

August 01, 2021 12:00:00 PM MDT

| Object  | Right ascens  | Declination  | Earth distance | Sun distance  |
|---------|---------------|--------------|----------------|---------------|
| Sun     | 08h 48m 23.4s | +17° 49' 51" | 0              | 0             |
| Mercury | 08h 50m 51.3s | +19° 25' 48" | 200,848,584    | 49,293,854    |
| Venus   | 10h 58m 33.3s | +07° 57' 14" | 196,277,289    | 108,087,338   |
| Mars    | 10h 16m 46.3s | +11° 51' 04" | 382,866,759    | 248,935,882   |
| Ceres   | 03h 57m 19.5s | +13° 55' 25" | 453,281,548    | 424,857,953   |
| Jupiter | 22h 08m 12.3s | -12° 42' 04" | 607,917,962    | 752,457,157   |
| Saturn  | 20h 51m 34.6s | -18° 25' 43" | 1,336,718,413  | 1,488,528,238 |
| Uranus  | 02h 49m 16.2s | +15° 50' 19" | 2,962,972,089  | 2,953,631,488 |
| Neptune | 23h 35m 33.8s | -03° 53' 52" | 4,364,542,809  | 4,476,433,274 |
| Pluto   | 19h 49m 53.9s | -22° 39' 33" | 4,989,063,616  | 5,136,169,169 |
| Moon    | 03h 18m 37.7s | +16° 29' 13" | 404,182        | 0             |

(Distances in km)

| Object  | Rise: | Tran  | Set:  | Phase   | Constl | Magnitud |
|---------|-------|-------|-------|---------|--------|----------|
| Sun     | 06:00 | 13:06 | 20:12 | 0.00%   | Cnc    | unknown  |
| Mercury | 05:56 | 13:09 | 20:21 | 99.79%  | Cnc    | -2.0     |
| Venus   | 08:47 | 15:17 | 21:45 | 82.01%  | Leo    | -4.0     |
| Mars    | 07:52 | 14:34 | 21:17 | 98.66%  | Leo    | 1.8      |
| Ceres   | 01:27 | 08:17 | 15:06 | 99.50%  | Tau    | 9.2      |
| Jupiter | 21:04 | 02:23 | 07:47 | 99.88%  | Aqr    | -2.8     |
| Saturn  | 20:09 | 01:07 | 06:10 | 100.00% | Cap    | 0.2      |
| Uranus  | 00:12 | 07:08 | 14:04 | 99.93%  | Ari    | 5.8      |
| Neptune | 22:02 | 03:51 | 09:44 | 99.99%  | Aqr    | 7.8      |
| Pluto   | 19:23 | 00:04 | 04:50 | 100.00% | Sgr    | 14.3     |
| Moon    | 00:29 | 07:32 | 14:43 | 39.25%  | Ari    | 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<br>Twilight | End<br>Twilight |
|---------|----------|---------|---------|--------|-------------------|-----------------|
| 8/1/21  | 00:29    | 14:45   | 06:00   | 20:12  | 04:12             | 21:59           |
| 8/2/21  | 00:58    | 15:45   | 06:01   | 20:11  | 04:14             | 21:57           |
| 8/3/21  | 01:32    | 16:44   | 06:02   | 20:10  | 04:15             | 21:56           |
| 8/4/21  | 02:11    | 17:42   | 06:02   | 20:09  | 04:16             | 21:54           |
| 8/5/21  | 02:57    | 18:35   | 06:03   | 20:08  | 04:18             | 21:53           |
| 8/6/21  | 03:51    | 19:23   | 06:04   | 20:07  | 04:19             | 21:51           |
| 8/7/21  | 04:51    | 20:04   | 06:05   | 20:05  | 04:21             | 21:50           |
| 8/8/21  | 05:56    | 20:40   | 06:06   | 20:04  | 04:22             | 21:48           |
| 8/9/21  | 07:03    | 21:12   | 06:07   | 20:03  | 04:23             | 21:46           |
| 8/10/21 | 08:10    | 21:41   | 06:08   | 20:02  | 04:25             | 21:45           |
| 8/11/21 | 09:19    | 22:07   | 06:09   | 20:01  | 04:26             | 21:43           |
| 8/12/21 | 10:27    | 22:34   | 06:10   | 19:59  | 04:28             | 21:41           |
| 8/13/21 | 11:37    | 23:02   | 06:11   | 19:58  | 04:29             | 21:39           |
| 8/14/21 | 12:48    | 23:33   | 06:12   | 19:57  | 04:30             | 21:38           |
| 8/15/21 | 14:01    | -----   | 06:13   | 19:55  | 04:32             | 21:36           |
| 8/16/21 | 15:14    | 00:09   | 06:13   | 19:54  | 04:33             | 21:34           |
| 8/17/21 | 16:25    | 00:52   | 06:14   | 19:53  | 04:34             | 21:32           |
| 8/18/21 | 17:31    | 01:44   | 06:15   | 19:51  | 04:36             | 21:31           |
| 8/19/21 | 18:27    | 02:44   | 06:16   | 19:50  | 04:37             | 21:29           |
| 8/20/21 | 19:14    | 03:52   | 06:17   | 19:49  | 04:38             | 21:27           |
| 8/21/21 | 19:53    | 05:03   | 06:18   | 19:47  | 04:40             | 21:25           |
| 8/22/21 | 20:24    | 06:14   | 06:19   | 19:46  | 04:41             | 21:23           |
| 8/23/21 | 20:52    | 07:23   | 06:20   | 19:44  | 04:42             | 21:21           |
| 8/24/21 | 21:17    | 08:28   | 06:21   | 19:43  | 04:44             | 21:20           |
| 8/25/21 | 21:41    | 09:31   | 06:22   | 19:41  | 04:45             | 21:18           |
| 8/26/21 | 22:05    | 10:32   | 06:23   | 19:40  | 04:46             | 21:16           |
| 8/27/21 | 22:29    | 11:33   | 06:24   | 19:38  | 04:48             | 21:14           |
| 8/28/21 | 22:57    | 12:33   | 06:25   | 19:37  | 04:49             | 21:12           |
| 8/29/21 | 23:29    | 13:34   | 06:26   | 19:35  | 04:50             | 21:10           |
| 8/30/21 | -----    | 14:33   | 06:26   | 19:34  | 04:51             | 21:08           |
| 8/31/21 | 00:05    | 15:32   | 06:27   | 19:32  | 04:53             | 21:07           |

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