

GEN 2.7 Sunrise/sunset

- 1 The tables include 7 public airports in that part of the High Sea, which is being served by the Georgia air traffic services.
- 1.1 The times in the tables are given in UTC for beginning of civil morning twilight (TWIL FROM), sunrise (SR), sunset (SS) and end of civil evening twilight (TWIL TO) for the years from 2020 to 2028.
- 1.2 The time given for the beginning of civil morning twilight and end of civil evening twilight are calculated for an altitude of the sun 6° below the horizon, as commonly used.
- 1.3 The tables are calculated for the year 2024, which is used as an "average year" for the years from 2020 to 2028. In this period, the times on an arbitrary date and place will deviate less than 2 minutes from the times on the same date and place in the "average year".

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3 Sunrise-Sunset tables**3.1 TBILISI/Tbilisi and NATAKHTARI**

TBILISI/Tbilisi UGTB N 41° 40' 09" E 044° 57' 17"										NATAKHTARI UGSA N 41° 55' 14" E 044° 43' 10"				
MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
JAN					FEB					MAR				
1	03:56	04:27	13:40	14:12	1	03:43	04:13	14:15	14:45	1	03:07	03:34	14:51	15:19
2	03:56	04:27	13:41	14:12	2	03:43	04:12	14:17	14:46	2	03:05	03:33	14:52	15:20
3	03:56	04:27	13:42	14:13	3	03:42	04:11	14:18	14:47	3	03:03	03:31	14:54	15:21
4	03:56	04:28	13:43	14:14	4	03:41	04:10	14:19	14:48	4	03:02	03:30	14:55	15:23
5	03:56	04:27	13:44	14:15	5	03:40	04:09	14:20	14:50	5	03:00	03:28	14:56	15:24
6	03:56	04:27	13:45	14:16	6	03:39	04:08	14:22	14:51	6	02:59	03:26	14:57	15:25
7	03:56	04:27	13:46	14:17	7	03:37	04:07	14:23	14:52	7	02:57	03:25	14:58	15:26
8	03:56	04:27	13:47	14:18	8	03:36	04:05	14:24	14:53	8	02:55	03:23	14:59	15:27
9	03:56	04:27	13:48	14:19	9	03:35	04:04	14:25	14:54	9	02:54	03:21	15:01	15:28
10	03:56	04:27	13:49	14:20	10	03:34	04:03	14:27	14:56	10	02:52	03:20	15:02	15:29
11	03:56	04:27	13:50	14:21	11	03:33	04:02	14:28	14:57	11	02:50	03:18	15:03	15:30
12	03:55	04:26	13:51	14:22	12	03:32	04:00	14:29	14:58	12	02:49	03:16	15:04	15:32
13	03:55	04:26	13:52	14:23	13	03:30	03:59	14:30	14:59	13	02:47	03:15	15:05	15:33
14	03:55	04:25	13:53	14:24	14	03:29	03:58	14:32	15:00	14	02:45	03:13	15:06	15:34
15	03:54	04:25	13:54	14:25	15	03:28	03:56	14:33	15:02	15	02:44	03:11	15:07	15:35
16	03:54	04:25	13:56	14:26	16	03:27	03:55	14:34	15:03	16	02:42	03:10	15:08	15:36

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
17	03:54	04:24	13:57	14:27	17	03:25	03:54	14:35	15:04	17	02:40	03:08	15:10	15:37
18	03:53	04:24	13:58	14:28	18	03:24	03:52	14:37	15:05	18	02:39	03:06	15:11	15:38
19	03:53	04:23	13:59	14:29	19	03:23	03:51	14:38	15:06	19	02:37	03:05	15:12	15:40
20	03:52	04:23	14:00	14:31	20	03:21	03:50	14:39	15:07	20	02:35	03:03	15:13	15:41
21	03:52	04:22	14:01	14:32	21	03:20	03:48	14:40	15:09	21	02:33	03:01	15:14	15:42
22	03:51	04:21	14:03	14:33	22	03:18	03:47	14:42	15:10	22	02:32	02:59	15:15	15:43
23	03:51	04:21	14:04	14:34	23	03:17	03:45	14:43	15:11	23	02:30	02:58	15:16	15:44
24	03:50	04:20	14:05	14:35	24	03:16	03:44	14:44	15:12	24	02:28	02:56	15:17	15:45
25	03:49	04:19	14:06	14:36	25	03:14	03:42	14:45	15:13	25	02:27	02:54	15:18	15:46
26	03:48	04:18	14:08	14:38	26	03:13	03:41	14:46	15:14	26	02:25	02:53	15:20	15:47
27	03:48	04:18	14:09	14:39	27	03:11	03:39	14:48	15:16	27	02:23	02:51	15:21	15:48
28	03:47	04:17	14:10	14:40	28	03:10	03:38	14:49	15:17	28	02:21	02:49	15:22	15:50
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30	03:45	04:15	14:13	14:42						30	02:18	02:46	15:24	15:52
31	03:44	04:14	14:14	14:43						31	02:16	02:44	15:25	15:53
APR					MAY					JUN				
1	02:14	02:42	15:26	15:54	1	01:26	01:56	15:59	16:29	1	00:55	01:28	16:28	17:02
2	02:13	02:41	15:27	15:55	2	01:25	01:55	16:00	16:30	2	00:54	01:28	16:29	17:03
3	02:11	02:39	15:28	15:56	3	01:23	01:54	16:01	16:31	3	00:54	01:27	16:30	17:04
4	02:09	02:37	15:29	15:58	4	01:22	01:52	16:02	16:33	4	00:53	01:27	16:31	17:04
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6	02:06	02:34	15:32	16:00	6	01:19	01:50	16:04	16:35	6	00:52	01:26	16:32	17:06
7	02:04	02:32	15:33	16:01	7	01:18	01:49	16:05	16:36	7	00:52	01:26	16:33	17:06
8	02:02	02:31	15:34	16:02	8	01:17	01:48	16:06	16:37	8	00:52	01:26	16:33	17:07
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24	01:36	02:06	15:51	16:21	24	01:00	01:33	16:22	16:55	24	00:53	01:27	16:39	17:13
25	01:35	02:05	15:52	16:22	25	00:59	01:32	16:23	16:56	25	00:53	01:27	16:39	17:13
26	01:33	02:03	15:53	16:23	26	00:58	01:31	16:24	16:57	26	00:53	01:27	16:39	17:13

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
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28	01:30	02:00	15:56	16:26	28	00:57	01:30	16:25	16:58	28	00:54	01:28	16:39	17:13
29	01:29	01:59	15:57	16:27	29	00:56	01:29	16:26	16:59	29	00:55	01:29	16:39	17:13
30	01:27	01:58	15:58	16:28	30	00:56	01:29	16:27	17:00	30	00:55	01:29	16:39	17:12
					31	00:55	01:28	16:28	17:01					
JUL					AUG					SEP				
1	00:56	01:30	16:38	17:12	1	01:24	01:55	16:18	16:49	1	01:58	02:26	15:33	16:01
2	00:56	01:30	16:38	17:12	2	01:25	01:56	16:16	16:47	2	01:59	02:28	15:31	16:00
3	00:57	01:31	16:38	17:12	3	01:26	01:57	16:15	16:46	3	02:00	02:29	15:29	15:58
4	00:58	01:31	16:38	17:12	4	01:27	01:58	16:14	16:45	4	02:01	02:30	15:28	15:56
5	00:58	01:32	16:37	17:11	5	01:28	01:59	16:13	16:44	5	02:02	02:31	15:26	15:54
6	00:59	01:33	16:37	17:11	6	01:29	02:00	16:12	16:42	6	02:03	02:32	15:24	15:53
7	01:00	01:33	16:37	17:10	7	01:30	02:01	16:10	16:41	7	02:04	02:33	15:23	15:51
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12	01:04	01:37	16:35	17:08	12	01:36	02:06	16:04	16:34	12	02:10	02:38	15:14	15:42
13	01:04	01:38	16:34	17:07	13	01:37	02:07	16:02	16:32	13	02:11	02:39	15:12	15:40
14	01:05	01:38	16:33	17:06	14	01:38	02:08	16:01	16:31	14	02:12	02:40	15:11	15:38
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16	01:07	01:40	16:32	17:05	16	01:40	02:10	15:58	16:28	16	02:14	02:42	15:07	15:35
17	01:08	01:41	16:31	17:04	17	01:41	02:11	15:56	16:26	17	02:15	02:43	15:05	15:33
18	01:09	01:42	16:31	17:03	18	01:43	02:12	15:55	16:25	18	02:16	02:44	15:04	15:31
19	01:10	01:43	16:30	17:03	19	01:44	02:13	15:53	16:23	19	02:17	02:45	15:02	15:30
20	01:11	01:43	16:29	17:02	20	01:45	02:14	15:52	16:21	20	02:18	02:46	15:00	15:28
21	01:12	01:44	16:28	17:01	21	01:46	02:15	15:50	16:20	21	02:19	02:47	14:58	15:26
22	01:13	01:45	16:28	17:00	22	01:47	02:16	15:49	16:18	22	02:20	02:48	14:57	15:24
23	01:14	01:46	16:27	16:59	23	01:48	02:17	15:47	16:16	23	02:21	02:49	14:55	15:23
24	01:15	01:47	16:26	16:58	24	01:49	02:18	15:46	16:15	24	02:22	02:50	14:53	15:21
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26	01:17	01:49	16:24	16:56	26	01:51	02:20	15:43	16:11	26	02:24	02:52	14:50	15:17
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28	01:19	01:51	16:22	16:53	28	01:54	02:22	15:39	16:08	28	02:27	02:54	14:46	15:14
29	01:20	01:52	16:21	16:52	29	01:55	02:23	15:38	16:06	29	02:28	02:55	14:45	15:12
30	01:21	01:53	16:20	16:51	30	01:56	02:24	15:36	16:05	30	02:29	02:56	14:43	15:11
31	01:22	01:54	16:19	16:50	31	01:57	02:25	15:34	16:03					
OCT					NOV					DEC				
1	02:30	02:57	14:41	15:09	1	03:04	03:33	13:54	14:23	1	03:37	04:08	13:31	14:02
2	02:31	02:58	14:40	15:07	2	03:05	03:34	13:53	14:22	2	03:38	04:09	13:30	14:01
3	02:32	03:00	14:38	15:06	3	03:06	03:35	13:52	14:21	3	03:39	04:10	13:30	14:01
4	02:33	03:01	14:36	15:04	4	03:07	03:36	13:51	14:20	4	03:40	04:11	13:30	14:01

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
5	02:34	03:02	14:34	15:02	5	03:08	03:38	13:49	14:19	5	03:41	04:12	13:30	14:01
6	02:35	03:03	14:33	15:01	6	03:10	03:39	13:48	14:18	6	03:42	04:13	13:30	14:01
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9	02:38	03:06	14:28	14:56	9	03:13	03:42	13:45	14:15	9	03:44	04:16	13:30	14:01
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16	02:46	03:14	14:17	14:45	16	03:21	03:51	13:39	14:09	16	03:50	04:21	13:31	14:03
17	02:47	03:15	14:15	14:43	17	03:22	03:52	13:38	14:08	17	03:50	04:22	13:31	14:03
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22	02:53	03:21	14:08	14:36	22	03:28	03:58	13:34	14:05	22	03:53	04:25	13:34	14:05
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29	03:00	03:29	13:58	14:27	29	03:35	04:06	13:31	14:02	29	03:55	04:27	13:38	14:10
30	03:02	03:30	13:57	14:26	30	03:36	04:07	13:31	14:02	30	03:56	04:27	13:39	14:11
31	03:03	03:32	13:55	14:24						31	03:56	04:27	13:40	14:11

3.2 KUTAISI/Kopitnari

KUTAISI/Kopitnari UGKO N 42° 10' 37" E 042° 28' 58"														
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MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
JAN					FEB					MAR				
1	04:08	04:41	13:49	14:20	1	03:54	04:24	14:24	14:54	1	03:17	03:45	15:01	15:29
2	04:08	04:41	13:49	14:21	2	03:53	04:23	14:25	14:55	2	03:15	03:43	15:02	15:30
3	04:09	04:41	13:50	14:22	3	03:52	04:22	14:27	14:56	3	03:13	03:42	15:03	15:31
4	04:09	04:41	13:51	14:23	4	03:51	04:21	14:28	14:57	4	03:12	03:40	15:04	15:32
5	04:09	04:41	13:52	14:24	5	03:50	04:20	14:29	14:59	5	03:10	03:38	15:06	15:33
6	04:09	04:41	13:53	14:25	6	03:49	04:19	14:31	15:00	6	03:09	03:37	15:07	15:35
7	04:09	04:41	13:54	14:26	7	03:48	04:17	14:32	15:01	7	03:07	03:35	15:08	15:36

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
8	04:08	04:40	13:55	14:27	8	03:47	04:16	14:33	15:02	8	03:05	03:33	15:09	15:37
9	04:08	04:40	13:56	14:28	9	03:46	04:15	14:34	15:04	9	03:04	03:32	15:10	15:38
10	04:08	04:40	13:57	14:29	10	03:45	04:14	14:36	15:05	10	03:02	03:30	15:11	15:39
11	04:08	04:40	13:58	14:30	11	03:43	04:12	14:37	15:06	11	03:00	03:28	15:13	15:40
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19	04:05	04:36	14:08	14:38	19	03:33	04:02	14:47	15:16	19	02:47	03:14	15:22	15:50
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30	03:57	04:27	14:21	14:51						30	02:27	02:55	15:34	16:02
31	03:56	04:26	14:23	14:52						31	02:25	02:54	15:35	16:03
APR					MAY					JUN				
1	02:24	02:52	15:36	16:05	1	01:34	02:05	16:10	16:40	1	01:02	01:36	16:40	17:14
2	02:22	02:50	15:37	16:06	2	01:33	02:04	16:11	16:42	2	01:02	01:36	16:41	17:15
3	02:20	02:49	15:39	16:07	3	01:32	02:02	16:12	16:43	3	01:01	01:35	16:42	17:16
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5	02:17	02:45	15:41	16:09	5	01:29	02:00	16:14	16:45	5	01:01	01:35	16:43	17:17
6	02:15	02:44	15:42	16:10	6	01:28	01:59	16:15	16:46	6	01:00	01:34	16:44	17:18
7	02:13	02:42	15:43	16:12	7	01:26	01:57	16:16	16:48	7	01:00	01:34	16:44	17:18
8	02:12	02:40	15:44	16:13	8	01:25	01:56	16:17	16:49	8	01:00	01:34	16:45	17:19
9	02:10	02:39	15:45	16:14	9	01:24	01:55	16:18	16:50	9	00:59	01:34	16:45	17:20
10	02:08	02:37	15:46	16:15	10	01:22	01:54	16:19	16:51	10	00:59	01:33	16:46	17:20
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15	02:00	02:29	15:52	16:21	15	01:17	01:49	16:25	16:57	15	00:59	01:33	16:48	17:23
16	01:58	02:27	15:53	16:22	16	01:15	01:48	16:26	16:58	16	00:59	01:33	16:49	17:23
17	01:56	02:26	15:54	16:24	17	01:14	01:47	16:27	16:59	17	00:59	01:33	16:49	17:23

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
18	01:55	02:24	15:55	16:25	18	01:13	01:46	16:28	17:00	18	00:59	01:33	16:49	17:24
19	01:53	02:22	15:56	16:26	19	01:12	01:45	16:29	17:01	19	00:59	01:34	16:49	17:24
20	01:51	02:21	15:58	16:27	20	01:11	01:44	16:30	17:02	20	00:59	01:34	16:50	17:24
21	01:50	02:19	15:59	16:28	21	01:10	01:43	16:31	17:03	21	00:59	01:34	16:50	17:25
22	01:48	02:18	16:00	16:30	22	01:10	01:42	16:32	17:04	22	01:00	01:34	16:50	17:25
23	01:47	02:16	16:01	16:31	23	01:09	01:42	16:32	17:05	23	01:00	01:35	16:50	17:25
24	01:45	02:15	16:02	16:32	24	01:08	01:41	16:33	17:06	24	01:00	01:35	16:50	17:25
25	01:43	02:13	16:03	16:33	25	01:07	01:40	16:34	17:07	25	01:01	01:35	16:50	17:25
26	01:42	02:12	16:04	16:34	26	01:06	01:40	16:35	17:08	26	01:01	01:36	16:50	17:25
27	01:40	02:11	16:05	16:36	27	01:06	01:39	16:36	17:09	27	01:01	01:36	16:50	17:25
28	01:39	02:09	16:06	16:37	28	01:05	01:38	16:37	17:10	28	01:02	01:36	16:50	17:25
29	01:37	02:08	16:08	16:38	29	01:04	01:38	16:38	17:11	29	01:02	01:37	16:50	17:25
30	01:36	02:06	16:09	16:39	30	01:04	01:37	16:38	17:12	30	01:03	01:37	16:50	17:25
					31	01:03	01:37	16:39	17:13					
JUL					AUG					SEP				
1	01:03	01:38	16:50	17:24	1	01:32	02:03	16:29	17:00	1	02:07	02:36	15:43	16:12
2	01:04	01:38	16:50	17:24	2	01:33	02:04	16:28	16:59	2	02:08	02:37	15:42	16:10
3	01:05	01:39	16:50	17:24	3	01:34	02:05	16:26	16:58	3	02:09	02:38	15:40	16:08
4	01:05	01:40	16:49	17:24	4	01:35	02:07	16:25	16:56	4	02:10	02:39	15:38	16:07
5	01:06	01:40	16:49	17:23	5	01:36	02:08	16:24	16:55	5	02:11	02:40	15:36	16:05
6	01:07	01:41	16:49	17:23	6	01:38	02:09	16:23	16:54	6	02:13	02:41	15:35	16:03
7	01:07	01:41	16:48	17:22	7	01:39	02:10	16:21	16:52	7	02:14	02:42	15:33	16:01
8	01:08	01:42	16:48	17:22	8	01:40	02:11	16:20	16:51	8	02:15	02:43	15:31	16:00
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14	01:13	01:47	16:45	17:18	14	01:47	02:17	16:12	16:42	14	02:21	02:49	15:21	15:49
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16	01:15	01:48	16:44	17:17	16	01:49	02:19	16:09	16:39	16	02:23	02:52	15:17	15:45
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26	01:25	01:57	16:35	17:07	26	02:00	02:30	15:53	16:22	26	02:34	03:02	15:00	15:27
27	01:26	01:58	16:34	17:06	27	02:01	02:31	15:52	16:21	27	02:35	03:03	14:58	15:26

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
28	01:27	01:59	16:33	17:05	28	02:03	02:32	15:50	16:19	28	02:36	03:04	14:56	15:24
29	01:29	02:00	16:32	17:04	29	02:04	02:33	15:48	16:17	29	02:37	03:05	14:54	15:22
30	01:30	02:01	16:31	17:03	30	02:05	02:34	15:47	16:15	30	02:39	03:06	14:53	15:21
31	01:31	02:02	16:30	17:01	31	02:06	02:35	15:45	16:14					
OCT					NOV					DEC				
1	02:40	03:07	14:51	15:19	1	03:14	03:44	14:03	14:32	1	03:48	04:19	13:39	14:10
2	02:41	03:09	14:49	15:17	2	03:16	03:45	14:02	14:31	2	03:49	04:21	13:39	14:10
3	02:42	03:10	14:47	15:15	3	03:17	03:46	14:01	14:30	3	03:50	04:22	13:38	14:10
4	02:43	03:11	14:46	15:14	4	03:18	03:47	13:59	14:29	4	03:51	04:23	13:38	14:10
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11	02:51	03:19	14:34	15:02	11	03:26	03:56	13:52	14:22	11	03:57	04:29	13:38	14:10
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28	03:10	03:39	14:08	14:37	28	03:45	04:16	13:40	14:11	28	04:06	04:38	13:46	14:18
29	03:11	03:40	14:07	14:36	29	03:46	04:17	13:40	14:11	29	04:07	04:38	13:47	14:18
30	03:12	03:41	14:06	14:35	30	03:47	04:18	13:39	14:10	30	04:07	04:39	13:47	14:19
31	03:13	03:42	14:04	14:34						31	04:07	04:39	13:48	14:20

3.3 BATUMI

BATUMI UGSB N 41° 36' 37" E 041° 35' 58"														
MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
JAN					FEB					MAR				
1	04:08	04:41	13:54	14:25	1	03:57	04:26	14:29	14:58	1	03:20	03:48	15:05	15:33
2	04:08	04:41	13:55	14:26	2	03:56	04:25	14:30	14:59	2	03:18	03:46	15:06	15:34
3	04:09	04:41	13:56	14:27	3	03:55	04:24	14:31	15:01	3	03:17	03:45	15:07	15:35
4	04:09	04:41	13:57	14:28	4	03:54	04:23	14:33	15:02	4	03:15	03:43	15:08	15:36
5	04:09	04:41	13:57	14:29	5	03:53	04:22	14:34	15:03	5	03:14	03:41	15:09	15:37
6	04:09	04:41	13:58	14:30	6	03:52	04:21	14:35	15:04	6	03:12	03:40	15:11	15:38
7	04:09	04:41	13:59	14:30	7	03:51	04:20	14:36	15:05	7	03:10	03:38	15:12	15:39
8	04:08	04:40	14:00	14:31	8	03:50	04:19	14:38	15:07	8	03:09	03:36	15:13	15:41
9	04:08	04:40	14:01	14:32	9	03:49	04:17	14:39	15:08	9	03:07	03:35	15:14	15:42
10	04:08	04:40	14:02	14:33	10	03:47	04:16	14:40	15:09	10	03:06	03:33	15:15	15:43
11	04:08	04:40	14:04	14:34	11	03:46	04:15	14:42	15:10	11	03:04	03:32	15:16	15:44
12	04:08	04:39	14:05	14:35	12	03:45	04:14	14:43	15:11	12	03:02	03:30	15:17	15:45
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14	04:07	04:39	14:07	14:38	14	03:43	04:11	14:45	15:14	14	02:59	03:26	15:20	15:47
15	04:07	04:38	14:08	14:39	15	03:41	04:10	14:47	15:15	15	02:57	03:25	15:21	15:48
16	04:06	04:38	14:09	14:40	16	03:40	04:08	14:48	15:16	16	02:55	03:23	15:22	15:50
17	04:06	04:37	14:10	14:41	17	03:39	04:07	14:49	15:17	17	02:54	03:21	15:23	15:51
18	04:05	04:36	14:11	14:42	18	03:37	04:06	14:50	15:19	18	02:52	03:20	15:24	15:52
19	04:05	04:36	14:13	14:43	19	03:36	04:04	14:51	15:20	19	02:50	03:18	15:25	15:53
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30	03:57	04:27	14:26	14:56						30	02:31	02:59	15:37	16:05
31	03:56	04:26	14:28	14:57						31	02:30	02:58	15:38	16:06
APR					MAY					JUN				
1	02:28	02:56	15:39	16:08	1	01:40	02:10	16:12	16:42	1	01:08	01:42	16:42	17:15
2	02:26	02:54	15:41	16:09	2	01:38	02:09	16:13	16:44	2	01:08	01:41	16:42	17:16
3	02:24	02:53	15:42	16:10	3	01:37	02:07	16:14	16:45	3	01:07	01:41	16:43	17:17
4	02:23	02:51	15:43	16:11	4	01:35	02:06	16:15	16:46	4	01:07	01:40	16:44	17:17
5	02:21	02:49	15:44	16:12	5	01:34	02:05	16:16	16:47	5	01:06	01:40	16:45	17:18

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
6	02:19	02:48	15:45	16:13	6	01:33	02:04	16:17	16:48	6	01:06	01:40	16:45	17:19
7	02:18	02:46	15:46	16:14	7	01:31	02:02	16:18	16:49	7	01:06	01:40	16:46	17:20
8	02:16	02:44	15:47	16:15	8	01:30	02:01	16:19	16:51	8	01:05	01:39	16:46	17:20
9	02:14	02:43	15:48	16:17	9	01:29	02:00	16:21	16:52	9	01:05	01:39	16:47	17:21
10	02:13	02:41	15:49	16:18	10	01:28	01:59	16:22	16:53	10	01:05	01:39	16:47	17:21
11	02:11	02:39	15:50	16:19	11	01:27	01:58	16:23	16:54	11	01:05	01:39	16:48	17:22
12	02:09	02:38	15:51	16:20	12	01:25	01:57	16:24	16:55	12	01:05	01:39	16:48	17:22
13	02:07	02:36	15:53	16:21	13	01:24	01:56	16:25	16:56	13	01:05	01:39	16:49	17:23
14	02:06	02:35	15:54	16:22	14	01:23	01:55	16:26	16:57	14	01:05	01:39	16:49	17:23
15	02:04	02:33	15:55	16:24	15	01:22	01:54	16:27	16:58	15	01:05	01:39	16:50	17:24
16	02:03	02:31	15:56	16:25	16	01:21	01:53	16:28	17:00	16	01:05	01:39	16:50	17:24
17	02:01	02:30	15:57	16:26	17	01:20	01:52	16:29	17:01	17	01:05	01:39	16:50	17:25
18	01:59	02:28	15:58	16:27	18	01:19	01:51	16:30	17:02	18	01:05	01:39	16:51	17:25
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21	01:55	02:24	16:01	16:31	21	01:16	01:48	16:32	17:05	21	01:05	01:40	16:51	17:26
22	01:53	02:22	16:02	16:32	22	01:15	01:48	16:33	17:06	22	01:06	01:40	16:52	17:26
23	01:51	02:21	16:03	16:33	23	01:14	01:47	16:34	17:07	23	01:06	01:40	16:52	17:26
24	01:50	02:19	16:04	16:34	24	01:14	01:46	16:35	17:08	24	01:06	01:40	16:52	17:26
25	01:48	02:18	16:06	16:35	25	01:13	01:45	16:36	17:09	25	01:07	01:41	16:52	17:26
26	01:47	02:17	16:07	16:36	26	01:12	01:45	16:37	17:10	26	01:07	01:41	16:52	17:26
27	01:45	02:15	16:08	16:38	27	01:11	01:44	16:38	17:11	27	01:07	01:41	16:52	17:26
28	01:44	02:14	16:09	16:39	28	01:11	01:44	16:39	17:12	28	01:08	01:42	16:52	17:26
29	01:42	02:12	16:10	16:40	29	01:10	01:43	16:39	17:13	29	01:08	01:42	16:52	17:26
30	01:41	02:11	16:11	16:41	30	01:09	01:43	16:40	17:13	30	01:09	01:43	16:52	17:26
					31	01:09	01:42	16:41	17:14					
JUL					AUG					SEP				
1	01:09	01:43	16:52	17:25	1	01:37	02:08	16:31	17:02	1	02:11	02:40	15:46	16:15
2	01:10	01:44	16:51	17:25	2	01:38	02:09	16:30	17:01	2	02:13	02:41	15:44	16:13
3	01:11	01:44	16:51	17:25	3	01:39	02:10	16:28	16:59	3	02:14	02:42	15:43	16:11
4	01:11	01:45	16:51	17:25	4	01:40	02:11	16:27	16:58	4	02:15	02:43	15:41	16:09
5	01:12	01:46	16:51	17:24	5	01:42	02:12	16:26	16:57	5	02:16	02:44	15:39	16:08
6	01:13	01:46	16:50	17:24	6	01:43	02:13	16:25	16:55	6	02:17	02:45	15:38	16:06
7	01:13	01:47	16:50	17:24	7	01:44	02:14	16:24	16:54	7	02:18	02:46	15:36	16:04
8	01:14	01:48	16:50	17:23	8	01:45	02:15	16:22	16:53	8	02:19	02:47	15:34	16:02
9	01:15	01:48	16:49	17:23	9	01:46	02:16	16:21	16:51	9	02:20	02:48	15:33	16:01
10	01:16	01:49	16:49	17:22	10	01:47	02:17	16:20	16:50	10	02:21	02:49	15:31	15:59
11	01:16	01:50	16:48	17:22	11	01:48	02:18	16:18	16:48	11	02:22	02:50	15:29	15:57
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13	01:18	01:51	16:47	17:20	13	01:51	02:21	16:15	16:45	13	02:24	02:52	15:26	15:54
14	01:19	01:52	16:47	17:20	14	01:52	02:22	16:14	16:44	14	02:25	02:53	15:24	15:52
15	01:20	01:53	16:46	17:19	15	01:53	02:23	16:13	16:42	15	02:26	02:54	15:22	15:50

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
16	01:21	01:54	16:45	17:18	16	01:54	02:24	16:11	16:41	16	02:27	02:55	15:21	15:48
17	01:22	01:54	16:45	17:17	17	01:55	02:25	16:10	16:39	17	02:28	02:56	15:19	15:47
18	01:23	01:55	16:44	17:17	18	01:56	02:26	16:08	16:38	18	02:30	02:57	15:17	15:45
19	01:24	01:56	16:43	17:16	19	01:57	02:27	16:07	16:36	19	02:31	02:58	15:15	15:43
20	01:25	01:57	16:42	17:15	20	01:58	02:28	16:05	16:35	20	02:32	02:59	15:14	15:41
21	01:26	01:58	16:42	17:14	21	01:59	02:29	16:04	16:33	21	02:33	03:00	15:12	15:40
22	01:27	01:59	16:41	17:13	22	02:01	02:30	16:02	16:31	22	02:34	03:01	15:10	15:38
23	01:28	02:00	16:40	17:12	23	02:02	02:31	16:01	16:30	23	02:35	03:02	15:08	15:36
24	01:29	02:01	16:39	17:11	24	02:03	02:32	15:59	16:28	24	02:36	03:03	15:07	15:34
25	01:30	02:02	16:38	17:10	25	02:04	02:33	15:58	16:26	25	02:37	03:05	15:05	15:33
26	01:31	02:03	16:37	17:09	26	02:05	02:34	15:56	16:25	26	02:38	03:06	15:03	15:31
27	01:32	02:04	16:36	17:08	27	02:06	02:35	15:54	16:23	27	02:39	03:07	15:01	15:29
28	01:33	02:04	16:35	17:07	28	02:07	02:36	15:53	16:21	28	02:40	03:08	15:00	15:27
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31	01:36	02:07	16:32	17:03	31	02:10	02:39	15:48	16:16					
OCT					NOV					DEC				
1	02:43	03:11	14:55	15:22	1	03:17	03:46	14:08	14:37	1	03:50	04:21	13:44	14:15
2	02:44	03:12	14:53	15:21	2	03:18	03:47	14:07	14:35	2	03:51	04:22	13:44	14:15
3	02:45	03:13	14:51	15:19	3	03:19	03:48	14:05	14:34	3	03:52	04:23	13:44	14:15
4	02:46	03:14	14:50	15:17	4	03:21	03:50	14:04	14:33	4	03:53	04:24	13:44	14:15
5	02:47	03:15	14:48	15:16	5	03:22	03:51	14:03	14:32	5	03:54	04:25	13:43	14:15
6	02:48	03:16	14:46	15:14	6	03:23	03:52	14:02	14:31	6	03:55	04:26	13:43	14:15
7	02:50	03:17	14:45	15:12	7	03:24	03:53	14:01	14:30	7	03:56	04:27	13:43	14:15
8	02:51	03:18	14:43	15:11	8	03:25	03:55	14:00	14:29	8	03:57	04:28	13:43	14:15
9	02:52	03:19	14:41	15:09	9	03:26	03:56	13:59	14:28	9	03:58	04:29	13:43	14:15
10	02:53	03:21	14:40	15:07	10	03:28	03:57	13:58	14:27	10	03:58	04:30	13:43	14:15
11	02:54	03:22	14:38	15:06	11	03:29	03:58	13:57	14:26	11	03:59	04:31	13:44	14:15
12	02:55	03:23	14:36	15:04	12	03:30	03:59	13:56	14:25	12	04:00	04:31	13:44	14:15
13	02:56	03:24	14:35	15:03	13	03:31	04:01	13:55	14:25	13	04:01	04:32	13:44	14:15
14	02:57	03:25	14:33	15:01	14	03:32	04:02	13:54	14:24	14	04:02	04:33	13:44	14:16
15	02:58	03:26	14:32	15:00	15	03:33	04:03	13:53	14:23	15	04:02	04:34	13:44	14:16
16	02:59	03:27	14:30	14:58	16	03:34	04:04	13:52	14:22	16	04:03	04:34	13:45	14:16
17	03:00	03:28	14:29	14:57	17	03:36	04:05	13:51	14:21	17	04:03	04:35	13:45	14:17
18	03:01	03:30	14:27	14:55	18	03:37	04:07	13:51	14:21	18	04:04	04:36	13:45	14:17
19	03:03	03:31	14:26	14:54	19	03:38	04:08	13:50	14:20	19	04:05	04:36	13:46	14:17
20	03:04	03:32	14:24	14:52	20	03:39	04:09	13:49	14:20	20	04:05	04:37	13:46	14:18
21	03:05	03:33	14:23	14:51	21	03:40	04:10	13:49	14:19	21	04:06	04:37	13:47	14:18
22	03:06	03:34	14:21	14:49	22	03:41	04:11	13:48	14:18	22	04:06	04:38	13:47	14:19
23	03:07	03:35	14:20	14:48	23	03:42	04:13	13:47	14:18	23	04:07	04:38	13:48	14:19
24	03:08	03:37	14:18	14:47	24	03:43	04:14	13:47	14:17	24	04:07	04:39	13:48	14:20
25	03:09	03:38	14:17	14:45	25	03:44	04:15	13:46	14:17	25	04:07	04:39	13:49	14:21

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
26	03:10	03:39	14:16	14:44	26	03:45	04:16	13:46	14:17	26	04:08	04:39	13:50	14:21
27	03:12	03:40	14:14	14:43	27	03:46	04:17	13:45	14:16	27	04:08	04:40	13:50	14:22
28	03:13	03:41	14:13	14:42	28	03:47	04:18	13:45	14:16	28	04:08	04:40	13:51	14:23
29	03:14	03:42	14:12	14:40	29	03:48	04:19	13:45	14:16	29	04:09	04:40	13:52	14:23
30	03:15	03:44	14:10	14:39	30	03:49	04:20	13:44	14:15	30	04:09	04:40	13:53	14:24
31	03:16	03:45	14:09	14:38						31	04:09	04:40	13:54	14:25

3.4 MESTIA and AMBROLAURI

MESTIA UGMS N 43° 03' 18" E 042° 45' 01"	AMBROLAURI UGAM N 42° 31' 36" E 043° 08' 10"
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MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
JAN					FEB					MAR				
1	04:08	04:41	13:45	14:17	1	03:55	04:25	14:21	14:51	1	03:16	03:44	14:59	15:27
2	04:08	04:41	13:45	14:18	2	03:54	04:24	14:22	14:52	2	03:14	03:43	15:00	15:29
3	04:09	04:41	13:46	14:19	3	03:53	04:23	14:24	14:54	3	03:13	03:41	15:01	15:30
4	04:09	04:41	13:47	14:19	4	03:52	04:22	14:25	14:55	4	03:11	03:39	15:03	15:31
5	04:09	04:41	13:48	14:20	5	03:51	04:20	14:26	14:56	5	03:09	03:38	15:04	15:32
6	04:09	04:41	13:49	14:21	6	03:49	04:19	14:28	14:57	6	03:08	03:36	15:05	15:33
7	04:09	04:41	13:50	14:22	7	03:48	04:18	14:29	14:59	7	03:06	03:34	15:06	15:35
8	04:08	04:40	13:51	14:23	8	03:47	04:17	14:30	15:00	8	03:04	03:33	15:08	15:36
9	04:08	04:40	13:52	14:24	9	03:46	04:16	14:32	15:01	9	03:03	03:31	15:09	15:37
10	04:08	04:40	13:53	14:25	10	03:45	04:14	14:33	15:02	10	03:01	03:29	15:10	15:38
11	04:08	04:40	13:55	14:26	11	03:44	04:13	14:34	15:04	11	02:59	03:27	15:11	15:39
12	04:08	04:39	13:56	14:27	12	03:42	04:12	14:36	15:05	12	02:57	03:26	15:12	15:41
13	04:07	04:39	13:57	14:28	13	03:41	04:10	14:37	15:06	13	02:56	03:24	15:14	15:42
14	04:07	04:39	13:58	14:30	14	03:40	04:09	14:38	15:08	14	02:54	03:22	15:15	15:43
15	04:07	04:38	13:59	14:31	15	03:38	04:08	14:40	15:09	15	02:52	03:20	15:16	15:44
16	04:06	04:38	14:00	14:32	16	03:37	04:06	14:41	15:10	16	02:50	03:19	15:17	15:45
17	04:06	04:37	14:02	14:33	17	03:36	04:05	14:42	15:11	17	02:49	03:17	15:18	15:47
18	04:05	04:36	14:03	14:34	18	03:34	04:03	14:44	15:13	18	02:47	03:15	15:20	15:48
19	04:05	04:36	14:04	14:35	19	03:33	04:02	14:45	15:14	19	02:45	03:13	15:21	15:49
20	04:04	04:35	14:05	14:36	20	03:31	04:00	14:46	15:15	20	02:43	03:12	15:22	15:50
21	04:04	04:35	14:07	14:38	21	03:30	03:59	14:47	15:16	21	02:41	03:10	15:23	15:51
22	04:03	04:34	14:08	14:39	22	03:28	03:57	14:49	15:18	22	02:40	03:08	15:24	15:53
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28	03:58	04:29	14:16	14:46	28	03:19	03:48	14:56	15:25	28	02:29	02:57	15:31	16:00
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MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
30	03:57	04:27	14:18	14:49						30	02:25	02:54	15:34	16:02
31	03:56	04:26	14:20	14:50						31	02:23	02:52	15:35	16:03
APR					MAY					JUN				
1	02:22	02:50	15:36	16:05	1	01:31	02:02	16:11	16:42	1	00:58	01:32	16:42	17:17
2	02:20	02:49	15:37	16:06	2	01:29	02:01	16:12	16:43	2	00:57	01:32	16:43	17:17
3	02:18	02:47	15:38	16:07	3	01:28	01:59	16:13	16:44	3	00:57	01:31	16:43	17:18
4	02:16	02:45	15:39	16:08	4	01:27	01:58	16:14	16:46	4	00:56	01:31	16:44	17:19
5	02:14	02:43	15:41	16:09	5	01:25	01:57	16:15	16:47	5	00:56	01:31	16:45	17:20
6	02:13	02:42	15:42	16:11	6	01:24	01:55	16:16	16:48	6	00:55	01:30	16:46	17:20
7	02:11	02:40	15:43	16:12	7	01:22	01:54	16:17	16:49	7	00:55	01:30	16:46	17:21
8	02:09	02:38	15:44	16:13	8	01:21	01:53	16:18	16:50	8	00:55	01:30	16:47	17:22
9	02:07	02:36	15:45	16:14	9	01:20	01:52	16:20	16:52	9	00:54	01:29	16:47	17:22
10	02:06	02:35	15:46	16:16	10	01:18	01:51	16:21	16:53	10	00:54	01:29	16:48	17:23
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13	02:00	02:30	15:50	16:19	13	01:15	01:47	16:24	16:57	13	00:54	01:29	16:49	17:25
14	01:59	02:28	15:51	16:21	14	01:14	01:46	16:25	16:58	14	00:54	01:29	16:50	17:25
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18	01:52	02:22	15:56	16:25	18	01:09	01:42	16:29	17:02	18	00:54	01:29	16:51	17:27
19	01:50	02:20	15:57	16:27	19	01:08	01:41	16:30	17:03	19	00:54	01:29	16:52	17:27
20	01:48	02:18	15:58	16:28	20	01:07	01:40	16:31	17:05	20	00:54	01:30	16:52	17:27
21	01:47	02:17	15:59	16:29	21	01:06	01:39	16:32	17:06	21	00:54	01:30	16:52	17:27
22	01:45	02:15	16:00	16:30	22	01:05	01:39	16:33	17:07	22	00:55	01:30	16:52	17:28
23	01:43	02:14	16:01	16:32	23	01:04	01:38	16:34	17:08	23	00:55	01:30	16:52	17:28
24	01:42	02:12	16:03	16:33	24	01:03	01:37	16:35	17:09	24	00:55	01:31	16:52	17:28
25	01:40	02:11	16:04	16:34	25	01:02	01:36	16:36	17:10	25	00:56	01:31	16:52	17:28
26	01:39	02:09	16:05	16:36	26	01:02	01:36	16:37	17:11	26	00:56	01:31	16:52	17:28
27	01:37	02:08	16:06	16:37	27	01:01	01:35	16:38	17:12	27	00:56	01:32	16:52	17:28
28	01:36	02:06	16:07	16:38	28	01:00	01:34	16:39	17:13	28	00:57	01:32	16:52	17:28
29	01:34	02:05	16:08	16:39	29	00:59	01:34	16:40	17:14	29	00:57	01:33	16:52	17:28
30	01:32	02:03	16:09	16:41	30	00:59	01:33	16:40	17:15	30	00:58	01:33	16:52	17:27
					31	00:58	01:33	16:41	17:16					
JUL					AUG					SEP				
1	00:58	01:34	16:52	17:27	1	01:28	02:00	16:30	17:02	1	02:05	02:34	15:43	16:12
2	00:59	01:34	16:52	17:27	2	01:29	02:01	16:29	17:01	2	02:06	02:35	15:41	16:10
3	01:00	01:35	16:52	17:27	3	01:30	02:02	16:27	16:59	3	02:07	02:36	15:40	16:09
4	01:00	01:35	16:51	17:26	4	01:31	02:03	16:26	16:58	4	02:08	02:37	15:38	16:07
5	01:01	01:36	16:51	17:26	5	01:33	02:04	16:25	16:57	5	02:09	02:38	15:36	16:05
6	01:02	01:37	16:51	17:26	6	01:34	02:05	16:24	16:55	6	02:10	02:39	15:34	16:03
7	01:03	01:37	16:50	17:25	7	01:35	02:06	16:22	16:54	7	02:11	02:40	15:33	16:01

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
8	01:03	01:38	16:50	17:25	8	01:36	02:08	16:21	16:52	8	02:13	02:41	15:31	16:00
9	01:04	01:39	16:49	17:24	9	01:37	02:09	16:20	16:51	9	02:14	02:42	15:29	15:58
10	01:05	01:40	16:49	17:23	10	01:39	02:10	16:18	16:49	10	02:15	02:44	15:27	15:56
11	01:06	01:40	16:48	17:23	11	01:40	02:11	16:17	16:48	11	02:16	02:45	15:25	15:54
12	01:07	01:41	16:48	17:22	12	01:41	02:12	16:15	16:46	12	02:17	02:46	15:24	15:52
13	01:08	01:42	16:47	17:22	13	01:42	02:13	16:14	16:45	13	02:18	02:47	15:22	15:50
14	01:09	01:43	16:47	17:21	14	01:43	02:14	16:12	16:43	14	02:19	02:48	15:20	15:49
15	01:10	01:44	16:46	17:20	15	01:45	02:15	16:11	16:41	15	02:20	02:49	15:18	15:47
16	01:10	01:44	16:45	17:19	16	01:46	02:16	16:09	16:40	16	02:22	02:50	15:16	15:45
17	01:11	01:45	16:45	17:18	17	01:47	02:17	16:08	16:38	17	02:23	02:51	15:15	15:43
18	01:12	01:46	16:44	17:18	18	01:48	02:18	16:06	16:37	18	02:24	02:52	15:13	15:41
19	01:13	01:47	16:43	17:17	19	01:49	02:20	16:05	16:35	19	02:25	02:53	15:11	15:39
20	01:15	01:48	16:42	17:16	20	01:50	02:21	16:03	16:33	20	02:26	02:54	15:09	15:38
21	01:16	01:49	16:41	17:15	21	01:52	02:22	16:02	16:32	21	02:27	02:56	15:07	15:36
22	01:17	01:50	16:40	17:14	22	01:53	02:23	16:00	16:30	22	02:28	02:57	15:06	15:34
23	01:18	01:51	16:40	17:13	23	01:54	02:24	15:58	16:28	23	02:29	02:58	15:04	15:32
24	01:19	01:52	16:39	17:12	24	01:55	02:25	15:57	16:26	24	02:31	02:59	15:02	15:30
25	01:20	01:53	16:38	17:11	25	01:56	02:26	15:55	16:25	25	02:32	03:00	15:00	15:28
26	01:21	01:54	16:37	17:09	26	01:58	02:27	15:53	16:23	26	02:33	03:01	14:58	15:27
27	01:22	01:55	16:36	17:08	27	01:59	02:28	15:52	16:21	27	02:34	03:02	14:57	15:25
28	01:23	01:56	16:34	17:07	28	02:00	02:29	15:50	16:19	28	02:35	03:03	14:55	15:23
29	01:24	01:57	16:33	17:06	29	02:01	02:30	15:48	16:18	29	02:36	03:04	14:53	15:21
30	01:26	01:58	16:32	17:05	30	02:02	02:32	15:47	16:16	30	02:37	03:06	14:51	15:20
31	01:27	01:59	16:31	17:03	31	02:03	02:33	15:45	16:14					
OCT					NOV					DEC				
1	02:38	03:07	14:49	15:18	1	03:15	03:44	14:00	14:30	1	03:49	04:21	13:35	14:07
2	02:40	03:08	14:48	15:16	2	03:16	03:45	13:59	14:29	2	03:50	04:22	13:35	14:07
3	02:41	03:09	14:46	15:14	3	03:17	03:47	13:58	14:28	3	03:51	04:23	13:35	14:07
4	02:42	03:10	14:44	15:13	4	03:18	03:48	13:57	14:26	4	03:52	04:24	13:34	14:06
5	02:43	03:11	14:42	15:11	5	03:19	03:49	13:55	14:25	5	03:53	04:25	13:34	14:06
6	02:44	03:12	14:41	15:09	6	03:21	03:51	13:54	14:24	6	03:54	04:26	13:34	14:06
7	02:45	03:14	14:39	15:07	7	03:22	03:52	13:53	14:23	7	03:55	04:27	13:34	14:06
8	02:46	03:15	14:37	15:06	8	03:23	03:53	13:52	14:22	8	03:56	04:28	13:34	14:06
9	02:48	03:16	14:36	15:04	9	03:24	03:54	13:51	14:21	9	03:57	04:29	13:34	14:06
10	02:49	03:17	14:34	15:02	10	03:25	03:56	13:50	14:20	10	03:58	04:30	13:34	14:06
11	02:50	03:18	14:32	15:01	11	03:27	03:57	13:49	14:19	11	03:58	04:31	13:34	14:06
12	02:51	03:19	14:31	14:59	12	03:28	03:58	13:48	14:18	12	03:59	04:32	13:34	14:07
13	02:52	03:21	14:29	14:57	13	03:29	04:00	13:47	14:17	13	04:00	04:32	13:35	14:07
14	02:53	03:22	14:27	14:56	14	03:30	04:01	13:46	14:16	14	04:01	04:33	13:35	14:07
15	02:54	03:23	14:26	14:54	15	03:31	04:02	13:45	14:16	15	04:01	04:34	13:35	14:07
16	02:56	03:24	14:24	14:53	16	03:33	04:03	13:44	14:15	16	04:02	04:35	13:35	14:08
17	02:57	03:25	14:22	14:51	17	03:34	04:05	13:43	14:14	17	04:03	04:35	13:36	14:08

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
18	02:58	03:27	14:21	14:50	18	03:35	04:06	13:42	14:13	18	04:03	04:36	13:36	14:08
19	02:59	03:28	14:19	14:48	19	03:36	04:07	13:42	14:13	19	04:04	04:36	13:36	14:09
20	03:00	03:29	14:18	14:46	20	03:37	04:08	13:41	14:12	20	04:05	04:37	13:37	14:09
21	03:01	03:30	14:16	14:45	21	03:38	04:10	13:40	14:11	21	04:05	04:37	13:37	14:10
22	03:03	03:32	14:15	14:44	22	03:40	04:11	13:39	14:11	22	04:06	04:38	13:38	14:10
23	03:04	03:33	14:13	14:42	23	03:41	04:12	13:39	14:10	23	04:06	04:38	13:38	14:11
24	03:05	03:34	14:12	14:41	24	03:42	04:13	13:38	14:10	24	04:06	04:39	13:39	14:12
25	03:06	03:35	14:10	14:39	25	03:43	04:14	13:38	14:09	25	04:07	04:39	13:40	14:12
26	03:07	03:37	14:09	14:38	26	03:44	04:16	13:37	14:09	26	04:07	04:40	13:40	14:13
27	03:09	03:38	14:07	14:36	27	03:45	04:17	13:37	14:08	27	04:07	04:40	13:41	14:14
28	03:10	03:39	14:06	14:35	28	03:46	04:18	13:36	14:08	28	04:08	04:40	13:42	14:14
29	03:11	03:40	14:04	14:34	29	03:47	04:19	13:36	14:07	29	04:08	04:40	13:43	14:15
30	03:12	03:42	14:03	14:33	30	03:48	04:20	13:35	14:07	30	04:08	04:40	13:43	14:16
31	03:13	03:43	14:02	14:31						31	04:08	04:41	13:44	14:17

3.5 TELAVI

TELAVI UGGT N 41° 57' 12" E 045° 30' 32"

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
JAN					FEB					MAR				
1	03:54	04:26	13:37	14:09	1	03:42	04:11	14:12	14:42	1	03:04	03:32	14:49	15:17
2	03:55	04:26	13:38	14:10	2	03:41	04:10	14:14	14:43	2	03:03	03:31	14:50	15:18
3	03:55	04:26	13:39	14:10	3	03:40	04:09	14:15	14:44	3	03:01	03:29	14:51	15:19
4	03:55	04:26	13:40	14:11	4	03:39	04:08	14:16	14:46	4	03:00	03:28	14:52	15:20
5	03:55	04:26	13:41	14:12	5	03:38	04:07	14:18	14:47	5	02:58	03:26	14:54	15:21
6	03:55	04:26	13:42	14:13	6	03:37	04:06	14:19	14:48	6	02:56	03:24	14:55	15:23
7	03:55	04:26	13:43	14:14	7	03:36	04:05	14:20	14:49	7	02:55	03:23	14:56	15:24
8	03:55	04:26	13:44	14:15	8	03:35	04:04	14:21	14:50	8	02:53	03:21	14:57	15:25
9	03:54	04:26	13:45	14:16	9	03:33	04:02	14:23	14:52	9	02:52	03:19	14:58	15:26
10	03:54	04:25	13:46	14:17	10	03:32	04:01	14:24	14:53	10	02:50	03:18	14:59	15:27
11	03:54	04:25	13:47	14:18	11	03:31	04:00	14:25	14:54	11	02:48	03:16	15:01	15:28
12	03:54	04:25	13:48	14:19	12	03:30	03:59	14:27	14:55	12	02:47	03:14	15:02	15:29
13	03:54	04:25	13:49	14:20	13	03:29	03:57	14:28	14:57	13	02:45	03:13	15:03	15:31
14	03:53	04:24	13:50	14:21	14	03:27	03:56	14:29	14:58	14	02:43	03:11	15:04	15:32
15	03:53	04:24	13:51	14:22	15	03:26	03:55	14:30	14:59	15	02:41	03:09	15:05	15:33
16	03:53	04:23	13:53	14:23	16	03:25	03:53	14:32	15:00	16	02:40	03:08	15:06	15:34
17	03:52	04:23	13:54	14:24	17	03:23	03:52	14:33	15:01	17	02:38	03:06	15:07	15:35
18	03:52	04:22	13:55	14:25	18	03:22	03:51	14:34	15:03	18	02:36	03:04	15:08	15:36
19	03:51	04:22	13:56	14:27	19	03:21	03:49	14:35	15:04	19	02:35	03:02	15:10	15:37
20	03:51	04:21	13:57	14:28	20	03:19	03:48	14:37	15:05	20	02:33	03:01	15:11	15:39

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
21	03:50	04:21	13:59	14:29	21	03:18	03:46	14:38	15:06	21	02:31	02:59	15:12	15:40
22	03:50	04:20	14:00	14:30	22	03:16	03:45	14:39	15:07	22	02:29	02:57	15:13	15:41
23	03:49	04:19	14:01	14:31	23	03:15	03:43	14:40	15:09	23	02:28	02:56	15:14	15:42
24	03:48	04:18	14:02	14:32	24	03:14	03:42	14:42	15:10	24	02:26	02:54	15:15	15:43
25	03:48	04:18	14:03	14:34	25	03:12	03:40	14:43	15:11	25	02:24	02:52	15:16	15:44
26	03:47	04:17	14:05	14:35	26	03:11	03:39	14:44	15:12	26	02:22	02:50	15:17	15:45
27	03:46	04:16	14:06	14:36	27	03:09	03:37	14:45	15:13	27	02:21	02:49	15:19	15:47
28	03:45	04:15	14:07	14:37	28	03:08	03:36	14:46	15:14	28	02:19	02:47	15:20	15:48
29	03:44	04:14	14:09	14:38	29	03:06	03:34	14:48	15:16	29	02:17	02:45	15:21	15:49
30	03:44	04:13	14:10	14:40						30	02:15	02:43	15:22	15:50
31	03:43	04:12	14:11	14:41						31	02:14	02:42	15:23	15:51
APR					MAY					JUN				
1	02:12	02:40	15:24	15:52	1	01:23	01:53	15:57	16:28	1	00:51	01:25	16:27	17:01
2	02:10	02:38	15:25	15:53	2	01:22	01:52	15:58	16:29	2	00:51	01:24	16:28	17:02
3	02:08	02:37	15:26	15:55	3	01:20	01:51	15:59	16:30	3	00:50	01:24	16:29	17:02
4	02:07	02:35	15:27	15:56	4	01:19	01:50	16:00	16:31	4	00:50	01:24	16:29	17:03
5	02:05	02:33	15:28	15:57	5	01:17	01:48	16:01	16:32	5	00:49	01:23	16:30	17:04
6	02:03	02:32	15:30	15:58	6	01:16	01:47	16:03	16:34	6	00:49	01:23	16:31	17:05
7	02:01	02:30	15:31	15:59	7	01:15	01:46	16:04	16:35	7	00:49	01:23	16:31	17:05
8	02:00	02:28	15:32	16:00	8	01:14	01:45	16:05	16:36	8	00:48	01:23	16:32	17:06
9	01:58	02:27	15:33	16:02	9	01:12	01:44	16:06	16:37	9	00:48	01:22	16:32	17:07
10	01:56	02:25	15:34	16:03	10	01:11	01:42	16:07	16:38	10	00:48	01:22	16:33	17:07
11	01:55	02:23	15:35	16:04	11	01:10	01:41	16:08	16:39	11	00:48	01:22	16:33	17:08
12	01:53	02:22	15:36	16:05	12	01:09	01:40	16:09	16:41	12	00:48	01:22	16:34	17:08
13	01:51	02:20	15:37	16:06	13	01:07	01:39	16:10	16:42	13	00:48	01:22	16:34	17:09
14	01:50	02:19	15:38	16:07	14	01:06	01:38	16:11	16:43	14	00:48	01:22	16:35	17:09
15	01:48	02:17	15:40	16:09	15	01:05	01:37	16:12	16:44	15	00:48	01:22	16:35	17:10
16	01:46	02:15	15:41	16:10	16	01:04	01:36	16:13	16:45	16	00:48	01:22	16:36	17:10
17	01:45	02:14	15:42	16:11	17	01:03	01:35	16:14	16:46	17	00:48	01:22	16:36	17:10
18	01:43	02:12	15:43	16:12	18	01:02	01:34	16:15	16:47	18	00:48	01:22	16:36	17:11
19	01:41	02:11	15:44	16:13	19	01:01	01:33	16:16	16:48	19	00:48	01:22	16:37	17:11
20	01:40	02:09	15:45	16:15	20	01:00	01:33	16:17	16:49	20	00:48	01:22	16:37	17:11
21	01:38	02:08	15:46	16:16	21	00:59	01:32	16:18	16:50	21	00:48	01:23	16:37	17:11
22	01:37	02:06	15:47	16:17	22	00:58	01:31	16:19	16:51	22	00:48	01:23	16:37	17:12
23	01:35	02:05	15:48	16:18	23	00:57	01:30	16:20	16:53	23	00:49	01:23	16:37	17:12
24	01:33	02:03	15:49	16:19	24	00:57	01:29	16:21	16:54	24	00:49	01:24	16:37	17:12
25	01:32	02:02	15:51	16:20	25	00:56	01:29	16:21	16:55	25	00:49	01:24	16:37	17:12
26	01:30	02:00	15:52	16:22	26	00:55	01:28	16:22	16:55	26	00:50	01:24	16:37	17:12
27	01:29	01:59	15:53	16:23	27	00:54	01:27	16:23	16:56	27	00:50	01:25	16:37	17:12
28	01:27	01:58	15:54	16:24	28	00:54	01:27	16:24	16:57	28	00:51	01:25	16:37	17:12
29	01:26	01:56	15:55	16:25	29	00:53	01:26	16:25	16:58	29	00:51	01:26	16:37	17:12
30	01:24	01:55	15:56	16:26	30	00:52	01:26	16:26	16:59	30	00:52	01:26	16:37	17:11

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
					31	00:52	01:25	16:26	17:00					
JUL					AUG					SEP				
1	00:52	01:26	16:37	17:11	1	01:20	01:52	16:16	16:47	1	01:55	02:24	15:31	16:00
2	00:53	01:27	16:37	17:11	2	01:22	01:53	16:15	16:46	2	01:56	02:25	15:29	15:58
3	00:53	01:28	16:37	17:11	3	01:23	01:54	16:14	16:45	3	01:57	02:26	15:28	15:56
4	00:54	01:28	16:36	17:10	4	01:24	01:55	16:12	16:44	4	01:59	02:27	15:26	15:54
5	00:55	01:29	16:36	17:10	5	01:25	01:56	16:11	16:42	5	02:00	02:28	15:24	15:53
6	00:56	01:29	16:36	17:10	6	01:26	01:57	16:10	16:41	6	02:01	02:29	15:22	15:51
7	00:56	01:30	16:36	17:09	7	01:27	01:58	16:09	16:39	7	02:02	02:30	15:21	15:49
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31	01:19	01:51	16:17	16:49	31	01:54	02:23	15:33	16:01					
OCT					NOV					DEC				
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3	02:30	02:57	14:35	15:03	3	03:04	03:33	13:49	14:18	3	03:38	04:09	13:27	13:58
4	02:31	02:59	14:34	15:02	4	03:06	03:35	13:48	14:17	4	03:38	04:10	13:27	13:58
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8	02:35	03:03	14:27	14:55	8	03:10	03:40	13:43	14:13	8	03:42	04:14	13:27	13:58

MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO	MONTH DAY	TWIL FROM	SR	SS	TWIL TO
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