

ЛАБОРАТОРНАЯ РАБОТА №5

РАСЧЕТ МЕСТНОГО ЧАСОВОГО УГЛА И СКЛОНЕНИЯ СОЛНЦА, ЛУНЫ И ПЛАНЕТ

Учебная цель: Научиться решению задач по нахождению местного часового угла и склонения Солнца, Луны и планет.

РАСЧЕТ ПО NAUTICAL ALMANAC

ПРИМЕР

ДАТА : 01.01.2020

СУДОВОЕ ВРЕМЯ $T_C = 19ч 35м$

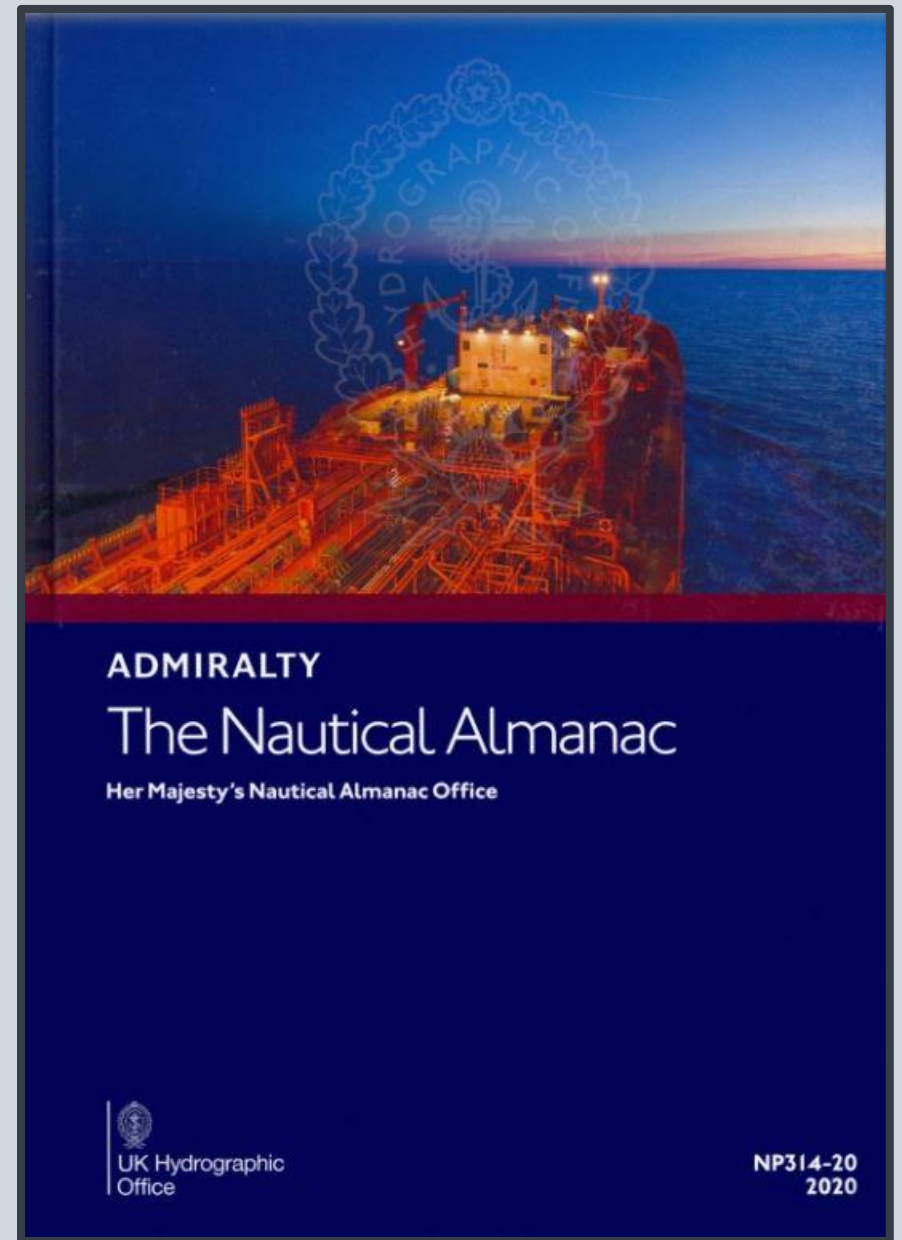
ДОЛГОТА $LONGITUDE = 148^{\circ} 30,5' W$

НАБЛЮДЕНИЕ СОЛНЦА, ЛУНЫ И ВЕНЕРЫ.

В МОМЕНТ ВРЕМЕНИ ПО ХРОНОМЕТРУ $T_{XP} = 5ч 37м 43с$

ПОПРАВКА ХРОНОМЕТРА $U_{XP} = -2м 15с$

ВЫЧИСЛИТЬ: ЛНА И DECLINATION СОЛНЦА, ЛУНЫ И ВЕНЕРЫ.



ХОД РЕШЕНИЯ:

ПЕРЕВОДИМ СУДОВОЕ ВРЕМЯ ВО ВРЕМЯ ПО ГРИНВИЧУ. ДЛЯ ЭТОГО НЕОБХОДИМО
НАЙТИ ЧАСОВОЙ ПОЯС, ТО ЕСТЬ ДОЛГОТУ РАЗДЕЛИТЬ НА 15° .

$N_2 = 148^\circ 30,5' / 15 = 10$ ЧАСОВОЙ ПОЯС. ТАК КАК ДОЛГОТА ЗАПАДНАЯ, ТО
ЧАСОВОЙ ПОЯС = - 10 ЧАСОВ ОТ ГРИНВИЧСКОГО МЕРИДИАНА.

ТАКИМ ОБРАЗОМ

$T_{ГР} = T_C + N_2 = 19ч 35м + 10ч = 05ч 35м$ (ДАТА 02.01.2020)

ИСПРАВЛЯЕМ ВРЕМЯ ПО ХРОНОМЕТРУ, ПРИБАВИВ ПОПРАВКУ:

$T_{ГР} = T_{ХР} + U_{ХР} = 05ч 37м 43с + (-2 м 15 с) = 05ч 35м 28с$

Дата 01.01.2020

$T_C = 19:35$

$T_{ГР} = 05:35$

Дата 02.01.2020

← κ W "-"
κ E "+"

ЗАПИСЫВАЕМ В ТАБЛИЦУ РАСЧЕТ ВРЕМЕНИ.

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	19 ^ч 35 ^м	01.01	T_{xp}	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с
$N_o W$	+10		U_{xp}	-2 15	-2 15	-2 15
T_{gp}	5 ^ч 35 ^м	02.01	T_{gp}	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с
Ежедн. табл → Increments & Corrections → Increments & Corrections →			GHA Corr. (minutes) V corr.			
			GHA^*			
			λ			
Обыкновенный счет →			LHA			
Практический счет →			LHA			
Ежедн. табл → Increments & Corrections →			Dec d corr.			
			Dec			

GHA И V CORRECTION

На дату и целый час ТГР выбираем из

NAUTICAL ALMANAC

GHA для Солнца, Луны.

(ЕЖЕДНЕВНЫЕ ТАБЛИЦЫ)

ТАКЖЕ ЗАПИСЫВАЕМ V CORRECTION для

Луны и планет.

h	Sun			Moon			
Wed	GHA	Dec	GHA	ν	Dec	d	HP
0	179°13.7	S23°03.5	110°56.9	15.3'	S09°58.5	10.7'	54.3'
1	194°13.4	03.3	125°31.3	15.4'	09°47.8	10.7'	54.3'
2	209°13.1	03.1	140°05.7	15.4'	09°37.1	10.7'	54.3'
3	224°12.8	03.0	154°40.1	15.5'	09°26.3	10.8'	54.3'
4	239°12.5	02.8	169°14.6	15.5'	09°15.5	10.8'	54.3'
5	254°12.2	02.6	183°49.1	15.5'	09°04.7	10.8'	54.2'
6	269°11.9	S23°02.4	198°23.6	15.6'	S08°53.8	10.9'	54.2'
7	284°11.6	02.2	212°58.2	15.6'	08°42.9	10.9'	54.2'
8	299°11.3	02.0	227°32.8	15.6'	08°32.0	10.9'	54.2'
9	314°11.0	01.8	242°07.5	15.7'	08°21.0	11.0'	54.2'
10	329°10.7	01.6	256°42.2	15.7'	08°10.0	11.0'	54.2'
11	344°10.4	01.4	271°16.9	15.7'	07°59.0	11.0'	54.2'
12	359°10.1	S23°01.2	285°51.7	15.8'	S07°48.0	11.1'	54.2'
13	14°09.8	01.0	300°26.4	15.8'	07°36.9	11.1'	54.2'
14	29°09.5	00.8	315°01.2	15.8'	07°25.8	11.1'	54.2'
15	44°09.2	00.6	329°36.1	15.9'	07°14.7	11.1'	54.2'
16	59°08.9	00.4	344°10.9	15.9'	07°03.5	11.2'	54.2'
17	74°08.6	00.2	358°45.8	15.9'	06°52.3	11.2'	54.2'
18	89°08.3	S23°00.0	13°20.7	15.9'	S06°41.1	11.2'	54.2'
19	104°08.0	22°59.7	27°55.7	16.0'	06°29.9	11.2'	54.2'
20	119°07.7	59.5	42°30.7	16.0'	06°18.7	11.3'	54.2'
21	134°07.5	59.3	57°05.6	16.0'	06°07.4	11.3'	54.2'
22	149°07.2	59.1	71°40.6	16.0'	05°56.1	11.3'	54.2'
23	164°06.9	58.9	86°15.7	16.0'	05°44.8	11.3'	54.2'
	SD.=16.3	d=0.2	S.D.=14.8				

Thu	GHA	Dec	GHA	ν	Dec	d	HP
0	179°06.6	S22°58.7	100°50.7	16.1'	S05°33.4	11.3'	54.2'
1	194°06.3	58.5	115°25.8	16.1'	05°22.1	11.4'	54.2'
2	209°06.0	58.3	130°00.9	16.1'	05°10.7	11.4'	54.2'
3	224°05.7	58.1	144°36.0	16.1'	04°59.3	11.4'	54.2'
4	239°05.4	57.9	159°11.1	16.1'	04°47.9	11.4'	54.2'
5	254°05.1	57.6	173°46.3	16.1'	04°36.5	11.4'	54.2'
6	269°04.8	S22°57.4	188°21.4	16.2'	S04°25.0	11.5'	54.2'
7	284°04.5	57.2	202°56.6	16.2'	04°13.5	11.5'	54.2'
8	299°04.2	57.0	217°31.7	16.2'	04°02.1	11.5'	54.2'
9	314°03.9	56.8	232°06.9	16.2'	03°50.6	11.5'	54.2'
10	329°03.6	56.6	246°42.1	16.2'	03°39.0	11.5'	54.2'
11	344°03.3	56.3	261°17.3	16.2'	03°27.5	11.5'	54.2'
12	359°03.0	S22°56.1	275°52.6	16.2'	S03°16.0	11.5'	54.2'
13	14°02.8	55.9	290°27.8	16.2'	03°04.4	11.6'	54.2'
14	29°02.5	55.7	305°03.0	16.2'	02°52.8	11.6'	54.2'
15	44°02.2	55.5	319°38.3	16.2'	02°41.3	11.6'	54.2'
16	59°01.9	55.2	334°13.5	16.2'	02°29.7	11.6'	54.2'
17	74°01.6	55.0	348°48.8	16.3'	02°18.1	11.6'	54.2'
18	89°01.3	S22°54.8	3°24.0	16.3'	S02°06.5	11.6'	54.2'
19	104°01.0	54.6	17°59.3	16.3'	01°54.8	11.6'	54.2'
20	119°00.7	54.3	32°34.5	16.3'	01°43.2	11.6'	54.2'
21	134°00.4	54.1	47°09.8	16.3'	01°31.6	11.6'	54.2'
22	149°00.1	53.9	61°45.0	16.3'	01°19.9	11.7'	54.2'
23	163°59.8	53.7	76°20.3	16.3'	01°08.2	11.7'	54.3'
	SD.=16.3	d=0.2	S.D.=14.8				

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

Lat.	Moonrise			Moonset		
	Wed	Thu	Fri	Wed	Thu	Fri
N 72°	12:37	12:18	12:00	21:58	23:43	—
N 70°	12:26	12:13	12:02	22:06	23:44	—
68°	12:17	12:10	12:03	22:14	23:45	—
66°	12:09	12:07	12:04	22:20	23:46	—
64°	12:02	12:04	12:05	22:25	23:47	—
62°	11:57	12:02	12:06	22:29	23:48	—
60°	11:52	12:00	12:07	22:33	23:49	—
N 58°	11:48	11:58	12:08	22:36	23:49	—
56°	11:44	11:56	12:08	22:39	23:50	—
54°	11:40	11:55	12:09	22:42	23:50	—
52°	11:37	11:54	12:10	22:44	23:51	—
50°	11:34	11:52	12:10	22:46	23:51	—
45°	11:28	11:50	12:11	22:51	23:52	—
N 40°	11:23	11:48	12:12	22:55	23:52	—
35°	11:18	11:46	12:13	22:58	23:53	—
30°	11:14	11:44	12:14	23:01	23:54	—
20°	11:07	11:41	12:15	23:06	23:54	—

January 01, 02, 03 (Wed., Thu., Fri.)

	Aries			Venus			Mars			Jupiter			Saturn		
Wed	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec		
0	100°07.0	142°40.8	S18°15.9	223°53.4	S19°26.7	182°51.5	S23°10.8	167°00.1	S21°41.1						
1	115°09.5	157°40.2	15.0	238°54.2	27.1	197°53.3	10.8	182°02.3	41.0						
2	130°11.9	172°39.6	14.1	253°54.9	27.5	212°55.1	10.7	197°04.4	41.0						
3	145°14.4	187°39.0	.. 13.2	268°55.6	.. 27.9	227°57.0	.. 10.7	212°06.6	.. 40.9						
4	160°16.9	202°38.4	12.2	283°56.4	28.3	242°58.8	10.7	227°08.7	40.9						
5	175°19.3	217°37.7	11.3	298°57.1	28.7	258°00.7	10.7	242°10.9	40.8						
6	190°21.8	232°37.1	S18°10.4	313°57.8	S19°29.1	273°02.5	S23°10.6	257°13.0	S21°40.8						
7	205°24.3	247°36.5	09.5	328°58.5	29.5	288°04.3	10.6	272°15.2	40.8						
8	220°26.7	262°35.9	08.6	343°59.3	29.9	303°06.2	10.6	287°17.3	40.7						
9	235°29.2	277°35.3	.. 07.6	359°00.0	.. 30.3	318°08.0	.. 10.6	302°19.5	.. 40.7						
10	250°31.7	292°34.7	06.7	14°00.7	30.6	333°09.8	10.5	317°21.6	40.6						
11	265°34.1	307°34.1	05.8	29°01.5	31.0	348°11.7	10.5	332°23.8	40.6						
12	280°36.6	322°33.5	S18°04.8	44°02.2	S19°31.4	3°13.5	S23°10.5	347°26.0	S21°40.5						
13	295°39.0	337°32.9	03.9	59°02.9	31.8	18°15.4	10.5	2°28.1	40.5						
14	310°41.5	352°32.3	03.0	74°03.6	32.2	33°17.2	10.4	17°30.3	40.5						
15	325°44.0	7°31.7	.. 02.1	89°04.4	.. 32.6	48°19.0	.. 10.4	32°32.4	.. 40.4						
16	340°46.4	22°31.1	01.1	104°05.1	33.0	63°20.9	10.4	47°34.6	40.4						
17	355°48.9	37°30.5	18°00.2	119°05.8	33.4	78°22.7	10.4	62°36.7	40.3						
18	10°51.4	52°29.9	S17°59.3	134°06.6	S19°33.8	93°24.6	S23°10.3	77°38.9	S21°40.3						
19	25°53.8	67°29.3	58.3	149°07.3	34.2	108°26.4	10.3	92°41.0	40.2						
20	40°56.3	82°28.7	57.4	164°08.0	34.6	123°28.2	10.3	107°43.2	40.2						
21	55°58.8	97°28.1	.. 56.5	179°08.7	.. 35.0	138°30.1	.. 10.2	122°45.3	.. 40.2						
22	71°01.2	112°27.5	55.5	194°09.5	35.3	153°31.9	10.2	137°47.5	40.1						
23	86°03.7	127°26.9	54.6	209°10.2	35.7	168°33.7	10.2	152°49.6	40.1						
Mer.pass.:17:17		v-0.6 d0.9 m-3.9		v0.7 d-0.4 m1.6		v1.8 d0.0 m-1.7		v2.2 d0.0 m0.6							

Thu	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	101°06.1	142°26.3	S17°53.7	224°10.9	S19°36.1	183°35.6	S23°10.2	167°51.8	S21°40.0
1	116°08.6	157°25.7	52.7	239°11.7	36.5	198°37.4	10.1	182°53.9	40.0
2	131°11.1	172°25.1	51.8	254°12.4	36.9	213°39.3	10.1	197°56.1	39.9
3	146°13.5	187°24.5	.. 50.8	269°13.1	.. 37.3	228°41.1	.. 10.1	212°58.2	.. 39.9
4	161°16.0	202°23.9	49.9	284°13.8	37.7	243°42.9	10.1	228°00.4	39.9
5	176°18.5	217°23.3	49.0	299°14.6	38.1	258°44.8	10.0	243°02.5	39.8
6	191°20.9	232°22.7	S17°48.0	314°15.3	S19°38.5	273°46.6	S23°10.0	258°04.7	S21°39.8
7	206°23.4	247°22.1	47.1	329°16.0	38.8	288°48.4	10.0	273°06.8	39.7
8	221°25.9	262°21.5	46.1	344°16.7	39.2	303°50.3	10.0	288°09.0	39.7
9	236°28.3	277°20.9	.. 45.2	359°17.5	.. 39.6	318°52.1	.. 09.9	303°11.1	.. 39.6
10	251°30.8	292°20.3	44.2	14°18.2	40.0	333°54.0	09.9	318°13.3	39.6
11	266°33.3	307°19.7	43.3	29°18.9	40.4	348°55.8	09.9	333°15.5	39.5
12	281°35.7	322°19.1	S17°42.3	44°19.6	S19°40.8	3°57.6	S23°09.9	348°17.6	S21°39.5
13	296°38.2	337°18.6	41.4	59°20.4	41.2	18°59.5	09.8	3°19.8	39.5
14	311°40.6	352°18.0	40.4	74°21.1	41.6	34°01.3	09.8	18°21.9	39.4
15	326°43.1	7°17.4	.. 39.5	89°21.8	.. 41.9	49°03.2	.. 09.8	33°24.1	.. 39.4
16	341°45.6	22°16.8	38.5	104°22.5	42.3	64°05.0	09.7	48°26.2	39.3
17	356°48.0	37°16.2	37.6	119°23.3	42.7	79°06.8	09.7	63°28.4	39.3
18	11°50.5	52°15.6	S17°36.6	134°24.0	S19°43.1	94°08.7	S23°09.7	78°30.5	S21°39.2
19	26°53.0	67°15.0	35.7	149°24.7	43.5	109°10.5	09.7	93°32.7	39.2
20	41°55.4	82°14.4	34.7	164°25.4	43.9	124°12.4	09.6	108°34.8	39.2
21	56°57.9	97°13.9	.. 33.8	179°26.2	.. 44.2	139°14.2	.. 09.6	123°37.0	.. 39.1
22	72°00.4	112°13.3	32.8	194°26.9	44.6	154°16.0	09.6	138°39.1	39.1
23	87°02.8	127°12.7	31.9	209°27.6	45.0	169°17.9	09.6	153°41.3	39.0
Mer.pass.:17:13		v-0.6 d0.9 m-3.9		v0.7 d-0.4 m1.6		v1.8 d0.0 m-1.7		v2.2 d0.0 m0.6	

GHA И V CORRECTION

ТОЖЕ САМОЕ ДЕЛАЕМ ДЛЯ ВЕНЕРЫ (ИЛИ ДРУГОЙ ЗАДАННОЙ ПО УСЛОВИЮ ПЛАНЕТЫ).

ЗАПИСЫВАЕМ ЗНАЧЕНИЯ В ТАБЛИЦУ

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	$19^{\text{ч}}35^{\text{м}}$	01.01	T_{xp}	$05^{\text{ч}}37^{\text{м}}43^{\text{с}}$	$05^{\text{ч}}37^{\text{м}}43^{\text{с}}$	$05^{\text{ч}}37^{\text{м}}43^{\text{с}}$
$N_{\text{о}} W$	+10		U_{xp}	-2 15	-2 15	-2 15
$T_{гр}$	$5^{\text{ч}}35^{\text{м}}$	02.01	$T_{гр}$	$05^{\text{ч}}35^{\text{м}}28^{\text{с}}$	$05^{\text{ч}}35^{\text{м}}28^{\text{с}}$	$05^{\text{ч}}35^{\text{м}}28^{\text{с}}$
Ежедн. табл→			<i>GHA</i>	$254^{\circ}05,1'$	$173^{\circ}46,3'$	$217^{\circ}23,3'$
Increments & Corrections→			Corr. (minutes)			
Increments & Corrections→			<i>V corr.</i>	-	(+16,1)	(-0,6)
Обыкновенный счет→			<i>GHA*</i>			
Практический счет→			λ			
Ежедн. табл→			<i>LHA</i>			
Increments & Corrections→			<i>LHA</i>			
Ежедн. табл→			<i>Dec</i>			
Increments & Corrections→			d corr.			
Ежедн. табл→			<i>Dec</i>			

INCREMENTS AND CORRECTIONS

На последних страницах альманаха находим

в INCREMENTS AND CORRECTIONS поправку (CORR.)

на минуты и секунды Тгр (35м 28с). А также

значения V CORRECTION.

Increments and Corrections

Aries	Moon	v and d corr			m 35	Sun Plan.	Aries	Moon	v and d corr		
8°31.4	8°06.8	0.0 - 0.0	6.0 - 3.4	12.0 - 6.9	0	8°45.0	8°46.4	8°21.1	0.0 - 0.0	6.0 - 3.5	12.0 - 7.1
8°31.6	8°07.0	0.1 - 0.1	6.1 - 3.5	12.1 - 7.0	1	8°45.2	8°46.7	8°21.3	0.1 - 0.1	6.1 - 3.6	12.1 - 7.2
8°31.9	8°07.2	0.2 - 0.1	6.2 - 3.6	12.2 - 7.0	2	8°45.5	8°46.9	8°21.6	0.2 - 0.1	6.2 - 3.7	12.2 - 7.2
8°32.1	8°07.5	0.3 - 0.2	6.3 - 3.6	12.3 - 7.1	3	8°45.7	8°47.2	8°21.8	0.3 - 0.2	6.3 - 3.7	12.3 - 7.3
8°32.4	8°07.7	0.4 - 0.2	6.4 - 3.7	12.4 - 7.1	4	8°46.0	8°47.4	8°22.0	0.4 - 0.2	6.4 - 3.8	12.4 - 7.3
8°32.6	8°08.0	0.5 - 0.3	6.5 - 3.7	12.5 - 7.2	5	8°46.3	8°47.7	8°22.3	0.5 - 0.3	6.5 - 3.8	12.5 - 7.4
8°32.9	8°08.2	0.6 - 0.3	6.6 - 3.8	12.6 - 7.2	6	8°46.5	8°47.9	8°22.5	0.6 - 0.4	6.6 - 3.9	12.6 - 7.5
8°33.1	8°08.4	0.7 - 0.4	6.7 - 3.9	12.7 - 7.3	7	8°46.8	8°48.2	8°22.8	0.7 - 0.4	6.7 - 4.0	12.7 - 7.5
8°33.4	8°08.7	0.8 - 0.5	6.8 - 3.9	12.8 - 7.4	8	8°47.0	8°48.4	8°23.0	0.8 - 0.5	6.8 - 4.0	12.8 - 7.6
8°33.7	8°08.9	0.9 - 0.5	6.9 - 4.0	12.9 - 7.4	9	8°47.2	8°48.7	8°23.2	0.9 - 0.5	6.9 - 4.1	12.9 - 7.6
8°33.9	8°09.2	1.0 - 0.6	7.0 - 4.0	13.0 - 7.5	10	8°47.5	8°48.9	8°23.5	1.0 - 0.6	7.0 - 4.1	13.0 - 7.7
8°34.2	8°09.4	1.1 - 0.6	7.1 - 4.1	13.1 - 7.5	11	8°47.7	8°49.2	8°23.7	1.1 - 0.7	7.1 - 4.2	13.1 - 7.8
8°34.4	8°09.6	1.2 - 0.7	7.2 - 4.1	13.2 - 7.6	12	8°48.0	8°49.4	8°23.9	1.2 - 0.7	7.2 - 4.3	13.2 - 7.8
8°34.7	8°09.9	1.3 - 0.7	7.3 - 4.2	13.3 - 7.6	13	8°48.3	8°49.7	8°24.2	1.3 - 0.8	7.3 - 4.3	13.3 - 7.9
8°34.9	8°10.1	1.4 - 0.8	7.4 - 4.3	13.4 - 7.7	14	8°48.5	8°49.9	8°24.4	1.4 - 0.8	7.4 - 4.4	13.4 - 7.9
8°35.2	8°10.3	1.5 - 0.9	7.5 - 4.3	13.5 - 7.8	15	8°48.8	8°50.2	8°24.7	1.5 - 0.9	7.5 - 4.4	13.5 - 8.0
8°35.4	8°10.6	1.6 - 0.9	7.6 - 4.4	13.6 - 7.8	16	8°49.0	8°50.4	8°24.9	1.6 - 0.9	7.6 - 4.5	13.6 - 8.0
8°35.7	8°10.8	1.7 - 1.0	7.7 - 4.4	13.7 - 7.9	17	8°49.2	8°50.7	8°25.1	1.7 - 1.0	7.7 - 4.6	13.7 - 8.1
8°35.9	8°11.1	1.8 - 1.0	7.8 - 4.5	13.8 - 7.9	18	8°49.5	8°50.9	8°25.4	1.8 - 1.1	7.8 - 4.6	13.8 - 8.2
8°36.2	8°11.3	1.9 - 1.1	7.9 - 4.5	13.9 - 8.0	19	8°49.8	8°51.2	8°25.6	1.9 - 1.1	7.9 - 4.7	13.9 - 8.2
8°36.4	8°11.5	2.0 - 1.1	8.0 - 4.6	14.0 - 8.0	20	8°50.0	8°51.4	8°25.9	2.0 - 1.2	8.0 - 4.7	14.0 - 8.3
8°36.7	8°11.8	2.1 - 1.2	8.1 - 4.7	14.1 - 8.1	21	8°50.3	8°51.7	8°26.1	2.1 - 1.2	8.1 - 4.8	14.1 - 8.3
8°36.9	8°12.0	2.2 - 1.3	8.2 - 4.7	14.2 - 8.2	22	8°50.5	8°52.0	8°26.3	2.2 - 1.3	8.2 - 4.9	14.2 - 8.4
8°37.2	8°12.3	2.3 - 1.3	8.3 - 4.8	14.3 - 8.2	23	8°50.7	8°52.2	8°26.6	2.3 - 1.4	8.3 - 4.9	14.3 - 8.5
8°37.4	8°12.5	2.4 - 1.4	8.4 - 4.8	14.4 - 8.3	24	8°51.0	8°52.5	8°26.8	2.4 - 1.4	8.4 - 5.0	14.4 - 8.5
8°37.7	8°12.7	2.5 - 1.4	8.5 - 4.9	14.5 - 8.3	25	8°51.2	8°52.7	8°27.0	2.5 - 1.5	8.5 - 5.0	14.5 - 8.6
8°37.9	8°13.0	2.6 - 1.5	8.6 - 4.9	14.6 - 8.4	26	8°51.5	8°53.0	8°27.3	2.6 - 1.5	8.6 - 5.1	14.6 - 8.6
8°38.2	8°13.2	2.7 - 1.6	8.7 - 5.0	14.7 - 8.5	27	8°51.8	8°53.2	8°27.5	2.7 - 1.6	8.7 - 5.1	14.7 - 8.7
8°38.4	8°13.4	2.8 - 1.6	8.8 - 5.1	14.8 - 8.5	28	8°52.0	8°53.5	8°27.8	2.8 - 1.7	8.8 - 5.2	14.8 - 8.8
8°38.7	8°13.7	2.9 - 1.7	8.9 - 5.1	14.9 - 8.6	29	8°52.3	8°53.7	8°28.0	2.9 - 1.7	8.9 - 5.3	14.9 - 8.8
8°38.9	8°13.9	3.0 - 1.7	9.0 - 5.2	15.0 - 8.6	30	8°52.5	8°54.0	8°28.2	3.0 - 1.8	9.0 - 5.3	15.0 - 8.9
8°39.2	8°14.2	3.1 - 1.8	9.1 - 5.2	15.1 - 8.7	31	8°52.7	8°54.2	8°28.5	3.1 - 1.8	9.1 - 5.4	15.1 - 8.9
8°39.4	8°14.4	3.2 - 1.8	9.2 - 5.3	15.2 - 8.7	32	8°53.0	8°54.5	8°28.7	3.2 - 1.9	9.2 - 5.4	15.2 - 9.0
8°39.7	8°14.6	3.3 - 1.9	9.3 - 5.3	15.3 - 8.8	33	8°53.2	8°54.7	8°29.0	3.3 - 2.0	9.3 - 5.5	15.3 - 9.1
8°39.9	8°14.9	3.4 - 2.0	9.4 - 5.4	15.4 - 8.9	34	8°53.5	8°55.0	8°29.2	3.4 - 2.0	9.4 - 5.6	15.4 - 9.1
8°40.2	8°15.1	3.5 - 2.0	9.5 - 5.5	15.5 - 8.9	35	8°53.8	8°55.2	8°29.4	3.5 - 2.1	9.5 - 5.6	15.5 - 9.2
8°40.4	8°15.4	3.6 - 2.1	9.6 - 5.5	15.6 - 9.0	36	8°54.0	8°55.5	8°29.7	3.6 - 2.1	9.6 - 5.7	15.6 - 9.2
8°40.7	8°15.6	3.7 - 2.1	9.7 - 5.6	15.7 - 9.0	37	8°54.3	8°55.7	8°29.9	3.7 - 2.2	9.7 - 5.7	15.7 - 9.3
8°40.9	8°15.8	3.8 - 2.2	9.8 - 5.6	15.8 - 9.1	38	8°54.5	8°56.0	8°30.2	3.8 - 2.2	9.8 - 5.8	15.8 - 9.3
8°41.2	8°16.1	3.9 - 2.2	9.9 - 5.7	15.9 - 9.1	39	8°54.7	8°56.2	8°30.4	3.9 - 2.3	9.9 - 5.9	15.9 - 9.4
8°41.4	8°16.3	4.0 - 2.3	10.0 - 5.8	16.0 - 9.2	40	8°55.0	8°56.5	8°30.6	4.0 - 2.4	10.0 - 5.9	16.0 - 9.5
8°41.7	8°16.5	4.1 - 2.4	10.1 - 5.8	16.1 - 9.3	41	8°55.2	8°56.7	8°30.9	4.1 - 2.4	10.1 - 6.0	16.1 - 9.5
8°41.9	8°16.8	4.2 - 2.4	10.2 - 5.9	16.2 - 9.3	42	8°55.5	8°57.0	8°31.1	4.2 - 2.5	10.2 - 6.0	16.2 - 9.6
8°42.2	8°17.0	4.3 - 2.5	10.3 - 5.9	16.3 - 9.4	43	8°55.8	8°57.2	8°31.3	4.3 - 2.5	10.3 - 6.1	16.3 - 9.6
8°42.4	8°17.3	4.4 - 2.5	10.4 - 6.0	16.4 - 9.4	44	8°56.0	8°57.5	8°31.6	4.4 - 2.6	10.4 - 6.2	16.4 - 9.7
8°42.7	8°17.5	4.5 - 2.6	10.5 - 6.0	16.5 - 9.5	45	8°56.3	8°57.7	8°31.9	4.5 - 2.7	10.5 - 6.2	16.5 - 9.8

Записываем значения в таблицу

И выполняем расчет.

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	19 ^h 35 ^m	01.01	T_{xp}	05 ^h 37 ^m 43 ^s	05 ^h 37 ^m 43 ^s	05 ^h 37 ^m 43 ^s
$N_o W$	+10		U_{xp}	-2 15	-2 15	-2 15
T_{GP}	5 ^h 35 ^m	02.01	T_{GP}	05 ^h 35 ^m 28 ^s	05 ^h 35 ^m 28 ^s	05 ^h 35 ^m 28 ^s
Ежедн. табл→			GHA	254°05,1'	173°46,3'	217°23,3'
Increments & Corrections→			Corr. (minutes)	08°52,0'	08°27,8'	08°52,0'
Increments & Corrections→			V corr.	-	(+16,1) +9,5'	(-0,6) -0,4'
			GHA^*	262°57,1'	182°23,6'	226°14,9'
			λ			
Обыкновенный счет→			LHA			
Практический счет→			LHA			
Ежедн. табл→			Dec			
Increments & Corrections→			d corr.			
			Dec			

РАСЧЕТ ЛНА

Находим местный часовой угол,
Переводим в практический счет,
если необходимо.

Правила перевода ЛНА такие же,

Как и при расчете для светил

(Лабораторная номер 4)

				<i>Sun</i>	<i>Moon</i>	<i>Venus</i>
T_c	19 ^ч 35 ^м	01.01	T_{xp}	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с
№ <i>W</i>	+10		U_{xp}	-2 15	-2 15	-2 15
$T_{гр}$	5 ^ч 35 ^м	02.01	$T_{гр}$	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с
Ежедн. табл→			<i>GHA</i>	254°05,1'	173°46,3'	217°23,3'
Increments & Corrections→			Corr. (minutes)	08°52,0'	08°27,8'	08°52,0'
Increments & Corrections→			V corr.	-	(+16,1) +9,5'	(-0,6) -0,4'
Обыкновенный счет→			<i>GHA</i> *	262°57,1'	182°23,6'	226°14,9'
Практический счет→			<i>λ_w</i>	-148°30,5'	-148°30,5'	-148°30,5'
Ежедн. табл→			<i>LHA</i>	114°26,6' W	33°53,1' W	77°44,4' W
Increments & Corrections→			<i>LHA</i>	Такой же, т.к. <180°		
Ежедн. табл→			<i>Dec</i>			
Increments & Corrections→			d corr.			
			<i>Dec</i>			

DECLINATION И D CORRECTION

На ежедневных страницах альманаха, на текущую дату 02.01.2020 находим Declination и D correction для Солнца, для Луны и для Венеры (следующий слайд).

h	Sun			Moon				
	GHA	Dec		GHA	ν	Dec	d	HP
0	179°13.7	S23°03.5		110°56.9	15.3'	S09°58.5	10.7'	54.3'
1	194°13.4	03.3		125°31.3	15.4'	09°47.8	10.7'	54.3'
2	209°13.1	03.1		140°05.7	15.4'	09°37.1	10.7'	54.3'
3	224°12.8	03.0	..	154°40.1	15.5'	09°26.3	10.8'	54.3'
4	239°12.5	02.8		169°14.6	15.5'	09°15.5	10.8'	54.3'
5	254°12.2	02.6		183°49.1	15.5'	09°04.7	10.8'	54.2'
6	269°11.9	S23°02.4		198°23.6	15.6'	S08°53.8	10.9'	54.2'
7	284°11.6	02.2		212°58.2	15.6'	08°42.9	10.9'	54.2'
8	299°11.3	02.0		227°32.8	15.6'	08°32.0	10.9'	54.2'
9	314°11.0	01.8	..	242°07.5	15.7'	08°21.0	11.0'	54.2'
10	329°10.7	01.6		256°42.2	15.7'	08°10.0	11.0'	54.2'
11	344°10.4	01.4		271°16.9	15.7'	07°59.0	11.0'	54.2'
12	359°10.1	S23°01.2		285°51.7	15.8'	S07°48.0	11.1'	54.2'
13	14°09.8	01.0		300°26.4	15.8'	07°36.9	11.1'	54.2'
14	29°09.5	00.8		315°01.2	15.8'	07°25.8	11.1'	54.2'
15	44°09.2	00.6	..	329°36.1	15.9'	07°14.7	11.1'	54.2'
16	59°08.9	00.4		344°10.9	15.9'	07°03.5	11.2'	54.2'
17	74°08.6	00.2		358°45.8	15.9'	06°52.3	11.2'	54.2'
18	89°08.3	S23°00.0		13°20.7	15.9'	S06°41.1	11.2'	54.2'
19	104°08.0	22°59.7		27°55.7	16.0'	06°29.9	11.2'	54.2'
20	119°07.7	59.5		42°30.7	16.0'	06°18.7	11.3'	54.2'
21	134°07.5	59.3	..	57°05.6	16.0'	06°07.4	11.3'	54.2'
22	149°07.2	59.1		71°40.6	16.0'	05°56.1	11.3'	54.2'
23	164°06.9	58.9		86°15.7	16.0'	05°44.8	11.3'	54.2'
SD.=16.3		d=0.2		S.D.=14.8				

Thu	GHA	Dec	GHA	ν	Dec	d	HP
0	179°06.6	S22°58.7	100°50.7	16.1'	S05°33.4	11.3'	54.2'
1	194°06.3	58.5	115°25.8	16.1'	05°22.1	11.4'	54.2'
2	209°06.0	58.3	130°00.9	16.1'	05°10.7	11.4'	54.2'
3	224°05.7	58.1	144°36.0	16.1'	04°59.3	11.4'	54.2'
4	239°05.4	57.9	159°11.1	16.1'	04°47.9	11.4'	54.2'
5	254°05.1	57.6	173°46.3	16.1'	04°36.5	11.4'	54.2'
6	269°04.8	S22°57.4	188°21.4	16.2'	S04°25.0	11.5'	54.2'
7	284°04.5	57.2	202°56.6	16.2'	04°13.5	11.5'	54.2'
8	299°04.2	57.0	217°31.7	16.2'	04°02.1	11.5'	54.2'
9	314°03.9	56.8	232°06.9	16.2'	03°50.6	11.5'	54.2'
10	329°03.6	56.6	246°42.1	16.2'	03°39.0	11.5'	54.2'
11	344°03.3	56.3	261°17.3	16.2'	03°27.5	11.5'	54.2'
12	359°03.0	S22°56.1	275°52.6	16.2'	S03°16.0	11.5'	54.2'
13	14°02.8	55.9	290°27.8	16.2'	03°04.4	11.6'	54.2'
14	29°02.5	55.7	305°03.0	16.2'	02°52.8	11.6'	54.2'
15	44°02.2	55.5	319°38.3	16.2'	02°41.3	11.6'	54.2'
16	59°01.9	55.2	334°13.5	16.2'	02°29.7	11.6'	54.2'
17	74°01.6	55.0	348°48.8	16.3'	02°18.1	11.6'	54.2'
18	89°01.3	S22°54.8	3°24.0	16.3'	S02°06.5	11.6'	54.2'
19	104°01.0	54.6	17°59.3	16.3'	01°54.8	11.6'	54.2'
20	119°00.7	54.3	32°34.5	16.3'	01°43.2	11.6'	54.2'
21	134°00.4	54.1	47°09.8	16.3'	01°31.6	11.6'	54.2'
22	149°00.1	53.9	61°45.0	16.3'	01°19.9	11.7'	54.2'
23	163°59.8	53.7	76°20.3	16.3'	01°08.2	11.7'	54.3'
SD.=16.3		d=0.2	S.D.=14.8				

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

Lat.	Moonrise			Moonset		
	Wed	Thu	Fri	Wed	Thu	Fri
N 72°	12:37	12:18	12:00	21:58	23:43	--
N 70°	12:26	12:13	12:02	22:06	23:44	--
68°	12:17	12:10	12:03	22:14	23:45	--
66°	12:09	12:07	12:04	22:20	23:46	--
64°	12:02	12:04	12:05	22:25	23:47	--
62°	11:57	12:02	12:06	22:29	23:48	--
60°	11:52	12:00	12:07	22:33	23:49	--
N 58°	11:48	11:58	12:08	22:36	23:49	--
56°	11:44	11:56	12:08	22:39	23:50	--
54°	11:40	11:55	12:09	22:42	23:50	--
52°	11:37	11:54	12:10	22:44	23:51	--
50°	11:34	11:52	12:10	22:46	23:51	--
45°	11:28	11:50	12:11	22:51	23:52	--
N 40°	11:23	11:48	12:12	22:55	23:52	--
35°	11:18	11:46	12:13	22:58	23:53	--
30°	11:14	11:44	12:14	23:01	23:54	--
20°	11:07	11:41	12:15	23:06	23:54	--

DECLINATION И D CORRECTION

НА ЕЖЕДНЕВНЫХ СТРАНИЦАХ АЛЬМАНАХА, НА
ТЕКУЩУЮ ДАТУ 02.01.2020 НАХОДИМ DECLINATION И
D CORRECTION ДЛЯ ВЕНЕРЫ.

January 01, 02, 03 (Wed., Thu., Fri.)											
Aries			Venus			Mars		Jupiter		Saturn	
Wed	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	100°07.0	142°40.8	S18°15.9	223°53.4	S19°26.7	182°51.5	S23°10.8	167°00.1	S21°41.1		
1	115°09.5	157°40.2	15.0	238°54.2	27.1	197°53.3	10.8	182°02.3	41.0		
2	130°11.9	172°39.6	14.1	253°54.9	27.5	212°55.1	10.7	197°04.4	41.0		
3	145°14.4	187°39.0	· · 13.2	268°55.6	· · 27.9	227°57.0	· · 10.7	212°06.6	· · 40.9		
4	160°16.9	202°38.4	12.2	283°56.4	28.3	242°58.8	10.7	227°08.7	40.9		
5	175°19.3	217°37.7	11.3	298°57.1	28.7	258°00.7	10.7	242°10.9	40.8		
6	190°21.8	232°37.1	S18°10.4	313°57.8	S19°29.1	273°02.5	S23°10.6	257°13.0	S21°40.8		
7	205°24.3	247°36.5	09.5	328°58.5	29.5	288°04.3	10.6	272°15.2	40.8		
8	220°26.7	262°35.9	08.6	343°59.3	29.9	303°06.2	10.6	287°17.3	40.7		
9	235°29.2	277°35.3	· · 07.6	359°00.0	· · 30.3	318°08.0	· · 10.6	302°19.5	· · 40.7		
10	250°31.7	292°34.7	06.7	14°00.7	30.6	333°09.8	10.5	317°21.6	40.6		
11	265°34.1	307°34.1	05.8	29°01.5	31.0	348°11.7	10.5	332°23.8	40.6		
12	280°36.6	322°33.5	S18°04.8	44°02.2	S19°31.4	3°13.5	S23°10.5	347°26.0	S21°40.5		
13	295°39.0	337°32.9	03.9	59°02.9	31.8	18°15.4	10.5	2°28.1	40.5		
14	310°41.5	352°32.3	03.0	74°03.6	32.2	33°17.2	10.4	17°30.3	40.5		
15	325°44.0	7°31.7	· · 02.1	89°04.4	· · 32.6	48°19.0	· · 10.4	32°32.4	· · 40.4		
16	340°46.4	22°31.1	01.1	104°05.1	33.0	63°20.9	10.4	47°34.6	40.4		
17	355°48.9	37°30.5	18°00.2	119°05.8	33.4	78°22.7	10.4	62°36.7	40.3		
18	10°51.4	52°29.9	S17°59.3	134°06.6	S19°33.8	93°24.6	S23°10.3	77°38.9	S21°40.3		
19	25°53.8	67°29.3	58.3	149°07.3	34.2	108°26.4	10.3	92°41.0	40.2		
20	40°56.3	82°28.7	57.4	164°08.0	34.6	123°28.2	10.3	107°43.2	40.2		
21	55°58.8	97°28.1	· · 56.5	179°08.7	· · 35.0	138°30.1	· · 10.2	122°45.3	· · 40.2		
22	71°01.2	112°27.5	55.5	194°09.5	35.3	153°31.9	10.2	137°47.5	40.1		
23	86°03.7	127°26.9	54.6	209°10.2	35.7	168°33.7	10.2	152°49.6	40.1		
Mer.pass.:17:17		v-0.6 d0.9 m-3.9			v0.7 d-0.4 m1.6		v1.8 d0.0 m-1.7		v2.2 d0.0 m0.6		
Thu	GHA	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec	GHA	Dec
0	101°06.1	142°26.3	S17°53.7	224°10.9	S19°36.1	183°35.6	S23°10.2	167°51.8	S21°40.0		
1	116°08.6	157°25.7	52.7	239°11.7	36.5	198°37.4	10.1	182°53.9	40.0		
2	131°11.1	172°25.1	51.8	254°12.4	36.9	213°39.3	10.1	197°56.1	39.9		
3	146°13.5	187°24.5	· · 50.8	269°13.1	· · 37.3	228°41.1	· · 10.1	212°58.2	· · 39.9		
4	161°16.0	202°23.9	49.9	284°13.8	37.7	243°42.9	10.1	228°00.4	39.9		
5	176°18.5	217°23.3	49.0	299°14.6	38.1	258°44.8	10.0	243°02.5	39.8		
6	191°20.9	232°22.7	S17°48.0	314°15.3	S19°38.5	273°46.6	S23°10.0	258°04.7	S21°39.8		
7	206°23.4	247°22.1	47.1	329°16.0	38.8	288°48.4	10.0	273°06.8	39.7		
8	221°25.9	262°21.5	46.1	344°16.7	39.2	303°50.3	10.0	288°09.0	39.7		
9	236°28.3	277°20.9	· · 45.2	359°17.5	· · 39.6	318°52.1	· · 09.9	303°11.1	· · 39.6		
10	251°30.8	292°20.3	44.2	14°18.2	40.0	333°54.0	09.9	318°13.3	39.6		
11	266°33.3	307°19.7	43.3	29°18.9	40.4	348°55.8	09.9	333°15.5	39.5		
12	281°35.7	322°19.1	S17°42.3	44°19.6	S19°40.8	3°57.6	S23°09.9	348°17.6	S21°39.5		
13	296°38.2	337°18.6	41.4	59°20.4	41.2	18°59.5	09.8	3°19.8	39.5		
14	311°40.6	352°18.0	40.4	74°21.1	41.6	34°01.3	09.8	18°21.9	39.4		
15	326°43.1	7°17.4	· · 39.5	89°21.8	· · 41.9	49°03.2	· · 09.8	33°24.1	· · 39.4		
16	341°45.6	22°16.8	38.5	104°22.5	42.3	64°05.0	09.7	48°26.2	39.3		
17	356°48.0	37°16.2	37.6	119°23.3	42.7	79°06.8	09.7	63°28.4	39.3		
18	11°50.5	52°15.6	S17°36.6	134°24.0	S19°43.1	94°08.7	S23°09.7	78°30.5	S21°39.2		
19	26°53.0	67°15.0	35.7	149°24.7	43.5	109°10.5	09.7	93°32.7	39.2		
20	41°55.4	82°14.4	34.7	164°25.4	43.9	124°12.4	09.6	108°34.8	39.2		
21	56°57.9	97°13.9	· · 33.8	179°26.2	· · 44.2	139°14.2	· · 09.6	123°37.0	· · 39.1		
22	72°00.4	112°13.3	32.8	194°26.9	44.6	154°16.0	09.6	138°39.1	39.1		
23	87°02.8	127°12.7	31.9	209°27.6	45.0	169°17.9	09.6	153°41.3	39.0		
Mer.pass.:17:13		v-0.6 d0.9 m-3.9			v0.7 d-0.4 m1.6		v1.8 d0.0 m-1.7		v2.2 d0.0 m0.6		

РАСЧЕТ ПО NAUTICAL ALMANAC

Записываем значения в таблицу.

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	19 ^ч 35 ^м	01.01	T_{xp}	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с
№ <i>W</i>	+10		U_{xp}	-2 15	-2 15	-2 15
T_{gp}	5 ^ч 35 ^м	02.01	T_{gp}	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с
Ежедн. табл.→			<i>GHA</i>	254°05,1'	173°46,3'	217°23,3'
Increments & Corrections→			Corr. (minutes)	08°52,0'	08°27,8'	08°52,0'
Increments & Corrections→			V corr.	-	(+16,1) +9,5'	(-0,6) -0,4'
			<i>GHA</i> *	262°57,1'	182°23,6'	226°14,9'
			λ_w	-148°30,5'	-148°30,5'	-148°30,5'
Обыкновенный счет→			<i>LHA</i>	114°26,6' W	33°53,1' W	77°44,4' W
Практический счет→			<i>LHA</i>	Такой же, т.к. <180°		
Ежедн. табл.→			<i>Dec</i>	22°57,6' S	04°36,5' S	17°49,0' S
Increments & Corrections→			d corr.	(+0.2)	(+11.4)	(+0.9)
			<i>Dec</i>			

ЗНАЧЕНИЯ D CORRECTION

На последних страницах альманаха находим
в INCREMENTS AND CORRECTIONS значения D
CORRECTION на минуту по Тгр (35м).

Increments and Corrections												
	Aries	Moon	v and d corr			m 35	Sun Plan.	Aries	Moon	v and d corr		
0	8°31.4	8°06.8	0.0 - 0.0	6.0 - 3.4	12.0 - 6.9	0	8°45.0	8°46.4	8°21.1	0.0 - 0.0	6.0 - 3.5	12.0 - 7.1
2	8°31.6	8°07.0	0.1 - 0.1	6.1 - 3.5	12.1 - 7.0	1	8°45.2	8°46.7	8°21.3	0.1 - 0.1	6.1 - 3.6	12.1 - 7.2
5	8°31.9	8°07.2	0.2 - 0.1	6.2 - 3.6	12.2 - 7.0	2	8°45.5	8°46.9	8°21.6	0.2 - 0.1	6.2 - 3.7	12.2 - 7.2
7	8°32.1	8°07.5	0.3 - 0.2	6.3 - 3.6	12.3 - 7.1	3	8°45.7	8°47.2	8°21.8	0.3 - 0.2	6.3 - 3.7	12.3 - 7.3
0	8°32.4	8°07.7	0.4 - 0.2	6.4 - 3.7	12.4 - 7.1	4	8°46.0	8°47.4	8°22.0	0.4 - 0.2	6.4 - 3.8	12.4 - 7.3
3	8°32.6	8°08.0	0.5 - 0.3	6.5 - 3.7	12.5 - 7.2	5	8°46.3	8°47.7	8°22.3	0.5 - 0.3	6.5 - 3.8	12.5 - 7.4
5	8°32.9	8°08.2	0.6 - 0.3	6.6 - 3.8	12.6 - 7.2	6	8°46.5	8°47.9	8°22.5	0.6 - 0.4	6.6 - 3.9	12.6 - 7.5
8	8°33.1	8°08.4	0.7 - 0.4	6.7 - 3.9	12.7 - 7.3	7	8°46.8	8°48.2	8°22.8	0.7 - 0.4	6.7 - 4.0	12.7 - 7.5
0	8°33.4	8°08.7	0.8 - 0.5	6.8 - 3.9	12.8 - 7.4	8	8°47.0	8°48.4	8°23.0	0.8 - 0.5	6.8 - 4.0	12.8 - 7.6
2	8°33.7	8°08.9	0.9 - 0.5	6.9 - 4.0	12.9 - 7.4	9	8°47.2	8°48.7	8°23.2	0.9 - 0.5	6.9 - 4.1	12.9 - 7.6
5	8°33.9	8°09.2	1.0 - 0.6	7.0 - 4.0	13.0 - 7.5	10	8°47.5	8°48.9	8°23.5	1.0 - 0.6	7.0 - 4.1	13.0 - 7.7
7	8°34.2	8°09.4	1.1 - 0.6	7.1 - 4.1	13.1 - 7.5	11	8°47.7	8°49.2	8°23.7	1.1 - 0.7	7.1 - 4.2	13.1 - 7.8
0	8°34.4	8°09.6	1.2 - 0.7	7.2 - 4.1	13.2 - 7.6	12	8°48.0	8°49.4	8°23.9	1.2 - 0.7	7.2 - 4.3	13.2 - 7.8
3	8°34.7	8°09.9	1.3 - 0.7	7.3 - 4.2	13.3 - 7.6	13	8°48.3	8°49.7	8°24.2	1.3 - 0.8	7.3 - 4.3	13.3 - 7.9
5	8°34.9	8°10.1	1.4 - 0.8	7.4 - 4.3	13.4 - 7.7	14	8°48.5	8°49.9	8°24.4	1.4 - 0.8	7.4 - 4.4	13.4 - 7.9
8	8°35.2	8°10.3	1.5 - 0.9	7.5 - 4.3	13.5 - 7.8	15	8°48.8	8°50.2	8°24.7	1.5 - 0.9	7.5 - 4.4	13.5 - 8.0
0	8°35.4	8°10.6	1.6 - 0.9	7.6 - 4.4	13.6 - 7.8	16	8°49.0	8°50.4	8°24.9	1.6 - 0.9	7.6 - 4.5	13.6 - 8.0
2	8°35.7	8°10.8	1.7 - 1.0	7.7 - 4.4	13.7 - 7.9	17	8°49.2	8°50.7	8°25.1	1.7 - 1.0	7.7 - 4.6	13.7 - 8.1
5	8°35.9	8°11.1	1.8 - 1.0	7.8 - 4.5	13.8 - 7.9	18	8°49.5	8°50.9	8°25.4	1.8 - 1.1	7.8 - 4.6	13.8 - 8.2
8	8°36.2	8°11.3	1.9 - 1.1	7.9 - 4.5	13.9 - 8.0	19	8°49.8	8°51.2	8°25.6	1.9 - 1.1	7.9 - 4.7	13.9 - 8.2
0	8°36.4	8°11.5	2.0 - 1.1	8.0 - 4.6	14.0 - 8.0	20	8°50.0	8°51.4	8°25.9	2.0 - 1.2	8.0 - 4.7	14.0 - 8.3
3	8°36.7	8°11.8	2.1 - 1.2	8.1 - 4.7	14.1 - 8.1	21	8°50.3	8°51.7	8°26.1	2.1 - 1.2	8.1 - 4.8	14.1 - 8.3
5	8°36.9	8°12.0	2.2 - 1.3	8.2 - 4.7	14.2 - 8.2	22	8°50.5	8°52.0	8°26.3	2.2 - 1.3	8.2 - 4.9	14.2 - 8.4
7	8°37.2	8°12.3	2.3 - 1.3	8.3 - 4.8	14.3 - 8.2	23	8°50.7	8°52.2	8°26.6	2.3 - 1.4	8.3 - 4.9	14.3 - 8.5
0	8°37.4	8°12.5	2.4 - 1.4	8.4 - 4.8	14.4 - 8.3	24	8°51.0	8°52.5	8°26.8	2.4 - 1.4	8.4 - 5.0	14.4 - 8.5
2	8°37.7	8°12.7	2.5 - 1.4	8.5 - 4.9	14.5 - 8.3	25	8°51.2	8°52.7	8°27.0	2.5 - 1.5	8.5 - 5.0	14.5 - 8.6
5	8°37.9	8°13.0	2.6 - 1.5	8.6 - 4.9	14.6 - 8.4	26	8°51.5	8°53.0	8°27.3	2.6 - 1.5	8.6 - 5.1	14.6 - 8.6
8	8°38.2	8°13.2	2.7 - 1.6	8.7 - 5.0	14.7 - 8.5	27	8°51.8	8°53.2	8°27.5	2.7 - 1.6	8.7 - 5.1	14.7 - 8.7
0	8°38.4	8°13.4	2.8 - 1.6	8.8 - 5.1	14.8 - 8.5	28	8°52.0	8°53.5	8°27.8	2.8 - 1.7	8.8 - 5.2	14.8 - 8.8
3	8°38.7	8°13.7	2.9 - 1.7	8.9 - 5.1	14.9 - 8.6	29	8°52.3	8°53.7	8°28.0	2.9 - 1.7	8.9 - 5.3	14.9 - 8.8
5	8°38.9	8°13.9	3.0 - 1.7	9.0 - 5.2	15.0 - 8.6	30	8°52.5	8°54.0	8°28.2	3.0 - 1.8	9.0 - 5.3	15.0 - 8.9
7	8°39.2	8°14.2	3.1 - 1.8	9.1 - 5.2	15.1 - 8.7	31	8°52.7	8°54.2	8°28.5	3.1 - 1.8	9.1 - 5.4	15.1 - 8.9
0	8°39.4	8°14.4	3.2 - 1.8	9.2 - 5.3	15.2 - 8.7	32	8°53.0	8°54.5	8°28.7	3.2 - 1.9	9.2 - 5.4	15.2 - 9.0
2	8°39.7	8°14.6	3.3 - 1.9	9.3 - 5.3	15.3 - 8.8	33	8°53.2	8°54.7	8°29.0	3.3 - 2.0	9.3 - 5.5	15.3 - 9.1
5	8°39.9	8°14.9	3.4 - 2.0	9.4 - 5.4	15.4 - 8.9	34	8°53.5	8°55.0	8°29.2	3.4 - 2.0	9.4 - 5.6	15.4 - 9.1
8	8°40.2	8°15.1	3.5 - 2.0	9.5 - 5.5	15.5 - 8.9	35	8°53.8	8°55.2	8°29.4	3.5 - 2.1	9.5 - 5.6	15.5 - 9.2
0	8°40.4	8°15.4	3.6 - 2.1	9.6 - 5.5	15.6 - 9.0	36	8°54.0	8°55.5	8°29.7	3.6 - 2.1	9.6 - 5.7	15.6 - 9.2
3	8°40.7	8°15.6	3.7 - 2.1	9.7 - 5.6	15.7 - 9.0	37	8°54.3	8°55.7	8°29.9	3.7 - 2.2	9.7 - 5.7	15.7 - 9.3
5	8°40.9	8°15.8	3.8 - 2.2	9.8 - 5.6	15.8 - 9.1	38	8°54.5	8°56.0	8°30.2	3.8 - 2.2	9.8 - 5.8	15.8 - 9.3
7	8°41.2	8°16.1	3.9 - 2.2	9.9 - 5.7	15.9 - 9.1	39	8°54.7	8°56.2	8°30.4	3.9 - 2.3	9.9 - 5.9	15.9 - 9.4
0	8°41.4	8°16.3	4.0 - 2.3	10.0 - 5.8	16.0 - 9.2	40	8°55.0	8°56.5	8°30.6	4.0 - 2.4	10.0 - 5.9	16.0 - 9.5
2	8°41.7	8°16.5	4.1 - 2.4	10.1 - 5.8	16.1 - 9.3	41	8°55.2	8°56.7	8°30.9	4.1 - 2.4	10.1 - 6.0	16.1 - 9.5
5	8°41.9	8°16.8	4.2 - 2.4	10.2 - 5.9	16.2 - 9.3	42	8°55.5	8°57.0	8°31.1	4.2 - 2.5	10.2 - 6.0	16.2 - 9.6
8	8°42.2	8°17.0	4.3 - 2.5	10.3 - 5.9	16.3 - 9.4	43	8°55.8	8°57.2	8°31.3	4.3 - 2.5	10.3 - 6.1	16.3 - 9.6
0	8°42.4	8°17.3	4.4 - 2.5	10.4 - 6.0	16.4 - 9.4	44	8°56.0	8°57.5	8°31.6	4.4 - 2.6	10.4 - 6.2	16.4 - 9.7
3	8°42.7	8°17.5	4.5 - 2.6	10.5 - 6.0	16.5 - 9.5	45	8°56.3	8°57.7	8°31.8	4.5 - 2.7	10.5 - 6.2	16.5 - 9.8
5	8°42.9	8°17.7	4.6 - 2.6	10.6 - 6.1	16.6 - 9.5	46	8°56.5	8°58.0	8°32.1	4.6 - 2.7	10.6 - 6.3	16.6 - 9.8
7	8°43.2	8°18.0	4.7 - 2.7	10.7 - 6.2	16.7 - 9.6	47	8°56.7	8°58.2	8°32.3	4.7 - 2.8	10.7 - 6.3	16.7 - 9.9
0	8°43.4	8°18.2	4.8 - 2.8	10.8 - 6.2	16.8 - 9.7	48	8°57.0	8°58.5	8°32.5	4.8 - 2.8	10.8 - 6.4	16.8 - 9.9
3	8°43.7	8°18.5	4.9 - 2.8	10.9 - 6.3	16.9 - 9.7	49	8°57.3	8°58.7	8°32.8	4.9 - 2.9	10.9 - 6.4	16.9 - 10.0
5	8°43.9	8°18.7	5.0 - 2.9	11.0 - 6.3	17.0 - 9.8	50	8°57.5	8°59.0	8°33.0	5.0 - 3.0	11.0 - 6.5	17.0 - 10.1
8	8°44.2	8°18.9	5.1 - 2.9	11.1 - 6.4	17.1 - 9.8	51	8°57.8	8°59.2	8°33.3	5.1 - 3.0	11.1 - 6.6	17.1 - 10.1
0	8°44.4	8°19.2	5.2 - 3.0	11.2 - 6.4	17.2 - 9.9	52	8°58.0	8°59.5	8°33.5	5.2 - 3.1	11.2 - 6.6	17.2 - 10.2
2	8°44.7	8°19.4	5.3 - 3.0	11.3 - 6.5	17.3 - 9.9	53	8°58.2	8°59.7	8°33.7	5.3 - 3.1	11.3 - 6.7	17.3 - 10.2
5	8°44.9	8°19.7	5.4 - 3.1	11.4 - 6.6	17.4 - 10.0	54	8°58.5	9°00.0	8°34.0	5.4 - 3.2	11.4 - 6.7	17.4 - 10.3
7	8°45.2	8°19.9	5.5 - 3.2	11.5 - 6.6	17.5 - 10.1	55	8°58.7	9°00.2	8°34.2	5.5 - 3.3	11.5 - 6.8	17.5 - 10.4

Записываем значения в таблицу

И выполняем расчет.

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	19 ^ч 35 ^м	01.01	T_{xp}	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с	05 ^ч 37 ^м 43 ^с
$No W$	+10		U_{xp}	-2 15	-2 15	-2 15
$T_{гр}$	5 ^ч 35 ^м	02.01	$T_{гр}$	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с	05 ^ч 35 ^м 28 ^с
Ежедн. табл→			<i>GHA</i>	254°05,1'	173°46,3'	217°23,3'
Increments & Corrections→			Corr. (minutes)	08°52,0'	08°27,8'	08°52,0'
Increments & Corrections→			V corr.	-	(+16,1) +9,5'	(-0,6) -0,4'
			<i>GHA*</i>	262°57,1'	182°23,6'	226°14,9'
			λ_w	-148°30,5'	-148°30,5'	-148°30,5'
Обыкновенный счет→			<i>LHA</i>	114°26,6' W	33°53,1' W	77°44,4' W
Практический счет→			<i>LHA</i>	Такой же, т.к. < 180°		
Ежедн. табл→			<i>Dec</i>	22°57,6' S	04°36,5' S	17°49,0' S
Increments & Corrections→			d corr.	(+0.2) +0,1'	(+11.4) +6,7'	(+0.9) +0,5'
			<i>Dec</i>	22°57,7' S	04°43,2' S	17°49,5' S

ОТВЕТ:

			<i>Sun</i>	<i>Moon</i>	<i>Venus</i>	
T_c	19 ^h 35 ^m	01.01	T_{xp}	05 ^h 37 ^m 43 ^c	05 ^h 37 ^m 43 ^c	05 ^h 37 ^m 43 ^c
$N_0 W$	+10		U_{xp}	-2 15	-2 15	-2 15
$T_{ГР}$	5 ^h 35 ^m	02.01	$T_{ГР}$	05 ^h 35 ^m 28 ^c	05 ^h 35 ^m 28 ^c	05 ^h 35 ^m 28 ^c
Ежедн. табл→			<i>GHA</i>	254°05,1'	173°46,3'	217°23,3'
Increments & Corrections→			Corr. (minutes)	08°52,0'	08°27,8'	08°52,0'
Increments & Corrections→			V corr.	-	(+16,1) +9,5'	(-0,6) -0,4'
			<i>GHA*</i>	262°57,1'	182°23,6'	226°14,9'
			λW	-148°30,5'	-148°30,5'	-148°30,5'
Обыкновенный счет→			<i>LHA</i>	114°26,6'W	33°53,1' W	77°44,4' W
Практический счет→			<i>LHA</i>	Такой же, т.к. <180°		
Ежедн. табл→			<i>Dec</i>	22°57,6' S	04°36,5' S	17°49,0' S
Increments & Corrections→			d corr.	(+0.2)+0,1'	(+11.4) +6,7'	(+0.9) +0,5'
			<i>Dec</i>	22°57,7'S	04°43,2' S	17°49,5' S