

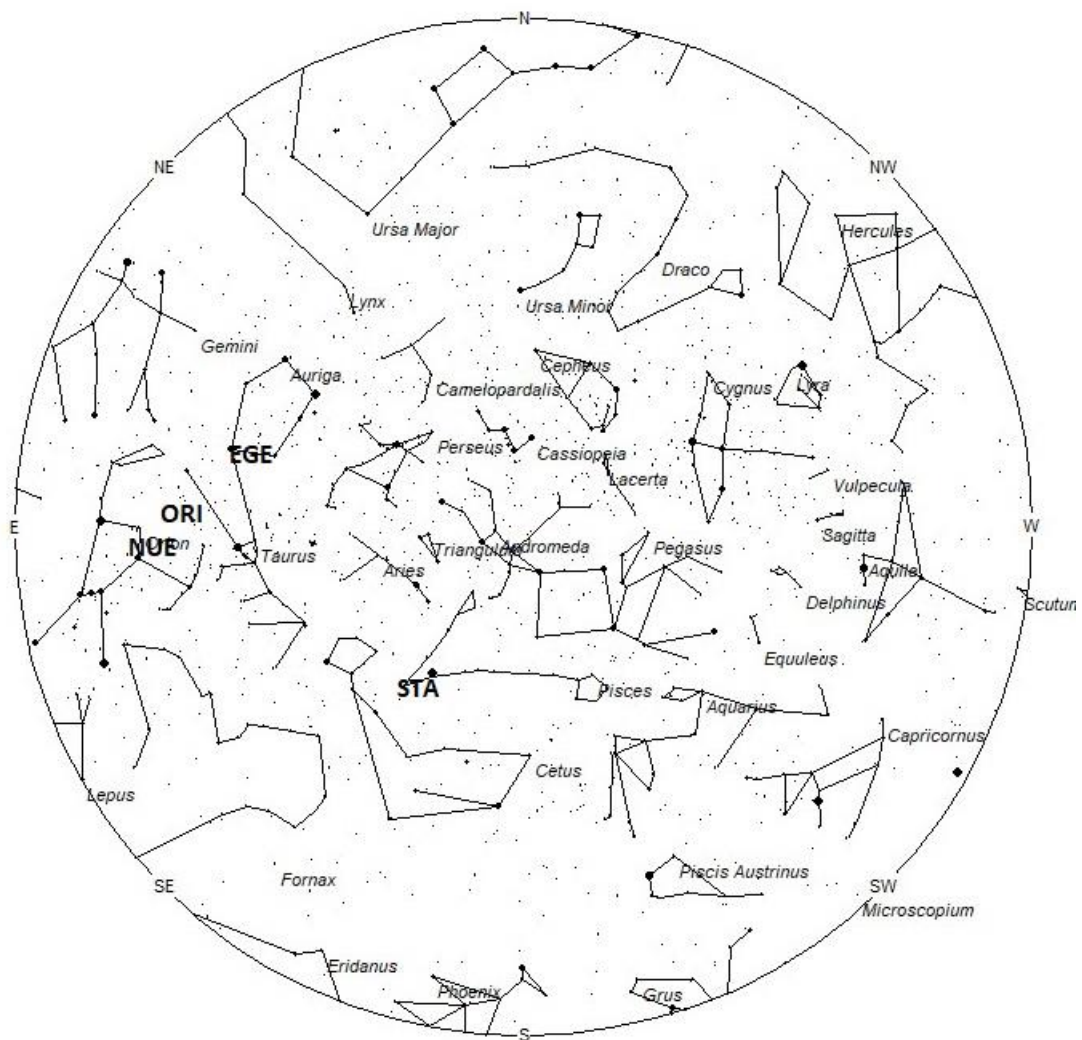
Meteor Activity Outlook for September 26-October 2, 2020



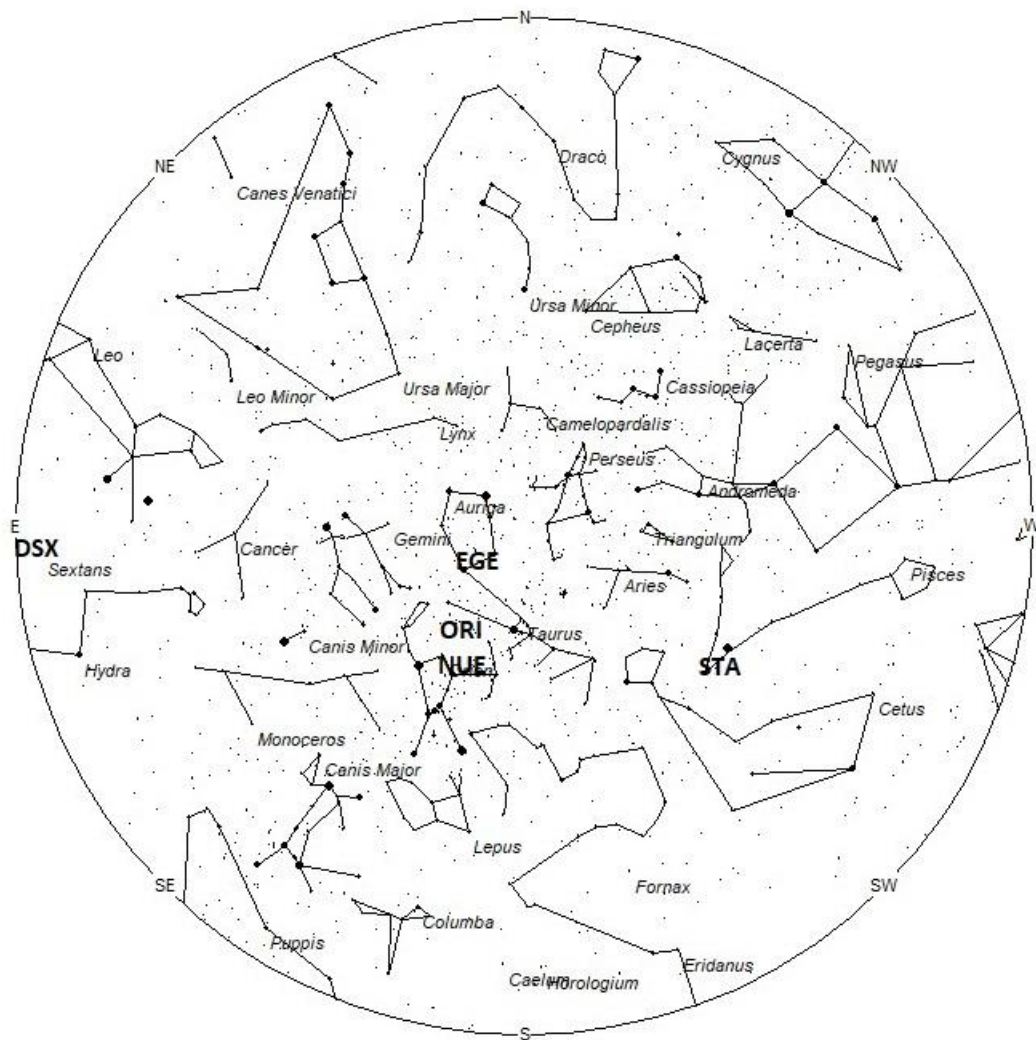
Romarc Bute was photographing a closeup of Comet Neowise from Montbellet, France on the morning of July 27, 2020, when at 01:13 CEST a bright meteor shot downward just to the right of the comet. This object was well seen over western Europe. For more information on this fireball visit [AMS Event#3672-2020](#). Credit: Romarc Bute

During this period, the moon reaches its full phase on Thursday October 1st. At that time, the moon is located opposite the sun and remains above the horizon all night long. This weekend the waxing gibbous moon will set during the early morning hours, allowing a few hours of observations under dark skies between moon set and dawn. The estimated total hourly meteor rates for evening observers this week is near 3 as seen from mid-northern latitudes and 2 as seen from tropical southern locations (25S). For morning observers, the estimated total hourly rates should be near 16 as seen from mid-northern latitudes (45N) and 13 as seen from tropical southern locations (25S). Evening rates are reduced due to moonlight. The actual rates 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 September 26/27. 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. A planisphere or computer



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.

We are now encountering inbound debris from comet 2P/Encke, which has its source superimposed upon the anthelion radiant. Since it has been shown that meteors from 2P/Encke are more numerous than the Anthelions, we will recognize this activity as the **Southern Taurids (STA)**. This source is now active through Christmas, peaking during the first days of November. The current position of the STA radiant lies at 01:32 (023) +08, which places it in southeastern Pisces, 2 degrees southeast of the brilliant orange planet Mars. The radiant is best placed near 0100 local daylight saving time (LDST), when it lies highest above the horizon. Rates are expected to be near 2 no matter your location. With an entry velocity of 27 km/sec., most activity from this radiant would be slow moving.

Observers should be alert for members of the **epsilon Geminids (EGE)** this week. Most lists have these meteors active a bit later in October but there is the possibility that they peak on October 11 instead of October 19. If they are active, they would radiant from an area near 05:12 (078) +29. This area of the sky lies in southern Auriga, 2 degrees northwest of the 2nd magnitude star known as El Nath (beta Tauri). The radiant is best placed in the sky during the last hour before dawn, when it lies highest above the horizon in a dark sky. Current rates would be less than 1 per hour no matter your location. With an entry velocity of 70 km/sec., most activity from this radiant would be of swift speed.

The **nu Eridanids (NUE)** were co-discovered by Japanese observers using SonotoCo and Juergen Rendtel and Sirko Molau of the IMO. Activity from this long-period stream stretches from August 24 all the way to November 16. Maximum activity occurs on September 24th. The radiant currently lies at 05:20 (080) +07, which places it in northern Orion, 1 degree northwest of the 2nd magnitude star known as Bellatrix (gamma Orionis). This area of the sky is best seen during the last dark hour before dawn when the radiant lies highest in a dark sky. Current rates are expected to be near 1 per hour during this period no matter your location. With an entry velocity of 67 km/sec., the average meteor from this source would be of swift velocity.

The **Orionids (ORI)** are active from a radiant located at 05:24 (081) +15. This area of the sky is located in northern Orion, 10 degrees north of the 2nd magnitude star known as Bellatrix (gamma Orionis). This area of the sky is best seen during the last dark hour before dawn when the radiant lies highest in a dark sky. Current rates are expected to be near 3 per hour no matter your location. This would make it the strongest source of activity in the sky, a title it will hold until early November, when Leonid rates surpass it. With an entry velocity of 66 km/sec., the average meteor from this source would be of swift velocity.

The **Daytime Sextantids (DSX)** are not well known due to the fact that the radiant lies close to the sun and these meteors are only visible during the last couple of hours before dawn. The radiant is currently located at 10:09 (152) -01. This position lies in central Sextans, 1 degree southeast of the 4th magnitude star known as alpha Sextantis. This area of the sky is best placed in the sky during the last hour before dawn, when it lies highest above the horizon in a dark sky. Current rates would be most likely less than 1 per hour no matter your location. Spotting any of this activity would be a notable accomplishment. With an entry velocity of 33km/sec., most activity from this radiant would be of medium-slow speed.

Morning **sporadic** rates are expected to be near 10 per hour as seen from mid-northern latitudes and 7 as seen from tropical southern latitudes. Evening rates should be near 2 as seen from the northern hemisphere and 1 as seen from tropical southern latitudes. The list below offers the information from above in tabular form. Rates and positions are exact for Saturday night/Sunday morning except where noted in the shower descriptions.

The list below offers the information from above in tabular form. Rates and positions are exact for Saturday night/Sunday morning except where noted in the shower descriptions.

SHOWER	DATE OF MAXIMUM ACTIVITY	CELESTIAL POSITION	ENTRY VELOCITY	CULMINATION	HOURLY RATE	CLASS
		RA (RA in Deg.) DEC	Km/Sec	Local Daylight Saving Time	North- South	
Southern Taurids (STA)	Nov 03	01:12 (018) +06	27	02:00	2 - 2	II
epsilon Geminids (EGE)	Oct 19	05:12 (078) +29	70	05:00	<1 - <1	II
nu Eridanids (NUE)	Sep 24	05:20 (080) +07	67	05:00	1 - 1	IV
Orionids (ORI)	Oct 21	05:24 (081) +15	66	05:00	3 - 3	I
Daytime Sextantids (DSX)	Sep 28	10:09 (152) -01	33	10:00	<1 - <1	IV