

December 01, 2022 12:00:00 PM MST

Object	Right ascens	Declination	Earth distance	Sun distance
Sun	16h 31m 33.7s	-21° 53' 07"	0	0
Mercury	17h 25m 44.8s	-25° 16' 18"	202,069,344	66,884,466
Venus	17h 14m 09.7s	-23° 25' 56"	251,042,238	108,779,268
Mars	05h 09m 33.1s	+24° 57' 52"	81,459,136	228,291,048
Ceres	11h 55m 35.6s	+11° 10' 12"	391,946,421	381,474,570
Jupiter	23h 58m 14.7s	-01° 44' 26"	678,729,530	740,766,544
Saturn	21h 30m 54.1s	-16° 02' 28"	1,515,568,055	1,472,523,335
Uranus	02h 54m 37.9s	+16° 16' 40"	2,807,440,686	2,943,251,043
Neptune	23h 34m 53.8s	-04° 01' 24"	4,439,251,958	4,474,943,279
Pluto	19h 57m 11.6s	-22° 58' 47"	5,283,664,377	5,184,722,621
Moon	23h 49m 10.5s	-06° 21' 22"	378,625	0

(Distances in km)

Object	Rise:	Tran	Set:	Phase	Constl	Magnitud
Sun	07:02	11:49	16:36	0.00%	Oph	unknown
Mercury	08:12	12:43	17:15	93.56%	Oph	-0.6
Venus	07:52	12:32	17:11	98.61%	Oph	-3.9
Mars	16:51	00:30	08:03	99.73%	Tau	-1.8
Ceres	00:36	07:15	13:54	99.50%	Leo	8.5
Jupiter	13:18	19:15	01:15	99.11%	Psc	-2.6
Saturn	11:41	16:48	21:55	99.78%	Cap	0.8
Uranus	15:12	22:10	05:13	99.99%	Ari	5.6
Neptune	13:03	18:51	00:44	99.97%	Aqr	7.9
Pluto	10:33	15:13	19:53	99.99%	Sgr	14.4
Moon	13:25	19:16	00:12	63.02%	Aqr	unknown

Meteor Radiant Report

Name	Month/Day	RA	Decl	Hourly Rate
December Phoenicids	12/05	1.0	-55.0	100
December Phoenicids	12/05	1.0	-45.0	100
Monocerotids	12/10	6.7	14.0	3
Southern Chi Orionids	12/10	5.7	16.0	8
Northern Chi Orionids	12/11	5.6	26.0	4
Sigma Hydrids	12/11	8.4	1.6	5
Delta Arietids	12/11	3.5	22.0	5
Geminids	12/14	7.5	32.5	90
Ursids	12/22	14.5	75.8	20

Equinox/Solstice Report

Vernal equinox: 3/20/22 8:34 AM STD
 Summer solstice: 6/21/22 2:14 AM STD
 Autumnal equinox: 9/22/22 6:05 PM STD
 Winter solstice: 12/21/22 2:49 PM STD

December 01, 2022 12:00:00 PM MST

Date	Moonrise	Moonset	Sunrise	Sunset	Begin Twilight	End Twilight
12/1/22	13:25	00:11	07:02	16:36	05:26	18:12
12/2/22	13:49	01:20	07:03	16:35	05:27	18:12
12/3/22	14:12	02:26	07:04	16:35	05:28	18:11
12/4/22	14:36	03:32	07:05	16:35	05:29	18:11
12/5/22	15:03	04:37	07:06	16:35	05:30	18:12
12/6/22	15:34	05:43	07:07	16:35	05:31	18:12
12/7/22	16:09	06:47	07:08	16:35	05:31	18:12
12/8/22	16:52	07:49	07:09	16:35	05:32	18:12
12/9/22	17:42	08:45	07:09	16:35	05:33	18:12
12/10/22	18:37	09:36	07:10	16:35	05:34	18:12
12/11/22	19:36	10:17	07:11	16:35	05:34	18:12
12/12/22	20:37	10:53	07:12	16:35	05:35	18:12
12/13/22	21:39	11:23	07:13	16:36	05:36	18:13
12/14/22	22:40	11:49	07:13	16:36	05:36	18:13
12/15/22	23:42	12:11	07:14	16:36	05:37	18:13
12/16/22	-----	12:33	07:15	16:36	05:38	18:14
12/17/22	00:43	12:55	07:15	16:37	05:38	18:14
12/18/22	01:48	13:19	07:16	16:37	05:39	18:14
12/19/22	02:56	13:46	07:17	16:38	05:39	18:15
12/20/22	04:08	14:17	07:17	16:38	05:40	18:15
12/21/22	05:24	14:58	07:18	16:39	05:40	18:16
12/22/22	06:41	15:49	07:18	16:39	05:41	18:16
12/23/22	07:55	16:53	07:19	16:40	05:41	18:17
12/24/22	08:58	18:07	07:19	16:40	05:42	18:17
12/25/22	09:49	19:26	07:20	16:41	05:42	18:18
12/26/22	10:28	20:44	07:20	16:42	05:43	18:19
12/27/22	11:01	22:00	07:20	16:42	05:43	18:19
12/28/22	11:29	23:11	07:20	16:43	05:43	18:20
12/29/22	11:53	-----	07:21	16:44	05:44	18:21
12/30/22	12:16	00:18	07:21	16:44	05:44	18:21
12/31/22	12:40	01:25	07:21	16:45	05:44	18:22

'-----' means the event does not occur on this date.

*Daylight Saving Time ends for most of US.