S	011° 29.9' 15° 39.6' S	011° 29.0' 15° 21.1' S	011° 28.2' 15° 02.2' S	011° 27.7' 14° 43.1' S
14	026° 39.7' 17° 24.6' S	026° 37.6' 17° 07.7' S	026° 35.6' 16° 50.5' S	026° 33.8' 16° 33.0' S	026° 32.3' 16° 15.2' S	026° 31.0' 15° 57.2' S	026° 29.9' 15° 38.9' S	026° 28.9' 15° 20.3' S	026° 28.2' 15° 01.4' S	026° 27.7' 14° 42.3' S
15	041° 39.6' 17° 23.9' S	041° 37.5' 17° 07.0' S	041° 35.5' 16° 49.8' S	041° 33.8' 16° 32.3' S	041° 32.3' 16° 14.5' S	041° 30.9' 15° 56.4' S	041° 29.8' 15° 38.1' S	041° 28.9' 15° 19.5' S	041° 28.2' 15° 00.6' S	041° 27.7' 14° 41.5' S
16	056° 39.5' 17° 23.2' S	056° 37.4' 17° 06.3' S	056° 35.4' 16° 49.0' S	056° 33.7' 16° 31.5' S	056° 32.2' 16° 13.7' S	056° 30.9' 15° 55.7' S	056° 29.8' 15° 37.3' S	056° 28.9' 15° 18.7' S	056° 28.2' 15° 09.9' S	056° 27.7' 14° 40.7' S
17	071° 39.4' 17° 22.5' S	071° 37.3' 17° 05.5' S	071° 35.4' 16° 48.3' S	071° 33.6' 16° 30.8' S	071° 32.1' 16° 13.0' S	071° 30.8' 15° 54.9' S	071° 29.7' 15° 36.6' S	071° 28.8' 15° 17.9' S	071° 28.1' 15° 09.1' S	071° 27.6' 14° 39.9' S
18	086° 39.3' 17° 21.8' S	086° 37.2' 17° 04.8' S	086° 35.3' 16° 47.6' S	086° 33.6' 16° 30.1' S	086° 32.1' 16° 12.2' S	086° 30.8' 15° 54.2' S	086° 29.7' 15° 35.8' S	086° 28.8' 15° 17.2' S	086° 28.1' 14° 58.3' S	086° 27.6' 14° 39.1' S
19	101° 39.2' 17° 21.1' S	101° 37.1' 17° 04.1' S	101° 35.2' 16° 46.9' S	101° 33.5' 16° 29.3' S	101° 32.0' 16° 11.5' S	101° 30.7' 15° 53.4' S	101° 29.6' 15° 35.0' S	101° 28.7' 15° 16.4' S	101° 28.1' 14° 57.5' S	101° 27.6' 14° 38.3' S
20	116° 39.2' 17° 20.4' S	116° 37.0' 17° 03.4' S	116° 35.1' 16° 46.1' S	116° 33.4' 16° 28.6' S	116° 32.0' 16° 10.7' S	116° 30.7' 15° 52.6' S	116° 29.6' 15° 34.2' S	116° 28.7' 15° 15.6' S	116° 28.1' 14° 56.7' S	116° 27.6' 14° 37.5' S
21	131° 39.1' 17° 19.7' S	131° 37.0' 17° 02.7' S	131° 35.1' 16° 45.4' S	131° 33.4' 16° 27.9' S	131° 31.9' 16° 10.0' S	131° 30.6' 15° 51.9' S	131° 29.6' 15° 33.5' S	131° 28.7' 15° 14.8' S	131° 28.0' 14° 55.9' S	131° 27.6' 14° 36.7' S
22	146° 39.0' 17° 19.0' S	146° 36.9' 17° 02.0' S	146° 35.0' 16° 44.7' S	146° 33.3' 16° 27.1' S	146° 31.8' 16° 09.3' S	146° 30.6' 15° 51.1' S	146° 29.5' 15° 32.7' S	146° 28.7' 15° 14.0' S	146° 28.0' 14° 55.1' S	146° 27.6' 14° 35.9' S
23	161° 38.9' 17° 18.3' S	161° 36.8' 17° 01.3' S	161° 34.9' 16° 44.0' S	161° 33.2' 16° 26.4' S	161° 31.8' 16° 08.5' S	161° 30.5' 15° 50.3' S	161° 29.5' 15° 31.9' S	161° 28.6' 15° 13.2' S	161° 28.0' 14° 54.3' S	161° 27.6' 14° 35.1' S

Solar Almanac 2028 — Sun GHA & Decl (UT) — 10 Feb to 29 Feb

UT	10 Feb	11 Feb	12 Feb	13 Feb	14 Feb	15 Feb	16 Feb	17 Feb	18 Feb	19 Feb
00	176° 27.5' 14° 34.3' S	176° 27.3' 14° 14.9' S	176° 27.2' 13° 55.2' S	176° 27.4' 13° 35.3' S	176° 27.7' 13° 15.1' S	176° 28.2' 12° 54.8' S	176° 28.9' 12° 34.2' S	176° 29.8' 12° 13.4' S	176° 30.8' 11° 52.5' S	176° 32.0' 11° 31.3' S
01	191° 27.5' 14° 33.5' S	191° 27.3' 14° 14.0' S	191° 27.3' 13° 54.4' S	191° 27.4' 13° 34.4' S	191° 27.7' 13° 14.3' S	191° 28.2' 12° 53.9' S	191° 28.9' 12° 33.3' S	191° 29.8' 12° 12.6' S	191° 30.9' 11° 51.6' S	191° 32.1' 11° 30.4' S
02	206° 27.5' 14° 32.7' S	206° 27.3' 14° 13.2' S	206° 27.3' 13° 53.5' S	206° 27.4' 13° 33.6' S	206° 27.8' 13° 13.4' S	206° 28.3' 12° 53.1' S	206° 29.0' 12° 32.5' S	206° 29.9' 12° 11.7' S	206° 30.9' 11° 50.7' S	206° 32.1' 11° 29.5' S
03	221° 27.5' 14° 31.9' S	221° 27.3' 14° 12.4' S	221° 27.3' 13° 52.7' S	221° 27.4' 13° 32.8' S	221° 27.8' 13° 12.6' S	221° 28.3' 12° 52.2' S	221° 29.0' 12° 31.6' S	221° 29.9' 12° 10.8' S	221° 30.9' 11° 49.8' S	221° 32.2' 11° 28.6' S
04	236° 27.5' 14° 31.1' S	236° 27.3' 14° 11.6' S	236° 27.3' 13° 51.9' S	236° 27.4' 13° 31.9' S	236° 27.8' 13° 11.7' S	236° 28.3' 12° 51.4' S	236° 29.0' 12° 30.8' S	236° 29.9' 12° 10.0' S	236° 31.0' 11° 48.9' S	236° 32.2' 11° 27.8' S
05	251° 27.5' 14° 30.3' S	251° 27.3' 14° 10.8' S	251° 27.3' 13° 51.0' S	251° 27.4' 13° 31.1' S	251° 27.8' 13° 10.9' S	251° 28.4' 12° 50.5' S	251° 29.1' 12° 29.9' S	251° 30.0' 12° 09.1' S	251° 31.0' 11° 48.1' S	251° 32.3' 11° 26.9' S
06	266° 27.5' 14° 29.5' S	266° 27.3' 14° 10.0' S	266° 27.3' 13° 50.2' S	266° 27.5' 13° 30.3' S	266° 27.8' 13° 10.1' S	266° 28.4' 12° 49.6' S	266° 29.1' 12° 29.0' S	266° 30.0' 11° 47.2' S	266° 31.1' 11° 46.3' S	266° 32.3' 11° 26.0' S
07	281° 27.4' 14° 28.7' S	281° 27.3' 14° 09.1' S	281° 27.3' 13° 49.4' S	281° 27.5' 13° 29.4' S	281° 27.8' 13° 09.2' S	281° 28.4' 12° 48.8' S	281° 29.1' 12° 28.2' S	281° 30.1' 12° 07.3' S	281° 31.1' 11° 46.3' S	281° 32.4' 11° 25.1' S
08	296° 27.4' 14° 27.8' S	296° 27.3' 14° 08.3' S	296° 27.3' 13° 48.6' S	296° 27.5' 13° 28.6' S	296° 27.9' 13° 08.4' S	296° 28.4' 12° 47.9' S	296° 29.2' 12° 27.3' S	296° 30.1' 12° 06.5' S	296° 31.2' 11° 45.4' S	296° 32.4' 11° 24.2' S
09	311° 27.4' 14° 27.0' S	311° 27.3' 14° 07.5' S	311° 27.3' 13° 47.7' S	311° 27.5' 13° 27.7' S	311° 27.9' 13° 07.5' S	311° 28.5' 12° 47.1' S	311° 29.2' 12° 26.4' S	311° 30.1' 12° 05.6' S	311° 31.2' 11° 44.6' S	311° 32.5' 11° 23.3' S
10	326° 27.4' 14° 26.2' S	326° 27.3' 14° 06.7' S	326° 27.3' 13° 46.9' S	326° 27.5' 13° 26.9' S	326° 27.9' 13° 06.7' S	326° 28.5' 12° 46.2' S	326° 29.2' 12° 25.6' S	326° 30.2' 12° 04.7' S	326° 31.3' 11° 43.7' S	326° 32.6' 11° 22.4' S
11	341° 27.4' 14° 25.4' S	341° 27.3' 14° 05.9' S	341° 27.3' 13° 46.1' S	341° 27.5' 13° 26.1' S	341° 27.9' 13° 05.8' S	341° 28.5' 12° 45.4' S	341° 29.3' 12° 24.7' S	341° 30.2' 12° 03.8' S	341° 31.3' 11° 42.8' S	341° 32.6' 11° 21.5' S
12	356° 27.4' 14° 24.6' S	356° 27.2' 14° 05.0' S	356° 27.3' 13° 45.2' S	356° 27.5' 13° 25.2' S	356° 27.9' 13° 05.0' S	356° 28.5' 12° 44.5' S	356° 29.3' 12° 23.8' S	356° 30.3' 12° 03.0' S	356° 31.4' 11° 41.9' S	356° 32.7' 11° 20.7' S
13	011° 27.4' 14° 23.8' S	011° 27.2' 14° 04.2' S	011° 27.3' 13° 44.4' S	011° 27.5' 13° 24.4' S	011° 28.0' 13° 04.1' S	011° 28.6' 12° 43.7' S	011° 29.4' 12° 23.0' S	011° 30.3' 12° 02.1' S	011° 31.4' 11° 41.0' S	011° 32.7' 11° 19.8' S
14	026° 27.4' 14° 23.0' S	026° 27.2' 14° 03.4' S	026° 27.3' 13° 43.6' S	026° 27.6' 13° 23.5' S	026° 28.0' 13° 03.3' S	026° 28.6' 12° 42.8' S	026° 29.4' 12° 22.1' S	026° 30.4' 12° 01.2' S	026° 31.5' 11° 40.1' S	026° 32.8' 11° 18.9' S
15	041° 27.4' 14° 22.2' S	041° 27.2' 14° 02.6' S	041° 27.3' 13° 42.8' S	041° 27.6' 13° 22.7' S	041° 28.0' 13° 02.4' S	041° 28.6' 12° 41.9' S	041° 29.4' 12° 21.2' S	041° 30.4' 12° 00.3' S	041° 31.5' 11° 39.3' S	041° 32.8' 11° 18.0' S
16	056° 27.4' 14° 21.4' S	056° 27.2' 14° 01.8' S	056° 27.3' 13° 41.9' S	056° 27.6' 13° 21.9' S	056° 28.0' 13° 01.6' S	056° 28.7' 12° 41.1' S	056° 29.5' 12° 20.4' S	056° 30.4' 11° 59.5' S	056° 31.6' 11° 38.4' S	056° 32.9' 11° 17.1' S
17	071° 27.3' 14° 20.6' S	071° 27.2' 14° 00.9' S	071° 27.3' 13° 41.1' S	071° 27.6' 13° 21.0' S	071° 28.1' 13° 00.7' S	071° 28.7' 12° 40.2' S	071° 29.5' 12° 19.5' S	071° 30.5' 11° 58.6' S	071° 31.6' 11° 37.5' S	071° 33.0' 11° 16.2' S
18	086° 27.3' 14° 19.7' S	086° 27.2' 14° 00.1' S	086° 27.3' 13° 40.3' S	086° 27.6' 13° 20.2' S	086° 28.1' 12° 59.9' S	086° 28.7' 12° 39.4' S	086° 29.5' 12° 18.6' S	086° 30.5' 11° 57.7' S	086° 31.7' 11° 36.6' S	086° 33.0' 11° 15.3' S
19	101° 27.3' 14° 18.9' S	101° 27.2' 13° 59.3' S	101° 27.3' 13° 39.4' S	101° 27.6' 13° 19.3' S	101° 28.1' 12° 38.5' S	101° 28.8' 12° 17.8' S	101° 29.6' 11° 56.8' S	101° 30.6' 11° 35.7' S	101° 31.7' 11° 14.4' S	101° 33.1' 11° 03.1' S
20	116° 27.3' 14° 18.1' S	116° 27.2' 13° 58.5' S	116° 27.4' 13° 38.6' S	116° 27.6' 13° 18.5' S	116° 28.1' 12° 37.6' S	116° 28.8' 12° 16.9' S	116° 29.6' 11° 55.0' S	116° 30.6' 11° 34.8' S	116° 31.8' 11° 13.5' S	116° 33.1' 11° 01.8' S
21	131° 27.3' 14° 17.3' S	131° 27.2' 13° 57.7' S	131° 27.4' 13° 37.8' S	131° 27.7' 13° 17.7' S	131° 28.2' 12° 57.3' S	131° 28.8' 12° 36.8' S	131° 29.7' 12° 16.0' S	131° 30.7' 11° 54.9' S	131° 31.8' 11° 33.0' S	131° 33.2' 11° 11.1' S
22	146° 27.3' 14° 16.5' S	146° 27.2' 13° 56.8' S	146° 27.4' 13° 36.9' S	146° 27.7' 13° 16.8' S	146° 28.2' 12° 56.5' S	146° 28.8' 12° 35.9' S	146° 29.7' 12° 15.2' S	146° 30.7' 11° 54.2' S	146° 31.9' 11° 33.1' S	146° 33.3' 11° 11.7' S
23	161° 27.3' 14° 15.7' S	161° 27.2' 13° 56.0' S	161° 27.4' 13° 36.1' S	161° 27.7' 13° 16.0' S	161° 28.2' 12° 55.6' S	161° 28.9' 12° 35.1' S	161° 29.7' 12° 14.3' S	161° 30.8' 11° 53.3' S	161° 32.0' 11° 32.2' S	161° 33.3' 11° 10.9' S

UT	20 Feb	21 Feb	22 Feb	23 Feb	24 Feb	25 Feb	26 Feb	27 Feb	28 Feb	29 Feb
00	176° 33.4' 11° 10.0' S	176° 34.9' 10° 48.4' S	176° 36.6' 10° 26.8' S	176° 38.5' 10° 04.9' S	176° 40.5' 09° 42.9' S	176° 42.6' 09° 20.7' S	176° 44.9' 08° 58.5' S	176° 47.3' 08° 36.0' S	176° 49.9' 08° 13.5' S	176° 52.6' 07° 50.8' S
01	191° 33.4' 11° 09.1' S	191° 35.0' 10° 47.5' S	191° 36.7' 10° 25.8' S	191° 38.5' 10° 04.0' S	191° 40.5' 09° 42.0' S	191° 42.7' 09° 19.8' S	191° 45.0' 08° 57.5' S	191° 47.5' 08° 35.1' S	191° 50.0' 08° 12.5' S	191° 52.8' 07° 49.9' S
02	206° 33.5' 11° 08.2' S	206° 35.0' 10° 46.6' S	206° 36.8' 10° 24.9' S	206° 38.6' 10° 03.1' S	206° 40.6' 09° 41.1' S	206° 42.8' 09° 18.9' S	206° 45.1' 08° 56.6' S	206° 47.6' 08° 34.2' S	206° 50.2' 08° 11.6' S	206° 52.9' 07° 48.9' S
03	221° 33.6' 11° 07.3' S	221° 35.1' 10° 45.7' S	221° 36.8' 10° 24.0' S	221° 38.7' 10° 02.2' S	221° 40.7' 09° 40.1' S	221° 42.9' 09° 18.0' S	221° 45.2' 08° 55.7' S	221° 47.7' 08° 33.2' S	221° 50.3' 08° 10.6' S	221° 53.0' 07° 48.0' S
04	236° 33.6' 11° 06.4' S	236° 35.2' 10° 44.8' S	236° 36.9' 10° 23.1' S	236° 38.8' 10° 01.2' S	236° 40.8' 09° 39.2' S	236° 43.0' 09° 17.0' S	236° 45.3' 08° 54.7' S	236° 47.8' 08° 32.3' S	236° 50.4' 08° 09.7' S	236° 53.1' 07° 47.0' S
05	251° 33.7' 11° 05.5' S	251° 35.2' 10° 43.9' S	251° 37.0' 10° 22.2' S	251° 38.9' 10° 00.3' S	251° 40.9' 09° 38.3' S	251° 43.1' 09° 16.1' S	251° 45.4' 08° 53.8' S	251° 47.9' 08° 31.3' S	251° 50.5' 08° 08.8' S	251° 53.2' 07° 46.1' S
06	266° 33.7' 11° 04.6' S	266° 35.3' 10° 43.0' S	266° 37.0' 10° 21.3' S	266° 38.9' 09° 59.4' S	266° 41.0' 09° 37.4' S	266° 43.2' 09° 15.2' S	266° 45.5' 08° 52.9' S	266° 48.0' 08° 30.4' S	266° 50.6' 08° 07.8' S	266° 53.4' 07° 45.1' S
07	281° 33.8' 11° 03.7' S	281° 35.4' 10° 42.1' S	281° 37.1' 10° 20.4' S	281° 39.0' 09° 58.5' S	281° 41.1' 09° 36.5' S	281° 43.3' 09° 14.3' S	281° 45.6' 08° 51.9' S	281° 48.1' 08° 29.5' S	281° 50.7' 08° 06.9' S	281° 53.5' 07° 44.2' S
08	296° 33.9' 11° 02.8' S	296° 35.5' 10° 41.2' S	296° 37.2' 10° 19.5' S	296° 39.1' 09° 57.6' S	296° 41.2' 09° 35.5' S	296° 43.4' 09° 13.3' S	296° 45.7' 08° 51.0' S	296° 48.2' 08° 28.5' S	296° 50.8' 08° 05.9' S	296° 53.6' 07° 43.2' S
09	311° 33.9' 11° 01.9' S	311° 35.5' 10° 40.3' S	311° 37.3' 10° 18.6' S	311° 39.2' 09° 56.7' S	311° 41.2' 09° 34.6' S	311° 43.5' 09° 12.4' S	311° 45.8' 08° 50.1' S	311° 48.3' 08° 27.6' S	311° 50.9' 08° 05.0' S	311° 53.7' 07° 42.3' S
10	326° 34.0' 11° 01.0' S	326° 35.6' 10° 39.4' S	326° 37.4' 10° 17.7' S	326° 39.3' 09° 55.8' S	326° 41.3' 09° 33.7' S	326° 43.5' 09° 11.5' S	326° 45.9' 08° 49.1' S	326° 48.4' 08° 26.6' S	326° 51.0' 08° 04.0' S	326° 53.8' 07° 41.3' S
11	341° 34.1' 11° 00.1' S	341° 35.7' 10° 38.5' S	341° 37.4' 10° 16.8' S	341° 39.3' 09° 54.8' S	341° 41.4' 09° 32.8' S	341° 43.6' 09° 10.5' S	341° 46.0' 08° 48.2' S	341° 48.5' 08° 25.7' S	341° 51.2' 08° 03.1' S	341° 53.9' 07° 40.4' S
12	356° 34.1' 10° 59.2' S	356° 35.7' 10° 37.6' S	356° 37.5' 10° 15.8' S	356° 39.4' 09° 53.9' S	356° 41.5' 09° 31.8' S	356° 43.7' 09° 09.6' S	356° 46.1' 08° 47.3' S	356° 48.6' 08° 24.8' S	356° 51.3' 08° 02.2' S	356° 54.1' 07° 39.4' S
13	011° 34.2' 10° 58.3' S	011° 35.8' 10° 36.7' S	011° 37.6' 10° 14.9' S	011° 39.5' 09° 53.0' S	011° 41.6' 09° 30.9' S	011° 43.8' 09° 08.7' S	011° 46.2' 08° 46.3' S	011° 48.7' 08° 23.8' S	011° 51.4' 08° 01.2' S	011° 54.2' 07° 38.5' S
14	026° 34.3' 10° 57.4' S	026° 35.9' 10° 35.8' S	026° 37.7' 10° 14.0' S	026° 39.6' 09° 52.1' S	026° 41.7' 09° 30.0' S	026° 43.9' 09° 07.8' S	026° 46.3' 08° 45.4' S	026° 48.8' 08° 22.9' S	026° 51.5' 08° 00.3' S	026° 54.3' 07° 37.5' S
15	041° 34.3' 10° 56.5' S	041° 35.9' 10° 34.9' S	041° 37.7' 10° 13.1' S	041° 39.7' 09° 51.2' S	041° 41.8' 09° 29.1' S	041° 44.0' 09° 06.8' S	041° 46.4' 08° 44.5' S	041° 48.9' 08° 21.9' S	041° 51.6' 07° 59.3' S	041° 54.4' 07° 36.6' S
16	056° 34.4' 10° 55.6' S	056° 36.0' 10° 34.0' S	056° 37.8' 10° 12.2' S	056° 39.8' 09° 50.2' S	056° 41.9' 09° 28.1' S	056° 44.1' 09° 05.9' S	056° 46.5' 08° 43.5' S	056° 49.1' 08° 21.0' S	056° 51.7' 07° 58.4' S	056° 54.5' 07° 35.6' S
17	071° 34.4' 10° 54.7' S	071° 36.1' 10° 33.1' S	071° 37.9' 10° 11.3' S	071° 39.9' 09° 49.3' S	071° 42.0' 09° 27.2' S	071° 44.2' 09° 05.0' S	071° 46.6' 08° 42.6' S	071° 49.2' 08° 20.1' S	071° 51.8' 07° 57.4' S	071° 54.7' 07° 34.7' S
18	086° 34.5' 10° 53.8' S	086° 36.2' 10° 32.2' S	086° 38.0' 10° 10.4' S	086° 39.9' 09° 48.4' S	086° 42.1' 09° 26.3' S	086° 44.3' 09° 04.0' S	086° 46.7' 08° 41.6' S	086° 49.3' 08° 19.1' S	086° 52.0' 07° 56.5' S	086° 54.8' 07° 33.7' S
19	101° 34.6' 10° 52.9' S	101° 36.2' 10° 31.3' S	101° 38.1' 10° 09.5' S	101° 40.0' 09° 47.5' S	101° 42.1' 09° 25.4' S	101° 44.4' 09° 03.1' S	101° 46.8' 08° 40.7' S	101° 49.3' 08° 18.2' S	101° 52.1' 07° 55.5' S	101° 54.9' 07° 32.8' S
20	116° 34.6' 10° 52.0' S	116° 36.3' 10° 30.4' S	116° 38.1' 10° 08.6' S	116° 40.1' 09° 46.6' S	116° 42.2' 09° 24.4' S	116° 44.5' 09° 02.2' S	116° 46.9' 08° 39.8' S	116° 49.5' 08° 17.2' S	116° 52.2' 07° 54.6' S	116° 55.0' 07° 31.8' S
21	131° 34.7' 10° 51.1' S	131° 36.4' 10° 29.5' S	131° 38.2' 10° 07.6' S	131° 40.2' 09° 45.7' S	131° 42.3' 09° 23.5' S	131° 44.6' 09° 01.2' S	131° 47.0' 08° 38.8' S	131° 49.6' 08° 16.3' S	131° 52.3' 07° 53.6' S	131° 55.1' 07° 30.9' S
22	146° 34.8' 10° 50.2' S	146° 36.5' 10° 28.6' S	146° 38.3' 10° 06.7' S	146° 40.3' 09° 44.7' S	146° 42.4' 09° 22.6' S	146° 44.7' 09° 00.3' S	146° 47.1' 08° 37.9' S	146° 49.7' 08° 15.4' S	146° 52.4' 07° 52.7' S	146° 55.3' 07° 29.9' S
23	161° 34.8' 10° 49.3' S	161° 36.5' 10° 27.5' S	161° 38.4' 10° 05.8' S	161° 40.4' 09° 43.8' S	161° 42.5' 09° 21.7' S	161° 44.8' 08° 59.4' S	161° 47.2' 08° 37.0' S	161° 49.8' 08° 14.4' S	161° 52.5' 07° 51.7' S	161° 55.4' 07° 29.0' S

Solar Almanac 2028 — Sun GHA & Decl (UT) — 01 Mar to 20 Mar

UT	01 Mar	02 Mar	03 Mar	04 Mar	05 Mar	06 Mar	07 Mar	08 Mar	09 Mar	10 Mar
00	176° 55.5' 07° 28.0' S	176° 58.5' 07° 05.1' S	177° 01.6' 06° 42.1' S	177° 04.8' 06° 19.1' S	177° 08.1' 05° 55.9' S	177° 11.6' 05° 32.6' S	177° 15.2' 05° 09.3' S	177° 18.8' 04° 45.9' S	177° 22.6' 04° 22.5' S	177° 26.4' 03° 59.0' S
01	191° 55.6' 07° 27.1' S	191° 58.6' 07° 04.2' S	192° 01.7' 06° 41.2' S	192° 04.9' 06° 18.1' S	192° 08.3' 05° 54.9' S	192° 11.7' 05° 31.7' S	192° 15.3' 05° 08.3' S	192° 19.0' 04° 45.0' S	192° 22.7' 04° 21.5' S	192° 26.6' 03° 58.0' S
02	206° 55.7' 07° 26.1' S	206° 58.7' 07° 03.2' S	207° 01.8' 06° 40.2' S	207° 05.1' 06° 17.1' S	207° 08.4' 05° 53.9' S	207° 11.9' 05° 30.7' S	207° 15.5' 05° 07.4' S	207° 19.1' 04° 44.0' S	207° 22.9' 04° 20.5' S	207° 26.7' 03° 57.0' S
03	221° 55.9' 07° 25.2' S	221° 58.9' 07° 02.3' S	222° 02.0' 06° 39.3' S	222° 05.2' 06° 16.2' S	222° 08.6' 05° 53.0' S	222° 12.0' 05° 29.7' S	222° 15.6' 05° 06.4' S	222° 19.3' 04° 43.0' S	222° 23.0' 04° 19.6' S	222° 26.9' 03° 56.0' S
04	236° 56.0' 07° 24.2' S	236° 59.0' 07° 01.3' S	237° 02.1' 06° 38.3' S	237° 05.4' 06° 15.2' S	237° 08.7' 05° 52.0' S	237° 12.2' 05° 28.8' S	237° 15.8' 05° 05.4' S	237° 19.4' 04° 42.0' S	237° 23.2' 04° 18.6' S	237° 27.1' 03° 55.1' S
05	251° 56.1' 07° 23.3' S	251° 59.1' 07° 00.3' S	252° 02.2' 06° 37.3' S	252° 05.5' 06° 14.2' S	252° 08.9' 05° 51.0' S	252° 12.3' 05° 27.8' S	252° 15.9' 05° 04.4' S	252° 19.6' 04° 41.1' S	252° 23.4' 04° 17.6' S	252° 27.2' 03° 54.1' S
06	266° 56.2' 07° 22.3' S	266° 59.2' 06° 59.4' S	267° 02.4' 06° 36.4' S	267° 05.6' 06° 13.3' S	267° 09.0' 05° 50.1' S	267° 12.5' 05° 26.8' S	267° 16.1' 05° 03.5' S	267° 19.7' 04° 40.1' S	267° 23.5' 04° 16.6' S	267° 27.4' 03° 53.1' S
07	281° 56.4' 07° 21.3' S	281° 59.4' 06° 58.4' S	282° 02.5' 06° 35.4' S	282° 05.8' 06° 12.3' S	282° 09.1' 05° 49.1' S	282° 12.6' 05° 25.8' S	282° 16.2' 05° 02.5' S	282° 19.9' 04° 39.1' S	282° 23.7' 04° 15.6' S	282° 27.6' 03° 52.1' S
08	296° 56.5' 07° 20.4' S	296° 59.5' 06° 57.5' S	297° 02.6' 06° 34.4' S	297° 05.9' 06° 11.3' S	297° 09.3' 05° 48.1' S	297° 12.8' 05° 24.9' S	297° 16.4' 05° 01.5' S	297° 20.1' 04° 38.1' S	297° 23.8' 04° 14.7' S	297° 27.7' 03° 51.1' S
09	311° 56.6' 07° 19.4' S	311° 59.6' 06° 56.5' S	312° 02.8' 06° 33.5' S	312° 06.0' 06° 10.4' S	312° 09.4' 05° 47.2' S	312° 12.9' 05° 23.9' S	312° 16.5' 05° 00.6' S	312° 20.1' 04° 37.1' S	312° 24.0' 04° 13.7' S	312° 27.9' 03° 50.2' S
10	326° 56.7' 07° 18.5' S	326° 59.8' 06° 55.6' S	327° 02.9' 06° 32.5' S	327° 06.2' 06° 09.4' S	327° 09.6' 05° 46.2' S	327° 13.1' 05° 22.9' S	327° 16.7' 04° 59.6' S	327° 20.4' 04° 36.2' S	327° 24.2' 04° 12.7' S	327° 28.0' 03° 49.2' S
11	341° 56.9' 07° 17.5' S	341° 59.9' 06° 54.6' S	342° 03.0' 06° 31.6' S	342° 06.3' 06° 08.4' S	342° 09.7' 05° 45.2' S	342° 13.2' 05° 22.0' S	342° 16.8' 04° 58.6' S	342° 20.5' 04° 35.2' S	342° 24.3' 04° 11.7' S	342° 28.2' 03° 48.2' S
12	356° 57.0' 07° 16.6' S	357° 00.0' 06° 53.6' S	357° 03.2' 06° 30.6' S	357° 06.5' 06° 07.5' S	357° 09.9' 05° 44.3' S	357° 13.4' 05° 21.0' S	357° 17.0' 04° 57.6' S	357° 20.7' 04° 34.2' S	357° 24.5' 04° 10.7' S	357° 28.4' 03° 47.2' S
13	011° 57.1' 07° 15.6' S	012° 00.1' 06° 52.7' S	012° 03.3' 06° 29.6' S	012° 06.6' 06° 06.5' S	012° 10.0' 05° 43.3' S	012° 13.5' 05° 20.0' S	012° 17.1' 04° 56.7' S	012° 20.8' 04° 33.2' S	012° 24.6' 04° 09.8' S	012° 28.5' 03° 46.2' S
14	026° 57.2' 07° 14.7' S	027° 00.3' 06° 51.7' S	027° 03.5' 06° 28.7' S	027° 06.7' 06° 05.5' S	027° 10.1' 05° 42.3' S	027° 13.7' 05° 19.0' S	027° 17.3' 04° 55.7' S	027° 21.0' 04° 32.3' S	027° 24.8' 04° 08.8' S	027° 28.7' 03° 45.3' S
15	041° 57.3' 07° 13.7' S	042° 00.4' 06° 50.8' S	042° 03.6' 06° 27.7' S	042° 06.9' 06° 04.6' S	042° 10.3' 05° 41.4' S	042° 13.8' 05° 18.1' S	042° 17.4' 04° 54.7' S	042° 21.2' 04° 31.3' S	042° 25.0' 04° 07.8' S	042° 28.9' 03° 44.3' S
16	056° 57.5' 07° 12.8' S	057° 00.5' 06° 49.8' S	057° 03.7' 06° 26.8' S	057° 07.0' 06° 03.6' S	057° 10.4' 05° 40.4' S	057° 14.0' 05° 17.1' S	057° 17.6' 04° 53.7' S	057° 21.3' 04° 30.3' S	057° 25.1' 04° 06.8' S	057° 29.0' 03° 43.3' S
17	071° 57.6' 07° 11.8' S	072° 00.7' 06° 48.8' S	072° 03.9' 06° 25.8' S	072° 07.2' 06° 02.6' S	072° 10.6' 05° 39.4' S	072° 14.1' 05° 16.1' S	072° 17.7' 04° 52.8' S	072° 21.5' 04° 29.3' S	072° 25.3' 04° 05.8' S	072° 29.2' 03° 42.3' S
18	086° 57.7' 07° 10.9' S	087° 00.8' 06° 47.9' S	087° 04.0' 06° 24.8' S	087° 07.3' 06° 01.7' S	087° 10.7' 05° 38.5' S	087° 14.3' 05° 15.2' S	087° 17.9' 04° 51.8' S	087° 21.6' 04° 28.4' S	087° 25.4' 04° 04.9' S	087° 29.4' 03° 41.3' S
19	101° 57.8' 07° 09.9' S	102° 00.9' 06° 46.9' S	102° 04.1' 06° 23.9' S	102° 07.4' 06° 00.7' S	102° 10.9' 05° 37.5' S	102° 14.4' 05° 14.2' S	102° 18.0' 04° 50.8' S	102° 21.8' 04° 27.4' S	102° 25.6' 04° 03.9' S	102° 29.5' 03° 40.3' S
20	116° 58.0' 07° 08.9' S	117° 01.1' 06° 46.0' S	117° 04.3' 06° 22.9' S	117° 07.6' 05° 59.7' S	117° 11.0' 05° 36.5' S	117° 14.6' 05° 13.2' S	117° 18.2' 04° 49.8' S	117° 21.9' 04° 26.4' S	117° 25.8' 04° 02.9' S	117° 29.7' 03° 39.4' S
21	131° 58.1' 07° 08.0' S	132° 01.2' 06° 45.0' S	132° 04.4' 06° 21.9' S	132° 07.7' 05° 58.8' S	132° 11.2' 05° 35.5' S	132° 14.7' 05° 12.2' S	132° 18.4' 04° 48.9' S	132° 22.1' 04° 25.4' S	132° 25.9' 04° 01.9' S	132° 29.8' 03° 38.4' S
22	146° 58.2' 07° 07.0' S	147° 01.3' 06° 44.1' S	147° 04.5' 06° 21.0' S	147° 07.9' 05° 57.8' S	147° 11.3' 05° 34.6' S	147° 14.9' 05° 11.3' S	147° 18.5' 04° 47.9' S	147° 22.3' 04° 24.4' S	147° 26.1' 04° 00.9' S	147° 30.0' 03° 37.4' S
23	161° 58.4' 07° 06.1' S	162° 01.5' 06° 43.1' S	162° 04.7' 06° 20.0' S	162° 08.0' 05° 56.8' S	162° 11.5' 05° 33.6' S	162° 15.0' 05° 10.3' S	162° 18.7' 04° 46.9' S	162° 22.4' 04° 23.5' S	162° 26.3' 04° 00.0' S	162° 30.2' 03° 36.4' S

UT	11 Mar	12 Mar	13 Mar	14 Mar	15 Mar	16 Mar	17 Mar	18 Mar	19 Mar	20 Mar
00	177° 30.3' 03° 35.4' S	177° 34.3' 03° 11.8' S	177° 38.4' 02° 48.2' S	177° 42.6' 02° 24.6' S	177° 46.8' 02° 00.9' S	177° 51.0' 01° 37.2' S	177° 55.3' 01° 13.4' S	177° 59.7' 00° 49.7' S	178° 04.0' 00° 26.0' S	178° 08.4' 00° 02.3' S
01	192° 30.5' 03° 34.5' S	192° 34.5' 03° 10.9' S	192° 38.6' 02° 47.2' S	192° 42.7' 02° 23.6' S	192° 46.9' 01° 59.9' S	192° 51.2' 01° 36.2' S	192° 55.5' 01° 12.5' S	192° 59.8' 00° 48.7' S	193° 04.2' 00° 25.0' S	193° 08.6' 00° 01.3' S
02	207° 30.7' 03° 33.5' S	207° 34.7' 03° 09.9' S	207° 38.8' 02° 46.2' S	207° 42.9' 02° 22.6' S	207° 47.1' 01° 58.9' S	207° 51.4' 01° 35.2' S	207° 55.7' 01° 11.5' S	208° 00.0' 00° 47.7' S	208° 04.4' 00° 24.0' S	208° 08.8' 00° 00.3' S
03	222° 30.8' 03° 32.5' S	222° 34.9' 03° 08.9' S	222° 38.9' 02° 45.3' S	222° 43.1' 02° 21.6' S	222° 47.3' 01° 57.9' S	222° 51.5' 01° 34.2' S	222° 55.9' 01° 10.5' S	223° 00.2' 00° 46.8' S	223° 04.6' 00° 23.0' S	223° 09.0' 00° 00.7' N
04	237° 31.0' 03° 31.5' S	237° 35.0' 03° 07.9' S	237° 39.1' 02° 44.3' S	237° 43.3' 02° 20.6' S	237° 47.5' 01° 56.9' S	237° 51.7' 01° 33.2' S	237° 56.0' 01° 09.5' S	238° 00.4' 00° 45.8' S	238° 04.8' 00° 22.0' S	238° 09.2' 00° 01.7' N
05	252° 31.2' 03° 30.5' S	252° 35.2' 03° 06.9' S	252° 39.3' 02° 43.3' S	252° 43.4' 02° 19.6' S	252° 47.6' 01° 55.9' S	252° 51.9' 01° 32.2' S	252° 56.2' 01° 08.5' S	253° 00.6' 00° 44.8' S	253° 04.9' 00° 21.0' S	253° 09.4' 00° 02.7' N
06	267° 31.3' 03° 29.5' S	267° 35.4' 03° 05.9' S	267° 39.5' 02° 42.3' S	267° 43.6' 02° 18.6' S	267° 47.8' 01° 54.9' S	267° 52.1' 01° 31.2' S	267° 56.4' 01° 07.5' S	268° 00.7' 00° 43.8' S	268° 05.1' 00° 20.1' S	268° 09.6' 00° 03.7' N
07	282° 31.5' 03° 28.6' S	282° 35.5' 03° 05.0' S	282° 39.6' 02° 41.3' S	282° 43.8' 02° 17.7' S	282° 48.0' 01° 54.0' S	282° 52.3' 01° 30.2' S	282° 56.6' 01° 06.5' S	283° 00.9' 00° 42.8' S	283° 05.3' 00° 19.1' S	283° 09.7' 00° 04.7' N
08	297° 31.7' 03° 27.6' S	297° 35.7' 03° 04.0' S	297° 39.8' 02° 40.3' S	297° 44.0' 02° 16.7' S	297° 48.2' 01° 53.0' S	297° 52.4' 01° 29.3' S	297° 56.8' 01° 05.5' S	298° 01.1' 00° 41.8' S	298° 05.5' 00° 18.1' S	298° 09.9' 00° 05.6' N
09	312° 31.8' 03° 26.6' S	312° 35.9' 03° 03.0' S	312° 40.0' 02° 39.4' S	312° 44.1' 02° 15.7' S	312° 48.3' 01° 52.0' S	312° 52.6' 01° 28.3' S	312° 56.9' 01° 04.5' S	313° 01.3' 00° 40.8' S	313° 05.7' 00° 17.1' S	313° 10.1' 00° 06.6' N
10	327° 32.0' 03° 25.6' S	327° 36.0' 03° 02.0' S	327° 40.1' 02° 38.4' S	327° 44.3' 02° 14.7' S	327° 48.5' 01° 51.0' S	327° 52.8' 01° 27.3' S	327° 57.1' 01° 03.6' S	328° 01.5' 00° 39.8' S	328° 05.9' 00° 16.1' S	328° 10.3' 00° 07.6' N
11	342° 32.2' 03° 24.6' S	342° 36.2' 03° 01.0' S	342° 40.3' 02° 37.4' S	342° 44.5' 02° 13.7' S	342° 48.7' 01° 50.0' S	342° 53.0' 01° 26.3' S	342° 57.3' 01° 02.6' S	343° 01.7' 00° 38.8' S	343° 06.1' 00° 15.1' S	343° 10.5' 00° 08.6' N
12	357° 32.3' 03° 23.6' S	357° 36.4' 03° 00.0' S	357° 40.5' 02° 36.4' S	357° 44.7' 02° 12.7' S	357° 48.9' 01° 49.0' S	357° 53.2' 01° 25.3' S	357° 57.5' 01° 01.6' S	358° 01.8' 00° 37.9' S	358° 06.2' 00° 14.1' S	358° 10.7' 00° 09.6' N
13	012° 32.5' 03° 22.7' S	012° 36.5' 02° 59.1' S	012° 40.7' 02° 35.4' S	012° 44.8' 02° 11.7' S	012° 49.1' 01° 48.0' S	012° 53.3' 01° 24.3' S	012° 57.7' 01° 00.6' S	013° 02.0' 00° 36.9' S	013° 06.4' 00° 13.1' S	013° 10.8' 00° 10.6' N
14	027° 32.7' 03° 21.7' S	027° 36.7' 02° 58.1' S	027° 40.8' 02° 34.4' S	027° 45.0' 02° 10.7' S	027° 49.2' 01° 47.0' S	027° 53.5' 01° 23.3' S	027° 57.8' 00° 59.6' S	028° 02.2' 00° 35.9' S	028° 06.6' 00° 12.1' S	028° 11.0' 00° 11.6' N
15	042° 32.8' 03° 20.7' S	042° 36.9' 02° 57.1' S	042° 41.0' 02° 33.4' S	042° 45.2' 02° 09.8' S	042° 49.4' 01° 46.1' S	042° 53.7' 01° 22.3' S	042° 58.0' 00° 58.6' S	043° 02.4' 00° 34.9' S	043° 06.8' 00° 11.2' S	043° 11.2' 00° 12.6' N
16	057° 33.0' 03° 19.7' S	057° 37.1' 02° 56.1' S	057° 41.2' 02° 32.5' S	057° 45.4' 02° 08.8' S	057° 49.6' 01° 45.1' S	057° 53.9' 01° 21.4' S	057° 58.2' 00° 57.6' S	058° 02.6' 00° 33.9' S	058° 07.0' 00° 10.2' S	058° 11.4' 00° 13.5' N
17	072° 33.2' 03° 18.7' S	072° 37.2' 02° 55.1' S	072° 41.3' 02° 31.5' S	072° 45.5' 02° 07.8' S	072° 49.8' 01° 44.1' S	072° 54.1' 01° 20.4' S	072° 58.4' 00° 56.6' S	073° 02.8' 00° 32.9' S	073° 07.2' 00° 09.2' S	073° 11.6' 00° 14.5' N
18	087° 33.3' 03° 17.8' S	087° 37.4' 02° 54.1' S	087° 41.5' 02° 30.5' S	087° 45.7' 02° 06.8' S	087° 49.9' 01° 43.1' S	087° 54.2' 01° 19.4' S	087° 58.6' 00° 55.6' S	088° 02.9' 00° 31.9' S	088° 07.3' 00° 08.2' S	088° 11.8' 00° 15.5' N
19	102° 33.5' 03° 16.8' S	102° 37.6' 02° 53.1' S	102° 41.7' 02° 29.5' S	102° 45.9' 02° 05.8' S	102° 50.1' 01° 42.1' S	102° 54.4' 01° 18.4' S	102° 58.7' 00° 54.7' S	103° 03.1' 00° 30.9' S	103° 07.5' 00° 07.2' S	103° 12.0' 00° 16.5' N
20	117° 33.7' 03° 15.8' S	117° 37.7' 02° 52.2' S	117° 41.9' 02° 28.5' S	117° 46.1' 02° 04.8' S	117° 50.3' 01° 41.1' S	117° 54.6' 01° 17.4' S	117° 58.9' 00° 53.7' S	118° 03.3' 00° 29.9' S	118° 07.7' 00° 06.2' S	118° 12.1' 00° 17.5' N
21	132° 33.8' 03° 14.8' S	132° 37.9' 02° 51.2' S	132° 42.0' 02° 27.5' S	132° 46.2' 02° 03.8' S	132° 50.5' 01° 40.1' S	132° 54.8' 01° 16.4' S	132° 59.1' 00° 52.7' S	133° 03.5' 00° 29.0' S	133° 07.9' 00° 05.2' S	133° 12.3' 00° 18.5' N
22	147° 34.0' 03° 13.8' S	147° 38.1' 02° 50.2' S	147° 42.2' 02° 26.5' S	147° 46.4' 02° 02.8' S	147° 50.7' 01° 39.1' S	147° 55.0' 01° 15.4' S	147° 59.3' 00° 51.7' S	148° 03.7' 00° 28.0' S	148° 08.1' 00° 04.2' S	148° 12.5' 00° 19.5' N
23	162° 34.2' 03° 12.8' S	162° 38.2' 02° 49.2' S	162° 42.4' 02° 25.5' S	162° 46.6' 02° 01.9' S	162° 50.8' 01° 38.2' S	162° 55.1' 01° 14.4' S	162° 59.5' 00° 50.7' S	163° 03.8' 00° 27.0' S	163° 08.3' 00° 03.2' S	163° 12.7' 00° 20.5' N

Solar Almanac 2028 — Sun GHA & Decl (UT) — 21 Mar to 09 Apr

UT	21 Mar	22 Mar	23 Mar	24 Mar	25 Mar	26 Mar	27 Mar	28 Mar	29 Mar	30 Mar
00	178° 12.9' 00° 21.5' N	178° 17.3' 00° 45.1' N	178° 21.8' 01° 08.8' N	178° 26.3' 01° 32.5' N	178° 30.8' 01° 56.1' N	178° 35.3' 02° 19.6' N	178° 39.8' 02° 43.1' N	178° 44.3' 03° 06.6' N	178° 48.8' 03° 30.0' N	178° 53.3' 03° 53.3' N
01	193° 13.1' 00° 22.4' N	193° 17.5' 00° 46.1' N	193° 22.0' 01° 09.8' N	193° 26.5' 01° 33.4' N	193° 31.0' 01° 57.1' N	193° 35.5' 02° 20.6' N	193° 40.0' 02° 44.1' N	193° 44.5' 03° 07.6' N	193° 49.0' 03° 31.0' N	193° 53.5' 03° 54.3' N
02	208° 13.3' 00° 23.4' N	208° 17.7' 00° 47.1' N	208° 22.2' 01° 10.8' N	208° 26.7' 01° 34.4' N	208° 31.2' 01° 58.0' N	208° 35.7' 02° 21.6' N	208° 40.2' 02° 45.1' N	208° 44.7' 03° 08.6' N	208° 49.2' 03° 31.9' N	208° 53.7' 03° 55.3' N
03	223° 13.4' 00° 24.4' N	223° 17.9' 00° 48.1' N	223° 22.4' 01° 11.8' N	223° 26.9' 01° 35.4' N	223° 31.4' 01° 59.0' N	223° 35.9' 02° 22.6' N	223° 40.4' 02° 46.1' N	223° 44.9' 03° 09.5' N	223° 49.4' 03° 32.9' N	223° 53.9' 03° 56.2' N
04	238° 13.6' 00° 25.4' N	238° 18.1' 00° 49.1' N	238° 22.6' 01° 12.8' N	238° 27.1' 01° 36.4' N	238° 31.6' 02° 00.0' N	238° 36.1' 02° 23.6' N	238° 40.6' 02° 47.1' N	238° 45.1' 03° 10.5' N	238° 49.6' 03° 33.9' N	238° 54.1' 03° 57.2' N
05	253° 13.8' 00° 26.4' N	253° 18.3' 00° 50.1' N	253° 22.8' 01° 13.7' N	253° 27.3' 01° 37.4' N	253° 31.8' 02° 01.0' N	253° 36.3' 02° 24.5' N	253° 40.8' 03° 11.5' N	253° 45.3' 03° 34.9' N	253° 49.8' 03° 58.2' N	253° 54.3' 03° 58.2' N
06	268° 14.0' 00° 27.4' N	268° 18.5' 00° 51.1' N	268° 22.9' 01° 14.7' N	268° 27.4' 01° 38.4' N	268° 31.9' 02° 02.0' N	268° 36.5' 02° 25.5' N	268° 41.0' 02° 49.0' N	268° 45.5' 03° 12.5' N	268° 50.0' 03° 35.8' N	268° 54.4' 03° 59.2' N
07	283° 14.2' 00° 28.4' N	283° 18.6' 00° 52.1' N	283° 23.1' 01° 15.7' N	283° 27.6' 01° 39.4' N	283° 32.1' 02° 02.9' N	283° 36.6' 02° 26.5' N	283° 41.1' 02° 50.0' N	283° 45.7' 03° 13.4' N	283° 50.1' 03° 36.8' N	283° 54.6' 04° 00.1' N
08	298° 14.4' 00° 29.4' N	298° 18.8' 00° 53.0' N	298° 23.3' 01° 16.7' N	298° 27.8' 01° 40.3' N	298° 32.3' 02° 03.9' N	298° 36.8' 02° 27.5' N	298° 41.3' 02° 51.0' N	298° 45.8' 03° 14.4' N	298° 50.3' 03° 37.8' N	298° 54.8' 04° 01.1' N
09	313° 14.6' 00° 30.3' N	313° 19.0' 00° 54.0' N	313° 23.5' 01° 17.7' N	313° 28.0' 01° 41.3' N	313° 32.5' 02° 04.9' N	313° 37.0' 02° 28.5' N	313° 41.5' 02° 51.9' N	313° 46.0' 03° 15.4' N	313° 50.5' 03° 38.8' N	313° 55.0' 04° 02.1' N
10	328° 14.7' 00° 31.3' N	328° 19.2' 00° 55.0' N	328° 23.7' 01° 18.7' N	328° 28.2' 01° 42.3' N	328° 32.7' 02° 05.9' N	328° 37.2' 02° 29.4' N	328° 41.7' 02° 52.9' N	328° 46.2' 03° 16.4' N	328° 50.7' 03° 39.7' N	328° 55.2' 04° 03.0' N
11	343° 14.9' 00° 32.3' N	343° 19.4' 00° 56.0' N	343° 23.9' 01° 19.7' N	343° 28.4' 01° 43.3' N	343° 32.9' 02° 06.9' N	343° 37.4' 02° 30.4' N	343° 41.9' 02° 53.9' N	343° 46.4' 03° 17.3' N	343° 50.9' 03° 40.7' N	343° 55.4' 04° 04.0' N
12	358° 15.1' 00° 33.3' N	358° 19.6' 00° 57.0' N	358° 24.1' 01° 20.6' N	358° 28.6' 01° 44.3' N	358° 33.1' 02° 07.9' N	358° 37.6' 02° 31.4' N	358° 42.1' 03° 14.9' N	358° 46.6' 03° 18.3' N	358° 51.1' 03° 41.7' N	358° 55.6' 04° 05.0' N
13	013° 15.3' 00° 34.3' N	013° 19.8' 00° 58.0' N	013° 24.3' 01° 21.6' N	013° 28.8' 01° 45.3' N	013° 33.3' 02° 08.8' N	013° 37.8' 02° 32.4' N	013° 42.3' 03° 11.5' N	013° 46.8' 03° 19.3' N	013° 51.3' 03° 42.6' N	013° 55.7' 04° 05.9' N
14	028° 15.5' 00° 35.3' N	028° 20.0' 00° 59.0' N	028° 24.4' 01° 22.6' N	028° 28.9' 01° 46.2' N	028° 33.4' 02° 09.8' N	028° 38.0' 02° 33.4' N	028° 42.5' 03° 12.5' N	028° 47.0' 03° 20.3' N	028° 51.5' 03° 43.6' N	028° 55.9' 04° 06.9' N
15	043° 15.7' 00° 36.3' N	043° 20.1' 00° 59.9' N	043° 24.6' 01° 23.6' N	043° 29.1' 01° 47.2' N	043° 33.6' 02° 10.8' N	043° 38.1' 02° 34.3' N	043° 42.7' 03° 12.5' N	043° 47.2' 03° 21.2' N	043° 51.6' 03° 44.6' N	043° 56.1' 04° 07.9' N
16	058° 15.9' 00° 37.3' N	058° 20.3' 01° 00.9' N	058° 24.8' 01° 24.6' N	058° 29.3' 01° 48.2' N	058° 33.8' 02° 11.8' N	058° 38.3' 02° 35.3' N	058° 42.8' 03° 14.4' N	058° 47.3' 03° 22.2' N	058° 51.8' 03° 45.6' N	058° 56.3' 04° 08.8' N
17	073° 16.0' 00° 38.2' N	073° 20.5' 01° 01.9' N	073° 25.0' 01° 25.6' N	073° 29.5' 01° 49.2' N	073° 34.0' 02° 12.8' N	073° 38.5' 02° 36.3' N	073° 43.0' 03° 15.4' N	073° 47.5' 03° 23.2' N	073° 52.0' 03° 46.5' N	073° 56.5' 04° 09.8' N
18	088° 16.2' 00° 39.2' N	088° 20.7' 01° 02.9' N	088° 25.2' 01° 26.6' N	088° 29.7' 01° 50.2' N	088° 34.2' 02° 13.7' N	088° 38.7' 02° 37.3' N	088° 43.2' 03° 00.7' N	088° 47.7' 03° 24.2' N	088° 52.2' 03° 47.5' N	088° 56.7' 04° 10.8' N
19	103° 16.4' 00° 40.2' N	103° 20.9' 01° 03.9' N	103° 25.4' 01° 27.5' N	103° 29.9' 01° 51.2' N	103° 34.4' 02° 14.7' N	103° 38.9' 02° 38.3' N	103° 43.4' 03° 01.7' N	103° 47.9' 03° 25.1' N	103° 52.4' 03° 48.5' N	103° 56.9' 04° 11.8' N
20	118° 16.6' 00° 41.2' N	118° 21.1' 01° 04.9' N	118° 25.6' 01° 28.5' N	118° 30.1' 01° 52.1' N	118° 34.6' 02° 15.7' N	118° 39.1' 02° 39.2' N	118° 43.6' 03° 02.7' N	118° 48.1' 03° 26.1' N	118° 52.6' 03° 49.4' N	118° 57.0' 04° 12.7' N
21	133° 16.8' 00° 42.2' N	133° 21.3' 01° 05.9' N	133° 25.8' 01° 29.5' N	133° 30.3' 01° 53.1' N	133° 34.8' 02° 16.7' N	133° 39.3' 02° 40.2' N	133° 43.8' 03° 03.7' N	133° 48.3' 03° 27.1' N	133° 52.8' 03° 50.4' N	133° 57.2' 04° 13.7' N
22	148° 17.0' 00° 43.2' N	148° 21.5' 01° 06.8' N	148° 25.9' 01° 30.5' N	148° 30.4' 01° 54.1' N	148° 35.0' 02° 17.7' N	148° 39.5' 02° 41.2' N	148° 44.0' 03° 04.7' N	148° 48.5' 03° 28.1' N	148° 52.9' 03° 51.4' N	148° 57.4' 04° 14.7' N
23	163° 17.2' 00° 44.2' N	163° 21.6' 01° 07.8' N	163° 26.1' 01° 31.5' N	163° 30.6' 01° 55.1' N	163° 35.1' 02° 18.7' N	163° 39.6' 02° 42.2' N	163° 44.2' 03° 05.6' N	163° 48.6' 03° 29.0' N	163° 53.1' 03° 52.4' N	163° 57.6' 04° 15.6' N

UT	31 Mar	01 Apr	02 Apr	03 Apr	04 Apr	05 Apr	06 Apr	07 Apr	08 Apr	09 Apr
00	178° 57.8' 04° 16.6' N	179° 02.2' 04° 39.8' N	179° 06.7' 05° 02.9' N	179° 11.1' 05° 25.9' N	179° 15.4' 05° 48.8' N	179° 19.7' 06° 11.6' N	179° 24.0' 06° 34.2' N	179° 28.3' 06° 56.8' N	179° 32.4' 07° 19.3' N	179° 36.6' 07° 41.6' N
01	193° 58.0' 04° 17.6' N	194° 02.4' 04° 40.7' N	194° 06.8' 05° 03.8' N	194° 11.2' 05° 26.8' N	194° 15.6' 05° 49.7' N	194° 19.9' 06° 12.5' N	194° 24.2' 06° 35.2' N	194° 28.4' 06° 57.8' N	194° 32.6' 07° 20.2' N	194° 36.7' 07° 42.5' N
02	208° 58.2' 04° 18.5' N	209° 02.6' 04° 41.7' N	209° 07.0' 05° 04.8' N	209° 11.4' 05° 27.8' N	209° 15.8' 05° 50.7' N	209° 20.1' 06° 13.5' N	209° 24.4' 06° 36.1' N	209° 28.6' 06° 58.7' N	209° 32.8' 07° 21.1' N	209° 36.9' 07° 43.5' N
03	223° 58.3' 04° 19.5' N	224° 02.8' 04° 42.7' N	224° 07.2' 05° 05.7' N	224° 11.6' 05° 28.7' N	224° 16.0' 05° 51.6' N	224° 20.3' 06° 14.4' N	224° 24.5' 06° 37.1' N	224° 28.8' 06° 59.6' N	224° 32.9' 07° 22.1' N	224° 37.1' 07° 44.4' N
04	238° 58.5' 04° 20.5' N	239° 03.0' 04° 43.6' N	239° 07.4' 05° 06.7' N	239° 11.8' 05° 29.7' N	239° 16.1' 05° 52.6' N	239° 20.5' 06° 15.3' N	239° 24.7' 06° 38.0' N	239° 29.0' 07° 00.6' N	239° 33.1' 07° 23.0' N	239° 37.2' 07° 45.3' N
05	253° 58.7' 04° 21.4' N	254° 03.2' 04° 44.6' N	254° 07.6' 05° 07.7' N	254° 12.0' 05° 30.6' N	254° 16.3' 05° 53.5' N	254° 20.6' 06° 16.3' N	254° 24.9' 06° 39.0' N	254° 29.1' 07° 01.5' N	254° 33.3' 07° 23.9' N	254° 37.4' 07° 46.2' N
06	268° 58.9' 04° 22.4' N	269° 03.3' 04° 45.5' N	269° 07.8' 05° 08.6' N	269° 12.1' 05° 31.6' N	269° 16.5' 05° 54.5' N	269° 20.8' 06° 17.2' N	269° 25.1' 06° 39.9' N	269° 29.3' 07° 02.4' N	269° 33.5' 07° 24.9' N	269° 37.6' 07° 47.2' N
07	283° 59.1' 04° 23.4' N	284° 03.5' 04° 46.5' N	284° 07.9' 05° 09.6' N	284° 12.3' 05° 32.5' N	284° 16.7' 05° 55.4' N	284° 21.0' 06° 18.2' N	284° 25.3' 06° 40.8' N	284° 29.5' 07° 03.4' N	284° 33.6' 07° 25.8' N	284° 37.7' 07° 48.1' N
08	298° 59.3' 04° 24.3' N	299° 03.7' 04° 47.5' N	299° 08.1' 05° 10.5' N	299° 12.5' 05° 33.5' N	299° 16.9' 05° 56.4' N	299° 21.2' 06° 19.1' N	299° 25.4' 06° 41.8' N	299° 29.7' 07° 04.3' N	299° 33.8' 07° 26.7' N	299° 37.9' 07° 49.0' N
09	313° 59.5' 04° 25.3' N	314° 03.9' 04° 48.4' N	314° 08.3' 05° 11.5' N	314° 12.7' 05° 34.7' N	314° 17.0' 05° 57.3' N	314° 21.3' 06° 20.1' N	314° 25.6' 06° 42.7' N	314° 29.8' 07° 05.3' N	314° 34.0' 07° 27.7' N	314° 38.1' 07° 49.9' N
10	328° 59.6' 04° 26.3' N	329° 04.1' 04° 49.4' N	329° 08.5' 05° 12.5' N	329° 12.9' 05° 35.4' N	329° 17.2' 05° 58.3' N	329° 21.5' 06° 21.0' N	329° 25.8' 06° 43.7' N	329° 30.0' 07° 06.2' N	329° 34.2' 07° 28.6' N	329° 38.2' 07° 50.9' N
11	343° 59.8' 04° 27.2' N	344° 04.3' 04° 50.4' N	344° 08.7' 05° 13.4' N	344° 13.1' 05° 36.4' N	344° 17.4' 05° 59.2' N	344° 21.7' 06° 22.0' N	344° 26.0' 06° 44.6' N	344° 30.2' 07° 07.1' N	344° 34.3' 07° 29.5' N	344° 38.4' 07° 51.8' N
12	359° 00.0' 04° 28.2' N	359° 04.5' 04° 51.3' N	359° 08.9' 05° 14.4' N	359° 13.2' 05° 37.3' N	359° 17.6' 06° 00.2' N	359° 21.9' 06° 22.9' N	359° 26.1' 06° 45.5' N	359° 30.3' 07° 08.1' N	359° 34.5' 07° 30.5' N	359° 38.6' 07° 52.7' N
13	014° 00.2' 04° 29.2' N	014° 04.6' 04° 52.3' N	014° 09.0' 05° 15.3' N	014° 13.4' 05° 38.3' N	014° 17.8' 06° 01.1' N	014° 22.1' 06° 23.9' N	014° 26.3' 06° 46.5' N	014° 30.5' 07° 09.0' N	014° 34.7' 07° 31.4' N	014° 38.8' 07° 53.7' N
14	029° 00.4' 04° 30.1' N	029° 04.8' 04° 53.2' N	029° 09.2' 05° 16.3' N	029° 13.6' 05° 39.2' N	029° 17.9' 06° 02.1' N	029° 22.2' 06° 24.8' N	029° 26.5' 06° 47.4' N	029° 30.7' 07° 09.9' N	029° 34.8' 07° 32.3' N	029° 38.9' 07° 54.6' N
15	044° 00.6' 04° 31.1' N	044° 05.0' 04° 54.2' N	044° 09.4' 05° 17.2' N	044° 13.8' 05° 40.2' N	044° 18.1' 06° 03.0' N	044° 22.4' 06° 25.8' N	044° 26.7' 06° 48.4' N	044° 30.9' 07° 10.9' N	044° 35.0' 07° 33.2' N	044° 39.1' 07° 55.5' N
16	059° 00.8' 04° 32.0' N	059° 05.2' 04° 55.2' N	059° 09.6' 05° 18.2' N	059° 14.0' 05° 41.1' N	059° 18.3' 06° 04.0' N	059° 22.6' 06° 26.7' N	059° 26.8' 06° 49.3' N	059° 31.0' 07° 11.8' N	059° 35.2' 07° 34.2' N	059° 39.3' 07° 56.4' N
17	074° 00.9' 04° 33.0' N	074° 05.4' 04° 56.1' N	074° 09.8' 05° 19.2' N	074° 14.1' 05° 42.1' N	074° 18.5' 06° 04.9' N	074° 22.8' 06° 27.6' N	074° 27.0' 06° 50.2' N	074° 31.2' 07° 12.7' N	074° 35.4' 07° 35.1' N	074° 39.4' 07° 57.3' N
18	089° 01.1' 04° 34.0' N	089° 05.6' 04° 57.1' N	089° 10.0' 05° 20.1' N	089° 14.3' 05° 43.0' N	089° 18.7' 06° 05.9' N	089° 23.0' 06° 28.6' N	089° 27.2' 06° 51.2' N	089° 31.4' 07° 13.7' N	089° 35.5' 07° 36.0' N	089° 39.6' 07° 58.3' N
19	104° 01.3' 04° 34.									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 10 Apr to 29 Apr

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

Solar Almanac 2028 — Sun GHA & Decl (UT) — 30 Apr to 19 May

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

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

Solar Almanac 2028 — Sun GHA & Decl (UT) — 20 May to 08 Jun

UT	20 May	21 May	22 May	23 May	24 May	25 May	26 May	27 May	28 May	29 May
00	180° 52.0' 20° 02.7' N	180° 51.0' 20° 14.9' N	180° 49.9' 20° 26.8' N	180° 48.6' 20° 38.3' N	180° 47.3' 20° 49.5' N	180° 45.8' 21° 00.3' N	180° 44.1' 21° 10.8' N	180° 42.4' 21° 20.9' N	180° 40.5' 21° 30.6' N	180° 38.6' 21° 39.9' N
01	195° 51.9' 20° 03.2' N	195° 51.0' 20° 15.4' N	195° 49.8' 20° 27.3' N	195° 48.6' 20° 38.8' N	195° 47.2' 20° 50.0' N	195° 45.7' 21° 00.8' N	195° 44.1' 21° 11.2' N	195° 42.3' 21° 21.3' N	195° 40.5' 21° 31.0' N	195° 38.5' 21° 40.3' N
02	210° 51.9' 20° 03.7' N	210° 50.9' 20° 15.9' N	210° 49.8' 20° 27.8' N	210° 48.5' 20° 39.3' N	210° 47.1' 20° 50.4' N	210° 45.6' 21° 01.2' N	210° 44.0' 21° 11.6' N	210° 42.2' 21° 21.7' N	210° 40.4' 21° 31.4' N	210° 38.4' 21° 40.7' N
03	225° 51.9' 20° 04.2' N	225° 50.9' 20° 16.4' N	225° 49.7' 20° 28.2' N	225° 48.5' 20° 39.7' N	225° 47.1' 20° 50.9' N	225° 45.6' 21° 01.6' N	225° 43.9' 21° 12.1' N	225° 42.2' 21° 22.1' N	225° 40.3' 21° 31.8' N	225° 38.3' 21° 41.1' N
04	240° 51.8' 20° 04.7' N	240° 50.8' 20° 16.9' N	240° 49.7' 20° 28.7' N	240° 48.4' 20° 40.2' N	240° 47.0' 20° 51.3' N	240° 45.5' 21° 02.1' N	240° 43.9' 21° 12.5' N	240° 42.1' 21° 22.5' N	240° 40.2' 21° 32.2' N	240° 38.2' 21° 41.5' N
05	255° 51.8' 20° 05.2' N	255° 50.8' 20° 17.4' N	255° 49.6' 20° 29.2' N	255° 48.4' 20° 40.7' N	255° 47.0' 20° 51.8' N	255° 45.4' 21° 02.5' N	255° 43.8' 21° 12.9' N	255° 42.0' 21° 22.9' N	255° 40.1' 21° 32.6' N	255° 38.2' 21° 41.9' N
06	270° 51.8' 20° 05.7' N	270° 50.7' 20° 17.9' N	270° 49.6' 20° 29.7' N	270° 48.3' 20° 41.1' N	270° 46.9' 20° 52.2' N	270° 45.4' 21° 03.0' N	270° 43.7' 21° 13.3' N	270° 41.9' 21° 23.3' N	270° 40.1' 21° 33.0' N	270° 38.1' 21° 42.2' N
07	285° 51.7' 20° 06.3' N	285° 50.7' 20° 18.4' N	285° 49.5' 20° 30.2' N	285° 48.3' 20° 41.6' N	285° 46.8' 20° 52.7' N	285° 45.3' 21° 03.4' N	285° 43.6' 21° 13.8' N	285° 41.9' 21° 23.7' N	285° 40.0' 21° 33.4' N	285° 38.0' 21° 42.6' N
08	300° 51.7' 20° 06.8' N	300° 50.6' 20° 18.9' N	300° 49.5' 20° 30.7' N	300° 48.2' 20° 42.1' N	300° 46.8' 20° 53.1' N	300° 45.2' 21° 03.8' N	300° 43.6' 21° 14.2' N	300° 41.8' 21° 24.2' N	300° 39.9' 21° 33.8' N	300° 37.9' 21° 43.0' N
09	315° 51.6' 20° 07.3' N	315° 50.6' 20° 19.4' N	315° 49.4' 20° 31.1' N	315° 48.1' 20° 42.5' N	315° 46.7' 20° 53.6' N	315° 45.2' 21° 04.3' N	315° 43.5' 21° 14.6' N	315° 41.7' 21° 24.6' N	315° 39.8' 21° 34.1' N	315° 37.8' 21° 43.4' N
10	330° 51.6' 20° 07.8' N	330° 50.6' 20° 19.9' N	330° 49.4' 20° 31.6' N	330° 48.1' 20° 43.0' N	330° 46.7' 20° 54.0' N	330° 45.1' 21° 04.7' N	330° 43.4' 21° 15.0' N	330° 41.6' 21° 25.0' N	330° 39.7' 21° 34.5' N	330° 37.7' 21° 43.7' N
11	345° 51.6' 20° 08.3' N	345° 50.5' 20° 20.4' N	345° 49.3' 20° 32.1' N	345° 48.0' 20° 43.5' N	345° 46.6' 20° 54.5' N	345° 45.0' 21° 05.2' N	345° 43.4' 21° 15.5' N	345° 41.6' 21° 25.4' N	345° 39.7' 21° 34.9' N	345° 37.6' 21° 44.1' N
12	000° 51.5' 20° 08.8' N	000° 50.5' 20° 20.9' N	000° 49.3' 20° 32.6' N	000° 48.0' 20° 43.9' N	000° 46.5' 20° 55.0' N	000° 45.0' 21° 05.6' N	000° 43.3' 21° 15.9' N	000° 41.5' 21° 25.8' N	000° 39.6' 21° 35.3' N	000° 37.6' 21° 44.5' N
13	015° 51.5' 20° 09.3' N	015° 50.4' 20° 21.4' N	015° 49.2' 20° 33.1' N	015° 47.9' 20° 44.4' N	015° 46.5' 20° 55.4' N	015° 44.9' 21° 06.0' N	015° 43.2' 21° 16.3' N	015° 41.4' 21° 26.2' N	015° 39.5' 21° 35.7' N	015° 37.5' 21° 44.9' N
14	030° 51.4' 20° 09.8' N	030° 50.4' 20° 21.9' N	030° 49.2' 20° 33.5' N	030° 47.9' 20° 44.9' N	030° 46.4' 20° 55.9' N	030° 44.8' 21° 06.5' N	030° 43.1' 21° 16.7' N	030° 41.3' 21° 26.6' N	030° 39.4' 21° 36.1' N	030° 37.4' 21° 45.2' N
15	045° 51.4' 20° 10.3' N	045° 50.3' 20° 22.4' N	045° 49.1' 20° 34.0' N	045° 47.8' 20° 45.3' N	045° 46.3' 20° 56.3' N	045° 44.8' 21° 06.9' N	045° 43.1' 21° 17.1' N	045° 41.3' 21° 27.0' N	045° 39.3' 21° 36.5' N	045° 37.3' 21° 45.6' N
16	060° 51.3' 20° 10.8' N	060° 50.3' 20° 22.9' N	060° 49.1' 20° 34.5' N	060° 47.7' 20° 45.8' N	060° 46.3' 20° 56.8' N	060° 44.7' 21° 07.3' N	060° 43.0' 21° 17.5' N	060° 41.2' 21° 27.4' N	060° 39.2' 21° 36.9' N	060° 37.2' 21° 46.0' N
17	075° 51.3' 20° 11.4' N	075° 50.2' 20° 23.3' N	075° 49.0' 20° 35.0' N	075° 47.7' 20° 46.3' N	075° 46.2' 20° 57.2' N	075° 44.6' 21° 07.8' N	075° 42.9' 21° 18.0' N	075° 41.1' 21° 27.8' N	075° 39.2' 21° 37.3' N	075° 37.1' 21° 46.3' N
18	090° 51.3' 20° 11.9' N	090° 50.2' 20° 23.8' N	090° 49.0' 20° 35.5' N	090° 47.6' 20° 46.7' N	090° 46.2' 20° 57.6' N	090° 44.6' 21° 08.2' N	090° 42.8' 21° 18.4' N	090° 41.0' 21° 28.2' N	090° 39.1' 21° 37.6' N	090° 37.0' 21° 46.7' N
19	105° 51.2' 20° 12.4' N	105° 50.1' 20° 24.3' N	105° 48.9' 20° 35.9' N	105° 47.6' 20° 47.2' N	105° 46.1' 20° 58.1' N	105° 44.5' 21° 08.6' N	105° 42.8' 21° 18.8' N	105° 40.9' 21° 28.6' N	105° 39.0' 21° 38.0' N	105° 36.9' 21° 47.1' N
20	120° 51.2' 20° 12.9' N	120° 50.1' 20° 24.8' N	120° 48.9' 20° 36.4' N	120° 47.5' 20° 47.7' N	120° 46.0' 20° 58.5' N	120° 44.4' 21° 09.1' N	120° 42.7' 21° 19.2' N	120° 40.9' 21° 29.0' N	120° 38.9' 21° 38.4' N	120° 36.9' 21° 47.5' N
21	135° 51.1' 20° 13.4' N	135° 50.0' 20° 25.3' N	135° 48.8' 20° 36.9' N	135° 47.4' 20° 48.1' N	135° 46.0' 20° 59.0' N	135° 44.4' 21° 09.5' N	135° 42.6' 21° 19.6' N	135° 40.8' 21° 29.4' N	135° 38.8' 21° 38.8' N	135° 36.8' 21° 47.8' N
22	150° 51.1' 20° 13.9' N	150° 50.0' 20° 25.8' N	150° 48.8' 20° 37.4' N	150° 47.4' 20° 48.6' N	150° 45.9' 20° 59.4' N	150° 44.3' 21° 09.9' N	150° 42.5' 21° 20.0' N	150° 40.7' 21° 29.8' N	150° 38.7' 21° 39.2' N	150° 36.7' 21° 48.2' N
23	165° 51.0' 20° 14.4' N	165° 49.9' 20° 26.3' N	165° 48.7' 20° 37.8' N	165° 47.3' 20° 49.0' N	165° 45.8' 20° 59.9' N	165° 44.2' 21° 10.4' N	165° 42.5' 21° 20.5' N	165° 40.6' 21° 30.2' N	165° 38.7' 21° 39.6' N	165° 36.6' 21° 48.6' N
UT	30 May	31 May	01 Jun	02 Jun	03 Jun	04 Jun	05 Jun	06 Jun	07 Jun	08 Jun
00	180° 36.5' 21° 48.9' N	180° 34.3' 21° 57.5' N	180° 32.1' 22° 05.7' N	180° 29.7' 22° 13.6' N	180° 27.3' 22° 21.0' N	180° 24.7' 22° 28.0' N	180° 22.1' 22° 34.7' N	180° 19.4' 22° 40.9' N	180° 16.7' 22° 46.8' N	180° 13.8' 22° 52.3' N
01	195° 36.4' 21° 49.3' N	195° 34.2' 21° 57.9' N	195° 32.0' 22° 06.1' N	195° 29.6' 22° 13.9' N	195° 27.2' 22° 21.3' N	195° 24.6' 22° 28.3' N	195° 22.0' 22° 35.0' N	195° 19.3' 22° 41.2' N	195° 16.6' 22° 47.0' N	195° 13.7' 22° 52.5' N
02	210° 36.3' 21° 49.7' N	210° 34.2' 21° 58.2' N	210° 31.9' 22° 06.4' N	210° 29.5' 22° 14.2' N	210° 27.1' 22° 21.6' N	210° 24.5' 22° 28.6' N	210° 21.9' 22° 35.2' N	210° 19.2' 22° 41.4' N	210° 16.4' 22° 47.3' N	210° 13.6' 22° 52.7' N
03	225° 36.2' 21° 50.0' N	225° 34.1' 21° 58.6' N	225° 31.8' 22° 06.7' N	225° 29.4' 22° 14.5' N	225° 27.0' 22° 21.9' N	225° 24.4' 22° 28.9' N	225° 21.8' 22° 35.5' N	225° 19.1' 22° 41.7' N	225° 16.3' 22° 47.5' N	225° 13.5' 22° 52.9' N
04	240° 36.2' 21° 50.4' N	240° 34.0' 21° 58.9' N	240° 31.7' 22° 07.1' N	240° 29.3' 22° 14.8' N	240° 26.9' 22° 22.2' N	240° 24.3' 22° 29.2' N	240° 21.7' 22° 35.8' N	240° 19.0' 22° 41.9' N	240° 16.2' 22° 47.7' N	240° 13.4' 22° 53.1' N
05	255° 36.1' 21° 50.7' N	255° 33.9' 21° 59.3' N	255° 31.6' 22° 07.4' N	255° 29.2' 22° 15.1' N	255° 26.8' 22° 22.5' N	255° 24.2' 22° 29.5' N	255° 21.6' 22° 36.0' N	255° 18.9' 22° 42.2' N	255° 16.1' 22° 48.0' N	255° 13.2' 22° 53.4' N
06	270° 36.0' 21° 51.1' N	270° 33.8' 21° 59.6' N	270° 31.5' 22° 07.7' N	270° 29.1' 22° 15.4' N	270° 26.6' 22° 22.8' N	270° 24.1' 22° 29.7' N	270° 21.5' 22° 36.3' N	270° 18.8' 22° 42.4' N	270° 16.0' 22° 48.2' N	270° 13.1' 22° 53.6' N
07	285° 35.9' 21° 51.5' N	285° 33.7' 22° 00.0' N	285° 31.4' 22° 08.1' N	285° 29.0' 22° 15.8' N	285° 26.5' 22° 23.1' N	285° 24.0' 22° 30.0' N	285° 21.4' 22° 36.6' N	285° 18.6' 22° 42.7' N	285° 15.9' 22° 48.4' N	285° 13.0' 22° 53.8' N
08	300° 35.8' 21° 51.8' N	300° 33.6' 22° 00.3' N	300° 31.3' 22° 08.4' N	300° 28.9' 22° 16.1' N	300° 26.4' 22° 23.4' N	300° 23.9' 22° 30.3' N	300° 21.2' 22° 36.8' N	300° 18.5' 22° 42.9' N	300° 15.7' 22° 48.7' N	300° 12.9' 22° 54.0' N
09	315° 35.7' 21° 52.2' N	315° 33.5' 22° 00.6' N	315° 31.2' 22° 08.7' N	315° 28.8' 22° 16.4' N	315° 26.3' 22° 23.7' N	315° 23.8' 22° 30.6' N	315° 21.1' 22° 37.1' N	315° 18.4' 22° 43.2' N	315° 15.6' 22° 48.9' N	315° 12.8' 22° 54.2' N
10	330° 35.6' 21° 52.6' N	330° 33.4' 22° 01.0' N	330° 31.1' 22° 09.0' N	330° 28.7' 22° 16.7' N	330° 26.2' 22° 24.0' N	330° 23.7' 22° 30.9' N	330° 21.0' 22° 37.3' N	330° 18.3' 22° 43.4' N	330° 15.5' 22° 49.1' N	330° 12.6' 22° 54.4' N
11	345° 35.5' 21° 52.9' N	345° 33.3' 22° 01.3' N	345° 31.0' 22° 09.4' N	345° 28.6' 22° 17.0' N	345° 26.1' 22° 24.3' N	345° 23.6' 22° 31.1' N	345° 20.9' 22° 37.6' N	345° 18.2' 22° 43.7' N	345° 15.4' 22° 49.4' N	345° 12.5' 22° 54.6' N
12	000° 35.4' 21° 53.3' N	000° 33.2' 22° 01.7' N	000° 30.9' 22° 09.7' N	000° 28.5' 22° 17.3' N	000° 26.0' 22° 24.6' N	000° 23.4' 22° 31.4' N	000° 20.8' 22° 37.9' N	000° 18.1' 22° 43.9' N	000° 15.3' 22° 49.6' N	000° 12.4' 22° 54.8' N
13	015° 35.3' 21° 53.6' N	015° 33.1' 22° 02.0' N	015° 30.8' 22° 10.0' N	015° 28.4' 22° 17.6' N	015° 25.9' 22° 24.9' N	015° 23.3' 22° 31.7' N	015° 20.7' 22° 38.1' N	015° 18.0' 22° 44.2' N	015° 15.2' 22° 49.8' N	015° 12.3' 22° 55.1' N
14	030° 35.3' 21° 54.0' N	030° 33.0' 22° 02.4' N	030° 30.7' 22° 10.3' N	030° 28.3' 22° 17.9' N	030° 25.8' 22° 25.1' N	030° 23.2' 22° 32.0' N	030° 20.6' 22° 38.4' N	030° 17.8' 22° 44.4' N	030° 15.0' 22° 50.0' N	030° 12.2' 22° 55.3' N
15	045° 35.2' 21° 54.3' N	045° 32.9' 22° 02.7' N	045° 30.6' 22° 10.7' N	045° 28.2' 22° 18.2' N	045° 25.7' 22° 25.4' N	045° 23.1' 22° 32.2' N	045° 20.5' 22° 38.6' N	045° 17.7' 22° 44.7' N	045° 14.9' 22° 50.3' N	045° 12.0' 22° 55.5' N
16	060° 35.1' 21° 54.7' N	060° 32.8' 22° 03.0' N	060° 30.5' 22° 11.0' N	060° 28.1' 22° 18.6' N	060° 25.6' 22° 25.7' N	060° 23.0' 22° 32.5' N	060° 20.3' 22° 38.9' N	060° 17.6' 22° 44.9' N	060° 14.8' 22° 50.5' N	060° 11.9' 22° 55.7' N
17	075° 35.0' 21° 55.1' N	075° 32.7' 22° 03.4' N	075° 30.4' 22° 11.3' N	075° 28.0' 22° 18.9' N	075° 25.5' 22° 26.0' N	075° 22.9' 22° 32.8' N	075° 20.2' 22° 39.2' N	075° 17.5' 22° 45.1' N	075° 14.7' 22° 50.7' N	075° 11.8' 22° 55.9' N
18	090° 34.9' 21° 55.4' N	090° 32.6' 22° 03.7' N	090° 30.3' 22° 11.6' N	090° 27.9' 22° 19.2' N	090° 25.4' 22° 26.3' N	090° 22.8' 22° 33.1' N	090° 20.1' 22° 39.4' N	090° 17.4' 22° 45.4' N	090° 14.6' 22° 50.9' N	090° 11.7' 22° 56.1' N
19	105° 34.8' 21° 55.8' N</									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 09 Jun to 28 Jun

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

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

Solar Almanac 2028 — Sun GHA & Decl (UT) — 29 Jun to 18 Jul

UT	29 Jun	30 Jun	01 Jul	02 Jul	03 Jul	04 Jul	05 Jul	06 Jul	07 Jul	08 Jul
00	179° 07.4' 23° 12.4' N	179° 04.4' 23° 08.9' N	179° 01.5' 23° 04.9' N	178° 58.6' 23° 00.5' N	178° 55.9' 22° 55.8' N	178° 53.2' 22° 50.6' N	178° 50.6' 22° 45.0' N	178° 48.1' 22° 39.1' N	178° 45.7' 22° 32.7' N	178° 43.4' 22° 26.0' N
01	194° 07.2' 23° 12.3' N	194° 04.3' 23° 08.7' N	194° 01.4' 23° 04.7' N	193° 58.5' 23° 00.4' N	193° 55.8' 22° 55.6' N	193° 53.1' 22° 50.4' N	193° 50.5' 22° 44.8' N	193° 48.0' 22° 38.8' N	193° 45.6' 22° 32.5' N	193° 43.3' 22° 25.7' N
02	209° 07.1' 23° 12.2' N	209° 04.1' 23° 08.6' N	209° 01.2' 23° 04.6' N	208° 58.4' 23° 00.2' N	208° 55.7' 22° 55.4' N	208° 53.0' 22° 50.2' N	208° 50.4' 22° 44.6' N	208° 47.9' 22° 38.6' N	208° 45.5' 22° 32.2' N	208° 43.2' 22° 25.4' N
03	224° 07.0' 23° 12.0' N	224° 04.0' 23° 08.4' N	224° 01.1' 23° 04.4' N	223° 58.3' 23° 00.0' N	223° 55.5' 22° 55.2' N	223° 52.9' 22° 49.9' N	223° 50.3' 22° 44.3' N	223° 47.8' 22° 38.3' N	223° 45.4' 22° 31.9' N	223° 43.1' 22° 25.1' N
04	239° 06.9' 23° 11.9' N	239° 03.9' 23° 08.2' N	239° 01.0' 23° 04.2' N	238° 58.2' 22° 59.8' N	238° 55.4' 22° 54.9' N	238° 52.8' 22° 49.7' N	238° 50.2' 22° 44.1' N	238° 47.7' 22° 38.1' N	238° 45.3' 22° 31.6' N	238° 43.0' 22° 24.8' N
05	254° 06.7' 23° 11.7' N	254° 03.8' 23° 08.1' N	254° 00.9' 23° 04.0' N	253° 58.1' 22° 59.6' N	253° 55.3' 22° 54.7' N	253° 52.7' 22° 49.5' N	253° 50.1' 22° 43.8' N	253° 47.6' 22° 37.8' N	253° 45.2' 22° 31.4' N	253° 42.9' 22° 24.5' N
06	269° 06.6' 23° 11.6' N	269° 03.7' 23° 07.9' N	269° 00.8' 23° 03.9' N	268° 57.9' 22° 59.4' N	268° 55.2' 22° 54.5' N	268° 52.5' 22° 49.3' N	268° 50.0' 22° 43.6' N	268° 47.5' 22° 37.5' N	268° 45.1' 22° 31.1' N	268° 42.8' 22° 24.3' N
07	284° 06.5' 23° 11.4' N	284° 03.5' 23° 07.8' N	284° 00.6' 23° 03.7' N	283° 57.8' 22° 59.2' N	283° 55.1' 22° 54.3' N	283° 52.4' 22° 49.0' N	283° 49.9' 22° 43.3' N	283° 47.4' 22° 37.3' N	283° 45.0' 22° 30.8' N	283° 42.7' 22° 24.0' N
08	299° 06.4' 23° 11.3' N	299° 03.4' 23° 07.6' N	299° 00.5' 23° 03.5' N	298° 57.7' 22° 59.0' N	298° 55.0' 22° 54.1' N	298° 52.3' 22° 48.8' N	298° 49.8' 22° 43.1' N	298° 47.3' 22° 37.0' N	298° 44.9' 22° 30.5' N	298° 42.6' 22° 23.7' N
09	314° 06.2' 23° 11.1' N	314° 03.3' 23° 07.4' N	314° 00.4' 23° 03.3' N	313° 57.6' 22° 58.8' N	313° 54.9' 22° 53.9' N	313° 52.2' 22° 48.6' N	313° 49.7' 22° 42.9' N	313° 47.2' 22° 36.8' N	313° 44.8' 22° 30.3' N	313° 42.5' 22° 23.4' N
10	329° 06.1' 23° 11.0' N	329° 03.2' 23° 07.3' N	329° 00.3' 23° 03.1' N	328° 57.5' 22° 58.6' N	328° 54.8' 22° 53.7' N	328° 52.1' 22° 48.3' N	328° 49.5' 22° 42.6' N	328° 47.1' 22° 36.5' N	328° 44.7' 22° 30.0' N	328° 42.4' 22° 23.1' N
11	344° 06.0' 23° 10.9' N	344° 03.0' 23° 07.1' N	344° 00.2' 23° 03.0' N	343° 57.4' 22° 58.4' N	343° 54.6' 22° 53.5' N	343° 52.0' 22° 48.1' N	343° 49.4' 22° 42.4' N	343° 47.0' 22° 36.2' N	343° 44.6' 22° 29.7' N	343° 42.3' 22° 22.8' N
12	359° 05.9' 23° 10.7' N	359° 02.9' 23° 06.9' N	359° 00.1' 23° 02.8' N	358° 57.3' 22° 58.2' N	358° 54.5' 22° 53.2' N	358° 51.9' 22° 47.9' N	358° 49.3' 22° 42.1' N	358° 46.9' 22° 35.7' N	358° 44.5' 22° 29.4' N	358° 42.2' 22° 22.5' N
13	014° 05.7' 23° 10.6' N	014° 02.8' 23° 06.8' N	013° 59.9' 23° 02.6' N	013° 57.1' 22° 58.0' N	013° 54.4' 22° 53.0' N	013° 51.8' 22° 47.6' N	013° 49.2' 22° 41.9' N	013° 46.8' 22° 35.7' N	013° 44.4' 22° 29.1' N	013° 42.1' 22° 22.2' N
14	029° 05.6' 23° 10.4' N	029° 02.7' 23° 06.6' N	028° 59.8' 23° 02.4' N	028° 57.0' 22° 57.8' N	028° 54.3' 22° 52.8' N	028° 51.7' 22° 47.4' N	028° 49.1' 22° 41.6' N	028° 46.7' 22° 35.4' N	028° 44.3' 22° 28.9' N	028° 42.1' 22° 21.9' N
15	044° 05.5' 23° 10.3' N	044° 02.6' 23° 06.4' N	043° 59.7' 23° 02.2' N	043° 56.9' 22° 57.6' N	043° 54.2' 22° 52.6' N	043° 51.6' 22° 47.2' N	043° 49.0' 22° 41.4' N	043° 46.6' 22° 35.2' N	043° 44.2' 22° 28.6' N	043° 42.0' 22° 21.6' N
16	059° 05.4' 23° 10.1' N	059° 02.4' 23° 06.3' N	058° 59.6' 23° 02.0' N	058° 56.8' 22° 57.4' N	058° 54.1' 22° 52.4' N	058° 51.5' 22° 46.9' N	058° 48.9' 22° 41.1' N	058° 46.5' 22° 34.9' N	058° 44.1' 22° 28.3' N	058° 41.9' 22° 21.3' N
17	074° 05.3' 23° 10.0' N	074° 02.3' 23° 06.1' N	073° 59.5' 23° 01.9' N	073° 56.7' 22° 57.2' N	073° 54.0' 22° 52.2' N	073° 51.4' 22° 46.7' N	073° 48.8' 22° 40.9' N	073° 46.4' 22° 34.6' N	073° 44.0' 22° 28.0' N	073° 41.8' 22° 21.0' N
18	089° 05.1' 23° 09.8' N	089° 02.2' 23° 05.9' N	088° 59.3' 23° 01.7' N	088° 56.6' 22° 57.0' N	088° 53.9' 22° 51.9' N	088° 51.2' 22° 46.5' N	088° 48.7' 22° 40.6' N	088° 46.3' 22° 34.4' N	088° 43.9' 22° 27.7' N	088° 41.7' 22° 20.7' N
19	104° 05.0' 23° 09.6' N	104° 02.1' 23° 05.8' N	103° 59.2' 23° 01.5' N	103° 56.5' 22° 56.8' N	103° 53.8' 22° 51.7' N	103° 51.1' 22° 46.2' N	103° 48.6' 22° 40.4' N	103° 46.2' 22° 34.1' N	103° 43.8' 22° 27.4' N	103° 41.6' 22° 20.4' N
20	119° 04.9' 23° 09.5' N	119° 02.0' 23° 05.6' N	118° 59.1' 23° 01.3' N	118° 56.3' 22° 56.6' N	118° 53.6' 22° 51.5' N	118° 51.0' 22° 46.0' N	118° 48.5' 22° 40.1' N	118° 46.1' 22° 33.8' N	118° 43.7' 22° 27.2' N	118° 41.5' 22° 20.1' N
21	134° 04.8' 23° 09.3' N	134° 01.8' 23° 05.4' N	133° 59.0' 23° 01.1' N	133° 56.2' 22° 56.4' N	133° 53.5' 22° 51.3' N	133° 50.9' 22° 45.8' N	133° 48.4' 22° 39.9' N	133° 46.0' 22° 33.6' N	133° 43.6' 22° 26.9' N	133° 41.4' 22° 19.8' N
22	149° 04.6' 23° 09.2' N	149° 01.7' 23° 05.3' N	148° 58.9' 23° 00.9' N	148° 56.1' 22° 56.2' N	148° 53.4' 22° 51.1' N	148° 50.8' 22° 45.5' N	148° 48.3' 22° 39.6' N	148° 45.9' 22° 33.3' N	148° 43.5' 22° 26.6' N	148° 41.3' 22° 19.5' N
23	164° 04.5' 23° 09.0' N	164° 01.6' 23° 05.1' N	163° 58.8' 23° 00.7' N	163° 56.0' 22° 56.0' N	163° 53.3' 22° 50.8' N	163° 50.7' 22° 45.3' N	163° 48.2' 22° 39.3' N	163° 45.8' 22° 33.0' N	163° 43.5' 22° 26.3' N	163° 41.2' 22° 19.2' N
UT	09 Jul	10 Jul	11 Jul	12 Jul	13 Jul	14 Jul	15 Jul	16 Jul	17 Jul	18 Jul
00	178° 41.1' 22° 18.9' N	178° 39.0' 22° 11.4' N	178° 37.0' 22° 03.5' N	178° 35.1' 21° 55.2' N	178° 33.3' 21° 46.6' N	178° 31.6' 21° 37.5' N	178° 30.1' 21° 28.1' N	178° 28.7' 21° 18.4' N	178° 27.3' 21° 08.3' N	178° 26.2' 20° 57.8' N
01	193° 41.0' 22° 18.6' N	193° 38.9' 22° 11.0' N	193° 36.9' 22° 03.1' N	193° 35.0' 21° 54.8' N	193° 33.2' 21° 46.2' N	193° 31.6' 21° 37.1' N	193° 30.0' 21° 27.7' N	193° 28.6' 21° 18.0' N	193° 27.3' 21° 07.8' N	193° 26.1' 20° 57.3' N
02	208° 41.0' 22° 18.3' N	208° 38.8' 22° 10.7' N	208° 36.8' 22° 02.8' N	208° 34.9' 21° 54.5' N	208° 33.2' 21° 45.8' N	208° 31.5' 21° 36.8' N	208° 30.0' 21° 27.3' N	208° 28.5' 21° 17.6' N	208° 27.2' 21° 07.4' N	208° 26.1' 20° 56.9' N
03	223° 40.9' 22° 18.0' N	223° 38.8' 22° 10.4' N	223° 36.8' 22° 02.5' N	223° 34.9' 21° 54.1' N	223° 33.1' 21° 45.4' N	223° 31.4' 21° 36.4' N	223° 29.9' 21° 26.9' N	223° 28.5' 21° 17.1' N	223° 27.2' 21° 07.0' N	223° 26.0' 20° 56.4' N
04	238° 40.8' 22° 17.7' N	238° 38.7' 22° 10.1' N	238° 36.7' 22° 02.1' N	238° 34.8' 21° 53.8' N	238° 33.0' 21° 45.1' N	238° 31.4' 21° 36.0' N	238° 29.8' 21° 26.5' N	238° 28.4' 21° 16.7' N	238° 27.1' 21° 06.5' N	238° 26.0' 20° 56.0' N
05	253° 40.7' 22° 17.3' N	253° 38.6' 22° 09.8' N	253° 36.6' 22° 01.8' N	253° 34.7' 21° 53.4' N	253° 33.0' 21° 44.7' N	253° 31.3' 21° 35.6' N	253° 29.8' 21° 26.1' N	253° 28.4' 21° 16.3' N	253° 27.1' 21° 06.1' N	253° 25.9' 20° 55.6' N
06	268° 40.6' 22° 17.0' N	268° 38.5' 22° 09.4' N	268° 36.5' 22° 01.4' N	268° 34.6' 21° 53.1' N	268° 32.9' 21° 44.3' N	268° 31.2' 21° 35.2' N	268° 29.7' 21° 25.7' N	268° 28.3' 21° 15.9' N	268° 27.0' 21° 05.7' N	268° 25.9' 20° 55.1' N
07	283° 40.5' 22° 16.7' N	283° 38.4' 22° 09.1' N	283° 36.4' 22° 01.1' N	283° 34.6' 21° 52.7' N	283° 32.8' 21° 44.0' N	283° 31.2' 21° 34.8' N	283° 29.7' 21° 25.3' N	283° 28.3' 21° 15.5' N	283° 27.0' 21° 05.2' N	283° 25.8' 20° 54.7' N
08	298° 40.4' 22° 16.4' N	298° 38.3' 22° 08.8' N	298° 36.4' 22° 00.8' N	298° 34.5' 21° 52.4' N	298° 32.7' 21° 43.6' N	298° 31.1' 21° 34.4' N	298° 29.6' 21° 24.9' N	298° 28.2' 21° 15.0' N	298° 26.9' 21° 04.8' N	298° 25.8' 20° 54.2' N
09	313° 40.3' 22° 16.1' N	313° 38.3' 22° 08.5' N	313° 36.3' 22° 00.4' N	313° 34.4' 21° 52.0' N	313° 32.7' 21° 43.2' N	313° 31.0' 21° 34.1' N	313° 29.5' 21° 24.5' N	313° 28.1' 21° 14.6' N	313° 26.9' 21° 04.4' N	313° 25.8' 20° 53.8' N
10	328° 40.2' 22° 15.8' N	328° 38.2' 22° 08.1' N	328° 36.2' 22° 00.1' N	328° 34.3' 21° 51.6' N	328° 32.6' 21° 42.8' N	328° 31.0' 21° 33.7' N	328° 29.5' 21° 24.1' N	328° 28.1' 21° 14.2' N	328° 26.8' 21° 03.9' N	328° 25.7' 20° 53.3' N
11	343° 40.2' 22° 15.5' N	343° 38.1' 22° 07.8' N	343° 36.1' 21° 59.7' N	343° 34.3' 21° 51.3' N	343° 32.5' 21° 42.5' N	343° 30.9' 21° 33.3' N	343° 29.4' 21° 23.7' N	343° 28.0' 21° 13.8' N	343° 26.8' 21° 03.5' N	343° 25.7' 20° 52.9' N
12	358° 40.1' 22° 15.2' N	358° 38.0' 22° 07.5' N	358° 36.0' 21° 59.4' N	358° 34.2' 21° 50.9' N	358° 32.5' 21° 42.1' N	358° 30.8' 21° 32.9' N	358° 29.4' 21° 23.3' N	358° 28.0' 21° 13.4' N	358° 26.7' 21° 03.1' N	358° 25.6' 20° 52.4' N
13	013° 40.0' 22° 14.9' N	013° 37.9' 22° 07.1' N	013° 36.0' 21° 59.0' N	013° 34.1' 21° 50.6' N	013° 32.4' 21° 41.7' N	013° 30.8' 21° 32.5' N	013° 29.3' 21° 22.9' N	013° 27.9' 21° 12.9' N	013° 26.7' 21° 02.6' N	013° 25.6' 20° 52.0' N
14	028° 39.9' 22° 14.5' N	028° 37.8' 22° 06.8' N	028° 35.9' 21° 58.7' N	028° 34.0' 21° 50.2' N	028° 32.3' 21° 41.3' N	028° 30.7' 21° 32.1' N	028° 29.2' 21° 22.5' N	028° 27.9' 21° 12.5' N	028° 26.6' 21° 02.2' N	028° 25.5' 20° 51.5' N
15	043° 39.8' 22° 14.2' N	043° 37.7' 22° 06.5' N	043° 35.8' 21° 58.3' N	043° 34.0' 21° 49.8' N	043° 32.3' 21° 41.0' N	043° 30.7' 21° 31.7' N	043° 29.2' 21° 22.1' N	043° 27.8' 21° 12.1' N	043° 26.6' 21° 01.8' N	043° 25.5' 20° 51.1' N
16	058° 39.7' 22° 13.9' N	058° 37.7' 22° 06.1' N	058° 35.7' 21° 58.0' N	058° 33.9' 21° 49.5' N	058° 32.2' 21° 40.6' N	058° 30.6' 21° 31.3' N	058° 29.1' 21° 21.7' N	058° 27.8' 21° 11.7' N	058° 26.5' 21° 01.3' N	058° 25.5' 20° 50.6' N
17	073° 39.6' 22° 13.6' N	073° 37.6' 22° 05.8' N	073° 35.6' 21° 57.7' N	073° 33.8' 21° 49.1' N	073° 32.1' 21° 40.2' N	073° 30.5' 21° 30.9' N	073° 29.1' 21° 21.3' N	073° 27.7' 21° 11.3' N	073° 26.5' 21° 00.9' N	073° 25.4' 20° 50.1' N
18	088° 39.5' 22° 13.3' N	088° 37.5' 22° 05.5' N	088° 35.6' 21° 57.3' N	088° 33.7' 21° 48.8' N	088° 32.0' 21° 39.8' N	088° 30.5' 21° 30.5' N	088° 29.0' 21° 20.9' N	088° 27.7' 21° 10.8' N	088° 26.4' 21° 00.4' N	088° 25.4' 20° 49.7' N
19	103° 39.5' 22° 13.0' N</									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 19 Jul to 07 Aug

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

UT	29 Jul	30 Jul	31 Jul	01 Aug	02 Aug	03 Aug	04 Aug	05 Aug	06 Aug	07 Aug
00	178° 22,5' 18° 40,0' N	178° 23,1' 18° 25,6' N	178° 23,9' 18° 10,8' N	178° 24,8' 17° 55,8' N	178° 25,8' 17° 40,5' N	178° 27,0' 17° 24,8' N	178° 28,4' 17° 08,9' N	178° 29,9' 16° 52,8' N	178° 31,5' 16° 36,3' N	178° 33,3' 16° 19,6' N
01	193° 22,6' 18° 39,4' N	193° 23,1' 18° 25,0' N	193° 23,9' 18° 10,2' N	193° 24,8' 17° 55,2' N	193° 25,9' 17° 39,8' N	193° 27,1' 17° 24,2' N	193° 28,4' 17° 08,3' N	193° 29,9' 16° 52,1' N	193° 31,6' 16° 35,6' N	193° 33,4' 16° 18,9' N
02	208° 22,6' 18° 38,8' N	208° 23,2' 18° 24,4' N	208° 23,9' 18° 09,6' N	208° 24,8' 17° 54,5' N	208° 25,9' 17° 39,2' N	208° 27,1' 17° 23,5' N	208° 28,5' 17° 07,6' N	208° 30,0' 16° 51,4' N	208° 31,7' 16° 34,9' N	208° 33,5' 16° 18,2' N
03	223° 22,6' 18° 38,2' N	223° 23,2' 18° 23,8' N	223° 24,0' 18° 09,0' N	223° 24,9' 17° 53,9' N	223° 25,9' 17° 38,5' N	223° 27,2' 17° 22,9' N	223° 28,5' 17° 06,9' N	223° 30,1' 16° 50,7' N	223° 31,8' 16° 34,2' N	223° 33,6' 16° 17,5' N
04	238° 22,6' 18° 37,6' N	238° 23,2' 18° 23,1' N	238° 24,0' 18° 08,4' N	238° 24,9' 17° 53,3' N	238° 26,0' 17° 37,9' N	238° 27,2' 17° 22,2' N	238° 28,6' 17° 06,3' N	238° 30,1' 16° 50,0' N	238° 31,8' 16° 33,6' N	238° 33,7' 16° 16,8' N
05	253° 22,6' 18° 37,0' N	253° 23,3' 18° 22,5' N	253° 24,0' 18° 07,7' N	253° 25,0' 17° 52,6' N	253° 26,0' 17° 37,2' N	253° 27,3' 17° 21,6' N	253° 28,7' 17° 05,6' N	253° 30,2' 16° 49,4' N	253° 31,9' 16° 32,9' N	253° 33,7' 16° 16,1' N
06	268° 22,7' 18° 36,4' N	268° 23,3' 18° 21,9' N	268° 24,1' 18° 07,1' N	268° 25,0' 17° 52,0' N	268° 26,0' 17° 36,6' N	268° 27,3' 17° 20,9' N	268° 28,7' 17° 04,9' N	268° 30,3' 16° 48,7' N	268° 32,0' 16° 32,2' N	268° 33,8' 16° 15,4' N
07	283° 22,7' 18° 35,8' N	283° 23,3' 18° 21,3' N	283° 24,1' 18° 06,5' N	283° 25,0' 17° 51,4' N	283° 26,1' 17° 35,9' N	283° 27,4' 17° 20,2' N	283° 28,8' 17° 04,3' N	283° 30,3' 16° 48,0' N	283° 32,0' 16° 31,5' N	283° 33,9' 16° 14,7' N
08	298° 22,7' 18° 35,2' N	298° 23,4' 18° 20,7' N	298° 24,1' 18° 05,9' N	298° 25,1' 17° 50,7' N	298° 26,2' 17° 35,3' N	298° 27,4' 17° 19,6' N	298° 28,9' 17° 03,6' N	298° 30,4' 16° 47,3' N	298° 32,1' 16° 30,8' N	298° 34,0' 16° 14,0' N
09	313° 22,7' 18° 34,6' N	313° 23,4' 18° 20,1' N	313° 24,2' 18° 05,2' N	313° 25,1' 17° 50,1' N	313° 26,2' 17° 34,6' N	313° 27,5' 17° 18,9' N	313° 28,9' 17° 02,9' N	313° 30,5' 16° 46,6' N	313° 32,2' 16° 30,1' N	313° 34,1' 16° 13,3' N
10	328° 22,8' 18° 34,0' N	328° 23,4' 18° 19,5' N	328° 24,2' 18° 04,6' N	328° 25,2' 17° 49,4' N	328° 26,3' 17° 34,0' N	328° 27,6' 17° 18,3' N	328° 29,0' 17° 02,2' N	328° 30,5' 16° 45,9' N	328° 32,3' 16° 29,4' N	328° 34,1' 16° 12,6' N
11	343° 22,8' 18° 33,4' N	343° 23,4' 18° 18,9' N	343° 24,3' 18° 04,0' N	343° 25,2' 17° 48,8' N	343° 26,3' 17° 33,3' N	343° 27,6' 17° 17,6' N	343° 29,0' 17° 01,6' N	343° 30,6' 16° 45,3' N	343° 32,3' 16° 28,7' N	343° 34,2' 16° 11,9' N
12	358° 22,8' 18° 32,8' N	358° 23,5' 18° 18,2' N	358° 24,3' 18° 03,4' N	358° 25,3' 17° 48,2' N	358° 26,4' 17° 32,7' N	358° 27,7' 17° 16,9' N	358° 29,1' 17° 00,9' N	358° 30,7' 16° 44,6' N	358° 32,4' 16° 28,0' N	358° 34,3' 16° 11,1' N
13	013° 22,8' 18° 32,2' N	013° 23,5' 18° 17,6' N	013° 24,3' 18° 02,7' N	013° 25,3' 17° 47,5' N	013° 26,4' 17° 32,0' N	013° 27,7' 17° 16,3' N	013° 29,2' 17° 00,2' N	013° 30,8' 16° 43,9' N	013° 32,5' 16° 27,3' N	013° 34,4' 16° 10,4' N
14	028° 22,9' 18° 31,6' N	028° 23,5' 18° 17,0' N	028° 24,4' 18° 02,1' N	028° 25,3' 17° 46,9' N	028° 26,5' 17° 31,4' N	028° 27,8' 17° 15,8' N	028° 29,2' 16° 59,5' N	028° 30,8' 16° 43,2' N	028° 32,6' 16° 26,6' N	028° 34,5' 16° 09,7' N
15	043° 22,9' 18° 31,0' N	043° 23,6' 18° 16,4' N	043° 24,4' 18° 01,5' N	043° 25,4' 17° 46,2' N	043° 26,5' 17° 30,7' N	043° 27,8' 17° 14,9' N	043° 29,3' 16° 58,9' N	043° 30,9' 16° 42,5' N	043° 32,6' 16° 25,9' N	043° 34,5' 16° 09,0' N
16	058° 22,9' 18° 30,4' N	058° 23,6' 18° 15,8' N	058° 24,4' 18° 00,8' N	058° 25,4' 17° 45,6' N	058° 26,6' 17° 30,1' N	058° 27,9' 17° 14,3' N	058° 29,4' 16° 58,2' N	058° 31,0' 16° 41,8' N	058° 32,7' 16° 25,2' N	058° 34,6' 16° 08,3' N
17	073° 22,9' 18° 29,8' N	073° 23,6' 18° 15,2' N	073° 24,5' 18° 00,2' N	073° 25,5' 17° 45,0' N	073° 26,6' 17° 29,4' N	073° 28,0' 17° 13,6' N	073° 29,4' 16° 57,5' N	073° 31,0' 16° 41,1' N	073° 32,8' 16° 24,5' N	073° 34,7' 16° 07,6' N
18	088° 23,0' 18° 29,2' N	088° 23,7' 18° 14,6' N	088° 24,5' 17° 59,6' N	088° 25,5' 17° 44,3' N	088° 26,7' 17° 28,8' N	088° 28,0' 17° 12,9' N	088° 29,5' 16° 56,8' N	088° 31,1' 16° 40,5' N	088° 32,9' 16° 23,8' N	088° 34,8' 16° 06,9' N
19	103° 23,0' 18° 28,									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 08 Aug to 27 Aug

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

UT	18 Aug	19 Aug	20 Aug	21 Aug	22 Aug	23 Aug	24 Aug	25 Aug	26 Aug	27 Aug
00	179° 02,4' 12° 59,4' N	179° 05,8' 12° 39,9' N	179° 09,3' 12° 20,1' N	179° 13,0' 12° 00,2' N	179° 16,7' 11° 40,1' N	179° 20,6' 11° 19,8' N	179° 24,6' 10° 59,3' N	179° 28,7' 10° 38,6' N	179° 32,9' 10° 17,8' N	179° 37,2' 9° 56,8' N
01	194° 02,5' 12° 58,6' N	194° 05,9' 12° 39,1' N	194° 09,5' 12° 19,3' N	194° 13,1' 11° 59,4' N	194° 16,9' 11° 39,2' N	194° 20,8' 11° 18,9' N	194° 24,8' 10° 58,4' N	194° 28,9' 10° 37,7' N	194° 33,1' 10° 16,9' N	194° 37,4' 9° 55,9' N
02	209° 02,7' 12° 57,8' N	209° 06,1' 12° 38,3' N	209° 09,6' 12° 18,5' N	209° 13,3' 11° 58,5' N	209° 17,0' 11° 38,4' N	209° 20,9' 11° 18,1' N	209° 24,9' 10° 57,6' N	209° 29,0' 10° 36,9' N	209° 33,3' 10° 16,0' N	209° 37,6' 9° 55,0' N
03	224° 02,8' 12° 57,0' N	224° 06,2' 12° 37,4' N	224° 09,8' 12° 17,7' N	224° 13,4' 11° 57,7' N	224° 17,2' 11° 37,5' N	224° 21,1' 11° 17,2' N	224° 25,1' 10° 56,7' N	224° 29,2' 10° 36,0' N	224° 33,4' 10° 15,2' N	224° 37,7' 9° 54,2' N
04	239° 02,9' 12° 56,2' N	239° 06,4' 12° 36,6' N	239° 09,9' 12° 16,8' N	239° 13,6' 11° 56,9' N	239° 17,4' 11° 36,7' N	239° 21,3' 11° 16,4' N	239° 25,3' 10° 55,8' N	239° 29,4' 10° 35,1' N	239° 33,6' 10° 14,3' N	239° 37,9' 9° 53,3' N
05	254° 03,1' 12° 55,4' N	254° 06,5' 12° 35,8' N	254° 10,1' 12° 16,0' N	254° 13,7' 11° 56,0' N	254° 17,5' 11° 35,9' N	254° 21,4' 11° 15,5' N	254° 25,4' 10° 55,0' N	254° 29,6' 10° 34,3' N	254° 33,8' 10° 13,4' N	254° 38,1' 9° 52,4' N
06	269° 03,2' 12° 54,6' N	269° 06,7' 12° 35,0' N	269° 10,2' 12° 15,2' N	269° 13,9' 11° 55,2' N	269° 17,7' 11° 35,0' N	269° 21,6' 11° 14,7' N	269° 25,6' 10° 54,1' N	269° 29,7' 10° 33,4' N	269° 34,0' 10° 12,5' N	269° 38,3' 9° 51,5' N
07	284° 03,4' 12° 53,8' N	284° 06,8' 12° 34,2' N	284° 10,4' 12° 14,3' N	284° 14,1' 11° 54,4' N	284° 17,9' 11° 34,2' N	284° 21,8' 11° 13,8' N	284° 25,8' 10° 53,3' N	284° 29,9' 10° 32,5' N	284° 34,1' 10° 11,7' N	284° 38,5' 9° 50,6' N
08	299° 03,5' 12° 52,9' N	299° 07,0' 12° 33,3' N	299° 10,5' 12° 13,5' N	299° 14,2' 11° 53,5' N	299° 18,0' 11° 33,3' N	299° 21,9' 11° 13,0' N	299° 26,0' 10° 52,4' N	299° 30,1' 10° 31,7' N	299° 34,3' 10° 10,8' N	299° 38,7' 9° 49,8' N
09	314° 03,6' 12° 52,1' N	314° 07,1' 12° 32,5' N	314° 10,7' 12° 12,7' N	314° 14,4' 11° 52,7' N	314° 18,2' 11° 32,5' N	314° 22,1' 11° 12,1' N	314° 26,1' 10° 51,5' N	314° 30,3' 10° 30,8' N	314° 34,5' 10° 09,9' N	314° 38,8' 9° 48,9' N
10	329° 03,8' 12° 51,3' N	329° 07,2' 12° 31,7' N	329° 10,8' 12° 11,9' N	329° 14,5' 11° 51,8' N	329° 18,3' 11° 31,6' N	329° 22,3' 11° 11,2' N	329° 26,3' 10° 50,7' N	329° 30,4' 10° 29,9' N	329° 34,7' 10° 09,1' N	329° 39,0' 9° 48,0' N
11	344° 03,9' 12° 50,5' N	344° 07,4' 12° 30,9' N	344° 11,0' 12° 11,0' N	344° 14,7' 11° 51,0' N	344° 18,5' 11° 30,8' N	344° 22,4' 11° 10,4' N	344° 26,5' 10° 49,8' N	344° 30,6' 10° 29,1' N	344° 34,9' 10° 08,2' N	344° 39,2' 9° 47,1' N
12	359° 04,1' 12° 49,7' N	359° 07,5' 12° 30,0' N	359° 11,1' 12° 10,2' N	359° 14,8' 11° 50,2' N	359° 18,7' 11° 29,9' N	359° 22,6' 11° 09,5' N	359° 26,6' 10° 49,0' N	359° 30,8' 10° 28,2' N	359° 35,0' 10° 07,3' N	359° 39,4' 9° 46,2' N
13	014° 04,2' 12° 48,9' N	014° 07,7' 12° 29,2' N	014° 11,3' 12° 09,4' N	014° 15,0' 11° 49,3' N	014° 18,8' 11° 29,1' N	014° 22,8' 11° 08,7' N	014° 26,8' 10° 48,1' N	014° 31,0' 10° 27,3' N	014° 35,2' 10° 06,4' N	014° 39,6' 9° 45,4' N
14	029° 04,4' 12° 48,1' N	029° 07,8' 12° 28,4' N	029° 11,4' 12° 08,5' N	029° 15,1' 11° 48,5' N	029° 19,0' 11° 28,2' N	029° 22,9' 11° 07,8' N	029° 27,0' 10° 47,2' N	029° 31,1' 10° 26,5' N	029° 35,4' 10° 05,6' N	029° 39,8' 9° 44,5' N
15	044° 04,5' 12° 47,2' N	044° 08,0' 12° 27,6' N	044° 11,6' 12° 07,7' N	044° 15,3' 11° 47,6' N	044° 19,1' 11° 27,4' N	044° 23,1' 11° 07,0' N	044° 27,1' 10° 46,4' N	044° 31,3' 10° 25,6' N	044° 35,6' 10° 04,7' N	044° 39,9' 9° 43,6' N
16	059° 04,6' 12° 46,4' N	059° 08,1' 12° 26,7' N	059° 11,7' 12° 06,9' N	059° 15,5' 11° 46,8' N	059° 19,3' 11° 26,6' N	059° 23,3' 11° 06,1' N	059° 27,3' 10° 45,5' N	059° 31,5' 10° 24,7' N	059° 35,8' 10° 03,8' N	059° 40,1' 9° 42,7' N
17	074° 04,8' 12° 45,6' N	074° 08,3' 12° 25,9' N	074° 11,9' 12° 06,0' N	074° 15,6' 11° 46,0' N	074° 19,5' 11° 25,7' N	074° 23,4' 11° 05,3' N	074° 27,5' 10° 44,7' N	074° 31,7' 10° 23,9' N	074° 35,9' 10° 02,9' N	074° 40,3' 9° 41,8' N
18	089° 04,9' 12° 44,8' N	089° 08,4' 12° 25,1' N	089° 12,0' 12° 05,2' N	089° 15,8' 11° 45,1' N	089° 19,6' 11° 24,9' N	089° 23,6' 11° 04,4' N	089° 27,7' 10° 43,8' N	089° 31,8' 10° 23,0' N	089° 36,1' 10° 02,0' N	089° 40,5' 9° 40,9' N
19	104° 05,1' 12° 44,0' N	104° 08,6'								

Solar Almanac 2028 — Sun GHA & Decl (UT) — 28 Aug to 16 Sep

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

UT	07 Sep	08 Sep	09 Sep	10 Sep	11 Sep	12 Sep	13 Sep	14 Sep	15 Sep	16 Sep
00	180° 30,0' 05° 56,7' N	180° 35,2' 05° 34,2' N	180° 40,4' 05° 11,6' N	180° 45,7' 04° 48,9' N	180° 50,9' 04° 26,1' N	180° 56,2' 04° 03,2' N	181° 01,5' 03° 40,3' N	181° 06,9' 03° 17,3' N	181° 12,2' 02° 54,2' N	181° 17,6' 02° 31,1' N
01	195° 30,2' 05° 55,8' N	195° 35,4' 05° 33,3' N	195° 40,6' 05° 10,7' N	195° 45,9' 04° 47,9' N	195° 51,2' 04° 25,1' N	195° 56,5' 04° 02,3' N	196° 01,8' 03° 39,3' N	196° 07,1' 03° 16,3' N	196° 12,4' 02° 53,2' N	196° 17,8' 02° 30,1' N
02	210° 30,5' 05° 54,9' N	210° 35,6' 05° 32,3' N	210° 40,9' 05° 09,7' N	210° 46,1' 04° 47,0' N	210° 51,4' 04° 24,2' N	210° 56,7' 04° 01,3' N	211° 02,0' 03° 38,4' N	211° 07,3' 03° 15,4' N	211° 12,7' 02° 52,3' N	211° 18,0' 02° 29,1' N
03	225° 30,7' 05° 53,9' N	225° 35,9' 05° 31,4' N	225° 41,1' 05° 08,8' N	225° 46,3' 04° 46,0' N	225° 51,6' 04° 23,2' N	225° 56,9' 04° 00,4' N	226° 02,2' 03° 37,4' N	226° 07,5' 03° 14,4' N	226° 12,9' 02° 51,3' N	226° 18,2' 02° 28,2' N
04	240° 30,9' 05° 53,0' N	240° 36,1' 05° 30,5' N	240° 41,3' 05° 07,8' N	240° 46,5' 04° 45,1' N	240° 51,8' 04° 22,3' N	240° 57,1' 03° 59,4' N	241° 02,4' 03° 36,5' N	241° 07,8' 03° 13,4' N	241° 13,1' 02° 50,3' N	241° 18,4' 02° 27,2' N
05	255° 31,1' 05° 52,1' N	255° 36,3' 05° 29,5' N	255° 41,5' 05° 06,9' N	255° 46,8' 04° 44,2' N	255° 52,0' 04° 21,3' N	255° 57,3' 03° 58,5' N	256° 02,7' 03° 35,5' N	256° 08,0' 03° 12,5' N	256° 13,3' 02° 49,4' N	256° 18,7' 02° 26,2' N
06	270° 31,3' 05° 51,1' N	270° 36,5' 05° 28,6' N	270° 41,7' 05° 05,9' N	270° 47,0' 04° 43,2' N	270° 52,3' 04° 20,4' N	270° 57,6' 03° 57,5' N	271° 02,9' 03° 34,5' N	271° 08,2' 03° 11,5' N	271° 13,6' 02° 48,4' N	271° 18,9' 02° 25,3' N
07	285° 31,5' 05° 50,2' N	285° 36,7' 05° 27,6' N	285° 41,9' 05° 05,0' N	285° 47,2' 04° 42,3' N	285° 52,5' 04° 19,4' N	285° 57,8' 03° 56,5' N	286° 03,1' 03° 33,6' N	286° 08,4' 03° 10,5' N	286° 13,8' 02° 47,5' N	286° 19,1' 02° 24,3' N
08	300° 31,8' 05° 49,2' N	300° 36,9' 05° 26,7' N	300° 42,2' 05° 04,0' N	300° 47,4' 04° 41,3' N	300° 52,7' 04° 18,5' N	300° 58,0' 03° 55,6' N	301° 03,3' 03° 32,6' N	301° 08,7' 03° 09,6' N	301° 14,0' 02° 46,5' N	301° 19,3' 02° 23,3' N
09	315° 32,0' 05° 48,3' N	315° 37,2' 05° 25,7' N	315° 42,4' 05° 03,1' N	315° 47,6' 04° 40,4' N	315° 52,9' 04° 17,5' N	315° 58,2' 03° 54,6' N	316° 03,5' 03° 31,7' N	316° 08,9' 03° 08,6' N	316° 14,2' 02° 45,5' N	316° 19,6' 02° 22,4' N
10	330° 32,2' 05° 47,4' N	330° 37,4' 05° 24,8' N	330° 42,6' 05° 02,2' N	330° 47,9' 04° 16,6' N	330° 53,1' 04° 16,6' N	330° 58,4' 03° 53,7' N	331° 03,8' 03° 30,7' N	331° 09,1' 03° 07,7' N	331° 14,4' 02° 44,6' N	331° 19,8' 02° 21,4' N
11	345° 32,4' 05° 46,4' N	345° 37,6' 05° 23,9' N	345° 42,8' 05° 01,2' N	345° 48,1' 04° 38,5' N	345° 53,4' 04° 15,6' N	345° 58,7' 03° 52,7' N	346° 04,0' 03° 29,7' N	346° 09,3' 03° 06,7' N	346° 14,7' 02° 43,6' N	346° 20,0' 02° 20,4' N
12	000° 32,6' 05° 45,5' N	000° 37,8' 05° 22,9' N	000° 43,0' 05° 00,3' N	000° 48,3' 04° 37,5' N	000° 53,6' 04° 14,7' N	000° 58,9' 03° 51,8' N	001° 04,2' 03° 28,8' N	001° 09,5' 03° 05,7' N	001° 14,9' 02° 42,6' N	001° 20,2' 02° 19,5' N
13	015° 32,8' 05° 44,6' N	015° 38,0' 05° 22,0' N	015° 43,3' 04° 59,3' N	015° 48,5' 04° 36,6' N	015° 53,8' 04° 13,7' N	015° 59,1' 03° 50,8' N	016° 04,4' 03° 27,8' N	016° 09,8' 03° 04,8' N	016° 15,1' 02° 41,7' N	016° 20,5' 02° 18,5' N
14	030° 33,0' 05° 43,6' N	030° 38,2' 05° 21,0' N	030° 43,5' 04° 58,4' N	030° 48,7' 04° 35,6' N	030° 54,0' 04° 12,8' N	030° 59,3' 03° 49,9' N	031° 04,7' 03° 26,9' N	031° 10,0' 03° 03,8' N	031° 15,3' 02° 40,7' N	031° 20,7' 02° 17,5' N
15	045° 33,3' 05° 42,7' N	045° 38,5' 05° 20,1' N	045° 43,7' 04° 57,4' N	045° 49,0' 04° 34,7' N	045° 54,2' 04° 11,8' N	045° 59,6' 03° 48,9' N	046° 04,9' 03° 25,9' N	046° 10,2' 03° 01,9' N	046° 15,6' 02° 39,7' N	046° 20,9' 02° 16,6' N
16	060° 33,5' 05° 41,7' N	060° 38,7' 05° 19,2' N	060° 43,9' 04° 56,5' N	060° 49,2' 04° 33,7' N	060° 54,5' 04° 10,9' N	060° 59,8' 03° 47,9' N	061° 05,1' 03° 24,9' N	061° 10,4' 03° 01,9' N	061° 15,8' 02° 38,8' N	061° 21,1' 02° 15,6' N
17	075° 33,7' 05° 40,8' N	075° 38,9' 05° 18,2' N	075° 44,1' 04° 55,5' N	075° 49,4' 04° 32,8' N	075° 54,7' 04° 09,9' N	076° 00,0' 03° 47,0' N	076° 05,3' 03° 24,0' N	076° 10,7' 03° 00,9' N	076° 16,0' 02° 37,8' N	076° 21,3' 02° 14,6' N
18	090° 33,9' 05° 39,9' N	090° 39,1' 05° 17,3' N	090° 44,3' 04° 54,6' N	090° 49,6' 04° 31,8' N	090° 54,9' 04° 09,0' N	091° 00,2' 03° 46,0' N	091° 05,5' 03° 23,0' N	091° 10,9' 03° 00,0' N	091° 16,2' 02° 36,9' N	091° 21,6' 02° 13,7' N
19	105° 34,1' 05° 38,									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 17 Sep to 06 Oct

UT	17 Sep	18 Sep	19 Sep	20 Sep	21 Sep	22 Sep	23 Sep	24 Sep	25 Sep	26 Sep
00	181° 22.9' 02° 07.9' N	181° 28.2' 01° 44.7' N	181° 33.6' 01° 21.4' N	181° 38.9' 00° 58.1' N	181° 44.2' 00° 34.8' N	181° 49.5' 00° 11.4' N	181° 54.7' 00° 11.9' S	181° 59.9' 00° 35.3' S	182° 05.1' 00° 58.7' S	182° 10.3' 01° 22.0' S
01	196° 23.1' 02° 06.9' N	196° 28.5' 01° 43.7' N	196° 33.8' 01° 20.4' N	196° 39.1' 00° 57.1' N	196° 44.4' 00° 33.8' N	196° 49.7' 00° 10.5' N	197° 00.2' 00° 12.9' S	197° 00.2' 00° 36.3' S	197° 05.4' 00° 59.6' S	197° 10.5' 01° 23.0' S
02	211° 23.3' 02° 05.9' N	211° 28.7' 01° 42.7' N	211° 34.0' 01° 19.5' N	211° 39.3' 00° 56.2' N	211° 44.6' 00° 32.8' N	211° 49.9' 00° 09.5' N	211° 55.2' 00° 13.9' S	212° 00.4' 00° 37.2' S	212° 05.6' 01° 00.6' S	212° 10.7' 01° 24.0' S
03	226° 23.6' 02° 05.0' N	226° 28.9' 01° 41.8' N	226° 34.2' 01° 18.5' N	226° 39.5' 00° 55.2' N	226° 44.8' 00° 31.9' N	226° 50.1' 00° 08.5' N	226° 55.4' 00° 14.8' S	227° 00.6' 00° 38.2' S	227° 05.8' 01° 01.6' S	227° 10.9' 01° 24.9' S
04	241° 23.8' 02° 04.0' N	241° 29.1' 01° 40.8' N	241° 34.4' 01° 17.5' N	241° 39.8' 00° 54.2' N	241° 45.1' 00° 30.9' N	241° 50.3' 00° 07.5' N	241° 55.6' 00° 15.8' S	242° 00.8' 00° 39.2' S	242° 06.0' 01° 02.6' S	242° 11.1' 01° 25.9' S
05	256° 24.0' 02° 03.0' N	256° 29.3' 01° 39.8' N	256° 34.7' 01° 16.5' N	256° 40.0' 00° 53.2' N	256° 45.3' 00° 29.9' N	256° 50.6' 00° 06.6' N	256° 55.8' 00° 16.8' S	257° 01.0' 00° 40.2' S	257° 06.2' 01° 03.5' S	257° 11.4' 01° 26.9' S
06	271° 24.2' 02° 02.1' N	271° 29.6' 01° 38.8' N	271° 34.9' 01° 15.6' N	271° 40.2' 00° 52.3' N	271° 45.5' 00° 28.9' N	271° 50.8' 00° 05.6' N	271° 56.0' 00° 17.8' S	272° 01.2' 00° 41.1' S	272° 06.4' 01° 04.5' S	272° 11.6' 01° 27.9' S
07	286° 24.5' 02° 01.1' N	286° 29.8' 01° 37.9' N	286° 35.1' 01° 14.6' N	286° 40.4' 00° 51.3' N	286° 45.7' 00° 28.0' N	286° 51.0' 00° 04.6' N	286° 56.2' 00° 18.7' S	287° 01.5' 00° 42.1' S	287° 06.6' 01° 05.5' S	287° 11.8' 01° 28.8' S
08	301° 24.7' 02° 00.1' N	301° 30.0' 01° 36.9' N	301° 35.3' 01° 13.6' N	301° 40.6' 00° 50.3' N	301° 45.9' 00° 27.0' N	301° 51.2' 00° 03.6' N	301° 56.5' 00° 19.7' S	302° 01.7' 00° 43.1' S	302° 06.9' 01° 06.4' S	302° 12.0' 01° 29.8' S
09	316° 24.9' 01° 59.2' N	316° 30.2' 01° 35.9' N	316° 35.6' 01° 12.7' N	316° 40.9' 00° 49.4' N	316° 46.2' 00° 26.0' N	316° 51.4' 00° 02.7' N	316° 56.7' 00° 20.7' S	317° 01.9' 00° 44.1' S	317° 07.1' 01° 07.4' S	317° 12.2' 01° 30.8' S
10	331° 25.1' 01° 58.2' N	331° 30.5' 01° 35.0' N	331° 35.8' 01° 11.7' N	331° 41.1' 00° 48.4' N	331° 46.4' 00° 25.1' N	331° 51.7' 00° 01.7' N	331° 56.9' 00° 21.7' S	332° 02.1' 00° 45.0' S	332° 07.3' 01° 08.4' S	332° 12.4' 01° 31.8' S
11	346° 25.3' 01° 57.2' N	346° 30.7' 01° 34.0' N	346° 36.0' 01° 10.7' N	346° 41.3' 00° 47.4' N	346° 46.6' 00° 24.1' N	346° 51.9' 00° 00.7' N	346° 57.1' 00° 22.6' S	347° 02.3' 00° 46.0' S	347° 07.5' 01° 09.4' S	347° 12.6' 01° 32.7' S
12	001° 25.6' 01° 56.3' N	001° 30.9' 01° 33.0' N	001° 36.2' 01° 09.7' N	001° 41.5' 00° 46.4' N	001° 46.8' 00° 23.1' N	001° 52.1' 00° 00.2' S	001° 57.3' 00° 23.6' S	002° 02.5' 00° 47.0' S	002° 07.7' 01° 10.3' S	002° 12.9' 01° 33.7' S
13	016° 25.8' 01° 55.3' N	016° 31.1' 01° 32.1' N	016° 36.4' 01° 08.8' N	016° 41.8' 00° 45.5' N	016° 47.0' 00° 22.1' N	016° 52.3' 00° 01.2' S	016° 57.6' 00° 24.6' S	017° 02.8' 00° 47.9' S	017° 07.9' 01° 11.3' S	017° 13.1' 01° 34.7' S
14	031° 26.0' 01° 54.3' N	031° 31.3' 01° 31.1' N	031° 36.7' 01° 07.8' N	031° 42.0' 00° 44.5' N	031° 47.3' 00° 21.2' N	031° 52.5' 00° 02.2' S	031° 57.8' 00° 25.6' S	032° 03.0' 00° 48.9' S	032° 08.1' 01° 12.3' S	032° 13.3' 01° 35.6' S
15	046° 26.2' 01° 53.4' N	046° 31.6' 01° 30.1' N	046° 36.9' 01° 06.8' N	046° 42.2' 00° 43.5' N	046° 47.5' 00° 20.2' N	046° 52.7' 00° 03.2' S	046° 58.0' 00° 26.5' S	047° 03.2' 00° 49.9' S	047° 08.4' 01° 13.3' S	047° 13.5' 01° 36.6' S
16	061° 26.5' 01° 52.4' N	061° 31.8' 01° 29.2' N	061° 37.1' 01° 05.9' N	061° 42.4' 00° 42.6' N	061° 47.7' 00° 19.2' N	061° 53.0' 00° 04.1' S	061° 58.2' 00° 27.5' S	062° 03.4' 00° 50.9' S	062° 08.6' 01° 14.2' S	062° 13.7' 01° 37.6' S
17	076° 26.7' 01° 51.4' N	076° 32.0' 01° 28.2' N	076° 37.3' 01° 04.9' N	076° 42.6' 00° 41.6' N	076° 47.9' 00° 18.2' N	076° 53.2' 00° 05.1' S	076° 58.4' 00° 28.5' S	077° 03.6' 00° 51.8' S	077° 08.8' 01° 15.2' S	077° 13.9' 01° 38.6' S
18	091° 26.9' 01° 50.5' N	091° 32.2' 01° 27.2' N	091° 37.6' 01° 03.9' N	091° 42.9' 00° 40.6' N	091° 48.1' 00° 17.3' N	091° 53.4' 00° 06.1' S	091° 58.6' 00° 29.4' S	092° 03.8' 00° 52.8' S	092° 09.0' 01° 16.2' S	092° 14.1' 01° 39.5' S
19	106° 27.1' 01° 49.5' N	106° 32.5' 01° 26.2' N	106° 37.8' 01° 03.0' N	106° 43.1' 00° 39.6' N	106° 48.4' 00° 16.3' N	106° 53.6' 00° 07.1' S	106° 58.9' 00° 30.4' S	107° 04.1' 00° 53.8' S	107° 09.2' 01° 17.2' S	107° 14.3' 01° 40.5' S
20	121° 27.3' 01° 48.5' N	121° 32.7' 01° 25.3' N	121° 38.0' 01° 02.0' N	121° 43.3' 00° 38.7' N	121° 48.6' 00° 15.3' N	121° 53.8' 00° 08.0' S	121° 59.1' 00° 31.4' S	122° 04.3' 00° 54.8' S	122° 09.4' 01° 18.1' S	122° 14.6' 01° 41.5' S
21	136° 27.6' 01° 47.6' N	136° 32.9' 01° 24.3' N	136° 38.2' 01° 01.0' N	136° 43.5' 00° 37.7' N	136° 48.8' 00° 14.4' N	136° 54.1' 00° 09.0' S	136° 59.3' 00° 32.4' S	137° 04.5' 00° 55.7' S	137° 09.6' 01° 19.1' S	137° 14.8' 01° 42.5' S
22	151° 27.8' 01° 46.6' N	151° 33.1' 01° 23.3' N	151° 38.4' 01° 00.0' N	151° 43.7' 00° 36.7' N	151° 49.0' 00° 13.4' N	151° 54.3' 00° 10.0' S	151° 59.5' 00° 33.3' S	152° 04.7' 00° 56.7' S	152° 09.9' 01° 20.1' S	152° 15.0' 01° 43.4' S
23	166° 28.0' 01° 45.6' N	166° 33.3' 01° 22.4' N	166° 38.7' 00° 59.1' N	166° 44.0' 00° 35.7' N	166° 49.2' 00° 12.4' N	166° 54.5' 00° 11.0' S	166° 59.7' 00° 34.3' S	167° 04.9' 00° 57.7' S	167° 10.1' 01° 21.0' S	167° 15.2' 01° 44.4' S
UT	27 Sep	28 Sep	29 Sep	30 Sep	01 Oct	02 Oct	03 Oct	04 Oct	05 Oct	06 Oct
00	182° 15.4' 01° 45.4' S	182° 20.5' 02° 08.7' S	182° 25.5' 02° 32.0' S	182° 30.4' 02° 55.3' S	182° 35.3' 03° 18.6' S	182° 40.1' 03° 41.8' S	182° 44.8' 04° 05.0' S	182° 49.5' 04° 28.1' S	182° 54.1' 04° 51.2' S	182° 58.5' 05° 14.2' S
01	197° 15.6' 01° 46.3' S	197° 20.7' 02° 09.7' S	197° 25.7' 02° 33.0' S	197° 30.6' 02° 56.3' S	197° 35.5' 03° 19.6' S	197° 40.3' 03° 42.8' S	197° 45.0' 04° 06.0' S	197° 49.7' 04° 29.1' S	197° 54.2' 04° 52.2' S	197° 58.7' 05° 15.2' S
02	212° 15.8' 01° 47.3' S	212° 20.9' 02° 10.7' S	212° 25.9' 02° 34.0' S	212° 30.8' 02° 57.3' S	212° 35.7' 03° 20.5' S	212° 40.5' 03° 43.7' S	212° 45.2' 04° 06.9' S	212° 49.9' 04° 30.1' S	212° 54.4' 04° 53.1' S	212° 58.9' 05° 16.2' S
03	227° 16.0' 01° 48.3' S	227° 21.1' 02° 11.6' S	227° 26.1' 02° 34.9' S	227° 31.0' 02° 58.2' S	227° 35.9' 03° 21.5' S	227° 40.7' 03° 44.7' S	227° 45.4' 04° 07.9' S	227° 50.1' 04° 31.0' S	227° 54.6' 04° 54.1' S	227° 59.1' 05° 17.1' S
04	242° 16.3' 01° 49.3' S	242° 21.3' 02° 12.6' S	242° 26.3' 02° 35.9' S	242° 31.2' 02° 59.2' S	242° 36.1' 03° 22.5' S	242° 40.9' 03° 45.7' S	242° 45.6' 04° 08.9' S	242° 50.3' 04° 32.0' S	242° 54.8' 04° 55.1' S	242° 59.3' 05° 18.1' S
05	257° 16.5' 01° 50.2' S	257° 21.5' 02° 13.6' S	257° 26.5' 02° 36.9' S	257° 31.4' 03° 00.2' S	257° 36.3' 03° 23.4' S	257° 41.1' 03° 46.6' S	257° 45.8' 04° 09.8' S	257° 50.5' 04° 32.9' S	257° 55.0' 04° 56.0' S	257° 59.4' 05° 19.0' S
06	272° 16.7' 01° 51.2' S	272° 21.7' 02° 14.5' S	272° 26.7' 02° 37.9' S	272° 31.6' 03° 01.1' S	272° 36.5' 03° 24.4' S	272° 41.3' 03° 47.6' S	272° 46.0' 04° 10.8' S	272° 50.6' 04° 33.9' S	272° 55.2' 04° 57.0' S	272° 59.6' 05° 20.0' S
07	287° 16.9' 01° 52.2' S	287° 21.9' 02° 15.5' S	287° 26.9' 02° 38.8' S	287° 31.9' 03° 02.1' S	287° 36.7' 03° 25.4' S	287° 41.5' 03° 48.6' S	287° 46.2' 04° 11.8' S	287° 50.8' 04° 34.9' S	287° 55.4' 04° 57.9' S	287° 59.8' 05° 20.9' S
08	302° 17.1' 01° 53.2' S	302° 22.1' 02° 16.5' S	302° 27.1' 02° 39.8' S	302° 32.1' 03° 03.1' S	302° 36.9' 03° 26.3' S	302° 41.7' 03° 49.5' S	302° 46.4' 04° 12.7' S	302° 51.0' 04° 35.8' S	302° 55.6' 04° 58.9' S	303° 00.0' 05° 21.9' S
09	317° 17.3' 01° 54.1' S	317° 22.4' 02° 17.5' S	317° 27.3' 02° 40.8' S	317° 32.3' 03° 04.1' S	317° 37.1' 03° 27.3' S	317° 41.9' 03° 50.5' S	317° 46.6' 04° 13.7' S	317° 51.2' 04° 36.8' S	317° 55.7' 04° 59.9' S	318° 00.2' 05° 22.9' S
10	332° 17.5' 01° 55.1' S	332° 22.6' 02° 18.4' S	332° 27.5' 02° 41.7' S	332° 32.5' 03° 05.0' S	332° 37.3' 03° 28.3' S	332° 42.1' 03° 51.5' S	332° 46.8' 04° 14.6' S	332° 51.4' 04° 37.8' S	332° 55.9' 05° 00.8' S	333° 00.4' 05° 23.8' S
11	347° 17.7' 01° 56.1' S	347° 22.8' 02° 19.4' S	347° 27.7' 02° 42.7' S	347° 32.7' 03° 06.0' S	347° 37.5' 03° 29.2' S	347° 42.3' 03° 52.4' S	347° 47.0' 04° 15.6' S	347° 51.6' 04° 38.7' S	347° 56.1' 05° 01.8' S	348° 00.5' 05° 24.8' S
12	002° 17.9' 01° 57.0' S	002° 23.0' 02° 20.4' S	002° 28.0' 02° 43.7' S	002° 32.9' 03° 07.0' S	002° 37.7' 03° 30.2' S	002° 42.5' 03° 53.4' S	002° 47.2' 04° 16.6' S	002° 51.8' 04° 39.7' S	002° 56.3' 05° 02.7' S	003° 00.7' 05° 25.7' S
13	017° 18.2' 01° 58.0' S	017° 23.2' 02° 21.3' S	017° 28.2' 02° 44.7' S	017° 33.1' 03° 07.9' S	017° 37.9' 03° 31.2' S	017° 42.7' 03° 54.4' S	017° 47.4' 04° 17.5' S	017° 52.0' 04° 40.6' S	017° 56.5' 05° 03.7' S	018° 00.9' 05° 26.7' S
14	032° 18.4' 01° 59.0' S	032° 23.4' 02° 22.3' S	032° 28.4' 02° 45.6' S	032° 33.3' 03° 08.9' S	032° 38.1' 03° 32.1' S	032° 42.9' 03° 55.3' S	032° 47.6' 04° 18.5' S	032° 52.2' 04° 41.6' S	032° 56.7' 05° 04.7' S	033° 01.1' 05° 27.6' S
15	047° 18.6' 02° 00.0' S	047° 23.6' 02° 23.3' S	047° 28.6' 02° 46.6' S	047° 33.5' 03° 09.9' S	047° 38.3' 03° 33.1' S	047° 43.1' 03° 56.3' S	047° 47.8' 04° 19.5' S	047° 52.4' 04° 42.6' S	047° 56.9' 05° 05.6' S	048° 01.3' 05° 28.6' S
16	062° 18.8' 02° 00.9' S	062° 23.8' 02° 24.3' S	062° 28.							

Solar Almanac 2028 — Sun GHA & Decl (UT) — 07 Oct to 26 Oct

UT	07 Oct	08 Oct	09 Oct	10 Oct	11 Oct	12 Oct	13 Oct	14 Oct	15 Oct	16 Oct
00	183° 02.9' 05° 37.2' S	183° 07.2' 06° 00.1' S	183° 11.3' 06° 22.9' S	183° 15.3' 06° 45.6' S	183° 19.3' 07° 08.3' S	183° 23.0' 07° 30.8' S	183° 26.7' 07° 53.3' S	183° 30.2' 08° 15.6' S	183° 33.6' 08° 37.8' S	183° 36.8' 08° 59.9' S
01	198° 03.1' 05° 38.2' S	198° 07.3' 06° 01.0' S	198° 11.5' 06° 23.8' S	198° 15.5' 06° 46.6' S	198° 19.4' 07° 09.2' S	198° 23.2' 07° 31.8' S	198° 26.8' 07° 54.2' S	198° 30.3' 08° 16.5' S	198° 33.7' 08° 38.7' S	198° 36.9' 09° 00.8' S
02	213° 03.3' 05° 39.1' S	213° 07.5' 06° 02.0' S	213° 11.6' 06° 24.8' S	213° 15.7' 06° 47.5' S	213° 19.6' 07° 10.1' S	213° 23.3' 07° 32.7' S	213° 27.0' 07° 55.1' S	213° 30.5' 08° 17.5' S	213° 33.9' 08° 39.7' S	213° 37.1' 09° 01.8' S
03	228° 03.4' 05° 40.1' S	228° 07.7' 06° 02.9' S	228° 11.8' 06° 25.7' S	228° 15.8' 06° 48.5' S	228° 19.7' 07° 11.1' S	228° 23.5' 07° 33.6' S	228° 27.1' 07° 56.1' S	228° 30.6' 08° 18.4' S	228° 34.0' 08° 40.6' S	228° 37.2' 09° 02.7' S
04	243° 03.6' 05° 41.0' S	243° 07.9' 06° 03.9' S	243° 12.0' 06° 26.7' S	243° 16.0' 06° 49.4' S	243° 19.9' 07° 12.0' S	243° 23.7' 07° 34.6' S	243° 27.3' 07° 57.0' S	243° 30.8' 08° 19.3' S	243° 34.1' 08° 41.5' S	243° 37.3' 09° 03.6' S
05	258° 03.8' 05° 42.0' S	258° 08.0' 06° 04.8' S	258° 12.2' 06° 27.6' S	258° 16.2' 06° 50.4' S	258° 20.1' 07° 13.0' S	258° 23.8' 07° 35.5' S	258° 27.4' 07° 57.9' S	258° 30.9' 08° 20.2' S	258° 34.3' 08° 42.4' S	258° 37.5' 09° 04.5' S
06	273° 04.0' 05° 42.9' S	273° 08.2' 06° 05.8' S	273° 12.3' 06° 28.6' S	273° 16.3' 06° 51.3' S	273° 20.2' 07° 13.9' S	273° 24.0' 07° 36.4' S	273° 27.6' 07° 58.9' S	273° 31.1' 08° 21.2' S	273° 34.4' 08° 43.4' S	273° 37.6' 09° 05.4' S
07	288° 04.1' 05° 43.9' S	288° 08.4' 06° 06.7' S	288° 12.5' 06° 29.5' S	288° 16.5' 06° 52.2' S	288° 20.4' 07° 14.9' S	288° 24.1' 07° 37.4' S	288° 27.7' 07° 59.8' S	288° 31.2' 08° 22.1' S	288° 34.5' 08° 44.3' S	288° 37.7' 09° 06.3' S
08	303° 04.3' 05° 44.8' S	303° 08.6' 06° 07.7' S	303° 12.7' 06° 30.5' S	303° 16.7' 06° 53.2' S	303° 20.5' 07° 15.8' S	303° 24.3' 07° 38.3' S	303° 27.9' 08° 00.7' S	303° 31.3' 08° 23.0' S	303° 34.7' 08° 45.2' S	303° 37.9' 09° 07.3' S
09	318° 04.5' 05° 45.8' S	318° 08.7' 06° 08.6' S	318° 12.8' 06° 31.4' S	318° 16.8' 06° 54.1' S	318° 20.7' 07° 16.7' S	318° 24.4' 07° 39.2' S	318° 28.0' 08° 01.6' S	318° 31.5' 08° 23.9' S	318° 34.8' 08° 46.1' S	318° 38.0' 09° 08.2' S
10	333° 04.7' 05° 46.7' S	333° 08.9' 06° 09.6' S	333° 13.0' 06° 32.4' S	333° 17.0' 06° 55.1' S	333° 20.8' 07° 17.7' S	333° 24.6' 07° 40.2' S	333° 28.2' 08° 02.6' S	333° 31.6' 08° 24.9' S	333° 34.9' 08° 47.0' S	333° 38.1' 09° 09.1' S
11	348° 04.9' 05° 47.7' S	348° 09.1' 06° 10.5' S	348° 13.2' 06° 33.3' S	348° 17.1' 06° 56.0' S	348° 21.0' 07° 18.6' S	348° 24.7' 07° 41.1' S	348° 28.3' 08° 03.5' S	348° 31.8' 08° 25.8' S	348° 35.1' 08° 48.0' S	348° 38.2' 09° 10.0' S
12	003° 05.0' 05° 48.6' S	003° 09.2' 06° 11.5' S	003° 13.3' 06° 34.3' S	003° 17.3' 06° 57.0' S	003° 21.2' 07° 19.6' S	003° 24.9' 07° 42.0' S	003° 28.5' 08° 04.4' S	003° 31.9' 08° 26.7' S	003° 35.2' 08° 48.9' S	003° 38.4' 09° 10.9' S
13	018° 05.2' 05° 49.6' S	018° 09.4' 06° 12.5' S	018° 13.5' 06° 35.2' S	018° 17.5' 06° 57.9' S	018° 21.3' 07° 20.5' S	018° 25.0' 07° 43.0' S	018° 28.6' 08° 05.4' S	018° 32.0' 08° 27.6' S	018° 35.3' 08° 49.8' S	018° 38.5' 09° 11.8' S
14	033° 05.4' 05° 50.6' S	033° 09.6' 06° 13.4' S	033° 13.7' 06° 36.2' S	033° 17.6' 06° 58.8' S	033° 21.5' 07° 21.4' S	033° 25.2' 07° 43.9' S	033° 28.8' 08° 06.3' S	033° 32.2' 08° 28.6' S	033° 35.5' 08° 50.8' S	033° 38.6' 09° 12.8' S
15	048° 05.6' 05° 51.5' S	048° 09.8' 06° 14.4' S	048° 13.8' 06° 37.1' S	048° 17.8' 06° 59.8' S	048° 21.6' 07° 22.4' S	048° 25.3' 07° 44.9' S	048° 28.9' 08° 07.2' S	048° 32.3' 08° 29.5' S	048° 35.6' 08° 51.6' S	048° 38.8' 09° 13.7' S
16	063° 05.7' 05° 52.5' S	063° 09.9' 06° 15.3' S	063° 14.0' 06° 38.1' S	063° 18.0' 07° 00.7' S	063° 21.8' 07° 23.3' S	063° 25.5' 07° 45.8' S	063° 29.0' 08° 08.2' S	063° 32.5' 08° 30.4' S	063° 35.7' 08° 52.6' S	063° 38.9' 09° 14.6' S
17	078° 05.9' 05° 53.4' S	078° 10.1' 06° 16.3' S	078° 14.2' 06° 39.0' S	078° 18.1' 07° 01.7' S	078° 21.9' 07° 24.2' S	078° 25.6' 07° 46.7' S	078° 29.2' 08° 09.1' S	078° 32.6' 08° 31.3' S	078° 35.9' 08° 53.5' S	078° 39.0' 09° 15.5' S
18	093° 06.1' 05° 54.4' S	093° 10.3' 06° 17.2' S	093° 14.3' 06° 40.0' S	093° 18.3' 07° 02.6' S	093° 22.1' 07° 25.2' S	093° 25.8' 07° 47.7' S	093° 29.3' 08° 10.0' S	093° 32.7' 08° 32.3' S	093° 36.0' 08° 54.4' S	093° 39.1' 09° 16.4' S
19	108° 06.3' 05° 55.3' S	108° 10.5' 06° 18.2' S	108° 14.5' 06° 40.9' S	108° 18.4' 07° 03.6' S	108° 22.3' 07° 26.1' S	108° 25.9' 07° 48.6' S	108° 29.5' 08° 11.0' S	108° 32.9' 08° 33.9' S	108° 36.1' 08° 55.3' S	108° 39.3' 09° 17.3' S
20	123° 06.5' 05° 56.3' S	123° 10.6' 06° 19.1' S	123° 14.7' 06° 41.8' S	123° 18.6' 07° 04.5' S	123° 22.4' 07° 27.1' S	123° 26.1' 07° 49.5' S	123° 29.6' 08° 11.9' S	123° 33.0' 08° 34.1' S	123° 36.3' 08° 56.2' S	123° 39.4' 09° 18.2' S
21	138° 06.6' 05° 57.2' S	138° 10.8' 06° 20.0' S	138° 14.8' 06° 42.8' S	138° 18.8' 07° 05.4' S	138° 22.6' 07° 28.0' S	138° 26.2' 07° 50.5' S	138° 29.8' 08° 12.8' S	138° 33.2' 08° 35.0' S	138° 36.4' 08° 57.2' S	138° 39.5' 09° 19.2' S
22	153° 06.8' 05° 58.2' S	153° 11.0' 06° 21.0' S	153° 15.0' 06° 43.7' S	153° 18.9' 07° 06.4' S	153° 22.7' 07° 28.9' S	153° 26.4' 07° 51.4' S	153° 29.9' 08° 13.7' S	153° 33.3' 08° 36.0' S	153° 36.5' 08° 58.1' S	153° 39.6' 09° 20.1' S
23	168° 07.0' 05° 59.1' S	168° 11.1' 06° 21.9' S	168° 15.2' 06° 44.7' S	168° 19.1' 07° 07.3' S	168° 22.9' 07° 29.9' S	168° 26.5' 07° 52.3' S	168° 30.1' 08° 14.7' S	168° 33.4' 08° 36.9' S	168° 36.7' 08° 59.0' S	168° 39.8' 09° 21.0' S

UT	17 Oct	18 Oct	19 Oct	20 Oct	21 Oct	22 Oct	23 Oct	24 Oct	25 Oct	26 Oct
00	183° 39.9' 09° 21.9' S	183° 42.8' 09° 43.7' S	183° 45.6' 10° 05.4' S	183° 48.2' 10° 27.0' S	183° 50.7' 10° 48.4' S	183° 53.0' 11° 09.6' S	183° 55.1' 11° 30.7' S	183° 57.1' 11° 51.6' S	183° 58.8' 12° 12.3' S	184° 00.5' 12° 32.8' S
01	198° 40.0' 09° 22.8' S	198° 42.9' 09° 44.6' S	198° 45.7' 10° 06.3' S	198° 48.3' 10° 27.9' S	198° 50.8' 10° 49.3' S	198° 53.1' 11° 10.5' S	198° 55.2' 11° 31.5' S	198° 57.1' 11° 52.4' S	198° 58.9' 12° 13.1' S	199° 00.5' 12° 33.6' S
02	213° 40.1' 09° 23.7' S	213° 43.1' 09° 45.5' S	213° 45.8' 10° 07.2' S	213° 48.4' 10° 28.8' S	213° 50.9' 10° 50.1' S	213° 53.1' 11° 11.4' S	213° 55.3' 11° 32.4' S	213° 57.2' 11° 53.3' S	213° 59.0' 12° 14.0' S	214° 00.6' 12° 34.5' S
03	228° 40.3' 09° 24.6' S	228° 43.2' 09° 46.5' S	228° 45.9' 10° 08.1' S	228° 48.5' 10° 29.7' S	228° 51.0' 10° 51.0' S	228° 53.2' 11° 12.2' S	228° 55.3' 11° 33.3' S	228° 57.3' 11° 54.2' S	228° 59.1' 12° 14.8' S	229° 00.6' 12° 35.3' S
04	243° 40.4' 09° 25.5' S	243° 43.3' 09° 47.4' S	243° 46.0' 10° 09.0' S	243° 48.6' 10° 30.6' S	243° 51.1' 10° 51.9' S	243° 53.3' 11° 13.1' S	243° 55.4' 11° 34.2' S	243° 57.4' 11° 55.0' S	243° 59.1' 12° 15.7' S	244° 00.7' 12° 36.2' S
05	258° 40.5' 09° 26.5' S	258° 43.4' 09° 48.3' S	258° 46.2' 10° 09.9' S	258° 48.7' 10° 31.4' S	258° 51.2' 10° 52.8' S	258° 53.4' 11° 14.0' S	258° 55.5' 11° 35.0' S	258° 57.4' 11° 55.9' S	258° 59.2' 12° 16.5' S	259° 00.8' 12° 37.0' S
06	273° 40.6' 09° 27.4' S	273° 43.5' 09° 49.2' S	273° 46.3' 10° 10.8' S	273° 48.8' 10° 32.3' S	273° 51.3' 10° 53.7' S	273° 53.5' 11° 14.9' S	273° 55.6' 11° 35.9' S	273° 57.5' 11° 56.7' S	273° 59.3' 12° 17.4' S	274° 00.8' 12° 37.9' S
07	288° 40.8' 09° 28.3' S	288° 43.6' 09° 50.1' S	288° 46.4' 10° 11.7' S	288° 48.9' 10° 33.2' S	288° 51.4' 10° 54.6' S	288° 53.6' 11° 15.8' S	288° 55.7' 11° 36.8' S	288° 57.6' 11° 57.6' S	288° 59.3' 12° 18.3' S	289° 00.9' 12° 38.7' S
08	303° 40.9' 09° 29.2' S	303° 43.8' 09° 51.0' S	303° 46.5' 10° 12.6' S	303° 49.0' 10° 34.1' S	303° 51.5' 10° 55.5' S	303° 53.7' 11° 16.6' S	303° 55.8' 11° 37.6' S	303° 57.7' 11° 58.5' S	303° 59.4' 12° 19.1' S	304° 01.0' 12° 39.6' S
09	318° 41.0' 09° 30.1' S	318° 43.9' 09° 51.9' S	318° 46.6' 10° 13.5' S	318° 49.2' 10° 35.0' S	318° 51.5' 10° 56.4' S	318° 53.8' 11° 17.5' S	318° 55.8' 11° 38.5' S	318° 57.7' 11° 59.3' S	318° 59.5' 12° 20.0' S	319° 01.0' 12° 40.4' S
10	333° 41.1' 09° 31.0' S	333° 44.0' 09° 52.8' S	333° 46.7' 10° 14.4' S	333° 49.3' 10° 35.9' S	333° 51.6' 10° 57.2' S	333° 53.9' 11° 18.4' S	333° 55.9' 11° 39.4' S	333° 57.8' 12° 00.2' S	333° 59.5' 12° 20.8' S	334° 01.1' 12° 41.3' S
11	348° 41.2' 09° 31.9' S	348° 44.1' 09° 53.7' S	348° 46.8' 10° 15.3' S	348° 49.4' 10° 36.8' S	348° 51.7' 10° 58.1' S	348° 54.0' 11° 19.3' S	348° 56.0' 11° 40.3' S	348° 57.9' 12° 01.1' S	348° 59.6' 12° 21.7' S	349° 01.1' 12° 42.1' S
12	003° 41.4' 09° 32.8' S	003° 44.2' 09° 54.6' S	003° 46.9' 10° 16.2' S	003° 49.5' 10° 37.7' S	003° 51.8' 10° 59.0' S	003° 54.0' 11° 20.2' S	003° 56.1' 11° 41.1' S	003° 58.0' 12° 01.9' S	003° 59.7' 12° 22.5' S	004° 01.2' 12° 43.0' S
13	018° 41.5' 09° 33.7' S	018° 44.3' 09° 55.5' S	018° 47.0' 10° 17.1' S	018° 49.6' 10° 38.6' S	018° 51.9' 10° 59.9' S	018° 54.1' 11° 21.0' S	018° 56.2' 11° 42.0' S	018° 58.0' 12° 02.8' S	018° 59.7' 12° 23.4' S	019° 01.3' 12° 43.8' S
14	033° 41.6' 09° 34.6' S	033° 44.5' 09° 56.4' S	033° 47.1' 10° 18.0' S	033° 49.7' 10° 39.5' S	033° 52.0' 11° 00.8' S	033° 54.2' 11° 21.9' S	033° 56.3' 11° 42.9' S	033° 58.1' 12° 03.7' S	033° 59.8' 12° 24.3' S	034° 01.3' 12° 44.7' S
15	048° 41.7' 09° 35.6' S	048° 44.6' 09° 57.3' S	048° 47.2' 10° 18.9' S	048° 49.8' 10° 40.4' S	048° 52.1' 11° 01.7' S	048° 54.3' 11° 22.8' S	048° 56.3' 11° 43.7' S	048° 58.2' 12° 04.5' S	048° 59.9' 12° 25.1' S	049° 01.4' 12° 45.5' S
16	063° 41.9' 09° 36.5' S	063° 44.7' 09° 58.2' S	063° 47.4' 10° 19.8' S	063° 49.9' 10° 41.3' S	063° 52.2' 11° 02.5' S	063° 54.4' 11° 23.7' S	063° 56.4' 11° 44.6' S	063° 58.3' 12° 05.4' S	063° 59.9' 12° 26.0' S	064° 01.4' 12° 46.3' S
17	078° 42.0' 09° 37.4' S	078° 44.8' 09° 59.1' S	078° 47.5' 10° 20.7' S	078° 50.0' 10° 42.1' S	078° 52.3' 11° 03.4' S	078° 54.5' 11° 24.5' S	078° 56.5' 11° 45.5' S	078° 58.3' 12° 06.2' S	079° 00.0' 12° 26.8' S	079° 01.5' 12° 47.2' S
18	093° 42.1' 09° 38.3' S	093° 44.9' 10° 00.0' S	093° 47.6' 10° 21.6' S	093° 50.1' 10° 43.0' S	093° 52.4' 11° 04.3' S	093° 54.6' 11° 25.4' S	093° 56.6' 11° 46.3' S	093° 58.4' 12° 07.1' S	094° 00.1' 12° 27.7' S	094° 01.5' 12° 48.0' S
19	108° 42.2' 09° 39.2' S	108° 45.0' 10° 00.9' S	108° 47.7' 10° 22.5' S	108° 50.2' 10° 43.9' S	108° 52.5' 11° 05.2' S	108° 54.7' 11° 26.3' S	108° 56.7' 11° 47.2' S	108° 58.5' 12° 08.0' S	109° 00.1' 12° 28.5' S	109° 01.6' 12° 48.9' S
20	123° 42.3' 09° 40.1' S	123° 45.1' 10° 01.8' S	123° 47.8' 10° 23.4' S	123° 50.3' 10° 44.8' S	123° 52.6' 11° 06.1' S	123° 54.8' 11° 27.2' S	123° 56.7' 11° 48.1' S	123° 58.6' 12° 08.8' S	124° 00.2' 12° 29.4' S	124° 01.7' 12° 49.7' S
21	138° 42.5' 09° 41.0' S	138° 45.3' 10° 02.7' S	138° 47.9' 10° 24.3' S	138° 50.4' 10° 45.7' S	138° 52.7' 11° 07.0' S	138° 54.8' 11° 28.0' S	138° 56.8' 11° 49.0' S	138° 58.6' 12° 09.7' S	139° 00.3' 12° 30.2' S	139° 01.7' 12° 50.6' S
22	153° 42.6' 09° 41.9' S	153° 45.4' 10° 03.6' S	153° 48.0' 10° 25.2' S	153° 50.5' 10° 46.6' S	153° 52.8' 11° 07.8' S	153° 54.9' 11° 28.9' S	153° 56.9' 11° 49.8' S	153° 58.7' 12° 10.5' S	154° 00.3' 12° 31.1' S	154° 01.8' 12° 51.4' S
23	168° 42.7' 09° 42.8' S	168° 45.5' 10° 04.5' S	168° 48.1' 10° 26.1' S	168° 50.6' 10° 47.5' S	168° 52.9' 11° 08.7' S	168° 55.0' 11° 29.8' S	168° 57.0' 11° 50.7' S	168° 58.8' 12° 11.4' S	169° 00.4' 12° 31.9' S	169° 01.8' 12° 52.3' S

Solar Almanac 2028 — Sun GHA & Decl (UT) — 27 Oct to 15 Nov

UT	27 Oct	28 Oct	29 Oct	30 Oct	31 Oct	01 Nov	02 Nov	03 Nov	04 Nov	05 Nov
00	184° 01.9' 12° 53.1' S	184° 03.1' 13° 13.2' S	184° 04.2' 13° 33.1' S	184° 05.1' 13° 52.8' S	184° 05.8' 14° 12.3' S	184° 06.2' 14° 31.6' S	184° 06.5' 14° 50.6' S	184° 06.6' 15° 09.3' S	184° 06.5' 15° 27.9' S	184° 06.2' 15° 46.1' S
01	199° 01.9' 12° 53.9' S	199° 03.2' 13° 14.1' S	199° 04.2' 13° 34.0' S	199° 05.1' 13° 53.6' S	199° 05.8' 14° 13.1' S	199° 06.3' 14° 32.3' S	199° 06.5' 14° 51.4' S	199° 06.6' 15° 10.1' S	199° 06.5' 15° 28.6' S	199° 06.2' 15° 46.9' S
02	214° 02.0' 12° 54.8' S	214° 03.2' 13° 14.9' S	214° 04.3' 13° 34.8' S	214° 05.1' 13° 54.5' S	214° 05.8' 14° 13.9' S	214° 06.3' 14° 33.1' S	214° 06.5' 14° 52.1' S	214° 06.6' 15° 10.9' S	214° 06.5' 15° 29.4' S	214° 06.1' 15° 47.7' S
03	229° 02.1' 12° 55.6' S	229° 03.3' 13° 15.7' S	229° 04.3' 13° 35.6' S	229° 05.2' 13° 55.3' S	229° 05.8' 14° 14.7' S	229° 06.3' 14° 33.9' S	229° 06.6' 14° 52.9' S	229° 06.6' 15° 11.7' S	229° 06.5' 15° 30.2' S	229° 06.1' 15° 48.4' S
04	244° 02.1' 12° 56.5' S	244° 03.3' 13° 16.6' S	244° 04.4' 13° 36.4' S	244° 05.2' 13° 56.1' S	244° 05.9' 14° 15.5' S	244° 06.3' 14° 34.7' S	244° 06.6' 14° 53.7' S	244° 06.6' 15° 12.4' S	244° 06.5' 15° 30.9' S	244° 06.1' 15° 49.2' S
05	259° 02.2' 12° 57.3' S	259° 03.4' 13° 17.4' S	259° 04.4' 13° 37.3' S	259° 05.2' 13° 56.9' S	259° 05.9' 14° 16.3' S	259° 06.3' 14° 35.5' S	259° 06.6' 14° 54.5' S	259° 06.6' 15° 13.2' S	259° 06.4' 15° 31.7' S	259° 06.1' 15° 49.9' S
06	274° 02.2' 12° 58.1' S	274° 03.4' 13° 18.2' S	274° 04.4' 13° 38.1' S	274° 05.3' 13° 57.7' S	274° 05.9' 14° 17.1' S	274° 06.3' 14° 36.3' S	274° 06.6' 14° 55.3' S	274° 06.6' 15° 14.0' S	274° 06.4' 15° 32.5' S	274° 06.1' 15° 50.7' S
07	289° 02.3' 12° 59.0' S	289° 03.5' 13° 19.0' S	289° 04.5' 13° 38.9' S	289° 05.3' 13° 58.5' S	289° 05.9' 14° 17.9' S	289° 06.3' 14° 37.1' S	289° 06.6' 14° 56.1' S	289° 06.6' 15° 14.8' S	289° 06.4' 15° 33.2' S	289° 06.0' 15° 51.4' S
08	304° 02.3' 12° 59.8' S	304° 03.5' 13° 19.9' S	304° 04.5' 13° 39.7' S	304° 05.3' 13° 59.3' S	304° 05.9' 14° 18.7' S	304° 06.4' 14° 37.9' S	304° 06.6' 14° 56.9' S	304° 06.6' 15° 15.5' S	304° 06.4' 15° 34.0' S	304° 06.0' 15° 52.2' S
09	319° 02.4' 13° 00.7' S	319° 03.6' 13° 20.7' S	319° 04.5' 13° 40.5' S	319° 05.4' 14° 00.2' S	319° 06.0' 14° 19.5' S	319° 06.4' 14° 38.7' S	319° 06.6' 14° 57.6' S	319° 06.6' 15° 16.3' S	319° 06.4' 15° 34.8' S	319° 06.0' 15° 52.9' S
10	334° 02.4' 13° 01.5' S	334° 03.6' 13° 21.5' S	334° 04.6' 13° 41.4' S	334° 05.4' 14° 01.0' S	334° 06.0' 14° 20.4' S	334° 06.4' 14° 39.5' S	334° 06.6' 14° 58.4' S	334° 06.6' 15° 17.1' S	334° 06.4' 15° 35.5' S	334° 06.0' 15° 53.7' S
11	349° 02.5' 13° 02.3' S	349° 03.6' 13° 22.4' S	349° 04.6' 13° 42.2' S	349° 05.4' 14° 01.8' S	349° 06.0' 14° 21.2' S	349° 06.4' 14° 40.3' S	349° 06.6' 14° 59.2' S	349° 06.6' 15° 17.9' S	349° 06.4' 15° 36.3' S	349° 06.0' 15° 54.4' S
12	004° 02.5' 13° 03.2' S	004° 03.7' 13° 23.2' S	004° 04.7' 13° 43.0' S	004° 05.4' 14° 02.6' S	004° 06.0' 14° 22.0' S	004° 06.4' 14° 41.1' S	004° 06.6' 15° 00.0' S	004° 06.6' 15° 18.6' S	004° 06.4' 15° 37.0' S	004° 05.9' 15° 55.2' S
13	019° 02.6' 13° 04.0' S	019° 03.7' 13° 24.0' S	019° 04.7' 13° 43.8' S	019° 05.5' 14° 03.4' S	019° 06.0' 14° 22.8' S	019° 06.4' 14° 41.9' S	019° 06.6' 15° 00.8' S	019° 06.6' 15° 19.4' S	019° 06.3' 15° 37.8' S	019° 05.9' 15° 55.9' S
14	034° 02.6' 13° 04.9' S	034° 03.8' 13° 24.9' S	034° 04.7' 13° 44.6' S	034° 05.5' 14° 04.2' S	034° 06.1' 14° 23.6' S	034° 06.4' 14° 42.7' S	034° 06.6' 15° 01.5' S	034° 06.6' 15° 20.2' S	034° 06.3' 15° 38.6' S	034° 05.9' 15° 56.7' S
15	049° 02.7' 13° 05.7' S	049° 03.8' 13° 25.7' S	049° 04.8' 13° 45.5' S	049° 05.5' 14° 05.0' S	049° 06.1' 14° 24.4' S	049° 06.4' 14° 43.5' S	049° 06.6' 15° 02.3' S	049° 06.6' 15° 20.9' S	049° 06.3' 15° 39.3' S	049° 05.9' 15° 57.4' S
16	064° 02.7' 13° 06.5' S	064° 03.9' 13° 26.5' S	064° 04.8' 13° 46.3' S	064° 05.6' 14° 05.8' S	064° 06.1' 14° 25.2' S	064° 06.5' 14° 44.3' S	064° 06.6' 15° 03.1' S	064° 06.6' 15° 21.7' S	064° 06.3' 15° 40.1' S	064° 05.8' 15° 58.2' S
17	079° 02.8' 13° 07.4' S	079° 03.9' 13° 27.3' S	079° 04.8' 13° 47.1' S	079° 05.6' 14° 06.6' S	079° 06.1' 14° 26.0' S	079° 06.5' 14° 45.0' S	079° 06.6' 15° 03.9' S	079° 06.6' 15° 22.5' S	079° 06.3' 15° 40.8' S	079° 05.8' 15° 58.9' S
18	094° 02.8' 13° 08.2' S	094° 04.0' 13° 28.2' S	094° 04.9' 13° 47.9' S	094° 05.6' 14° 07.5' S	094° 06.1' 14° 26.8' S	094° 06.5' 14° 45.8' S	094° 06.6' 15° 04.7' S	094° 06.5' 15° 23.3' S	094° 06.3' 15° 41.6' S	094° 05.8' 15° 59.7' S
19	109° 02.9' 13° 09.0' S	109° 04.0' 13° 29.0' S	109° 04.9' 13° 48.7' S	109° 05.6' 14° 08.3' S	109° 06.2' 14° 27.6' S	109° 06.5' 14° 46.6' S	109° 06.6' 15° 05.4' S	109° 06.5' 15° 24.0' S	109° 06.3' 15° 42.4' S	109° 05.8' 16° 00.4' S
20	124° 02.9' 13° 09.9' S	124° 04.0' 13° 29.8' S	124° 04.9' 13° 49.6' S	124° 05.7' 14° 09.1' S	124° 06.2' 14° 28.4' S	124° 06.5' 14° 47.4' S	124° 06.6' 15° 06.2' S	124° 06.5' 15° 24.8' S	124° 06.2' 15° 43.1' S	124° 05.7' 16° 01.2' S
21	139° 03.0' 13° 10.7' S	139° 04.1' 13° 30.7' S	139° 05.0' 13° 50.4' S	139° 05.7' 14° 09.9' S	139° 06.2' 14° 29.2' S	139° 06.5' 14° 48.2' S	139° 06.6' 15° 07.0' S	139° 06.5' 15° 25.6' S	139° 06.2' 15° 43.9' S	139° 05.7' 16° 01.9' S
22	154° 03.0' 13° 11.5' S	154° 04.1' 13° 31.5' S	154° 05.0' 13° 51.2' S	154° 05.7' 14° 10.7' S	154° 06.2' 14° 30.0' S	154° 06.5' 14° 49.0' S	154° 06.6' 15° 07.8' S	154° 06.5' 15° 26.3' S	154° 06.2' 15° 44.6' S	154° 05.7' 16° 02.7' S
23	169° 03.1' 13° 12.4' S	169° 04.2' 13° 32.3' S	169° 05.0' 13° 52.0' S	169° 05.7' 14° 11.5' S	169° 06.2' 14° 30.8' S	169° 06.5' 14° 49.8' S	169° 06.6' 15° 08.6' S	169° 06.5' 15° 27.1' S	169° 06.2' 15° 45.4' S	169° 05.7' 16° 03.4' S

UT	06 Nov	07 Nov	08 Nov	09 Nov	10 Nov	11 Nov	12 Nov	13 Nov	14 Nov	15 Nov
00	184° 05.6' 16° 04.2' S	184° 04.9' 16° 21.9' S	184° 03.9' 16° 39.4' S	184° 02.8' 16° 56.6' S	184° 01.4' 17° 13.5' S	183° 59.7' 17° 30.1' S	183° 57.9' 17° 46.4' S	183° 55.9' 18° 02.4' S	183° 53.6' 18° 18.1' S	183° 51.1' 18° 33.5' S
01	199° 05.6' 16° 04.9' S	199° 04.9' 16° 22.6' S	199° 03.9' 16° 40.1' S	199° 02.7' 16° 57.3' S	199° 01.3' 17° 14.2' S	198° 59.7' 17° 30.8' S	198° 57.8' 17° 47.1' S	198° 55.8' 18° 03.1' S	198° 53.5' 18° 18.8' S	198° 51.0' 18° 34.1' S
02	214° 05.6' 16° 05.6' S	214° 04.8' 16° 23.4' S	214° 03.8' 16° 40.8' S	214° 02.6' 16° 58.0' S	214° 01.2' 17° 14.9' S	213° 59.6' 17° 31.5' S	213° 57.8' 17° 47.8' S	213° 55.7' 18° 03.8' S	213° 53.4' 18° 19.4' S	213° 50.9' 18° 34.8' S
03	229° 05.6' 16° 06.4' S	229° 04.8' 16° 24.1' S	229° 03.8' 16° 41.6' S	229° 02.6' 16° 58.7' S	229° 01.2' 17° 15.6' S	228° 59.5' 17° 32.2' S	228° 57.7' 17° 48.4' S	228° 55.6' 18° 04.5' S	228° 53.3' 18° 20.1' S	228° 50.8' 18° 35.4' S
04	244° 05.5' 16° 07.1' S	244° 04.7' 16° 24.8' S	244° 03.7' 16° 42.3' S	244° 02.5' 16° 59.4' S	244° 01.1' 17° 16.3' S	243° 59.5' 17° 32.8' S	243° 57.6' 17° 49.1' S	243° 55.5' 18° 05.1' S	243° 53.2' 18° 20.7' S	243° 50.7' 18° 36.0' S
05	259° 05.5' 16° 07.9' S	259° 04.7' 16° 25.6' S	259° 03.7' 16° 43.0' S	259° 02.5' 17° 00.1' S	259° 01.0' 17° 17.0' S	258° 59.4' 17° 33.5' S	258° 57.5' 17° 49.8' S	258° 55.4' 18° 05.7' S	258° 53.1' 18° 21.4' S	258° 50.6' 18° 36.7' S
06	274° 05.5' 16° 08.6' S	274° 04.7' 16° 26.3' S	274° 03.7' 16° 43.7' S	274° 02.4' 17° 00.8' S	274° 01.0' 17° 17.7' S	273° 59.3' 17° 34.2' S	273° 57.4' 17° 50.5' S	273° 55.3' 18° 06.4' S	273° 53.0' 18° 22.0' S	273° 50.5' 18° 37.3' S
07	289° 05.4' 16° 09.4' S	289° 04.6' 16° 27.0' S	289° 03.6' 16° 44.4' S	289° 02.4' 17° 01.5' S	289° 00.9' 17° 18.4' S	288° 59.2' 17° 34.9' S	288° 57.3' 17° 51.1' S	288° 55.2' 18° 07.0' S	288° 52.9' 18° 22.6' S	288° 50.4' 18° 37.9' S
08	304° 05.4' 16° 10.1' S	304° 04.6' 16° 27.8' S	304° 03.6' 16° 45.1' S	304° 02.3' 17° 02.3' S	304° 00.8' 17° 19.1' S	303° 59.2' 17° 35.6' S	303° 57.3' 17° 51.8' S	303° 55.1' 18° 07.7' S	303° 52.8' 18° 23.3' S	303° 50.3' 18° 38.5' S
09	319° 05.4' 16° 10.8' S	319° 04.6' 16° 28.5' S	319° 03.5' 16° 45.9' S	319° 02.3' 17° 03.0' S	319° 00.8' 17° 19.8' S	318° 59.1' 17° 36.3' S	318° 57.2' 17° 52.5' S	318° 55.1' 18° 08.4' S	318° 52.7' 18° 23.9' S	318° 50.1' 18° 39.2' S
10	334° 05.4' 16° 11.6' S	334° 04.5' 16° 29.2' S	334° 03.5' 16° 46.6' S	334° 02.2' 17° 03.7' S	334° 00.7' 17° 20.5' S	333° 59.0' 17° 36.9' S	333° 57.1' 17° 53.1' S	333° 55.0' 18° 09.0' S	333° 52.6' 18° 24.6' S	333° 50.0' 18° 39.8' S
11	349° 05.3' 16° 12.3' S	349° 04.5' 16° 30.0' S	349° 03.4' 16° 47.3' S	349° 02.1' 17° 04.4' S	349° 00.6' 17° 21.1' S	348° 58.9' 17° 37.6' S	348° 57.0' 17° 53.8' S	348° 54.9' 18° 09.7' S	348° 52.5' 18° 25.2' S	348° 49.9' 18° 40.4' S
12	004° 05.3' 16° 13.1' S	004° 04.4' 16° 30.7' S	004° 03.4' 16° 48.0' S	004° 02.1' 17° 05.1' S	004° 00.6' 17° 21.8' S	003° 58.9' 17° 38.3' S	003° 56.9' 17° 54.5' S	003° 54.8' 18° 10.3' S	003° 52.4' 18° 25.9' S	003° 49.8' 18° 41.1' S
13	019° 05.3' 16° 13.8' S	019° 04.4' 16° 31.4' S	019° 03.3' 16° 48.7' S	019° 02.0' 17° 05.8' S	019° 00.5' 17° 22.5' S	018° 58.8' 17° 39.0' S	018° 56.8' 17° 55.1' S	018° 54.7' 18° 11.0' S	018° 52.3' 18° 26.5' S	018° 49.7' 18° 41.7' S
14	034° 05.2' 16° 14.5' S	034° 04.4' 16° 32.1' S	034° 03.3' 16° 49.5' S	034° 02.0' 17° 06.5' S	034° 00.4' 17° 23.2' S	033° 58.7' 17° 39.7' S	033° 56.8' 17° 55.8' S	033° 54.6' 18° 11.6' S	033° 52.2' 18° 27.1' S	033° 49.6' 18° 42.3' S
15	049° 05.2' 16° 15.3' S	049° 04.3' 16° 32.9' S	049° 03.2' 16° 50.2' S	049° 01.9' 17° 07.2' S	049° 00.4' 17° 23.9' S	048° 58.6' 17° 40.3' S	048° 56.7' 17° 56.5' S	048° 54.5' 18° 12.3' S	048° 52.1' 18° 27.8' S	048° 49.5' 18° 42.9' S
16	064° 05.2' 16° 16.0' S	064° 04.3' 16° 33.6' S	064° 03.2' 16° 50.9' S	064° 01.8' 17° 07.9' S	064° 00.3' 17° 24.6' S	063° 58.6' 17° 41.0' S	063° 56.6' 17° 57.1' S	063° 54.4' 18° 12.9' S	063° 52.0' 18° 28.4' S	063° 49.4' 18° 43.6' S
17	079° 05.1' 16° 16.8' S	079° 04.2' 16° 34.3' S	079° 03.1' 16° 51.6' S	079° 01.8' 17° 08.6' S	079° 00.2' 17° 25.3' S	078° 58.5' 17° 41.7' S	078° 56.5' 17° 57.8' S	078° 54.3' 18° 13.6' S	078° 51.9' 18° 29.0' S	078° 49.2' 18° 44.2' S
18	094° 05.1' 16° 17.5' S	094° 04.2' 16° 35.0' S	094° 03.1' 16° 52.3' S	094° 01.7' 17° 09.3' S	094° 00.2' 17° 26.0' S	093° 58.4' 17° 42.4' S	093° 56.4' 17° 58.5' S	093° 54.2' 18° 14.2' S	093° 51.8' 18° 29.7' S	093° 49.1' 18° 44.8' S
19	109° 05.1' 16° 18.									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 16 Nov to 05 Dec

UT	16 Nov	17 Nov	18 Nov	19 Nov	20 Nov	21 Nov	22 Nov	23 Nov	24 Nov	25 Nov
00	183° 48.4' 18° 48.5' S	183° 45.5' 19° 03.3' S	183° 42.4' 19° 17.6' S	183° 39.1' 19° 31.6' S	183° 35.6' 19° 45.3' S	183° 31.9' 19° 58.6' S	183° 28.0' 20° 11.6' S	183° 23.9' 20° 24.1' S	183° 19.6' 20° 36.3' S	183° 15.1' 20° 48.2' S
01	198° 48.3' 18° 49.2' S	198° 45.4' 19° 03.9' S	198° 42.3' 19° 18.2' S	198° 39.0' 19° 32.2' S	198° 35.4' 19° 45.9' S	198° 31.7' 19° 59.2' S	198° 27.8' 20° 12.1' S	198° 23.7' 20° 24.7' S	198° 19.4' 20° 36.8' S	198° 14.9' 20° 48.6' S
02	213° 48.2' 18° 49.8' S	213° 45.3' 19° 04.5' S	213° 42.2' 19° 18.8' S	213° 38.8' 19° 32.8' S	213° 35.3' 19° 46.4' S	213° 31.6' 19° 59.7' S	213° 27.6' 20° 12.6' S	213° 23.5' 20° 25.2' S	213° 19.2' 20° 37.3' S	213° 14.7' 20° 49.1' S
03	228° 48.1' 18° 50.4' S	228° 45.2' 19° 05.1' S	228° 42.0' 19° 19.4' S	228° 38.7' 19° 33.4' S	228° 35.1' 19° 47.0' S	228° 31.4' 19° 59.7' S	228° 27.5' 20° 10.3' S	228° 23.3' 20° 22.7' S	228° 19.0' 20° 34.8' S	228° 14.5' 20° 46.9' S
04	243° 48.0' 18° 51.0' S	243° 45.0' 19° 05.7' S	243° 41.9' 19° 20.0' S	243° 38.5' 19° 34.0' S	243° 35.0' 19° 47.6' S	243° 31.2' 20° 00.8' S	243° 27.3' 20° 13.7' S	243° 23.2' 20° 26.2' S	243° 18.8' 20° 38.3' S	243° 14.3' 20° 50.1' S
05	258° 47.9' 18° 51.6' S	258° 44.9' 19° 06.3' S	258° 41.8' 19° 20.6' S	258° 38.4' 19° 34.5' S	258° 34.8' 19° 48.1' S	258° 31.1' 20° 01.4' S	258° 27.1' 20° 14.2' S	258° 23.0' 20° 26.7' S	258° 18.7' 20° 38.8' S	258° 14.1' 20° 50.6' S
06	273° 47.7' 18° 52.3' S	273° 44.8' 19° 06.9' S	273° 41.6' 19° 21.2' S	273° 38.3' 19° 35.1' S	273° 34.7' 19° 48.7' S	273° 30.9' 20° 01.9' S	273° 27.0' 20° 14.8' S	273° 22.8' 20° 27.2' S	273° 18.5' 20° 39.3' S	273° 13.9' 20° 51.1' S
07	288° 47.6' 18° 52.9' S	288° 44.7' 19° 07.5' S	288° 41.5' 19° 21.8' S	288° 38.1' 19° 35.7' S	288° 34.5' 19° 49.2' S	288° 30.8' 20° 02.4' S	288° 26.8' 20° 15.3' S	288° 22.6' 20° 27.7' S	288° 18.3' 20° 39.8' S	288° 13.8' 20° 51.5' S
08	303° 47.5' 18° 53.5' S	303° 44.5' 19° 08.1' S	303° 41.3' 19° 22.3' S	303° 38.0' 19° 36.2' S	303° 34.4' 19° 49.8' S	303° 30.6' 20° 03.0' S	303° 26.6' 20° 15.8' S	303° 22.5' 20° 28.3' S	303° 18.1' 20° 40.3' S	303° 13.6' 20° 52.0' S
09	318° 47.4' 18° 54.1' S	318° 44.4' 19° 08.7' S	318° 41.2' 19° 22.9' S	318° 37.8' 19° 36.8' S	318° 34.2' 19° 50.4' S	318° 30.4' 20° 03.5' S	318° 26.5' 20° 16.3' S	318° 22.3' 20° 28.8' S	318° 17.9' 20° 40.8' S	318° 13.4' 20° 52.5' S
10	333° 47.3' 18° 54.7' S	333° 44.3' 19° 09.3' S	333° 41.1' 19° 23.5' S	333° 37.7' 19° 37.4' S	333° 34.1' 19° 50.9' S	333° 30.3' 20° 04.1' S	333° 26.3' 20° 16.9' S	333° 22.1' 20° 29.3' S	333° 17.7' 20° 41.3' S	333° 13.2' 20° 53.0' S
11	348° 47.1' 18° 55.3' S	348° 44.1' 19° 09.9' S	348° 40.9' 19° 24.1' S	348° 37.5' 19° 38.0' S	348° 33.9' 19° 51.5' S	348° 30.1' 20° 04.6' S	348° 26.1' 20° 17.4' S	348° 21.9' 20° 29.8' S	348° 17.5' 20° 41.8' S	348° 13.0' 20° 53.4' S
12	003° 47.0' 18° 55.9' S	003° 44.0' 19° 10.5' S	003° 40.8' 19° 24.7' S	003° 37.4' 19° 38.5' S	003° 33.8' 19° 52.0' S	003° 30.0' 20° 05.1' S	003° 25.9' 20° 17.9' S	003° 21.7' 20° 30.3' S	003° 17.4' 20° 42.3' S	003° 12.8' 20° 53.9' S
13	018° 46.9' 18° 56.6' S	018° 43.9' 19° 11.1' S	018° 40.7' 19° 25.3' S	018° 37.2' 19° 39.1' S	018° 33.6' 19° 52.6' S	018° 29.8' 20° 05.7' S	018° 25.8' 20° 18.4' S	018° 21.6' 20° 30.8' S	018° 17.2' 20° 42.8' S	018° 12.6' 20° 54.4' S
14	033° 46.8' 18° 57.2' S	033° 43.8' 19° 11.7' S	033° 40.5' 19° 25.8' S	033° 37.1' 19° 39.7' S	033° 33.5' 19° 53.1' S	033° 29.6' 20° 06.2' S	033° 25.6' 20° 19.0' S	033° 21.4' 20° 31.3' S	033° 17.0' 20° 43.3' S	033° 12.4' 20° 54.9' S
15	048° 46.7' 18° 57.8' S	048° 43.6' 19° 12.3' S	048° 40.4' 19° 26.4' S	048° 36.9' 19° 40.2' S	048° 33.3' 19° 53.7' S	048° 29.5' 20° 06.8' S	048° 25.4' 20° 19.5' S	048° 21.2' 20° 31.8' S	048° 16.8' 20° 43.8' S	048° 12.2' 20° 55.3' S
16	063° 46.5' 18° 58.4' S	063° 43.5' 19° 12.9' S	063° 40.2' 19° 27.0' S	063° 36.8' 19° 40.8' S	063° 33.1' 19° 54.2' S	063° 29.3' 20° 07.3' S	063° 25.3' 20° 20.0' S	063° 21.0' 20° 32.3' S	063° 16.6' 20° 44.3' S	063° 12.0' 20° 55.8' S
17	078° 46.4' 18° 59.0' S	078° 43.4' 19° 13.5' S	078° 40.1' 19° 27.6' S	078° 36.6' 19° 41.4' S	078° 33.0' 19° 54.8' S	078° 29.1' 20° 07.8' S	078° 25.1' 20° 20.5' S	078° 20.8' 20° 32.8' S	078° 16.4' 20° 44.8' S	078° 11.8' 20° 56.3' S
18	093° 46.3' 18° 59.6' S	093° 43.2' 19° 14.1' S	093° 40.0' 19° 28.2' S	093° 36.5' 19° 41.9' S	093° 32.8' 19° 55.3' S	093° 29.0' 20° 08.4' S	093° 24.9' 20° 21.0' S	093° 20.7' 20° 33.3' S	093° 16.2' 20° 45.2' S	093° 11.6' 20° 56.8' S
19	108° 46.2' 19° 00.2' S	108° 43.1' 19° 14.7' S	108° 39.8' 19° 28.8' S	108° 36.3' 19° 42.5' S	108° 32.7' 19° 55.9' S	108° 28.8' 20° 08.9' S	108° 24.7' 20° 21.6' S	108° 20.5' 20° 33.8' S	108° 16.0' 20° 45.7' S	108° 11.4' 20° 57.2' S
20	123° 46.0' 19° 00.8' S	123° 43.0' 19° 15.3' S	123° 39.7' 19° 29.3' S	123° 36.2' 19° 43.1' S	123° 32.5' 19° 56.4' S	123° 28.6' 20° 09.4' S	123° 24.6' 20° 22.1' S	123° 20.3' 20° 34.3' S	123° 15.9' 20° 46.2' S	123° 11.2' 20° 57.7' S
21	138° 45.9' 19° 01.4' S	138° 42.8' 19° 15.8' S	138° 39.5' 19° 29.9' S	138° 36.1' 19° 43.6' S	138° 32.4' 19° 57.0' S	138° 28.5' 20° 10.0' S	138° 24.4' 20° 22.6' S	138° 20.1' 20° 34.8' S	138° 15.7' 20° 46.7' S	138° 11.0' 20° 58.2' S
22	153° 45.8' 19° 02.0' S	153° 42.7' 19° 16.4' S	153° 39.4' 19° 30.5' S	153° 35.9' 19° 44.2' S	153° 32.2' 19° 57.5' S	153° 28.3' 20° 10.5' S	153° 24.2' 20° 23.1' S	153° 19.9' 20° 35.3' S	153° 15.5' 20° 47.2' S	153° 10.8' 20° 58.6' S
23	168° 45.7' 19° 02.6' S	168° 42.6' 19° 17.0' S	168° 39.3' 19° 31.1' S	168° 35.8' 19° 44.8' S	168° 32.0' 19° 58.1' S	168° 28.1' 20° 11.0' S	168° 24.0' 20° 23.6' S	168° 19.8' 20° 35.8' S	168° 15.3' 20° 47.7' S	168° 10.6' 20° 59.1' S

UT	26 Nov	27 Nov	28 Nov	29 Nov	30 Nov	01 Dec	02 Dec	03 Dec	04 Dec	05 Dec
00	183° 10.4' 20° 59.6' S	183° 05.6' 21° 10.6' S	183° 00.6' 21° 21.2' S	182° 55.4' 21° 31.5' S	182° 50.0' 21° 41.3' S	182° 44.5' 21° 50.7' S	182° 38.8' 21° 59.7' S	182° 33.0' 22° 08.3' S	182° 27.0' 22° 16.4' S	182° 20.9' 22° 24.1' S
01	198° 10.2' 21° 00.1' S	198° 05.4' 21° 11.1' S	198° 00.4' 21° 21.7' S	197° 55.2' 21° 31.9' S	197° 49.8' 21° 41.7' S	197° 44.3' 21° 51.1' S	197° 38.6' 22° 00.1' S	197° 32.8' 22° 08.6' S	197° 26.8' 22° 16.7' S	197° 20.6' 22° 24.4' S
02	213° 10.0' 21° 00.5' S	213° 05.2' 21° 11.5' S	213° 00.1' 21° 22.1' S	212° 54.9' 21° 32.3' S	212° 49.6' 21° 42.1' S	212° 44.0' 21° 51.5' S	212° 38.3' 22° 00.4' S	212° 32.5' 22° 09.0' S	212° 26.5' 22° 17.1' S	212° 20.4' 22° 24.7' S
03	228° 09.8' 21° 01.0' S	228° 05.0' 21° 12.0' S	227° 59.9' 21° 22.5' S	227° 54.7' 21° 32.7' S	227° 49.3' 21° 42.5' S	227° 43.8' 21° 51.9' S	227° 38.1' 22° 00.8' S	227° 32.3' 22° 09.3' S	227° 26.3' 22° 17.4' S	227° 20.1' 22° 25.0' S
04	243° 09.6' 21° 01.5' S	243° 04.8' 21° 12.4' S	242° 59.7' 21° 23.0' S	242° 54.5' 21° 33.1' S	242° 49.1' 21° 42.9' S	242° 43.6' 21° 52.2' S	242° 37.9' 22° 01.2' S	242° 32.0' 22° 09.6' S	242° 26.0' 22° 17.7' S	242° 19.9' 22° 25.4' S
05	258° 09.4' 21° 01.9' S	258° 04.6' 21° 12.9' S	257° 59.5' 21° 23.4' S	257° 54.3' 21° 33.6' S	257° 48.9' 21° 43.3' S	257° 43.3' 21° 52.6' S	257° 37.6' 22° 01.5' S	257° 31.8' 22° 10.0' S	257° 25.8' 22° 18.0' S	257° 19.6' 22° 25.7' S
06	273° 09.2' 21° 02.4' S	273° 04.4' 21° 13.3' S	272° 59.3' 21° 23.8' S	272° 54.1' 21° 34.0' S	272° 48.7' 21° 43.7' S	272° 43.1' 21° 53.0' S	272° 37.4' 22° 01.9' S	272° 31.5' 22° 10.3' S	272° 25.5' 22° 18.4' S	272° 19.3' 22° 26.0' S
07	288° 09.0' 21° 02.8' S	288° 04.1' 21° 13.8' S	287° 59.1' 21° 24.3' S	287° 53.8' 21° 34.4' S	287° 48.4' 21° 44.1' S	287° 42.9' 21° 53.4' S	287° 37.1' 22° 02.2' S	287° 31.3' 22° 10.7' S	287° 25.2' 22° 18.7' S	287° 19.1' 22° 26.3' S
08	303° 08.8' 21° 03.3' S	303° 03.9' 21° 14.2' S	302° 58.9' 21° 24.7' S	302° 53.6' 21° 34.8' S	302° 48.2' 21° 44.5' S	302° 42.6' 21° 53.7' S	302° 36.9' 22° 02.6' S	302° 31.0' 22° 11.0' S	302° 25.0' 22° 19.0' S	302° 18.8' 22° 26.6' S
09	318° 08.6' 21° 03.8' S	318° 03.7' 21° 14.6' S	317° 58.6' 21° 25.1' S	317° 53.4' 21° 35.2' S	317° 48.0' 21° 44.9' S	317° 42.4' 21° 54.1' S	317° 36.7' 22° 03.0' S	317° 30.8' 22° 11.4' S	317° 24.7' 22° 19.3' S	317° 18.6' 22° 26.9' S
10	333° 08.4' 21° 04.2' S	333° 03.5' 21° 15.1' S	332° 58.4' 21° 25.6' S	332° 53.2' 21° 35.6' S	332° 47.7' 21° 45.3' S	332° 42.2' 21° 54.5' S	332° 36.4' 22° 03.3' S	332° 30.5' 22° 11.7' S	332° 24.5' 22° 19.7' S	332° 18.3' 22° 27.2' S
11	348° 08.2' 21° 04.7' S	348° 03.3' 21° 15.5' S	347° 58.2' 21° 26.0' S	347° 52.9' 21° 36.0' S	347° 47.5' 21° 45.7' S	347° 41.9' 21° 54.9' S	347° 36.2' 22° 03.7' S	347° 30.3' 22° 12.0' S	347° 24.2' 22° 20.0' S	347° 18.0' 22° 27.5' S
12	003° 08.0' 21° 05.1' S	003° 03.1' 21° 16.0' S	002° 58.0' 21° 26.4' S	002° 52.7' 21° 36.4' S	002° 47.3' 21° 46.1' S	002° 41.7' 21° 55.3' S	002° 35.9' 22° 04.0' S	002° 30.0' 22° 12.4' S	002° 24.0' 22° 20.3' S	002° 17.8' 22° 27.8' S
13	018° 07.8' 21° 05.6' S	018° 02.9' 21° 16.4' S	017° 57.8' 21° 26.8' S	017° 52.5' 21° 36.8' S	017° 47.1' 21° 46.4' S	017° 41.5' 21° 55.6' S	017° 35.7' 22° 04.4' S	017° 29.8' 22° 12.7' S	017° 23.7' 22° 20.6' S	017° 17.5' 22° 28.1' S
14	033° 07.6' 21° 06.1' S	033° 02.7' 21° 16.9' S	032° 57.6' 21° 27.3' S	032° 52.3' 21° 37.3' S	032° 46.8' 21° 46.8' S	032° 41.2' 21° 56.0' S	032° 35.4' 22° 04.7' S	032° 29.5' 22° 13.1' S	032° 23.5' 22° 21.0' S	032° 17.2' 22° 28.4' S
15	048° 07.4' 21° 06.5' S	048° 02.5' 21° 17.3' S	047° 57.3' 21° 27.7' S	047° 52.1' 21° 37.7' S	047° 46.6' 21° 47.2' S	047° 41.0' 21° 56.4' S	047° 35.2' 22° 05.1' S	047° 29.3' 22° 13.4' S	047° 23.2' 22° 21.3' S	047° 17.0' 22° 28.7' S
16	063° 07.2' 21° 07.0' S	063° 02.3' 21° 17.7' S	062° 57.1' 21° 28.1' S	062° 51.8' 21° 38.1' S	062° 46.4' 21° 47.6' S	062° 40.7' 21° 56.7' S	062° 35.0' 22° 05.5' S	062° 29.0' 22° 13.7' S	062° 22.9' 22° 21.6' S	062° 16.7' 22° 29.0' S
17	078° 07.0' 21° 07.4' S	078° 02.1' 21° 18.2' S	077° 56.9' 21° 28.5' S	077° 51.6' 21° 38.5' S	077° 46.1' 21° 48.0' S	077° 40.5' 21° 57.1' S	077° 34.7' 22° 05.8' S	077° 28.8' 22° 14.1' S	077° 22.7' 22° 21.9' S	077° 16.5' 22° 29.3' S
18	093° 06.8' 21° 07.9' S	093° 01.8' 21° 18.6' S	092° 56.7' 21° 29.0' S	092° 51.4' 21° 38.9' S	092° 45.9' 21° 48.4' S	092° 40.3' 21° 57.5' S	092° 34.5' 22° 06.2' S	092° 28.5' 22° 14.4' S	092° 22.4' 22° 22.2' S	092° 16.2' 22° 29.6' S
19	108° 06.6' 21° 08.3' S	108° 01.6' 21° 19.1' S	107° 56.5' 21° 29.4' S	107° 51.2' 21° 39.3' S	107° 45.7' 21° 48.8' S	107° 40.0' 21° 57.9' S	107° 34.2' 22° 06.5' S	107° 28.3' 22° 14.7' S	107° 22.2' 22° 22.5' S	107° 15.9' 22° 29.9' S
20	123° 06.4' 21° 08.8' S	123° 01.4' 21° 19.5' S	122° 56.3' 21° 29.8' S	122° 50.9' 21° 39.7' S	122° 45.4' 21° 49.2' S	122° 39.8' 21° 58.2' S	122° 34.0' 22° 06.9' S	122° 28.0' 22° 15.1' S	122° 21.9' 22° 22.9' S	122° 15.7' 22° 30.2' S
21	138° 06.2' 21° 09.3' S	138° 01.2' 21° 19.9' S	137° 56.0' 21° 30.2' S	137° 50.7' 21° 40.1' S	137° 45.2' 21° 49.6' S	137° 39.5' 21° 58.6' S	137° 33.7' 22° 07.2' S	137° 27.8' 22° 15.4' S	137° 21.7' 22° 23.2' S	137° 15.4' 22° 30.5' S
22	153° 06.0' 21° 09.7' S	153° 01.0' 21° 20.4' S	152° 55.8' 21° 30.6' S	152° 50.5' 21° 40.5' S	152° 45.0' 21° 49.9' S	152° 39.3' 21° 59.0' S	152° 33.5' 22° 07.6' S	152° 27.5' 22° 15.7' S	152° 21.4' 22° 23.5' S	152° 15.1' 22° 30.8' S
23	168° 05.8' 21° 10.2' S	168° 00.8' 21° 20.8' S	167° 55.6' 21° 31.1' S	167° 50.3' 21° 40.9' S	167° 44.7' 21° 50.3' S	167° 39.1' 21° 59.3' S	167° 33.2' 22° 07.9' S	167° 27.3' 22° 16.1' S	167° 21.1' 22° 23.8' S	167° 14.9' 22° 31.1' S

Solar Almanac 2028 — Sun GHA & Decl (UT) — 06 Dec to 25 Dec

UT	06 Dec	07 Dec	08 Dec	09 Dec	10 Dec	11 Dec	12 Dec	13 Dec	14 Dec	15 Dec
00	182° 14,6' 22° 31,4' S	182° 08,2' 22° 38,2' S	182° 01,7' 22° 44,6' S	181° 55,0' 22° 50,6' S	181° 48,3' 22° 56,1' S	181° 41,4' 23° 01,1' S	181° 34,4' 23° 05,7' S	181° 27,4' 23° 09,8' S	181° 20,2' 23° 13,5' S	181° 13,0' 23° 16,7' S
01	197° 14,4' 22° 31,7' S	197° 08,0' 22° 38,5' S	197° 01,4' 22° 44,9' S	196° 54,8' 22° 50,8' S	196° 48,0' 22° 56,3' S	196° 41,1' 23° 01,3' S	196° 34,1' 23° 05,9' S	196° 27,1' 23° 10,0' S	196° 19,9' 23° 13,6' S	196° 12,7' 23° 16,8' S
02	212° 14,1' 22° 32,0' S	212° 07,7' 22° 38,8' S	212° 01,1' 22° 45,1' S	211° 54,5' 22° 51,0' S	211° 47,7' 22° 56,5' S	211° 40,8' 23° 01,5' S	211° 33,9' 23° 06,1' S	211° 26,8' 23° 10,2' S	211° 19,6' 23° 13,8' S	211° 12,4' 23° 16,9' S
03	227° 13,8' 22° 32,3' S	227° 07,4' 22° 39,1' S	227° 00,9' 22° 45,4' S	226° 54,2' 22° 51,3' S	226° 47,4' 22° 56,7' S	226° 40,5' 23° 01,7' S	226° 33,6' 23° 06,2' S	226° 26,5' 23° 10,3' S	226° 19,3' 23° 13,9' S	226° 12,1' 23° 17,1' S
04	242° 13,6' 22° 32,6' S	242° 07,1' 22° 39,3' S	242° 00,6' 22° 45,6' S	241° 53,9' 22° 51,5' S	241° 47,1' 22° 56,9' S	241° 40,3' 23° 01,9' S	241° 33,3' 23° 06,4' S	241° 26,2' 23° 10,5' S	241° 19,0' 23° 14,1' S	241° 11,8' 23° 17,2' S
05	257° 13,3' 22° 32,9' S	257° 06,9' 22° 39,6' S	257° 00,3' 22° 45,9' S	256° 53,6' 22° 51,8' S	256° 46,9' 22° 57,2' S	256° 40,0' 23° 02,1' S	256° 33,0' 23° 06,6' S	256° 25,9' 23° 10,6' S	256° 18,7' 23° 14,2' S	256° 11,5' 23° 17,3' S
06	272° 13,0' 22° 33,1' S	272° 06,6' 22° 39,9' S	272° 00,0' 22° 46,2' S	271° 53,4' 22° 52,0' S	271° 46,6' 22° 57,4' S	271° 39,7' 23° 02,3' S	271° 32,7' 23° 06,8' S	271° 25,6' 23° 10,8' S	271° 18,4' 23° 14,3' S	271° 11,2' 23° 17,4' S
07	287° 12,8' 22° 33,4' S	287° 06,3' 22° 40,1' S	286° 59,8' 22° 46,4' S	286° 53,1' 22° 52,2' S	286° 46,3' 22° 57,6' S	286° 39,4' 23° 02,5' S	286° 32,4' 23° 07,0' S	286° 25,3' 23° 10,9' S	286° 18,1' 23° 14,5' S	286° 10,9' 23° 17,5' S
08	302° 12,5' 22° 33,7' S	302° 06,1' 22° 40,4' S	301° 59,5' 22° 46,7' S	301° 52,8' 22° 52,5' S	301° 46,0' 22° 57,8' S	301° 39,1' 23° 02,7' S	301° 32,1' 23° 07,1' S	301° 25,0' 23° 11,1' S	301° 17,8' 23° 14,6' S	301° 10,6' 23° 17,7' S
09	317° 12,2' 22° 34,0' S	317° 05,8' 22° 40,7' S	316° 59,2' 22° 46,9' S	316° 52,5' 22° 52,7' S	316° 45,7' 22° 58,0' S	316° 38,8' 23° 02,9' S	316° 31,8' 23° 07,3' S	316° 24,7' 23° 11,3' S	316° 17,5' 23° 14,8' S	316° 10,3' 23° 17,8' S
10	332° 12,0' 22° 34,3' S	332° 05,5' 22° 40,9' S	331° 58,9' 22° 47,2' S	331° 52,2' 22° 52,9' S	331° 45,4' 22° 58,2' S	331° 38,5' 23° 03,1' S	331° 31,5' 23° 07,5' S	331° 24,4' 23° 11,4' S	331° 17,2' 23° 14,9' S	331° 10,0' 23° 17,9' S
11	347° 11,7' 22° 34,6' S	347° 05,2' 22° 41,2' S	346° 58,7' 22° 47,4' S	346° 52,0' 22° 53,1' S	346° 45,1' 22° 58,4' S	346° 38,2' 23° 03,3' S	346° 31,2' 23° 07,6' S	346° 24,1' 23° 11,6' S	346° 16,9' 23° 15,0' S	346° 09,7' 23° 18,0' S
12	002° 11,4' 22° 34,9' S	002° 05,0' 22° 41,5' S	001° 58,4' 22° 47,7' S	001° 51,7' 22° 53,4' S	001° 44,9' 22° 58,6' S	001° 37,9' 23° 03,5' S	001° 30,9' 23° 07,8' S	001° 23,8' 23° 11,7' S	001° 16,6' 23° 15,2' S	001° 09,4' 23° 18,1' S
13	017° 11,2' 22° 35,1' S	017° 04,7' 22° 41,7' S	016° 58,1' 22° 47,9' S	016° 51,4' 22° 53,6' S	016° 44,6' 22° 58,9' S	016° 37,6' 23° 03,7' S	016° 30,6' 23° 08,0' S	016° 23,5' 23° 11,9' S	016° 16,3' 23° 15,3' S	016° 09,1' 23° 18,2' S
14	032° 10,9' 22° 35,4' S	032° 04,4' 22° 42,0' S	031° 57,8' 22° 48,1' S	031° 51,1' 22° 53,8' S	031° 44,3' 22° 59,1' S	031° 37,4' 23° 03,8' S	031° 30,3' 23° 08,2' S	031° 23,2' 23° 12,0' S	031° 16,0' 23° 15,4' S	031° 08,8' 23° 18,4' S
15	047° 10,6' 22° 35,7' S	047° 04,2' 22° 42,3' S	046° 57,6' 22° 48,4' S	046° 50,8' 22° 54,1' S	046° 44,0' 22° 59,3' S	046° 37,1' 23° 04,0' S	046° 30,0' 23° 08,3' S	046° 22,9' 23° 12,2' S	046° 15,7' 23° 15,6' S	046° 08,5' 23° 18,5' S
16	062° 10,4' 22° 36,0' S	062° 03,9' 22° 42,5' S	061° 57,3' 22° 48,6' S	061° 50,5' 22° 54,3' S	061° 43,7' 22° 59,5' S	061° 36,8' 23° 04,2' S	061° 29,7' 23° 08,5' S	061° 22,6' 23° 12,3' S	061° 15,4' 23° 15,7' S	061° 08,2' 23° 18,6' S
17	077° 10,1' 22° 36,3' S	077° 03,6' 22° 42,8' S	076° 57,0' 22° 48,9' S	076° 50,3' 22° 54,5' S	076° 43,4' 22° 59,7' S	076° 36,5' 23° 04,4' S	076° 29,4' 23° 08,7' S	076° 22,3' 23° 12,5' S	076° 15,1' 23° 15,8' S	076° 07,9' 23° 18,7' S
18	092° 09,8' 22° 36,6' S	092° 03,3' 22° 43,1' S	091° 56,7' 22° 49,1' S	091° 50,0' 22° 54,7' S	091° 43,1' 22° 59,9' S	091° 36,2' 23° 04,6' S	091° 29,1' 23° 08,8' S	091° 22,0' 23° 12,6' S	091° 14,8' 23° 15,9' S	091° 07,6' 23° 18,8' S
19	107° 09,6' 22° 36,8' S	107° 03,1' 22° 43,3' S	106° 56,4' 22° 49,4' S	106° 49,7' 22° 55,0' S	106° 42,8' 23° 00,1' S	106° 35,9' 23° 04,8' S	106° 28,9' 23° 09,0' S	106° 21,7' 23° 12,8' S	106° 14,5' 23° 16,1' S	106° 07,2' 23° 18,9' S
20	122° 09,3' 22° 37,1' S	122° 02,8' 22° 43,6' S	121° 56,2' 22° 49,6' S	121° 49,4' 22° 55,2' S	121° 42,6' 23° 00,3' S	121° 35,6' 23° 05,0' S	121° 28,6' 23° 09,2' S	121° 21,4' 23° 12,9' S	121° 14,2' 23° 16,2' S	121° 06,9' 23° 19,0' S
21	137° 09,0' 22° 37,4' S	137° 02,5' 22° 43,8' S	136° 55,9' 22° 49,9' S	136° 49,1' 22° 55,4' S	136° 42,3' 23° 00,5' S	136° 35,3' 23° 05,2' S	136° 28,3' 23° 09,3' S	136° 21,1' 23° 13,1' S	136° 13,9' 23° 16,3' S	136° 06,6' 23° 19,1' S
22	152° 08,8' 22° 37,7' S	152° 02,2' 22° 44,1' S	151° 55,6' 22° 50,1' S	151° 48,8' 22° 55,6' S	151° 42,0' 23° 00,7' S	151° 35,0' 23° 05,3' S	151° 28,0' 23° 09,5' S	151° 20,8' 23° 13,2' S	151° 13,6' 23° 16,5' S	151° 06,3' 23° 19,2' S
23	167° 08,5' 22° 38,0' S	167° 02,0' 22° 44,4' S	166° 55,3' 22° 50,3' S	166° 48,6' 22° 55,8' S	166° 41,7' 23° 00,9' S	166° 34,7' 23° 05,5' S	166° 27,7' 23° 09,7' S	166° 20,5' 23° 13,4' S	166° 13,3' 23° 16,6' S	166° 06,0' 23° 19,3' S
UT	16 Dec	17 Dec	18 Dec	19 Dec	20 Dec	21 Dec	22 Dec	23 Dec	24 Dec	25 Dec
00	181° 05,7' 23° 19,4' S	180° 58,4' 23° 21,7' S	180° 51,0' 23° 23,5' S	180° 43,6' 23° 24,9' S	180° 36,1' 23° 25,7' S	180° 28,7' 23° 26,1' S	180° 21,2' 23° 26,1' S	180° 13,8' 23° 25,5' S	180° 06,3' 23° 24,5' S	179° 58,9' 23° 23,0' S
01	196° 05,4' 23° 19,5' S	195° 58,1' 23° 21,8' S	195° 50,7' 23° 23,6' S	195° 43,3' 23° 24,9' S	195° 35,8' 23° 25,8' S	195° 28,4' 23° 26,1' S	195° 20,9' 23° 26,0' S	195° 13,4' 23° 25,5' S	195° 06,0' 23° 24,4' S	194° 58,6' 23° 22,9' S
02	211° 05,1' 23° 19,6' S	210° 57,8' 23° 21,9' S	210° 50,4' 23° 23,7' S	210° 43,0' 23° 25,0' S	210° 35,5' 23° 25,8' S	210° 28,1' 23° 26,1' S	210° 20,6' 23° 26,0' S	210° 13,1' 23° 25,4' S	210° 05,7' 23° 24,4' S	209° 58,2' 23° 22,9' S
03	226° 04,8' 23° 19,8' S	225° 57,5' 23° 22,0' S	225° 50,1' 23° 23,7' S	225° 42,7' 23° 25,0' S	225° 35,2' 23° 25,8' S	225° 27,8' 23° 26,1' S	225° 20,3' 23° 26,0' S	225° 12,8' 23° 25,4' S	225° 05,4' 23° 24,3' S	224° 57,9' 23° 22,8' S
04	241° 04,5' 23° 19,9' S	240° 57,2' 23° 22,0' S	240° 49,8' 23° 23,8' S	240° 42,4' 23° 25,0' S	240° 34,9' 23° 25,8' S	240° 27,4' 23° 26,1' S	240° 20,0' 23° 26,0' S	240° 12,5' 23° 25,4' S	240° 05,1' 23° 24,3' S	239° 57,6' 23° 22,7' S
05	256° 04,2' 23° 20,0' S	255° 56,9' 23° 22,1' S	255° 49,5' 23° 23,8' S	255° 42,0' 23° 25,1' S	255° 34,6' 23° 25,8' S	255° 27,1' 23° 26,1' S	255° 19,7' 23° 26,0' S	255° 12,2' 23° 25,3' S	255° 04,8' 23° 24,2' S	254° 57,3' 23° 22,6' S
06	271° 03,9' 23° 20,1' S	270° 56,5' 23° 22,2' S	270° 49,2' 23° 23,9' S	270° 41,7' 23° 25,1' S	270° 34,3' 23° 25,9' S	270° 26,8' 23° 26,2' S	270° 19,4' 23° 26,0' S	270° 11,9' 23° 25,3' S	270° 04,4' 23° 24,2' S	269° 57,0' 23° 22,6' S
07	286° 03,6' 23° 20,2' S	285° 56,2' 23° 22,3' S	285° 48,8' 23° 24,0' S	285° 41,4' 23° 25,2' S	285° 34,0' 23° 25,9' S	285° 26,5' 23° 26,2' S	285° 19,0' 23° 25,9' S	285° 11,6' 23° 25,5' S	285° 04,1' 23° 24,1' S	284° 56,7' 23° 22,5' S
08	301° 03,3' 23° 20,3' S	300° 55,9' 23° 22,4' S	300° 48,5' 23° 24,0' S	300° 41,1' 23° 25,2' S	300° 33,7' 23° 25,9' S	300° 26,2' 23° 26,2' S	300° 18,7' 23° 25,9' S	300° 11,3' 23° 25,5' S	300° 03,8' 23° 24,1' S	299° 56,4' 23° 22,4' S
09	316° 03,0' 23° 20,3' S	315° 55,6' 23° 22,4' S	315° 48,2' 23° 24,1' S	315° 40,8' 23° 25,2' S	315° 33,4' 23° 25,9' S	315° 25,9' 23° 26,2' S	315° 18,4' 23° 25,9' S	315° 11,0' 23° 25,2' S	315° 03,5' 23° 24,0' S	314° 56,1' 23° 22,3' S
10	331° 02,7' 23° 20,4' S	330° 55,3' 23° 22,5' S	330° 47,9' 23° 24,1' S	330° 40,5' 23° 25,0' S	330° 33,0' 23° 26,0' S	330° 25,6' 23° 26,2' S	330° 18,1' 23° 25,9' S	330° 10,6' 23° 25,1' S	330° 03,2' 23° 23,9' S	329° 55,8' 23° 22,3' S
11	346° 02,4' 23° 20,5' S	345° 55,0' 23° 22,6' S	345° 47,6' 23° 24,2' S	345° 40,2' 23° 25,3' S	345° 32,7' 23° 26,0' S	345° 25,3' 23° 26,2' S	345° 17,8' 23° 25,9' S	345° 10,3' 23° 25,1' S	345° 02,9' 23° 23,9' S	344° 55,5' 23° 22,2' S
12	001° 02,1' 23° 20,6' S	000° 54,7' 23° 22,7' S	000° 47,3' 23° 24,2' S	000° 39,9' 23° 25,4' S	000° 32,4' 23° 26,0' S	000° 25,0' 23° 26,1' S	000° 17,5' 23° 25,8' S	000° 10,0' 23° 25,1' S	000° 02,6' 23° 23,8' S	359° 55,2' 23° 22,1' S
13	016° 01,8' 23° 20,7' S	015° 54,4' 23° 22,8' S	015° 47,0' 23° 24,3' S	015° 39,6' 23° 25,4' S	015° 32,1' 23° 26,0' S	015° 24,6' 23° 26,1' S	015° 17,2' 23° 25,8' S	015° 09,7' 23° 25,0' S	015° 02,3' 23° 23,7' S	014° 54,8' 23° 22,0' S
14	031° 01,5' 23° 20,8' S	030° 54,1' 23° 22,8' S	030° 46,7' 23° 24,4' S	030° 39,3' 23° 25,4' S	030° 31,8' 23° 26,0' S	030° 24,3' 23° 26,1' S	030° 16,9' 23° 25,8' S	030° 09,4' 23° 25,0' S	030° 02,0' 23° 23,7' S	029° 54,5' 23° 21,9' S
15	046° 01,1' 23° 20,9' S	045° 53,8' 23° 22,9' S	045° 46,4' 23° 24,4' S	045° 38,9' 23° 25,5' S	045° 31,5' 23° 26,0' S	045° 24,0' 23° 26,1' S	045° 16,6' 23° 25,8' S	045° 09,1' 23° 24,9' S	045° 01,7' 23° 23,6' S	044° 54,2' 23° 21,8' S
16	061° 00,8' 23° 21,0' S	060° 53,5' 23° 23,0' S	060° 46,1' 23° 24,5' S	060° 38,6' 23° 25,5' S	060° 31,2' 23° 26,0' S	060° 23,7' 23° 26,1' S	060° 16,2' 23° 25,7' S	060° 08,8' 23° 24,9' S	060° 01,3' 23° 23,6' S	059° 53,9' 23° 21,8' S
17	076° 00,5' 23° 21,1' S	075° 53,2' 23° 23,0' S	075° 45,8' 23° 24,5' S	075° 38,3' 23° 25,5' S	075° 30,9' 23° 26,1' S	075° 23,4' 23° 26,1' S	075° 15,9' 23° 25,7' S	075° 08,5' 23° 24,8' S	075° 01,0' 23° 23,5' S	074° 53,6' 23° 21,7' S
18	091° 00,2' 23° 21,2' S	090° 52,9' 23° 23,1' S	090° 45,4' 23° 24,6' S	090° 38,0' 23° 25,6' S	090° 30,6' 23° 26,1' S	090° 23,1' 23° 26,1' S	090° 15,6' 23° 25,7' S	090° 08,2' 23° 24,8' S	090° 00,7' 23° 23,4' S	089° 53,3' 23° 21,6' S
19	105° 59,9' 23° 21,3' S</									

Solar Almanac 2028 — Sun GHA & Decl (UT) — 26 Dec to 31 Dec

UT	26 Dec	27 Dec	28 Dec	29 Dec	30 Dec	31 Dec	31 Dec	31 Dec	31 Dec	31 Dec
00	179° 51.5' 23° 21.1' S	179° 44.1' 23° 18.6' S	179° 36.8' 23° 15.7' S	179° 29.5' 23° 12.4' S	179° 22.2' 23° 08.6' S	179° 15.1' 23° 04.3' S	179° 15.1' 23° 04.3' S	179° 15.1' 23° 04.3' S	179° 15.1' 23° 04.3' S	179° 15.1' 23° 04.3' S
01	194° 51.1' 23° 21.0' S	194° 43.8' 23° 18.5' S	194° 36.4' 23° 15.6' S	194° 29.2' 23° 12.2' S	194° 21.9' 23° 08.4' S	194° 14.8' 23° 04.1' S	194° 14.8' 23° 04.1' S	194° 14.8' 23° 04.1' S	194° 14.8' 23° 04.1' S	194° 14.8' 23° 04.1' S
02	209° 50.8' 23° 20.9' S	209° 43.5' 23° 18.4' S	209° 36.1' 23° 15.5' S	209° 28.9' 23° 12.1' S	209° 21.6' 23° 08.2' S	209° 14.5' 23° 03.9' S	209° 14.5' 23° 03.9' S	209° 14.5' 23° 03.9' S	209° 14.5' 23° 03.9' S	209° 14.5' 23° 03.9' S
03	224° 50.5' 23° 20.8' S	224° 43.2' 23° 18.3' S	224° 35.8' 23° 15.4' S	224° 28.6' 23° 11.9' S	224° 21.3' 23° 08.1' S	224° 14.2' 23° 03.7' S	224° 14.2' 23° 03.7' S	224° 14.2' 23° 03.7' S	224° 14.2' 23° 03.7' S	224° 14.2' 23° 03.7' S
04	239° 50.2' 23° 20.7' S	239° 42.9' 23° 18.2' S	239° 35.5' 23° 15.2' S	239° 28.3' 23° 11.8' S	239° 21.1' 23° 07.9' S	239° 13.9' 23° 03.5' S	239° 13.9' 23° 03.5' S	239° 13.9' 23° 03.5' S	239° 13.9' 23° 03.5' S	239° 13.9' 23° 03.5' S
05	254° 49.9' 23° 20.6' S	254° 42.6' 23° 18.1' S	254° 35.2' 23° 15.1' S	254° 28.0' 23° 11.6' S	254° 20.8' 23° 07.7' S	254° 13.6' 23° 03.3' S	254° 13.6' 23° 03.3' S	254° 13.6' 23° 03.3' S	254° 13.6' 23° 03.3' S	254° 13.6' 23° 03.3' S
06	269° 49.6' 23° 20.5' S	269° 42.2' 23° 18.0' S	269° 34.9' 23° 14.9' S	269° 27.7' 23° 11.5' S	269° 20.5' 23° 07.5' S	269° 13.3' 23° 03.1' S	269° 13.3' 23° 03.1' S	269° 13.3' 23° 03.1' S	269° 13.3' 23° 03.1' S	269° 13.3' 23° 03.1' S
07	284° 49.3' 23° 20.4' S	284° 41.9' 23° 17.8' S	284° 34.6' 23° 14.8' S	284° 27.4' 23° 11.3' S	284° 20.2' 23° 07.4' S	284° 13.0' 23° 03.0' S	284° 13.0' 23° 03.0' S	284° 13.0' 23° 03.0' S	284° 13.0' 23° 03.0' S	284° 13.0' 23° 03.0' S
08	299° 49.0' 23° 20.3' S	299° 41.6' 23° 17.7' S	299° 34.3' 23° 14.7' S	299° 27.1' 23° 11.2' S	299° 19.9' 23° 07.2' S	299° 12.7' 23° 02.8' S	299° 12.7' 23° 02.8' S	299° 12.7' 23° 02.8' S	299° 12.7' 23° 02.8' S	299° 12.7' 23° 02.8' S
09	314° 48.7' 23° 20.2' S	314° 41.3' 23° 17.6' S	314° 34.0' 23° 14.5' S	314° 26.8' 23° 11.0' S	314° 19.6' 23° 07.0' S	314° 12.4' 23° 02.6' S	314° 12.4' 23° 02.6' S	314° 12.4' 23° 02.6' S	314° 12.4' 23° 02.6' S	314° 12.4' 23° 02.6' S
10	329° 48.4' 23° 20.1' S	329° 41.0' 23° 17.5' S	329° 33.7' 23° 14.4' S	329° 26.5' 23° 10.9' S	329° 19.3' 23° 06.8' S	329° 12.1' 23° 02.4' S	329° 12.1' 23° 02.4' S	329° 12.1' 23° 02.4' S	329° 12.1' 23° 02.4' S	329° 12.1' 23° 02.4' S
11	344° 48.1' 23° 20.0' S	344° 40.7' 23° 17.4' S	344° 33.4' 23° 14.3' S	344° 26.2' 23° 10.7' S	344° 19.0' 23° 06.7' S	344° 11.8' 23° 02.2' S	344° 11.8' 23° 02.2' S	344° 11.8' 23° 02.2' S	344° 11.8' 23° 02.2' S	344° 11.8' 23° 02.2' S
12	359° 47.8' 23° 19.9' S	359° 40.4' 23° 17.2' S	359° 33.1' 23° 14.1' S	359° 25.9' 23° 10.5' S	359° 18.7' 23° 06.5' S	359° 11.5' 23° 02.0' S	359° 11.5' 23° 02.0' S	359° 11.5' 23° 02.0' S	359° 11.5' 23° 02.0' S	359° 11.5' 23° 02.0' S
13	014° 47.5' 23° 19.8' S	014° 40.1' 23° 17.1' S	014° 32.8' 23° 14.0' S	014° 25.6' 23° 10.4' S	014° 18.4' 23° 06.3' S	014° 11.2' 23° 01.8' S	014° 11.2' 23° 01.8' S	014° 11.2' 23° 01.8' S	014° 11.2' 23° 01.8' S	014° 11.2' 23° 01.8' S
14	029° 47.1' 23° 19.7' S	029° 39.8' 23° 17.0' S	029° 32.5' 23° 13.8' S	029° 25.2' 23° 10.2' S	029° 18.1' 23° 06.1' S	029° 10.9' 23° 01.6' S	029° 10.9' 23° 01.6' S	029° 10.9' 23° 01.6' S	029° 10.9' 23° 01.6' S	029° 10.9' 23° 01.6' S
15	044° 46.8' 23° 19.6' S	044° 39.5' 23° 16.9' S	044° 32.2' 23° 13.7' S	044° 24.9' 23° 10.1' S	044° 17.8' 23° 06.0' S	044° 10.7' 23° 01.4' S	044° 10.7' 23° 01.4' S	044° 10.7' 23° 01.4' S	044° 10.7' 23° 01.4' S	044° 10.7' 23° 01.4' S
16	059° 46.5' 23° 19.5' S	059° 39.2' 23° 16.8' S	059° 31.9' 23° 13.6' S	059° 24.6' 23° 09.9' S	059° 17.5' 23° 05.8' S	059° 10.4' 23° 01.2' S	059° 10.4' 23° 01.2' S	059° 10.4' 23° 01.2' S	059° 10.4' 23° 01.2' S	059° 10.4' 23° 01.2' S
17	074° 46.2' 23° 19.4' S	074° 38.9' 23° 16.6' S	074° 31.6' 23° 13.4' S	074° 24.3' 23° 09.7' S	074° 17.2' 23° 05.6' S	074° 10.1' 23° 01.0' S	074° 10.1' 23° 01.0' S	074° 10.1' 23° 01.0' S	074° 10.1' 23° 01.0' S	074° 10.1' 23° 01.0' S
18	089° 45.9' 23° 19.3' S	089° 38.6' 23° 16.5' S	089° 31.3' 23° 13.3' S	089° 24.0' 23° 09.6' S	089° 16.9' 23° 05.4' S	089° 09.8' 23° 00.8' S	089° 09.8' 23° 00.8' S	089° 09.8' 23° 00.8' S	089° 09.8' 23° 00.8' S	089° 09.8' 23° 00.8' S
19	104° 45.6' 23° 19.2' S	104° 38.3' 23° 16.4' S	104° 31.0' 23° 13.1' S	104° 23.7' 23° 09.4' S	104° 16.6' 23° 05.2' S	104° 09.5' 23° 00.6' S	104° 09.5' 23° 00.6' S	104° 09.5' 23° 00.6' S	104° 09.5' 23° 00.6' S	104° 09.5' 23° 00.6' S
20	119° 45.3' 23° 19.1' S	119° 38.0' 23° 16.3' S	119° 30.7' 23° 13.0' S	119° 23.4' 23° 09.2' S	119° 16.3' 23° 05.0' S	119° 09.2' 23° 00.4' S	119° 09.2' 23° 00.4' S	119° 09.2' 23° 00.4' S	119° 09.2' 23° 00.4' S	119° 09.2' 23° 00.4' S
21	134° 45.0' 23° 19.0' S	134° 37.7' 23° 16.1' S	134° 30.4' 23° 12.8' S	134° 23.1' 23° 09.1' S	134° 16.0' 23° 04.9' S	134° 08.9' 23° 00.2' S	134° 08.9' 23° 00.2' S	134° 08.9' 23° 00.2' S	134° 08.9' 23° 00.2' S	134° 08.9' 23° 00.2' S
22	149° 44.7' 23° 18.9' S	149° 37.4' 23° 16.0' S	149° 30.1' 23° 12.7' S	149° 22.8' 23° 08.9' S	149° 15.7' 23° 04.7' S	149° 08.6' 23° 00.0' S	149° 08.6' 23° 00.0' S	149° 08.6' 23° 00.0' S	149° 08.6' 23° 00.0' S	149° 08.6' 23° 00.0' S
23	164° 44.4' 23° 18.7' S	164° 37.1' 23° 15.9' S	164° 29.8' 23° 12.5' S	164° 22.5' 23° 08.7' S	164° 15.4' 23° 04.5' S	164° 08.3' 22° 59.8' S	164° 08.3' 22° 59.8' S	164° 08.3' 22° 59.8' S	164° 08.3' 22° 59.8' S	164° 08.3' 22° 59.8' S