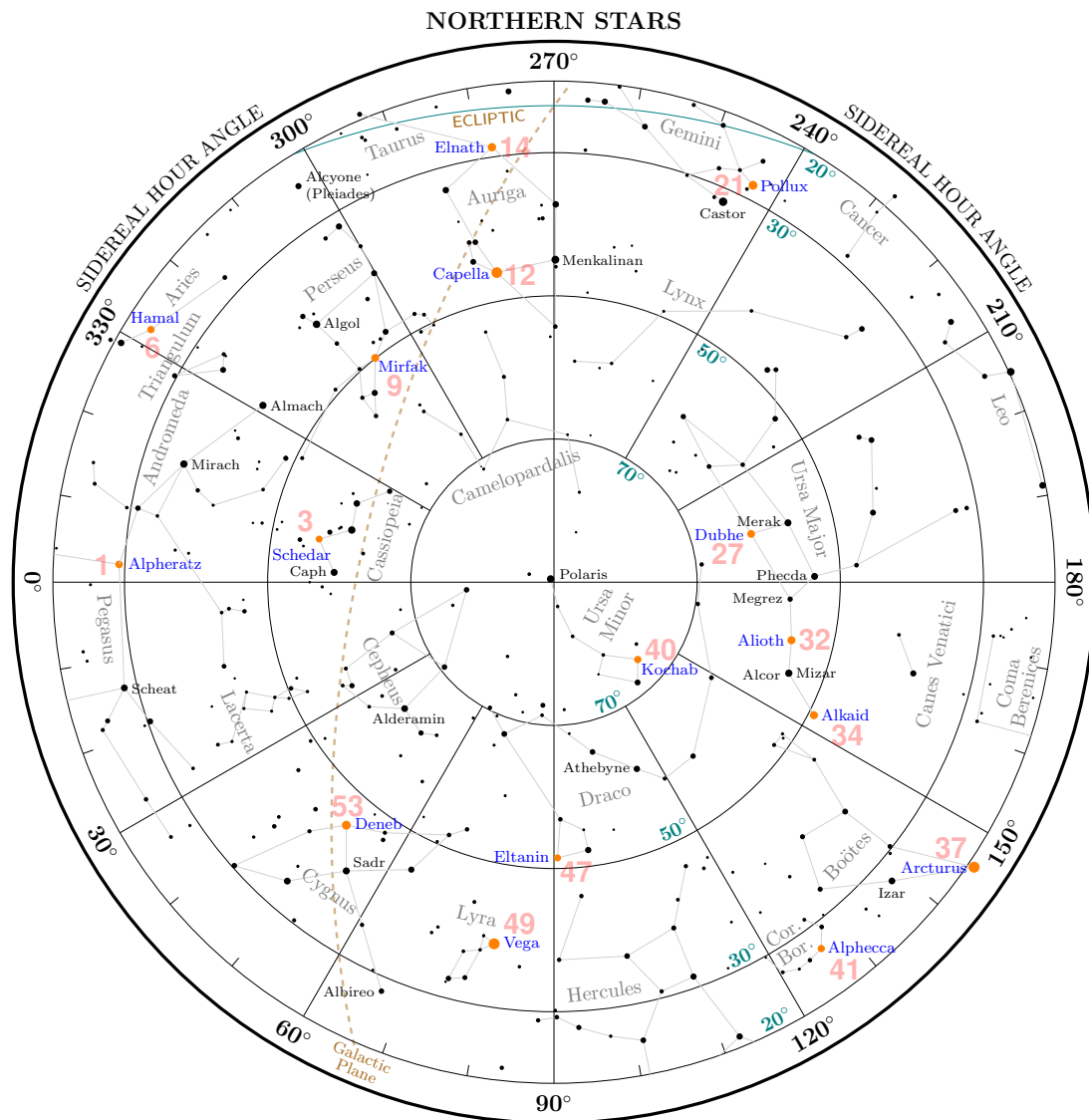


GENERATED USING EPHEM



THE NAUTICAL ALMANAC

from 8.5.2021

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Enhancements: Andrew BAUER

May 8, 2021

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May 08, 09, 10 (Sat., Sun., Mon.)

Aries		Venus		Mars		Jupiter		Saturn	
Sat	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	226°02.5	169°35.6	N19°47.7	126°20.4	N24°34.3	254°21.1	S12°26.6	270°04.4	S17°23.4
1	241°05.0	184°34.8	48.5	141°21.2	34.2	269°23.2	26.5	285°06.8	23.4
2	256°07.4	199°34.1	49.3	156°22.0	34.1	284°25.4	26.4	300°09.2	23.4
3	271°09.9	214°33.4	· · 50.0	171°22.8	· · 34.0	299°27.5	· · 26.3	315°11.6	· · 23.4
4	286°12.3	229°32.7	50.8	186°23.6	33.9	314°29.7	26.2	330°14.0	23.4
5	301°14.8	244°32.0	51.6	201°24.4	33.8	329°31.8	26.1	345°16.4	23.4
6	316°17.3	259°31.3	N19°52.3	216°25.2	N24°33.7	344°34.0	S12°26.0	0°18.8	S17°23.4
7	331°19.7	274°30.6	53.1	231°26.0	33.5	359°36.2	25.9	15°21.2	23.4
8	346°22.2	289°29.9	53.9	246°26.8	33.4	14°38.3	25.8	30°23.6	23.3
9	1°24.7	304°29.2	· · 54.7	261°27.5	· · 33.3	29°40.5	· · 25.7	45°26.0	· · 23.3
10	16°27.1	319°28.5	55.4	276°28.3	33.2	44°42.6	25.6	60°28.4	23.3
11	31°29.6	334°27.8	56.2	291°29.1	33.1	59°44.8	25.5	75°30.8	23.3
12	46°32.1	349°27.1	N19°57.0	306°29.9	N24°33.0	74°47.0	S12°25.4	90°33.2	S17°23.3
13	61°34.5	4°26.4	57.7	321°30.7	32.9	89°49.1	25.3	105°35.6	23.3
14	76°37.0	19°25.7	58.5	336°31.5	32.8	104°51.3	25.2	120°38.0	23.3
15	91°39.5	34°25.0	19°59.2	351°32.3	· · 32.7	119°53.5	· · 25.1	135°40.4	· · 23.3
16	106°41.9	49°24.3	20°00.0	6°33.1	32.5	134°55.6	25.0	150°42.8	23.3
17	121°44.4	64°23.6	00.8	21°33.9	32.4	149°57.8	24.9	165°45.2	23.2
18	136°46.8	79°22.9	N20°01.5	36°34.7	N24°32.3	164°59.9	S12°24.8	180°47.6	S17°23.2
19	151°49.3	94°22.1	02.3	51°35.5	32.2	180°02.1	24.7	195°50.0	23.2
20	166°51.8	109°21.4	03.0	66°36.3	32.1	195°04.3	24.6	210°52.5	23.2
21	181°54.2	124°20.7	· · 03.8	81°37.1	· · 32.0	210°06.4	· · 24.5	225°54.9	· · 23.2
22	196°56.7	139°20.0	04.5	96°37.9	31.9	225°08.6	24.4	240°57.3	23.2
23	211°59.2	154°19.3	05.3	111°38.7	31.7	240°10.8	24.3	255°59.7	23.2
Mer.pass.:08:54		v-0.7 d0.8 m-3.8		v0.8 d-0.1 m1.6		v2.2 d0.1 m-2.1		v2.4 d0.0 m0.7	

Sun	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	227°01.6	169°18.6	N20°06.1	126°39.5	N24°31.6	255°12.9	S12°24.2	271°02.1	S17°23.2
1	242°04.1	184°17.9	06.8	141°40.2	31.5	270°15.1	24.1	286°04.5	23.1
2	257°06.6	199°17.2	07.6	156°41.0	31.4	285°17.3	24.0	301°06.9	23.1
3	272°09.0	214°16.5	· · 08.3	171°41.8	· · 31.3	300°19.4	· · 23.9	316°09.3	· · 23.1
4	287°11.5	229°15.7	09.1	186°42.6	31.2	315°21.6	23.8	331°11.7	23.1
5	302°14.0	244°15.0	09.8	201°43.4	31.1	330°23.7	23.7	346°14.1	23.1
6	317°16.4	259°14.3	N20°10.6	216°44.2	N24°30.9	345°25.9	S12°23.6	1°16.5	S17°23.1
7	332°18.9	274°13.6	11.3	231°45.0	30.8	0°28.1	23.5	16°18.9	23.1
8	347°21.3	289°12.9	12.1	246°45.8	30.7	15°30.2	23.4	31°21.3	23.1
9	2°23.8	304°12.2	· · 12.8	261°46.6	· · 30.6	30°32.4	· · 23.3	46°23.7	· · 23.1
10	17°26.3	319°11.4	13.5	276°47.4	30.5	45°34.6	23.2	61°26.1	23.0
11	32°28.7	334°10.7	14.3	291°48.2	30.3	60°36.7	23.1	76°28.5	23.0
12	47°31.2	349°10.0	N20°15.0	306°49.0	N24°30.2	75°38.9	S12°23.0	91°30.9	S17°23.0
13	62°33.7	4°09.3	15.8	321°49.8	30.1	90°41.1	22.9	106°33.3	23.0
14	77°36.1	19°08.6	16.5	336°50.6	30.0	105°43.2	22.8	121°35.7	23.0
15	92°38.6	34°07.9	· · 17.2	351°51.4	· · 29.9	120°45.4	· · 22.7	136°38.1	· · 23.0
16	107°41.1	49°07.1	18.0	6°52.2	29.7	135°47.6	22.6	151°40.5	23.0
17	122°43.5	64°06.4	18.7	21°53.0	29.6	150°49.7	22.5	166°42.9	23.0
18	137°46.0	79°05.7	N20°19.5	36°53.7	N24°29.5	165°51.9	S12°22.4	181°45.4	S17°23.0
19	152°48.4	94°05.0	20.2	51°54.5	29.4	180°54.1	22.3	196°47.8	23.0
20	167°50.9	109°04.2	20.9	66°55.3	29.3	195°56.3	22.2	211°50.2	22.9
21	182°53.4	124°03.5	· · 21.7	81°56.1	· · 29.1	210°58.4	· · 22.1	226°52.6	· · 22.9
22	197°55.8	139°02.8	22.4	96°56.9	29.0	226°00.6	22.0	241°55.0	22.9
23	212°58.3	154°02.1	23.1	111°57.7	28.9	241°02.8	21.9	256°57.4	22.9
Mer.pass.:08:50		v-0.7 d0.8 m-3.8		v0.8 d-0.1 m1.6		v2.2 d0.1 m-2.1		v2.4 d0.0 m0.7	

Mon	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	228°00.8	169°01.4	N20°23.9	126°58.5	N24°28.8	256°04.9	S12°21.8	271°59.8	S17°22.9
1	243°03.2	184°00.6	24.6	141°59.3	28.7	271°07.1	21.7	287°02.2	22.9
2	258°05.7	198°59.9	25.3	157°00.1	28.5	286°09.3	21.6	302°04.6	22.9
3	273°08.2	213°59.2	• • 26.0	172°00.9	• • 28.4	301°11.4	• • 21.5	317°07.0	• • 22.8
4	288°10.6	228°58.5	26.8	187°01.7	28.3	316°13.6	21.4	332°09.4	22.9
5	303°13.1	243°57.7	27.5	202°02.5	28.2	331°15.8	21.3	347°11.8	22.9
6	318°15.6	258°57.0	N20°28.2	217°03.3	N24°28.0	346°18.0	S12°21.2	2°14.2	S17°22.8
7	333°18.0	273°56.3	28.9	232°04.1	27.9	1°20.1	21.1	17°16.7	22.8
8	348°20.5	288°55.6	29.7	247°04.9	27.8	16°22.3	21.1	32°19.1	22.8
9	3°22.9	303°54.8	• • 30.4	262°05.7	• • 27.7	31°24.5	• • 21.0	47°21.5	• • 22.8
10	18°25.4	318°54.1	31.1	277°06.5	27.5	46°26.6	20.9	62°23.9	22.8
11	33°27.9	333°53.4	31.8	292°07.3	27.4	61°28.8	20.8	77°26.3	22.8
12	48°30.3	348°52.6	N20°32.6	307°08.0	N24°27.3	76°31.0	S12°20.7	92°28.7	S17°22.8
13	63°32.8	3°51.9	33.3	322°08.8	27.2	91°33.2	20.6	107°31.1	22.8
14	78°35.3	18°51.2	34.0	337°09.6	27.0	106°35.3	20.5	122°33.5	22.8
15	93°37.7	33°50.4	• • 34.7	352°10.4	• • 26.9	121°37.5	• • 20.4	137°35.9	• • 22.8
16	108°40.2	48°49.7	35.4	7°11.2	26.8	136°39.7	20.3	152°38.3	22.7
17	123°42.7	63°49.0	36.1	22°12.0	26.7	151°41.9	20.2	167°40.7	22.7
18	138°45.1	78°48.3	N20°36.8	37°12.8	N24°26.5	166°44.0	S12°20.1	182°43.2	S17°22.7
19	153°47.6	93°47.5	37.6	52°13.6	26.4	181°46.2	20.0	197°45.6	22.7
20	168°50.0	108°46.8	38.3	67°14.4	26.3	196°48.4	19.9	212°48.0	22.7
21	183°52.5	123°46.1	• • 39.0	82°15.2	• • 26.1	211°50.6	• • 19.8	227°50.4	• • 22.7
22	198°55.0	138°45.3	39.7	97°16.0	26.0	226°52.7	19.7	242°52.8	22.7
23	213°57.4	153°44.6	40.4	112°16.8	25.9	241°54.9	19.6	257°55.2	22.7
Mer.pass.:08:46		v-0.7 d0.7 m-3.8		v0.8 d-0.1 m1.6		v2.2 d0.1 m-2.1		v2.4 d0.0 m0.7	

	Stars	
	SHA	Dec
Alpheratz	357° 38.1	29° 12.2
Ankaa	353° 10.5	-42° 11.4
Schedar	349° 34.8	56° 38.9
Diphda	348° 50.6	-17° 52.3
Achernar	335° 23.1	-57° 07.7
Hamal	327° 54.9	23° 33.5
Polaris	315° 53.7	89° 21.1
Acamar	315° 14.5	-40° 13.3
Menkar	314° 09.6	4° 10.2
Mirfak	308° 33.0	49° 56.0
Aldebaran	290° 43.4	16° 33.0
Rigel	281° 07.1	-8° 10.8
Capella	280° 26.8	46° 01.1
Bellatrix	278° 26.4	6° 22.0
Elnath	278° 06.0	28° 37.4
Anilam	275° 41.1	-1° 11.5
Betelgeuse	270° 55.6	7° 24.5
Canopus	263° 54.1	-52° 42.7
Sirius	258° 29.1	-16° 44.9
Adhara	255° 08.4	-29° 00.3
Procyon	244° 54.1	5° 10.1
Pollux	243° 21.2	27° 58.5
Avior	234° 16.1	-59° 34.9
Suhail	222° 48.5	-43° 31.4
Miaplacidus	221° 38.8	-69° 48.1
Alphard	217° 50.7	-8° 45.1
Regulus	207° 37.6	11° 51.8
Dubhe	193° 44.5	61° 38.5
Denebola	182° 27.8	14° 27.3
Gienah	175° 46.4	-17° 39.7
Acrux	173° 02.8	-63° 13.2
Garcrux	171° 54.5	-57° 14.1
Alioth	166° 15.2	55° 50.9
Spica	158° 25.2	-11° 16.4
Alkaid	152° 54.0	49° 12.6
Hadar	148° 39.6	-60° 28.6
Menkent	148° 00.8	-36° 28.5
Arcturus	145° 50.4	19° 04.3
Rigil Kent.	139° 43.7	-60° 55.4
Kochab	137° 18.7	74° 04.2
Zuben'ubi	136° 59.0	-16° 07.8
Alphecca	126° 05.9	26° 38.6
Antares	112° 19.2	-26° 28.7
Atria	107° 15.6	-69° 03.8
Sabik	102° 05.9	-15° 45.0
Shaula	96° 14.1	-37° 07.0
Rasalhague	90° 01.1	12° 32.6
Eltanin	90° 43.2	51° 29.0
Kaus Aug.	83° 36.2	-34° 22.4
Vega	80° 35.0	38° 48.0
Nunki	75° 51.3	-26° 16.1
Altair	62° 02.8	8° 55.3
Peacock	53° 10.4	-56° 39.8
Deneb	49° 27.7	45° 21.0
Enif	33° 41.8	9° 58.2
Al Na'ir	27° 36.9	-46° 51.4
Fomalhaut	15° 18.0	-29° 30.6
Scheat	13° 48.3	28° 11.6
Markab	13° 33.0	15° 18.9

May 08 Sat	SHA	Mer.pass
Venus	303°33.1	12:42
Mars	260°17.9	15:34
Jupiter	28°18.6	07:02
Saturn	44°01.9	05:59

May 09 Sun	SHA	Mer.pass
Venus	302° 17.0	12:43
Mars	259° 37.8	15:33
Jupiter	28° 11.3	06:58
Saturn	44° 00.4	05:55

May 10 Mon	SHA	Mer.pass
Venus	301°00.6	12:45
Mars	258°57.7	15:31
Jupiter	28°04.2	06:55
Saturn	43°59.0	05:51

Horizontal parallax	
Venus:	0.1
Mars:	0.1

h Sun				Moon			
Sat	GHA	Dec		GHA	ν	Dec	d HP
0	180°52.4	N17°05.4		218°31.5	16.2'	S01°54.9	13.0' 54.6'
1	195°52.4	06.0		233°06.7	16.2'	01°41.8	13.0' 54.6'
2	210°52.5	06.7		247°42.0	16.2'	01°28.8	13.0' 54.6'
3	225°52.5	· · 07.4		262°17.2	16.2'	01°15.8	13.0' 54.6'
4	240°52.5	08.1		276°52.4	16.3'	01°02.8	13.0' 54.6'
5	255°52.6	08.7		291°27.7	16.3'	00°49.8	13.0' 54.6'
6	270°52.6	N17°09.4		306°03.0	16.3'	S00°36.7	13.0' 54.6'
7	285°52.6	10.1		320°38.3	16.3'	00°23.7	13.0' 54.5'
8	300°52.7	10.8		335°13.6	16.3'	S00°10.7	13.0' 54.5'
9	315°52.7	· · 11.4		349°48.9	16.3'	N00°02.3	13.0' 54.5'
10	330°52.7	12.1		4°24.3	16.3'	00°15.3	13.0' 54.5'
11	345°52.8	12.8		18°59.6	16.4'	00°28.3	13.0' 54.5'
12	0°52.8	N17°13.5		33°35.0	16.4'	N00°41.3	13.0' 54.5'
13	15°52.8	14.1		48°10.4	16.4'	00°54.3	13.0' 54.5'
14	30°52.9	14.8		62°45.7	16.4'	01°07.2	13.0' 54.4'
15	45°52.9	· · 15.5		77°21.1	16.4'	01°20.2	13.0' 54.4'
16	60°52.9	16.2		91°56.5	16.4'	01°33.1	12.9' 54.4'
17	75°53.0	16.8		106°31.9	16.4'	01°46.1	12.9' 54.4'
18	90°53.0	N17°17.5		121°07.3	16.4'	N01°59.0	12.9' 54.4'
19	105°53.0	18.2		135°42.7	16.4'	02°11.9	12.9' 54.4'
20	120°53.0	18.8		150°18.1	16.4'	02°24.8	12.9' 54.4'
21	135°53.1	· · 19.5		164°53.5	16.4'	02°37.7	12.9' 54.4'
22	150°53.1	20.2		179°28.9	16.4'	02°50.6	12.9' 54.3'
23	165°53.1	20.8		194°04.3	16.4'	03°03.5	12.9' 54.3'
SD.=15.8			d=0.7	S.D.=14.9			

Sun	GHA	Dec		GHA	ν	Dec	d HP
0	180°53.2	N17°21.5		208°39.7	16.4'	N03°16.3	12.8' 54.3'
1	195°53.2	22.2		223°15.1	16.4'	03°29.1	12.8' 54.3'
2	210°53.2	22.8		237°50.5	16.4'	03°41.9	12.8' 54.3'
3	225°53.2	· · 23.5		252°25.9	16.4'	03°54.7	12.8' 54.3'
4	240°53.3	24.2		267°01.3	16.4'	04°07.5	12.8' 54.3'
5	255°53.3	24.8		281°36.7	16.4'	04°20.3	12.7' 54.3'
6	270°53.3	N17°25.5		296°12.1	16.4'	N04°33.0	12.7' 54.3'
7	285°53.4	26.2		310°47.5	16.4'	04°45.7	12.7' 54.2'
8	300°53.4	26.8		325°22.8	16.4'	04°58.4	12.7' 54.2'
9	315°53.4	· · 27.5		339°58.2	16.3'	05°11.1	12.7' 54.2'
10	330°53.4	28.1		354°33.5	16.3'	05°23.7	12.6' 54.2'
11	345°53.5	28.8		9°08.8	16.3'	05°36.4	12.6' 54.2'
12	0°53.5	N17°29.5		23°44.2	16.3'	N05°49.0	12.6' 54.2'
13	15°53.5	30.1		38°19.5	16.3'	06°01.5	12.6' 54.2'
14	30°53.5	30.8		52°54.8	16.3'	06°14.1	12.5' 54.2'
15	45°53.6	· · 31.4		67°30.0	16.3'	06°26.6	12.5' 54.2'
16	60°53.6	32.1		82°05.3	16.3'	06°39.1	12.5' 54.2'
17	75°53.6	32.8		96°40.5	16.2'	06°51.6	12.5' 54.2'
18	90°53.6	N17°33.4		111°15.8	16.2'	N07°04.0	12.4' 54.1'
19	105°53.7	34.1		125°51.0	16.2'	07°16.4	12.4' 54.1'
20	120°53.7	34.7		140°26.2	16.2'	07°28.8	12.4' 54.1'
21	135°53.7	· · 35.4		155°01.4	16.2'	07°41.2	12.3' 54.1'
22	150°53.7	36.0		169°36.5	16.1'	07°53.5	12.3' 54.1'
23	165°53.8	36.7		184°11.6	16.1'	08°05.8	12.3' 54.1'
SD.=15.8			d=0.7	S.D.=14.8			

Mon	GHA	Dec		GHA	ν	Dec	d HP
0	180°53.8	N17°37.4		198°46.8	16.1'	N08°18.0	12.2' 54.1'
1	195°53.8	38.0		213°21.8	16.1'	08°30.3	12.2' 54.1'
2	210°53.8	38.7		227°56.9	16.1'	08°42.4	12.2' 54.1'
3	225°53.8	· · 39.3		242°31.9	16.0'	08°54.6	12.1' 54.1'
4	240°53.9	40.0		257°07.0	16.0'	09°06.7	12.1' 54.1'
5	255°53.9	40.6		271°42.0	16.0'	09°18.8	12.1' 54.1'
6	270°53.9	N17°41.3		286°16.9	16.0'	N09°30.8	12.0' 54.1'
7	285°53.9	41.9		300°51.9	15.9'	09°42.8	12.0' 54.1'
8	300°53.9	42.6		315°26.8	15.9'	09°54.8	11.9' 54.0'
9	315°54.0	· · 43.2		330°01.6	15.9'	10°06.7	11.9' 54.0'
10	330°54.0	43.9		344°36.5	15.8'	10°18.6	11.9' 54.0'
11	345°54.0	44.5		359°11.3	15.8'	10°30.5	11.8' 54.0'
12	0°54.0	N17°45.2		13°46.1	15.8'	N10°42.3	11.8' 54.0'
13	15°54.0	45.8		28°20.9	15.7'	10°54.0	11.7' 54.0'
14	30°54.1	46.5		42°55.6	15.7'	11°05.8	11.7' 54.0'
15	45°54.1	· · 47.1		57°30.3	15.7'	11°17.4	11.7' 54.0'
16	60°54.1	47.8		72°04.9	15.6'	11°29.1	11.6' 54.0'
17	75°54.1	48.4		86°39.6	15.6'	11°40.7	11.6' 54.0'
18	90°54.1	N17°49.0		101°14.2	15.6'	N11°52.2	11.5' 54.0'
19	105°54.2	49.7		115°48.7	15.5'	12°03.7	11.5' 54.0'
20	120°54.2	50.3		130°23.2	15.5'	12°15.1	11.4' 54.0'
21	135°54.2	· · 51.0		144°57.7	15.5'	12°26.5	11.4' 54.0'
22	150°54.2	51.6		159°32.2	15.4'	12°37.9	11.3' 54.0'
23	165°54.2	52.3		174°06.6	15.4'	12°49.2	11.3' 54.0'
SD.=15.8			d=0.7	S.D.=14.8			

Lat.	Twilight		Sunrise	Sunset	Twilight	
	Naut.	Civil			Civil	Naut.
N 72°	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
N 70°	—:—	—:—	01:38	22:22	—:—	—:—
68°	—:—	—:—	02:18	21:39	—:—	—:—
66°	—:—	00:51	02:45	21:11	23:14	—:—
64°	—:—	01:44	03:06	20:49	22:13	—:—
62°	—:—	02:15	03:23	20:32	21:41	—:—
60°	00:45	02:38	03:37	20:18	21:17	23:18
N 58°	01:33	02:56	03:48	20:06	20:59	22:24
56°	02:02	03:11	03:59	19:56	20:43	21:54
54°	02:23	03:24	04:08	19:46	20:30	21:32
52°	02:40	03:35	04:16	19:38	20:19	21:14
50°	02:55	03:45	04:23	19:31	20:09	21:00
45°	03:23	04:05	04:38	19:15	19:49	20:31
N 40°	03:44	04:21	04:51	19:03	19:33	20:10
35°	04:00	04:34	05:01	18:52	19:20	19:53
30°	04:14	04:45	05:11	18:43	19:09	19:39
20°	04:35	05:03	05:26	18:27	18:50	19:18
N 10°	04:52	05:18	05:40	18:13	18:35	19:01
0°	05:06	05:31	05:53	18:00	18:22	18:47
S 10°	05:18	05:44	06:06	17:47	18:09	18:35
20°	05:29	05:56	06:19	17:34	17:57	18:23
30°	05:40	06:09	06:34	17:18	17:44	18:12
35°	05:46	06:16	06:43	17:10	17:36	18:07
40°	05:52	06:24	06:53	17:00	17:28	18:01
45°	05:58	06:33	07:05	16:48	17:19	17:55
S 50°	06:04	06:43	07:19	16:34	17:09	17:48
52°	06:07	06:48	07:25	16:27	17:04	17:45
54°	06:11	06:53	07:32	16:20	16:59	17:42
56°	06:14	06:59	07:41	16:12	16:53	17:38
58°	06:17	07:05	07:50	16:02	16:47	17:35
S 60°	06:21	07:12	08:00	15:52	16:40	17:31

Lat.	Moonrise			Moonset		
	Sat	Sun	Mon	Sat	Sun	Mon
N 72°	03:47	03:22	02:56	16:11	18:04	20:05
N 70°	03:45	03:28	03:09	16:09	17:53	19:42
68°	03:44	03:32	03:19	16:07	17:44	19:25
66°	03:43	03:36	03:28	16:06	17:37	19:11
64°	03:42	03:39	03:36	16:04	17:31	19:00
62°	03:41	03:41	03:42	16:03	17:26	18:50
60°	03:40	03:44	03:48	16:02	17:22	18:42
N 58°	03:40	03:46	03:53	16:02	17:18	18:35
56°	03:39	03:48	03:57	16:01	17:14	18:28
54°	03:39	03:50	04:01	16:00	17:11	18:23
52°	03:38	03:51	04:05	16:00	17:09	18:18
50°	03:38	03:53	04:08	15:59	17:06	18:13
45°	03:37	03:56	04:15	15:58	17:00	18:03
N 40°	03:36	03:58	04:21	15:57	16:56	17:55
35°	03:35	04:01	04:27	15:56	16:52	17:48
30°	03:35	04:03	04:31	15:55	16:48	17:42
20°	03:34	04:06	04:39	15:54	16:42	17:31
N 10°	03:33	04:10	04:47	15:53	16:37	17:22
0°	03:32	04:13	04:53	15:52	16:32	17:13
S 10°	03:31	04:16	05:00	15:51	16:27	17:05
20°	03:30	04:19	05:08	15:49	16:22	16:56
30°	03:29	04:23	05:16	15:48	16:16	16:45
35°	03:29	04:25	05:21	15:47	16:13	16:39
40°	03:28	04:27	05:26	15:46	16:09	16:32
45°	03:27	04:30	05:33	15:45	16:04	16:25
S 50°	03:27	04:34	05:41	15:44	15:59	16:15
52°	03:26	04:35	05:44	15:44	15:57	16:11
54°	03:26	04:37	05:48	15:43	15:54	16:06
56°	03:25	04:39	05:53	15:42	15:51	16:01
58°	03:25	04:41	05:58	15:42	15:48	15:55
S 60°	03:24	04:44	06:03	15:41	15:44	15:48

Day	Sun		Mer. Pass	Moon		Age
	Eqn. of Time 00 ^h mm:ss	12 ^h mm:ss		Upper hh:mm	Lower hh:mm	
08	03:30	03:31	11:56	09:42	22:02	26(10%)
09	03:33	03:34	11:56	10:22	22:43	27(5%)
10	03:35	03:36	11:56	11:03	23:24	28(2%)