

Meteor Activity Outlook for October 28-November 03, 2023



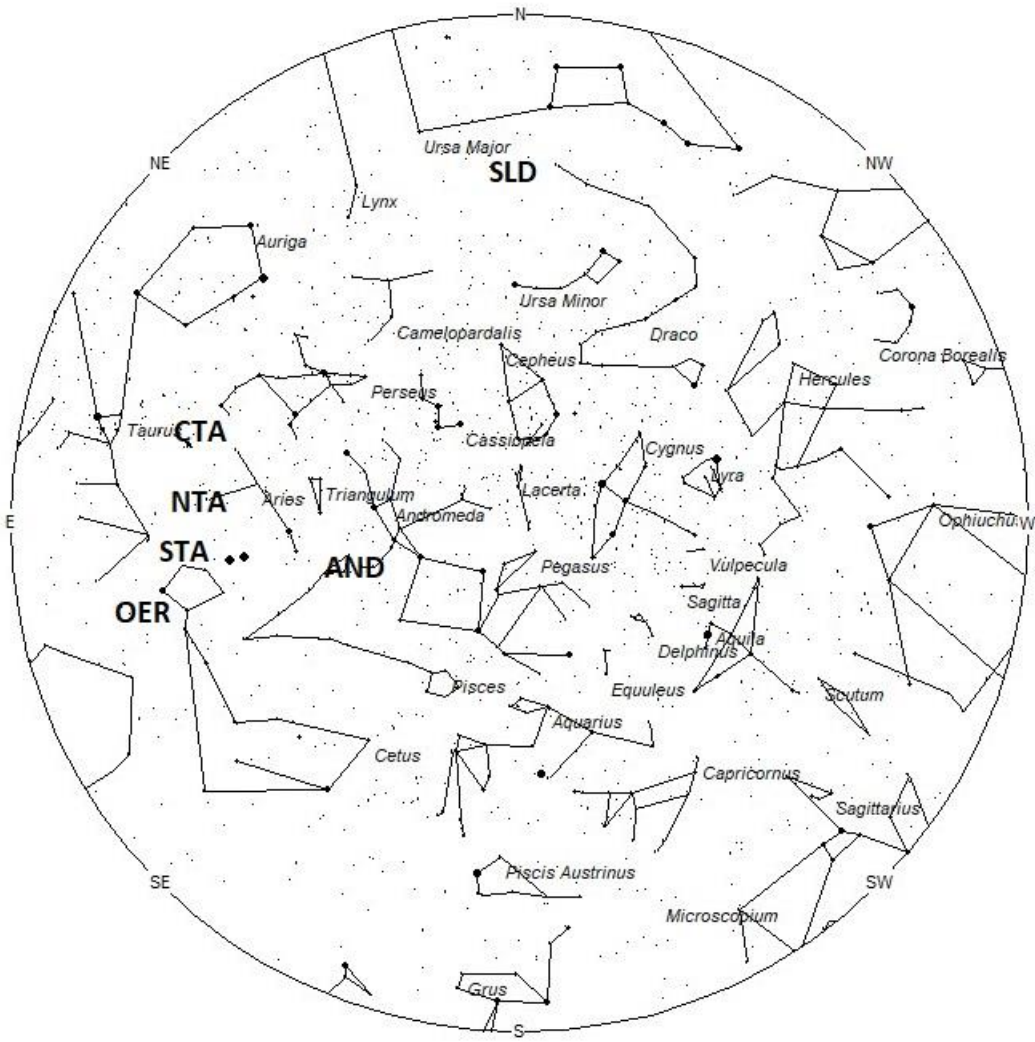
This very long fireball was captured by Roy Georges at 03:47 CEST (01:47 UT) on May 18, 2023, from Pasly, France. According to a majority of reports, this object covered a large length of the sky in less than 10 seconds! ©Roy Georges

As seen from the northern hemisphere, meteor rates continue to be strong in November. While no major activity is expected this month, the two Taurid radiants plus the Leonids keep the skies active. The addition of strong sporadic rates makes November one of the better months to view meteor activity from north of the equator. Skies are fairly quiet as seen from the southern hemisphere this month. Activity from the three showers mentioned above may be seen from south of the equator, but the sporadic rates are much lower than those seen north of the equator.

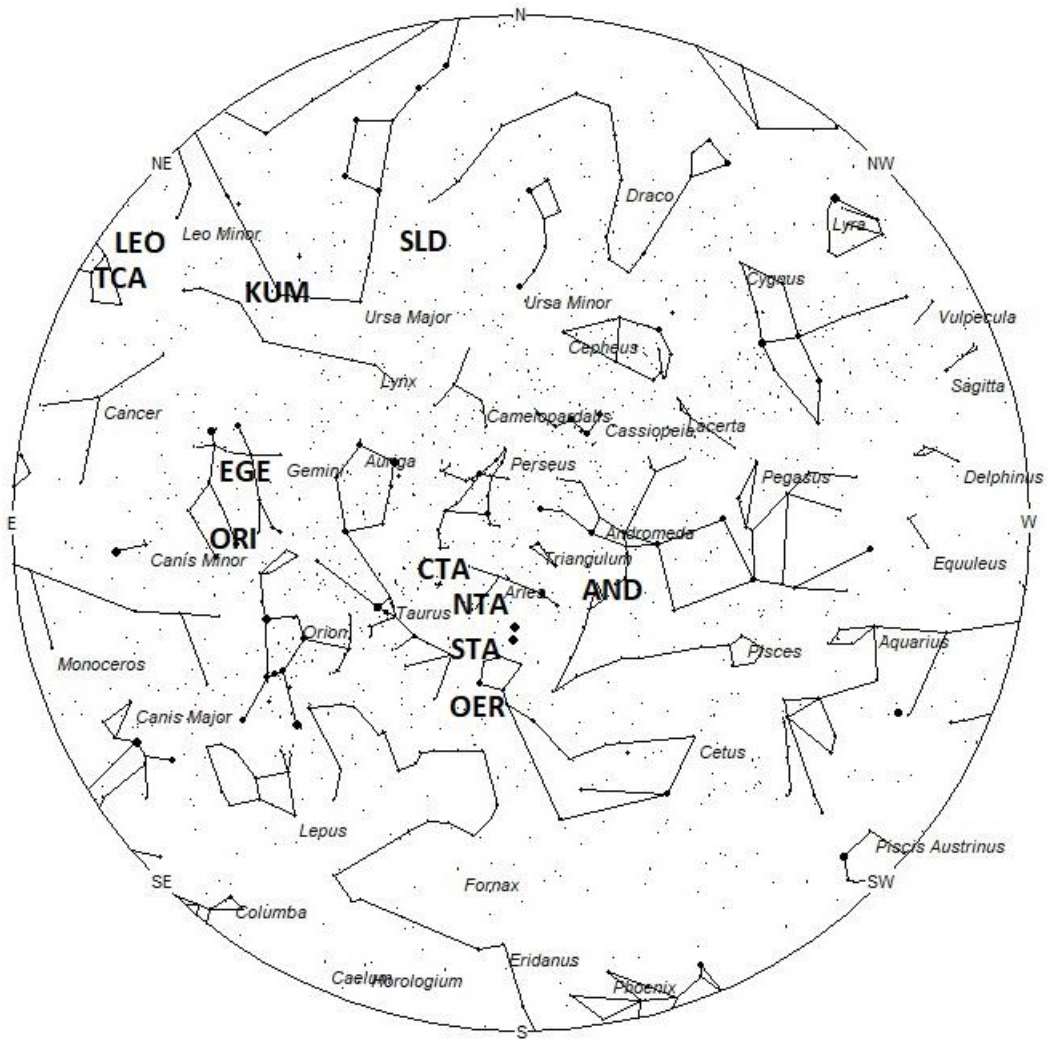
During this period, the moon reaches its full phase on Saturday October 28th. This weekend the moon will lie above the horizon all night long. As the week progresses, a window of opportunity opens up to view under dark skies during the early evening hours. The estimated total hourly rates for evening observers this weekend should be near 2 as seen from mid-northern latitudes (45N) and 1 as seen from tropical southern locations (25S) For morning observers, the estimated total hourly rates should be near 7 as seen from mid-northern latitudes (45N) and 5 as seen from tropical southern locations (25S). Rates are reduced by moonlight this week. The actual rates seen will also

depend on factors such as personal light and motion perception, local weather conditions, alertness, and experience in watching meteor activity. Note that the hourly rates listed below are estimates as viewed from dark sky sites away from urban light sources. Observers viewing from urban areas will see less activity as only the brighter meteors will be visible from such locations.

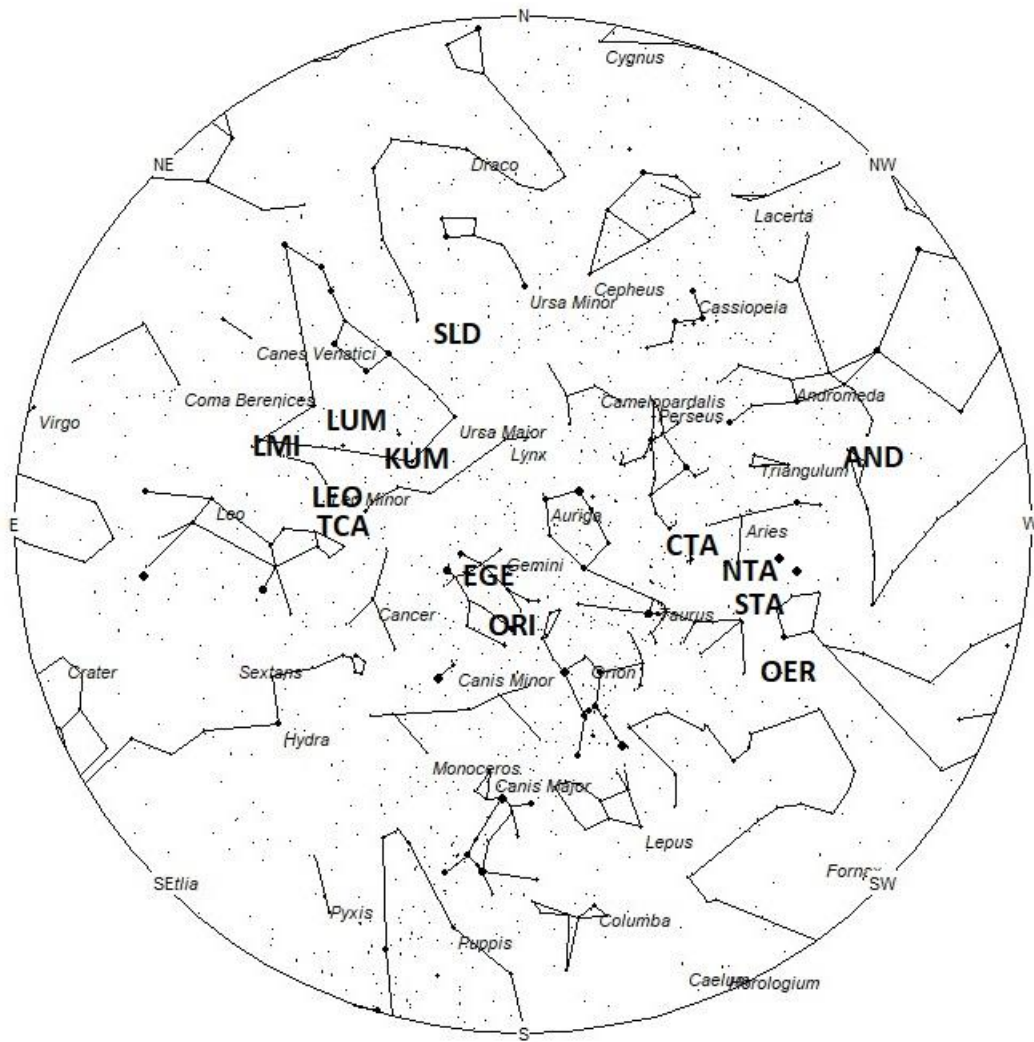
The radiant (the area of the sky where meteors appear to shoot from) positions and rates listed below are exact for Saturday night/Sunday morning October 28/29. These positions do not change greatly day to day so the listed coordinates may be used during this entire period. Most star atlases (available at science stores and planetariums) will provide maps with grid lines of the celestial coordinates so that you may find out exactly where these positions are located in the sky. I have also included charts of the sky that display the radiant positions for evening, midnight, and morning. The center of each chart is the sky directly overhead at the appropriate hour. These charts are oriented for facing south but can be used for any direction by rotating the charts to the desired direction. A planisphere or computer planetarium program is also useful in showing the sky at any time of night on any date of the year. Activity from each radiant is best seen when it is positioned highest in the sky, either due north or south along the meridian, depending on your latitude. Radiants that rise after midnight will not reach their highest point in the sky until daylight. For these radiants, it is best to view them during the last few hours before dawn. It must be remembered that meteor activity is rarely seen at its radiant position. Rather they shoot outwards from the radiant, so it is best to center your field of view so that the radiant lies toward the edge and not the center. Viewing there will allow you to easily trace the path of each meteor back to the radiant (if it is a shower member) or in another direction if it is sporadic. Meteor activity is not seen from radiants that are located far below the horizon. The positions below are listed in a west to east manner in order of right ascension (celestial longitude). The positions listed first are located further west therefore are accessible earlier in the night while those listed further down the list rise later in the night.



Radiant Positions at 9pm Local Daylight-Saving Time



Radiant Positions at 1am Local Daylight-Saving Time



Radiant Positions at 5am Local Daylight-Saving Time

These sources of meteoric activity are expected to be active this week.

Details of each source will continue next week with viewing conditions are more favorable.

You can keep track of the activity of these meteor showers as well as those beyond the limits of visual observing by visiting the [NASA Meteor Shower Portal](#). You can move the sky globe to see different areas of the sky. Colored dots indicate shower meteors while white dots indicate sporadic (random) activity. The large orange disk indicates the position of the sun so little activity will be seen in that area of the sky.

The list below offers the information in tabular form of the showers that I feel are within reach of the visual observer to discern. Hourly rates are often less than 1 but noting parameters such as the duration, radiant distance and the elevation of each meteor, one can compute the probability of shower association. Most showers discovered by video means have rates less than 1 meteor per **night** away from maximum, so the showers listed in these articles are not as weak as they seem. Rates and positions are exact for Saturday night/Sunday morning.

SHOWER	DATE OF MAXIMUM ACTIVITY	CELESTIAL POSITION	ENTRY VELOCITY	CULMINATION	HOURLY RATE	CLASS
Andromedids (AND)	Nov 06	01:13 (018) +22	20	00:00	<1 - <1	IV
Southern Taurids (STA)	Nov 07	03:04 (046) +14	29	02:00	2 - 2	II
omicron Eridanids (OER)	Nov 14	03:09 (047) +01	30	02:00	<1 - <1	IV
Northern Taurids (NTA)	Nov 12	03:09 (047) +20	30	02:00	1 - <1	II
chi Taurids (CTA)	Nov 05	03:50 (051) +26	41	03:00	<1 - <1	IV
Orionids (ORI)	Oct 22	06:42 (101) +16	66	06:00	3- 2	I
epsilon Geminids (EGE)	Oct 19	07:16 (109) +27	68	06:00	<1 - <1	II
kappa Ursae Majorids (KUM)	Nov 06	09:01 (135) +48	66	08:00	<1 - <1	IV
Leonids (LEO)	Nov 18	09:24 (141) +30	69	08:00	<1 - <1	I

tau Cancrids (TCA)	Oct 21	09:38 (145) +29	67	09:00	<1 - <1	IV
Southern lambda Draconids (SLD)	Nov 04	09:56 (150) +72	50	09:00	<1 - <1	IV
lambda Ursa Majorids (LUM)	Oct 28	10:32 (158) +49	61	10:00	<1 - <1	IV
Leonis Minorids (LMI)	Oct 22	11:06 (167) +35	61	11:00	<1 - <1	II

Class Explanation: A scale to group meteor showers by their intensity:

- **Class I:** the strongest annual showers with Zenith Hourly Rates normally ten or better.
- **Class II:** reliable minor showers with ZHR's normally two to ten.
- **Class III:** showers that do not provide annual activity. These showers are rarely active yet have the potential to produce a major display on occasion.
- **Class IV:** weak minor showers with ZHR's rarely exceeding two. The study of these showers is best left to experienced observers who use plotting and angular velocity estimates to determine shower association. These weak showers are also good targets for video and photographic work. Observers with less experience are urged to limit their shower associations to showers with a rating of I to III.