

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
01/01/2024	M	12:03:19.0	4:02:34.0	10:44:29.9	9:23:37.1	11:07:17.4	19:30:56.4	15:40:09.2	20:24:02.9	17:00:31.6
01/02/2024	Tu	12:03:47.2	4:42:28.2	10:40:25.6	9:24:42.4	11:06:35.7	19:27:01.8	15:36:33.6	20:20:01.9	16:56:39.0
01/03/2024	W	12:04:15.1	5:21:29.9	10:36:58.9	9:25:48.9	11:05:54.3	19:23:08.0	15:32:58.2	20:16:01.2	16:52:46.5
01/04/2024	Th		3:30LQ							
01/04/2024	Th	12:04:42.6	6:00:50.7	10:34:07.0	9:26:56.6	11:05:13.1	19:19:15.1	15:29:23.1	20:12:00.6	16:48:54.1
01/05/2024	F	12:05:09.7	6:41:46.9	10:31:47.2	9:28:05.4	11:04:32.2	19:15:22.9	15:25:48.2	20:08:00.2	16:45:01.8
01/06/2024	Sat	12:05:36.5	7:25:37.7	10:29:56.4	9:29:15.2	11:03:51.5	19:11:31.5	15:22:13.6	20:03:59.9	16:41:09.7
01/07/2024	Sun	12:06:02.8	8:13:39.9	10:28:32.1	9:30:26.2	11:03:11.0	19:07:40.9	15:18:39.2	19:59:59.9	16:37:17.6
01/08/2024	M	12:06:28.6	9:06:51.8	10:27:31.7	9:31:38.2	11:02:30.7	19:03:51.1	15:15:05.0	19:56:00.1	16:33:25.7
01/09/2024	Tu	12:06:53.9	10:05:21.5	10:26:52.9	9:32:51.2	11:01:50.5	19:00:02.1	15:11:31.0	19:52:00.4	16:29:33.9
01/10/2024	W	12:07:18.7	11:07:52.3	10:26:33.5	9:34:05.1	11:01:10.5	18:56:13.8	15:07:57.3	19:48:01.0	16:25:42.2
01/11/2024	Th	12:07:43.0	11:57NM	10:26:31.7	9:35:20.0	11:00:30.6				
01/11/2024	Th		12:11:42.7				18:52:26.4	15:04:23.7	19:44:01.8	16:21:50.6
01/12/2024	F	12:08:06.6	13:13:49.0	10:26:45.7	9:36:35.8	10:59:50.9	18:48:39.7	15:00:50.4	19:40:02.7	16:17:59.1
01/13/2024	Sat	12:08:29.7	14:12:09.4	10:27:13.9	9:37:52.4	10:59:11.2	18:44:53.8	14:57:17.3	19:36:03.9	16:14:07.8
01/14/2024	Sun	12:08:52.1	15:06:16.0	10:27:55.0	9:39:09.9	10:58:31.6	18:41:08.7	14:53:44.4	19:32:05.2	16:10:16.5
01/15/2024	M	12:09:13.8	15:56:52.7	10:28:47.7	9:40:28.1	10:57:52.1	18:37:24.3	14:50:11.7	19:28:06.8	16:06:25.3
01/16/2024	Tu	12:09:34.9	16:45:17.8	10:29:50.9	9:41:47.0	10:57:12.7	18:33:40.7	14:46:39.2	19:24:08.5	16:02:34.3
01/17/2024	W	12:09:55.3	17:32:58.5	10:31:03.7	9:43:06.6	10:56:33.3	18:29:57.8	14:43:06.8	19:20:10.5	15:58:43.4
01/18/2024	Th	12:10:14.9	3:53FQ	10:32:25.1	9:44:26.9	10:55:53.9		14:39:34.7		15:54:52.5
01/18/2024	Th		18:21:15.9				18:26:15.7		19:16:12.7	
01/19/2024	F	12:10:33.8	19:11:13.9	10:33:54.4	9:45:47.7	10:55:14.5	18:22:34.3	14:36:02.7	19:12:15.1	15:51:01.8
01/20/2024	Sat	12:10:51.9	20:03:26.5	10:35:30.8	9:47:09.0	10:54:35.1	18:18:53.7	14:32:30.9	19:08:17.7	15:47:11.2
01/21/2024	Sun	12:11:09.3	20:57:43.9	10:37:13.8	9:48:30.9	10:53:55.8	18:15:13.8	14:28:59.3	19:04:20.5	15:43:20.6
01/22/2024	M	12:11:25.9	21:53:05.7	10:39:02.7	9:49:53.2	10:53:16.3	18:11:34.6	14:25:27.8	19:00:23.5	15:39:30.2
01/23/2024	Tu	12:11:41.8	22:47:56.2	10:40:57.0	9:51:15.8	10:52:36.9	18:07:56.2	14:21:56.5	18:56:26.7	15:35:39.8
01/24/2024	W	12:11:56.8	23:40:38.7	10:42:56.3	9:52:38.8	10:51:57.4	18:04:18.4	14:18:25.3	18:52:30.1	15:31:49.6
01/25/2024	Th	12:12:11.1	17:54FM	10:45:00.2	9:54:02.1	10:51:17.8	18:00:41.4	14:14:54.3	18:48:33.8	15:27:59.4
01/26/2024	F	12:12:24.5	0:30:09.6	10:47:08.2	9:55:25.6	10:50:38.2	17:57:05.0	14:11:23.5	18:44:37.6	15:24:09.4
01/27/2024	Sat	12:12:37.2	1:16:11.1	10:49:20.1	9:56:49.3	10:49:58.4	17:53:29.3	14:07:52.7	18:40:41.7	15:20:19.4
01/28/2024	Sun	12:12:49.1	1:59:04.8	10:51:35.5	9:58:13.2	10:49:18.6	17:49:54.4	14:04:22.1	18:36:45.9	15:16:29.5
01/29/2024	M	12:13:00.1	2:39:36.4	10:53:54.0	9:59:37.0	10:48:38.6	17:46:20.1	14:00:51.7	18:32:50.4	15:12:39.7
01/30/2024	Tu	12:13:10.4	3:18:44.0	10:56:15.6	10:01:00.9	10:47:58.6	17:42:46.4	13:57:21.4	18:28:55.1	15:08:50.0
01/31/2024	W	12:13:19.9	3:57:32.5	10:58:39.8	10:02:24.8	10:47:18.4	17:39:13.5	13:53:51.2	18:25:00.0	15:05:00.4
02/01/2024	Th	12:13:28.5	4:37:11.1	11:01:06.6	10:03:48.5	10:46:38.0	17:35:41.2	13:50:21.1	18:21:05.1	15:01:10.8
02/02/2024	F	12:13:36.4	5:18:52.6	11:03:35.6	10:05:12.1	10:45:57.5	17:32:09.5	13:46:51.2	18:17:10.4	14:57:21.4
02/02/2024	F		23:18LQ							
02/03/2024	Sat	12:13:43.5	6:03:51.8	11:06:06.8	10:06:35.5	10:45:16.9	17:28:38.5	13:43:21.3	18:13:16.0	14:53:32.0
02/04/2024	Sun	12:13:49.8	6:53:16.8	11:08:39.8	10:07:58.6	10:44:36.0	17:25:08.2	13:39:51.6	18:09:21.7	14:49:42.7
02/05/2024	M	12:13:55.2	7:47:49.0	11:11:14.7	10:09:21.4	10:43:55.0	17:21:38.4	13:36:22.0	18:05:27.7	14:45:53.5
02/06/2024	Tu	12:13:59.9	8:47:12.3	11:13:51.2	10:10:43.8	10:43:13.7	17:18:09.4	13:32:52.4	18:01:33.8	14:42:04.4
02/07/2024	W	12:14:03.8	9:49:48.0	11:16:29.3	10:12:05.8	10:42:32.3	17:14:40.9	13:29:23.0	17:57:40.2	14:38:15.3
02/08/2024	Th	12:14:07.0	10:52:54.0	11:19:08.7	10:13:27.3	10:41:50.6	17:11:13.1	13:25:53.7	17:53:46.8	14:34:26.3
02/09/2024	F	12:14:09.3	11:53:53.3	11:21:49.4	10:14:48.3	10:41:08.7	17:07:45.8	13:22:24.4	17:49:53.6	14:30:37.4
02/09/2024	F		22:59NM							
02/10/2024	Sat	12:14:10.8	12:51:19.7	11:24:31.4	10:16:08.6	10:40:26.5	17:04:19.2	13:18:55.2	17:46:00.6	14:26:48.5
02/11/2024	Sun	12:14:11.6	13:45:10.9	11:27:14.5	10:17:28.4	10:39:44.0	17:00:53.2	13:15:26.1	17:42:07.8	14:22:59.7
02/12/2024	M	12:14:11.6	14:36:21.1	11:29:58.7	10:18:47.4	10:39:01.3	16:57:27.7	13:11:57.1	17:38:15.2	14:19:11.0
02/13/2024	Tu	12:14:10.8	15:26:08.6	11:32:43.9	10:20:05.8	10:38:18.3	16:54:02.9	13:08:28.2	17:34:22.9	14:15:22.3
02/14/2024	W	12:14:09.3	16:15:53.2	11:35:30.0	10:21:23.3	10:37:34.9	16:50:38.6	13:04:59.3	17:30:30.7	14:11:33.7
02/15/2024	Th	12:14:07.0	17:06:41.8	11:38:17.1	10:22:40.1	10:36:51.3	16:47:14.9	13:01:30.4	17:26:38.7	14:07:45.2
02/16/2024	F	12:14:03.9	15:01FQ	11:41:05.1	10:23:56.0	10:36:07.4	16:43:51.7	12:58:01.6	17:22:47.0	14:03:56.7
02/16/2024	F		17:59:14.4							
02/17/2024	Sat	12:14:00.1	18:53:31.6	11:43:54.0	10:25:11.1	10:35:23.1	16:40:29.1	12:54:32.9	17:18:55.4	14:00:08.3
02/18/2024	Sun	12:13:55.6	19:48:47.6	11:46:43.8	10:26:25.2	10:34:38.6	16:37:07.0	12:51:04.2	17:15:04.1	13:56:19.9
02/19/2024	M	12:13:50.4	20:43:40.9	11:49:34.4	10:27:38.5	10:33:53.7	16:33:45.5	12:47:35.6	17:11:12.9	13:52:31.6

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ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
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02/21/2024	W	12:13:38.0	22:26:47.6	11:55:18.4	10:30:02.1	10:32:22.8	16:27:04.0	12:40:38.3	17:03:31.2	13:44:55.1
02/22/2024	Th	12:13:30.8	23:13:32.1	11:58:11.7	10:31:12.5	10:31:36.9	16:23:44.1	12:37:09.8	16:59:40.7	13:41:07.0
02/23/2024	F	12:13:22.9	23:57:08.6	12:01:05.9	10:32:21.8	10:30:50.6	16:20:24.6	12:33:41.3	16:55:50.3	13:37:18.8
02/24/2024	Sat	12:13:14.5	12:30FM	12:04:00.9	10:33:30.1	10:30:04.0	16:17:05.6	12:30:12.7	16:52:00.1	13:33:30.8
02/25/2024	Sun	12:13:05.4	0:38:15.1	12:06:56.9	10:34:37.4	10:29:17.1	16:13:47.2	12:26:44.2	16:48:10.1	13:29:42.7
02/26/2024	M	12:12:55.8	1:17:43.1	12:09:53.8	10:35:43.7	10:28:29.7	16:10:29.2	12:23:15.8	16:44:20.3	13:25:54.7
02/27/2024	Tu	12:12:45.6	1:56:30.9	12:12:51.5	10:36:48.9	10:27:42.0	16:07:11.7	12:19:47.3	16:40:30.7	13:22:06.8
02/28/2024	W	12:12:34.8	2:35:40.6	12:15:50.0	10:37:53.1	10:26:54.0	16:03:54.6	12:16:18.8	16:36:41.3	13:18:18.8
02/29/2024	Th	12:12:23.6	3:16:17.0	12:18:49.2	10:38:56.2	10:26:05.6	16:00:38.1	12:12:50.3	16:32:52.0	13:14:30.9
03/01/2024	F	12:12:11.8	3:59:26.4	12:21:49.1	10:39:58.2	10:25:16.8	15:57:22.0	12:09:21.8	16:29:03.0	13:10:43.1
03/02/2024	Sat	12:11:59.6	4:46:11.3	12:24:49.4	10:40:59.2	10:24:27.7	15:54:06.3	12:05:53.4	16:25:14.1	13:06:55.3
03/03/2024	Sun	12:11:46.9	5:37:18.3	12:27:50.1	10:41:59.1	10:23:38.1		12:02:24.9		13:03:07.5
03/03/2024	Sun		15:23LQ				15:50:51.2		16:21:25.4	
03/04/2024	M	12:11:33.8	6:32:56.9	12:30:50.8	10:42:58.0	10:22:48.3	15:47:36.4	11:58:56.3	16:17:36.9	12:59:19.7
03/05/2024	Tu	12:11:20.3	7:32:16.3	12:33:51.3	10:43:55.8	10:21:58.0	15:44:22.1	11:55:27.8	16:13:48.6	12:55:32.0
03/06/2024	W	12:11:06.3	8:33:23.0	12:36:51.2	10:44:52.5	10:21:07.4	15:41:08.2	11:51:59.3	16:10:00.4	12:51:44.3
03/07/2024	Th	12:10:52.0	9:33:59.0	12:39:50.0	10:45:48.2	10:20:16.4	15:37:54.8	11:48:30.7	16:06:12.5	12:47:56.6
03/08/2024	F	12:10:37.3	10:32:19.0	12:42:47.1	10:46:42.9	10:19:25.0	15:34:41.7	11:45:02.1	16:02:24.7	12:44:08.9
03/09/2024	Sat	12:10:22.3	11:27:45.3	12:45:41.9	10:47:36.6	10:18:33.2	15:31:29.1	11:41:33.4	15:58:37.0	12:40:21.2
03/10/2024	Sun	12:10:06.9	9:00NM		10:48:29.2	10:17:41.0		11:38:04.7		
03/10/2024	Sun		12:20:42.6	12:48:33.6			15:28:16.9		15:54:49.6	12:36:33.6
03/11/2024	M	12:09:51.2	13:12:12.9	12:51:21.1	10:49:20.9	10:16:48.4	15:25:05.1	11:34:36.0	15:51:02.3	12:32:46.0
03/12/2024	Tu	12:09:35.2	14:03:30.9	12:54:03.6	10:50:11.6	10:15:55.5	15:21:53.7	11:31:07.2	15:47:15.1	12:28:58.4
03/13/2024	W	12:09:18.9	14:55:44.5	12:56:39.7	10:51:01.3	10:15:02.1	15:18:42.6	11:27:38.3	15:43:28.1	12:25:10.8
03/14/2024	Th	12:09:02.4	15:49:38.5	12:59:08.2	10:51:50.1	10:14:08.4	15:15:32.0	11:24:09.4	15:39:41.3	12:21:23.2
03/15/2024	F	12:08:45.6	16:45:17.6	13:01:27.6	10:52:37.9	10:13:14.3	15:12:21.7	11:20:40.4	15:35:54.7	12:17:35.6
03/16/2024	Sat	12:08:28.5	17:41:58.0	13:03:36.5	10:53:24.9	10:12:19.8	15:09:11.8	11:17:11.4	15:32:08.2	12:13:48.0
03/17/2024	Sun	12:08:11.3	4:11FQ	13:05:33.3	10:54:11.0	10:11:24.9	15:06:02.2	11:13:42.3	15:28:21.8	12:10:00.4
03/17/2024	Sun		18:38:15.7							
03/18/2024	M	12:07:53.8	19:32:36.7	13:07:16.3	10:54:56.2	10:10:29.6	15:02:53.0	11:10:13.1	15:24:35.6	12:06:12.8
03/19/2024	Tu	12:07:36.2	20:23:51.4	13:08:44.0	10:55:40.6	10:09:33.9	14:59:44.2	11:06:43.8	15:20:49.6	12:02:25.3
03/20/2024	W	3:06ME			10:56:24.3	10:08:37.9		11:03:14.4		11:58:37.7
03/20/2024	W	12:07:18.4	21:11:32.9	13:09:54.8			14:56:35.7		15:17:03.7	
03/21/2024	Th	12:07:00.5	21:55:53.5	13:10:47.1	10:57:07.2	10:07:41.5	14:53:27.5	10:59:45.0	15:13:17.9	11:54:50.1
03/22/2024	F	12:06:42.5	22:37:31.8	13:11:19.4	10:57:49.4	10:06:44.7	14:50:19.6	10:56:15.5	15:09:32.3	11:51:02.5
03/23/2024	Sat	12:06:24.5	23:17:19.7	13:11:30.4	10:58:30.9	10:05:47.6	14:47:12.1	10:52:45.8	15:05:46.8	11:47:14.9
03/24/2024	Sun	12:06:06.3	23:56:15.0	13:11:18.9	10:59:11.7	10:04:50.1	14:44:04.8	10:49:16.1	15:02:01.4	11:43:27.3
03/25/2024	M	12:05:48.1	7:00FM	13:10:43.7	10:59:51.9	10:03:52.3	14:40:57.9	10:45:46.3	14:58:16.2	11:39:39.7
03/26/2024	Tu	12:05:29.9	0:35:18.1	13:09:43.9	11:00:31.6	10:02:54.1	14:37:51.3	10:42:16.3	14:54:31.1	11:35:52.0
03/27/2024	W	12:05:11.8	1:15:30.2	13:08:18.7	11:01:10.7	10:01:55.6	14:34:45.0	10:38:46.3	14:50:46.2	11:32:04.4
03/28/2024	Th	12:04:53.6	1:57:52.8	13:06:27.7	11:01:49.3	10:00:56.8	14:31:39.0	10:35:16.1	14:47:01.4	11:28:16.7
03/29/2024	F	12:04:35.5	2:43:22.8	13:04:10.3	11:02:27.4	9:59:57.6	14:28:33.2	10:31:45.9	14:43:16.7	11:24:29.0
03/30/2024	Sat	12:04:17.5	3:32:43.4	13:01:26.6	11:03:05.1	9:58:58.1	14:25:27.8	10:28:15.5	14:39:32.1	11:20:41.3
03/31/2024	Sun	12:03:59.6	4:26:07.0	12:58:16.7	11:03:42.4	9:57:58.3	14:22:22.6	10:24:44.9	14:35:47.6	11:16:53.5
04/01/2024	M	12:03:41.8	5:22:57.7	12:54:40.9	11:04:19.4	9:56:58.2	14:19:17.7	10:21:14.3	14:32:03.3	11:13:05.8
04/02/2024	Tu		3:15LQ							
04/02/2024	Tu	12:03:24.1	6:21:46.2	12:50:40.2	11:04:56.0	9:55:57.8	14:16:13.1	10:17:43.5	14:28:19.0	11:09:18.0
04/03/2024	W	12:03:06.6	7:20:35.6	12:46:15.4	11:05:32.4	9:54:57.1	14:13:08.7	10:14:12.6	14:24:34.9	11:05:30.2
04/04/2024	Th	12:02:49.3	8:17:47.0	12:41:28.0	11:06:08.5	9:53:56.0	14:10:04.6	10:10:41.6	14:20:50.9	11:01:42.4
04/05/2024	F	12:02:32.2	9:12:34.6	12:36:19.6	11:06:44.4	9:52:54.7	14:07:00.8	10:07:10.4	14:17:07.0	10:57:54.5
04/06/2024	Sat	12:02:15.3	10:05:09.4	12:30:52.4	11:07:20.2	9:51:53.1	14:03:57.2	10:03:39.0	14:13:23.3	10:54:06.6
04/07/2024	Sun	12:01:58.6	10:56:23.7	12:25:08.7	11:07:55.8	9:50:51.2	14:00:53.9	10:00:07.5	14:09:39.6	10:50:18.6
04/08/2024	M	12:01:42.2	11:47:29.3	12:19:11.0	11:08:31.4	9:49:49.0	13:57:50.8	9:56:35.9	14:05:56.0	10:46:30.7
04/08/2024	M		18:21NM							
04/09/2024	Tu	12:01:26.0	12:39:39.9	12:13:02.1	11:09:06.9	9:48:46.5	13:54:47.9	9:53:04.1	14:02:12.5	10:42:42.7

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
04/10/2024	W	12:01:10.0	13:33:52.4	12:06:45.1	11:09:42.3	9:47:43.8	13:51:45.2	9:49:32.1	13:58:29.1	10:38:54.6
04/11/2024	Th	12:00:54.4	14:30:26.8	12:00:23.0	11:10:17.9	9:46:40.8	13:48:42.8	9:45:59.9	13:54:45.8	10:35:06.5
04/12/2024	F	12:00:39.0	15:28:47.4	11:53:58.8	11:10:53.4	9:45:37.5	13:45:40.6	9:42:27.6	13:51:02.6	10:31:18.4
04/13/2024	Sat	12:00:24.0	16:27:23.4	11:47:35.5	11:11:29.1	9:44:34.0	13:42:38.6	9:38:55.1	13:47:19.5	10:27:30.2
04/14/2024	Sun	12:00:09.2	17:24:18.6	11:41:16.1	11:12:04.9	9:43:30.2	13:39:36.7	9:35:22.5	13:43:36.4	10:23:41.9
04/15/2024	M	11:59:54.8	18:17:57.9	11:35:03.0	11:12:40.9	9:42:26.1	13:36:35.1	9:31:49.6	13:39:53.5	10:19:53.7
04/15/2024	M		19:13FQ							
04/16/2024	Tu	11:59:40.8	19:07:37.1	11:28:58.9	11:13:17.1	9:41:21.9	13:33:33.7	9:28:16.6	13:36:10.6	10:16:05.3
04/17/2024	W	11:59:27.1	19:53:23.1	11:23:05.6	11:13:53.6	9:40:17.4	13:30:32.5	9:24:43.3	13:32:27.8	10:12:16.9
04/18/2024	Th	11:59:13.7	20:35:56.3	11:17:25.2	11:14:30.4	9:39:12.6	13:27:31.4	9:21:09.9	13:28:45.1	10:08:28.5
04/19/2024	F	11:59:00.8	21:16:13.7	11:11:59.0	11:15:07.5	9:38:07.7	13:24:30.5	9:17:36.3	13:25:02.4	10:04:40.0
04/20/2024	Sat	11:58:48.3	21:55:18.4	11:06:48.3	11:15:45.0	9:37:02.5	13:21:29.8	9:14:02.5	13:21:19.8	10:00:51.4
04/21/2024	Sun	11:58:36.2	22:34:14.7	11:01:53.8	11:16:23.0	9:35:57.2	13:18:29.2	9:10:28.4	13:17:37.3	9:57:02.8
04/22/2024	M	11:58:24.6	23:14:07.2	10:57:16.3	11:17:01.4	9:34:51.7	13:15:28.9	9:06:54.2	13:13:54.8	9:53:14.2
04/23/2024	Tu	11:58:13.4	23:49FM	10:52:56.0	11:17:40.3	9:33:46.0	13:12:28.6	9:03:19.8	13:10:12.4	9:49:25.4
04/23/2024	Tu		23:55:59.2							
04/24/2024	W	11:58:02.6		10:48:53.2	11:18:19.7	9:32:40.1	13:09:28.5	8:59:45.1	13:06:30.0	9:45:36.6
04/25/2024	Th	11:57:52.4	0:40:49.8	10:45:07.7	11:18:59.8	9:31:34.0	13:06:28.6	8:56:10.2	13:02:47.7	9:41:47.8
04/26/2024	F	11:57:42.6	1:29:24.2	10:41:39.4	11:19:40.4	9:30:27.8	13:03:28.8	8:52:35.1	12:59:05.5	9:37:58.8
04/27/2024	Sat	11:57:33.4	2:21:58.3	10:38:28.0	11:20:21.7	9:29:21.5	13:00:29.2	8:48:59.8	12:55:23.3	9:34:09.8
04/28/2024	Sun	11:57:24.6	3:17:59.9	10:35:33.0	11:21:03.7	9:28:15.0	12:57:29.6	8:45:24.3	12:51:41.1	9:30:20.8
04/29/2024	M	11:57:16.4	4:16:02.4	10:32:54.2	11:21:46.4	9:27:08.4	12:54:30.3	8:41:48.5	12:47:59.0	9:26:31.6
04/30/2024	Tu	11:57:08.8	5:14:08.3	10:30:30.9	11:22:29.9	9:26:01.6	12:51:31.0	8:38:12.5	12:44:17.0	9:22:42.4
05/01/2024	W		6:10:33.7	10:28:22.5	11:23:14.1	9:24:54.7		8:34:36.3		9:18:53.2
05/01/2024	W	11:57:01.7	11:27LQ				12:48:31.9		12:40:34.9	
05/02/2024	Th	11:56:55.2	7:04:26.3	10:26:28.7	11:23:59.2	9:23:47.8	12:45:32.8	8:30:59.8	12:36:52.9	9:15:03.8
05/03/2024	F	11:56:49.2	7:55:51.9	10:24:48.8	11:24:45.1	9:22:40.7	12:42:33.9	8:27:23.1	12:33:11.0	9:11:14.4
05/04/2024	Sat	11:56:43.8	8:45:39.5	10:23:22.4	11:25:31.9	9:21:33.5	12:39:35.1	8:23:46.1	12:29:29.0	9:07:24.9
05/05/2024	Sun	11:56:39.0	9:35:02.0	10:22:08.8	11:26:19.6	9:20:26.2	12:36:36.4	8:20:08.9	12:25:47.2	9:03:35.3
05/06/2024	M	11:56:34.7	10:25:20.2	10:21:07.7	11:27:08.3	9:19:18.8	12:33:37.8	8:16:31.4	12:22:05.3	8:59:45.7
05/07/2024	Tu	11:56:31.1	11:17:47.1	10:20:18.6	11:27:57.9	9:18:11.3	12:30:39.3	8:12:53.6	12:18:23.4	8:55:55.9
05/08/2024	W	11:56:28.0	3:22NM	10:19:41.0	11:28:48.5	9:17:03.8		8:09:15.6		8:52:06.1
05/08/2024	W		12:13:09.6				12:27:40.9		12:14:41.6	
05/09/2024	Th	11:56:25.4	13:11:22.9	10:19:14.6	11:29:40.0	9:15:56.1	12:24:42.6	8:05:37.4	12:10:59.8	8:48:16.2
05/10/2024	F	11:56:23.5	14:11:14.1	10:18:59.1	11:30:32.6	9:14:48.4	12:21:44.3	8:01:58.8	12:07:18.0	8:44:26.2
05/11/2024	Sat	11:56:22.1	15:10:35.4	10:18:54.2	11:31:26.2	9:13:40.6	12:18:46.1	7:58:20.0	12:03:36.2	8:40:36.1
05/12/2024	Sun	11:56:21.2	16:07:14.6	10:18:59.6	11:32:20.9	9:12:32.8	12:15:48.0	7:54:40.9	11:59:54.4	8:36:45.9
05/13/2024	M	11:56:21.0	16:59:47.3	10:19:15.1	11:33:16.6	9:11:24.8	12:12:49.9	7:51:01.5	11:56:12.6	8:32:55.7
05/14/2024	Tu	11:56:21.2	17:47:54.6	10:19:40.5	11:34:13.3	9:10:16.9	12:09:51.9	7:47:21.9	11:52:30.8	8:29:05.3
05/15/2024	W	11:56:22.1	11:48FQ	10:20:15.7	11:35:11.2	9:09:08.9	12:06:53.9	7:43:42.0	11:48:49.1	8:25:14.9
05/15/2024	W		18:32:07.7							
05/16/2024	Th	11:56:23.4	19:13:24.7	10:21:00.7	11:36:10.2	9:08:00.8	12:03:56.0	7:40:01.7	11:45:07.3	8:21:24.3
05/17/2024	F	11:56:25.3	19:52:53.6	10:21:55.3	11:37:10.2	9:06:52.8	12:00:58.1	7:36:21.2	11:41:25.5	8:17:33.7
05/18/2024	Sat	11:56:27.8	20:31:44.7	10:22:59.6	11:38:11.4	9:05:44.7	11:58:00.2	7:32:40.4	11:37:43.7	8:13:43.0
05/19/2024	Sun	11:56:30.7	21:11:08.3	10:24:13.6	11:39:13.7	9:04:36.6	11:55:02.4	7:28:59.3	11:34:01.9	8:09:52.1
05/20/2024	M	11:56:34.3	21:52:13.9	10:25:37.3	11:40:17.1	9:03:28.4	11:52:04.6	7:25:17.9	11:30:20.1	8:06:01.2
05/21/2024	Tu	11:56:38.3	22:36:08.4	10:27:10.8	11:41:21.6	9:02:20.3	11:49:06.8	7:21:36.2	11:26:38.2	8:02:10.2
05/22/2024	W	11:56:42.8	23:23:48.1	10:28:54.3	11:42:27.2	9:01:12.2	11:46:09.0	7:17:54.2	11:22:56.4	7:58:19.1
05/23/2024	Th	11:56:47.9	13:53FM	10:30:47.9	11:43:33.9	9:00:04.1	11:43:11.3	7:14:11.9	11:19:14.5	7:54:27.9
05/24/2024	F	11:56:53.5	0:15:43.4	10:32:51.8	11:44:41.8	8:58:56.0	11:40:13.5	7:10:29.3	11:15:32.6	7:50:36.6
05/25/2024	Sat	11:56:59.5	1:11:36.3	10:35:06.2	11:45:50.7	8:57:48.0	11:37:15.8	7:06:46.4	11:11:50.6	7:46:45.1
05/26/2024	Sun	11:57:06.1	2:10:06.0	10:37:31.4	11:47:00.7	8:56:40.0	11:34:18.0	7:03:03.1	11:08:08.7	7:42:53.6
05/27/2024	M	11:57:13.1	3:09:04.1	10:40:07.4	11:48:11.8	8:55:32.0	11:31:20.3	6:59:19.6	11:04:26.7	7:39:02.0
05/28/2024	Tu	11:57:20.6	4:06:24.0	10:42:54.7	11:49:24.0	8:54:24.0	11:28:22.5	6:55:35.7	11:00:44.6	7:35:10.3
05/29/2024	W	11:57:28.6	5:00:50.3	10:45:53.4	11:50:37.2	8:53:16.2	11:25:24.8	6:51:51.5	10:57:02.6	7:31:18.4
05/30/2024	Th	11:57:37.1	5:52:14.3	10:49:03.8	11:51:51.5	8:52:08.3	11:22:27.0	6:48:07.0	10:53:20.5	7:27:26.5

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
	ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice									
05/30/2024	Th		17:13LQ							
05/31/2024	F	11:57:45.9	6:41:19.0	10:52:26.1	11:53:06.7	8:51:00.5	11:19:29.2	6:44:22.1	10:49:38.3	7:23:34.4
06/01/2024	Sat	11:57:55.2	7:29:16.8	10:56:00.5	11:54:22.9	8:49:52.8	11:16:31.3	6:40:36.9	10:45:56.1	7:19:42.3
06/02/2024	Sun	11:58:04.9	8:17:31.8	10:59:47.0	11:55:40.0	8:48:45.1	11:13:33.5	6:36:51.4	10:42:13.9	7:15:50.0
06/03/2024	M	11:58:15.0	9:07:27.0	11:03:45.8	11:56:58.0	8:47:37.5	11:10:35.6	6:33:05.6	10:38:31.6	7:11:57.7
06/04/2024	Tu	11:58:25.5	10:00:10.2	11:07:56.7	11:58:17.0	8:46:30.0	11:07:37.6	6:29:19.4	10:34:49.2	7:08:05.2
06/05/2024	W	11:58:36.2	10:56:12.1	11:12:19.8	11:59:36.7	8:45:22.5	11:04:39.6	6:25:32.9	10:31:06.8	7:04:12.6
06/06/2024	Th	11:58:47.3	11:55:01.7	11:16:54.6	12:00:57.2	8:44:15.1	11:01:41.6	6:21:46.0	10:27:24.4	7:00:19.9
06/06/2024	Th		12:38NM							
06/07/2024	F	11:58:58.7	12:54:56.3	11:21:40.7	12:02:18.5	8:43:07.7	10:58:43.4	6:17:58.8	10:23:41.9	6:56:27.0
06/08/2024	Sat	11:59:10.4	13:53:32.3	11:26:37.7	12:03:40.5	8:42:00.4	10:55:45.2	6:14:11.2	10:19:59.3	6:52:34.1
06/09/2024	Sun	11:59:22.3	14:48:44.7	11:31:44.7	12:05:03.1	8:40:53.2	10:52:47.0	6:10:23.3	10:16:16.6	6:48:41.1
06/10/2024	M	11:59:34.4	15:39:31.6	11:37:00.7	12:06:26.3	8:39:46.0	10:49:48.6	6:06:35.1	10:12:33.9	6:44:47.9
06/11/2024	Tu	11:59:46.7	16:25:56.5	11:42:24.8	12:07:50.0	8:38:38.9	10:46:50.2	6:02:46.5	10:08:51.1	6:40:54.6
06/12/2024	W	11:59:59.2	17:08:45.5	11:47:55.5	12:09:14.3	8:37:31.9	10:43:51.7	5:58:57.5	10:05:08.2	6:37:01.2
06/13/2024	Th	12:00:11.8	17:49:04.5	11:53:31.6	12:10:39.0	8:36:24.9	10:40:53.1	5:55:08.2	10:01:25.3	6:33:07.7
06/14/2024	F	12:00:24.6	5:18FQ	11:59:11.4	12:12:04.1	8:35:18.1	10:37:54.4	5:51:18.5	9:57:42.3	6:29:14.1
06/14/2024	F		18:28:05.7							
06/15/2024	Sat	12:00:37.4	19:07:02.4	12:04:53.3	12:13:29.5	8:34:11.3	10:34:55.6	5:47:28.5	9:53:59.1	6:25:20.4
06/16/2024	Sun	12:00:50.4	19:47:08.5	12:10:35.7	12:14:55.2	8:33:04.6	10:31:56.6	5:43:38.1	9:50:15.9	6:21:26.5
06/17/2024	M	12:01:03.3	20:29:37.1	12:16:17.0	12:16:21.1	8:31:58.0	10:28:57.6	5:39:47.3	9:46:32.7	6:17:32.5
06/18/2024	Tu	12:01:16.3	21:15:36.6	12:21:55.6	12:17:47.2	8:30:51.4	10:25:58.4	5:35:56.2	9:42:49.3	6:13:38.4
06/19/2024	W	12:01:29.3	22:05:58.3	12:27:30.0	12:19:13.3	8:29:45.0	10:22:59.1	5:32:04.8	9:39:05.8	6:09:44.2
06/20/2024	Th	12:01:42.3		12:32:58.8	12:20:39.6	8:28:38.7	10:19:59.7	5:28:12.9	9:35:22.2	6:05:49.9
06/20/2024	Th	20:51JS	23:00:53.8							
06/21/2024	F	12:01:55.3	23:59:30.0	12:38:20.8	12:22:05.8	8:27:32.4	10:17:00.1	5:24:20.7	9:31:38.6	6:01:55.5
06/22/2024	Sat	12:02:08.2	1:08FM	12:43:34.7	12:23:31.9	8:26:26.3	10:14:00.4	5:20:28.2	9:27:54.8	5:58:00.9
06/23/2024	Sun	12:02:21.1	0:59:45.2	12:48:39.8	12:24:57.9	8:25:20.2	10:11:00.6	5:16:35.3	9:24:11.0	5:54:06.2
06/24/2024	M	12:02:33.9	1:59:09.5	12:53:35.2	12:26:23.8	8:24:14.2	10:08:00.6	5:12:42.0	9:20:27.0	5:50:11.4
06/25/2024	Tu	12:02:46.5	2:55:48.3	12:58:20.2	12:27:49.4	8:23:08.4	10:05:00.5	5:08:48.4	9:16:42.9	5:46:16.5
06/26/2024	W	12:02:59.0	3:48:59.3	13:02:54.2	12:29:14.7	8:22:02.6	10:02:00.2	5:04:54.4	9:12:58.7	5:42:21.5
06/27/2024	Th	12:03:11.4	4:39:06.8	13:07:17.0	12:30:39.6	8:20:57.0	9:58:59.7	5:01:00.0	9:09:14.5	5:38:26.3
06/28/2024	F	12:03:23.7	5:27:16.3	13:11:28.1	12:32:04.2	8:19:51.4	9:55:59.1	4:57:05.2	9:05:30.0	5:34:31.0
06/28/2024	F		21:53LQ							
06/29/2024	Sat	12:03:35.7	6:14:50.7	13:15:27.4	12:33:28.3	8:18:45.9	9:52:58.3	4:53:10.1	9:01:45.5	5:30:35.6
06/30/2024	Sun	12:03:47.5	7:03:16.1	13:19:14.7	12:34:51.8	8:17:40.5	9:49:57.3	4:49:14.7	8:58:00.9	5:26:40.1
07/01/2024	M	12:03:59.1	7:53:49.3	13:22:50.0	12:36:14.8	8:16:35.2	9:46:56.1	4:45:18.8	8:54:16.1	5:22:44.5
07/02/2024	Tu	12:04:10.4	8:47:22.1	13:26:13.1	12:37:37.2	8:15:30.0	9:43:54.7	4:41:22.6	8:50:31.3	5:18:48.7
07/03/2024	W	12:04:21.5	9:43:58.8	13:29:24.3	12:38:59.0	8:14:24.8	9:40:53.1	4:37:26.0	8:46:46.3	5:14:52.9
07/04/2024	Th	12:04:32.2	10:42:37.7	13:32:23.4	12:40:20.0	8:13:19.7	9:37:51.4	4:33:29.1	8:43:01.1	5:10:56.9
07/05/2024	F	12:04:42.7	11:41:18.6	13:35:10.5	12:41:40.2	8:12:14.6	9:34:49.4	4:29:31.8	8:39:15.9	5:07:00.8
07/05/2024	F		22:57NM							
07/06/2024	Sat	12:04:52.7	12:37:46.9	13:37:45.8	12:42:59.6	8:11:09.6	9:31:47.1	4:25:34.1	8:35:30.5	5:03:04.6
07/07/2024	Sun	12:05:02.4	13:30:27.8	13:40:09.3	12:44:18.2	8:10:04.7	9:28:44.7	4:21:36.1	8:31:44.9	4:59:08.2
07/08/2024	M	12:05:11.7	14:18:50.6	13:42:21.1	12:45:35.8	8:08:59.8	9:25:42.0	4:17:37.6	8:27:59.3	4:55:11.8
07/09/2024	Tu	12:05:20.5	15:03:17.9	13:44:21.2	12:46:52.6	8:07:54.9	9:22:39.1	4:13:38.9	8:24:13.5	4:51:15.2
07/10/2024	W	12:05:29.0	15:44:43.5	13:46:09.8	12:48:08.3	8:06:50.1	9:19:35.9	4:09:39.7	8:20:27.5	4:47:18.5
07/11/2024	Th	12:05:36.9	16:24:14.3	13:47:46.9	12:49:23.0	8:05:45.2	9:16:32.4	4:05:40.3	8:16:41.4	4:43:21.7
07/12/2024	F	12:05:44.4	17:03:01.4	13:49:12.5	12:50:36.7	8:04:40.4	9:13:28.7	4:01:40.4	8:12:55.2	4:39:24.7
07/13/2024	Sat	12:05:51.4	17:42:17.2	13:50:26.7	12:51:49.3	8:03:35.7	9:10:24.8	3:57:40.2	8:09:08.8	4:35:27.7
07/13/2024	Sat		22:49FQ							
07/14/2024	Sun	12:05:57.9	18:23:15.2	13:51:29.5	12:53:00.8	8:02:30.9	9:07:20.5	3:53:39.6	8:05:22.2	4:31:30.5
07/15/2024	M	12:06:03.9	19:07:07.8	13:52:20.8	12:54:11.2	8:01:26.1	9:04:16.0	3:49:38.7	8:01:35.5	4:27:33.3
07/16/2024	Tu	12:06:09.3	19:55:00.0	13:53:00.6	12:55:20.5	8:00:21.4	9:01:11.2	3:45:37.5	7:57:48.7	4:23:35.9
07/17/2024	W	12:06:14.2	20:47:31.9	13:53:28.8	12:56:28.6	7:59:16.6	8:58:06.1	3:41:35.9	7:54:01.7	4:19:38.4
07/18/2024	Th	12:06:18.5	21:44:33.1	13:53:45.2	12:57:35.5	7:58:11.8	8:55:00.8	3:37:33.9	7:50:14.5	4:15:40.8

**Ephemeris transit times plus phases of the Moon and the seasons.**

All dates and times are UT1.

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
07/19/2024	F	12:06:22.3	22:44:40.7	13:53:49.9	12:58:41.3	7:57:07.0	8:51:55.1	3:33:31.7	7:46:27.2	4:11:43.0
07/20/2024	Sat	12:06:25.5	23:45:32.6	13:53:42.5	12:59:45.8	7:56:02.2	8:48:49.1	3:29:29.0	7:42:39.7	4:07:45.2
07/21/2024	Sun	12:06:28.2	10:17FM	13:53:22.9	13:00:49.2	7:54:57.4	8:45:42.8	3:25:26.1	7:38:52.1	4:03:47.3
07/22/2024	M	12:06:30.2	0:44:43.2	13:52:50.8	13:01:51.3	7:53:52.6	8:42:36.1	3:21:22.8	7:35:04.3	3:59:49.2
07/23/2024	Tu	12:06:31.7	1:40:44.1	13:52:06.0	13:02:52.3	7:52:47.7	8:39:29.2	3:17:19.2	7:31:16.3	3:55:51.0
07/24/2024	W	12:06:32.7	2:33:22.9	13:51:08.0	13:03:52.0	7:51:42.8	8:36:21.9	3:13:15.3	7:27:28.2	3:51:52.8
07/25/2024	Th	12:06:33.0	3:23:24.7	13:49:56.7	13:04:50.5	7:50:37.8	8:33:14.3	3:09:11.0	7:23:39.9	3:47:54.4
07/26/2024	F	12:06:32.8	4:12:04.6	13:48:31.5	13:05:47.9	7:49:32.7	8:30:06.3	3:05:06.4	7:19:51.4	3:43:55.9
07/27/2024	Sat	12:06:31.9	5:00:46.6	13:46:52.1	13:06:44.1	7:48:27.6	8:26:58.0	3:01:01.5	7:16:02.7	3:39:57.3
07/28/2024	Sun		2:52LQ					2:56:56.3		3:35:58.6
07/28/2024	Sun	12:06:30.6	5:50:49.6	13:44:58.1	13:07:39.1	7:47:22.4	8:23:49.3		7:12:13.9	
07/29/2024	M	12:06:28.6	6:43:13.3	13:42:48.8	13:08:32.9	7:46:17.2	8:20:40.2	2:52:50.8	7:08:24.9	3:31:59.8
07/30/2024	Tu	12:06:26.0	7:38:19.8	13:40:23.9	13:09:25.6	7:45:11.8	8:17:30.8	2:48:45.0	7:04:35.7	3:28:01.0
07/31/2024	W	12:06:22.8	8:35:35.7	13:37:42.8	13:10:17.2	7:44:06.2	8:14:21.0	2:44:38.8	7:00:46.4	3:24:02.0
08/01/2024	Th	12:06:19.1	9:33:30.1	13:34:45.1	13:11:07.6	7:43:00.6	8:11:10.8	2:40:32.4	6:56:56.8	3:20:02.9
08/02/2024	F	12:06:14.7	10:30:02.5	13:31:30.1	13:11:56.9	7:41:54.8	8:08:00.2	2:36:25.7	6:53:07.1	3:16:03.7
08/03/2024	Sat	12:06:09.8	11:23:30.5	13:27:57.6	13:12:45.2	7:40:48.8	8:04:49.2	2:32:18.7	6:49:17.2	3:12:04.4
08/04/2024	Sun	12:06:04.2	11:13NM			7:39:42.7	8:01:37.8	2:28:11.4	6:45:27.1	3:08:05.0
08/04/2024	Sun		12:13:03.0	13:24:06.9	13:13:32.3					
08/05/2024	M	12:05:58.1	12:58:42.2	13:19:57.9	13:14:18.4	7:38:36.4	7:58:25.9	2:24:03.8	6:41:36.8	3:04:05.5
08/06/2024	Tu	12:05:51.3	13:41:06.9	13:15:30.3	13:15:03.5	7:37:29.9	7:55:13.6	2:19:56.0	6:37:46.3	3:00:05.9
08/07/2024	W	12:05:43.9	14:21:14.4	13:10:43.9	13:15:47.6	7:36:23.1	7:52:00.9	2:15:47.9	6:33:55.7	2:56:06.2
08/08/2024	Th	12:05:36.0	15:00:09.2	13:05:39.0	13:16:30.7	7:35:16.2	7:48:47.7	2:11:39.6	6:30:04.8	2:52:06.5
08/09/2024	F	12:05:27.4	15:38:58.4	13:00:15.7	13:17:12.8	7:34:09.0	7:45:34.1	2:07:31.0	6:26:13.7	2:48:06.6
08/10/2024	Sat	12:05:18.3	16:18:50.4	12:54:34.8	13:17:54.1	7:33:01.5	7:42:20.0	2:03:22.1	6:22:22.5	2:44:06.7
08/11/2024	Sun	12:05:08.6	17:00:54.0	12:48:37.0	13:18:34.4	7:31:53.8	7:39:05.4	1:59:13.0	6:18:31.0	2:40:06.7
08/12/2024	M	12:04:58.3	15:19FQ	12:42:23.6	13:19:13.8	7:30:45.9	7:35:50.4	1:55:03.7	6:14:39.4	2:36:06.5
08/12/2024	M		17:46:14.9							
08/13/2024	Tu	12:04:47.4	18:35:45.6	12:35:56.1	13:19:52.5	7:29:37.6	7:32:34.9	1:50:54.2	6:10:47.6	2:32:06.4
08/14/2024	W	12:04:36.0	19:29:46.1	12:29:16.5	13:20:30.3	7:28:29.1	7:29:18.9	1:46:44.4	6:06:55.5	2:28:06.1
08/15/2024	Th	12:04:24.0	20:27:40.5	12:22:27.2	13:21:07.3	7:27:20.2	7:26:02.4	1:42:34.4	6:03:03.3	2:24:05.7
08/16/2024	F	12:04:11.4	21:27:47.7	12:15:30.9	13:21:43.6	7:26:11.1	7:22:45.4	1:38:24.2	5:59:10.8	2:20:05.3
08/17/2024	Sat	12:03:58.4	22:27:50.7	12:08:30.6	13:22:19.3	7:25:01.6	7:19:27.8	1:34:13.9	5:55:18.2	2:16:04.8
08/18/2024	Sun	12:03:44.8	23:25:52.9	12:01:29.7	13:22:54.2	7:23:51.8	7:16:09.8	1:30:03.3	5:51:25.4	2:12:04.2
08/19/2024	M	12:03:30.8	18:26FM	11:54:31.8	13:23:28.5	7:22:41.6	7:12:51.2	1:25:52.5	5:47:32.3	2:08:03.5
08/20/2024	Tu	12:03:16.2	0:21:01.1	11:47:40.5	13:24:02.3	7:21:31.1	7:09:32.1	1:21:41.6	5:43:39.1	2:04:02.8
08/21/2024	W	12:03:01.2	1:13:27.8	11:40:59.7	13:24:35.5	7:20:20.3	7:06:12.5	1:17:30.5	5:39:45.6	2:00:02.0
08/22/2024	Th	12:02:45.8	2:04:09.8	11:34:32.9	13:25:08.2	7:19:09.0	7:02:52.3	1:13:19.2	5:35:52.0	1:56:01.2
08/23/2024	F	12:02:29.9	2:54:23.8	11:28:23.7	13:25:40.5	7:17:57.4	6:59:31.6	1:09:07.8	5:31:58.1	1:52:00.2
08/24/2024	Sat	12:02:13.6	3:45:27.0	11:22:35.2	13:26:12.4	7:16:45.3	6:56:10.3	1:04:56.2	5:28:04.1	1:47:59.2
08/25/2024	Sun	12:01:57.0	4:38:21.3	11:17:10.4	13:26:43.9	7:15:32.9	6:52:48.4	1:00:44.5	5:24:09.8	1:43:58.2
08/26/2024	M		5:33:35.5			7:14:19.9	6:49:25.9	0:56:32.7	5:20:15.4	1:39:57.1
08/26/2024	M	12:01:39.9	9:26LQ	11:12:11.8	13:27:15.0					
08/27/2024	Tu	12:01:22.5	6:30:47.9	11:07:41.5	13:27:45.9	7:13:06.6	6:46:02.9	0:52:20.7	5:16:20.7	1:35:55.9
08/28/2024	W	12:01:04.7	7:28:41.7	11:03:41.0	13:28:16.5	7:11:52.7	6:42:39.2	0:48:08.6	5:12:25.8	1:31:54.6
08/29/2024	Th	12:00:46.6	8:25:27.4	11:00:11.6	13:28:47.0	7:10:38.4	6:39:15.0	0:43:56.4	5:08:30.7	1:27:53.3
08/30/2024	F	12:00:28.2	9:19:25.2	10:57:14.0	13:29:17.2	7:09:23.5	6:35:50.1	0:39:44.1	5:04:35.5	1:23:52.0
08/31/2024	Sat	12:00:09.5	10:09:38.7	10:54:48.4	13:29:47.4	7:08:08.1	6:32:24.6	0:35:31.7	5:00:40.0	1:19:50.6
09/01/2024	Sun	11:59:50.4	10:56:02.0	10:52:54.8	13:30:17.5	7:06:52.2	6:28:58.5	0:31:19.3	4:56:44.2	1:15:49.2
09/02/2024	M	11:59:31.1	11:39:06.1	10:51:32.5	13:30:47.5	7:05:35.7	6:25:31.7	0:27:06.7	4:52:48.3	1:11:47.7
09/03/2024	Tu	11:59:11.6	1:56NM	10:50:40.7		7:04:18.6	6:22:04.2	0:22:54.1	4:48:52.2	1:07:46.1
09/03/2024	Tu		12:19:42.3		13:31:17.6					
09/04/2024	W	11:58:51.7	12:58:50.0	10:50:18.3	13:31:47.6	7:03:00.9	6:18:36.2	0:18:41.4	4:44:55.9	1:03:44.5
09/05/2024	Th	11:58:31.7	13:37:31.4	10:50:23.6	13:32:17.8	7:01:42.6	6:15:07.4	0:14:28.7	4:40:59.3	0:59:42.9
09/06/2024	F	11:58:11.4	14:16:49.2	10:50:54.9	13:32:48.1	7:00:23.7	6:11:37.9	0:10:16.0	4:37:02.6	0:55:41.3
09/07/2024	Sat	11:57:50.9	14:57:45.9	10:51:50.1	13:33:18.6	6:59:04.1	6:08:07.8	0:06:03.2	4:33:05.6	0:51:39.6

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ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
09/08/2024	Sun	11:57:30.2	15:41:21.5	10:53:07.3	13:33:49.3	6:57:43.8	6:04:37.0	0:01:50.4	4:29:08.5	0:47:37.8
09/08/2024	Sun						23:57:37.6			
09/09/2024	M	11:57:09.4	16:28:27.4	10:54:43.9	13:34:20.2	6:56:22.9	6:01:05.5	23:53:24.8	4:25:11.1	0:43:36.1
09/10/2024	Tu	11:56:48.4	17:19:32.8	10:56:37.8	13:34:51.4	6:55:01.3	5:57:33.3	23:49:12.0	4:21:13.6	0:39:34.3
09/11/2024	W	11:56:27.2	6:06FQ	10:58:46.5	13:35:23.0	6:53:39.1	5:54:00.4		4:17:15.8	0:35:32.5
09/11/2024	W		18:14:27.0				23:44:59.2			
09/12/2024	Th	11:56:06.0	19:12:06.9	11:01:07.8	13:35:54.9	6:52:16.0	5:50:26.7	23:40:46.4	4:13:17.8	0:31:30.6
09/13/2024	F	11:55:44.6	20:10:46.8	11:03:39.3	13:36:27.2	6:50:52.3	5:46:52.4	23:36:33.7	4:09:19.7	0:27:28.8
09/14/2024	Sat	11:55:23.2	21:08:37.1	11:06:19.1	13:37:00.0	6:49:27.8	5:43:17.3	23:32:21.0	4:05:21.3	0:23:26.9
09/15/2024	Sun	11:55:01.7	22:04:26.7	11:09:05.3	13:37:33.2	6:48:02.6	5:39:41.4	23:28:08.4	4:01:22.7	0:19:25.0
09/16/2024	M	11:54:40.1	22:58:02.6	11:11:55.9	13:38:07.0	6:46:36.6	5:36:04.8	23:23:55.8	3:57:24.0	0:15:23.1
09/17/2024	Tu	11:54:18.6	23:50:00.8	11:14:49.7	13:38:41.3	6:45:09.9	5:32:27.5	23:19:43.3	3:53:25.0	0:11:21.2
09/18/2024	W	11:53:57.1	2:34FM	11:17:45.1	13:39:16.3	6:43:42.3	5:28:49.4	23:15:30.9	3:49:25.8	0:07:19.2
09/19/2024	Th	11:53:35.6	0:41:27.1	11:20:41.1	13:39:51.8	6:42:14.0	5:25:10.6	23:11:18.6	3:45:26.5	0:03:17.3
09/19/2024	Th									23:59:15.4
09/20/2024	F	11:53:14.2	1:33:36.6	11:23:36.8	13:40:28.1	6:40:44.8	5:21:30.9	23:07:06.3	3:41:26.9	23:55:13.4
09/21/2024	Sat	11:52:52.9	2:27:35.1	11:26:31.3	13:41:05.1	6:39:14.8	5:17:50.6	23:02:54.2	3:37:27.2	23:51:11.4
09/22/2024	Sun	11:52:31.7	3:23:58.4	11:29:24.0		6:37:44.0	5:14:09.4		3:33:27.3	
09/22/2024	Sun	12:44SE			13:41:42.9			22:58:42.2		23:47:09.5
09/23/2024	M	11:52:10.6	4:22:30.8	11:32:14.5	13:42:21.4	6:36:12.2	5:10:27.4	22:54:30.3	3:29:27.2	23:43:07.5
09/24/2024	Tu	11:51:49.7	5:21:55.9	11:35:02.4	13:43:00.8	6:34:39.6	5:06:44.6		3:25:26.9	
09/24/2024	Tu		18:50LQ					22:50:18.5		23:39:05.6
09/25/2024	W	11:51:28.9	6:20:17.1	11:37:47.5	13:43:41.1	6:33:06.1	5:03:01.1	22:46:06.9	3:21:26.4	23:35:03.6
09/26/2024	Th	11:51:08.4	7:15:43.9	11:40:29.5	13:44:22.2	6:31:31.6	4:59:16.7	22:41:55.4	3:17:25.7	23:31:01.7
09/27/2024	F	11:50:48.0	8:07:12.0	11:43:08.5	13:45:04.3	6:29:56.2	4:55:31.5	22:37:44.0	3:13:24.8	23:26:59.8
09/28/2024	Sat	11:50:27.9	8:54:32.3	11:45:44.3	13:45:47.3	6:28:19.8	4:51:45.4	22:33:32.8	3:09:23.8	23:22:57.9
09/29/2024	Sun	11:50:08.1	9:38:16.4	11:48:17.1	13:46:31.4	6:26:42.4	4:47:58.6	22:29:21.8	3:05:22.6	23:18:56.0
09/30/2024	M	11:49:48.5	10:19:17.6	11:50:46.7	13:47:16.4	6:25:03.9	4:44:10.9	22:25:11.0	3:01:21.2	23:14:54.1
10/01/2024	Tu	11:49:29.3	10:58:36.6	11:53:13.5	13:48:02.5	6:23:24.5	4:40:22.4	22:21:00.3	2:57:19.6	23:10:52.3
10/02/2024	W	11:49:10.3	11:37:15.9	11:55:37.3	13:48:49.6	6:21:43.9	4:36:33.0		2:53:17.9	
10/02/2024	W		18:49NM					22:16:49.9		23:06:50.4
10/03/2024	Th	11:48:51.6	12:16:17.0	11:57:58.5	13:49:37.8	6:20:02.3	4:32:42.7	22:12:39.7	2:49:16.0	23:02:48.6
10/04/2024	F	11:48:33.3	12:56:39.6	12:00:17.0	13:50:27.1	6:18:19.6	4:28:51.7	22:08:29.6	2:45:13.9	22:58:46.9
10/05/2024	Sat	11:48:15.4	13:39:20.0	12:02:33.2	13:51:17.5	6:16:35.8	4:24:59.7	22:04:19.8	2:41:11.6	22:54:45.1
10/06/2024	Sun	11:47:57.8	14:25:05.6	12:04:47.1	13:52:09.0	6:14:50.8	4:21:06.9	22:00:10.2	2:37:09.2	22:50:43.4
10/07/2024	M	11:47:40.6	15:14:24.8	12:06:58.9	13:53:01.7	6:13:04.7	4:17:13.3	21:56:00.9	2:33:06.6	22:46:41.8
10/08/2024	Tu	11:47:23.9	16:07:12.7	12:09:08.8	13:53:55.5	6:11:17.4	4:13:18.8	21:51:51.8	2:29:03.9	22:42:40.1
10/09/2024	W	11:47:07.5	17:02:40.3	12:11:16.9	13:54:50.4	6:09:29.0	4:09:23.4	21:47:42.9	2:25:01.0	22:38:38.6
10/10/2024	Th	11:46:51.6	17:59:20.5	12:13:23.4	13:55:46.5	6:07:39.3	4:05:27.2		2:20:58.0	
10/10/2024	Th		18:55FQ					21:43:34.3		22:34:37.0
10/11/2024	F	11:46:36.2	18:55:36.9	12:15:28.4	13:56:43.7	6:05:48.4	4:01:30.1	21:39:26.0	2:16:54.8	22:30:35.5
10/12/2024	Sat	11:46:21.3	19:50:20.1	12:17:32.2	13:57:42.1	6:03:56.2	3:57:32.1	21:35:17.9	2:12:51.5	22:26:34.1
10/13/2024	Sun	11:46:06.8	20:43:08.8	12:19:34.7	13:58:41.7	6:02:02.8	3:53:33.3	21:31:10.1	2:08:48.0	22:22:32.7
10/14/2024	M	11:45:52.9	21:34:28.8	12:21:36.3	13:59:42.4	6:00:08.2	3:49:33.6	21:27:02.6	2:04:44.4	22:18:31.3
10/15/2024	Tu	11:45:39.5	22:25:19.1	12:23:37.0	14:00:44.2	5:58:12.2	3:45:33.1	21:22:55.4	2:00:40.6	22:14:30.0
10/16/2024	W	11:45:26.7	23:16:55.5	12:25:36.9	14:01:47.1	5:56:14.9	3:41:31.7	21:18:48.4	1:56:36.8	22:10:28.8
10/17/2024	Th	11:45:14.4	11:26FM	12:27:36.2	14:02:51.2	5:54:16.3	3:37:29.4	21:14:41.8	1:52:32.8	22:06:27.6
10/18/2024	F	11:45:02.8	0:10:33.6	12:29:34.9	14:03:56.4	5:52:16.4	3:33:26.3	21:10:35.4	1:48:28.6	22:02:26.5
10/19/2024	Sat	11:44:51.8	1:07:07.7	12:31:33.2	14:05:02.7	5:50:15.0	3:29:22.3	21:06:29.4	1:44:24.4	21:58:25.4
10/20/2024	Sun	11:44:41.4	2:06:43.0	12:33:31.1	14:06:10.1	5:48:12.3	3:25:17.5	21:02:23.7	1:40:20.0	21:54:24.4
10/21/2024	M	11:44:31.7	3:08:12.5	12:35:28.7	14:07:18.5	5:46:08.1	3:21:11.9	20:58:18.3	1:36:15.5	21:50:23.5
10/22/2024	Tu	11:44:22.7	4:09:24.6	12:37:26.0	14:08:28.0	5:44:02.5	3:17:05.4	20:54:13.2	1:32:10.9	21:46:22.6
10/23/2024	W	11:44:14.4	5:07:54.8	12:39:23.2	14:09:38.5	5:41:55.4	3:12:58.0	20:50:08.4	1:28:06.2	21:42:21.9
10/24/2024	Th		6:02:05.9			5:39:46.7	3:08:49.8		1:24:01.4	
10/24/2024	Th	11:44:06.8	8:03LQ	12:41:20.1	14:10:50.0			20:46:04.0		21:38:21.1
10/25/2024	F	11:44:00.0	6:51:31.6	12:43:16.9	14:12:02.5	5:37:36.6	3:04:40.8	20:41:59.9	1:19:56.4	21:34:20.5

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
10/26/2024	Sat	11:43:53.9	7:36:41.3	12:45:13.5	14:13:15.9	5:35:24.8	3:00:30.9	20:37:56.1	1:15:51.4	21:30:19.9
10/27/2024	Sun	11:43:48.5	8:18:33.2	12:47:09.8	14:14:30.1	5:33:11.4	2:56:20.2	20:33:52.7	1:11:46.3	21:26:19.4
10/28/2024	M	11:43:43.9	8:58:15.5	12:49:05.8	14:15:45.2	5:30:56.4	2:52:08.7	20:29:49.7	1:07:41.1	21:22:19.0
10/29/2024	Tu	11:43:40.1	9:36:56.9	12:51:01.4	14:17:01.1	5:28:39.6	2:47:56.4	20:25:47.0	1:03:35.8	21:18:18.7
10/30/2024	W	11:43:37.1	10:15:43.9	12:52:56.5	14:18:17.7	5:26:21.2	2:43:43.3	20:21:44.6	0:59:30.4	21:14:18.4
10/31/2024	Th	11:43:34.8	10:55:40.0	12:54:50.9	14:19:35.1	5:24:01.0	2:39:29.4	20:17:42.6	0:55:25.0	21:10:18.3
11/01/2024	F	11:43:33.4	11:37:44.1			5:21:39.1	2:35:14.8		0:51:19.4	
11/01/2024	F		12:47NM	12:56:44.4	14:20:53.0			20:13:41.0		21:06:18.2
11/02/2024	Sat	11:43:32.8	12:22:46.2	12:58:36.9	14:22:11.6	5:19:15.3	2:30:59.3	20:09:39.7	0:47:13.8	21:02:18.2
11/03/2024	Sun	11:43:33.0	13:11:17.4	13:00:28.0	14:23:30.7	5:16:49.7	2:26:43.1	20:05:38.9	0:43:08.2	20:58:18.3
11/04/2024	M	11:43:34.0	14:03:15.7	13:02:17.4	14:24:50.2	5:14:22.3	2:22:26.2	20:01:38.3	0:39:02.4	20:54:18.5
11/05/2024	Tu	11:43:35.8	14:57:54.0	13:04:04.7	14:26:10.1	5:11:52.9	2:18:08.5	19:57:38.2	0:34:56.6	20:50:18.8
11/06/2024	W	11:43:38.4	15:53:45.4	13:05:49.4	14:27:30.4	5:09:21.6	2:13:50.1	19:53:38.5	0:30:50.8	20:46:19.2
11/07/2024	Th	11:43:41.9	16:49:10.1	13:07:31.2	14:28:50.9	5:06:48.3	2:09:31.0	19:49:39.1	0:26:44.9	20:42:19.7
11/08/2024	F	11:43:46.2	17:42:53.2	13:09:09.3	14:30:11.6	5:04:13.0	2:05:11.2	19:45:40.1	0:22:39.0	20:38:20.3
11/09/2024	Sat	11:43:51.3	5:55FQ	13:10:43.1	14:31:32.4	5:01:35.7	2:00:50.8		0:18:33.0	
11/09/2024	Sat		18:34:27.6					19:41:41.5		20:34:21.0
11/10/2024	Sun	11:43:57.2	19:24:14.1	13:12:11.9	14:32:53.2	4:58:56.3	1:56:29.7	19:37:43.3	0:14:27.0	20:30:21.8
11/11/2024	M	11:44:04.0	20:13:09.1	13:13:34.7	14:34:14.0	4:56:14.9	1:52:07.9	19:33:45.4	0:10:21.0	20:26:22.7
11/12/2024	Tu	11:44:11.6	21:02:29.6	13:14:50.4	14:35:34.6	4:53:31.3	1:47:45.6	19:29:48.0	0:06:14.9	20:22:23.7
11/13/2024	W	11:44:20.0	21:53:40.4	13:15:58.1	14:36:55.1	4:50:45.5	1:43:22.6	19:25:50.9	0:02:08.8	20:18:24.8
11/13/2024	W								23:58:02.7	
11/14/2024	Th	11:44:29.3	22:47:58.5	13:16:56.3	14:38:15.4	4:47:57.5	1:38:59.1	19:21:54.3	23:53:56.6	20:14:26.0
11/15/2024	F	11:44:39.4	21:29FM	13:17:43.6	14:39:35.2	4:45:07.3	1:34:35.0	19:17:58.0		20:10:27.3
11/15/2024	F		23:46:07.6						23:49:50.5	
11/16/2024	Sat	11:44:50.4		13:18:18.3	14:40:54.7	4:42:14.7	1:30:10.3	19:14:02.1	23:45:44.3	20:06:28.8
11/17/2024	Sun	11:45:02.2	0:47:43.8	13:18:38.6	14:42:13.7	4:39:19.9	1:25:45.2	19:10:06.6	23:41:38.2	20:02:30.3
11/18/2024	M	11:45:14.8	1:50:54.9	13:18:42.3	14:43:32.2	4:36:22.7	1:21:19.5	19:06:11.5	23:37:32.1	19:58:31.9
11/19/2024	Tu	11:45:28.2	2:52:49.2	13:18:27.2	14:44:50.1	4:33:23.0	1:16:53.3	19:02:16.7	23:33:26.0	19:54:33.7
11/20/2024	W	11:45:42.5	3:50:52.8	13:17:50.6	14:46:07.2	4:30:20.8	1:12:26.7	18:58:22.4	23:29:19.9	19:50:35.6
11/21/2024	Th	11:45:57.7	4:43:48.8	13:16:49.7	14:47:23.7	4:27:16.2	1:07:59.6	18:54:28.5	23:25:13.8	19:46:37.6
11/22/2024	F	11:46:13.6	5:31:41.4	13:15:21.5	14:48:39.3	4:24:08.9	1:03:32.1	18:50:34.9	23:21:07.7	19:42:39.7
11/23/2024	Sat		1:28LQ			4:20:59.0	0:59:04.1			
11/23/2024	Sat	11:46:30.3	6:15:23.9	13:13:22.9	14:49:54.0			18:46:41.7	23:17:01.7	19:38:41.9
11/24/2024	Sun	11:46:47.8	6:56:09.8	13:10:50.3	14:51:07.8	4:17:46.4	0:54:35.8	18:42:49.0	23:12:55.7	19:34:44.3
11/25/2024	M	11:47:06.1	7:35:15.7	13:07:40.5	14:52:20.6	4:14:31.1	0:50:07.2	18:38:56.6	23:08:49.7	19:30:46.7
11/26/2024	Tu	11:47:25.2	8:13:55.9	13:03:50.4	14:53:32.2	4:11:13.0	0:45:38.2	18:35:04.6	23:04:43.8	19:26:49.3
11/27/2024	W	11:47:45.0	8:53:21.2	12:59:17.1	14:54:42.8	4:07:52.1	0:41:08.9	18:31:13.0	23:00:37.9	19:22:52.0
11/28/2024	Th	11:48:05.5	9:34:38.2	12:53:58.4	14:55:52.1	4:04:28.2	0:36:39.3	18:27:21.8	22:56:32.1	19:18:54.8
11/29/2024	F	11:48:26.8	10:18:46.3	12:47:53.2	14:57:00.2	4:01:01.5	0:32:09.5	18:23:31.0	22:52:26.3	19:14:57.8
11/30/2024	Sat	11:48:48.7	11:06:28.9	12:41:01.7	14:58:07.0	3:57:31.7	0:27:39.4	18:19:40.6	22:48:20.5	19:11:00.8
12/01/2024	Sun	11:49:11.3	6:21NM			3:53:58.9	0:23:09.1			
12/01/2024	Sun		11:57:57.7	12:33:25.9	14:59:12.4			18:15:50.5	22:44:14.9	19:07:04.0
12/02/2024	M	11:49:34.5	12:52:36.4	12:25:09.8	15:00:16.3	3:50:23.0	0:18:38.7	18:12:00.9	22:40:09.3	19:03:07.3
12/03/2024	Tu	11:49:58.3	13:48:57.5	12:16:19.5	15:01:18.8	3:46:44.0	0:14:08.1	18:08:11.6	22:36:03.8	18:59:10.8
12/04/2024	W	11:50:22.7	14:45:06.8	12:07:03.3	15:02:19.7	3:43:01.9	0:09:37.4	18:04:22.7	22:31:58.3	18:55:14.4
12/05/2024	Th	11:50:47.6	15:39:27.4	11:57:31.2	15:03:19.1	3:39:16.5	0:05:06.6	18:00:34.2	22:27:52.9	18:51:18.0
12/06/2024	F	11:51:13.0	16:31:12.3	11:47:54.3	15:04:16.8	3:35:28.0	0:00:35.8	17:56:46.1	22:23:47.6	18:47:21.9
12/06/2024	F								23:56:04.9	
12/07/2024	Sat	11:51:39.0	17:20:30.1	11:38:23.9	15:05:12.8	3:31:36.1	23:51:34.0	17:52:58.3	22:19:42.4	18:43:25.8
12/08/2024	Sun	11:52:05.4	15:27FQ	11:29:10.8	15:06:07.0	3:27:41.0		17:49:10.9		
12/08/2024	Sun		18:08:10.8						22:15:37.3	18:39:29.9
12/09/2024	M	11:52:32.2	18:55:29.1	11:20:24.5	15:06:59.6	3:23:42.5	23:42:32.3	17:45:23.9	22:11:32.3	18:35:34.1
12/10/2024	Tu	11:52:59.4	19:43:51.7	11:12:12.7	15:07:50.2	3:19:40.7	23:38:01.5	17:41:37.3	22:07:27.4	18:31:38.4
12/11/2024	W	11:53:27.0	20:34:45.7	11:04:41.0	15:08:39.1	3:15:35.4	23:33:30.8	17:37:51.0	22:03:22.6	18:27:42.8
12/12/2024	Th	11:53:55.0	21:29:22.6	10:57:52.7	15:09:26.1	3:11:26.8	23:29:00.3	17:34:05.1	21:59:17.9	18:23:47.4

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
12/13/2024	F	11:54:23.2	22:28:09.6	10:51:49.3	15:10:11.1	3:07:14.8	23:24:30.0	17:30:19.5	21:55:13.4	18:19:52.1
12/14/2024	Sat	11:54:51.8	23:30:14.4	10:46:30.8	15:10:54.3	3:02:59.3	23:19:59.8	17:26:34.3	21:51:08.9	18:15:57.0
12/15/2024	Sun	11:55:20.6	9:02FM	10:41:55.8	15:11:35.4	2:58:40.3	23:15:29.8	17:22:49.5	21:47:04.5	18:12:01.9
12/16/2024	M	11:55:49.7	0:33:15.5	10:38:02.2	15:12:14.6	2:54:17.9	23:11:00.0	17:19:05.0	21:43:00.3	18:08:07.0
12/17/2024	Tu	11:56:18.9	1:34:12.0	10:34:47.2	15:12:51.8	2:49:51.9	23:06:30.5	17:15:20.8	21:38:56.2	18:04:12.2
12/18/2024	W	11:56:48.3	2:30:44.9	10:32:07.8	15:13:27.0	2:45:22.5	23:02:01.2	17:11:37.0	21:34:52.3	18:00:17.5
12/19/2024	Th	11:57:17.9	3:22:03.3	10:30:01.0	15:14:00.2	2:40:49.5	22:57:32.3	17:07:53.6	21:30:48.4	17:56:23.0
12/20/2024	F	11:57:47.6	4:08:31.0	10:28:23.8	15:14:31.4	2:36:13.0	22:53:03.7	17:04:10.4	21:26:44.7	17:52:28.6
12/21/2024	Sat	9:21DS	4:51:11.9	10:27:13.1		2:31:33.1				
12/21/2024	Sat	11:58:17.4			15:15:00.4		22:48:35.4	17:00:27.7	21:22:41.1	17:48:34.3
12/22/2024	Sun	11:58:47.3	5:31:23.4	10:26:26.5	15:15:27.5	2:26:49.6		16:56:45.2	21:18:37.7	17:44:40.1
12/22/2024	Sun		22:18LQ				22:44:07.5			
12/23/2024	M	11:59:17.1	6:10:24.0	10:26:01.3	15:15:52.4	2:22:02.6	22:39:40.0	16:53:03.1	21:14:34.4	17:40:46.1
12/24/2024	Tu	11:59:46.9	6:49:29.4	10:25:55.4	15:16:15.3	2:17:12.3	22:35:12.9	16:49:21.3	21:10:31.3	17:36:52.2
12/25/2024	W	12:00:16.7	7:29:52.2	10:26:06.8	15:16:36.1	2:12:18.5	22:30:46.3	16:45:39.8	21:06:28.4	17:32:58.4
12/26/2024	Th	12:00:46.4	8:12:40.4	10:26:33.7	15:16:54.8	2:07:21.4	22:26:20.1	16:41:58.7	21:02:25.5	17:29:04.7
12/27/2024	F	12:01:16.0	8:58:52.0	10:27:14.4	15:17:11.4	2:02:21.0	22:21:54.5	16:38:17.9	21:08:22.9	17:25:11.2
12/28/2024	Sat	12:01:45.4	9:49:01.4	10:28:07.7	15:17:25.9	1:57:17.5	22:17:29.3	16:34:37.4	20:54:20.4	17:21:17.8
12/29/2024	Sun	12:02:14.6	10:43:00.1	10:29:12.2	15:17:38.2	1:52:10.8	22:13:04.6	16:30:57.2	20:50:18.1	17:17:24.5
12/30/2024	M	12:02:43.6	11:39:41.8	10:30:26.8	15:17:48.4	1:47:01.1	22:08:40.6	16:27:17.3	20:46:15.9	17:13:31.3
12/30/2024	M		22:27NM							
12/31/2024	Tu	12:03:12.3	12:37:11.8	10:31:50.6	15:17:56.5	1:41:48.4	22:04:17.0	16:23:37.7	20:42:13.9	17:09:38.3
01/01/2025	W	12:03:40.8	13:33:28.2	10:33:22.7	15:18:02.4	1:36:33.0	21:59:54.1	16:19:58.5	20:38:12.1	17:05:45.3
01/02/2025	Th	12:04:08.8	14:27:09.9	10:35:02.4	15:18:06.1	1:31:14.8	21:55:31.8	16:16:19.5	20:34:10.4	17:01:52.5
01/03/2025	F	12:04:36.5	15:17:57.0	10:36:49.0	15:18:07.5	1:25:54.2	21:51:10.1	16:12:40.8	20:30:09.0	16:57:59.9
01/04/2025	Sat	12:05:03.8	16:06:22.6	10:38:41.9	15:18:06.8	1:20:31.1	21:46:49.1	16:09:02.4	20:26:07.7	16:54:07.3
01/05/2025	Sun	12:05:30.6	16:53:32.6	10:40:40.5	15:18:03.9	1:15:05.8	21:42:28.8	16:05:24.3	20:22:06.6	16:50:14.8
01/06/2025	M	12:05:57.0	17:40:49.1	10:42:44.4	15:17:58.6	1:09:38.4	21:38:09.1	16:01:46.5	20:18:05.7	16:46:22.5
01/06/2025	M		23:56FQ							
01/07/2025	Tu	12:06:22.9	18:29:38.9	10:44:53.1	15:17:51.2	1:04:09.0	21:33:50.1	15:58:08.9	20:14:05.0	16:42:30.3
01/08/2025	W	12:06:48.2	19:21:20.9	10:47:06.3	15:17:41.4	0:58:38.0	21:29:31.8	15:54:31.6	20:10:04.5	16:38:38.2
01/09/2025	Th	12:07:13.0	20:16:47.0	10:49:23.7	15:17:29.2	0:53:05.4	21:25:14.3	15:50:54.6	20:06:04.1	16:34:46.2
01/10/2025	F	12:07:37.2	21:15:53.2	10:51:44.8	15:17:14.8	0:47:31.4	21:20:57.4	15:47:17.8	20:02:04.0	16:30:54.4
01/11/2025	Sat	12:08:00.9	22:17:15.1	10:54:09.5	15:16:57.9	0:41:56.2	21:16:41.4	15:43:41.3	19:58:04.0	16:27:02.6
01/12/2025	Sun	12:08:23.9	23:18:21.5	10:56:37.5	15:16:38.7	0:36:20.0	21:12:26.0	15:40:05.1	19:54:04.3	16:23:11.0
01/13/2025	M	12:08:46.3	22:27FM	10:59:08.5	15:16:17.1	0:30:43.0	21:08:11.5	15:36:29.1	19:50:04.7	16:19:19.4
01/14/2025	Tu	12:09:08.0	0:16:35.9	11:01:42.3	15:15:53.0	0:25:05.4	21:03:57.7	15:32:53.4	19:46:05.3	16:15:28.0
01/15/2025	W	12:09:29.1	1:10:21.1	11:04:18.7	15:15:26.5	0:19:27.4	20:59:44.7	15:29:17.8	19:42:06.2	16:11:36.7
01/16/2025	Th	12:09:49.5	1:59:18.0	11:06:57.5	15:14:57.4	0:13:49.2	20:55:32.4	15:25:42.6	19:38:07.2	16:07:45.5
01/17/2025	F	12:10:09.2	2:44:04.5	11:09:38.5	15:14:25.8	0:08:10.9	20:51:21.0	15:22:07.5	19:34:08.5	16:03:54.3
01/18/2025	Sat	12:10:28.2	3:25:45.8	11:12:21.6	15:13:51.7	0:02:32.8	20:47:10.4	15:18:32.7	19:30:09.9	16:00:03.3
01/18/2025	Sat					23:56:55.2				
01/19/2025	Sun	12:10:46.6	4:05:35.7	11:15:06.7	15:13:14.9	23:51:18.1	20:43:00.6	15:14:58.2	19:26:11.6	15:56:12.4
01/20/2025	M	12:11:04.1	4:44:48.3	11:17:53.4	15:12:35.5	23:45:41.8	20:38:51.6	15:11:23.8	19:22:13.4	15:52:21.6
01/21/2025	Tu	12:11:21.0	5:24:35.8	11:20:41.9	15:11:53.5			15:07:49.7	19:18:15.5	15:48:30.9
01/21/2025	Tu		20:31LQ			23:40:06.5	20:34:43.5			
01/22/2025	W	12:11:37.1	6:06:07.6	11:23:31.8	15:11:08.6	23:34:32.4	20:30:36.2	15:04:15.8	19:14:17.8	15:44:40.4
01/23/2025	Th	12:11:52.5	6:50:27.6	11:26:23.1	15:10:21.0	23:28:59.7	20:26:29.7	15:00:42.1	19:10:20.3	15:40:49.9
01/24/2025	F	12:12:07.0	7:38:25.7	11:29:15.6	15:09:30.5	23:23:28.5	20:22:24.1	14:57:08.6	19:06:23.0	15:36:59.5
01/25/2025	Sat	12:12:20.8	8:30:22.3	11:32:09.3	15:08:37.1	23:17:59.1	20:18:19.3	14:53:35.3	19:02:25.9	15:33:09.2
01/26/2025	Sun	12:12:33.9	9:25:48.7	11:35:04.0	15:07:40.7	23:12:31.7	20:14:15.4	14:50:02.2	18:58:29.0	15:29:18.9
01/27/2025	M	12:12:46.1	10:23:20.0	11:37:59.7	15:06:41.2	23:07:06.3	20:10:12.3	14:46:29.3	18:54:32.3	15:25:28.8
01/28/2025	Tu	12:12:57.5	11:20:56.7	11:40:56.3	15:05:38.6	23:01:43.2	20:06:10.1	14:42:56.6	18:50:35.9	15:21:38.8
01/29/2025	W	12:13:08.1	12:16:51.3	11:43:53.6						
01/29/2025	W		12:36NM		15:04:32.7	22:56:22.5	20:02:08.8	14:39:24.0	18:46:39.6	15:17:48.9
01/30/2025	Th	12:13:17.9	13:10:07.4	11:46:51.6	15:03:23.5	22:51:04.4	19:58:08.3	14:35:51.7	18:42:43.6	15:13:59.0



**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
01/31/2025	F	12:13:26.9	14:00:47.9	11:49:50.3	15:02:10.9	22:45:49.0	19:54:08.7	14:32:19.5	18:38:47.8	15:10:09.3
02/01/2025	Sat	12:13:35.1	14:49:40.1	11:52:49.5	15:00:54.7	22:40:36.4	19:50:10.0	14:28:47.5	18:34:52.2	15:06:19.6
02/02/2025	Sun	12:13:42.4	15:37:56.1	11:55:49.1	14:59:34.8	22:35:26.8	19:46:12.2	14:25:15.7	18:30:56.9	15:02:30.0
02/03/2025	M	12:13:48.9	16:26:56.8	11:58:49.2	14:58:11.1	22:30:20.2	19:42:15.2	14:21:44.0	18:27:01.7	14:58:40.5
02/04/2025	Tu	12:13:54.5	17:17:59.5	12:01:49.7	14:56:43.5	22:25:16.7	19:38:19.1	14:18:12.5	18:23:06.8	14:54:51.1
02/05/2025	W	12:13:59.3	8:02FQ	12:04:50.4	14:55:11.8			14:14:41.1		14:51:01.8
02/05/2025	W		18:12:00.9			22:20:16.4	19:34:23.9		18:19:12.0	
02/06/2025	Th	12:14:03.3	19:09:14.9	12:07:51.4	14:53:35.9	22:15:19.4	19:30:29.5	14:11:09.9	18:15:17.5	14:47:12.5
02/07/2025	F	12:14:06.5	20:08:50.3	12:10:52.6	14:51:55.6	22:10:25.6	19:26:36.0	14:07:38.9	18:11:23.2	14:43:23.3
02/08/2025	Sat	12:14:08.9	21:08:51.8	12:13:53.9	14:50:10.7	22:05:35.3	19:22:43.3	14:04:07.9	18:07:29.2	14:39:34.2
02/09/2025	Sun	12:14:10.5	22:07:00.2	12:16:55.2	14:48:21.1	22:00:48.3	19:18:51.5	14:00:37.1	18:03:35.3	14:35:45.2
02/10/2025	M	12:14:11.2	23:01:29.3	12:19:56.5	14:46:26.7	21:56:04.8	19:15:00.5	13:57:06.5	17:59:41.6	14:31:56.2
02/11/2025	Tu	12:14:11.3	23:51:37.2	12:22:57.6	14:44:27.2	21:51:24.6	19:11:10.4	13:53:35.9	17:55:48.2	14:28:07.3
02/12/2025	W	12:14:10.5	13:53FM	12:25:58.5	14:42:22.5	21:46:48.0	19:07:21.2	13:50:05.5	17:51:55.0	14:24:18.5
02/13/2025	Th	12:14:09.0	0:37:39.6	12:28:58.9	14:40:12.4	21:42:14.8	19:03:32.7	13:46:35.2	17:48:01.9	14:20:29.7
02/14/2025	F	12:14:06.7	1:20:26.5	12:31:58.8	14:37:56.6	21:37:45.0	18:59:45.1	13:43:05.0	17:44:09.1	14:16:41.0
02/15/2025	Sat	12:14:03.8	2:01:02.1	12:34:57.9	14:35:35.1	21:33:18.7	18:55:58.4	13:39:34.9	17:40:16.5	14:12:52.3
02/16/2025	Sun	12:14:00.1	2:40:34.1	12:37:56.0	14:33:07.6	21:28:55.8	18:52:12.4	13:36:05.0	17:36:24.1	14:09:03.8
02/17/2025	M	12:13:55.7	3:20:09.6	12:40:52.8	14:30:33.9	21:24:36.4	18:48:27.3	13:32:35.1	17:32:31.9	14:05:15.2
02/18/2025	Tu	12:13:50.7	4:00:53.4	12:43:47.9	14:27:53.7	21:20:20.4	18:44:43.0	13:29:05.3	17:28:39.9	14:01:26.8
02/19/2025	W	12:13:45.0	4:43:46.6	12:46:40.8	14:25:07.0	21:16:07.8	18:40:59.5	13:25:35.7	17:24:48.2	13:57:38.4
02/20/2025	Th	12:13:38.6	5:29:41.2	12:49:31.1	14:22:13.4			13:22:06.1	17:20:56.6	13:53:50.0
02/20/2025	Th		17:33LQ			21:11:58.6	18:37:16.8			
02/21/2025	F	12:13:31.7	6:19:09.8	12:52:18.2	14:19:12.8	21:07:52.7	18:33:34.9	13:18:36.6	17:17:05.2	13:50:01.7
02/22/2025	Sat	12:13:24.1	7:12:10.3	12:55:01.2	14:16:05.0	21:03:50.2	18:29:53.8	13:15:07.2	17:13:14.1	13:46:13.5
02/23/2025	Sun	12:13:15.9	8:07:53.7	12:57:39.4	14:12:49.7	20:59:50.9	18:26:13.5	13:11:37.8	17:09:23.1	13:42:25.3
02/24/2025	M	12:13:07.1	9:04:49.1	13:00:11.8	14:09:26.7	20:55:54.9	18:22:34.0	13:08:08.6	17:05:32.3	13:38:37.1
02/25/2025	Tu	12:12:57.7	10:01:14.1	13:02:37.2	14:05:55.9	20:52:02.1	18:18:55.3	13:04:39.4	17:01:41.8	13:34:49.0
02/26/2025	W	12:12:47.8	10:55:53.8	13:04:54.5	14:02:17.1	20:48:12.5	18:15:17.3	13:01:10.2	16:57:51.4	13:31:00.9
02/27/2025	Th	12:12:37.3	11:48:23.7	13:07:02.1	13:58:30.0	20:44:26.1	18:11:40.2	12:57:41.2	16:54:01.3	13:27:12.9
02/28/2025	F	12:12:26.3	0:45NM							
02/28/2025	F		12:39:07.8	13:08:58.7	13:54:34.7	20:40:42.7	18:08:03.7	12:54:12.2	16:50:11.3	13:23:24.9
03/01/2025	Sat	12:12:14.8	13:29:03.6	13:10:42.4	13:50:30.8	20:37:02.4	18:04:28.1	12:50:43.2	16:46:21.5	13:19:37.0
03/02/2025	Sun	12:12:02.8	14:19:24.6	13:12:11.5	13:46:18.3	20:33:25.1	18:00:53.2	12:47:14.3	16:42:31.9	13:15:49.1
03/03/2025	M	12:11:50.3	15:11:25.2	13:13:24.3	13:41:57.2	20:29:50.8	17:57:19.0	12:43:45.4	16:38:42.6	13:12:01.2
03/04/2025	Tu	12:11:37.3	16:06:03.1	13:14:18.7	13:37:27.3	20:26:19.4	17:53:45.5	12:40:16.6	16:34:53.4	13:08:13.3
03/05/2025	W	12:11:23.9	17:03:36.4	13:14:53.0	13:32:48.7	20:22:50.7	17:50:12.8	12:36:47.8	16:31:04.4	13:04:25.5
03/06/2025	Th	12:11:10.0	16:32FQ	13:15:05.2	13:28:01.5		17:46:40.8	12:33:19.0	16:27:15.5	13:00:37.7
03/06/2025	Th		18:03:22.3			20:19:24.9				
03/07/2025	F	12:10:55.7	19:03:35.8	13:14:53.6	13:23:05.6	20:16:01.8	17:43:09.6	12:29:50.3	16:23:26.9	12:56:50.0
03/08/2025	Sat	12:10:41.0	20:02:04.3	13:14:16.5	13:18:01.4	20:12:41.3	17:39:39.0	12:26:21.5	16:19:38.4	12:53:02.3
03/09/2025	Sun	12:10:25.9	20:57:02.3	13:13:12.5	13:12:48.9	20:09:23.5	17:36:09.1	12:22:52.8	16:15:50.2	12:49:14.5
03/10/2025	M	12:10:10.5	21:47:43.6	13:11:40.3	13:07:28.6	20:06:08.1	17:32:39.8	12:19:24.1	16:12:02.1	12:45:26.8
03/11/2025	Tu	12:09:54.7	22:34:18.5	13:09:39.0	13:02:00.8	20:02:55.2	17:29:11.3	12:15:55.4	16:08:14.1	12:41:39.2
03/12/2025	W	12:09:38.6	23:17:32.4	13:07:07.8	12:56:25.9	19:59:44.8	17:25:43.4	12:12:26.7	16:04:26.4	12:37:51.5
03/13/2025	Th	12:09:22.2	23:58:26.0	13:04:06.4	12:50:44.4	19:56:36.7	17:22:16.2	12:08:58.0	16:00:38.8	12:34:03.9
03/14/2025	F	12:09:05.6	6:55FM	13:00:34.9	12:44:56.9	19:53:30.9	17:18:49.6	12:05:29.3	15:56:51.4	12:30:16.2
03/15/2025	Sat	12:08:48.7	0:38:03.8	12:56:33.7	12:39:04.1	19:50:27.3	17:15:23.7	12:02:00.6	15:53:04.1	12:26:28.6
03/16/2025	Sun	12:08:31.6	1:17:29.3	12:52:03.8	12:33:06.6	19:47:26.0	17:11:58.4	11:58:31.9	15:49:17.1	12:22:41.0
03/17/2025	M	12:08:14.3	1:57:43.6	12:47:06.6	12:27:05.2	19:44:26.7	17:08:33.8	11:55:03.2	15:45:30.1	12:18:53.4
03/18/2025	Tu	12:07:56.9	2:39:43.1	12:41:44.0	12:21:00.7	19:41:29.6	17:05:09.7	11:51:34.5	15:41:43.4	12:15:05.8
03/19/2025	W	12:07:39.3	3:24:16.5	12:35:58.3	12:14:54.0	19:38:34.5	17:01:46.3	11:48:05.7	15:37:56.8	12:11:18.2
03/20/2025	Th	9:01ME	4:11:56.8					11:44:36.9		
03/20/2025	Th	12:07:21.5		12:29:52.4	12:08:45.9	19:35:41.4	16:58:23.5		15:34:10.4	12:07:30.6
03/21/2025	F	12:07:03.7	5:02:49.8	12:23:29.4	12:02:37.4	19:32:50.3	16:55:01.3	11:41:08.1	15:30:24.1	12:03:43.0
03/22/2025	Sat		5:56:23.6							

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
03/22/2025	Sat	12:06:45.7	11:29LQ	12:16:53.0	11:56:29.2	19:30:01.0	16:51:39.7	11:37:39.2	15:26:38.0	11:59:55.4
03/23/2025	Sun	12:06:27.7	6:51:29.9	12:10:06.8	11:50:22.4	19:27:13.6	16:48:18.6	11:34:10.4	15:22:52.0	11:56:07.8
03/24/2025	M	12:06:09.7	7:46:42.7	12:03:14.8	11:44:17.8	19:24:28.0	16:44:58.2	11:30:41.4	15:19:06.2	11:52:20.3
03/25/2025	Tu	12:05:51.6	8:40:50.1	11:56:20.8	11:38:16.3	19:21:44.2	16:41:38.3	11:27:12.5	15:15:20.5	11:48:32.6
03/26/2025	W	12:05:33.6	9:33:18.2	11:49:28.5	11:32:18.6	19:19:02.2	16:38:19.0	11:23:43.4	15:11:35.0	11:44:45.0
03/27/2025	Th	12:05:15.5	10:24:17.8	11:42:41.7	11:26:25.5	19:16:21.8	16:35:00.2	11:20:14.4	15:07:49.6	11:40:57.4
03/28/2025	F	12:04:57.5	11:14:35.1	11:36:03.4	11:20:37.8	19:13:43.0	16:31:42.0	11:16:45.2	15:04:04.3	11:37:09.8
03/29/2025	Sat	12:04:39.5	10:58NM	11:29:36.6	11:14:56.1			11:13:16.0		11:33:22.1
03/29/2025	Sat		12:05:19.1			19:11:05.9	16:28:24.3		15:00:19.2	
03/30/2025	Sun	12:04:21.6	12:57:46.1	11:23:23.7	11:09:20.9	19:08:30.4	16:25:07.2	11:09:46.8	14:56:34.3	11:29:34.5
03/31/2025	M	12:04:03.8	13:53:02.6	11:17:26.7	11:03:52.8	19:05:56.4	16:21:50.6	11:06:17.4	14:52:49.4	11:25:46.8
04/01/2025	Tu	12:03:46.0	14:51:39.4	11:11:47.1	10:58:32.2	19:03:23.8	16:18:34.5	11:02:48.0	14:49:04.7	11:21:59.1
04/02/2025	W	12:03:28.4	15:53:02.2	11:06:26.1	10:53:19.5	19:00:52.7	16:15:18.9	10:59:18.5	14:45:20.2	11:18:11.4
04/03/2025	Th	12:03:10.9	16:55:21.2	11:01:24.5	10:48:15.2	18:58:23.1	16:12:03.8	10:55:48.9	14:41:35.7	11:14:23.6
04/04/2025	F	12:02:53.5	17:56:04.5	10:56:42.7	10:43:19.3	18:55:54.7	16:08:49.2	10:52:19.3	14:37:51.4	11:10:35.8
04/05/2025	Sat	12:02:36.3	2:15FQ	10:52:20.9	10:38:32.2		16:05:35.1	10:48:49.5	14:34:07.2	11:06:48.0
04/05/2025	Sat		18:53:03.4			18:53:27.7				
04/06/2025	Sun	12:02:19.2	19:45:17.8	10:48:18.8	10:33:54.0	18:51:02.0	16:02:21.5	10:45:19.7	14:30:23.1	11:03:00.2
04/07/2025	M	12:02:02.4	20:32:55.3	10:44:36.2	10:29:24.8	18:48:37.5	15:59:08.3	10:41:49.7	14:26:39.1	10:59:12.3
04/08/2025	Tu	12:01:45.8	21:16:45.1	10:41:12.6	10:25:04.6	18:46:14.2	15:55:55.6	10:38:19.7	14:22:55.2	10:55:24.4
04/09/2025	W	12:01:29.3	21:57:53.1	10:38:07.4	10:20:53.4	18:43:52.0	15:52:43.3	10:34:49.5	14:19:11.5	10:51:36.5
04/10/2025	Th	12:01:13.2	22:37:28.6	10:35:19.9	10:16:51.3	18:41:31.0	15:49:31.5	10:31:19.2	14:15:27.8	10:47:48.5
04/11/2025	F	12:00:57.3	23:16:37.9	10:32:49.4	10:12:58.1	18:39:11.1	15:46:20.1	10:27:48.9	14:11:44.2	10:44:00.5
04/12/2025	Sat	12:00:41.7	23:56:23.6	10:30:35.2	10:09:13.7	18:36:52.2	15:43:09.2	10:24:18.4	14:08:00.8	10:40:12.5
04/13/2025	Sun	12:00:26.5	0:22FM	10:28:36.5	10:05:38.0	18:34:34.4	15:39:58.7	10:20:47.7	14:04:17.4	10:36:24.4
04/14/2025	M	12:00:11.5	0:37:42.8	10:26:52.4	10:02:10.8	18:32:17.5	15:36:48.5	10:17:17.0	14:00:34.2	10:32:36.3
04/15/2025	Tu	11:59:56.9	1:21:23.9	10:25:22.4	9:58:51.9	18:30:01.7	15:33:38.8	10:13:46.1	13:56:51.0	10:28:48.1
04/16/2025	W	11:59:42.7	2:08:00.4	10:24:05.6	9:55:41.1	18:27:46.8	15:30:29.5	10:10:15.1	13:53:08.0	10:24:59.9
04/17/2025	Th	11:59:28.9	2:57:39.9	10:23:01.3	9:52:38.1	18:25:32.7	15:27:20.6	10:06:44.0	13:49:25.0	10:21:11.6
04/18/2025	F	11:59:15.5	3:49:54.9	10:22:09.0	9:49:42.9	18:23:19.6	15:24:12.1	10:03:12.7	13:45:42.1	10:17:23.3
04/19/2025	Sat	11:59:02.4	4:43:42.6	10:21:28.0	9:46:55.1	18:21:07.4	15:21:04.0	9:59:41.3	13:41:59.3	10:13:34.9
04/20/2025	Sun	11:58:49.8	5:37:41.7	10:20:57.8	9:44:14.4	18:18:56.0	15:17:56.2	9:56:09.8	13:38:16.6	10:09:46.5
04/21/2025	M		1:36LQ							
04/21/2025	M	11:58:37.7	6:30:40.9	10:20:37.8	9:41:40.6	18:16:45.4	15:14:48.8	9:52:38.1	13:34:33.9	10:05:58.1
04/22/2025	Tu	11:58:26.0	7:22:03.1	10:20:27.7	9:39:13.6	18:14:35.6	15:11:41.8	9:49:06.2	13:30:51.4	10:02:09.5
04/23/2025	W	11:58:14.8	8:11:53.5	10:20:26.9	9:36:52.9	18:12:26.7	15:08:35.1	9:45:34.2	13:27:08.9	9:58:20.9
04/24/2025	Th	11:58:04.1	9:00:53.5	10:20:35.1	9:34:38.4	18:10:18.4	15:05:28.8	9:42:02.0	13:23:26.4	9:54:32.3
04/25/2025	F	11:57:53.9	9:50:10.2	10:20:52.0	9:32:29.8	18:08:10.9	15:02:22.9	9:38:29.7	13:19:44.1	9:50:43.6
04/26/2025	Sat	11:57:44.2	10:41:04.6	10:21:17.3	9:30:26.9	18:06:04.2	14:59:17.2	9:34:57.2	13:16:01.8	9:46:54.8
04/27/2025	Sun	11:57:35.0	11:34:58.4	10:21:50.7	9:28:29.5	18:03:58.1	14:56:11.9	9:31:24.5	13:12:19.6	9:43:06.0
04/27/2025	Sun		19:31NM							
04/28/2025	M	11:57:26.3	12:32:51.0	10:22:32.0	9:26:37.2	18:01:52.8	14:53:07.0	9:27:51.6	13:08:37.4	9:39:17.1
04/29/2025	Tu	11:57:18.1	13:34:43.8	10:23:21.1	9:24:49.9	17:59:48.0	14:50:02.3	9:24:18.6	13:04:55.3	9:35:28.2
04/30/2025	W	11:57:10.4	14:39:07.1	10:24:17.8	9:23:07.5	17:57:44.0	14:46:58.0	9:20:45.3	13:01:13.2	9:31:39.1
05/01/2025	Th	11:57:03.3	15:43:10.1	10:25:22.1	9:21:29.5	17:55:40.5	14:43:53.9	9:17:11.9	12:57:31.2	9:27:50.1
05/02/2025	F	11:56:56.6	16:43:53.9	10:26:33.8	9:19:56.0	17:53:37.6	14:40:50.2	9:13:38.3	12:53:49.3	9:24:00.9
05/03/2025	Sat	11:56:50.5	17:39:30.0	10:27:53.1	9:18:26.7	17:51:35.3	14:37:46.7	9:10:04.5	12:50:07.3	9:20:11.6
05/04/2025	Sun	11:56:45.0	13:52FQ	10:29:19.8	9:17:01.4	17:49:33.6	14:34:43.5	9:06:30.5	12:46:25.5	9:16:22.3
05/04/2025	Sun		18:29:41.6							
05/05/2025	M	11:56:40.0	19:15:14.4	10:30:54.1	9:15:40.1	17:47:32.4	14:31:40.6	9:02:56.3	12:42:43.6	9:12:32.9
05/06/2025	Tu	11:56:35.5	19:57:21.3	10:32:36.1	9:14:22.4	17:45:31.7	14:28:38.0	8:59:21.9	12:39:01.8	9:08:43.5
05/07/2025	W	11:56:31.6	20:37:20.3	10:34:25.7	9:13:08.3	17:43:31.4	14:25:35.6	8:55:47.3	12:35:20.1	9:04:53.9
05/08/2025	Th	11:56:28.2	21:16:26.2	10:36:23.3	9:11:57.7	17:41:31.7	14:22:33.5	8:52:12.4	12:31:38.3	9:01:04.3
05/09/2025	F	11:56:25.4	21:55:48.2	10:38:29.0	9:10:50.3	17:39:32.4	14:19:31.6	8:48:37.4	12:27:56.6	8:57:14.6
05/10/2025	Sat	11:56:23.1	22:36:29.1	10:40:42.9	9:09:46.2	17:37:33.6	14:16:29.9	8:45:02.1	12:24:14.9	8:53:24.8
05/11/2025	Sun	11:56:21.4	23:19:23.4	10:43:05.2	9:08:45.1	17:35:35.1	14:13:28.5	8:41:26.6	12:20:33.3	8:49:34.9

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
<b>ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice</b>										
05/12/2025	M	11:56:20.3	16:56FM	10:45:36.3	9:07:46.9	17:33:37.1	14:10:27.4	8:37:50.9	12:16:51.7	8:45:45.0
05/13/2025	Tu	11:56:19.7	0:05:11.1	10:48:16.4	9:06:51.6	17:31:39.5	14:07:26.4	8:34:14.9	12:13:10.0	8:41:54.9
05/14/2025	W	11:56:19.8	0:54:07.0	10:51:05.6	9:05:59.1	17:29:42.3	14:04:25.7	8:30:38.7	12:09:28.4	8:38:04.8
05/15/2025	Th	11:56:20.4	1:45:49.4	10:54:04.4	9:05:09.1	17:27:45.5	14:01:25.1	8:27:02.3	12:05:46.8	8:34:14.6
05/16/2025	F	11:56:21.5	2:39:16.8	10:57:12.9	9:04:21.8	17:25:49.0	13:58:24.8	8:23:25.7	12:02:05.3	8:30:24.3
05/17/2025	Sat	11:56:23.3	3:33:02.6	11:00:31.4	9:03:36.9	17:23:52.9	13:55:24.7	8:19:48.8	11:58:23.7	8:26:33.9
05/18/2025	Sun	11:56:25.6	4:25:44.9	11:04:00.2	9:02:54.3	17:21:57.1	13:52:24.8	8:16:11.6	11:54:42.1	8:22:43.4
05/19/2025	M	11:56:28.5	5:16:34.9	11:07:39.4	9:02:14.1	17:20:01.6	13:49:25.1	8:12:34.2	11:51:00.6	8:18:52.8
05/20/2025	Tu	11:56:31.9	6:05:28.4	11:11:29.2	9:01:36.1		8:08:56.6	11:47:19.0	8:15:02.2	
05/20/2025	Tu		11:59LQ			17:18:06.5	13:46:25.6			
05/21/2025	W	11:56:35.9	6:53:00.5	11:15:29.7	9:01:00.3	17:16:11.7	13:43:26.2	8:05:18.7	11:43:37.4	8:11:11.4
05/22/2025	Th	11:56:40.5	7:40:14.5	11:19:40.8	9:00:26.5	17:14:17.3	13:40:27.1	8:01:40.5	11:39:55.8	8:07:20.5
05/23/2025	F	11:56:45.5	8:28:31.6	11:24:02.6	8:59:54.8	17:12:23.1	13:37:28.1	7:58:02.1	11:36:14.3	8:03:29.6
05/24/2025	Sat	11:56:51.2	9:19:21.2	11:28:34.7	8:59:25.0	17:10:29.2	13:34:29.2	7:54:23.4	11:32:32.7	7:59:38.5
05/25/2025	Sun	11:56:57.3	10:14:06.8	11:33:16.8	8:58:57.2	17:08:35.6	13:31:30.6	7:50:44.4	11:28:51.1	7:55:47.4
05/26/2025	M	11:57:03.9	11:13:36.9	11:38:08.3	8:58:31.2	17:06:42.3	13:28:32.0	7:47:05.2	11:25:09.4	7:51:56.1
05/27/2025	Tu	11:57:11.0	3:02NM	11:43:08.8	8:58:06.9		7:43:25.7	11:21:27.8	7:48:04.7	
05/27/2025	Tu		12:17:22.3			17:04:49.3	13:25:33.7			
05/28/2025	W	11:57:18.6	13:23:06.4	11:48:17.1	8:57:44.5	17:02:56.6	13:22:35.4	7:39:45.9	11:17:46.1	7:44:13.3
05/29/2025	Th	11:57:26.6	14:27:22.8	11:53:32.5	8:57:23.7	17:01:04.1	13:19:37.4	7:36:05.8	11:14:04.4	7:40:21.7
05/30/2025	F	11:57:35.1	15:27:13.2	11:58:53.7	8:57:04.7	16:59:11.8	13:16:39.4	7:32:25.4	11:10:22.7	7:36:30.0
05/31/2025	Sat	11:57:43.9	16:21:19.2	12:04:19.4	8:56:47.3	16:57:19.8	13:13:41.5	7:28:44.8	11:06:40.9	7:32:38.3
06/01/2025	Sun	11:57:53.2	17:09:56.1	12:09:48.3	8:56:31.5	16:55:28.0	13:10:43.8	7:25:03.8	11:02:59.1	7:28:46.4
06/02/2025	M	11:58:02.8	17:54:10.8	12:15:18.8	8:56:17.3	16:53:36.4	13:07:46.2	7:21:22.6	10:59:17.3	7:24:54.4
06/03/2025	Tu	11:58:12.7	3:41FQ	12:20:49.4	8:56:04.7	16:51:45.1	13:04:48.6	7:17:41.0	10:55:35.4	7:21:02.3
06/03/2025	Tu		18:35:26.7							
06/04/2025	W	11:58:23.0	19:15:06.6	12:26:18.7	8:55:53.6	16:49:53.9	13:01:51.2	7:13:59.2	10:51:53.5	7:17:10.1
06/05/2025	Th	11:58:33.6	19:54:27.5	12:31:45.0	8:55:44.1	16:48:02.9	12:58:53.9	7:10:17.0	10:48:11.6	7:13:17.8
06/06/2025	F	11:58:44.5	20:34:40.0	12:37:07.1	8:55:36.2	16:46:12.1	12:55:56.6	7:06:34.5	10:44:29.5	7:09:25.3
06/07/2025	Sat	11:58:55.7	21:16:47.0	12:42:23.6	8:55:29.7	16:44:21.5	12:52:59.5	7:02:51.8	10:40:47.5	7:05:32.8
06/08/2025	Sun	11:59:07.1	22:01:39.0	12:47:33.3	8:55:24.8	16:42:31.1	12:50:02.4	6:59:08.7	10:37:05.4	7:01:40.2
06/09/2025	M	11:59:18.8	22:49:45.0	12:52:35.1	8:55:21.4	16:40:40.8	12:47:05.3	6:55:25.3	10:33:23.2	6:57:47.4
06/10/2025	Tu	11:59:30.7	23:40:58.5	12:57:28.0	8:55:19.5	16:38:50.7	12:44:08.4	6:51:41.6	10:29:41.0	6:53:54.5
06/11/2025	W	11:59:42.9	7:44FM	13:02:11.2	8:55:19.0	16:37:00.8	12:41:11.5	6:47:57.5	10:25:58.7	6:50:01.5
06/12/2025	Th	11:59:55.2	0:34:28.3	13:06:43.9	8:55:20.1	16:35:11.0	12:38:14.7	6:44:13.2	10:22:16.3	6:46:08.4
06/13/2025	F	12:00:07.7	1:28:46.3	13:11:05.6	8:55:22.6	16:33:21.4	12:35:17.9	6:40:28.5	10:18:33.9	6:42:15.2
06/14/2025	Sat	12:00:20.3	2:22:16.4	13:15:15.8	8:55:26.6	16:31:32.0	12:32:21.1	6:36:43.5	10:14:51.4	6:38:21.9
06/15/2025	Sun	12:00:33.1	3:13:49.0	13:19:14.1	8:55:32.1	16:29:42.7	12:29:24.4	6:32:58.1	10:11:08.9	6:34:28.5
06/16/2025	M	12:00:46.0	4:03:01.4	13:23:00.1	8:55:39.1	16:27:53.5	12:26:27.8	6:29:12.5	10:07:26.2	6:30:34.9
06/17/2025	Tu	12:00:59.0	4:50:15.7	13:26:33.6	8:55:47.5	16:26:04.5	12:23:31.2	6:25:26.5	10:03:43.5	6:26:41.2
06/18/2025	W	12:01:12.1	5:36:26.7	13:29:54.5	8:55:57.4	16:24:15.7	12:20:34.6	6:21:40.1	10:00:00.8	6:22:47.5
06/18/2025	W		19:19LQ							
06/19/2025	Th	12:01:25.2	6:22:50.3	13:33:02.4	8:56:08.7	16:22:27.0	12:17:38.0	6:17:53.4	9:56:17.9	6:18:53.6
06/20/2025	F	12:01:38.3	7:10:53.8	13:35:57.4	8:56:21.5	16:20:38.4	12:14:41.5	6:14:06.4	9:52:34.9	6:14:59.5
06/21/2025	Sat	2:42JS	8:02:06.9		8:56:35.8		6:10:19.1	9:48:51.9	6:11:05.4	
06/21/2025	Sat	12:01:51.5		13:38:39.4		16:18:50.1	12:11:44.9			
06/22/2025	Sun	12:02:04.6	8:57:44.1	13:41:08.3	8:56:51.4	16:17:01.8	12:08:48.4	6:06:31.3	9:45:08.8	6:07:11.1
06/23/2025	M	12:02:17.7	9:58:11.2	13:43:24.0	8:57:08.5	16:15:13.7	12:05:51.9	6:02:43.3	9:41:25.6	6:03:16.8
06/24/2025	Tu	12:02:30.7	11:02:22.5	13:45:26.4	8:57:27.0	16:13:25.8	12:02:55.4	5:58:54.9	9:37:42.3	5:59:22.3
06/25/2025	W	12:02:43.6	10:32NM		8:57:47.0		11:59:58.8	5:55:06.1	9:33:58.9	5:55:27.7
06/25/2025	W		12:07:31.1	13:47:15.6		16:11:38.0				
06/26/2025	Th	12:02:56.3	13:10:11.3	13:48:51.4	8:58:08.3	16:09:50.4	11:57:02.3	5:51:17.0	9:30:15.4	5:51:32.9
06/27/2025	F	12:03:08.9	14:07:56.7	13:50:13.7	8:58:31.0	16:08:02.9	11:54:05.7	5:47:27.5	9:26:31.8	5:47:38.1
06/28/2025	Sat	12:03:21.3	15:00:04.1	13:51:22.6	8:58:55.2	16:06:15.6	11:51:09.1	5:43:37.7	9:22:48.0	5:43:43.1
06/29/2025	Sun	12:03:33.5	15:47:10.0	13:52:17.8	8:59:20.7	16:04:28.4	11:48:12.5	5:39:47.5	9:19:04.2	5:39:48.0
06/30/2025	M	12:03:45.4	16:30:28.8	13:52:59.3	8:59:47.6	16:02:41.3	11:45:15.8	5:35:56.9	9:15:20.3	5:35:52.8

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ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
07/01/2025	Tu	12:03:57.1	17:11:24.1	13:53:26.9	9:00:15.8	16:00:54.4	11:42:19.1	5:32:06.0	9:11:36.2	5:31:57.5
07/02/2025	W	12:04:08.5	17:51:17.2	13:53:40.5	9:00:45.5	15:59:07.6	11:39:22.3	5:28:14.7	9:07:52.1	5:28:02.0
07/02/2025	W		19:30FQ							
07/03/2025	Th	12:04:19.5	18:31:23.4	13:53:39.8	9:01:16.5	15:57:20.9	11:36:25.5	5:24:23.0	9:04:07.8	5:24:06.4
07/04/2025	F	12:04:30.3	19:12:51.8	13:53:24.6	9:01:48.9	15:55:34.4	11:33:28.6	5:20:31.0	9:00:23.4	5:20:10.8
07/05/2025	Sat	12:04:40.7	19:56:41.9	13:52:54.7	9:02:22.7	15:53:48.0	11:30:31.6	5:16:38.7	8:56:38.9	5:16:14.9
07/06/2025	Sun	12:04:50.7	20:43:37.0	13:52:09.8	9:02:57.8	15:52:01.7	11:27:34.6	5:12:45.9	8:52:54.2	5:12:19.0
07/07/2025	M	12:05:00.3	21:33:51.0	13:51:09.7	9:03:34.2	15:50:15.6	11:24:37.5	5:08:52.8	8:49:09.5	5:08:23.0
07/08/2025	Tu	12:05:09.6	22:26:55.2	13:49:53.9	9:04:12.0	15:48:29.6	11:21:40.3	5:04:59.3	8:45:24.6	5:04:26.8
07/09/2025	W	12:05:18.4	23:21:35.4	13:48:22.2	9:04:51.2	15:46:43.7	11:18:43.1	5:01:05.5	8:41:39.6	5:00:30.5
07/10/2025	Th	12:05:26.8	20:37FM	13:46:34.2	9:05:31.6	15:44:58.0	11:15:45.7	4:57:11.3	8:37:54.4	4:56:34.1
07/11/2025	F	12:05:34.7	0:16:11.5	13:44:29.6	9:06:13.4	15:43:12.4	11:12:48.3	4:53:16.7	8:34:09.1	4:52:37.6
07/12/2025	Sat	12:05:42.2	1:09:14.4	13:42:08.0	9:06:56.4	15:41:26.9	11:09:50.7	4:49:21.8	8:30:23.7	4:48:41.0
07/13/2025	Sun	12:05:49.3	1:59:55.9	13:39:29.0	9:07:40.7	15:39:41.6	11:06:53.1	4:45:26.5	8:26:38.1	4:44:44.3
07/14/2025	M	12:05:55.8	2:48:17.0	13:36:32.3	9:08:26.3	15:37:56.5	11:03:55.4	4:41:30.8	8:22:52.4	4:40:47.4
07/15/2025	Tu	12:06:01.9	3:34:58.4	13:33:17.6	9:09:13.1	15:36:11.5	11:00:57.5	4:37:34.8	8:19:06.5	4:36:50.4
07/16/2025	W	12:06:07.5	4:21:06.4	13:29:44.6	9:10:01.2	15:34:26.7	10:57:59.5	4:33:38.3	8:15:20.5	4:32:53.3
07/17/2025	Th	12:06:12.6	5:08:01.3	13:25:53.3	9:10:50.4	15:32:42.0	10:55:01.4	4:29:41.6	8:11:34.4	4:28:56.1
07/18/2025	F		0:38LQ					4:25:44.4		4:24:58.8
07/18/2025	F	12:06:17.1	5:57:08.9	13:21:43.5	9:11:40.8	15:30:57.5	10:52:03.2		8:07:48.1	
07/19/2025	Sat	12:06:21.2	6:49:48.5	13:17:15.2	9:12:32.3	15:29:13.1	10:49:04.8	4:21:46.9	8:04:01.6	4:21:01.4
07/20/2025	Sun	12:06:24.7	7:46:49.2	13:12:28.6	9:13:25.0	15:27:29.0	10:46:06.3	4:17:49.0	8:00:15.0	4:17:03.8
07/21/2025	M	12:06:27.6	8:47:56.4	13:07:24.1	9:14:18.7	15:25:45.0	10:43:07.7	4:13:50.8	7:56:28.3	4:13:06.2
07/22/2025	Tu	12:06:30.1	9:51:23.8	13:02:02.1	9:15:13.4	15:24:01.2	10:40:08.9	4:09:52.2	7:52:41.4	4:09:08.4
07/23/2025	W	12:06:31.9	10:54:16.1	12:56:23.6	9:16:09.1	15:22:17.6	10:37:10.0	4:05:53.2	7:48:54.3	4:05:10.5
07/24/2025	Th	12:06:33.2	11:53:44.8	12:50:29.6	9:17:05.8	15:20:34.2	10:34:10.9	4:01:53.8	7:45:07.0	4:01:12.5
07/24/2025	Th		19:11NM							
07/25/2025	F	12:06:33.8	12:48:17.9	12:44:21.2	9:18:03.4	15:18:51.0	10:31:11.6	3:57:54.1	7:41:19.6	3:57:14.4
07/26/2025	Sat	12:06:33.9	13:37:50.2	12:38:00.3	9:19:01.9	15:17:07.9	10:28:12.2	3:53:54.1	7:37:32.1	3:53:16.2
07/27/2025	Sun	12:06:33.3	14:23:12.0	12:31:28.5	9:20:01.2	15:15:25.1	10:25:12.5	3:49:53.6	7:33:44.3	3:49:17.9
07/28/2025	M	12:06:32.2	15:05:36.9	12:24:48.3	9:21:01.3	15:13:42.4	10:22:12.7	3:45:52.9	7:29:56.4	3:45:19.4
07/29/2025	Tu	12:06:30.4	15:46:22.8	12:18:01.9	9:22:02.1	15:12:00.0	10:19:12.7	3:41:51.7	7:26:08.3	3:41:20.9
07/30/2025	W	12:06:28.0	16:26:44.7	12:11:12.2	9:23:03.7	15:10:17.7	10:16:12.5	3:37:50.2	7:22:20.0	3:37:22.3
07/31/2025	Th	12:06:25.0	17:07:52.2	12:04:22.0	9:24:05.9	15:08:35.7	10:13:12.1	3:33:48.4	7:18:31.6	3:33:23.5
08/01/2025	F	12:06:21.3	12:41FQ	11:57:34.3	9:25:08.8	15:06:53.9	10:10:11.5	3:29:46.2	7:14:43.0	3:29:24.7
08/01/2025	F		17:50:48.1							
08/02/2025	Sat	12:06:17.1	18:36:23.4	11:50:52.3	9:26:12.2	15:05:12.2	10:07:10.6	3:25:43.7	7:10:54.2	3:25:25.7
08/03/2025	Sun	12:06:12.2	19:25:07.9	11:44:19.1	9:27:16.2	15:03:30.8	10:04:09.6	3:21:40.8	7:07:05.2	3:21:26.7
08/04/2025	M	12:06:06.6	20:16:56.8	11:37:57.7	9:28:20.7	15:01:49.6	10:01:08.3	3:17:37.6	7:03:16.0	3:17:27.5
08/05/2025	Tu	12:06:00.5	21:11:01.7	11:31:51.0	9:29:25.6	15:00:08.7	9:58:06.8	3:13:34.1	6:59:26.7	3:13:28.3
08/06/2025	W	12:05:53.7	22:05:57.5	11:26:01.8	9:30:30.9	14:58:27.9	9:55:05.1	3:09:30.3	6:55:37.2	3:09:29.0
08/07/2025	Th	12:05:46.4	23:00:10.3	11:20:32.5	9:31:36.6	14:56:47.4	9:52:03.1	3:05:26.1	6:51:47.4	3:05:29.5
08/08/2025	F	12:05:38.5	23:52:31.9	11:15:25.5	9:32:42.7	14:55:07.1	9:49:00.9	3:01:21.6	6:47:57.5	3:01:30.0
08/09/2025	Sat	12:05:29.9	7:55FM	11:10:42.6	9:33:48.9	14:53:27.1	9:45:58.4	2:57:16.7	6:44:07.5	2:57:30.4
08/10/2025	Sun	12:05:20.8	0:42:39.2	11:06:25.5	9:34:55.5	14:51:47.3	9:42:55.7	2:53:11.6	6:40:17.2	2:53:30.7
08/11/2025	M	12:05:11.1	1:30:53.3	11:02:35.4	9:36:02.2	14:50:07.7	9:39:52.7	2:49:06.2	6:36:26.7	2:49:30.9
08/12/2025	Tu	12:05:00.9	2:18:06.8	10:59:13.4	9:37:09.0	14:48:28.4	9:36:49.4	2:45:00.4	6:32:36.0	2:45:31.0
08/13/2025	W	12:04:50.1	3:05:31.3	10:56:20.2	9:38:16.0	14:46:49.4	9:33:45.9	2:40:54.3	6:28:45.2	2:41:31.0
08/14/2025	Th	12:04:38.8	3:54:26.0	10:53:56.2	9:39:23.0	14:45:10.7	9:30:42.1	2:36:48.0	6:24:54.1	2:37:30.9
08/15/2025	F	12:04:27.0	4:46:06.4	10:52:01.7	9:40:30.0	14:43:32.2	9:27:38.0	2:32:41.3	6:21:02.9	2:33:30.8
08/16/2025	Sat		5:12LQ					2:28:34.4		2:29:30.6
08/16/2025	Sat	12:04:14.7	5:41:26.5	10:50:36.3	9:41:36.9	14:41:54.1	9:24:33.7		6:17:11.4	
08/17/2025	Sun	12:04:01.9	6:40:30.7	10:49:40.0	9:42:43.7	14:40:16.2	9:21:29.0	2:24:27.2	6:13:19.8	2:25:30.2
08/18/2025	M	12:03:48.6	7:42:08.7	10:49:11.9	9:43:50.4	14:38:38.6	9:18:24.0	2:20:19.7	6:09:27.9	2:21:29.8
08/19/2025	Tu	12:03:34.8	8:44:00.9	10:49:11.4	9:44:57.0	14:37:01.3	9:15:18.8	2:16:11.9	6:05:35.9	2:17:29.4
08/20/2025	W	12:03:20.5	9:43:31.7	10:49:37.4	9:46:03.2	14:35:24.4	9:12:13.2	2:12:03.8	6:01:43.6	2:13:28.8

**Ephemeris transit times plus phases of the Moon and the seasons.**

**All dates and times are UT1.**

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
08/21/2025	Th	12:03:05.8	10:38:54.8	10:50:28.7	9:47:09.2	14:33:47.8	9:09:07.3	2:07:55.5	5:57:51.1	2:09:28.2
08/22/2025	F	12:02:50.7	11:29:39.6	10:51:43.9	9:48:14.9	14:32:11.4	9:06:01.1	2:03:46.9	5:53:58.5	2:05:27.5
08/23/2025	Sat	12:02:35.1	6:07NM	10:53:21.2	9:49:20.2		9:02:54.5	1:59:38.1	5:50:05.6	2:01:26.7
08/23/2025	Sat		12:16:15.4			14:30:35.5				
08/24/2025	Sun	12:02:19.0	12:59:42.3	10:55:19.0	9:50:25.2	14:28:59.8	8:59:47.6	1:55:29.0	5:46:12.5	1:57:25.9
08/25/2025	M	12:02:02.6	13:41:10.6	10:57:35.2	9:51:29.6	14:27:24.5	8:56:40.3	1:51:19.7	5:42:19.2	1:53:25.0
08/26/2025	Tu	12:01:45.7	14:21:50.7	11:00:07.8	9:52:33.6	14:25:49.5	8:53:32.7	1:47:10.2	5:38:25.7	1:49:24.0
08/27/2025	W	12:01:28.4	15:02:49.0	11:02:54.6	9:53:37.1	14:24:14.9	8:50:24.7	1:43:00.4	5:34:32.0	1:45:23.0
08/28/2025	Th	12:01:10.8	15:45:06.2	11:05:53.6	9:54:40.1	14:22:40.6	8:47:16.4	1:38:50.4	5:30:38.1	1:41:21.9
08/29/2025	F	12:00:52.8	16:29:33.8	11:09:02.5	9:55:42.5	14:21:06.7	8:44:07.6	1:34:40.2	5:26:44.0	1:37:20.7
08/30/2025	Sat	12:00:34.4	17:16:47.2	11:12:19.3	9:56:44.3	14:19:33.1	8:40:58.5	1:30:29.9	5:22:49.7	1:33:19.5
08/31/2025	Sun	12:00:15.7	6:25FQ	11:15:42.0	9:57:45.5	14:17:59.9	8:37:49.1	1:26:19.3	5:18:55.1	1:29:18.3
08/31/2025	Sun		18:06:55.8							
09/01/2025	M	11:59:56.6	18:59:32.9	11:19:08.6	9:58:46.1	14:16:27.1	8:34:39.2	1:22:08.5	5:15:00.4	1:25:16.9
09/02/2025	Tu	11:59:37.3	19:53:36.1	11:22:37.7	9:59:46.0	14:14:54.7	8:31:28.9	1:17:57.5	5:11:05.4	1:21:15.6
09/03/2025	W	11:59:17.7	20:47:43.6	11:26:07.5	10:00:45.2	14:13:22.6	8:28:18.2	1:13:46.4	5:07:10.2	1:17:14.1
09/04/2025	Th	11:58:57.8	21:40:43.7	11:29:36.9	10:01:43.8	14:11:50.9	8:25:07.1	1:09:35.1	5:03:14.8	1:13:12.7
09/05/2025	F	11:58:37.7	22:31:58.3	11:33:04.7	10:02:41.7	14:10:19.6	8:21:55.6	1:05:23.7	4:59:19.3	1:09:11.1
09/06/2025	Sat	11:58:17.3	23:21:30.8	11:36:29.9	10:03:38.8	14:08:48.7	8:18:43.7	1:01:12.1	4:55:23.5	1:05:09.6
09/07/2025	Sun	11:57:56.7	18:09FM	11:39:51.9	10:04:35.3	14:07:18.2	8:15:31.3	0:57:00.4	4:51:27.4	1:01:08.0
09/08/2025	M	11:57:36.0	0:10:00.0	11:43:10.1	10:05:31.0	14:05:48.1	8:12:18.5	0:52:48.5	4:47:31.2	0:57:06.4
09/09/2025	Tu	11:57:15.0	0:58:27.8	11:46:23.9	10:06:26.0	14:04:18.5	8:09:05.3	0:48:36.5	4:43:34.8	0:53:04.7
09/10/2025	W	11:56:54.0	1:48:08.4	11:49:33.2	10:07:20.2	14:02:49.2	8:05:51.6	0:44:24.4	4:39:38.2	0:49:03.0
09/11/2025	Th	11:56:32.8	2:40:15.1	11:52:37.6	10:08:13.8	14:01:20.5	8:02:37.4	0:40:12.2	4:35:41.3	0:45:01.2
09/12/2025	F	11:56:11.6	3:35:43.0	11:55:37.1	10:09:06.6	13:59:52.1	7:59:22.8	0:35:59.9	4:31:44.3	0:40:59.5
09/13/2025	Sat	11:55:50.2	4:34:42.4	11:58:31.6	10:09:58.6	13:58:24.2	7:56:07.8	0:31:47.4	4:27:47.0	0:36:57.6
09/14/2025	Sun		5:36:13.5		10:10:50.0		7:52:52.2	0:27:34.9	4:23:49.5	0:32:55.8
09/14/2025	Sun	11:55:28.9	10:33LQ	12:01:21.2		13:56:56.8				
09/15/2025	M	11:55:07.5	6:38:08.0	12:04:05.8	10:11:40.6	13:55:29.8	7:49:36.2	0:23:22.4	4:19:51.9	0:28:54.0
09/16/2025	Tu	11:54:46.0	7:37:55.3	12:06:45.7	10:12:30.5	13:54:03.3	7:46:19.7	0:19:09.7	4:15:54.0	0:24:52.1
09/17/2025	W	11:54:24.6	8:33:46.1	12:09:21.0	10:13:19.7	13:52:37.3	7:43:02.7	0:14:57.0	4:11:55.9	0:20:50.2
09/18/2025	Th	11:54:03.3	9:25:02.8	12:11:51.8	10:14:08.1	13:51:11.8	7:39:45.2	0:10:44.3	4:07:57.6	0:16:48.3
09/19/2025	F	11:53:41.9	10:12:07.8	12:14:18.2	10:14:55.9	13:49:46.8	7:36:27.1	0:06:31.5	4:03:59.1	0:12:46.4
09/20/2025	Sat	11:53:20.6	10:55:56.8	12:16:40.6	10:15:43.0	13:48:22.3	7:33:08.6	0:02:18.6	4:00:00.4	0:08:44.4
09/20/2025	Sat							23:58:05.8		
09/21/2025	Sun	11:52:59.4	11:37:37.1	12:18:59.0	10:16:29.4	13:46:58.3	7:29:49.5		3:56:01.5	0:04:42.5
09/21/2025	Sun		19:54NM					23:53:52.9		
09/22/2025	M	11:52:38.3	12:18:16.9	12:21:13.8	10:17:15.1	13:45:34.8	7:26:29.9		3:52:02.4	0:00:40.5
09/22/2025	M	18:19SE						23:49:40.1		23:56:38.5
09/23/2025	Tu	11:52:17.3	12:59:00.2	12:23:25.0	10:18:00.2	13:44:11.8	7:23:09.7	23:45:27.2	3:48:03.1	23:52:36.6
09/24/2025	W	11:51:56.5	13:40:45.6	12:25:32.9	10:18:44.6	13:42:49.3	7:19:49.0	23:41:14.4	3:44:03.6	23:48:34.6
09/25/2025	Th	11:51:35.8	14:24:22.4	12:27:37.7	10:19:28.4	13:41:27.3	7:16:27.7	23:37:01.6	3:40:03.9	23:44:32.6
09/26/2025	F	11:51:15.2	15:10:26.1	12:29:39.5	10:20:11.6	13:40:05.9	7:13:05.8	23:32:48.8	3:36:04.0	23:40:30.7
09/27/2025	Sat	11:50:54.8	15:59:09.9	12:31:38.6	10:20:54.3	13:38:45.0	7:09:43.4	23:28:36.1	3:32:03.9	23:36:28.7
09/28/2025	Sun	11:50:34.7	16:50:16.3	12:33:35.1	10:21:36.4	13:37:24.6	7:06:20.4	23:24:23.4	3:28:03.6	23:32:26.8
09/29/2025	M	11:50:14.7	17:42:56.1	12:35:29.2	10:22:18.0	13:36:04.8	7:02:56.8	23:20:10.8	3:24:03.1	23:28:24.8
09/29/2025	M		23:54FQ							
09/30/2025	Tu	11:49:55.0	18:36:00.1	12:37:21.0	10:22:59.1	13:34:45.5	6:59:32.6	23:15:58.2	3:20:02.5	23:24:22.9
10/01/2025	W	11:49:35.6	19:28:21.7	12:39:10.7	10:23:39.7	13:33:26.8	6:56:07.8	23:11:45.8	3:16:01.6	23:20:21.0
10/02/2025	Th	11:49:16.5	20:19:20.2	12:40:58.5	10:24:19.9	13:32:08.6	6:52:42.4	23:07:33.4	3:12:00.6	23:16:19.1
10/03/2025	F	11:48:57.6	21:08:51.0	12:42:44.4	10:24:59.6	13:30:51.0	6:49:16.4	23:03:21.1	3:07:59.4	23:12:17.3
10/04/2025	Sat	11:48:39.1	21:57:24.4	12:44:28.5	10:25:39.0	13:29:33.9	6:45:49.8	22:59:08.9	3:03:58.0	23:08:15.4
10/05/2025	Sun	11:48:20.9	22:45:56.4	12:46:11.0	10:26:18.1	13:28:17.4	6:42:22.5	22:54:56.9	2:59:56.4	23:04:13.6
10/06/2025	M	11:48:03.1	23:35:39.8	12:47:51.9	10:26:56.8	13:27:01.5	6:38:54.6	22:50:45.0	2:55:54.6	23:00:11.8
10/07/2025	Tu	11:47:45.7	3:48FM	12:49:31.3	10:27:35.2	13:25:46.1	6:35:26.1	22:46:33.2	2:51:52.7	22:56:10.1
10/08/2025	W	11:47:28.7	0:27:52.4	12:51:09.3	10:28:13.4	13:24:31.3	6:31:56.9	22:42:21.5	2:47:50.6	22:52:08.4

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Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice										
10/09/2025	Th	11:47:12.1	1:23:39.7	12:52:45.9	10:28:51.4	13:23:17.1	6:28:27.1	22:38:10.0	2:43:48.4	22:48:06.7
10/10/2025	F	11:46:56.0	2:23:26.7	12:54:21.1	10:29:29.3	13:22:03.6	6:24:56.6	22:33:58.6	2:39:46.0	22:44:05.0
10/11/2025	Sat	11:46:40.4	3:26:23.8	12:55:54.8	10:30:07.0	13:20:50.6	6:21:25.5	22:29:47.5	2:35:43.4	22:40:03.4
10/12/2025	Sun	11:46:25.3	4:30:16.6	12:57:27.2	10:30:44.6	13:19:38.2	6:17:53.6	22:25:36.4	2:31:40.6	22:36:01.8
10/13/2025	M	11:46:10.8	5:32:12.2	12:58:58.1	10:31:22.1	13:18:26.4	6:14:21.1		2:27:37.7	
10/13/2025	M		18:13LQ					22:21:25.6		22:32:00.3
10/14/2025	Tu	11:45:56.8	6:29:55.8	13:00:27.4	10:31:59.6	13:17:15.3	6:10:47.9	22:17:14.9	2:23:34.6	22:27:58.8
10/15/2025	W	11:45:43.3	7:22:35.7	13:01:55.0	10:32:37.1	13:16:04.8	6:07:14.0	22:13:04.5	2:19:31.4	22:23:57.4
10/16/2025	Th	11:45:30.5	8:10:32.3	13:03:20.8	10:33:14.7	13:14:54.9	6:03:39.4	22:08:54.2	2:15:28.1	22:19:56.0
10/17/2025	F	11:45:18.2	8:54:45.7	13:04:44.6	10:33:52.4	13:13:45.6	6:00:04.1	22:04:44.2	2:11:24.5	22:15:54.7
10/18/2025	Sat	11:45:06.6	9:36:29.0	13:06:06.2	10:34:30.1	13:12:37.0	5:56:28.0	22:00:34.4	2:07:20.9	22:11:53.4
10/19/2025	Sun	11:44:55.6	10:16:55.2	13:07:25.3	10:35:08.0	13:11:29.0	5:52:51.2	21:56:24.8	2:03:17.1	22:07:52.2
10/20/2025	M	11:44:45.2	10:57:12.1	13:08:41.5	10:35:46.2	13:10:21.6	5:49:13.7	21:52:15.4	1:59:13.1	22:03:51.0
10/21/2025	Tu	11:44:35.5	11:38:20.3		10:36:24.5		5:45:35.5		1:55:09.0	
10/21/2025	Tu		12:25NM	13:09:54.6		13:09:14.9		21:48:06.3		21:59:49.9
10/22/2025	W	11:44:26.4	12:21:11.4	13:11:04.0	10:37:03.1	13:08:08.8	5:41:56.4	21:43:57.4	1:51:04.8	21:55:48.9
10/23/2025	Th	11:44:18.1	13:06:22.7	13:12:09.2	10:37:42.0	13:07:03.3	5:38:16.7	21:39:48.8	1:47:00.5	21:51:47.9
10/24/2025	F	11:44:10.4	13:54:09.9	13:13:09.7	10:38:21.2	13:05:58.5	5:34:36.1	21:35:40.5	1:42:56.0	21:47:47.0
10/25/2025	Sat	11:44:03.4	14:44:18.5	13:14:04.8	10:39:00.8	13:04:54.2	5:30:54.8	21:31:32.4	1:38:51.4	21:43:46.2
10/26/2025	Sun	11:43:57.1	15:36:02.1	13:14:53.6	10:39:40.8	13:03:50.7	5:27:12.8	21:27:24.6	1:34:46.7	21:39:45.4
10/27/2025	M	11:43:51.6	16:28:12.4	13:15:35.3	10:40:21.3	13:02:47.7	5:23:29.9	21:23:17.1	1:30:41.9	21:35:44.7
10/28/2025	Tu	11:43:46.8	17:19:41.6	13:16:08.9	10:41:02.2	13:01:45.4	5:19:46.3	21:19:09.9	1:26:37.0	21:31:44.1
10/29/2025	W	11:43:42.7	16:21FQ	13:16:33.3	10:41:43.7	13:00:43.7	5:16:01.9		1:22:32.0	
10/29/2025	W		18:09:45.3					21:15:03.0		21:27:43.6
10/30/2025	Th	11:43:39.4	18:58:14.4	13:16:47.0	10:42:25.7	12:59:42.7	5:12:16.7	21:10:56.4	1:18:26.9	21:23:43.1
10/31/2025	F	11:43:36.9	19:45:34.5	13:16:48.8	10:43:08.3	12:58:42.2	5:08:30.7	21:06:50.1	1:14:21.6	21:19:42.7
11/01/2025	Sat	11:43:35.1	20:32:38.9	13:16:36.8	10:43:51.6	12:57:42.4	5:04:43.9	21:02:44.1	1:10:16.3	21:15:42.5
11/02/2025	Sun	11:43:34.2	21:20:40.3	13:16:09.4	10:44:35.5	12:56:43.2	5:00:56.3	20:58:38.4	1:06:10.9	21:11:42.3
11/03/2025	M	11:43:34.0	22:11:03.4	13:15:24.5	10:45:20.2	12:55:44.7	4:57:07.9	20:54:33.0	1:02:05.4	21:07:42.1
11/04/2025	Tu	11:43:34.6	23:05:12.4	13:14:19.8	10:46:05.5	12:54:46.7	4:53:18.7	20:50:28.0	0:57:59.9	21:03:42.1
11/05/2025	W	11:43:36.0	13:19FM	13:12:52.9	10:46:51.7	12:53:49.4	4:49:28.7	20:46:23.3	0:53:54.2	20:59:42.2
11/06/2025	Th	11:43:38.3	0:04:06.1	13:11:01.3	10:47:38.7	12:52:52.7	4:45:37.9	20:42:18.9	0:49:48.5	20:55:42.3
11/07/2025	F	11:43:41.4	1:07:36.4	13:08:42.1	10:48:26.5	12:51:56.6	4:41:46.2	20:38:14.9	0:45:42.7	20:51:42.6
11/08/2025	Sat	11:43:45.4	2:13:49.9	13:05:52.6	10:49:15.2	12:51:01.2	4:37:53.8	20:34:11.2	0:41:36.9	20:47:42.9
11/09/2025	Sun	11:43:50.2	3:19:26.4	13:02:29.9	10:50:04.8	12:50:06.3	4:34:00.5	20:30:07.9	0:37:31.0	20:43:43.3
11/10/2025	M	11:43:55.9	4:21:10.3	12:58:31.4	10:50:55.4	12:49:12.1	4:30:06.3	20:26:04.9	0:33:25.0	20:39:43.9
11/11/2025	Tu	11:44:02.5	5:17:17.5	12:53:54.5	10:51:47.0	12:48:18.5	4:26:11.4	20:22:02.2	0:29:19.0	20:35:44.5
11/12/2025	W		5:28LQ				4:22:15.6		0:25:12.9	
11/12/2025	W	11:44:09.9	6:07:45.8	12:48:37.6	10:52:39.6	12:47:25.4		20:17:59.9		20:31:45.2
11/13/2025	Th	11:44:18.2	6:53:35.1	12:42:39.5	10:53:33.2	12:46:33.0	4:18:19.0	20:13:58.0	0:21:06.8	20:27:46.1
11/14/2025	F	11:44:27.3	7:36:07.3	12:36:00.4	10:54:27.8	12:45:41.2	4:14:21.5	20:09:56.5	0:17:00.6	20:23:47.0
11/15/2025	Sat	11:44:37.4	8:16:45.9	12:28:41.8	10:55:23.6	12:44:50.0	4:10:23.2	20:05:55.3	0:12:54.5	20:19:48.1
11/16/2025	Sun	11:44:48.2	8:56:47.5	12:20:47.0	10:56:20.4	12:43:59.4	4:06:24.1	20:01:54.4	0:08:48.2	20:15:49.2
11/17/2025	M	11:45:00.0	9:37:20.9	12:12:21.1	10:57:18.3	12:43:09.3	4:02:24.1	19:57:54.0	0:04:42.0	20:11:50.5
11/18/2025	Tu	11:45:12.6	10:19:24.9	12:03:31.2	10:58:17.4	12:42:19.8	3:58:23.2	19:53:53.9	0:00:35.7	20:07:51.8
11/18/2025	Tu								23:56:29.5	
11/19/2025	W	11:45:26.0	11:03:44.9	11:54:25.7	10:59:17.7	12:41:30.9	3:54:21.6	19:49:54.2	23:52:23.2	20:03:53.3
11/20/2025	Th	11:45:40.2	6:47NM	11:45:14.7	11:00:19.1		3:50:19.1			
11/20/2025	Th		11:50:45.2			12:40:42.5		19:45:54.9	23:48:16.9	19:59:54.9
11/21/2025	F	11:45:55.2	12:40:19.0	11:36:08.4	11:01:21.7	12:39:54.7	3:46:15.7	19:41:56.0	23:44:10.6	19:55:56.6
11/22/2025	Sat	11:46:11.1	13:31:43.8	11:27:16.9	11:02:25.4	12:39:07.4	3:42:11.5	19:37:57.5	23:40:04.3	19:51:58.4
11/23/2025	Sun	11:46:27.7	14:23:47.8	11:18:49.6	11:03:30.4	12:38:20.6	3:38:06.5	19:33:59.3	23:35:58.0	19:48:00.4
11/24/2025	M	11:46:45.1	15:15:13.2	11:10:54.1	11:04:36.5	12:37:34.3	3:34:00.7	19:30:01.6	23:31:51.7	19:44:02.4
11/25/2025	Tu	11:47:03.2	16:05:02.4	11:03:36.4	11:05:43.9	12:36:48.5	3:29:54.1	19:26:04.2	23:27:45.5	19:40:04.6
11/26/2025	W	11:47:22.1	16:52:54.4	10:57:00.5	11:06:52.4	12:36:03.2	3:25:46.6	19:22:07.2	23:23:39.2	19:36:06.9
11/27/2025	Th	11:47:41.6	17:39:06.4	10:51:08.3	11:08:02.1	12:35:18.4	3:21:38.4	19:18:10.7	23:19:33.0	19:32:09.3

**Ephemeris transit times plus phases of the Moon and the seasons.**

All dates and times are UT1.

Date	Sun	Moon	Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune
ME= March Equinox, JS= June Solstice, SE= September Equinox, DS= December Solstice									
11/28/2025	F	11:48:01.9	6:59FQ	10:46:00.2	11:09:13.1	12:34:34.1	3:17:29.3		
11/28/2025	F		18:24:25.7				19:14:14.5	23:15:26.8	19:28:11.8
11/29/2025	Sat	11:48:22.8	19:10:01.3	10:41:35.4	11:10:25.2	12:33:50.2	3:13:19.4	19:10:18.7	23:11:20.7
11/30/2025	Sun	11:48:44.5	19:57:17.5	10:37:51.9	11:11:38.6	12:33:06.7	3:09:08.8	19:06:23.3	23:07:14.6
12/01/2025	M	11:49:06.7	20:47:47.1	10:34:47.2	11:12:53.1	12:32:23.7	3:04:57.4	19:02:28.3	23:03:08.5
12/02/2025	Tu	11:49:29.5	21:42:57.8	10:32:18.2	11:14:08.7	12:31:41.1	3:00:45.2	18:58:33.6	22:59:02.5
12/03/2025	W	11:49:53.0	22:43:39.6	10:30:22.0	11:15:25.5	12:30:58.9	2:56:32.2	18:54:39.4	22:54:56.6
12/04/2025	Th	11:50:17.0	23:14FM	10:28:55.4	11:16:43.5	12:30:17.1	2:52:18.5	18:50:45.6	22:50:50.7
12/04/2025	Th		23:49:13.9						
12/05/2025	F	11:50:41.6		10:27:55.5	11:18:02.6	12:29:35.7	2:48:04.0	18:46:52.1	22:46:44.9
12/06/2025	Sat	11:51:06.8	0:56:59.0	10:27:19.3	11:19:22.8	12:28:54.7	2:43:48.8	18:42:59.1	22:42:39.1
12/07/2025	Sun	11:51:32.5	2:02:58.9	10:27:04.5	11:20:44.0	12:28:14.0	2:39:32.9	18:39:06.4	22:38:33.4
12/08/2025	M	11:51:58.6	3:04:01.8	10:27:08.5	11:22:06.3	12:27:33.7	2:35:16.3	18:35:14.1	22:34:27.8
12/09/2025	Tu	11:52:25.3	3:58:54.9	10:27:29.4	11:23:29.7	12:26:53.8	2:30:59.0	18:31:22.2	22:30:22.2
12/10/2025	W	11:52:52.4	4:48:07.5	10:28:05.3	11:24:54.0	12:26:14.1	2:26:40.9	18:27:30.7	22:26:16.8
12/11/2025	Th	11:53:19.9	5:32:58.5	10:28:54.5	11:26:19.3	12:25:34.8	2:22:22.2	18:23:39.6	22:22:11.4
12/11/2025	Th		20:52LQ						
12/12/2025	F	11:53:47.8	6:14:58.8	10:29:55.6	11:27:45.4	12:24:55.8	2:18:02.9	18:19:48.9	22:18:06.1
12/13/2025	Sat	11:54:16.0	6:55:35.0	10:31:07.4	11:29:12.5	12:24:17.0	2:13:42.8	18:15:58.6	22:14:00.9
12/14/2025	Sun	11:54:44.6	7:36:05.1	10:32:28.7	11:30:40.4	12:23:38.6	2:09:22.1	18:12:08.6	22:09:55.8
12/15/2025	M	11:55:13.5	8:17:37.3	10:33:58.7	11:32:09.1	12:23:00.4	2:05:00.8	18:08:19.0	22:05:50.8
12/16/2025	Tu	11:55:42.7	9:01:07.7	10:35:36.4	11:33:38.5	12:22:22.4	2:00:38.9	18:04:29.9	22:01:45.9
12/17/2025	W	11:56:12.0	9:47:14.1	10:37:21.2	11:35:08.6	12:21:44.6	1:56:16.4	18:00:41.0	21:57:41.2
12/18/2025	Th	11:56:41.6	10:36:05.9	10:39:12.3	11:36:39.3	12:21:07.1	1:51:53.3	17:56:52.6	21:53:36.5
12/19/2025	F	11:57:11.3	11:27:14.6	10:41:09.3	11:38:10.6	12:20:29.8	1:47:29.7	17:53:04.6	21:49:32.0
12/20/2025	Sat	11:57:41.1	1:43NM	10:43:11.7	11:39:42.4		1:43:05.6		
12/20/2025	Sat		12:19:34.8			12:19:52.6		17:49:16.9	21:45:27.6
12/21/2025	Sun	11:58:11.0	13:11:41.4	10:45:19.1	11:41:14.6	12:19:15.6	1:38:40.9		
12/21/2025	Sun	15:03DS						17:45:29.6	21:41:23.3
12/22/2025	M	11:58:40.9	14:02:19.8	10:47:31.0	11:42:47.2	12:18:38.7	1:34:15.7	17:41:42.7	21:37:19.1
12/23/2025	Tu	11:59:10.8	14:50:49.1	10:49:47.2	11:44:20.2	12:18:01.9	1:29:50.0	17:37:56.1	21:33:15.1
12/24/2025	W	11:59:40.7	15:37:09.9	10:52:07.3	11:45:53.4	12:17:25.3	1:25:23.9	17:34:09.9	21:29:11.2
12/25/2025	Th	12:00:10.5	16:21:57.5	10:54:31.1	11:47:26.8	12:16:48.7	1:20:57.4	17:30:24.1	21:25:07.5
12/26/2025	F	12:00:40.2	17:06:11.9	10:56:58.4	11:49:00.4	12:16:12.2	1:16:30.5	17:26:38.6	21:21:03.9
12/27/2025	Sat	12:01:09.7	17:51:09.7	10:59:28.8	11:50:34.0	12:15:35.7	1:12:03.1	17:22:53.5	
12/27/2025	Sat		19:10FQ						21:17:00.5
12/28/2025	Sun	12:01:39.1	18:38:18.7	11:02:02.4	11:52:07.6	12:14:59.3	1:07:35.5	17:19:08.8	21:12:57.2
12/29/2025	M	12:02:08.2	19:29:11.0	11:04:38.8	11:53:41.2	12:14:22.9	1:03:07.4	17:15:24.4	21:08:54.0
12/30/2025	Tu	12:02:37.1	20:25:05.0	11:07:17.9	11:55:14.7	12:13:46.5	0:58:39.1	17:11:40.3	21:04:51.1
12/31/2025	W	12:03:05.7	21:26:29.1	11:09:59.6	11:56:47.9	12:13:10.1	0:54:10.5	17:07:56.6	21:00:48.3
01/01/2026	Th	12:03:34.0	22:32:12.0	11:12:43.6	11:58:20.9	12:12:33.6	0:49:41.6	17:04:13.2	20:56:45.6
01/02/2026	F			11:15:30.0			0:45:12.5		

Twilight criterion is Sun 15.0 degrees below horizon.

ssorts.py ver 240120a + gglib version 240118a Delta-T data current 01/11/2024