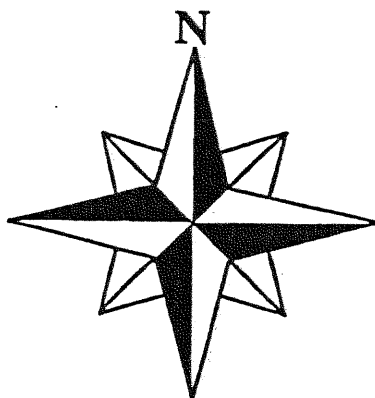


CALCULS DE PASSERELLE

ELEMENTS DE CALCULS



INSPECTION GENERALE DE L'ENSEIGNEMENT MARITIME

d'après les travaux de M. GUILLEMET, professeur de l'enseignement maritime

NE PAS UTILISER POUR LA NAVIGATION

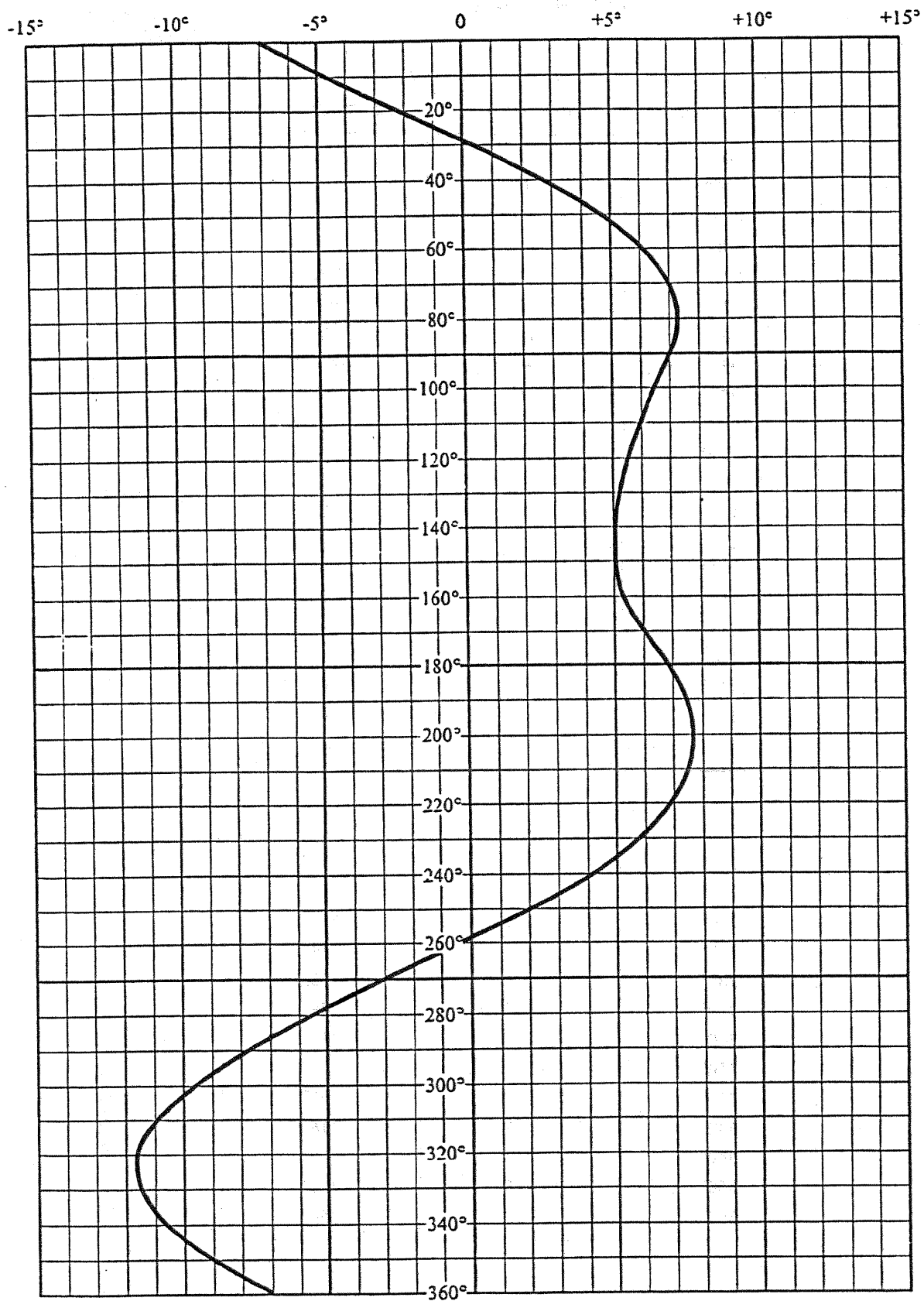
COURBE ET TABLE DE DÉVIATIONS DU COMPAS MAGNÉTIQUE

Remarque

La courbe et la table sont établies pour deux compas magnétiques différents.

NE PAS UTILISER POUR LA NAVIGATION

Courbe de déviations



NE PAS UTILISER POUR LA NAVIGATION

Table de déviations

cap au compas	déviations	cap magnétique
000°	- 4°	356°
010°	0°	010°
020°	+ 3,5°	023,5°
030°	+ 6,5°	036,5°
040°	+ 8,5°	048,5°
050°	+ 10°	060°
060°	+ 10°	070°
070°	+ 9,5°	079,5°
080°	+ 8°	088°
090°	+ 6°	096°
100°	+ 4°	104°
110°	+ 2°	112°
120°	0°	120°
130°	- 0,5°	129,5°
140°	- 1°	139°
150°	- 0,5°	149,5°
160°	+ 0,5°	160,5°
170°	+ 2°	172°
180°	+ 4°	184°
190°	+ 6°	196°
200°	+ 7°	207°
210°	+ 7,5°	217,5°
220°	+ 7°	227°
230°	+ 6°	236°
240°	+ 4°	244°
250°	+ 1°	251°
260°	- 2,5°	257,5°
270°	- 6°	264°
280°	- 9,5	270,5°
290°	- 12°	278°
300°	- 14°	286°
310°	- 15°	295°
320°	- 15°	305°
330°	- 13,5°	316,5°
340°	- 11°	329°
350°	- 8°	342°
360°	- 4°	356°

NAVIGATION ASTRONOMIQUE

Éléments extraits des éphémérides nautiques, reproduits avec l'aimable autorisation des éditions EDINAUTIC et du Bureau des longitudes.

Symboles

Heure UT :	temps civil au méridien origine (heure Tcp).
AHvo :	angle horaire du Soleil vrai au méridien origine.
AHao :	angle horaire de l'astre au méridien origine.
AHso :	angle horaire sidéral au méridien origine.
D :	déclinaison.
π :	parallaxe équatoriale horizontale.
Tcp pass :	heure de passage de l'astre au méridien origine.
Z :	azimut compté de 0° à 360°.

Remarques

- Les heures de lever et coucher du Soleil ainsi que les relèvements se réfèrent à une observation au niveau de la mer ($e = 0$), à l'instant où le bord supérieur de l'astre est tangent à l'horizon.
- Les heures de début de l'aube et de fin du crépuscule indiquent le moment où le centre du Soleil se trouve à 6° au-dessous de l'horizon apparent.
- Les éphémérides simplifiées du Soleil (page 9) donnent des éléments astronomiques pour les quatre mois de l'année au cours desquels se produisent les solstices et les équinoxes. Les heures de lever et coucher du Soleil sont établies pour une latitude de 48°N.
- Les éléments donnés dans ces pages sont destinés à la formation maritime ; ils ne sont pas valables pour l'année en cours.

NE PAS UTILISER POUR LA NAVIGATION

27 août

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°33,5'	N 10°17,7'	358°46,9'	S 11°58,2'	57,2'	192°02,1'	N 05°54,9'	334°47,3'
01	194°33,7'	N 10°16,8'	13°16,7'	S 11°48,8'	57,3'	207°05,8'	N 05°55,4'	349°49,7'
02	209°33,9'	N 10°16,0'	27°46,6'	S 11°39,3'	57,3'	222°09,6'	N 05°55,8'	4°52,2'
03	224°34,1'	N 10°15,1'	42°16,4'	S 11°29,7'	57,3'	237°13,3'	N 05°56,3'	19°54,6'
04	239°34,2'	N 10°14,2'	56°46,3'	S 11°20,1'	57,3'	252°17,0'	N 05°56,8'	34°57,1'
05	254°34,4'	N 10°13,4'	71°16,1'	S 11°10,3'	57,4'	267°20,8'	N 05°57,2'	49°59,6'
06	269°34,6'	N 10°12,5'	85°46,0'	S 11°00,6'	57,4'	282°24,5'	N 05°57,7'	65°02,0'
07	284°34,8'	N 10°11,6'	100°15,9'	S 10°50,7'	57,4'	297°28,2'	N 05°58,2'	80°04,5'
08	299°35,0'	N 10°10,7'	114°45,8'	S 10°40,8'	57,4'	312°31,9'	N 05°58,6'	95°07,0'
09	314°35,1'	N 10°09,9'	129°15,7'	S 10°30,8'	57,5'	327°35,6'	N 05°59,1'	110°09,4'
10	329°35,3'	N 10°09,0'	143°45,6'	S 10°20,8'	57,5'	342°39,3'	N 05°59,6'	125°11,9'
11	344°35,5'	N 10°08,1'	158°15,5'	S 10°10,7'	57,5'	357°43,1'	N 06°00,0'	140°14,4'
12	359°35,7'	N 10°07,2'	172°45,5'	S 10°00,5'	57,5'	12°46,8'	N 06°00,5'	155°16,8'
13	14°35,9'	N 10°06,4'	187°15,4'	S 09°50,3'	57,6'	27°50,5'	N 06°01,0'	170°19,3'
14	29°36,0'	N 10°05,5'	201°45,4'	S 09°40,0'	57,6'	42°54,2'	N 06°01,4'	185°21,7'
15	44°36,2'	N 10°04,6'	216°15,3'	S 09°29,7'	57,6'	57°57,9'	N 06°01,9'	200°24,2'
16	59°36,4'	N 10°03,7'	230°45,3'	S 09°19,3'	57,6'	73°01,6'	N 06°02,4'	215°26,7'
17	74°36,6'	N 10°02,9'	245°15,3'	S 09°08,8'	57,6'	88°05,2'	N 06°02,9'	230°29,1'
18	89°36,8'	N 10°02,0'	259°45,2'	S 08°58,3'	57,7'	103°08,9'	N 06°03,3'	245°31,6'
19	104°36,9'	N 10°01,1'	274°15,2'	S 08°47,7'	57,7'	118°12,6'	N 06°03,8'	260°34,1'
20	119°37,1'	N 10°00,2'	288°45,2'	S 08°37,1'	57,7'	133°16,3'	N 06°04,3'	275°36,5'
21	134°37,3'	N 09°59,4'	303°15,2'	S 08°26,4'	57,7'	148°20,0'	N 06°04,8'	290°39,0'
22	149°37,5'	N 09°58,5'	317°45,2'	S 08°15,7'	57,8'	163°23,7'	N 06°05,2'	305°41,5'
23	164°37,7'	N 09°57,6'	332°15,2'	S 08°04,9'	57,8'	178°27,3'	N 06°05,7'	320°43,9'
24	179°37,9'	N 09°56,7'	346°45,3'	S 07°54,1'	57,8'	193°31,0'	N 06°06,2'	335°46,4'
Tcp pass	12h 01min 37s		00h 05,1min			11h 09,1min		01h 41min

28 août

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°37,9'	N 09°56,7'	346°45,3'	S 07°54,1'	57,8'	193°31,0'	N 06°06,2'	335°46,4'
01	194°38,0'	N 09°55,8'	1°15,3'	S 07°43,2'	57,8'	208°34,7'	N 06°06,7'	350°48,9'
02	209°38,2'	N 09°55,0'	15°45,3'	S 07°32,3'	57,8'	223°38,3'	N 06°07,1'	5°51,3'
03	224°38,4'	N 09°54,1'	30°15,3'	S 07°21,3'	57,9'	238°42,0'	N 06°07,6'	20°53,8'
04	239°38,6'	N 09°53,2'	44°45,4'	S 07°10,3'	57,9'	253°45,6'	N 06°08,1'	35°56,2'
05	254°38,8'	N 09°52,3'	59°15,4'	S 06°59,2'	57,9'	268°49,3'	N 06°08,6'	50°58,7'
06	269°38,9'	N 09°51,5'	73°45,4'	S 06°48,1'	57,9'	283°53,0'	N 06°09,0'	66°01,2'
07	284°39,1'	N 09°50,6'	88°15,5'	S 06°36,9'	57,9'	298°56,6'	N 06°09,5'	81°03,6'
08	299°39,3'	N 09°49,7'	102°45,5'	S 06°25,7'	58,0'	314°00,3'	N 06°10,0'	96°06,1'
09	314°39,5'	N 09°48,8'	117°15,6'	S 06°14,5'	58,0'	329°03,9'	N 06°10,5'	111°08,6'
10	329°39,7'	N 09°47,9'	131°45,6'	S 06°03,2'	58,0'	344°07,5'	N 06°10,9'	126°11,0'
11	344°39,9'	N 09°47,1'	146°15,7'	S 05°51,9'	58,0'	359°11,2'	N 06°11,4'	141°13,5'
12	359°40,1'	N 09°46,2'	160°45,7'	S 05°40,5'	58,1'	14°14,8'	N 06°11,9'	156°16,0'
13	14°40,2'	N 09°45,3'	175°15,8'	S 05°29,1'	58,1'	29°18,4'	N 06°12,4'	171°18,4'
14	29°40,4'	N 09°44,4'	189°45,8'	S 05°17,6'	58,1'	44°22,1'	N 06°12,9'	186°20,9'
15	44°40,6'	N 09°43,5'	204°15,9'	S 05°06,2'	58,1'	59°25,7'	N 06°13,3'	201°23,3'
16	59°40,8'	N 09°42,6'	218°45,9'	S 04°54,7'	58,1'	74°29,3'	N 06°13,8'	216°25,8'
17	74°41,0'	N 09°41,8'	233°16,0'	S 04°43,1'	58,2'	89°32,9'	N 06°14,3'	231°28,3'
18	89°41,2'	N 09°40,9'	247°46,0'	S 04°31,5'	58,2'	104°36,5'	N 06°14,8'	246°30,7'
19	104°41,3'	N 09°40,0'	262°16,1'	S 04°19,9'	58,2'	119°40,2'	N 06°15,3'	261°33,2'
20	119°41,5'	N 09°39,1'	276°46,1'	S 04°08,3'	58,2'	134°43,8'	N 06°15,7'	276°35,7'
21	134°41,7'	N 09°38,2'	291°16,1'	S 03°56,6'	58,2'	149°47,4'	N 06°16,2'	291°38,1'
22	149°41,9'	N 09°37,3'	305°46,2'	S 03°44,9'	58,2'	164°51,0'	N 06°16,7'	306°40,6'
23	164°42,1'	N 09°36,5'	320°16,2'	S 03°33,2'	58,3'	179°54,6'	N 06°17,2'	321°43,1'
24	179°42,3'	N 09°35,6'	334°46,2'	S 03°21,5'	58,3'	194°58,2'	N 06°17,7'	336°45,5'
Tcp pass	12h 01min 20s		00h 54,8min			11h 03,3min		01h 37min

NE PAS UTILISER POUR LA NAVIGATION

29 août

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°42,3'	N 09°35,6'	334°46,2'	S 03°21,5'	58,3'	194°58,2'	N 06°17,7'	336°45,5'
01	194°42,5'	N 09°34,7'	349°16,3'	S 03°09,7'	58,3'	210°01,7'	N 06°18,1'	351°48,0'
02	209°42,6'	N 09°33,8'	3°46,3'	S 02°57,9'	58,3'	225°05,3'	N 06°18,6'	6°50,5'
03	224°42,8'	N 09°32,9'	18°16,3'	S 02°46,1'	58,3'	240°08,9'	N 06°19,1'	21°52,9'
04	239°43,0'	N 09°32,0'	32°46,3'	S 02°34,3'	58,4'	255°12,5'	N 06°19,6'	36°55,4'
05	254°43,2'	N 09°31,2'	47°16,3'	S 02°22,4'	58,4'	270°16,1'	N 06°20,1'	51°57,8'
06	269°43,4'	N 09°30,3'	61°46,2'	S 02°10,5'	58,4'	285°19,7'	N 06°20,6'	67°00,3'
07	284°43,6'	N 09°29,4'	76°16,2'	S 01°58,6'	58,4'	300°23,2'	N 06°21,0'	82°02,8'
08	299°43,8'	N 09°28,5'	90°46,2'	S 01°46,7'	58,4'	315°26,8'	N 06°21,5'	97°05,2'
09	314°44,0'	N 09°27,6'	105°16,1'	S 01°34,8'	58,4'	330°30,4'	N 06°22,0'	112°07,7'
10	329°44,1'	N 09°26,7'	119°46,1'	S 01°22,8'	58,5'	345°33,9'	N 06°22,5'	127°10,2'
11	344°44,3'	N 09°25,8'	134°16,0'	S 01°10,9'	58,5'	0°37,5'	N 06°23,0'	142°12,6'
12	359°44,5'	N 09°25,0'	148°45,9'	S 00°58,9'	58,5'	15°41,0'	N 06°23,5'	157°15,1'
13	14°44,7'	N 09°24,1'	163°15,8'	S 00°46,9'	58,5'	30°44,6'	N 06°23,9'	172°17,6'
14	29°44,9'	N 09°23,2'	177°45,7'	S 00°34,9'	58,5'	45°48,1'	N 06°24,4'	187°20,0'
15	44°45,1'	N 09°22,3'	192°15,6'	S 00°22,9'	58,5'	60°51,7'	N 06°24,9'	202°22,5'
16	59°45,3'	N 09°21,4'	206°45,5'	S 00°10,9'	58,6'	75°55,2'	N 06°25,4'	217°25,0'
17	74°45,5'	N 09°20,5'	221°15,4'	N 00°01,1'	58,6'	90°58,8'	N 06°25,9'	232°27,4'
18	89°45,6'	N 09°19,6'	235°45,2'	N 00°13,1'	58,6'	106°02,3'	N 06°26,4'	247°29,9'
19	104°45,8'	N 09°18,7'	250°15,0'	N 00°25,1'	58,6'	121°05,8'	N 06°26,9'	262°32,3'
20	119°46,0'	N 09°17,8'	264°44,8'	N 00°37,2'	58,6'	136°09,4'	N 06°27,3'	277°34,8'
21	134°46,2'	N 09°17,0'	279°14,6'	N 00°49,2'	58,6'	151°12,9'	N 06°27,8'	292°37,3'
22	149°46,4'	N 09°16,1'	293°44,4'	N 01°01,2'	58,6'	166°16,4'	N 06°28,3'	307°39,7'
23	164°46,6'	N 09°15,2'	308°14,2'	N 01°13,2'	58,7'	181°19,9'	N 06°28,8'	322°42,2'
24	179°46,8'	N 09°14,3'	322°43,9'	N 01°25,3'	58,7'	196°23,4'	N 06°29,3'	337°44,7'
Tcp pass	12h 01min 02s		01h 44,4min			10h 57,5min		01h 33min

30 août

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°46,8'	N 09°14,3'	322°43,9'	N 01°25,3'	58,7'	196°23,4'	N 06°29,3'	337°44,7'
01	194°47,0'	N 09°13,4'	337°13,6'	N 01°37,3'	58,7'	211°26,9'	N 06°29,8'	352°47,1'
02	209°47,2'	N 09°12,5'	351°43,3'	N 01°49,3'	58,7'	226°30,5'	N 06°30,3'	7°49,6'
03	224°47,3'	N 09°11,6'	6°13,0'	N 02°01,3'	58,7'	241°34,0'	N 06°30,7'	22°52,1'
04	239°47,5'	N 09°10,7'	20°42,6'	N 02°13,4'	58,7'	256°37,5'	N 06°31,2'	37°54,5'
05	254°47,7'	N 09°09,8'	35°12,3'	N 02°25,4'	58,7'	271°41,0'	N 06°31,7'	52°57,0'
06	269°47,9'	N 09°08,9'	49°41,9'	N 02°37,4'	58,8'	286°44,4'	N 06°32,2'	67°59,4'
07	284°48,1'	N 09°08,0'	64°11,5'	N 02°49,3'	58,8'	301°47,9'	N 06°32,7'	83°01,9'
08	299°48,3'	N 09°07,2'	78°41,0'	N 03°01,3'	58,8'	316°51,4'	N 06°33,2'	98°04,4'
09	314°48,5'	N 09°06,3'	93°10,6'	N 03°13,3'	58,8'	331°54,9'	N 06°33,7'	113°06,8'
10	329°48,7'	N 09°05,4'	107°40,1'	N 03°25,2'	58,8'	346°58,4'	N 06°34,1'	128°09,3'
11	344°48,9'	N 09°04,5'	122°09,6'	N 03°37,2'	58,8'	2°01,9'	N 06°34,6'	143°11,8'
12	359°49,1'	N 09°03,6'	136°39,1'	N 03°49,1'	58,8'	17°05,3'	N 06°35,1'	158°14,2'
13	14°49,3'	N 09°02,7'	151°08,5'	N 04°01,0'	58,8'	32°08,8'	N 06°35,6'	173°16,7'
14	29°49,4'	N 09°01,8'	165°37,9'	N 04°12,9'	58,9'	47°12,3'	N 06°36,1'	188°19,2'
15	44°49,6'	N 09°00,9'	180°07,3'	N 04°24,7'	58,9'	62°15,7'	N 06°36,6'	203°21,6'
16	59°49,8'	N 09°00,0'	194°36,7'	N 04°36,6'	58,9'	77°19,2'	N 06°37,1'	218°24,1'
17	74°50,0'	N 08°59,1'	209°06,0'	N 04°48,4'	58,9'	92°22,6'	N 06°37,6'	233°26,6'
18	89°50,2'	N 08°58,2'	223°35,3'	N 05°00,2'	58,9'	107°26,1'	N 06°38,0'	248°29,0'
19	104°50,4'	N 08°57,3'	238°04,6'	N 05°12,0'	58,9'	122°29,5'	N 06°38,5'	263°31,5'
20	119°50,6'	N 08°56,4'	252°33,8'	N 05°23,7'	58,9'	137°33,0'	N 06°39,0'	278°33,9'
21	134°50,8'	N 08°55,5'	267°03,0'	N 05°35,5'	58,9'	152°36,4'	N 06°39,5'	293°36,4'
22	149°51,0'	N 08°54,6'	281°32,2'	N 05°47,2'	58,9'	167°39,8'	N 06°40,0'	308°38,9'
23	164°51,2'	N 08°53,7'	296°01,3'	N 05°58,8'	59,0'	182°43,3'	N 06°40,5'	323°41,3'
24	179°51,4'	N 08°52,8'	310°30,4'	N 06°10,5'	59,0'	197°46,7'	N 06°41,0'	338°43,8'
Tcp pass	12h 00min 44s		02h 34,3min			10h 51,9min		01h 29min

NE PAS UTILISER POUR LA NAVIGATION

31 août

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHSo
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°51,4'	N 08°52,8'	310°30,4'	N 06°10,5'	59,0'	197°46,7'	N 06°41,0'	338°43,8'
01	194°51,6'	N 08°51,9'	324°59,5'	N 06°22,1'	59,0'	212°50,1'	N 06°41,5'	353°46,3'
02	209°51,8'	N 08°51,0'	339°28,6'	N 06°33,7'	59,0'	227°53,5'	N 06°41,9'	8°48,7'
03	224°51,9'	N 08°50,1'	353°57,6'	N 06°45,2'	59,0'	242°57,0'	N 06°42,4'	23°51,2'
04	239°52,1'	N 08°49,3'	8°26,5'	N 06°56,7'	59,0'	258°00,4'	N 06°42,9'	38°53,7'
05	254°52,3'	N 08°48,4'	22°55,5'	N 07°08,2'	59,0'	273°03,8'	N 06°43,4'	53°56,1'
06	269°52,5'	N 08°47,5'	37°24,4'	N 07°19,6'	59,0'	288°07,2'	N 06°43,9'	68°58,6'
07	284°52,7'	N 08°46,6'	51°53,2'	N 07°31,0'	59,0'	303°10,6'	N 06°44,4'	84°01,0'
08	299°52,9'	N 08°45,7'	66°22,1'	N 07°42,4'	59,0'	318°14,0'	N 06°44,9'	99°03,5'
09	314°53,1'	N 08°44,8'	80°50,9'	N 07°53,7'	59,1'	333°17,4'	N 06°45,4'	114°06,0'
10	329°53,3'	N 08°43,9'	95°19,6'	N 08°04,9'	59,1'	348°20,8'	N 06°45,8'	129°08,4'
11	344°53,5'	N 08°43,0'	109°48,3'	N 08°16,2'	59,1'	3°24,2'	N 06°46,3'	144°10,9'
12	359°53,7'	N 08°42,1'	124°17,0'	N 08°27,3'	59,1'	18°27,5'	N 06°46,8'	159°13,4'
13	14°53,9'	N 08°41,2'	138°45,6'	N 08°38,5'	59,1'	33°30,9'	N 06°47,3'	174°15,8'
14	29°54,1'	N 08°40,3'	153°14,2'	N 08°49,6'	59,1'	48°34,3'	N 06°47,8'	189°18,3'
15	44°54,3'	N 08°39,4'	167°42,8'	N 09°00,6'	59,1'	63°37,7'	N 06°48,3'	204°20,8'
16	59°54,5'	N 08°38,5'	182°11,3'	N 09°11,6'	59,1'	78°41,0'	N 06°48,8'	219°23,2'
17	74°54,7'	N 08°37,6'	196°39,7'	N 09°22,5'	59,1'	93°44,4'	N 06°49,3'	234°25,7'
18	89°54,9'	N 08°36,7'	211°08,2'	N 09°33,4'	59,1'	108°47,8'	N 06°49,7'	249°28,2'
19	104°55,1'	N 08°35,8'	225°36,6'	N 09°44,3'	59,1'	123°51,1'	N 06°50,2'	264°30,6'
20	119°55,3'	N 08°34,9'	240°04,9'	N 09°55,1'	59,1'	138°54,5'	N 06°50,7'	279°33,1'
21	134°55,4'	N 08°34,0'	254°33,2'	N 10°05,8'	59,1'	153°57,8'	N 06°51,2'	294°35,5'
22	149°55,6'	N 08°33,1'	269°01,5'	N 10°16,4'	59,2'	169°01,2'	N 06°51,7'	309°38,0'
23	164°55,8'	N 08°32,2'	283°29,7'	N 10°27,1'	59,2'	184°04,5'	N 06°52,2'	324°40,5'
24	179°56,0'	N 08°31,3'	297°57,8'	N 10°37,6'	59,2'	199°07,9'	N 06°52,7'	339°42,9'
Tcp pass	12h 00min 25s		03h 25,0min			10h 46,4min		01h 25min

1 septembre

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHSo
	AHvo	D	AHao	D	π	AHao	D	
00 h	179°56,0'	N 08°31,3'	297°57,8'	N 10°37,6'	59,2'	199°07,9'	N 06°52,7'	339°42,9'
01	194°56,2'	N 08°30,3'	312°26,0'	N 10°48,1'	59,2'	214°11,2'	N 06°53,2'	354°45,4'
02	209°56,4'	N 08°29,4'	326°54,0'	N 10°58,5'	59,2'	229°14,5'	N 06°53,6'	9°47,9'
03	224°56,6'	N 08°28,5'	341°22,1'	N 11°08,9'	59,2'	244°17,8'	N 06°54,1'	24°50,3'
04	239°56,8'	N 08°27,6'	355°50,1'	N 11°19,2'	59,2'	259°21,2'	N 06°54,6'	39°52,8'
05	254°57,0'	N 08°26,7'	10°18,0'	N 11°29,4'	59,2'	274°24,5'	N 06°55,1'	54°55,3'
06	269°57,2'	N 08°25,8'	24°45,9'	N 11°39,6'	59,2'	289°27,8'	N 06°55,6'	69°57,7'
07	284°57,4'	N 08°24,9'	39°13,7'	N 11°49,7'	59,2'	304°31,1'	N 06°56,1'	85°00,2'
08	299°57,6'	N 08°24,0'	53°41,6'	N 11°59,7'	59,2'	319°34,4'	N 06°56,6'	100°02,6'
09	314°57,8'	N 08°23,1'	68°09,3'	N 12°09,7'	59,2'	334°37,7'	N 06°57,0'	115°05,1'
10	329°58,0'	N 08°22,2'	82°37,0'	N 12°19,6'	59,2'	349°41,0'	N 06°57,5'	130°07,6'
11	344°58,2'	N 08°21,3'	97°04,7'	N 12°29,4'	59,2'	4°44,3'	N 06°58,0'	145°10,0'
12	359°58,4'	N 08°20,4'	111°32,3'	N 12°39,2'	59,2'	19°47,6'	N 06°58,5'	160°12,5'
13	14°58,6'	N 08°19,5'	125°59,9'	N 12°48,8'	59,2'	34°50,9'	N 06°59,0'	175°15,0'
14	29°58,8'	N 08°18,6'	140°27,4'	N 12°58,4'	59,2'	49°54,2'	N 06°59,5'	190°17,4'
15	44°59,0'	N 08°17,7'	154°54,8'	N 13°08,0'	59,2'	64°57,5'	N 06°59,9'	205°19,9'
16	59°59,2'	N 08°16,8'	169°22,3'	N 13°17,4'	59,2'	80°00,7'	N 07°00,4'	220°22,4'
17	74°59,4'	N 08°15,9'	183°49,6'	N 13°26,8'	59,2'	95°04,0'	N 07°00,9'	235°24,8'
18	89°59,6'	N 08°15,0'	198°17,0'	N 13°36,1'	59,3'	110°07,3'	N 07°01,4'	250°27,3'
19	104°59,8'	N 08°14,1'	212°44,2'	N 13°45,3'	59,3'	125°10,5'	N 07°01,9'	265°29,8'
20	120°00,0'	N 08°13,2'	227°11,5'	N 13°54,4'	59,3'	140°13,8'	N 07°02,4'	280°32,2'
21	135°00,2'	N 08°12,2'	241°38,6'	N 14°03,4'	59,3'	155°17,0'	N 07°02,8'	295°34,7'
22	150°00,4'	N 08°11,3'	256°05,8'	N 14°12,4'	59,3'	170°20,3'	N 07°03,3'	310°37,1'
23	165°00,6'	N 08°10,4'	270°32,9'	N 14°21,2'	59,3'	185°23,5'	N 07°03,8'	325°39,6'
24	180°00,8'	N 08°09,5'	284°59,9'	N 14°30,0'	59,3'	200°26,8'	N 07°04,3'	340°42,1'
Tcp pass	12h 00min 06s		04h 17,3min			10h 41,1min		01h 21min

NE PAS UTILISER POUR LA NAVIGATION

2 septembre

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	180°00,8'	N 08°09,5'	284°59,9'	N 14°30,0'	59,3'	200°26,8'	N 07°04,3'	340°42,1'
01	195°01,0'	N 08°08,6'	299°26,9'	N 14°38,7'	59,3'	215°30,0'	N 07°04,8'	355°44,5'
02	210°01,2'	N 08°07,7'	313°53,8'	N 14°47,3'	59,3'	230°33,3'	N 07°05,3'	10°47,0'
03	225°01,4'	N 08°06,8'	328°20,7'	N 14°55,8'	59,3'	245°36,5'	N 07°05,7'	25°49,5'
04	240°01,6'	N 08°05,9'	342°47,5'	N 15°04,2'	59,3'	260°39,7'	N 07°06,2'	40°51,9'
05	255°01,8'	N 08°05,0'	357°14,3'	N 15°12,6'	59,3'	275°42,9'	N 07°06,7'	55°54,4'
06	270°02,0'	N 08°04,1'	11°41,1'	N 15°20,8'	59,3'	290°46,2'	N 07°07,2'	70°56,9'
07	285°02,2'	N 08°03,2'	26°07,8'	N 15°28,9'	59,3'	305°49,4'	N 07°07,7'	85°59,3'
08	300°02,4'	N 08°02,3'	40°34,4'	N 15°37,0'	59,3'	320°52,6'	N 07°08,2'	101°01,8'
09	315°02,6'	N 08°01,3'	55°01,0'	N 15°44,9'	59,3'	335°55,8'	N 07°08,6'	116°04,3'
10	330°02,8'	N 08°00,4'	69°27,6'	N 15°52,8'	59,3'	350°59,0'	N 07°09,1'	131°06,7'
11	345°03,0'	N 07°59,5'	83°54,1'	N 16°00,5'	59,3'	6°02,2'	N 07°09,6'	146°09,2'
12	0°03,2'	N 07°58,6'	98°20,5'	N 16°08,2'	59,3'	21°05,4'	N 07°10,1'	161°11,6'
13	15°03,4'	N 07°57,7'	112°46,9'	N 16°15,7'	59,3'	36°08,6'	N 07°10,6'	176°14,1'
14	30°03,6'	N 07°56,8'	127°13,3'	N 16°23,2'	59,3'	51°11,8'	N 07°11,0'	191°16,6'
15	45°03,8'	N 07°55,9'	141°39,6'	N 16°30,5'	59,3'	66°15,0'	N 07°11,5'	206°19,0'
16	60°04,0'	N 07°55,0'	156°05,9'	N 16°37,7'	59,3'	81°18,1'	N 07°12,0'	221°21,5'
17	75°04,2'	N 07°54,1'	170°32,1'	N 16°44,9'	59,3'	96°21,3'	N 07°12,5'	236°24,0'
18	90°04,4'	N 07°53,1'	184°58,3'	N 16°51,9'	59,3'	111°24,5'	N 07°12,9'	251°26,4'
19	105°04,6'	N 07°52,2'	199°24,4'	N 16°58,8'	59,3'	126°27,7'	N 07°13,4'	266°28,9'
20	120°04,8'	N 07°51,3'	213°50,5'	N 17°05,7'	59,3'	141°30,8'	N 07°13,9'	281°31,4'
21	135°05,0'	N 07°50,4'	228°16,6'	N 17°12,4'	59,3'	156°34,0'	N 07°14,4'	296°33,8'
22	150°05,2'	N 07°49,5'	242°42,6'	N 17°19,0'	59,3'	171°37,1'	N 07°14,9'	311°36,3'
23	165°05,4'	N 07°48,6'	257°08,6'	N 17°25,5'	59,3'	186°40,3'	N 07°15,3'	326°38,8'
24	180°05,6'	N 07°47,7'	271°34,5'	N 17°31,8'	59,3'	201°43,4'	N 07°15,8'	341°41,2'
Tcp pass	11h 59min 47s		05h 11,5min			10h 35,9min		01h 17min

3 septembre

Heure U.T.	Soleil		Lune			Vénus		Point vernal AHso
	AHvo	D	AHao	D	π	AHao	D	
00 h	180°05,6'	N 07°47,7'	271°34,5'	N 17°31,8'	59,3'	201°43,4'	N 07°15,8'	341°41,2'
01	195°05,8'	N 07°46,8'	286°00,4'	N 17°38,1'	59,3'	216°46,6'	N 07°16,3'	356°43,7'
02	210°06,0'	N 07°45,8'	300°26,2'	N 17°44,3'	59,3'	231°49,7'	N 07°16,8'	11°46,1'
03	225°06,2'	N 07°44,9'	314°52,0'	N 17°50,3'	59,3'	246°52,9'	N 07°17,2'	26°48,6'
04	240°06,4'	N 07°44,0'	329°17,8'	N 17°56,2'	59,3'	261°56,0'	N 07°17,7'	41°51,1'
05	255°06,6'	N 07°43,1'	343°43,5'	N 18°02,0'	59,3'	276°59,1'	N 07°18,2'	56°53,5'
06	270°06,8'	N 07°42,2'	358°09,2'	N 18°07,7'	59,3'	292°02,2'	N 07°18,7'	71°56,0'
07	285°07,0'	N 07°41,3'	12°34,8'	N 18°13,3'	59,3'	307°05,4'	N 07°19,1'	86°58,5'
08	300°07,2'	N 07°40,3'	27°00,4'	N 18°18,8'	59,3'	322°08,5'	N 07°19,6'	102°00,9'
09	315°07,4'	N 07°39,4'	41°26,0'	N 18°24,1'	59,3'	337°11,6'	N 07°20,1'	117°03,4'
10	330°07,6'	N 07°38,5'	55°51,5'	N 18°29,3'	59,3'	352°14,7'	N 07°20,6'	132°05,9'
11	345°07,8'	N 07°37,6'	70°17,0'	N 18°34,4'	59,3'	7°17,8'	N 07°21,0'	147°08,3'
12	0°08,0'	N 07°36,7'	84°42,5'	N 18°39,4'	59,3'	22°20,9'	N 07°21,5'	162°10,8'
13	15°08,2'	N 07°35,8'	99°07,9'	N 18°44,3'	59,3'	37°24,0'	N 07°22,0'	177°13,2'
14	30°08,4'	N 07°34,9'	113°33,3'	N 18°49,0'	59,3'	52°27,1'	N 07°22,4'	192°15,7'
15	45°08,6'	N 07°33,9'	127°58,7'	N 18°53,7'	59,3'	67°30,2'	N 07°22,9'	207°18,2'
16	60°08,8'	N 07°33,0'	142°24,0'	N 18°58,1'	59,3'	82°33,2'	N 07°23,4'	222°20,6'
17	75°09,0'	N 07°32,1'	156°49,3'	N 19°02,5'	59,3'	97°36,3'	N 07°23,9'	237°23,1'
18	90°09,2'	N 07°31,2'	171°14,6'	N 19°06,8'	59,3'	112°39,4'	N 07°24,3'	252°25,6'
19	105°09,4'	N 07°30,3'	185°39,9'	N 19°10,9'	59,2'	127°42,5'	N 07°24,8'	267°28,0'
20	120°09,6'	N 07°29,4'	200°05,1'	N 19°14,9'	59,2'	142°45,5'	N 07°25,3'	282°30,5'
21	135°09,8'	N 07°28,4'	214°30,3'	N 19°18,8'	59,2'	157°48,6'	N 07°25,7'	297°33,0'
22	150°10,0'	N 07°27,5'	228°55,5'	N 19°22,5'	59,2'	172°51,6'	N 07°26,2'	312°35,4'
23	165°10,2'	N 07°26,6'	243°20,6'	N 19°26,1'	59,2'	187°54,7'	N 07°26,7'	327°37,9'
24	180°10,5'	N 07°25,7'	257°45,7'	N 19°29,6'	59,2'	202°57,7'	N 07°27,1'	342°40,4'
Tcp pass	11h 59min 28s		06h 07,7min			10h 30,9min		01h 13min

NE PAS UTILISER POUR LA NAVIGATION

Levers et couchers du Soleil

LATI- TUDE	27 août			28 août			29 août			30 août		
	Début de l'aube (h. min)	Lever (h. min)	Z	Coucher (h. min)	Z	Fin du crépus (h. min)	Début de l'aube (h. min)	Lever (h. min)	Z	Coucher (h. min)	Z	Fin du crépus (h. min)
70°N	02 26	03 51	056°	20 04	302°	21 25	02 39	04 00	058°	19 54	299°	21 12
66°N	03 14	04 17	062°	19 40	296°	20 41	03 23	04 24	064°	19 32	294°	20 32
62°N	03 44	04 35	066°	19 24	292°	20 13	03 50	04 40	067°	19 17	291°	20 06
58°N	04 05	04 48	069°	19 11	290°	19 54	04 09	04 52	070°	19 06	288°	19 48
56°N	04 13	04 53	070°	19 06	288°	19 46	04 17	04 57	071°	19 01	287°	19 41
54°N	04 20	04 58	071°	19 01	288°	19 39	04 24	05 02	072°	18 57	286°	19 34
52°N	04 27	05 03	072°	18 57	287°	19 33	04 30	05 06	073°	18 53	285°	19 28
50°N	04 32	05 07	073°	18 53	286°	19 28	04 36	05 10	074°	18 49	285°	19 23
45°N	04 44	05 15	074°	18 45	284°	19 16	04 47	05 18	075°	18 42	283°	19 12
40°N	04 54	05 22	076°	18 39	283°	19 07	04 56	05 24	076°	18 35	282°	19 03
35°N	05 02	05 29	077°	18 33	282°	18 59	05 04	05 30	077°	18 30	281°	18 56
30°N	05 09	05 34	077°	18 28	281°	18 52	05 10	05 35	078°	18 25	280°	18 50
20°N	05 21	05 43	078°	18 19	280°	18 42	05 21	05 44	079°	18 17	279°	18 40
10°N	05 30	05 51	079°	18 12	280°	18 33	05 30	05 51	080°	18 10	279°	18 32
0°	05 37	05 58	079°	18 05	279°	18 26	05 37	05 58	080°	18 04	278°	18 25
10°S	05 44	06 06	079°	17 58	279°	18 19	05 43	06 04	080°	17 58	278°	18 19
20°S	05 51	06 13	079°	17 51	279°	18 13	05 49	06 11	080°	17 51	279°	18 13
30°S	05 57	06 22	078°	17 43	280°	18 07	05 55	06 19	079°	17 44	279°	18 08
35°S	06 01	06 27	077°	17 38	281°	18 04	05 58	06 24	078°	17 39	280°	18 05
40°S	06 05	06 32	077°	17 33	281°	18 00	06 02	06 29	078°	17 35	280°	18 02
45°S	06 09	06 38	076°	17 27	282°	17 57	06 05	06 35	077°	17 29	281°	17 59
50°S	06 13	06 46	074°	17 20	283°	17 52	06 09	06 42	075°	17 23	282°	17 55
52°S	06 15	06 49	074°	17 16	284°	17 51	06 11	06 45	075°	17 20	283°	17 54
54°S	06 17	06 53	073°	17 13	285°	17 49	06 13	06 48	074°	17 16	284°	17 52
56°S	06 19	06 57	072°	17 09	286°	17 47	06 15	06 52	073°	17 13	284°	17 50

LATI- TUDE	31 août			1 septembre			2 septembre			3 septembre		
	Début de l'aube (h. min)	Lever (h. min)	Z	Coucher (h. min)	Z	Fin du crépus (h. min)	Début de l'aube (h. min)	Lever (h. min)	Z	Coucher (h. min)	Z	Fin du crépus (h. min)
70°N	02 51	04 09	061°	19 44	297°	20 59	03 02	04 17	063°	19 35	295°	20 47
66°N	03 30	04 30	066°	19 25	292°	20 23	03 38	04 37	068°	19 17	290°	20 14
62°N	03 56	04 45	069°	19 11	289°	19 59	04 02	04 50	071°	19 04	288°	19 52
58°N	04 14	04 57	072°	19 00	287°	19 42	04 19	05 01	073°	18 55	285°	19 36
56°N	04 21	05 01	073°	18 56	286°	19 35	04 26	05 05	074°	18 51	284°	19 30
54°N	04 28	05 05	073°	18 52	285°	19 29	04 32	05 09	075°	18 47	284°	19 24
52°N	04 34	05 09	074°	18 48	284°	19 24	04 37	05 12	075°	18 44	283°	19 19
50°N	04 39	05 13	075°	18 45	284°	19 19	04 42	05 16	076°	18 41	282°	19 14
45°N	04 50	05 20	076°	18 38	282°	19 08	04 52	05 22	077°	18 34	281°	19 05
40°N	04 58	05 26	077°	18 32	281°	19 00	05 00	05 28	078°	18 29	280°	18 57
35°N	05 06	05 31	078°	18 27	280°	18 53	05 07	05 33	079°	18 25	279°	18 50
30°N	05 12	05 36	079°	18 23	280°	18 47	05 13	05 37	080°	18 21	279°	18 45
20°N	05 22	05 44	080°	18 16	279°	18 38	05 22	05 44	081°	18 14	278°	18 36
10°N	05 30	05 51	080°	18 09	278°	18 31	05 29	05 51	081°	18 08	277°	18 29
0°	05 36	05 57	081°	18 03	278°	18 24	05 36	05 57	081°	18 03	277°	18 24
10°S	05 42	06 03	081°	17 58	278°	18 19	05 41	06 02	081°	17 57	277°	18 19
20°S	05 48	06 10	080°	17 51	278°	18 14	05 46	06 08	081°	17 52	277°	18 14
30°S	05 53	06 17	080°	17 45	278°	18 09	05 51	06 15	081°	17 46	278°	18 10
35°S	05 56	06 21	079°	17 41	279°	18 06	05 53	06 19	080°	17 42	278°	18 08
40°S	05 59	06 26	079°	17 36	279°	18 04	05 56	06 23	079°	17 38	278°	18 06
45°S	06 02	06 31	078°	17 31	280°	18 01	05 58	06 28	079°	17 34	279°	18 03
50°S	06 05	06 38	077°	17 25	281°	17 58	06 01	06 33	078°	17 28	280°	18 01
52°S	06 06	06 41	076°	17 23	282°	17 57	06 02	06 36	077°	17 26	280°	18 00
54°S	06 08	06 44	075°	17 20	282°	17 55	06 03	06 39	077°	17 23	281°	17 59
56°S	06 10	06 47	075°	17 16	283°	17 54	06 05	06 42	076°	17 20	282°	17 58

NE PAS UTILISER POUR LA NAVIGATION

Éphémérides partielles du Soleil

Mars	AHvo à 00h UT	Déclinaison à 00h UT	Tcp pass h min s	Lever h min	Coucher h min
1	176°52,4'	S 07°50,3'	12 12 25	06 42	17 44
2	176°55,3'	S 07°27,5'	12 12 13	06 40	17 46
3	176°58,3'	S 07°04,7'	12 12 01	06 38	17 47
4	177°01,4'	S 06°41,7'	12 11 48	06 36	17 49
5	177°04,7'	S 06°18,6'	12 11 34	06 34	17 50
6	177°08,1'	S 05°55,5'	12 11 21	06 32	17 52
7	177°11,5'	S 05°32,2'	12 11 07	06 30	17 53
8	177°15,1'	S 05°08,9'	12 10 52	06 28	17 54
9	177°18,8'	S 04°45,5'	12 10 37	06 26	17 55
10	177°22,5'	S 04°22,1'	12 10 22	06 24	17 57
11	177°26,4'	S 03°58,5'	12 10 07	06 22	17 59
12	177°30,3'	S 03°35,0'	12 09 51	06 20	18 01
13	177°34,2'	S 03°11,4'	12 09 35	06 18	18 02
14	177°38,3'	S 02°47,7'	12 09 19	06 16	18 03
15	177°42,4'	S 02°24,1'	12 09 02	06 14	18 04
16	177°46,6'	S 02°00,4'	12 08 45	06 12	18 06
17	177°50,8'	S 01°36,7'	12 08 28	06 10	18 07
18	177°55,1'	S 01°12,9'	12 08 11	06 08	18 09
19	177°59,4'	S 00°49,2'	12 07 53	06 06	18 11
20	178°03,8'	S 00°25,5'	12 07 36	06 04	18 13
21	178°08,2'	S 00°01,8'	12 07 18	06 02	18 14
22	178°12,6'	N 00°22,0'	12 07 00	06 00	18 16
23	178°17,1'	N 00°45,6'	12 06 42	05 58	18 17
24	178°21,6'	N 01°09,3'	12 06 24	05 56	18 18
25	178°26,1'	N 01°32,9'	12 06 06	05 54	18 19
26	178°30,7'	N 01°56,5'	12 05 48	05 52	18 21
27	178°35,2'	N 02°20,1'	12 05 30	05 50	18 22
28	178°39,8'	N 02°43,6'	12 05 12	05 48	18 24
29	178°44,3'	N 03°07,0'	12 04 54	05 46	18 25
30	178°48,9'	N 03°30,4'	12 04 35	05 44	18 27
31	178°53,4'	N 03°53,7'	12 04 17	05 42	18 28

Juin	AHvo à 00h UT	Déclinaison à 00h UT	Tcp pass h min s	Lever h min	Coucher h min
1	180°35,0'	N 21°57,6'	11 57 45	04 05	19 52
2	180°32,7'	N 22°05,8'	11 57 54	04 04	19 53
3	180°30,4'	N 22°13,6'	11 58 03	04 03	19 54
4	180°27,9'	N 22°21,1'	11 58 13	04 02	19 55
5	180°25,4'	N 22°28,1'	11 58 24	04 02	19 55
6	180°22,8'	N 22°34,8'	11 58 34	04 01	19 56
7	180°20,1'	N 22°41,0'	11 58 45	04 01	19 57
8	180°17,3'	N 22°46,9'	11 58 57	04 01	19 58
9	180°14,4'	N 22°52,4'	11 59 08	04 00	19 58
10	180°11,5'	N 22°57,4'	11 59 20	04 00	19 59
11	180°08,5'	N 23°02,1'	11 59 32	04 00	19 59
12	180°05,4'	N 23°06,3'	11 59 44	03 59	20 00
13	180°02,3'	N 23°10,2'	11 59 57	03 59	20 01
14	179°59,2'	N 23°13,6'	12 00 10	03 59	20 02
15	179°56,0'	N 23°16,6'	12 00 22	03 59	20 02
16	179°52,8'	N 23°19,2'	12 00 35	03 59	20 03
17	179°49,5'	N 23°21,4'	12 00 48	03 59	20 03
18	179°46,3'	N 23°23,2'	12 01 01	03 59	20 03
19	179°43,0'	N 23°24,6'	12 01 14	03 59	20 03
20	179°39,7'	N 23°25,6'	12 01 28	03 59	20 03
21	179°36,5'	N 23°26,1'	12 01 41	04 00	20 04
22	179°33,2'	N 23°26,3'	12 01 54	04 00	20 04
23	179°30,0'	N 23°26,0'	12 02 07	04 00	20 04
24	179°26,7'	N 23°25,3'	12 02 19	04 00	20 04
25	179°23,5'	N 23°24,2'	12 02 32	04 01	20 04
26	179°20,4'	N 23°22,7'	12 02 45	04 01	20 04
27	179°17,2'	N 23°20,7'	12 02 57	04 02	20 04
28	179°14,1'	N 23°18,4'	12 03 10	04 02	20 04
29	179°11,1'	N 23°15,6'	12 03 22	04 03	20 04
30	179°08,1'	N 23°12,5'	12 03 34	04 03	20 04

Sept.	AHvo à 00h UT	Déclinaison à 00h UT	Tcp pass h min s	Lever h min	Coucher h min
1	179°56,0'	N 08°31,3'	12 00 06	05 16	18 42
2	180°00,8'	N 08°09,5'	11 59 47	05 18	18 40
3	180°05,6'	N 07°47,7'	11 59 28	05 20	18 38
4	180°10,5'	N 07°25,7'	11 59 08	05 21	18 36
5	180°15,4'	N 07°03,6'	11 58 49	05 23	18 34
6	180°20,4'	N 06°41,3'	11 58 28	05 24	18 32
7	180°25,4'	N 06°19,0'	11 58 08	05 25	18 30
8	180°30,5'	N 05°56,6'	11 57 48	05 27	18 28
9	180°35,6'	N 05°34,0'	11 57 27	05 29	18 26
10	180°40,8'	N 05°11,4'	11 57 06	05 30	18 24
11	180°46,0'	N 04°48,7'	11 56 46	05 31	18 22
12	180°51,2'	N 04°25,9'	11 56 25	05 32	18 20
13	180°56,5'	N 04°03,0'	11 56 03	05 34	18 18
14	181°01,8'	N 03°40,0'	11 55 42	05 35	18 16
15	181°07,1'	N 03°17,0'	11 55 21	05 36	18 14
16	181°12,5'	N 02°53,9'	11 55 00	05 37	18 12
17	181°17,8'	N 02°30,8'	11 54 38	05 39	18 09
18	181°23,2'	N 02°07,6'	11 54 17	05 40	18 07
19	181°28,5'	N 01°44,4'	11 53 55	05 42	18 05
20	181°33,9'	N 01°21,2'	11 53 34	05 43	18 03
21	181°39,2'	N 00°57,9'	11 53 13	05 44	18 01
22	181°44,5'	N 00°34,5'	11 52 51	05 45	17 59
23	181°49,8'	N 00°11,2'	11 52 30	05 47	17 57
24	181°55,1'	S 00°12,1'	11 52 09	05 48	17 55
25	182°00,4'	S 00°35,5'	11 51 48	05 50	17 53
26	182°05,6'	S 00°58,9'	11 51 27	05 52	17 51
27	182°10,8'	S 01°22,2'	11 51 07	05 54	17 48
28	182°15,9'	S 01°45,6'	11 50 46	05 55	17 46
29	182°20,9'	S 02°08,9'	11 50 26	05 57	17 44
30	182°25,9'	S 02°32,2'	11 50 06	05 58	17 42

Déc.	AHvo à 00h UT	Déclinaison à 00h UT	Tcp pass h min s	Lever h min	Coucher h min
1	182°49,6'	S 21°41,6'	11 48 53	07 28	16 09
2	182°44,0'	S 21°51,0'	11 49 15	07 30	16 09
3	182°38,3'	S 22°00,0'	11 49 38	07 31	16 08
4	182°32,4'	S 22°08,5'	11 50 02	07 32	16 08
5	182°26,4'	S 22°16,7'	11 50 27	07 33	16 08
6	182°20,2'	S 22°24,4'	11 50 52	07 35	16 07
7	182°13,9'	S 22°31,6'	11 51 17	07 36	16 07
8	182°07,4'	S 22°38,5'	11 51 43	07 37	16 07
9	182°00,8'	S 22°44,9'	11 52 10	07 38	16 07
10	181°54,1'	S 22°50,8'	11 52 37	07 39	16 06
11	181°47,3'	S 22°56,3'	11 53 04	07 40	16 06
12	181°40,4'	S 23°01,3'	11 53 32	07 41	16 06
13	181°33,5'	S 23°05,9'	11 54 00	07 42	16 06
14	181°26,4'	S 23°10,0'	11 54 29	07 43	16 06
15	181°19,3'	S 23°13,7'	11 54 57	07 44	16 06
16	181°12,0'	S 23°16,9'	11 55 26	07 45	16 06
17	181°04,8'	S 23°19,6'	11 55 55	07 45	16 07
18	180°57,5'	S 23°21,9'	11 56 25	07 46	16 07
19	180°50,1'	S 23°23,7'	11 56 54	07 46	16 08
20	180°42,7'	S 23°25,0'	11 57 24	07 47	16 08
21	180°35,3'	S 23°25,8'	11 57 53	07 48	16 09
22	180°27,9'	S 23°26,2'	11 58 23	07 48	16 09
23	180°20,5'	S 23°26,1'	11 58 53	07 49	16 10
24	180°13,0'	S 23°25,6'	11 59 23	07 49	16 10
25	180°05,6'	S 23°24,6'	11 59 52	07 49	16 11
26	179°58,2'	S 23°23,1'	12 00 22	07 50	16 11
27	179°50,8'	S 23°21,1'	12 00 52	07 50	16 12
28	179°43,4'	S 23°18,7'	12 01 21	07 50	16 13
29	179°36,0'	S 23°15,8'	12 01 51	07 50	16 14
30	179°28,7'	S 23°12,4'	12 02 20	07 50	16 14
31	179°21,5'	S 23°08,6'	12 02 49	07 51	16 15

NE PAS UTILISER POUR LA NAVIGATION

Étoiles

Coordonnées équatoriales entre le 27 août et le 3 septembre

Etoile	Constellation	Magnitude	Ascension verse	Déclinaison
Achernar.....	α Eridan	0,6	335°34,4'	S 57°14,2'
Acrux.....	α Croix du Sud	1,1	173°21,9'	S 63°05,8'
Aldébaran.....	α Taureau	1,1	291°01,7'	N 16°30,4'
Alkaïd.....	η Grande Ourse	1,9	153°07,6'	N 49°19,3'
Alnaïr.....	α Grue	2,2	27°56,7'	S 46°57,7'
Alphéraz.....	α Andromède	2,2	357°54,3'	N 29°05,3'
Altaïr.....	α Aigle	0,9	62°18,4'	N 08°52,2'
Antarès.....	α Scorpion	1,2	112°39,4'	S 26°25,8'
Arcturus.....	α Bouvier	0,2	146°05,7'	N 19°11,4'
Bételgeuse.....	α Orion	0,1 - 1,2	271°13,0'	N 07°24,4'
Canopus.....	α Carène	- 0,9	264°01,2'	S 52°41,5'
Capella (<i>la Chèvre</i>)...	α Cocher	0,2	280°50,4'	N 45°59,6'
Deneb.....	α Cygne	1,3	49°38,4'	N 45°17,0'
Denebola.....	β Lion	2,2	182°44,9'	N 14°34,7'
Dubhe.....	α Grande Ourse	2,0	194°05,4'	N 61°45,3'
Fomalhaut.....	α Poisson austral	1,3	15°35,4'	S 29°37,4'
Peacock.....	α Paon	2,1	53°35,6'	S 56°44,2'
Polaire (1a).....	α Petite Ourse	2,1 - 2,2	321°57,2 (27/08) 321°54,5 (03/09)	N 89°15,4'
Pollux.....	β Gémeaux	1,2	243°41,1	N 28°01,6'
Procyon.....	α Petit Chien	0,5	245°11,2'	N 05°13,6'
Rasalague.....	α Ophiuchus	2,1	96°16,3'	N 12°33,9'
Régulus.....	α Lion	1,3	207°55,2'	N 11°58,3'
Rigel.....	β Orion	0,3	281°22,4'	S 08°12,1'
Rigil Kentarus.....	α Centaure	0,1	140°06,8'	S 60°50,1'
Sirius.....	α Grand Chien	- 1,6	258°43,3'	S 16°42,8'
Spica (<i>l'Epi</i>).....	α Vierge	1,2	158°42,8'	S 11°09,4'
Véga.....	α Lyre	0,1	80°46,0'	N 38°47,3'

NE PAS UTILISER POUR LA NAVIGATION

Corrections des hauteurs observées du Soleil

Première correction

Hauteur observée	Élévation de l'œil														
	0 m	2 m	4 m	6 m	8 m	10 m	12 m	14 m	16 m	18 m	20 m	22 m	24 m	26 m	28 m
07°00'	+ 8,7'	+ 6,2'	+ 5,1'	+ 4,3'	+ 3,6'	+ 3,0'	+ 2,5'	+ 2,0'	+ 1,5'	+ 1,1'	+ 0,7'	+ 0,3'	- 0,1'	- 0,4'	- 0,8'
07°20'	+ 9,0'	+ 6,5'	+ 5,4'	+ 4,6'	+ 4,0'	+ 3,4'	+ 2,8'	+ 2,3'	+ 1,9'	+ 1,4'	+ 1,0'	+ 0,6'	+ 0,2'	- 0,1'	- 0,5'
07°40'	+ 9,3'	+ 6,8'	+ 5,7'	+ 4,9'	+ 4,2'	+ 3,6'	+ 3,1'	+ 2,6'	+ 2,2'	+ 1,7'	+ 1,3'	+ 0,9'	+ 0,5'	+ 0,2'	- 0,2'
08°00'	+ 9,6'	+ 7,1'	+ 6,0'	+ 5,2'	+ 4,5'	+ 3,9'	+ 3,4'	+ 2,9'	+ 2,4'	+ 2,0'	+ 1,6'	+ 1,2'	+ 0,8'	+ 0,4'	+ 0,1'
08°20'	+ 9,8'	+ 7,3'	+ 6,3'	+ 5,4'	+ 4,8'	+ 4,2'	+ 3,6'	+ 3,1'	+ 2,7'	+ 2,2'	+ 1,8'	+ 1,4'	+ 1,1'	+ 0,7'	+ 0,4'
08°40'	+10,1'	+ 7,5'	+ 6,5'	+ 5,7'	+ 5,0'	+ 4,4'	+ 3,9'	+ 3,4'	+ 2,9'	+ 2,5'	+ 2,1'	+ 1,7'	+ 1,3'	+ 0,9'	+ 0,6'
09°00'	+10,3'	+ 7,7'	+ 6,7'	+ 5,9'	+ 5,2'	+ 4,6'	+ 4,1'	+ 3,6'	+ 3,1'	+ 2,7'	+ 2,3'	+ 1,9'	+ 1,5'	+ 1,1'	+ 0,8'
09°20'	+10,5'	+ 7,9'	+ 6,9'	+ 6,1'	+ 5,4'	+ 4,8'	+ 4,3'	+ 3,8'	+ 3,3'	+ 2,9'	+ 2,5'	+ 2,1'	+ 1,7'	+ 1,3'	+ 1,0'
09°40'	+10,7'	+ 8,1'	+ 7,1'	+ 6,3'	+ 5,6'	+ 5,0'	+ 4,5'	+ 4,0'	+ 3,5'	+ 3,1'	+ 2,7'	+ 2,3'	+ 1,9'	+ 1,5'	+ 1,2'
10°00'	+10,8'	+ 8,3'	+ 7,3'	+ 6,5'	+ 5,8'	+ 5,2'	+ 4,7'	+ 4,2'	+ 3,7'	+ 3,3'	+ 2,9'	+ 2,5'	+ 2,1'	+ 1,7'	+ 1,4'
10°20'	+11,0'	+ 8,5'	+ 7,4'	+ 6,6'	+ 5,9'	+ 5,3'	+ 4,8'	+ 4,3'	+ 3,9'	+ 3,4'	+ 3,0'	+ 2,6'	+ 2,3'	+ 1,9'	+ 1,6'
10°40'	+11,2'	+ 8,6'	+ 7,6'	+ 6,8'	+ 6,1'	+ 5,5'	+ 5,0'	+ 4,5'	+ 4,0'	+ 3,6'	+ 3,2'	+ 2,8'	+ 2,4'	+ 2,1'	+ 1,7'
11°00'	+11,3'	+ 8,8'	+ 7,7'	+ 6,9'	+ 6,3'	+ 5,7'	+ 5,1'	+ 4,6'	+ 4,2'	+ 3,7'	+ 3,3'	+ 2,9'	+ 2,6'	+ 2,2'	+ 1,9'
11°30'	+11,5'	+ 9,0'	+ 7,9'	+ 7,1'	+ 6,5'	+ 5,9'	+ 5,3'	+ 4,8'	+ 4,4'	+ 3,9'	+ 3,5'	+ 3,1'	+ 2,8'	+ 2,4'	+ 2,1'
12°00'	+11,7'	+ 9,2'	+ 8,1'	+ 7,3'	+ 6,7'	+ 6,1'	+ 5,5'	+ 5,0'	+ 4,6'	+ 4,1'	+ 3,7'	+ 3,3'	+ 3,0'	+ 2,6'	+ 2,3'
12°30'	+11,9'	+ 9,4'	+ 8,3'	+ 7,5'	+ 6,8'	+ 6,2'	+ 5,7'	+ 5,2'	+ 4,8'	+ 4,3'	+ 3,9'	+ 3,5'	+ 3,2'	+ 2,8'	+ 2,4'
13°00'	+12,0'	+ 9,5'	+ 8,5'	+ 7,7'	+ 7,0'	+ 6,4'	+ 5,9'	+ 5,4'	+ 4,9'	+ 4,5'	+ 4,1'	+ 3,7'	+ 3,3'	+ 2,9'	+ 2,6'
13°30'	+12,2'	+ 9,7'	+ 8,6'	+ 7,8'	+ 7,1'	+ 6,5'	+ 6,0'	+ 5,5'	+ 5,1'	+ 4,6'	+ 4,2'	+ 3,8'	+ 3,5'	+ 3,1'	+ 2,8'
14°00'	+12,3'	+ 9,8'	+ 8,8'	+ 8,0'	+ 7,3'	+ 6,7'	+ 6,2'	+ 5,7'	+ 5,2'	+ 4,8'	+ 4,4'	+ 4,0'	+ 3,6'	+ 3,2'	+ 2,9'
15°00'	+12,6'	+10,1'	+ 9,0'	+ 8,2'	+ 7,5'	+ 6,9'	+ 6,4'	+ 5,9'	+ 5,5'	+ 5,0'	+ 4,6'	+ 4,2'	+ 3,9'	+ 3,5'	+ 3,2'
16°00'	+12,8'	+10,3'	+ 9,3'	+ 8,5'	+ 7,8'	+ 7,2'	+ 6,7'	+ 6,2'	+ 5,7'	+ 5,3'	+ 4,9'	+ 4,5'	+ 4,1'	+ 3,7'	+ 3,4'
17°00'	+13,0'	+10,5'	+ 9,5'	+ 8,7'	+ 8,0'	+ 7,4'	+ 6,9'	+ 6,4'	+ 5,9'	+ 5,5'	+ 5,1'	+ 4,7'	+ 4,3'	+ 3,9'	+ 3,6'
18°00'	+13,2'	+10,7'	+ 9,6'	+ 8,8'	+ 8,2'	+ 7,6'	+ 7,1'	+ 6,6'	+ 6,1'	+ 5,7'	+ 5,3'	+ 4,9'	+ 4,5'	+ 4,1'	+ 3,8'
19°00'	+13,4'	+10,8'	+ 9,8'	+ 9,0'	+ 8,3'	+ 7,7'	+ 7,2'	+ 6,7'	+ 6,3'	+ 5,8'	+ 5,4'	+ 5,0'	+ 4,7'	+ 4,3'	+ 4,0'
20°00'	+13,5'	+11,0'	+ 9,9'	+ 9,1'	+ 8,5'	+ 7,9'	+ 7,4'	+ 6,9'	+ 6,4'	+ 6,0'	+ 5,6'	+ 5,2'	+ 4,8'	+ 4,4'	+ 4,1'
22°00'	+13,8'	+11,3'	+10,2'	+ 9,4'	+ 8,7'	+ 8,1'	+ 7,6'	+ 7,1'	+ 6,7'	+ 6,2'	+ 5,8'	+ 5,4'	+ 5,1'	+ 4,7'	+ 4,4'
24°00'	+14,0'	+11,5'	+10,4'	+ 9,6'	+ 8,9'	+ 8,3'	+ 7,8'	+ 7,3'	+ 6,9'	+ 6,4'	+ 6,0'	+ 5,7'	+ 5,3'	+ 4,9'	+ 4,6'
26°00'	+14,2'	+11,7'	+10,6'	+ 9,8'	+ 9,1'	+ 8,5'	+ 8,0'	+ 7,5'	+ 7,1'	+ 6,6'	+ 6,2'	+ 5,9'	+ 5,5'	+ 5,1'	+ 4,8'
28°00'	+14,3'	+11,8'	+10,8'	+10,0'	+ 9,3'	+ 8,7'	+ 8,2'	+ 7,7'	+ 7,2'	+ 6,8'	+ 6,4'	+ 6,0'	+ 5,6'	+ 5,3'	+ 4,9'
30°00'	+14,5'	+12,0'	+10,9'	+10,1'	+ 9,4'	+ 8,8'	+ 8,3'	+ 7,8'	+ 7,4'	+ 6,9'	+ 6,5'	+ 6,2'	+ 5,8'	+ 5,4'	+ 5,1'
32°00'	+14,6'	+12,1'	+11,0'	+10,2'	+ 9,6'	+ 9,0'	+ 8,5'	+ 8,0'	+ 7,5'	+ 7,1'	+ 6,7'	+ 6,3'	+ 5,9'	+ 5,5'	+ 5,2'
34°00'	+14,7'	+12,2'	+11,1'	+10,3'	+ 9,7'	+ 9,1'	+ 8,6'	+ 8,1'	+ 7,6'	+ 7,2'	+ 6,8'	+ 6,4'	+ 6,0'	+ 5,6'	+ 5,3'
36°00'	+14,8'	+12,3'	+11,2'	+10,4'	+ 9,8'	+ 9,2'	+ 8,7'	+ 8,2'	+ 7,7'	+ 7,3'	+ 6,9'	+ 6,5'	+ 6,1'	+ 5,7'	+ 5,4'
38°00'	+14,9'	+12,4'	+11,3'	+10,5'	+ 9,9'	+ 9,3'	+ 8,8'	+ 8,3'	+ 7,8'	+ 7,4'	+ 7,0'	+ 6,6'	+ 6,2'	+ 5,8'	+ 5,5'
40°00'	+15,0'	+12,5'	+11,4'	+10,6'	+10,0'	+ 9,4'	+ 8,8'	+ 8,3'	+ 7,9'	+ 7,4'	+ 7,0'	+ 6,7'	+ 6,3'	+ 5,9'	+ 5,6'
45°00'	+15,1'	+12,6'	+11,6'	+10,8'	+10,1'	+ 9,5'	+ 9,0'	+ 8,5'	+ 8,1'	+ 7,6'	+ 7,2'	+ 6,8'	+ 6,5'	+ 6,1'	+ 5,8'
50°00'	+15,3'	+12,8'	+11,7'	+10,9'	+10,3'	+ 9,7'	+ 9,2'	+ 8,7'	+ 8,2'	+ 7,8'	+ 7,4'	+ 7,0'	+ 6,6'	+ 6,3'	+ 5,9'
55°00'	+15,4'	+12,9'	+11,9'	+11,1'	+10,4'	+ 9,8'	+ 9,3'	+ 8,8'	+ 8,3'	+ 7,9'	+ 7,5'	+ 7,1'	+ 6,7'	+ 6,4'	+ 6,0'
60°00'	+15,5'	+13,0'	+12,0'	+11,2'	+10,5'	+ 9,9'	+ 9,4'	+ 8,9'	+ 8,4'	+ 8,0'	+ 7,6'	+ 7,2'	+ 6,8'	+ 6,5'	+ 6,1'
70°00'	+15,7'	+13,2'	+12,2'	+11,4'	+10,7'	+10,1'	+ 9,6'	+ 9,1'	+ 8,6'	+ 8,2'	+ 7,8'	+ 7,4'	+ 7,0'	+ 6,7'	+ 6,3'
80°00'	+15,9'	+13,4'	+12,3'	+11,5'	+10,9'	+10,3'	+ 9,7'	+ 9,2'	+ 8,8'	+ 8,4'	+ 8,0'	+ 7,6'	+ 7,2'	+ 6,8'	+ 6,5'
90°00'	+16,0'	+13,5'	+12,5'	+11,7'	+11,0'	+10,4'	+ 9,9'	+ 9,4'	+ 8,9'	+ 8,5'	+ 8,1'	+ 7,7'	+ 7,3'	+ 7,0'	+ 6,6'

Deuxième correction (bord inférieur)

janvier	février	mars	avril	mai	juin	juillet	août	septembre	octobre	novembre	décembre
+ 0,3'	+ 0,2'	+ 0,1'	0,0'	- 0,2'	- 0,2'	- 0,2'	- 0,2'	- 0,1'	+ 0,1'	+ 0,2'	+ 0,3'

Deuxième correction (bord supérieur)

janvier	février	mars	avril	mai	juin	juillet	août	septembre	octobre	novembre	décembre
- 32,3'	- 32,2'	- 32,1'	- 32,0'	- 31,8'	- 31,8'	- 31,8'	- 31,8'	- 31,9'	- 32,1'	- 32,2'	- 32,3'

Corrections des hauteurs observées des étoiles et des planètes

Première correction

Hauteur observée	Élévation de l'œil														
	0 m	2 m	4 m	6 m	8 m	10 m	12 m	14 m	16 m	18 m	20 m	22 m	24 m	26 m	28 m
07°00'	-7,4'	-10,0'	-11,0'	-11,8'	-12,5'	-13,1'	-13,7'	-14,2'	-14,6'	-15,1'	-15,5'	-15,9'	-16,2'	-16,6'	-16,9'
07°20'	-7,1'	-9,7'	-10,7'	-11,5'	-12,2'	-12,8'	-13,3'	-13,8'	-14,3'	-14,7'	-15,1'	-15,5'	-15,9'	-16,3'	-16,6'
07°40'	-6,8'	-9,4'	-10,4'	-11,2'	-11,9'	-12,5'	-13,0'	-13,5'	-14,0'	-14,5'	-14,9'	-15,3'	-15,6'	-16,0'	-16,3'
08°00'	-6,6'	-9,1'	-10,2'	-11,0'	-11,7'	-12,3'	-12,8'	-13,3'	-13,7'	-14,2'	-14,6'	-15,0'	-15,4'	-15,7'	-16,1'
08°20'	-6,3'	-8,9'	-9,9'	-10,7'	-11,4'	-12,0'	-12,5'	-13,0'	-13,5'	-13,9'	-14,3'	-14,7'	-15,1'	-15,5'	-15,8'
08°40'	-6,1'	-8,6'	-9,7'	-10,5'	-11,2'	-11,8'	-12,3'	-12,8'	-13,3'	-13,7'	-14,1'	-14,5'	-14,9'	-15,2'	-15,6'
09°00'	-5,9'	-8,4'	-9,5'	-10,3'	-11,0'	-11,6'	-12,1'	-12,6'	-13,0'	-13,5'	-13,9'	-14,3'	-14,7'	-15,0'	-15,4'
09°20'	-5,7'	-8,2'	-9,3'	-10,1'	-10,8'	-11,4'	-11,9'	-12,4'	-12,8'	-13,3'	-13,7'	-14,1'	-14,5'	-14,8'	-15,2'
09°40'	-5,5'	-8,0'	-9,1'	-9,9'	-10,6'	-11,2'	-11,7'	-12,2'	-12,6'	-13,1'	-13,5'	-13,9'	-14,3'	-14,6'	-15,0'
10°00'	-5,3'	-7,8'	-8,9'	-9,7'	-10,4'	-11,0'	-11,5'	-12,0'	-12,5'	-12,9'	-13,3'	-13,7'	-14,1'	-14,4'	-14,8'
10°20'	-5,2'	-7,7'	-8,7'	-9,5'	-10,2'	-10,8'	-11,3'	-11,8'	-12,3'	-12,7'	-13,1'	-13,5'	-13,9'	-14,3'	-14,6'
10°40'	-5,0'	-7,5'	-8,6'	-9,4'	-10,1'	-10,7'	-11,2'	-11,7'	-12,1'	-12,6'	-13,0'	-13,4'	-13,7'	-14,1'	-14,5'
11°00'	-4,9'	-7,4'	-8,4'	-9,2'	-9,9'	-10,5'	-11,0'	-11,5'	-12,0'	-12,4'	-12,8'	-13,2'	-13,6'	-14,0'	-14,3'
11°30'	-4,7'	-7,2'	-8,2'	-9,0'	-9,7'	-10,3'	-10,8'	-11,3'	-11,8'	-12,2'	-12,6'	-13,0'	-13,4'	-13,8'	-14,1'
12°00'	-4,5'	-7,0'	-8,0'	-8,8'	-9,5'	-10,1'	-10,6'	-11,1'	-11,6'	-12,0'	-12,4'	-12,8'	-13,2'	-13,6'	-13,9'
12°30'	-4,3'	-6,8'	-7,8'	-8,7'	-9,3'	-9,9'	-10,5'	-11,0'	-11,4'	-11,9'	-12,3'	-12,6'	-13,0'	-13,4'	-13,7'
13°00'	-4,1'	-6,6'	-7,7'	-8,5'	-9,2'	-9,8'	-10,3'	-10,8'	-11,2'	-11,7'	-12,1'	-12,5'	-12,8'	-13,2'	-13,5'
13°30'	-4,0'	-6,5'	-7,5'	-8,3'	-9,0'	-9,6'	-10,1'	-10,6'	-11,1'	-11,5'	-11,9'	-12,3'	-12,7'	-13,1'	-13,4'
14°00'	-3,8'	-6,3'	-7,4'	-8,2'	-8,9'	-9,5'	-10,0'	-10,5'	-10,9'	-11,4'	-11,8'	-12,2'	-12,5'	-12,9'	-13,2'
15°00'	-3,6'	-6,1'	-7,1'	-7,9'	-8,6'	-9,2'	-9,7'	-10,2'	-10,7'	-11,1'	-11,5'	-11,9'	-12,3'	-12,6'	-13,0'
16°00'	-3,3'	-5,9'	-6,9'	-7,7'	-8,4'	-9,0'	-9,5'	-10,0'	-10,4'	-10,9'	-11,3'	-11,7'	-12,0'	-12,4'	-12,7'
17°00'	-3,1'	-5,7'	-6,7'	-7,5'	-8,2'	-8,8'	-9,3'	-9,8'	-10,2'	-10,7'	-11,1'	-11,5'	-11,8'	-12,2'	-12,5'
18°00'	-3,0'	-5,5'	-6,5'	-7,3'	-8,0'	-8,6'	-9,1'	-9,6'	-10,1'	-10,5'	-10,9'	-11,3'	-11,7'	-12,0'	-12,4'
19°00'	-2,8'	-5,3'	-6,3'	-7,1'	-7,8'	-8,4'	-8,9'	-9,4'	-9,9'	-10,3'	-10,7'	-11,1'	-11,5'	-11,9'	-12,2'
20°00'	-2,7'	-5,2'	-6,2'	-7,0'	-7,7'	-8,3'	-8,8'	-9,3'	-9,8'	-10,2'	-10,6'	-11,0'	-11,3'	-11,7'	-12,1'
22°00'	-2,4'	-4,9'	-5,9'	-6,7'	-7,4'	-8,0'	-8,5'	-9,0'	-9,5'	-9,9'	-10,3'	-10,7'	-11,1'	-11,4'	-11,8'
24°00'	-2,2'	-4,7'	-5,7'	-6,5'	-7,2'	-7,8'	-8,3'	-8,8'	-9,3'	-9,7'	-10,1'	-10,5'	-10,9'	-11,2'	-11,6'
26°00'	-2,0'	-4,5'	-5,5'	-6,3'	-7,0'	-7,6'	-8,1'	-8,6'	-9,1'	-9,5'	-9,9'	-10,3'	-10,7'	-11,0'	-11,4'
28°00'	-1,8'	-4,3'	-5,4'	-6,2'	-6,8'	-7,4'	-8,0'	-8,5'	-8,9'	-9,3'	-9,7'	-10,1'	-10,5'	-10,9'	-11,2'
30°00'	-1,7'	-4,2'	-5,2'	-6,0'	-6,7'	-7,3'	-7,8'	-8,3'	-8,8'	-9,2'	-9,6'	-10,0'	-10,4'	-10,7'	-11,1'
32°00'	-1,5'	-4,0'	-5,1'	-5,9'	-6,6'	-7,2'	-7,7'	-8,2'	-8,6'	-9,1'	-9,5'	-9,9'	-10,2'	-10,6'	-10,9'
34°00'	-1,4'	-3,9'	-5,0'	-5,8'	-6,5'	-7,1'	-7,6'	-8,1'	-8,5'	-9,0'	-9,4'	-9,8'	-10,1'	-10,5'	-10,8'
36°00'	-1,3'	-3,8'	-4,9'	-5,7'	-6,4'	-7,0'	-7,5'	-8,0'	-8,4'	-8,9'	-9,3'	-9,7'	-10,0'	-10,4'	-10,7'
38°00'	-1,2'	-3,7'	-4,8'	-5,6'	-6,3'	-6,9'	-7,4'	-7,9'	-8,3'	-8,8'	-9,2'	-9,6'	-9,9'	-10,3'	-10,6'
40°00'	-1,2'	-3,7'	-4,7'	-5,5'	-6,2'	-6,8'	-7,3'	-7,8'	-8,2'	-8,7'	-9,1'	-9,5'	-9,8'	-10,2'	-10,5'
45°00'	-1,0'	-3,5'	-4,5'	-5,3'	-6,0'	-6,6'	-7,1'	-7,6'	-8,0'	-8,5'	-8,9'	-9,3'	-9,6'	-10,0'	-10,3'
50°00'	-0,8'	-3,3'	-4,4'	-5,2'	-5,8'	-6,4'	-6,9'	-7,4'	-7,9'	-8,3'	-8,7'	-9,1'	-9,5'	-9,9'	-10,2'
55°00'	-0,7'	-3,2'	-4,2'	-5,0'	-5,7'	-6,3'	-6,8'	-7,3'	-7,8'	-8,2'	-8,6'	-9,0'	-9,3'	-9,7'	-10,0'
60°00'	-0,6'	-3,1'	-4,1'	-4,9'	-5,6'	-6,2'	-6,7'	-7,2'	-7,6'	-8,1'	-8,5'	-8,9'	-9,2'	-9,6'	-9,9'
70°00'	-0,4'	-2,9'	-3,9'	-4,7'	-5,4'	-6,0'	-6,5'	-7,0'	-7,4'	-7,9'	-8,3'	-8,7'	-9,0'	-9,4'	-9,7'
80°00'	-0,2'	-2,7'	-3,7'	-4,5'	-5,2'	-5,8'	-6,3'	-6,8'	-7,2'	-7,7'	-8,1'	-8,5'	-8,8'	-9,2'	-9,5'
90°00'	0,0'	-2,5'	-3,5'	-4,3'	-5,0'	-5,6'	-6,1'	-6,6'	-7,1'	-7,5'	-7,9'	-8,3'	-8,7'	-9,0'	-9,4'

Deuxième correction (pour la parallaxe des planètes)

Hauteur observée	Vénus				Mars			
	janvier	avril	août	décembre	janvier	avril	août	décembre
0°	+0,1'	+0,1'	+0,5'	+0,1'	+0,1'	+0,2'	+0,1'	+0,1'
30°	+0,1'	+0,1'	+0,4'	+0,1'	+0,1'	+0,2'	+0,1'	+0,1'
60°	0,0'	+0,1'	+0,2'	+0,1'	+0,1'	+0,1'	+0,1'	0,0'

NE PAS UTILISER POUR LA NAVIGATION

Corrections des hauteurs observées de la Lune

Première correction

Élévation de l'œil	0 m	2 m	4 m	6 m	8 m	10 m	12 m	14 m	16 m	18 m	20 m	22 m	24 m	26 m	28 m
Dépression	0,0'	-2,5'	-3,5'	-4,3'	-5,0'	-5,6'	-6,1'	-6,6'	-7,1'	-7,5'	-7,9'	-8,3'	-8,7'	-9,0'	-9,4'

Deuxième correction (bord inférieur)

Hauteur apparente réfractée	Parallaxe horizontale												
	54'	55'	55,5'	56'	56,5'	57'	57,5'	58'	58,5'	59'	59,5'	60'	61'
08°00'	+ 61,8'	+ 63,1'	+ 63,7'	+ 64,3'	+ 64,9'	+ 65,6'	+ 66,2'	+ 66,8'	+ 67,5'	+ 68,1'	+ 68,7'	+ 69,4'	+ 70,7'
10°00'	+ 62,7'	+ 64,0'	+ 64,6'	+ 65,2'	+ 65,8'	+ 66,5'	+ 67,1'	+ 67,7'	+ 68,3'	+ 69,0'	+ 69,6'	+ 70,3'	+ 71,5'
12°00'	+ 63,2'	+ 64,4'	+ 65,0'	+ 65,7'	+ 66,3'	+ 66,9'	+ 67,5'	+ 68,2'	+ 68,8'	+ 69,5'	+ 70,1'	+ 70,7'	+ 72,0'
14°00'	+ 63,4'	+ 64,6'	+ 65,2'	+ 65,9'	+ 66,5'	+ 67,1'	+ 67,7'	+ 68,4'	+ 69,0'	+ 69,6'	+ 70,2'	+ 70,9'	+ 72,1'
16°00'	+ 63,4'	+ 64,6'	+ 65,2'	+ 65,8'	+ 66,5'	+ 67,1'	+ 67,7'	+ 68,3'	+ 68,9'	+ 69,6'	+ 70,2'	+ 70,8'	+ 72,0'
18°00'	+ 63,2'	+ 64,4'	+ 65,0'	+ 65,6'	+ 66,2'	+ 66,9'	+ 67,5'	+ 68,1'	+ 68,7'	+ 69,3'	+ 69,9'	+ 70,6'	+ 71,8'
20°00'	+ 62,9'	+ 64,1'	+ 64,7'	+ 65,3'	+ 65,9'	+ 66,5'	+ 67,1'	+ 67,7'	+ 68,3'	+ 69,0'	+ 69,6'	+ 70,2'	+ 71,4'
22°00'	+ 62,5'	+ 63,7'	+ 64,3'	+ 64,9'	+ 65,5'	+ 66,1'	+ 66,7'	+ 67,3'	+ 67,9'	+ 68,5'	+ 69,1'	+ 69,7'	+ 70,9'
24°00'	+ 62,0'	+ 63,1'	+ 63,7'	+ 64,3'	+ 64,9'	+ 65,5'	+ 66,1'	+ 66,7'	+ 67,3'	+ 67,9'	+ 68,5'	+ 69,1'	+ 70,3'
26°00'	+ 61,3'	+ 62,5'	+ 63,1'	+ 63,7'	+ 64,3'	+ 64,9'	+ 65,5'	+ 66,0'	+ 66,6'	+ 67,2'	+ 67,8'	+ 68,4'	+ 69,6'
28°00'	+ 60,7'	+ 61,8'	+ 62,4'	+ 63,0'	+ 63,6'	+ 64,1'	+ 64,7'	+ 65,3'	+ 65,9'	+ 66,4'	+ 67,0'	+ 67,6'	+ 68,8'
30°00'	+ 59,9'	+ 61,0'	+ 61,6'	+ 62,2'	+ 62,8'	+ 63,3'	+ 63,9'	+ 64,4'	+ 65,0'	+ 65,6'	+ 66,2'	+ 66,7'	+ 67,9'
32°00'	+ 59,0'	+ 60,2'	+ 60,8'	+ 61,3'	+ 61,9'	+ 62,4'	+ 63,0'	+ 63,5'	+ 64,1'	+ 64,7'	+ 65,3'	+ 65,8'	+ 66,9'
34°00'	+ 58,1'	+ 59,2'	+ 59,8'	+ 60,3'	+ 60,9'	+ 61,4'	+ 62,0'	+ 62,5'	+ 63,1'	+ 63,6'	+ 64,2'	+ 64,8'	+ 65,9'
36°00'	+ 57,2'	+ 58,2'	+ 58,8'	+ 59,3'	+ 59,9'	+ 60,4'	+ 61,0'	+ 61,5'	+ 62,1'	+ 62,6'	+ 63,2'	+ 63,7'	+ 64,7'
38°00'	+ 56,1'	+ 57,2'	+ 57,8'	+ 58,2'	+ 58,8'	+ 59,3'	+ 59,9'	+ 60,4'	+ 61,0'	+ 61,4'	+ 62,0'	+ 62,5'	+ 63,6'
40°00'	+ 55,0'	+ 56,1'	+ 56,7'	+ 57,1'	+ 57,7'	+ 58,1'	+ 58,7'	+ 59,2'	+ 59,8'	+ 60,2'	+ 60,8'	+ 61,3'	+ 62,3'
42°00'	+ 53,9'	+ 54,9'	+ 55,5'	+ 55,9'	+ 56,5'	+ 56,9'	+ 57,5'	+ 57,9'	+ 58,5'	+ 59,0'	+ 59,5'	+ 60,0'	+ 61,0'
44°00'	+ 52,7'	+ 53,7'	+ 54,3'	+ 54,7'	+ 55,2'	+ 55,6'	+ 56,1'	+ 56,6'	+ 57,1'	+ 57,6'	+ 58,1'	+ 58,6'	+ 59,6'
46°00'	+ 51,4'	+ 52,4'	+ 52,8'	+ 53,3'	+ 53,8'	+ 54,3'	+ 54,8'	+ 55,3'	+ 55,8'	+ 56,2'	+ 56,7'	+ 57,2'	+ 58,2'
48°00'	+ 50,1'	+ 51,0'	+ 51,5'	+ 52,0'	+ 52,5'	+ 52,9'	+ 53,4'	+ 53,9'	+ 54,4'	+ 54,8'	+ 55,3'	+ 55,7'	+ 56,7'
50°00'	+ 48,7'	+ 49,6'	+ 50,1'	+ 50,5'	+ 51,0'	+ 51,5'	+ 52,0'	+ 52,4'	+ 52,9'	+ 53,3'	+ 53,8'	+ 54,2'	+ 55,1'
52°00'	+ 47,3'	+ 48,2'	+ 48,7'	+ 49,1'	+ 49,6'	+ 50,0'	+ 50,4'	+ 50,9'	+ 51,4'	+ 51,8'	+ 52,2'	+ 52,7'	+ 53,5'
54°00'	+ 45,8'	+ 46,7'	+ 47,2'	+ 47,6'	+ 48,0'	+ 48,4'	+ 48,9'	+ 49,3'	+ 49,8'	+ 50,2'	+ 50,6'	+ 51,0'	+ 51,9'
56°00'	+ 44,4'	+ 45,2'	+ 45,6'	+ 46,0'	+ 46,4'	+ 46,8'	+ 47,3'	+ 47,7'	+ 48,1'	+ 48,5'	+ 48,9'	+ 49,4'	+ 50,2'
58°00'	+ 42,8'	+ 43,6'	+ 44,0'	+ 44,4'	+ 44,8'	+ 45,2'	+ 45,6'	+ 46,0'	+ 46,4'	+ 46,9'	+ 47,3'	+ 47,7'	+ 48,5'
60°00'	+ 41,3'	+ 42,1'	+ 42,5'	+ 42,8'	+ 43,2'	+ 43,6'	+ 44,0'	+ 44,4'	+ 44,8'	+ 45,1'	+ 45,5'	+ 45,9'	+ 46,7'
62°00'	+ 39,6'	+ 40,4'	+ 40,8'	+ 41,1'	+ 41,5'	+ 41,9'	+ 42,3'	+ 42,6'	+ 43,0'	+ 43,4'	+ 43,8'	+ 44,1'	+ 44,9'
64°00'	+ 38,0'	+ 38,7'	+ 39,1'	+ 39,4'	+ 39,8'	+ 40,2'	+ 40,6'	+ 40,9'	+ 41,2'	+ 41,6'	+ 42,0'	+ 42,3'	+ 43,0'
66°00'	+ 36,4'	+ 37,0'	+ 37,3'	+ 37,7'	+ 38,1'	+ 38,4'	+ 38,8'	+ 39,1'	+ 39,4'	+ 39,8'	+ 40,1'	+ 40,4'	+ 41,1'
68°00'	+ 34,7'	+ 35,3'	+ 35,6'	+ 36,0'	+ 36,3'	+ 36,6'	+ 37,0'	+ 37,3'	+ 37,6'	+ 37,9'	+ 38,3'	+ 38,6'	+ 39,2'
70°00'	+ 32,9'	+ 33,6'	+ 33,9'	+ 34,2'	+ 34,5'	+ 34,8'	+ 35,1'	+ 35,4'	+ 35,7'	+ 36,0'	+ 36,3'	+ 36,7'	+ 37,3'
72°00'	+ 31,2'	+ 31,8'	+ 32,1'	+ 32,3'	+ 32,6'	+ 32,9'	+ 33,2'	+ 33,5'	+ 33,8'	+ 34,1'	+ 34,4'	+ 34,7'	+ 35,3'
74°00'	+ 29,4'	+ 30,0'	+ 30,3'	+ 30,5'	+ 30,8'	+ 31,1'	+ 31,4'	+ 31,6'	+ 31,9'	+ 32,2'	+ 32,5'	+ 32,7'	+ 33,3'
76°00'	+ 27,7'	+ 28,2'	+ 28,5'	+ 28,7'	+ 29,0'	+ 29,2'	+ 29,5'	+ 29,7'	+ 30,0'	+ 30,2'	+ 30,5'	+ 30,8'	+ 31,3'
78°00'	+ 25,8'	+ 26,3'	+ 26,5'	+ 26,8'	+ 27,1'	+ 27,3'	+ 27,6'	+ 27,8'	+ 28,0'	+ 28,3'	+ 28,5'	+ 28,7'	+ 29,2'
80°00'	+ 24,0'	+ 24,5'	+ 24,7'	+ 24,9'	+ 25,1'	+ 25,4'	+ 25,6'	+ 25,8'	+ 26,0'	+ 26,3'	+ 26,5'	+ 26,7'	+ 27,2'
82°00'	+ 22,2'	+ 22,6'	+ 22,8'	+ 23,0'	+ 23,2'	+ 23,4'	+ 23,6'	+ 23,9'	+ 24,1'	+ 24,3'	+ 24,5'	+ 24,7'	+ 25,1'
84°00'	+ 20,4'	+ 20,8'	+ 20,9'	+ 21,1'	+ 21,3'	+ 21,5'	+ 21,7'	+ 21,9'	+ 22,1'	+ 22,3'	+ 22,5'	+ 22,6'	+ 23,0'
86°00'	+ 18,5'	+ 18,9'	+ 19,0'	+ 19,2'	+ 19,4'	+ 19,6'	+ 19,8'	+ 19,9'	+ 20,1'	+ 20,3'	+ 20,4'	+ 20,6'	+ 20,9'
88°00'	+ 16,7'	+ 17,0'	+ 17,1'	+ 17,3'	+ 17,4'	+ 17,6'	+ 17,8'	+ 17,9'	+ 18,1'	+ 18,2'	+ 18,3'	+ 18,5'	+ 18,8'
90°00'	+ 14,7'	+ 15,0'	+ 15,1'	+ 15,3'	+ 15,4'	+ 15,6'	+ 15,7'	+ 15,8'	+ 16,0'	+ 16,1'	+ 16,2'	+ 16,4'	+ 16,7'
Diamètre de la Lune	29,4'	30,0'	30,3'	30,6'	30,8'	31,1'	31,4'	31,7'	32,0'	32,2'	32,5'	32,8'	33,3'

Pour le bord supérieur, retrancher le diamètre de la correction précédente.

Fuseaux horaires

Numéro	Lettre	Limites
+ 12	Y	180°
+ 11	X	172,5° W
+ 10	W	157,5° W
+ 9	V	142,5° W
+ 8	U	127,5° W
+ 7	T	112,5° W
+ 6	S	097,5° W
+ 5	R	082,5° W
+ 4	Q	067,5° W
+ 3	P	052,5° W
+ 2	O	037,5° W
+ 1	N	022,5° W
0	Z	007,5° W
- 1	A	007,5° E
- 2	B	022,5° E
- 3	C	037,5° E
- 4	D	052,5° E
- 5	E	067,5° E
- 6	F	082,5° E
- 7	G	097,5° E
- 8	H	112,5° E
- 9	I	127,5° E
- 10	K	142,5° E
- 11	L	157,5° E
- 12	M	172,5° E
		180°

