

December 01, 2021 12:00:00 PM MST

Object	Right ascens	Declination	Earth distance	Sun distance
Sun	16h 32m 35.6s	-21° 55' 14"	0	0
Mercury	16h 38m 11.3s	-23° 05' 56"	217,080,129	69,787,071
Venus	19h 32m 31.2s	-24° 39' 02"	63,560,749	108,140,505
Mars	15h 18m 13.2s	-18° 04' 20"	371,470,172	235,473,699
Ceres	04h 10m 05.8s	+16° 48' 02"	263,292,252	409,898,166
Jupiter	21h 52m 28.3s	-14° 00' 32"	770,559,892	747,885,099
Saturn	20h 46m 45.7s	-18° 47' 04"	1,554,971,810	1,484,934,616
Uranus	02h 37m 43.3s	+14° 57' 23"	2,820,152,032	2,951,116,166
Neptune	23h 26m 32.5s	-04° 51' 35"	4,446,615,918	4,476,087,271
Pluto	19h 49m 19.4s	-22° 47' 18"	5,251,030,194	5,148,301,140
Moon	14h 09m 34.1s	-11° 23' 52"	363,360	0

(Distances in km)

Object	Rise:	Tran	Set:	Phase	Constl	Magnitud
Sun	07:02	11:49	16:36	0.00%	Oph	unknown
Mercury	07:13	11:55	16:36	99.90%	Oph	-1.1
Venus	10:15	14:49	19:23	28.09%	Sgr	-4.7
Mars	05:34	10:35	15:35	99.07%	Lib	1.6
Ceres	16:26	23:26	06:30	99.50%	Tau	7.2
Jupiter	11:53	17:08	22:23	99.08%	Cap	-2.3
Saturn	11:05	16:03	21:00	99.82%	Cap	0.7
Uranus	15:00	21:53	04:49	99.99%	Ari	5.7
Neptune	12:56	18:42	00:32	99.97%	Aqr	7.9
Pluto	10:23	15:04	19:45	99.99%	Sgr	14.4
Moon	03:40	09:22	14:55	9.38%	Vir	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

December 01, 2021 12:00:00 PM MST

Date	Moonrise	Moonset	Sunrise	Sunset	Begin Twilight	End Twilight
12/1/21	03:40	14:55	07:02	16:36	05:26	18:12
12/2/21	04:56	15:29	07:03	16:36	05:27	18:12
12/3/21	06:15	16:09	07:04	16:36	05:28	18:12
12/4/21	07:35	17:00	07:05	16:36	05:29	18:12
12/5/21	08:50	18:00	07:06	16:36	05:30	18:12
12/6/21	09:55	19:10	07:06	16:36	05:30	18:12
12/7/21	10:48	20:23	07:07	16:36	05:31	18:12
12/8/21	11:30	21:36	07:08	16:36	05:32	18:12
12/9/21	12:04	22:45	07:09	16:36	05:33	18:12
12/10/21	12:32	23:52	07:10	16:36	05:33	18:12
12/11/21	12:57	-----	07:11	16:36	05:34	18:13
12/12/21	13:20	00:54	07:11	16:36	05:35	18:13
12/13/21	13:43	01:56	07:12	16:36	05:36	18:13
12/14/21	14:06	02:56	07:13	16:37	05:36	18:13
12/15/21	14:32	03:56	07:14	16:37	05:37	18:14
12/16/21	15:01	04:56	07:14	16:37	05:38	18:14
12/17/21	15:35	05:57	07:15	16:38	05:38	18:14
12/18/21	16:14	06:56	07:16	16:38	05:39	18:15
12/19/21	17:01	07:52	07:16	16:38	05:39	18:15
12/20/21	17:54	08:43	07:17	16:39	05:40	18:16
12/21/21	18:52	09:29	07:17	16:39	05:40	18:16
12/22/21	19:54	10:07	07:18	16:40	05:41	18:17
12/23/21	20:57	10:41	07:18	16:40	05:41	18:17
12/24/21	22:01	11:10	07:19	16:41	05:42	18:18
12/25/21	23:05	11:37	07:19	16:42	05:42	18:18
12/26/21	-----	12:01	07:19	16:42	05:42	18:19
12/27/21	00:11	12:26	07:20	16:43	05:43	18:20
12/28/21	01:19	12:53	07:20	16:44	05:43	18:20
12/29/21	02:30	13:23	07:20	16:44	05:43	18:21
12/30/21	03:46	13:59	07:20	16:45	05:44	18:22
12/31/21	05:04	14:42	07:21	16:46	05:44	18:22

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