

Twilight
Twilight Period

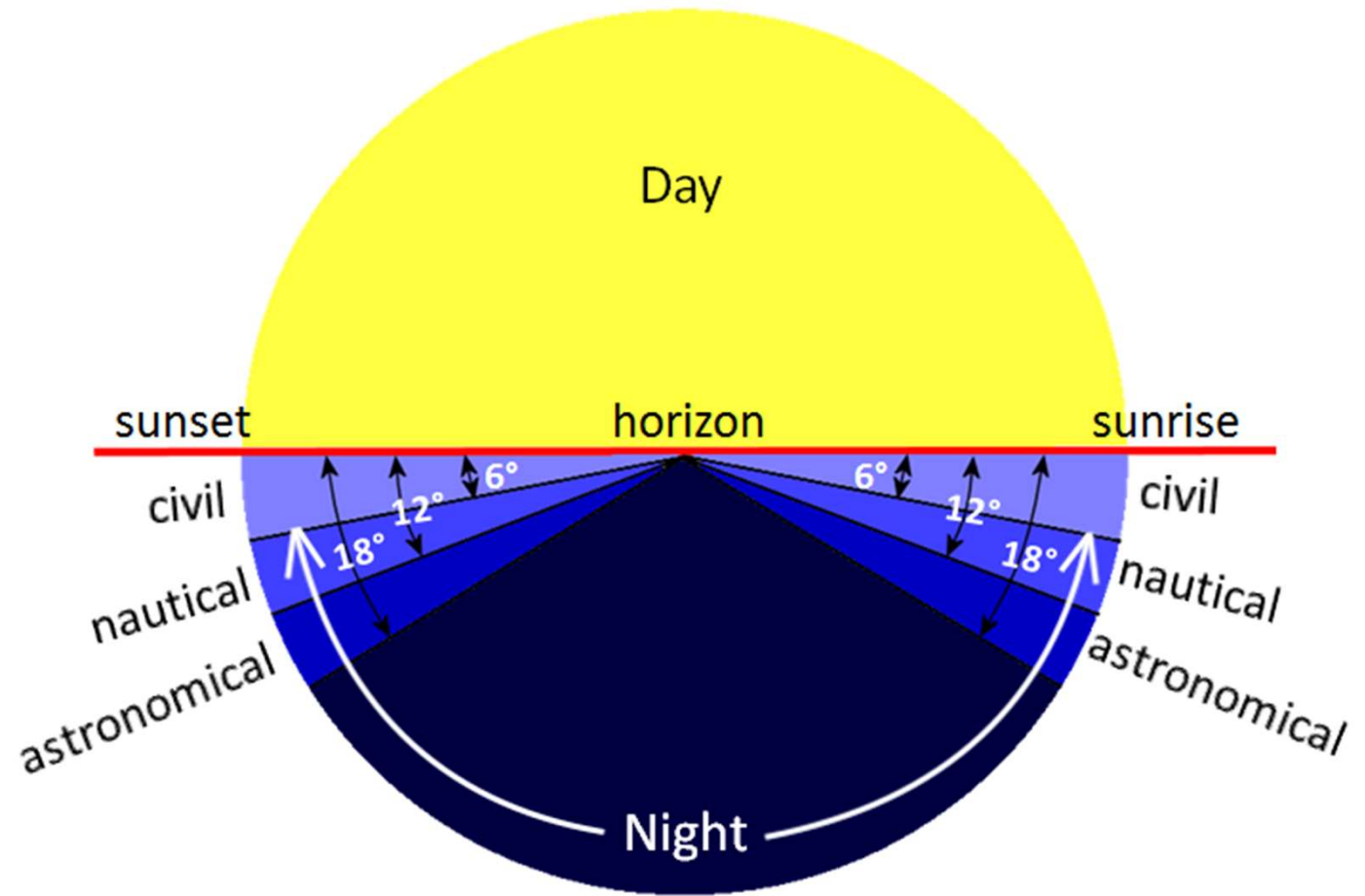
When to Look for Stars and Planets

Practical Sextant Navigation – Planets, Stars and Moon



Twilight

Planets, Stars and Moon



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

Lat.	Moonrise			Moonset		
	Sun	Mon	Tue	Sun	Mon	Tue
N 72°	16:50	18:52	21:13	04:17	03:45	03:08
N 70°	16:47	18:39	20:43	04:16	03:51	03:24
68°	16:45	18:28	20:21	04:15	03:56	03:36
66°	16:43	18:20	20:04	04:14	04:01	03:46
64°	16:41	18:13	19:50	04:13	04:04	03:55
62°	16:40	18:07	19:38	04:12	04:07	04:02
60°	16:39	18:02	19:28	04:12	04:10	04:09
N 58°	16:38	17:57	19:20	04:11	04:13	04:15
56°	16:37	17:53	19:13	04:11	04:15	04:20
54°	16:36	17:49	19:06	04:10	04:17	04:24
52°	16:35	17:46	19:00	04:10	04:19	04:29
50°	16:34	17:43	18:54	04:10	04:21	04:32
45°	16:33	17:37	18:43	04:09	04:24	04:41
N 40°	16:31	17:31	18:33	04:08	04:27	04:48
35°	16:30	17:27	18:25	04:08	04:30	04:54
30°	16:29	17:23	18:18	04:07	04:32	04:59
20°	16:28	17:16	18:06	04:06	04:37	05:08
N 10°	16:26	17:10	17:56	04:05	04:40	05:16
0°	16:25	17:04	17:46	04:05	04:44	05:24
S 10°	16:24	16:59	17:36	04:04	04:47	05:32
20°	16:22	16:53	17:26	04:03	04:51	05:40
30°	16:21	16:46	17:14	04:02	04:55	05:49
35°	16:20	16:43	17:07	04:01	04:57	05:55
40°	16:19	16:38	17:00	04:01	05:00	06:01
45°	16:18	16:33	16:51	04:00	05:03	06:08
S 50°	16:16	16:28	16:40	03:59	05:07	06:17
52°	16:16	16:25	16:35	03:59	05:09	06:21
54°	16:15	16:22	16:30	03:58	05:11	06:26
56°	16:14	16:19	16:24	03:58	05:13	06:31
58°	16:13	16:15	16:17	03:57	05:16	06:36
S 60°	16:12	16:11	16:10	03:56	05:18	06:43

Day	Eqn. of Time 00' mm:ss	Sun		Mer. Pass hh:mm	Moon		Age 13-15 92-99%
		hh:mm	mm:ss		Upper hh:mm	Lower hh:mm	
21	01:18	01:24	11:59	23:34	10:15		
22	01:30	01:35	11:58	23:14	10:54		
23	01:41	01:47	11:58	23:56	11:35		

At night, with limited or no moon light, you have no horizon available. Then, only in Twilight Periods you may have the possibility to perform sextant readings.

Twilight Periods, for mornings and evenings, are given on the Daily Pages in the Nautical Almanac, for Latitudes per 10°.

Our evening observation period falls between

- the midpoint between the Sunset and the Civil Twilight, and
- the midpoint between the Civil Twilight and the Nautical Twilight.

Lat.	Sunset	Twilight		
		Civil	Naut.	Naut.
30°	18:32	18:57	19:26	
20°	18:21	18:43	19:10	
N 10°	18:11	18:32	18:58	
0°	18:02	18:23	18:48	
S 10°	17:53	18:14	18:39	
20°	17:43	18:06	18:32	

In our case, we first interpolate towards 17°, i.e. 18:18, 18:39 and 19:06.

Twilight Time differences are 21' and 27' respectively.

Our observation period **starts at 18:29 and ends at 18:52 LMT.**

For our EP, it means somewhere between 10:00 and 10:22 UT.

Sunset, Sunrise
Civil Twilight
Nautical Twilight

Twilight Period

Planets, Stars and Moon