

Aries			Venus			Mars			Jupiter			Saturn		
Fri	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec		
0	1777°32.6	161°41.7	N05°47.2	192°08.3	507°24.1	70°59.3	N22°55.8	172°59.0	500°20.4					
1	1927°35.0	176°41.3	48.5	207°09.0	23.4	86°01.6	55.8	188°01.1	20.2					
2	2077°37.5	191°40.9	49.7	222°09.6	22.6	101°04.0	55.8	203°03.3	20.2					
3	2227°40.0	206°40.6	51.0	237°10.2	21.8	116°06.4	55.8	218°05.5	20.0					
4	2377°42.4	221°40.2	52.3	252°10.9	21.1	131°08.8	55.8	233°07.7	19.9					
5	2527°44.8	236°39.8	53.5	267°11.5	20.3	146°11.2	55.8	248°09.9	19.7					
6	2677°47.4	251°39.4	N05°54.8	282°12.2	507°19.6	161°13.6	N22°55.8	263°12.0	500°19.6					
7	2827°49.8	266°39.0	56.0	297°12.8	18.8	176°16.0	55.8	278°14.2	19.5					
8	2977°52.3	281°38.7	57.3	312°13.4	18.0	191°18.3	55.8	293°16.4	19.4					
9	3127°54.8	296°38.3	58.5	327°14.1	17.3	206°20.7	55.8	308°18.6	19.2					
10	3277°57.2	311°37.9	05°59.8	342°14.7	16.5	221°23.1	55.8	323°20.7	19.1					
11	3427°59.7	326°37.5	06°01.1	357°15.3	15.7	236°25.5	55.8	338°22.9	19.0					
12	3578°02.1	341°37.1	N06°02.3	12°16.0	507°15.0	251°27.9	N22°55.8	353°25.1	500°18.9					
13	373°04.6	356°36.8	03.6	27°16.6	14.2	266°30.3	55.8	8°27.3	18.7					
14	28°07.1	11°36.4	04.8	42°17.3	13.5	281°32.6	55.7	23°29.5	18.6					
15	43°09.5	26°36.0	06.1	57°17.9	12.7	296°35.0	55.7	38°31.6	18.5					
16	58°12.0	41°35.6	07.4	72°18.5	11.9	311°37.4	55.7	53°33.8	18.4					
17	73°14.5	56°35.2	08.6	87°19.2	11.2	326°39.8	55.7	68°36.0	18.3					
18	88°16.9	71°34.9	N06°09.9	102°19.8	507°10.4	341°42.2	N22°55.7	83°38.2	500°18.1					
19	103°19.4	86°34.5	11.1	117°20.5	09.6	356°44.5	55.7	98°40.3	18.0					
20	118°21.9	101°34.1	12.4	132°21.1	08.9	11°46.9	55.7	113°42.5	17.9					
21	133°24.3	116°33.7	13.6	147°21.7	08.1	26°49.3	55.7	128°44.7	17.8					
22	148°26.8	131°33.3	14.9	162°22.4	07.4	41°51.7	55.7	143°46.9	17.6					
23	163°29.2	146°33.0	16.2	177°23.0	06.6	56°54.1	55.7	158°49.1	17.5					
Mer.pass.	12:08	$\nu-0.4'$ $d$ 1.3' $m$ -3.92		$\nu$ 0.6' $d$ -0.8' $m$ 1.17		$\nu$ 2.4' $d$ -0.0' $m$ -2.29		$\nu$ 2.2' $d$ -0.1' $m$ 0.93						

Sat	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	1787°31.7	161°32.6	N06°17.4	192°23.7	507°05.8	71°56.4	N22°55.7	173°51.2
1	1937°34.2	176°32.2	18.7	207°24.3	05.1	86°58.8	55.7	188°53.4
2	2087°36.6	191°31.8	19.9	222°24.9	04.3	102°01.2	55.7	203°55.6
3	2237°39.1	206°31.4	21.2	237°25.6	03.5	117°03.6	55.7	218°57.8
4	2387°41.6	221°31.0	22.4	252°26.2	02.8	132°05.9	55.6	233°59.9
5	2537°44.0	236°30.7	23.7	267°26.9	02.0	147°08.3	55.6	249°02.1
6	2687°46.5	251°30.3	N06°24.9	282°27.5	07°01.2	162°10.7	N22°55.6	264°04.3
7	2837°49.0	266°29.9	26.2	297°28.1	07°00.5	177°13.1	55.6	279°06.5
8	2987°51.4	281°29.5	27.4	312°28.8	06°59.7	192°15.4	55.6	294°08.7
9	3137°53.9	296°29.1	28.7	327°29.4	06°58.9	207°17.8	55.6	309°10.8
10	3287°56.4	311°28.7	30.0	342°30.1	58.2	222°20.2	55.6	324°13.0
11	3437°58.8	326°28.4	31.2	357°30.7	57.4	237°22.6	55.6	339°15.2
12	3587°01.3	341°28.0	N06°32.5	12°31.4	506°56.7	252°24.9	N22°55.6	354°17.4
13	14°03.7	356°27.6	33.7	27°32.0	55.9	267°27.3	55.6	9°19.5
14	29°06.2	11°27.2	35.0	42°32.6	55.1	282°29.7	55.6	24°21.7
15	44°08.7	26°26.8	36.2	57°33.3	54.4	297°32.1	55.6	39°23.9
16	59°11.1	41°26.4	37.5	72°33.9	53.6	312°34.4	55.6	54°26.1
17	74°13.6	56°26.1	38.7	87°34.6	52.8	327°36.8	55.5	69°28.3
18	89°16.1	71°25.7	N06°40.0	102°35.2	506°52.1	342°39.2	N22°55.5	84°30.4
19	104°18.5	86°25.3	41.0	117°35.8	51.3	357°41.6	55.5	99°32.6
20	119°21.0	101°24.9	42.5	132°36.5	50.5	12°43.9	55.5	114°34.8
21	134°23.5	116°24.5	43.7	147°37.1	49.8	27°46.3	55.5	129°37.0
22	149°25.9	131°24.1	45.0	162°37.8	49.0	42°48.7	55.5	144°39.1
23	164°28.4	146°23.7	46.2	177°38.4	48.2	57°51.0	55.5	159°41.3
Mer.pass.	12:04	$\nu-0.4'$ $d$ 1.3' $m$ -3.92		$\nu$ 0.6' $d$ -0.8' $m$ 1.17		$\nu$ 2.4' $d$ -0.0' $m$ -2.28		$\nu$ 2.2' $d$ -0.1' $m$ 0.92

Sun	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	1797°30.9	161°23.3	N06°47.5	192°39.1	506°47.5	72°53.4	N22°55.5	174°43.5
1	1947°33.3	176°23.0	48.7	207°39.7	46.7	87°55.8	55.5	189°45.7
2	2097°35.8	191°22.6	50.0	222°40.3	45.9	102°58.1	55.5	204°47.9
3	2247°38.2	206°22.2	51.2	237°41.0	45.2	118°00.5	55.5	219°50.0
4	2397°40.7	221°21.8	52.5	252°41.6	44.4	133°02.9	55.5	234°52.2
5	2547°43.2	236°21.4	53.7	267°42.3	43.6	148°05.2	55.5	249°54.4
6	2697°45.6	251°21.0	N06°55.0	282°42.9	506°42.9	163°07.6	N22°55.4	264°56.6
7	2847°48.1	266°20.6	56.2	297°43.6	42.1	178°10.0	55.4	279°57.7
8	2997°50.6	281°20.3	57.5	312°44.2	41.3	193°12.4	55.4	295°00.9
9	3147°53.0	296°19.9	06°58.7	327°44.9	40.6	208°14.7	55.4	310°03.1
10	3297°55.5	311°19.5	07°00.0	342°45.5	39.8	223°17.1	55.4	325°05.3
11	3447°58.0	326°19.1	01.2	357°46.1	39.0	238°19.4	55.4	340°07.5
12	0°00.4	341°18.7	N07°02.4	12°46.8	506°38.3	243°21.8	N22°55.4	355°09.6
13	15°02.9	356°18.3	03.7	27°47.4	37.5	268°24.2	55.4	10°11.8
14	30°05.3	11°17.9	04.9	42°48.1	36.7	283°26.5	55.4	25°14.0
15	45°07.8	26°17.5	06.2	57°48.7	36.0	298°28.9	55.4	40°16.2
16	60°10.3	41°17.1	07.4	72°49.4	35.2	313°31.3	55.4	55°18.3
17	75°12.7	56°16.8	08.7	87°50.0	34.4	328°33.6	55.4	70°20.5
18	90°15.2	71°16.4	N07°09.9	102°50.7	33.7	343°36.0	N22°55.3	85°22.7
19	105°17.7	86°16.0	11.2	117°51.3	32.9	358°38.4	55.3	100°24.9
20	120°20.1	101°15.6	12.4	132°51.9	32.1	13°40.7	55.3	115°27.1
21	135°22.6	116°15.2	13.7	147°52.6	31.4	28°43.1	55.3	130°29.2
22	150°25.1	131°14.8	14.9	162°53.2	30.6	43°45.5	55.3	145°31.4
23	165°27.5	146°14.4	16.1	177°53.9	29.8	58°47.8	55.3	160°33.6
Mer.pass.	12:00	$\nu-0.4'$ $d$ 1.2' $m$ -3.92		$\nu$ 0.6' $d$ -0.8' $m$ 1.17		$\nu$ 2.4' $d$ -0.0' $m$ -2.28		$\nu$ 2.2' $d$ -0.1' $m$ 0.92

Stars	SHA	Dec
Alpheratz	357°34.1	29°14.0
Ankaa	353°06.6	-42°09.9
Schedar	349°30.5	56°40.9
Diphda	348°46.6	-17°50.7
Achernar	335°19.9	-57°06.3
Hamal	327°50.4	23°35.2
Polaris	313°52.2	89°22.7
Acamar	315°11.3	-40°12.2
Menkar	314°05.3	4°11.5
Mirfak	308°27.1	49°57.4
Aldebaran	290°38.6	16°33.7
Rigel	281°03.0	-8°10.4
Capella	280°20.5	46°01.6
Bellatrix	278°21.9	6°22.3
Elinath	278°00.7	28°37.8
Alnilam	275°36.8	-1°11.2
Betelgeuse	270°51.0	7°24.6
Canopus	263°51.9	-52°42.8
Sirius	258°25.3	-16°45.3
Adhara	255°05.0	-29°00.7
Procyon	244°49.7	5°09.4
Pollux	243°15.9	27°57.8
Avior	234°14.0	-59°35.9
Suhail	222°45.3	-43°32.5
Miaplacidus	221°37.4	-69°49.7
Alphard	217°46.5	-8°46.5
Regulus	207°33.1	11°50.2
Dubhe	193°39.1	61°36.5
Denebola	182°23.6	14°25.4
Geniah	175°42.3	-17°41.4
Acrux	172°58.3	-63°14.7
Gacrux	171°50.0	-57°15.7
Alloth	166°11.5	55°48.9
Spica	158°21.0	-11°28.0
Alkaid	152°50.8	49°10.7
Hadar	148°34.1	-60°29.9
Menkent	147°56.1	-36°30.0
Arcturus	145°46.7	19°02.5
Rigel Kent.	139°38.5	-60°56.5
Kochab	137°18.9	74°02.5
Zuben'elubi	136°54.7	-16°09.2
Alphecca	126°02.7	26°37.3
Antares	112°14.5	-26°29.4
Atria	107°07.7	-69°04.2
Sabik	102°01.6	-15°45.5
Shaula	96°09.0	-37°07.3
Rasalhague	95°57.6	12°32.2
Eltanin	90°41.7	51°28.7
Kaus Aust.	83°31.2	-34°22.3
Vega	80°32.6	38°48.1
Nunki	75°	

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes columns for GHA, Dec, and Mer. pass.

Table for Stars with columns: Star, SHA, Dec. Lists stars like Alpheratz, Ankaa, Schedar, etc.

Table for Sun and Moon with columns: h, Mon, GHA, Dec, GHA, ν, Dec, d, HP.

Table for twilight and sunrise/sunset with columns: Lat., Naut., Civil, Sunrise, Sunset, Twilight.

Table with columns: Tue, GHA, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec.

Table for Stars with columns: Star, SHA, Dec. Lists stars like Denebola, Gienah, Acrux, etc.

Table for Sun and Moon with columns: Tue, GHA, Dec, GHA, ν, Dec, d, HP.

Table for moonrise and moonset with columns: Lat., Mon, Tue, Wed, Moonrise, Moonset.

Table with columns: Wed, GHA, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec.

Table for Mars and Saturn with columns: Mar 23 Mon, SHA, Mer. pass, Venus, Mars, Jupiter, Saturn.

Table for Sun and Moon with columns: Wed, GHA, Dec, GHA, ν, Dec, d, HP.

Table for Sun and Moon with columns: Day, Eqn. of Time, Mer. Pass, Moon, Age.

Thu	Aries			Venus			Mars			Jupiter			Saturn		
	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	GHA	Dec	SHA	
0	183°27.4	160°45.3	N08°46.1	193°41.3	S05°33.5	76°39.3	N22°54.5	178°12.5	S00°02.6	178°12.5	S00°02.6	178°12.5	S00°02.6	178°12.5	S00°02.6
1	198°29.9	175°44.5	47.3	208°42.0	32.7	91°41.6	54.5	193°14.7	02.5	193°14.7	02.5	193°14.7	02.5	193°14.7	02.5
2	213°32.3	190°44.5	48.5	223°42.6	32.0	106°43.9	54.5	208°16.9	02.4	208°16.9	02.4	208°16.9	02.4	208°16.9	02.4
3	228°34.8	205°44.1	49.7	238°43.3	31.2	121°46.3	54.5	223°19.1	02.3	223°19.1	02.3	223°19.1	02.3	223°19.1	02.3
4	243°37.3	220°43.7	51.0	253°44.0	30.4	136°48.6	54.5	238°21.3	02.1	238°21.3	02.1	238°21.3	02.1	238°21.3	02.1
5	258°39.7	235°43.3	52.2	268°44.6	29.6	151°51.0	54.5	253°23.4	02.0	253°23.4	02.0	253°23.4	02.0	253°23.4	02.0
6	273°42.2	250°42.9	N08°53.4	283°45.3	S05°28.9	166°53.3	N22°54.5	268°25.6	S00°01.9	268°25.6	S00°01.9	268°25.6	S00°01.9	268°25.6	S00°01.9
7	288°44.7	265°42.5	54.6	298°45.9	28.1	181°55.6	54.5	283°27.8	01.8	283°27.8	01.8	283°27.8	01.8	283°27.8	01.8
8	303°47.1	280°42.1	55.8	313°46.6	27.3	196°58.0	54.4	298°30.0	01.6	298°30.0	01.6	298°30.0	01.6	298°30.0	01.6
9	318°49.6	295°41.7	57.0	328°47.2	26.5	212°00.3	54.4	313°32.1	01.5	313°32.1	01.5	313°32.1	01.5	313°32.1	01.5
10	333°52.1	310°41.3	58.3	343°47.9	25.8	227°02.6	54.4	328°34.3	01.4	328°34.3	01.4	328°34.3	01.4	328°34.3	01.4
11	348°54.5	325°40.8	N08°59.5	358°48.5	25.0	242°05.0	54.4	343°36.5	01.3	343°36.5	01.3	343°36.5	01.3	343°36.5	01.3
12	3°57.0	340°40.4	N09°00.7	13°49.2	S05°24.2	257°07.3	N22°54.5	358°38.7	S00°01.2	358°38.7	S00°01.2	358°38.7	S00°01.2	358°38.7	S00°01.2
13	18°59.4	355°40.0	01.9	28°49.8	23.4	272°09.6	54.4	13°40.8	01.0	13°40.8	01.0	13°40.8	01.0	13°40.8	01.0
14	34°01.9	10°39.6	03.1	43°50.5	22.7	287°11.9	54.4	28°43.0	00.9	28°43.0	00.9	28°43.0	00.9	28°43.0	00.9
15	49°04.4	25°39.2	04.3	58°51.2	21.9	302°14.3	54.4	43°45.2	00.8	43°45.2	00.8	43°45.2	00.8	43°45.2	00.8
16	64°06.8	40°38.8	05.6	73°51.8	21.1	317°16.6	54.3	58°47.4	00.7	58°47.4	00.7	58°47.4	00.7	58°47.4	00.7
17	79°09.3	55°38.4	06.8	88°52.5	20.3	332°18.9	54.3	73°49.6	00.5	73°49.6	00.5	73°49.6	00.5	73°49.6	00.5
18	94°11.8	70°38.0	N09°08.0	103°53.1	S05°19.6	347°21.3	N22°54.3	88°51.7	S00°00.4	88°51.7	S00°00.4	88°51.7	S00°00.4	88°51.7	S00°00.4
19	109°14.2	85°37.6	09.2	118°53.8	18.8	2°23.6	54.3	103°53.9	00.3	103°53.9	00.3	103°53.9	00.3	103°53.9	00.3
20	124°16.7	100°37.1	10.4	133°54.4	18.0	17°25.9	54.3	118°56.1	00.2	118°56.1	00.2	118°56.1	00.2	118°56.1	00.2
21	139°19.2	115°36.7	11.6	148°55.1	17.2	32°28.3	54.3	133°58.3	S00°00.1	133°58.3	S00°00.1	133°58.3	S00°00.1	133°58.3	S00°00.1
22	154°21.6	130°36.3	12.8	163°55.8	16.5	47°30.6	54.3	149°00.8	N00°00.1	149°00.8	N00°00.1	149°00.8	N00°00.1	149°00.8	N00°00.1
23	169°24.1	145°35.9	14.1	178°56.4	15.7	62°32.9	54.3	164°02.6	00.2	164°02.6	00.2	164°02.6	00.2	164°02.6	00.2
Mer.pass.	11:44	ν-0.4' d 1.2' m -3.92		ν 0.7' d -0.8' m 1.17		ν 2.3' d -0.0' m -2.25		ν 2.2' d -0.1' m 0.91							

Fri	GHA			Dec			SHA			Dec					
	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec				
0	184°26.6	160°35.5	N09°15.3	193°57.1	S05°14.9	77°35.2	N22°54.2	179°04.8	N00°00.3	179°04.8	N00°00.3	179°04.8	N00°00.3		
1	199°29.0	175°35.1	16.5	208°57.7	14.1	92°37.6	54.2	194°07.0	00.4	194°07.0	00.4	194°07.0	00.4		
2	214°31.5	190°34.7	17.7	223°58.4	13.4	107°39.9	54.2	209°09.2	00.6	209°09.2	00.6	209°09.2	00.6		
3	229°33.9	205°34.3	18.9	238°59.0	12.6	122°42.2	54.2	224°11.3	00.7	224°11.3	00.7	224°11.3	00.7		
4	244°36.4	220°33.8	20.1	253°59.7	11.8	137°44.6	54.2	239°13.5	00.8	239°13.5	00.8	239°13.5	00.8		
5	259°38.9	235°33.4	21.3	269°00.4	11.0	152°46.9	54.2	254°15.7	00.9	254°15.7	00.9	254°15.7	00.9		
6	274°41.3	250°33.0	N09°22.5	284°01.0	S05°10.3	167°49.2	N22°54.2	269°17.0	N00°01.0	269°17.0	N00°01.0	269°17.0	N00°01.0		
7	289°43.8	265°32.6	23.5	299°01.7	09.5	182°51.5	54.2	284°20.9	01.2	284°20.9	01.2	284°20.9	01.2		
8	304°46.3	280°32.2	24.9	314°02.3	08.7	197°53.9	54.1	299°22.2	01.3	299°22.2	01.3	299°22.2	01.3		
9	319°48.7	295°31.8	26.1	329°03.0	07.9	212°56.2	54.1	314°24.4	01.4	314°24.4	01.4	314°24.4	01.4		
10	334°51.2	310°31.4	27.4	344°03.6	07.2	227°58.5	54.1	329°26.6	01.5	329°26.6	01.5	329°26.6	01.5		
11	349°53.7	325°30.9	28.6	359°04.3	06.4	243°00.8	54.1	344°28.7	01.7	344°28.7	01.7	344°28.7	01.7		
12	4°56.1	340°30.5	N09°29.8	14°05.0	S05°05.6	258°03.2	N22°54.1	359°30.9	N00°01.8	359°30.9	N00°01.8	359°30.9	N00°01.8		
13	19°58.6	355°30.1	31.0	29°05.6	04.8	373°05.5	54.1	14°33.1	01.9	14°33.1	01.9	14°33.1	01.9		
14	35°01.0	10°29.7	32.2	44°06.3	04.1	288°07.8	54.1	29°35.3	02.0	29°35.3	02.0	29°35.3	02.0		
15	50°03.5	25°29.3	33.4	59°06.9	03.3	303°10.1	54.1	44°37.5	02.2	44°37.5	02.2	44°37.5	02.2		
16	65°06.0	40°28.9	34.6	74°07.6	02.5	318°12.4	54.0	59°39.6	02.3	59°39.6	02.3	59°39.6	02.3		
17	80°08.4	55°28.4	35.8	89°08.2	01.7	333°14.8	54.0	74°41.8	02.4	74°41.8	02.4	74°41.8	02.4		
18	95°10.9	70°28.0	N09°37.0	104°08.9	S05°00.9	348°17.1	N22°54.0	89°44.0	N00°02.5	89°44.0	N00°02.5	89°44.0	N00°02.5		
19	110°13.4	85°27.6	38.2	119°09.6	05°00.2	3°19.4	54.0	104°46.2	02.6	104°46.2	02.6	104°46.2	02.6		
20	125°15.8	100°27.2	39.4	134°10.2	04°59.4	18°21.7	54.0	119°48.3	02.8	119°48.3	02.8	119°48.3	02.8		
21	140°18.3	115°26.8	40.6	149°10.9	04.5	33°24.1	54.0	134°50.5	02.9	134°50.5	02.9	134°50.5	02.9		
22	155°20.8	130°26.4	41.8	164°11.5	57.8	48°26.4	54.0	149°52.7	03.0	149°52.7	03.0	149°52.7	03.0		
23	170°23.2	145°25.9	43.0	179°12.2	57.1	63°28.7	53.9	164°54.9	03.1	164°54.9	03.1	164°54.9	03.1		
Mer.pass.	11:40	ν-0.4' d 1.2' m -3.92		ν 0.7' d -0.8' m 1.18		ν 2.3' d -0.0' m -2.24		ν 2.2' d 0.1' m 0.91							

Sat	GHA			Dec			SHA			Dec			
	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec	SHA	GHA	Dec		
0	185°25.7	160°25.5	N09°44.2	194°12.9	S04°56.3	78°31.0	N22°53.9	179°57.1	N00°03.3	179°57.1	N00°03.3	179°57.1	N00°03.3
1	200°28.2	175°25.1	45.4	209°13.5	55.5	93°33.3	53.9	194°59.2	03.4	194°59.2	03.4	194°59.2	03.4
2	215°30.6	190°24.7	46.6	224°14.2	54.7	108°35.7	53.9	210°01.4	03.5	210°01.4	03.5	210°01.4	03.5
3	230°33.1	205°24.3	47.8	239°14.8	54.0	123°38.0	53.9	225°03.6	03.6	225°03.6	03.6	225°03.6	03.6
4	245°35.5	220°23.8	49.0	254°15.5	53.2	138°40.3	53.9	240°05.8	03.7	240°05.8	03.7	240°05.8	03.7
5	260°38.0	235°23.4	50.2	269°16.2	52.4	153°42.6	53.9	255°07.9	03.9	255°07.9	03.9	255°07.9	03.9
6	275°40.5	250°23.0	N09°51.4	284°16.8	S04°51.6	168°44.9	N22°53.8	270°10.1	N00°04.0	270°10.1	N00°04.0	270°10.1	N00°04.0
7	290°42.9	265°22.6	52.6	299°17.5	50.8	183°47.2	53.8	285°12.3	04.1	285°12.3	04.1	285°12.3	04.1
8	305°45.4	280°22.2	53.8	314°18.1	50.1	198°49.6	53.8	300°14.5	04.2	300°14.5	04.2	300°14.5	04.2
9	320°47.9	295°21.7	55.0	329°18.8	49.3	213°51.9	53.8	315°16.7	04.4	315°16.7	04.4	315°16.7	04.4
10	335°50.3	310°21.3	56.2	344°19.5	48.5	228°54.2	53.8	330°18.8	04.5	330°18.8	04.5	330°18.8	04.5
11	350°52.8	325°20.9	57.4	359°20.1	47.7	243°56.5	53.8	345°21.0	04.6	345°21.0	04.6	345°21.0	04.6
12	5°55.3	340°20.5	N09°58.6	14°20.8	S04°57.0	258°58.8	N22°53.8	0°23.2	N00°04.7	0°23.2	N00°04.7	0°23.2	N00°04.7
13	20°57.7	355°20.0	09°59.8	29°21.4	46.2	274°01.1	53.8	15°25.4	04.8	15°25.4	04.8	15°25.4	04.8
14	36°00.2	10°19.6	10°01.0	44°22.1	45.4	289°03.5	53.7	30°27.5	05.0	30°27.5	05.0	30°27.5	05.0
15	51°02.7	25°19.2	02.2	55°22.8	44.6	304°05.8	53.7	45°29.7	05.1	45°29.7	05.1	45°29.7	05.1
16	66°05.1	40°18.8	03.4	74°23.4	43.8	319°08.1	53.7	60°31.9	05.2	60°31.9	05.2	60°31.9	05.2
17	81°07.6	55°18.3	04.6	89°24.1	43.1	334°10.4	53.7	75°34.1	05.3	75°34.1	05.3	75°34.1	05.3
18	96°10.0	70°17.9	N10°05.8	104°24.7	S04°57.0	349°12.7	N22°53.7	90°36.2	N00°05.5	90°36.2	N00°05.5	90°36.2	N00°05.5
19	111°12.5	85°17.5	07.0	119°25.4	41.5	4°15.0	53.7	105°38.4	05.6	105°38.4	05.6	105°38.4	

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes columns for GHA, Dec, and magnitude.

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes columns for GHA, Dec, and magnitude.

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes columns for GHA, Dec, and magnitude.

Table with columns for Stars: Alpheratz, Schedar, Kikab, etc. Includes columns for SHA, Dec, and magnitude.

Table with columns for Stars: Alpheratz, Schedar, Kikab, etc. Includes columns for SHA, Dec, and magnitude.

Table with columns for Stars: Alpheratz, Schedar, Kikab, etc. Includes columns for SHA, Dec, and magnitude.

Table with columns for Sun and Moon. Includes columns for h, GHA, Dec, and HP.

Table with columns for Sun and Moon. Includes columns for Mon, GHA, Dec, and HP.

Table with columns for Sun and Moon. Includes columns for Tue, GHA, Dec, and HP.

Table with columns for Twilight, Sunrise, Sunset, and Twilight. Includes columns for Lat., Naut., Civil, and Naut.

Table with columns for Moonrise, Moonset. Includes columns for Lat., Sun, Moonrise, Tue, Sun, Moonset, Tue.

Table with columns for Day, Sun, Mer., Moon, Age. Includes columns for Eqn. of Time, Mer. Pass, Mer. Pass, Age.

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec.

Table with columns for planets: Thu, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec.

Table with columns for planets: Fri, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec.

Table with columns for Stars: Alpheratz, Ankaa, Schedar, Diphda, Achernar, Hamal, Polaris, Acamar, Menkar, Mirfak, Aldebaran, Rigel, Capella, Bellatrix, Elmath, Alnilam, Betelgeuse, Canopus, Sirius, Adhara, Procyon, Pollux, Avior, Suhail, Miaplacidus, Alphard, Regulus, Dubhe, Denebola, Gienah, Acrux, Gacrux, Alioth, Spica, Alkaid, Hadar, Menkent, Arcturus, Rigel, Kochab, Zubeh, Alphecca, Antares, Atria, Sabik, Shaula, Rasalhague, Eltanin, Kaus Aust., Vega, Nunki, Altair, Peacock, Deneb, Enif, Al Na'ir, Fomalhaut, Scheat, Markab.

Table with columns for Stars: Apr 01 Wed, Apr 02 Thu, Apr 03 Fri. Includes rows for dates and astronomical data like SHA, Mer.pass, GHA, Dec, SHA, Mer.pass.

Table with columns for Stars: Horizontal parallax. Includes rows for Venus, Mars.

Table with columns for Sun and Moon: h, Sun, Moon. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec, d, HP.

Table with columns for Sun and Moon: Thu, Sun, Moon. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec, d, HP.

Table with columns for Sun and Moon: Fri, Sun, Moon. Includes rows for dates and astronomical data like GHA, Dec, SHA, Dec, d, HP.

Table with columns for Twilight: Lat., Twilight, Sunrise, Sunset, Twilight. Includes rows for dates and astronomical data like Lat., Twilight, Sunrise, Sunset, Twilight.

Table with columns for Moonrise: Lat., Moonrise, Moonset. Includes rows for dates and astronomical data like Lat., Moonrise, Moonset.

Table with columns for Day: Day, Sun, Mer., Moon, Age. Includes rows for dates and astronomical data like Day, Sun, Mer., Moon, Age.

Aries			Venus			Mars			Jupiter			Saturn		
Sat	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec		
0	192°19.7	159°10.8	N13°00.0	196°04.9	S02°45.1	84°56.1	N22°51.1	186°02.9	N00°23.7					
1	207°22.1	174°10.3	01.1	211°05.6	44.3	99°58.4	51.1	201°05.1	23.8					
2	222°24.6	189°09.8	02.2	226°06.2	43.5	115°00.7	51.0	216°07.3	23.9					
3	237°27.0	204°09.3	03.3	241°06.9	42.7	130°02.9	51.0	231°09.5	24.0					
4	252°29.5	219°08.9	04.5	256°07.6	41.9	145°05.2	51.0	246°11.7	24.2					
5	267°32.0	234°08.4	05.6	271°08.3	41.1	160°07.5	51.0	261°13.8	24.3					
6	282°34.4	249°07.7	N13°06.7	286°08.9	S02°40.4	175°09.7	N22°51.0	276°16.0	N00°24.4					
7	297°36.9	264°07.4	07.8	301°09.6	39.6	190°12.0	50.9	291°18.2	24.5					
8	312°39.4	279°07.0	08.9	316°10.3	38.8	205°14.2	50.9	306°20.4	24.6					
9	327°41.8	294°06.5	10.1	331°11.0	38.0	220°16.5	50.9	321°22.6	24.8					
10	342°44.3	309°06.0	11.2	346°11.6	37.2	235°18.8	50.9	336°24.7	24.9					
11	357°46.8	324°05.5	12.3	361°12.3	36.4	250°21.0	50.9	351°26.9	25.0					
12	12°49.2	339°05.0	N13°13.4	16°13.0	S02°35.7	265°23.3	N22°50.8	6°29.1	N00°25.1					
13	27°51.7	354°04.6	14.5	31°13.6	34.9	280°25.6	50.8	21°31.3	25.2					
14	42°54.1	9°04.1	15.6	46°14.3	34.1	295°27.8	50.8	36°33.4	25.4					
15	57°56.6	24°03.6	16.8	61°15.0	33.3	310°30.1	50.8	51°35.6	25.5					
16	72°59.1	39°03.1	17.9	76°15.7	32.5	325°32.3	50.8	66°37.8	25.6					
17	88°01.5	54°02.6	19.0	91°16.3	31.7	340°34.6	50.7	81°40.0	25.7					
18	103°04.0	69°02.2	N13°20.1	106°17.0	S02°31.0	355°36.9	N22°50.7	96°42.2	N00°25.8					
19	118°06.5	84°01.7	21.2	121°17.7	30.2	370°39.1	50.7	111°44.3	26.0					
20	133°08.9	99°01.2	22.3	136°18.4	29.4	25°41.4	50.7	126°46.5	26.1					
21	148°11.4	114°00.7	23.4	151°19.0	28.6	40°43.6	50.7	141°48.7	26.2					
22	163°13.9	129°00.2	24.6	166°19.7	27.8	55°45.9	50.6	156°50.9	26.3					
23	178°16.3	143°59.8	25.7	181°20.4	27.0	70°48.2	50.6	171°53.1	26.4					
Mer.pass.	11:09	$\nu$ -0.5' d 1.1' m -3.92		$\nu$ 0.7' d -0.8' m 1.19		$\nu$ 2.3' d -0.0' m -2.18		$\nu$ 2.2' d 0.1' m 0.93						

Sun	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	193°18.8	158°59.3	N13°26.8	196°21.1	S02°26.2	85°50.4	N22°50.6	186°55.2
1	208°21.3	173°58.8	27.9	211°21.8	25.5	100°52.7	50.6	201°57.4
2	223°23.7	188°58.3	29.0	226°22.4	24.7	115°54.9	50.5	216°59.6
3	238°26.2	203°57.8	30.1	241°23.1	23.9	130°57.2	50.5	232°01.8
4	253°28.6	218°57.3	31.2	256°23.8	23.1	145°59.4	50.5	247°04.0
5	268°31.1	233°56.9	32.3	271°24.5	22.3	161°01.7	50.5	262°06.1
6	283°33.6	248°56.4	N13°33.4	286°25.1	S02°21.5	176°04.0	N22°50.5	277°08.3
7	298°36.0	263°55.9	34.5	301°25.8	20.8	191°06.2	50.4	292°10.5
8	313°38.5	278°55.4	35.6	316°26.5	20.0	206°08.5	50.4	307°12.7
9	328°41.0	293°54.9	36.7	331°27.2	19.2	221°10.7	50.4	322°14.9
10	343°43.4	308°54.4	37.8	346°27.8	18.4	236°13.0	50.4	337°17.0
11	358°45.9	323°53.9	39.0	361°28.5	17.6	251°15.2	50.4	352°19.2
12	13°48.4	338°53.5	N13°40.1	16°29.2	S02°16.8	266°17.5	N22°50.3	7°21.4
13	28°50.8	353°53.0	41.2	31°29.9	16.0	281°19.7	50.3	22°23.6
14	43°53.3	8°52.5	42.3	46°30.5	15.3	296°22.0	50.3	37°25.7
15	58°55.8	23°52.0	43.4	61°31.2	14.5	311°24.2	50.3	52°27.9
16	73°58.2	38°51.5	44.5	76°31.9	13.7	326°26.5	50.2	67°30.1
17	89°00.7	53°51.0	45.6	91°32.6	12.9	341°28.8	50.2	82°32.3
18	104°03.1	68°50.5	N13°46.7	106°33.2	S02°12.1	356°31.0	N22°50.2	97°34.5
19	119°05.6	83°50.0	47.8	121°33.9	11.3	371°33.3	50.2	112°36.6
20	134°08.1	98°49.5	48.9	136°34.6	10.6	26°35.5	50.2	127°38.8
21	149°10.5	113°49.1	50.0	151°35.3	9.8	41°37.8	50.1	142°41.0
22	164°13.0	128°48.6	51.1	166°36.0	9.0	56°40.0	50.1	157°43.2
23	179°15.5	143°48.1	52.2	181°36.6	8.2	71°42.3	50.1	172°45.4
Mer.pass.	11:05	$\nu$ -0.5' d 1.1' m -3.92		$\nu$ 0.7' d -0.8' m 1.19		$\nu$ 2.3' d -0.0' m -2.17		$\nu$ 2.2' d 0.1' m 0.93

Mon	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	194°17.9	158°47.6	N13°53.3	196°37.3	S02°07.4	86°44.5	N22°50.1	187°47.5
1	209°20.4	173°47.1	54.4	211°38.0	06.6	101°46.8	50.0	202°49.7
2	224°22.9	188°46.6	55.5	226°38.7	05.8	116°49.1	50.0	217°51.9
3	239°25.3	203°46.1	56.6	241°39.3	05.1	131°51.3	50.0	232°54.1
4	254°27.8	218°45.6	57.7	256°40.0	04.3	146°53.5	50.0	247°56.3
5	269°30.2	233°45.1	58.7	271°40.7	03.5	161°55.8	50.0	262°58.4
6	284°32.7	248°44.6	N13°59.8	286°41.4	S02°02.7	176°58.0	N22°49.9	278°00.6
7	299°35.2	263°44.1	61.0	301°42.0	01.9	192°00.3	49.9	293°02.8
8	314°37.6	278°43.6	02.0	316°42.7	01.1	207°02.5	49.9	308°05.0
9	329°40.1	293°43.1	03.1	331°43.4	02.0	222°04.8	49.9	323°07.2
10	344°42.6	308°42.6	04.2	346°44.1	01°59.6	237°07.0	49.8	338°09.3
11	359°45.0	323°42.1	05.3	361°44.8	58.8	252°09.2	49.8	353°11.5
12	14°47.5	338°41.6	N14°05.6	16°48.5	S01°58.0	267°11.5	N22°49.8	8°13.7
13	29°50.0	353°41.2	07.5	31°49.1	57.2	282°13.7	49.8	23°15.9
14	44°52.4	8°40.7	08.6	46°46.8	56.4	297°16.0	49.8	38°18.1
15	59°54.9	23°40.2	09.6	61°47.5	55.6	312°18.2	49.7	53°20.2
16	74°57.4	38°39.7	10.7	76°48.1	54.9	327°20.5	49.7	68°22.4
17	89°59.8	53°39.2	11.8	91°48.8	54.1	342°22.7	49.7	83°24.6
18	105°02.3	68°38.7	N14°12.9	106°49.5	S01°53.3	357°25.0	N22°49.7	98°26.8
19	120°04.7	83°38.2	14.0	121°50.2	52.5	372°27.2	49.6	113°29.0
20	135°07.2	98°37.7	15.1	136°50.9	51.5	27°29.5	49.6	128°31.1
21	150°09.7	113°37.2	16.2	151°51.5	50.9	42°31.7	49.6	143°33.3
22	165°12.1	128°36.7	17.2	166°52.2	50.1	57°33.9	49.6	158°35.5
23	180°14.6	143°36.2	18.3	181°52.9	49.4	72°36.2	49.5	173°37.7
Mer.pass.	11:01	$\nu$ -0.5' d 1.1' m -3.92		$\nu$ 0.7' d -0.8' m 1.19		$\nu$ 2.3' d -0.0' m -2.17		$\nu$ 2.2' d 0.1' m 0.93

Stars	SHA	Dec
Alpheratz	357°34.1	29°14.0
Ankaa	343°06.5	-42°09.8
Schedar	359°30.5	56°40.8
Diphda	348°46.6	-17°50.6
Achernar	345°20.0	-57°06.3
Hamal	327°50.4	23°35.1
Polaris	313°56.3	89°22.6
Acamar	315°11.4	-40°12.1
Menkar	314°05.4	49°11.5
Mirafak	308°27.2	49°57.3
Aldebaran	290°38.7	16°33.7
Rigel	281°03.0	-8°10.4
Capella	280°25.6	46°01.6
Bellatrix	278°21.9	6°22.3
Elnath	278°00.7	28°37.8
Alnilam	275°36.8	-1°11.2
Betelgeuse	270°51.1	-7°24.6
Canopus	263°52.0	-52°42.8
Sirius	258°25.4	-16°45.3
Achernar	255°05.1	-29°00.9
Procyon	244°49.7	5°09.4
Pollux	243°16.0	27°57.8
Avior	234°14.1	59°35.9
Suhail	227°45.4	-43°32.6
Miaplacidus	221°37.6	-69°49.8
Alphard	217°46.6	-8°46.5
Regulus	207°33.1	11°50.2
Dubhe	193°39.2	61°36.6
Denebola	182°23.6	14°25.4
Gienah	175°42.2	-17°41.4
Acruz	172°58.3	-63°14.8
Gamma	171°50.0	-57°15.8
Alhena	166°11.5	55°48.9
Spica	158°20.9	-13°18.1
Alkaid	152°50.7	49°30.7
Hadar	148°34.0	-60°30.0
Menkent	147°56.1	-36°30.0
Arcturus	145°46.7	19°02.5
Rigel Kent.	139°38.3	-60°56.6
Kochab	137°18.8	74°02.6
Zubay'ubi	136°54.6	-16°09.2
Alphecca	126°02.6	-26°37.3
Antares	112°14.4	-26°29.4
Atria	107°07.4	-69°04.3
Sabik	102°01.5	-15°45.5
Shaula	96°08.8	-37°07.3
Rasalhague	95°57.5	12°32.2
Eltanin	90°41.6	51°28.7
Kaus Austral.	83°31.1	-34°22.3
Vega	80°32.5	38°48.1
Nunki	75°46.5	-26°15.8
Altair	61°59.0	8°56.1
Peacock	53°04.3	-56°38.8
Deneb	49°25.3	45°22.1
Enif	33°38.0	9°59.6
Al Na'ir	27°32.0	-46°49.9
Fomalhaut	15°13.7	-29°29.0
Scheat	13°44.5	28°13.4
Markab	13°29.2	15°20.7

Apr 04 Sat	SHA	Mer.pass.
Venus	326°51.1	13:24
Mars	3°45.3	10:55
Jupiter	252°36.5	18:17
Saturn	353°43.3	11:34

  

Apr 05 Sun	SHA	Mer.pass.
Venus	325°40.5	13:24
Mars	3°02.3	10:54
Jupiter	252°31.6	18:14
Saturn	353°36.4	11:31

  

Apr 06 Mon	SHA	Mer.pass.
Venus	324°29.7	13:25
Mars	2°19.4	10:53
Jupiter	252°26.6	18:10
Saturn	353°29.6	11:27

Horizontal parallax	Venus	Mars
	0.1	0.2

h	Sun			Moon			
Sat	GHA	Dec	GHA	$\nu$	Dec	d	HP
0	179°13.5	N05°36.7	340°06.3	13.8°	S17°39.1	11.7'	54.8'
1	194°13.7	37.7	354°39.1	13.8°	17°50.8	11.6'	54.8'
2	20						

Table with columns for planets: Aries, Venus, Mars, Jupiter, Saturn. Includes date, GHA, Dec, and other astronomical data.

Table with columns for planets: Wed, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec. Includes date, GHA, Dec, and other astronomical data.

Table with columns for planets: Thu, GHA, Dec, GHA, Dec, GHA, Dec, GHA, Dec. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Stars: SHA, Dec. Lists star names like Alpheratz, Ankaa, Schedar, etc.

Table with columns for Stars: SHA, Dec. Lists star names like Denobola, Gienah, Acrux, etc.

Table with columns for Stars: SHA, Dec, Mer.pass. Lists star names like Apr 07 Tue, Apr 08 Wed, Apr 09 Thu.

Table with columns for Sun and Moon: h, GHA, Dec, GHA, Dec, d, HP. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Sun and Moon: Wed, GHA, Dec, GHA, Dec, d, HP. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Sun and Moon: Thu, GHA, Dec, GHA, Dec, d, HP. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Twilight and Sunrise: Lat., Naut., Civil, Sunrise, Sunset, Civil, Twilight Naut. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Moonrise and Moonset: Lat., Tue, Moonrise Wed, Thu, Tue, Moonset Wed, Thu. Includes date, GHA, Dec, and other astronomical data.

Table with columns for Day, Sun, Moon, Age. Includes date, GHA, Dec, and other astronomical data.

	Aries			Venus			Mars			Jupiter			Saturn		
Fri	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	Dec	
0	198°14.5	157°58.5	N15°35.7	197°42.6	500°52.1	90°19.1	N22°47.8	191°16.9	N00°40.9						
1	213°17.0	172°57.9	36.8	212°43.3	51.3	105°21.4	47.7	206°19.0	41.0						
2	228°19.4	187°57.4	39.8	227°44.0	50.5	120°23.6	41.1	221°21.2	41.1						
3	243°21.9	202°56.9	38.9	242°44.6	49.7	135°25.8	47.7	236°23.4	41.2						
4	258°24.3	217°56.3	39.9	257°45.3	48.9	150°28.0	47.7	251°25.6	41.4						
5	273°26.8	232°55.8	40.9	272°46.0	48.1	165°30.3	47.6	266°27.8	41.5						
6	288°29.3	247°55.3	N15°41.9	287°46.7	500°47.3	180°32.5	N22°47.6	281°30.6	N00°41.6						
7	303°31.7	262°54.7	43.0	302°47.4	46.6	195°34.7	47.6	296°32.1	41.7						
8	318°34.2	277°54.2	44.0	317°34.0	45.8	210°36.9	47.5	311°34.3	41.8						
9	333°36.7	292°53.7	45.0	332°48.7	45.0	225°39.1	47.5	326°36.5	42.0						
10	348°39.1	307°53.1	46.1	347°49.4	44.2	240°41.3	47.5	341°38.7	42.1						
11	3°41.6	322°52.6	47.1	2°50.1	43.4	255°43.6	47.5	356°40.9	42.2						
12	18°44.1	337°52.0	N15°48.1	17°50.8	500°42.6	270°45.8	N22°47.4	11°43.0	N00°42.3						
13	33°46.5	352°51.5	49.1	32°51.5	41.9	285°48.0	47.4	26°45.2	42.4						
14	48°49.0	7°51.0	50.2	47°52.1	41.1	300°50.2	47.4	41°47.4	42.5						
15	63°51.4	22°50.4	51.2	62°52.8	40.3	315°52.4	47.4	56°49.6	42.7						
16	78°53.9	37°49.9	52.2	77°53.5	39.5	330°54.7	47.3	71°51.8	42.8						
17	93°56.4	52°49.4	53.3	92°54.2	38.7	345°56.9	47.3	86°54.0	42.9						
18	108°58.8	67°48.8	N15°54.3	107°54.9	500°37.9	0°59.1	N22°47.3	101°56.1	N00°43.0						
19	124°01.3	82°48.3	55.3	122°55.6	37.1	161°01.3	47.3	116°58.3	43.1						
20	139°03.8	97°47.7	56.3	137°56.3	36.4	31°03.5	47.2	132°00.5	43.3						
21	154°06.2	112°47.2	57.3	152°56.9	35.6	46°05.7	47.2	147°02.7	43.4						
22	169°08.7	127°46.6	58.4	167°57.6	34.8	61°07.9	47.2	162°04.9	43.5						
23	184°11.2	142°46.1	59.4	182°58.3	34.0	76°10.2	47.2	177°07.0	43.6						
Mer.pass.	10:45	ν-0.5' d 1.0' m -3.92		ν 0.7' d -0.8' m 1.20		ν 2.2' d -0.0' m -2.14		ν 2.2' d 0.1' m 0.93							

Sat	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	199°13.6	157°45.6	N16°00.4	197°59.0	500°33.2	91°12.4	N22°47.1	192°09.2	N00°43.7
1	214°16.1	172°45.0	01.4	212°59.7	32.4	106°14.6	47.1	207°11.4	43.8
2	229°18.6	187°44.5	02.5	228°00.4	31.7	121°16.8	47.1	222°13.6	44.0
3	244°21.0	202°43.9	03.5	243°01.0	30.9	136°19.0	47.0	237°15.8	44.1
4	259°23.5	217°43.4	04.5	258°01.7	30.1	151°21.2	47.0	252°18.0	44.2
5	274°25.9	232°42.8	05.5	273°02.4	29.3	166°23.4	47.0	267°20.1	44.3
6	289°28.4	247°42.3	N16°06.5	288°03.1	500°28.5	181°25.7	N22°47.0	282°22.3	N00°44.4
7	304°30.9	262°41.8	07.5	303°03.8	27.7	196°27.9	46.9	297°24.5	44.6
8	319°33.3	277°41.2	08.6	318°04.5	26.9	211°30.1	46.9	312°26.7	44.7
9	334°35.8	292°40.7	09.6	333°05.1	26.2	226°32.3	46.9	327°28.9	44.8
10	349°38.3	307°40.1	10.6	348°05.8	25.4	241°34.5	46.9	342°31.0	44.9
11	4°40.7	322°39.6	11.6	3°06.5	24.6	256°36.7	46.8	357°33.2	45.0
12	19°43.2	337°39.0	N16°12.6	18°07.2	500°23.8	271°38.9	N22°46.8	12°35.4	N00°45.1
13	34°45.7	352°38.5	13.6	33°07.9	23.1	286°41.1	46.8	27°37.6	45.3
14	49°48.1	7°37.9	14.6	48°08.6	22.2	301°43.3	46.7	42°39.8	45.4
15	64°50.6	22°37.4	15.6	63°09.2	21.5	316°45.6	46.7	57°42.0	45.5
16	79°53.1	37°36.8	16.6	78°09.9	20.7	331°47.8	46.7	72°44.1	45.6
17	94°55.5	52°36.3	17.7	93°10.6	19.9	346°50.0	46.7	87°46.3	45.7
18	109°58.0	67°35.7	N16°18.7	108°11.3	500°19.1	1°52.2	N22°46.6	102°48.5	N00°45.9
19	125°00.4	82°35.2	19.7	123°12.0	18.3	16°54.4	46.6	117°50.7	46.0
20	140°02.9	97°34.6	20.7	138°12.7	17.5	31°56.6	46.6	132°52.9	46.1
21	155°05.4	112°34.1	21.7	153°13.4	16.8	46°58.8	46.6	147°55.1	46.2
22	170°07.8	127°33.5	22.7	168°14.0	16.0	62°01.0	46.5	162°57.2	46.3
23	185°10.3	142°33.0	23.7	183°14.7	15.2	77°03.2	46.5	177°59.4	46.4
Mer.pass.	10:41	ν-0.5' d 1.0' m -3.92		ν 0.7' d -0.8' m 1.20		ν 2.2' d -0.0' m -2.13		ν 2.2' d 0.1' m 0.93	

Sun	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	200°12.8	157°32.4	N16°24.7	198°15.4	500°14.4	92°05.4	N22°46.5	193°01.6	N00°46.6
1	215°15.2	172°31.9	25.7	213°16.1	13.6	107°07.6	46.4	208°03.8	46.7
2	230°17.7	187°31.3	26.7	228°16.8	12.8	122°09.9	46.4	223°06.0	46.8
3	245°20.2	202°30.8	27.7	243°17.5	12.0	137°12.1	46.4	238°08.2	46.9
4	260°22.6	217°30.2	28.7	258°18.2	11.3	152°14.3	46.4	253°10.3	47.0
5	275°25.1	232°29.6	29.7	273°18.8	10.5	167°16.5	46.3	268°12.5	47.1
6	290°27.6	247°29.1	N16°30.7	288°19.5	500°09.7	182°18.7	N22°46.3	283°14.7	N00°47.3
7	305°30.0	262°28.5	31.7	303°20.2	08.9	197°20.9	46.3	298°16.9	47.4
8	320°32.5	277°28.0	32.7	318°20.9	08.1	212°23.1	46.2	313°19.1	47.5
9	335°34.9	292°27.4	33.7	333°21.6	07.3	227°25.3	46.2	328°21.2	47.6
10	350°37.4	307°26.9	34.7	348°22.3	06.6	242°27.5	46.2	343°23.4	47.7
11	5°39.9	322°26.3	35.7	3°23.0	05.8	257°29.7	46.2	358°25.6	47.9
12	20°42.3	337°25.7	N16°36.7	18°23.6	500°05.0	272°31.9	N22°46.1	13°27.8	N00°48.0
13	35°44.8	352°25.2	37.7	33°24.3	04.2	287°34.1	46.1	28°30.0	48.1
14	50°47.3	7°24.6	38.7	48°25.0	03.4	302°36.3	46.1	43°32.2	48.2
15	65°49.7	22°24.1	39.7	63°25.7	02.6	317°38.5	46.0	58°34.3	48.3
16	80°52.2	37°23.5	40.7	78°26.4	01.9	332°40.7	46.0	73°36.5	48.4
17	95°54.7	52°23.0	41.7	93°27.1	01.1	347°42.9	46.0	88°38.7	48.6
18	110°57.1	67°22.4	N16°42.6	108°27.8	500°00.3	2°45.1	N22°46.0	103°40.9	N00°48.7
19	125°59.6	82°21.8	43.6	123°28.4	N00°00.0	17°47.3	45.9	118°43.1	48.8
20	141°02.0	97°21.3	44.6	138°29.1	01.3	32°49.5	45.9	133°45.3	48.9
21	156°04.5	112°20.7	45.6	153°29.8	02.1	47°51.7	45.9	148°47.4	49.0
22	171°07.0	127°20.1	46.6	168°30.5	02.8	62°53.9	45.8	163°49.6	49.1
23	186°09.4	142°19.6	47.6	183°31.2	03.6	77°56.1	45.8	178°51.8	49.3
Mer.pass.	10:37	ν-0.6' d 1.0' m -3.92		ν 0.7' d -0.8' m 1.20		ν 2.2' d -0.0' m -2.13		ν 2.2' d 0.1' m 0.93	

Stars		
	SHA	Dec
Alpheratz	357°34.1	29°14.0
Ankaa	353°06.5	-42°09.8
Schedar	349°30.4	56°40.8
Dhifha	348°46.6	-17°50.6
Achernar	335°20.0	57°06.2
Hamal	327°50.4	23°35.1
Polaris	313°57.3	89°22.6
Acamar	315°11.4	-40°12.1
Menkar	314°05.4	4°11.5
Mirfak	308°27.2	49°57.3
Aldebaran	290°38.7	16°33.7
Rigel	281°03.1	-8°10.4
Capella	280°20.6	46°01.6
Bellatrix	278°21.9	6°22.3
Elnath	275°00.7	28°37.8
Alnilam	270°51.1	-1°11.2
Betelgeuse	270°51.1	7°24.6
Canopus	263°52.1	-52°42.8
Sirius	258°25.4	-16°45.3
Adhara	255°05.1	-29°00.7
Procyon	244°49.8	5°09.4
Pollux	243°16.0	27°57.8
Avior	234°14.2	-59°35.9
Suhail	222°45.4	-43°32.6
Miaplacidus	221°37.7	-69°49.8
Alphard	217°46.6	-8°46.5
Regulus	207°33.1	11°50.2
Dubhe	193°39.2	61°36.6
Denebola	182°23.6	14°25.4
Giannah	175°42.2	-17°41.5
Acrux	172°58.3	-63°14.9
Gacrux	171°50.0	-57°15.8
Alioth	166°11.5	55°48.9
Spica	158°20.9	-11°18.1
Alkaid	152°50.7	49°19.8
Hadar	148°33.9	-60°30.0
Menkent	147°56.0	-36°30.1