

October 01, 2019 12:00:00 PM MDT

Object	Right ascens	Declination	Earth distance	Sun distance
Sun	12h 30m 12.8s	-03° 15' 45"	0	0
Mercury	13h 41m 06.8s	-11° 38' 47"	189,980,672	69,767,553
Venus	13h 20m 03.5s	-07° 28' 27"	248,587,175	108,175,747
Mars	11h 55m 42.9s	+01° 31' 48"	394,484,984	248,242,332
Ceres	16h 49m 19.8s	-24° 33' 34"	466,745,357	427,849,910
Jupiter	17h 09m 08.3s	-22° 39' 38"	825,338,960	786,947,520
Saturn	19h 00m 58.4s	-22° 31' 01"	1,479,777,581	1,502,397,628
Uranus	02h 14m 05.3s	+12° 54' 52"	2,832,739,495	2,966,496,707
Neptune	23h 12m 50.9s	-06° 12' 37"	4,338,427,710	4,478,106,780
Pluto	19h 29m 35.9s	-22° 22' 50"	5,035,753,227	5,070,037,450
Moon	15h 13m 38.2s	-14° 12' 43"	369,168	0

(Distances in km)

Object	Rise:	Tran	Set:	Phase	Constl	Magnitud
Sun	06:56	12:50	18:43	0.00%	Vir	unknown
Mercury	08:36	14:01	19:24	84.95%	Vir	-0.2
Venus	08:01	13:40	19:17	97.47%	Vir	-3.9
Mars	06:07	12:15	18:22	99.73%	Vir	1.8
Ceres	12:35	17:09	21:43	99.50%	Oph	9.1
Jupiter	12:45	17:27	22:09	99.19%	Oph	-2.1
Saturn	14:36	19:19	00:05	99.75%	Sgr	0.5
Uranus	19:45	02:35	09:20	99.99%	Ari	5.7
Neptune	17:49	23:30	05:16	100.00%	Aqr	7.8
Pluto	15:03	19:46	00:33	99.98%	Sgr	14.3
Moon	10:13	15:39	20:58	12.28%	Lib	unknown

Meteor Radiant Report

Name	Month/Day	RA	Decl	Hourly Rate
Southern Annual Andromedids	10/03	0.3	8.0	13
Northern Annual Andromedids	10/03	1.3	34.0	10
October Draconids/Giacobinids	10/09	17.5	54.1	2
Northern Piscids	10/12	1.7	14.0	6
Epsilon Geminids	10/19	6.9	27.0	5
Orionids	10/21	6.3	15.8	30
Leo Minorids	10/24	10.8	37.0	3

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Date	Moonrise	Moonset	Sunrise	Sunset	Begin Twilight	End Twilight
10/1/19	10:14	20:58	06:56	18:42	05:27	20:12
10/2/19	11:25	21:38	06:57	18:41	05:28	20:10
10/3/19	12:30	22:22	06:58	18:39	05:29	20:09
10/4/19	13:32	23:11	06:59	18:38	05:30	20:07
10/5/19	14:26	-----	07:00	18:36	05:31	20:05
10/6/19	15:14	00:03	07:01	18:34	05:32	20:04
10/7/19	15:55	00:58	07:02	18:33	05:33	20:02
10/8/19	16:30	01:55	07:03	18:31	05:34	20:01
10/9/19	17:02	02:53	07:04	18:30	05:35	19:59
10/10/19	17:30	03:51	07:05	18:28	05:36	19:58
10/11/19	17:56	04:49	07:06	18:27	05:37	19:56
10/12/19	18:21	05:47	07:07	18:25	05:38	19:55
10/13/19	18:47	06:44	07:08	18:24	05:39	19:53
10/14/19	19:14	07:43	07:09	18:22	05:40	19:52
10/15/19	19:43	08:42	07:10	18:21	05:41	19:51
10/16/19	20:15	09:44	07:11	18:19	05:42	19:49
10/17/19	20:53	10:45	07:12	18:18	05:43	19:48
10/18/19	21:37	11:48	07:13	18:16	05:44	19:46
10/19/19	22:28	12:47	07:14	18:15	05:45	19:45
10/20/19	23:27	13:44	07:15	18:14	05:45	19:44
10/21/19	-----	14:35	07:16	18:12	05:46	19:42
10/22/19	00:32	15:20	07:17	18:11	05:47	19:41
10/23/19	01:42	16:00	07:18	18:10	05:48	19:40
10/24/19	02:54	16:36	07:20	18:08	05:49	19:39
10/25/19	04:08	17:10	07:21	18:07	05:50	19:38
10/26/19	05:22	17:43	07:22	18:06	05:51	19:36
10/27/19	06:35	18:16	07:23	18:04	05:52	19:35
10/28/19	07:49	18:51	07:24	18:03	05:53	19:34
10/29/19	09:02	19:29	07:25	18:02	05:54	19:33
10/30/19	10:11	20:11	07:26	18:01	05:55	19:32
10/31/19	11:18	20:59	07:27	18:00	05:56	19:31

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