

August 01, 2019 12:00:00 PM MDT

Object	Right ascens	Declination	Earth distance	Sun distance
Sun	08h 46m 24.0s	+17° 57' 35"	0	0
Mercury	07h 40m 47.1s	+17° 47' 15"	105,878,274	57,441,885
Venus	08h 33m 18.2s	+19° 47' 32"	258,619,830	107,492,860
Mars	09h 29m 14.4s	+16° 03' 31"	396,621,305	248,798,141
Ceres	15h 54m 59.8s	-20° 22' 14"	339,587,166	420,370,017
Jupiter	16h 53m 36.9s	-22° 07' 16"	692,261,669	790,138,190
Saturn	19h 07m 32.3s	-22° 14' 41"	1,362,740,638	1,503,135,857
Uranus	02h 17m 38.8s	+13° 13' 58"	2,956,828,575	2,967,594,122
Neptune	23h 18m 35.4s	-05° 35' 20"	4,359,439,495	4,478,250,175
Pluto	19h 33m 04.5s	-22° 10' 08"	4,919,207,347	5,064,060,503
Moon	09h 24m 08.1s	+17° 43' 11"	359,712	0

(Distances in km)

Object	Rise:	Tran	Set:	Phase	Constl	Magnitud
Sun	05:59	13:06	20:13	0.00%	Cnc	unknown
Mercury	04:57	12:01	19:04	14.85%	Gem	1.8
Venus	05:40	12:53	20:06	99.80%	Cnc	-3.9
Mars	06:51	13:49	20:46	99.69%	Leo	1.8
Ceres	16:24	21:14	02:09	99.50%	Lib	8.4
Jupiter	16:28	21:12	02:00	99.38%	Oph	-2.5
Saturn	18:42	23:25	04:13	99.96%	Sgr	0.2
Uranus	23:48	06:38	13:25	99.93%	Ari	5.8
Neptune	21:52	03:36	09:23	99.99%	Aqr	7.8
Pluto	19:06	23:50	04:37	100.00%	Sgr	14.2
Moon	06:26	13:47	21:00	0.55%	Leo	unknown

Meteor Radiant Report

Name	Month/Day	RA	Decl	Hourly Rate
Southern Iota Aquarids	08/05	22.2	-14.7	15
Perseids	08/12	3.1	57.4	95
Northern Delta Aquarids	08/12	22.6	-5.0	20
Kappa Cygnids	08/18	19.1	59.0	5

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

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