

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
1/1/2016	F	-0:03:36	21:44:58	22:23:19	23:03:57	23:53:37	0:07:00	0:47:46	0:53:54	3:16:26	6:32:41	7:22:54	9:36:31	11:43:16	13:01:05	16:07:37
1/2/2016	S	-0:03:08	21:41:02	22:19:24	23:00:01	23:49:41	0:03:04	0:43:50	0:49:58	3:12:30	6:28:46	7:18:58	9:32:36	11:39:20	12:57:09	16:03:36
1/3/2016	S	-0:02:40	21:37:06	22:15:28	22:56:05	23:45:46	23:59:08	0:39:54	0:46:02	3:08:34	6:24:50	7:15:02	9:28:40	11:35:24	12:53:13	15:59:40
1/4/2016	M	-0:02:12	21:33:10	22:11:32	22:52:09	23:41:50	23:55:12	0:35:58	0:42:06	3:04:38	6:20:54	7:11:06	9:24:44	11:31:28	12:49:17	15:55:45
1/5/2016	T	-0:01:45	21:29:14	22:07:36	22:48:13	23:37:54	23:51:16	0:32:02	0:38:10	3:00:42	6:16:58	7:07:10	9:20:48	11:27:32	12:45:21	15:51:49
1/6/2016	W	-0:01:18	21:25:18	22:03:40	22:44:17	23:33:58	23:47:20	0:28:06	0:34:14	2:56:46	6:13:02	7:03:14	9:16:52	11:23:36	12:41:25	15:47:53
1/7/2016	T	-0:00:52	21:21:22	21:59:44	22:40:21	23:30:02	23:43:24	0:24:10	0:30:19	2:52:50	6:09:06	6:59:19	9:12:56	11:19:40	12:37:29	15:43:57
1/8/2016	F	-0:00:26	21:17:26	21:55:48	22:36:25	23:26:06	23:39:28	0:20:14	0:26:23	2:48:55	6:05:10	6:55:23	9:09:00	11:15:44	12:33:33	15:40:01
1/9/2016	S	-0:00:00	21:13:31	21:51:52	22:32:29	23:22:10	23:35:33	0:16:19	0:22:27	2:44:59	6:01:14	6:51:27	9:05:04	11:11:48	12:29:37	15:36:05
1/10/2016	S	0:00:25	21:09:35	21:47:56	22:28:34	23:18:14	23:31:37	0:12:23	0:18:31	2:41:03	5:57:19	6:47:31	9:01:08	11:07:52	12:25:41	15:32:09
1/11/2016	M	0:00:49	21:05:39	21:44:00	22:24:38	23:14:18	23:27:41	0:08:27	0:14:35	2:37:07	5:53:23	6:43:35	8:57:13	11:03:57	12:21:46	15:28:13
1/12/2016	T	0:01:13	21:01:43	21:40:04	22:20:42	23:10:22	23:23:45	0:04:31	0:10:39	2:33:11	5:49:27	6:39:39	8:53:17	11:00:01	12:17:50	15:24:17
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1/14/2016	T	0:01:59	20:53:51	21:32:13	22:12:50	23:02:31	23:15:53	23:56:39	0:02:47	2:25:19	5:41:35	6:31:47	8:45:25	10:52:09	12:09:58	15:16:25
1/15/2016	F	0:02:21	20:49:55	21:28:17	22:08:54	22:58:35	23:11:57	23:52:43	23:58:51	2:21:23	5:37:39	6:27:52	8:41:29	10:48:13	12:06:02	15:12:29
1/16/2016	S	0:02:42	20:45:59	21:24:21	22:04:58	22:54:39	23:08:01	23:48:47	23:54:56	2:17:27	5:33:43	6:23:56	8:37:33	10:44:17	12:02:06	15:08:33
1/17/2016	S	0:03:02	20:42:03	21:20:25	22:01:02	22:50:43	23:04:05	23:44:51	23:51:00	2:13:32	5:29:47	6:20:00	8:33:37	10:40:21	11:54:14	15:04:38
1/18/2016	M	0:03:22	20:38:07	21:16:29	21:57:06	22:46:47	23:00:09	23:40:55	23:47:04	2:09:36	5:25:52	6:16:04	8:29:41	10:36:25	11:50:18	15:00:42
1/19/2016	T	0:03:41	20:34:11	21:12:33	21:53:10	22:42:51	22:56:13	23:37:00	23:43:08	2:05:40	5:21:56	6:12:08	8:25:46	10:32:29	11:46:22	14:56:46
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1/25/2016	M	0:05:20	20:10:36	20:48:58	21:29:35	22:19:16	22:32:38	23:13:24	23:19:32	1:42:04	4:58:20	5:48:33	8:02:10	10:08:54	11:22:47	14:33:10
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2/11/2016	T	0:07:24	19:03:45	19:42:07	20:22:44	21:12:25	21:25:47	22:06:34	22:12:42	1:07:14	4:03:14	4:53:30	6:55:20	9:02:04	10:15:57	13:26:20
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2/16/2016	T	0:07:17	18:44:06	19:22:27	20:03:05	20:52:45	21:06:08	21:46:54	21:53:02	1:07:35	4:03:51	4:54:03	6:35:41	8:42:25	9:56:17	13:06:40
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2/20/2016	S	0:06:59	18:28:22	19:06:44	19:47:21	20:37:02	20:50:24	21:31:11	21:37:19	1:07:51	4:04:08	4:54:20	6:19:58	8:26:41	9:40:34	12:50:57
2/21/2016	S	0:06:52	18:24:26	19:02:48	19:43:25	20:33:06	20:46:28	21:27:15	21:33:23	1:07:55	4:04:12	4:54:24	6:16:02	8:22:45	9:36:38	12:47:01
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2/26/2016	F	0:06:11	18:04:46	18:43:08	19:23:46											

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
3/17/2016	T	0:01:28	16:46:08	17:24:30	18:05:07	18:54:48	19:08:10	19:48:57	19:55:05	22:17:38	1:33:54	2:24:07	4:37:45	6:44:28	7:58:21	11:04:07
3/18/2016	F	0:01:11	16:42:12	17:20:34	18:01:11	18:50:52	19:04:14	19:45:01	19:51:09	22:13:42	1:29:59	2:20:11	4:33:49	6:40:32	7:54:25	11:00:51
3/19/2016	S	0:00:53	16:38:16	17:16:38	17:57:15	18:46:56	19:00:18	19:41:05	19:47:13	22:09:46	1:26:03	2:16:15	4:29:53	6:36:37	7:50:29	10:56:56
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5/12/2016	T	-0:10:28	13:05:57	13												

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
6/1/2016	W	-0:08:57	11:47:19	12:25:40	13:06:17	13:55:58	14:09:20	14:50:07	14:56:15	17:18:48	20:35:06	21:25:19	23:38:58	1:45:42	2:59:34	6:06:00
6/2/2016	T	-0:08:48	11:43:23	12:21:44	13:02:21	13:52:02	14:05:24	14:46:11	14:52:19	17:14:52	20:31:10	21:21:23	23:35:02	1:41:46	2:55:38	6:02:04
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7/26/2016	T	-0:00:18	8:11:05	8:49:26	9:30:03	10:19:43	10:33:05	11:13:52	11:20:00	13:42:32	16:58:50	17:49:03	20:02:43	22:0		

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
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8/17/2016	W	-0:02:49	6:44:35	7:22:56	8:03:34	8:53:14	9:06:36	9:47:22	9:53:30	12:16:03	15:32:20	16:22:33	18:36:12	20:42:57	21:56:50	1:03:17
8/18/2016	T	-0:03:02	6:40:39	7:19:01	7:59:38	8:49:18	9:02:40	9:43:26	9:49:35	12:12:07	15:28:24	16:18:37	18:32:16	20:39:01	21:52:54	0:59:22
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Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
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11/8/2016	T	-0:23:03	1:14:21	1:52:42	2:33:20	3:23:00	3:36:22	4:17:08	4:23:17	6:45:48	10:02:04	10:52:16	13:09:51	15:16:35	16:30:29	19:36:57
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12/26/2016	M	-0:06:08	22:05:38	22:43:59	23:24:37	0:14:17	0:27:39	1:08:26	1:14:35	3:37:06	6:53:21	7:43:34	9:57:12	12:07:51	13:21:45	16

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:54	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
1/15/2017	S	0:02:36	20:47:00	21:25:21	22:05:59	22:55:39	23:09:01	23:49:48	23:55:57	2:18:28	5:34:44	6:24:56	8:38:34	10:45:17	12:03:06	15:09:34
1/16/2017	M	0:02:57	20:43:04	21:21:25	22:02:03	22:51:43	23:05:05	23:45:52	23:52:01	2:14:32	5:30:48	6:21:00	8:34:38	10:41:21	11:55:15	15:05:38
1/17/2017	T	0:03:17	20:39:08	21:17:29	21:58:07	22:47:47	23:01:09	23:41:56	23:48:05	2:10:36	5:26:52	6:17:04	8:30:43	10:37:25	11:51:19	15:01:42
1/18/2017	W	0:03:36	20:35:12	21:13:33	21:54:11	22:43:51	22:57:13	23:38:00	23:44:09	2:06:40	5:22:56	6:13:08	8:26:47	10:33:29	11:47:23	14:57:47
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3/12/2017	S	0:02:56	17:06:48	17:45:10	18:25:47	1										

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
4/1/2017	S	-0:02:56	15:48:10	16:26:31	17:07:09	17:56:49	18:10:11	18:50:58	18:57:07	21:19:40	0:35:57	1:26:09	3:39:48	5:46:30	7:00:23	10:06:50
4/2/2017	S	-0:03:14	15:44:14	16:22:35	17:03:13	17:52:53	18:06:15	18:47:03	18:53:11	21:15:44	0:32:01	1:22:13	3:35:52	5:42:34	6:56:27	10:02:54
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5/21/2017	S	-0:10:14	12:31:34	13:09:55	13:50:33	14:40:13	14:53:35	15:34:22	15:40:31	18:03:04	21:19:22	22:09:34	0:23:14	2:29:56	3:43:49	6:50:16
5/22/2017	M	-0:10:09	12:27:38	13:05:59	13:46:37	14:36:17	14:49:39	15:30:26	15:36:35	17:59:08	21:15:26	22:05:38	0:19:18	2:26:00	3:39:53	6:46:20
5/23/2017	T	-0:10:04	12:23:43	13:02:04	13:42:41	14:32:21	14:45:43	15:26:31	15:32:39	17:55:12	21:11:30	22:01:42	0:15:22	2:22:04	3:35:58	6:42:24
5/24/2017	W	-0:09:59	12:19:47	12:58:08	13:38:45	14:28:25	14:41:47	15:22:35	15:28:43	17:51:16	21:07:34	21:57:46	0:11:26	2:18:08	3:32:02	6:38:28
5/25/2017	T	-0:09:53	12:15:51	12:54:12	13:34:49	14:24:29	14:37:51	15:18:39	15:24:47	17:47:20	21:03:38	21:53:50	0:07:30	2:14:13	3:28:06	6:34:32
5/26/2017	F	-0:09:46	12:11:55	12:50:16	13:30:53	14:20:33	14:33:55	15:14:43	15:20:51	17:43:24	20:59:42	21:49:54	0:03:34	2:10:17	3:24:10	6:30:36
5/27/2017	S	-0:09:39	1													

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
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6/16/2017	F	-0:06:07	10:49:21	11:27:42	12:08:19	12:57:59	13:11:21	13:52:09	13:58:17	16:20:50	19:37:08	20:27:20	22:41:00	0:47:43	2:01:36	5:08:03
6/17/2017	S	-0:05:54	10:45:25	11:23:46	12:04:24	12:54:03	13:07:25	13:48:13	13:54:21	16:16:54	19:33:12	20:23:24	22:37:04	0:43:47	1:57:40	5:04:07
6/18/2017	S	-0:05:41	10:41:29	11:19:50	12:00:28	12:50:07	13:03:29	13:44:17	13:50:25	16:12:58	19:29:16	20:19:28	22:33:08	0:39:51	1:53:44	5:00:11
6/19/2017	M	-0:05:28	10:37:33	11:15:54	11:56:32	12:46:12	12:59:33	13:40:21	13:46:29	16:09:02	19:25:20	20:15:32	22:29:12	0:35:55	1:49:49	4:56:15
6/20/2017	T	-0:05:15	10:33:37	11:11:58	11:52:36	12:42:16	12:55:37	13:36:25	13:42:34	16:05:06	19:21:24	20:11:36	22:25:17	0:31:59	1:45:53	4:52:19
6/21/2017	W	-0:05:02	10:29:42	11:08:02	11:48:40	12:38:20	12:51:42	13:32:29	13:38:38	16:01:10	19:17:28	20:07:41	22:21:21	0:28:03	1:41:57	4:48:24
6/22/2017	T	-0:04:49	10:25:46	11:04:06	11:44:44	12:34:24	12:47:46	13:28:33	13:34:42	15:57:14	19:13:32	20:03:45	22:17:25	0:24:07	1:38:01	4:44:28
6/23/2017	F	-0:04:35	10:21:50	11:00:11	11:40:48	12:30:28	12:43:50	13:24:37	13:30:46	15:53:18	19:09:36	19:59:49	22:13:29	0:20:12	1:34:05	4:40:32
6/24/2017	S	-0:04:22	10:17:54	10:56:15	11:36:52	12:26:32	12:39:54	13:20:41	13:26:50	15:49:22	19:05:40	19:55:53	22:09:33	0:16:16	1:30:09	4:36:36
6/25/2017	S	-0:04:10	10:13:58	10:52:19	11:32:56	12:22:36	12:35:58	13:16:45	13:22:54	15:45:26	19:01:44	19:51:57	22:05:37	0:12:20	1:26:13	4:32:40
6/26/2017	M	-0:03:57	10:10:02	10:48:23	11:29:01	12:18:40	12:32:02	13:12:50	13:18:58	15:41:31	18:57:48	19:48:01	22:01:41	0:08:24	1:22:17	4:28:44
6/27/2017	T	-0:03:44	10:06:06	10:44:27	11:25:05	12:14:44	12:28:06	13:08:54	13:15:02	15:37:35	18:53:53	19:44:05	21:57:45	0:04:28	1:18:21	4:24:48
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6/29/2017	T	-0:03:20	9:58:14	10:36:35	11:17:13	12:06:52	12:20:14	13:01:02	13:07:10	15:29:43	18:46:01	19:36:13	21:49:53	23:56:36	1:10:30	4:16:57
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Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
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8/31/2017	T	-0:06:29	5:50:34	6:28:54	7:09:32	7:59:11	8:12:33	8:53:20	8:59:29	11:22:01	14:38:18	15:28:30	17:42:10	19:48:53	21:02:48	0:09:16
9/1/2017	F	-0:06:48	5:46:38	6:24:59	7:05:36	7:55:15	8:08:37	8:49:25	8:55:33	11:18:05	14:34:22	15:24:34	17:38:15	19:44:58	20:58:52	0:05:20
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Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=	7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47		
11/15/2017	W	-0:22:12	0:47:51	1:26:12	2:06:49	2:56:29	3:09:51	3:50:38	3:56:47	6:19:18	9:35:33	10:25:45	12:43:21	14:50:03	16:03:58	19:10:26
11/16/2017	T	-0:22:02	0:43:55	1:22:16	2:02:53	2:52:33	3:05:55	3:46:42	3:52:51	6:15:22	9:31:37	10:21:49	12:39:25	14:46:07	16:00:02	19:06:31
11/17/2017	F	-0:21:50	0:39:59	1:18:20	1:58:58	2:48:37	3:01:59	3:42:46	3:48:55	6:11:26	9:27:41	10:17:53	12:35:29	14:42:11	15:56:06	19:02:35
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12/18/2017	M	-0:10:13	22:38:06	23:16:27	23:57:05	0:46:44	1:00:06	1:40:54	1:47:03	4:09:34	7:25:49	8:16:01	10:29:40	12:40:17	13:54:12	17:00:41
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12/20/2017	W	-0:09:13	22:30:15	23:08:35	23:49:13	0:38:53	0:52:14	1:33:02	1:39:11	4:01:42	7:17:57	8:08:09	10:21:48	12:32:26	13:46:20	16:52:49
12/21/2017	T	-0:08:43	22:26:19	23:04:39	23:45:17	0:34:57	0:48:19	1:29:06	1:35:15	3:57:46	7:14:01	8:04:13	10:17:52	12:28:30	13:42:25	16:48:53
12/22/2017	F	-0:08:13	22:22:23	23:00:43	23:41:21	0:31:01	0:44:23	1:25:10	1:31:19	3:53:50	7:10:06	8:00:17	10:13:57	12:24:34	13:38:29	16:44:57
12/23/2017	S	-0:07:43	22:18:27	22:56:48	23:37:25	0:27:05	0:40:27	1:21:14	1:27:23	3:49:54	7:06:10	7:56:21	10:10:01	12:20:38	13:34:33	16:41:01
12/24/2017	S	-0:07:14	22:14:31	22:52:52	23:33:29	0:23:09	0:36:31	1:17:18	1:23:27	3:45:58	7:02:14	7:52:26	10:06:05	12:16:42	13:30:37	16:37:05
12/25/2017	M	-0:06:44	22:10:35	22:48:56	23:29:34	0:19:13	0:32:35	1:13:22	1:19:32	3:42:02	6:58:18	7:48:30	10:02:09	12:12:46	13:26:41	16:33:09
12/26/2017	T	-0:06:14	22:06:39	22:45:00	23:25:38	0:15:17	0:28:39	1:09:26	1:15:36	3:38:07	6:54:22	7:44:34	9:58:13	12:08:50	13:22:45	16:29:14
12/27/2017	W	-0:05:45	22:02:43	22:41:04	23:21:42	0:11:21	0:24:43	1:05:31	1:11:40	3:34:11	6:50:26	7:40:38	9:54:17	12:04:54	13:18:49	16:25:18
12/28/2017	T	-0:05:15	21:58:47	22:37:08	23:17:46	0:07:25	0:20:47	1:01:35	1:07:44	3:30:15	6:46:30	7:36:42	9:50:21	11:57:03	13:14:53	16:21:22
12/29/2017	F	-0:04:46	21:54:51	22:33:12	23:13:50	0:03:29	0:16:51	0:57:39	1:03:48	3:26:19	6:42:34	7:32:46	9:46:25	11:53:07	13:10:57	16:17:26
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12/31/2017	S	-0:03:48	21:46:59	22:25:19	23:05:57	23:55:37	0:08:59	0:49:46	0:55:55	3:18:26	6:34:42	7:24:53	9:38:33	11:45:14	13:03:05	16:09:34
1/1/2018	M	-0:03:21	21:43:03	22:21:23	23:02:01	23:51:41	0:05:03	0:45:50	0:51:59	3:14:30	6:30:46	7:20:58	9:34:37	11:41:18	12:59:09	16:05:37
1/2/2018	T	-0:02:53	21:39:07	22:17:27	22:58:05	23:47:45	0:01:07	0:41:54	0:48:03	3:10:34	6:26:50	7:17:02	9:30:41	11:37:22	12:55:13	16:01:41
1/3/2018	W	-0:02:25	21:35:11	22:13:32	22:54:09	23:43:49	23:57:11	0:37:58	0:44:08	3:06:38	6:22:54	7:13:06	9:26:45	11:33:26	12:51:17	15:57:45
1/4/2018	T	-0:01:58	21:31:15	22:09:36	22:50:14	23:39:53	23:53:15	0:34:02	0:40:12	3:02:43	6:18:58	7:09:10	9:22:49	11:29:30	12:47:21	15:53:49
1/5/2018	F	-0:01:31	21:27:19	22:05:40	22:46:18	23:35:57	23:49:19	0:30:07	0:36:16	2:58:47	6:15:02	7:05:14	9:18:53	11:25:34	12:43:25	15:49:53
1/6/2018	S	-0:01:05	21:23:23	22:01:44	22:42:22	23:32:01	23:45:23	0:26:11	0:32:20	2:54:51	6:11:06	7:01:18	9:14:57	11:21:38	12:39:29	15:45:57
1/7/2018	S	-0:00:38	21:19:27	21:57:48	22:38:26	23:28:05	23:41:27	0:22:15	0:28:24	2:50:55	6:07:11	6:57:22	9:11:01	11:17:42	12:35:33	15:42:01
1/8/2018	M	-0:00:13	21:15:31	21:53:52	22:34:30	23:24:09	23:37:31	0:18:19	0:24:28	2:46:59	6:03:15	6:53:26	9:07:06	11:13:47	12:31:37	15:38:06
1/9/2018	T	0:00:12	21:11:35	21:49:56	22:30:34	23:20:14	23:33:35	0:14:23	0:20:32	2:43:03	5:59:19	6:49:30	9:03:10	11:09:51	12:27:41	15:34:10
1/10/2018	W	0:00:37	21:07:40	21:46:00	22:26:38	23:16:18	23:29:40	0:10:27	0:16:36	2:39:07	5:55:23	6:45:35	8:59:14	11:05:55	12:2	

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	4:17	
1/30/2018	T	0:06:26	19:49:01	20:27:22	21:08:00	21:57:39	22:11:01	22:51:49	22:57:58	1:20:30	4:36:45	5:26:57	7:40:36	9:47:17	11:01:12	13:11:35
1/31/2018	W	0:06:35	19:45:05	20:23:26	21:04:04	21:53:44	22:07:05	22:47:53	22:54:02	1:16:34	4:32:50	5:23:01	7:36:40	9:43:21	10:57:16	14:07:39
2/1/2018	T	0:06:43	19:41:09	20:19:30	21:00:08	21:49:48	22:03:10	22:43:57	22:50:06	1:12:38	4:28:54	5:19:05	7:32:44	9:39:25	10:53:20	14:03:44
2/2/2018	F	0:06:51	19:37:13	20:15:34	20:56:12	21:45:52	21:59:14	22:40:01	22:46:11	1:08:42	4:24:58	5:15:09	7:28:49	9:35:29	10:49:24	13:59:48
2/3/2018	S	0:06:57	19:33:17	20:11:38	20:52:16	21:41:56	21:55:18	22:36:05	22:42:15	1:04:46	4:21:02	5:11:14	7:24:53	9:31:33	10:45:28	13:55:52
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2/5/2018	M	0:07:09	19:25:26	20:03:46	20:44:24	21:34:04	21:47:26	22:28:14	22:34:23	0:56:54	4:13:10	5:03:22	7:17:01	9:23:42	10:37:36	13:48:00
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2/12/2018	M	0:07:23	18:57:54	19:36:15	20:16:53	21:06:33	21:19:54	22:00:42	22:06:51	0:29:23	3:45:39	4:35:51	6:49:30	8:56:10	10:10:05	13:20:29
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2/15/2018	T	0:07:18	18:46:06	19:24:27	20:05:05	20:54:45	21:08:07	21:48:54	21:55:04	0:17:35	3:33:51	4:24:03	6:37:42	8:44:23	9:58:17	13:08:41
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3/13/2018	T	0:02:42	17:03:52	17:42:13	18:22:51	19:12:31	19:25:53	20:06:41	20:12:50	22:35:22	1:51:38	2:41:50	4:55:30	7:02:10	8:16:04	11:22:32
3/14/2018	W	0:02:26	16:59:56	17:38:17	18:18:55	19:08:35	19:21:57	20:02:45	20:08:54	22:31:26	1:47:42	2:37:54	4:51:34	6:58:14	8:12:08	11:18:36
3/15/2018	T	0:02:09	16:56:01	17:34:21	18:14:59	19:04:39	19:18:01	19:58:49	20:04:58	22:27:30	1:43:47	2:33:58	4:47:38	6:54:18	8:08:13	11:14:40
3/16/2018	F	0:01:53	16:52:05	17:30:25	18:11:03	19:00:43	19:14:05	19:54:53	20:01:02	22:23:34	1:39:51	2:30:03	4:43:42	6:50:22	8:04:17	11:10:44
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3/18/2018	S	0:01:18	16:44:13	17:22:33	18:03:12	18:52:51	19:06:13	19:47:01	19:53:10	22:15:42	1:31:59	2:22:11	4:35:50	6:42:31	7:56:25	11:02:52
3/19/2018	M	0:01:01	16:40:17	17:18:38	17:59:16	18:48:55	19:02:17	19:43:05	19:49:14	22:11:46	1:28:03	2:18:15	4:31:54	6:38:35	7:52:29	10:58:56
3/20/2018	T	0:00:43	16:36:21	17:14:42	17:55:20	18:44:59	18:58:21	19:39:09	19:45:18	22:07:50	1:24:07	2:14:19	4:27:58	6:34:39	7:48:33	10:55:00
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3/27/2018	T	-0:01:23	16:08:49	16:47:10	17:27:											

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
4/16/2018	M	-0:06:58	14:50:11	15:28:32	16:09:10	16:58:49	17:12:11	17:52:59	17:59:08	20:21:41	23:37:58	0:28:10	2:41:50	4:48:30	6:02:24	9:08:51
4/17/2018	T	-0:07:12	14:46:15	15:24:36	16:05:14	16:54:53	17:08:15	17:49:03	17:55:12	20:17:45	23:34:02	0:24:14	2:37:54	4:44:35	5:58:29	9:04:55
4/18/2018	W	-0:07:25	14:42:19	15:20:40	16:01:18	16:50:57	17:04:19	17:45:07	17:51:17	20:13:49	23:30:06	0:20:18	2:33:58	4:40:39	5:54:33	9:01:00
4/19/2018	T	-0:07:38	14:38:23	15:16:44	15:57:22	16:47:02	17:00:23	17:41:11	17:47:21	20:09:53	23:26:10	0:16:22	2:30:02	4:36:43	5:50:37	8:57:04
4/20/2018	F	-0:07:51	14:34:27	15:12:48	15:53:26	16:43:06	16:56:27	17:37:16	17:43:25	20:05:57	23:22:14	0:12:26	2:26:06	4:32:47	5:46:41	8:53:08
4/21/2018	S	-0:08:04	14:30:32	15:08:52	15:49:30	16:39:10	16:52:31	17:33:20	17:39:29	20:02:01	23:18:18	0:08:30	2:22:10	4:28:51	5:42:45	8:49:12
4/22/2018	S	-0:08:15	14:26:36	15:04:56	15:45:34	16:35:14	16:48:36	17:29:24	17:35:33	19:58:05	23:14:22	0:04:34	2:18:14	4:24:55	5:38:49	8:45:16
4/23/2018	M	-0:08:27	14:22:40	15:01:00	15:41:38	16:31:18	16:44:40	17:25:28	17:31:37	19:54:09	23:10:27	0:00:39	2:14:19	4:20:59	5:34:53	8:41:20
4/24/2018	T	-0:08:38	14:18:44	14:57:04	15:37:42	16:27:22	16:40:44	17:21:32	17:27:41	19:50:13	23:06:31	23:56:43	2:10:23	4:17:03	5:30:57	8:37:24
4/25/2018	W	-0:08:49	14:14:48	14:53:08	15:33:47	16:23:26	16:36:48	17:17:36	17:23:45	19:46:17	23:02:35	23:52:47	2:06:27	4:13:08	5:27:02	8:33:28
4/26/2018	T	-0:08:59	14:10:52	14:49:13	15:29:51	16:19:30	16:32:52	17:13:40	17:19:49	19:42:21	22:58:39	23:48:51	2:02:31	4:09:12	5:23:06	8:29:33
4/27/2018	F	-0:09:08	14:06:56	14:45:17	15:25:55	16:15:34	16:28:56	17:09:44	17:15:53	19:38:26	22:54:43	23:44:55	1:58:35	4:05:16	5:19:10	8:25:37
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5/1/2018	T	-0:09:42	13:51:12	14:29:33	15:10:11	15:59:50	16:13:12	16:54:00	17:00:10	19:22:42	22:38:59	23:29:11	1:42:51	3:49:32	5:03:26	8:09:53
5/2/2018	W	-0:09:49	13:47:16	14:25:37	15:06:15	15:55:55	16:09:16	16:50:04	16:56:14	19:18:46	22:35:03	23:25:15	1:38:56	3:45:36	4:59:30	8:05:57
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Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:00:19	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
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8/20/2018	M	-0:03:22	6:34:49	7:13:09	7:53:46	8:43:25	8:56:47	9:37:35	9:43:44	12:06:15	15:22:32	16:12:45	18:26:26	20:33:07	21:47:02	0:53:30
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8/25/2018	S	-0:04:39	6:15:09	6:53:29	7:34:07	8:23:46	8:37:07	9:17:55	9:24:05	11:46:36	15:02:53	15:53:05	18:06:46	20:13:28	21:27:23	0:33:51
8/26/2018	S	-0:04:56	6:11:13	6:49:33	7:3											

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
9/15/2018	S	-0:11:31	4:52:36	5:30:56	6:11:34	7:01:12	7:14:34	7:55:22	8:01:31	10:24:02	13:40:19	14:30:31	16:44:12	18:50:53	20:04:48	23:11:17
9/16/2018	S	-0:11:52	4:48:40	5:27:00	6:07:38	6:57:16	7:10:38	7:51:26	7:57:35	10:20:06	13:36:23	14:26:35	16:40:16	18:46:57	20:00:52	23:07:21
9/17/2018	M	-0:12:14	4:44:44	5:23:04	6:03:42	6:53:21	7:06:42	7:47:30	7:53:39	10:16:10	13:32:27	14:22:39	16:36:20	18:43:01	19:56:56	23:03:25
9/18/2018	T	-0:12:35	4:40:48	5:19:08	5:59:46	6:49:25	7:02:46	7:43:34	7:49:43	10:12:14	13:28:31	14:18:43	16:32:24	18:39:05	19:53:01	22:59:29
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9/20/2018	T	-0:13:18	4:29:00	5:07:20	5:47:58	6:37:37	6:50:59	7:31:47	7:37:56	10:00:27	13:20:39	14:10:51	16:24:32	18:31:13	19:45:09	22:51:38
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11/5/2018	M	-0:23:14	1:28:10	2:06:30	2:47:08	3:36:47	3:50:08	4:30:56	4:37:06	6:59:36	10:15:52	11:06:03	13:23:40	15:30:21	16:44:16	19:50:46
11/6/2018	T	-0:23:12	1:24:14	2:02:34	2:43:12	3:32:51	3:46:12	4:27:00	4:33:10	6:55:40	10:11:56	11:02:08	13:19:44	15:26:25	16:40:20	19:46:50
11/7/2018	W	-0:23:09	1:20:18	1:58:38	2:39:16	3:28:55	3:42:16	4:23:04	4:29:14	6:51:44	10:08:00	10:58:12	13:15:48	15:22:29	16:36:24	19:42:54
11/8/2018	T	-0:23:05	1:16:22	1:54:42	2:35:20	3:24:59	3:38:21	4:19:09	4:25:18	6:47:48	10:04:04	10:54:16	13:11:52	15:18:33	16:32:28	19:38:58
11/9/2018	F	-0:23:01	1:12:26	1:50:46	2:31:24	3:21:03	3:34:25	4:15:13	4:21:22	6:43:52	10:00:08	10:50:20	13:07:56	15:14:37	16:28:33	19:35:02
11/10/2018	S	-0:22:55	1:08:30	1:46:50	2:27:28	3:17:07	3:30:29	4:11:17	4:17:26	6:39:57	9:56:12	10:46:24	13:04:00	15:10:41	1	

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=	7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	8:27		
11/30/2018	F	-0:18:16	23:49:53	0:28:13	1:08:51	1:58:30	2:11:51	2:52:39	2:58:49	5:21:19	8:37:35	9:27:46	11:41:26	13:52:03	15:05:58	18:1:27
12/1/2018	S	-0:17:54	23:45:57	0:24:17	1:04:55	1:54:34	2:07:55	2:48:43	2:54:53	5:17:23	8:33:39	9:23:50	11:37:30	13:48:07	15:02:02	18:08:32
12/2/2018	S	-0:17:31	23:42:01	0:20:21	1:00:59	1:50:38	2:03:59	2:44:47	2:50:57	5:13:27	8:29:43	9:19:54	11:33:35	13:44:11	14:58:06	18:04:36
12/3/2018	M	-0:17:08	23:38:05	0:16:25	0:57:03	1:46:42	2:00:04	2:40:52	2:47:01	5:09:31	8:25:47	9:15:58	11:29:39	13:40:15	14:54:10	18:00:40
12/4/2018	T	-0:16:44	23:34:09	0:12:29	0:53:07	1:42:46	1:56:08	2:36:56	2:43:05	5:05:36	8:21:51	9:12:03	11:25:43	13:36:19	14:50:15	17:56:44
12/5/2018	W	-0:16:19	23:30:13	0:08:33	0:49:11	1:38:50	1:52:12	2:33:00	2:39:09	5:01:40	8:17:55	9:08:07	11:21:47	13:32:23	14:46:19	17:52:48
12/6/2018	T	-0:15:54	23:26:17	0:04:37	0:45:15	1:34:54	1:48:16	2:29:04	2:35:13	4:57:44	8:13:59	9:04:11	11:17:51	13:28:27	14:42:23	17:48:52
12/7/2018	F	-0:15:29	23:22:21	0:00:41	0:41:19	1:30:58	1:44:20	2:25:08	2:31:18	4:53:48	8:10:03	9:00:15	11:13:55	13:24:31	14:38:27	17:44:56
12/8/2018	S	-0:15:03	23:18:25	23:56:45	0:37:24	1:27:02	1:40:24	2:21:12	2:27:22	4:49:52	8:06:08	8:56:19	11:09:59	13:20:35	14:34:31	17:41:00
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12/10/2018	M	-0:14:09	23:10:34	23:48:54	0:29:32	1:19:11	1:32:32	2:13:20	2:19:30	4:42:00	7:58:16	8:48:27	11:02:07	13:12:43	14:26:39	17:33:08
12/11/2018	T	-0:13:41	23:06:38	23:44:58	0:25:36	1:15:15	1:28:36	2:09:24	2:15:34	4:38:04	7:54:20	8:44:31	10:58:11	13:08:47	14:22:43	17:29:12
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12/16/2018	S	-0:11:19	22:46:58	23:25:18	0:05:56	0:55:35	1:08:57	1:49:45	1:55:55	4:18:25	7:34:41	8:24:52	10:38:32	12:49:08	14:03:04	17:09:33
12/17/2018	M	-0:10:50	22:43:02	23:21:22	0:02:01	0:51:39	1:05:01	1:45:49	1:51:59	4:14:29	7:30:45	8:20:56	10:34:36	12:45:12	13:59:08	17:05:37
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1/17/2019	T	0:03:08	20:41:09	21:19:29	22:00:07	22:49:46	23:03:08	23:43:56	23:50:06	2:12:37	5:28:52	6:19:04	8:32:44	10:39:23	11:53:19	15:03:43
1/18/2019	F	0:03:28	20:37:13	21:15:33	21:56:12	22:45:51	22:59:12	23:40:00	23:46:10	2:08:41	5:24:57	6:15:08	8:28:48	10:35:27	11:49:23	14:59:47
1/19/2019	S	0:03:46	20:33:17	21:11:37	21:52:16	22:41:55	22:55:16	23:36:05	23:42:14	2:04:45	5:21:01	6:11:12	8:24:52	10:31:31	11:45:27	14:55:51
1/20/2019	S	0:04:04	20:29:21	21:07:41	21:48:20	22:37:59	22:51:20	23:32:09	23:38:18	2:00:49	5:17:05	6:07:16	8:20:56	10:27:35	11:41:31	14:51:55
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1/22/2019	T	0:04:38	20:21:29	20:59:50	21:40:28	22:30:07	22:43:29	23:24:17	23:30:27	1:52:57	5:09:13	5:59:24	8:13:04	10:19:44	11:33:39	14:44:04
1/23/2019	W	0:04:54	20:17:34	20:55:54	21:36:32	22:26:11	22:39:33	23:20:21	23:26:31	1:49:01	5:05:17	5:55:29	8:09:08	10:15:48	11:29:43	14:40:08
1/24/2019	T	0:05:09	20:13:38	20:51:58	21:32:36	22:22:15	22:35:37	23:16:25	23:22:35	1:45:06	5:01:21	5:51:33	8:05:13	10:11:52	11:25:47	14:36:12
1/25/2019	F	0:05:24	20:09:42	20:48:02	21:28:40	22:18:19	22:31:41	23:12:29	23:18:39	1:41:10						

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	13:37	
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2/15/2019	F	0:07:20	18:47:07	19:25:27	20:06:06	20:55:45	21:09:07	21:49:55	21:56:05	0:18:36	3:34:52	4:25:03	6:38:43	8:45:22	9:59:18	13:09:42
2/16/2019	S	0:07:17	18:43:11	19:21:32	20:02:10	20:51:49	21:05:11	21:45:59	21:52:09	0:14:40	3:30:56	4:21:07	6:34:47	8:41:27	9:55:22	13:05:46
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2/18/2019	M	0:07:08	18:35:20	19:13:40	19:54:18	20:43:57	20:57:19	21:38:07	21:44:17	0:06:48	3:23:04	4:13:16	6:26:56	8:33:35	9:47:30	12:57:54
2/19/2019	T	0:07:03	18:31:24	19:09:44	19:50:22	20:40:01	20:53:23	21:34:11	21:40:21	0:02:52	3:19:08	4:09:20	6:23:00	8:29:39	9:43:34	12:53:58
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4/10/2019	W	-0:05:21	15:14:48	15:53:08	16:33:46	17:23:25	17:36:47	18:17:35	18:23:45	20:46:17	0:02:34	0:52:46	3:06:26	5:13:05	6:27:00	9:33:27
4/11/2019	T	-0:05:37	15:10:52	15:49:12	16:29:50											

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
5/1/2019	W	-0:09:38	13:52:13	14:30:33	15:11:12	16:00:51	16:14:12	16:55:01	17:01:11	19:23:43	22:40:00	23:30:12	1:43:53	3:50:32	5:04:27	8:10:54
5/2/2019	T	-0:09:45	13:48:17	14:26:37	15:07:16	15:56:55	16:10:16	16:51:05	16:57:15	19:19:47	22:36:04	23:26:16	1:39:57	3:46:36	5:00:31	8:06:58
5/3/2019	F	-0:09:52	13:44:21	14:22:42	15:03:20	15:52:59	16:06:20	16:47:09	16:53:19	19:15:51	22:32:08	23:22:20	1:36:01	3:42:40	4:56:35	8:03:02
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6/20/2019	T	-0:05:20	10:35:38	11:13:58	11:54:36	12:44:15	12:57:36	13:38:25	13:44:35	16:07:07	19:23:24	20:13:36	0:00:00	0:33:57	1:47:53	4:54:20
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6/22/2019	S	-0:04:54	10:27:46	11:06:06	11:46:45	12:36:23	12:49:44	13:30:33	13:36:43	15:59:15	19:15:32	20:05:44	0:00:00	0:26:06	1:40:01	4:46:28
6/23/2019	S	-0:04:41	10:23:51	11:02:10	11:42:49	12:32:27	12:45:48	13:26:38	13:32:47	15:55:19	19:11:37	20:01:48	0:00:00	0:22:10	1:36:05	4:42:33
6/24/2019	M	-0:04:28	10:19:55	10:58:14	11:38:53	12:28:31	12:41:53	13:22:42	13:28:51	15:51:23	19:07:41	19:57:52	0:00:00	0:18:14	1:32:09	4:38:37
6/25/2019	T	-0:04:15	10:15:59	10:54:19	11:34:57	12:24:35	12:37:57	13:18:46	13:24:55	15:47:27	19:03:45	19:53:56	0:00:00	0:14:18	1:28:13	4:34:41
6/																

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
7/16/2019	T	-0:00:45	8:53:25	9:31:45	10:12:23	11:02:01	11:15:23	11:56:12	12:02:21	14:24:53	17:41:10	18:31:22	20:45:04	22:51:44	0:05:39	3:12:07
7/17/2019	W	-0:00:40	8:49:29	9:27:49	10:08:27	10:58:06	11:11:27	11:52:16	11:58:25	14:20:57	17:37:14	18:27:26	20:41:08	22:47:48	0:01:43	3:08:11
7/18/2019	T	-0:00:35	8:45:33	9:23:53	10:04:31	10:54:10	11:07:31	11:48:20	11:54:30	14:17:01	17:33:18	18:23:30	20:37:12	22:43:52	23:57:47	3:04:16
7/19/2019	F	-0:00:31	8:41:38	9:19:57	10:00:35	10:50:14	11:03:35	11:44:24	11:50:34	14:13:05	17:29:23	18:19:34	20:33:16	22:39:56	23:53:52	3:00:20
7/20/2019	S	-0:00:27	8:37:42	9:16:01	9:56:40	10:46:18	10:59:39	11:40:28	11:46:38	14:09:09	17:25:27	18:15:38	20:29:20	22:36:00	23:49:56	2:56:24
7/21/2019	S	-0:00:24	8:33:46	9:12:05	9:52:44	10:42:22	10:55:43	11:36:32	11:42:42	14:05:13	17:21:31	18:11:43	20:25:24	22:32:04	23:46:00	2:52:28
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7/23/2019	T	-0:00:19	8:25:54	9:04:14	9:44:52	10:34:30	10:47:51	11:28:40	11:34:50	13:57:21	17:13:39	18:03:51	20:17:33	22:24:13	23:38:08	2:44:36
7/24/2019	W	-0:00:17	8:21:58	9:00:18	9:40:56	10:30:34	10:43:56	11:24:45	11:30:54	13:53:25	17:09:43	17:59:55	20:13:37	22:20:17	23:34:12	2:40:40
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9/5/2019	T	-0:07:57	5:32:55	6:11:15	6:51:53	7:41:31	7:54:52	8:35:41	8:41:51	11:04:22	14:20:38	15:10:50	17:24:32	19:31:12	20:45:08	23:51:37
9/6/2019	F	-0:08:17	5:29:00	6:07:19	6:47:57	7:37:35	7:50:57	8:31:45	8:37:55	11:00:26	14:16:43	15:06:54	17:20:36	19:27:16	20:41:12	23:47:41
9/7/2019	S	-0:08:37	5:25:04	6:03:23	6:44:01	7:33:39	7:47:01	8:27:50	8:33:59	10:56:30	14:12:47	15:02:58	17:16:40	19:23:20	20:37:16	23:43:45
9/8/2019	S	-0:08:58	5:21:08	5:59:27	6:40:05	7:29:44	7:43:05	8:23:54	8:30:03	10:52:34	14:08:51	14:59:02	17:12:44	19:19:24	20:33:20	23:39:49
9/9/2019	M	-0:09:19	5:17:12	5:55:31	6:36:10	7:25:48	7:39:09	8:19:58	8:26:08	10:48:38	14:04:55	14:55:06	17:08:48	19:15:28	20:29:24	23:35:53
9/10/2019	T	-0:09:40	5:13:16	5:51:36	6:32:14	7:21:52	7:35:13	8:16:02	8:22:12	10:4						

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
9/30/2019	M	-0:16:40	3:50:43	4:29:02	5:09:40	5:59:18	6:12:40	6:53:28	6:59:38	9:22:08	12:42:21	13:32:32	15:46:14	17:52:54	19:06:50	22:13:19
10/1/2019	T	-0:17:00	3:46:47	4:25:06	5:05:44	5:55:23	6:08:44	6:49:33	6:55:42	9:18:13	12:38:25	13:28:36	15:42:18	17:48:58	19:02:54	22:09:24
10/2/2019	W	-0:17:19	3:42:51	4:21:10	5:01:49	5:51:27	6:04:48	6:45:37	6:51:47	9:14:17	12:34:29	13:24:40	15:38:22	17:45:02	18:58:58	22:05:28
10/3/2019	T	-0:17:38	3:38:55	4:17:14	4:57:53	5:47:31	6:00:52	6:41:41	6:47:51	9:10:21	12:30:33	13:20:44	15:34:26	17:41:06	18:55:02	22:01:32
10/4/2019	F	-0:17:57	3:34:59	4:13:19	4:53:57	5:43:35	5:56:56	6:37:45	6:43:55	9:06:25	12:26:37	13:16:49	15:30:30	17:37:10	18:51:06	21:57:36
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10/6/2019	S	-0:18:33	3:27:07	4:05:27	4:46:05	5:35:43	5:49:04	6:29:53	6:36:03	8:58:33	12:18:45	13:08:57	15:22:38	17:29:18	18:43:14	21:49:44
10/7/2019	M	-0:18:51	3:23:11	4:01:31	4:42:09	5:31:47	5:45:09	6:25:57	6:32:07	8:54:37	12:14:49	13:05:01	15:18:43	17:25:22	18:39:18	21:45:48
10/8/2019	T	-0:19:08	3:19:16	3:57:35	4:38:13	5:27:51	5:41:13	6:22:01	6:28:11	8:50:41	12:10:53	13:01:05	15:14:47	17:21:26	18:35:23	21:41:52
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10/14/2019	M	-0:20:42	2:55:40	3:34:00	4:14:38	5:04:16	5:17:37	5:58:26	6:04:36	8:27:06	11:43:22	12:37:29	14:51:11	16:57:51	18:11:47	21:18:17
10/15/2019	T	-0:20:56	2:51:44	3:30:04	4:10:42	5:00:20	5:13:42	5:54:30	6:00:40	8:23:10	11:39:26	12:33:34	14:47:15	16:53:55	18:07:51	21:14:21
10/16/2019	W	-0:21:10	2:47:49	3:26:08	4:06:46	4:56:24	5:09:46	5:50:34	5:56:44	8:19:14	11:35:30	12:29:38	14:43:19	16:49:59	18:03:55	21:10:25
10/17/2019	T	-0:21:22	2:43:53	3:22:12	4:02:50	4:52:28	5:05:50	5:46:39	5:52:48	8:15:18	11:31:34	12:25:42	14:39:23	16:46:03	17:59:59	21:06:29
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10/21/2019	M	-0:22:07	2:28:09	3:06:29	3:47:07	4:36:45	4:50:06	5:30:55	5:37:05	7:59:35	11:15:51	12:09:58	14:23:40	16:30:19	17:44:16	20:50:45
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11/25/2019	M	-0:20:00	0:10:33	0:48:53	1:29:31	2:19:09	2:32:30	3:13:19	3:19:29	5:41:59	8:58:15	9:48:26	12:06:03	14:12:42	15:26:38	

Transit times (MST) for selected stars as observed at HVO. Add or subtract offset to obtain rising and setting times.

Date	Mid night	Aldebaran	Rigel	Betelgeuse	Sirius	Adhara	Procyron	Pollux	Regulus	Spica	Arcturus	Antares	Vega	Altair	Fomalhaut	
Offset=		7:07	5:28	6:29	4:52	3:50	6:20	8:04	6:47	5:16	7:18	4:05	9:25	6:35	3:47	
12/15/2019	S	-0:11:57	22:51:55	23:30:15	0:10:53	1:00:31	1:13:53	1:54:42	2:00:52	4:23:22	7:39:37	8:29:48	10:43:29	12:54:03	14:08:00	17:14:29
12/16/2019	M	-0:11:28	22:47:59	23:26:19	0:06:57	0:56:35	1:09:57	1:50:46	1:56:56	4:19:26	7:35:41	8:25:52	10:39:33	12:50:07	14:04:04	17:10:34
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12/26/2019	T	-0:06:31	22:08:40	22:47:00	23:27:38	0:17:16	0:30:38	1:11:27	1:17:37	3:40:07	6:56:22	7:46:33	10:00:14	12:10:48	13:24:45	16:31:14
12/27/2019	F	-0:06:01	22:04:44	22:43:04	23:23:42	0:13:21	0:26:42	1:07:31	1:13:41	3:36:11	6:52:26	7:42:37	9:56:18	12:06:52	13:20:49	16:27:18
12/28/2019	S	-0:05:31	22:00:48	22:39:08	23:19:46	0:09:25	0:22:46	1:03:35	1:09:45	3:32:15	6:48:31	7:38:42	9:52:23	12:02:57	13:16:53	16:23:22
12/29/2019	S	-0:05:02	21:56:52	22:35:12	23:15:50	0:05:29	0:18:50	0:59:39	1:05:49	3:28:19	6:44:35	7:34:46	9:48:27	11:55:05	13:12:57	16:19:27
12/30/2019	M	-0:04:33	21:52:56	22:31:16	23:11:55	0:01:33	0:14:54	0:55:43	1:01:53	3:24:23	6:40:39	7:30:50	9:44:31	11:51:09	13:09:01	16:15:31
12/31/2019	T	-0:04:04	21:49:00	22:27:20	23:07:59	23:57:37	0:10:58	0:51:47	0:57:58	3:20:28	6:36:43	7:26:54	9:40:35	11:47:13	13:05:05	16:11:35

Program starview.py ver 151102 + gglib version 160120a