

Meteor Activity Outlook for May 22-28, 2021

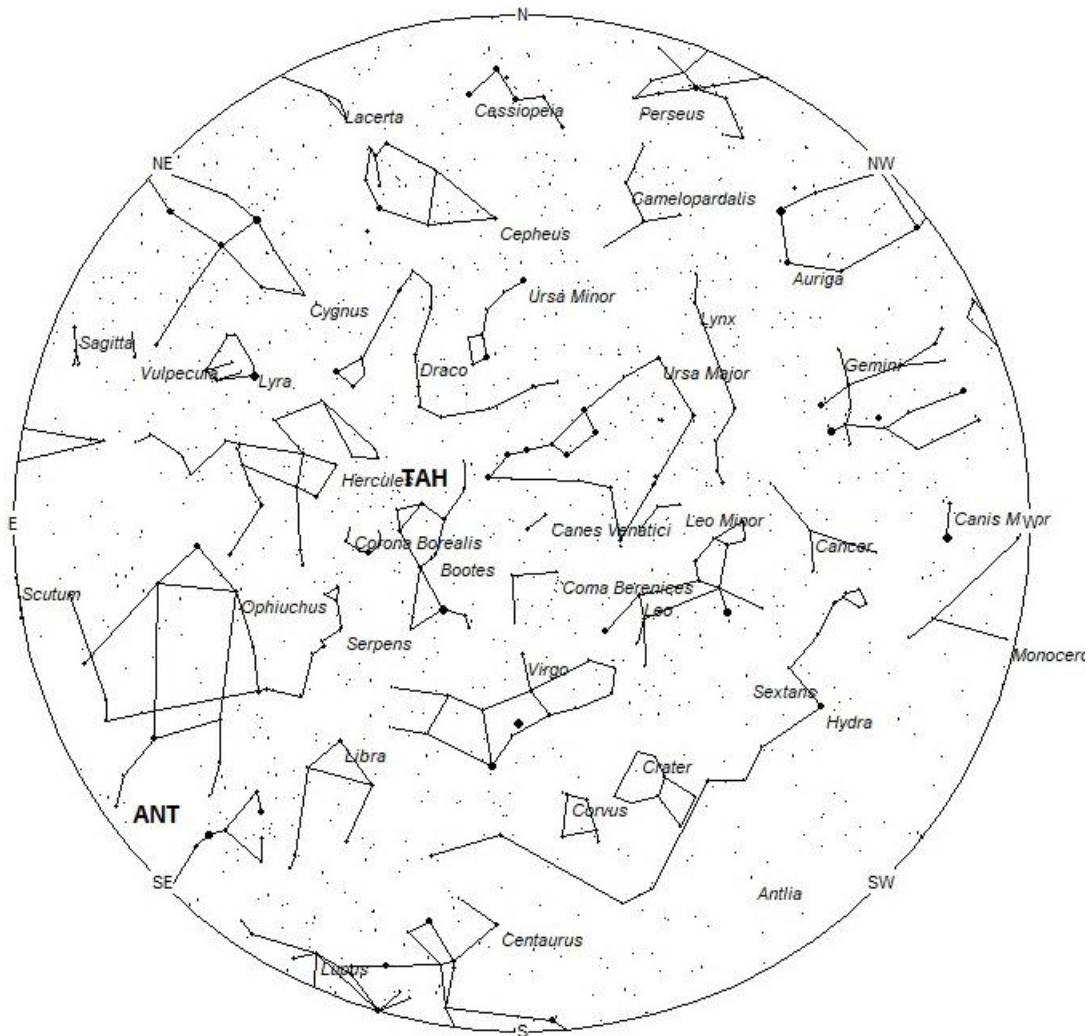


Casano, Guillaume obtained this photograph of the widely seen fireball on April 24, 2021, from Thônes, France. For more information on this fireball, visit: https://fireball.amsmeteors.org/members/imo_view/event/2021/2408. ©Casano, Guillaume

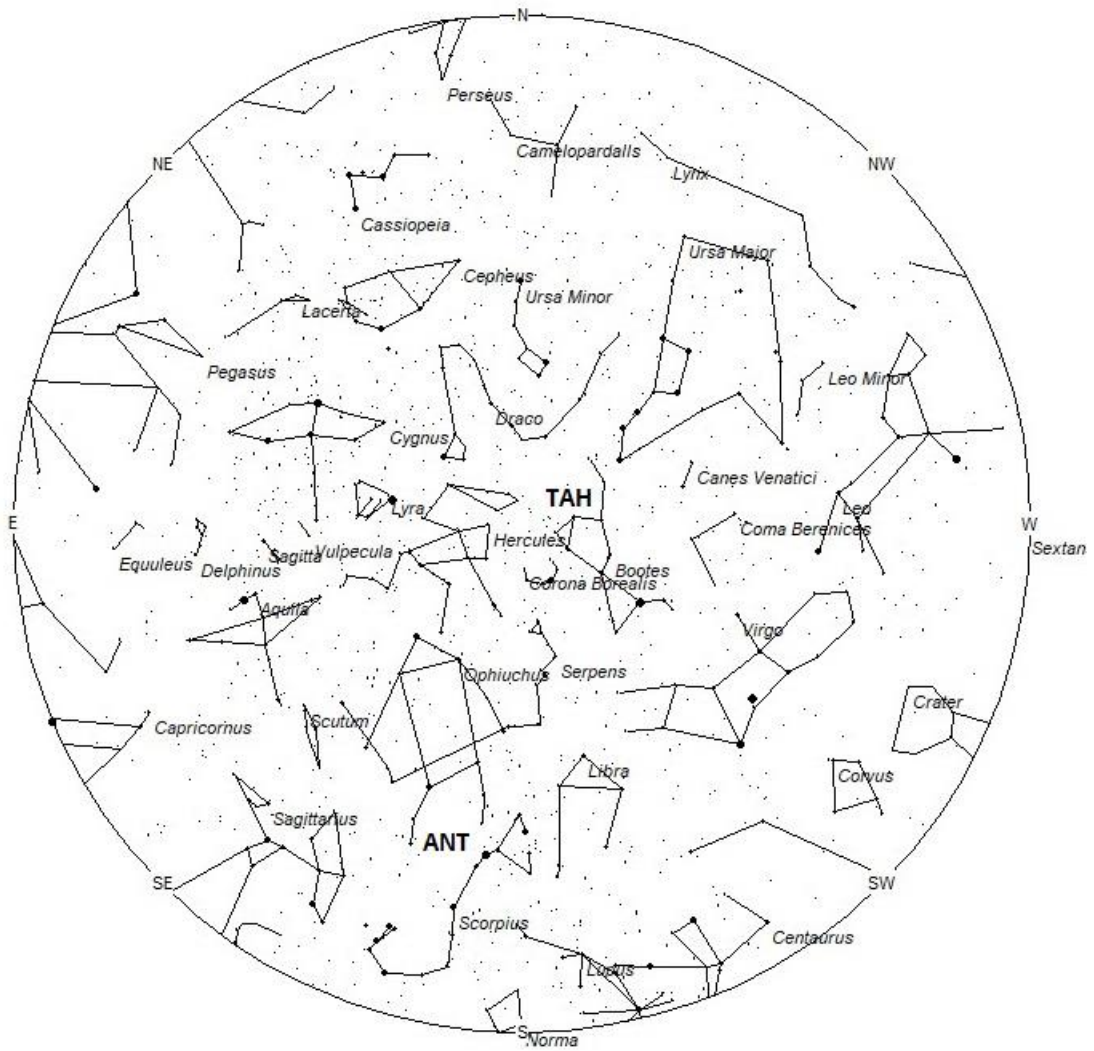
During this period, the moon reaches its full phase on Wednesday May 26th. On this date the moon is located opposite the sun and remains above the horizon all night long. This weekend the waxing gibbous moon will set during the early morning hours, leaving a small opportunity to view in dark conditions between moon set and morning twilight. The estimated total hourly meteor rates for evening observers this week is near 2 as seen from mid-northern latitudes (45N) and 3 as seen from tropical southern locations (25S). For morning observers, the estimated total hourly rates should be near 6 as seen from mid-northern latitudes (45N) and 12 as seen from tropical southern locations (25S). 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. Rates are reduced during this period due to moonlight. 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 May 22/23. 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 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. It must be

remembered that meteor activity is rarely seen at the radiant position. Rather they shoot outwards from the radiant, so it is best to center your field of view so that the radiant lies at 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 radiant positions 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 10pm Local Daylight Saving Time



Radiant Positions at 1am Local Daylight Saving Time



Radiant Positions at 4am Local Daylight Saving Time

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

The **tau Herculids (TAH)** are an irregular shower not active every year. They are best known for being associated with comet Schwassmann-Wachmann 3 and the strong display seen in 1930. Due to recent activity from the comet, this shower could produce more activity in upcoming years. The Earth could start encountering particles from Schwassmann-Wachmann 3 around May 19. The current radiant location is expected to lie near 14:47 (222) +42. This area of the sky is located in northern Bootes, 3 degrees northwest of the 4th magnitude star known as Nekkar (beta Bootis). This is not that close to the star tau Herculis, for which this shower is named. Apparently, the discoverers of this display placed the radiant further east toward Corona Borealis and Hercules. It's also possible that past displays from this source had a different radiant area. This area of the sky is best placed near 23:00 LST, when it lies high overhead for observers located in mid-northern latitudes. Rates are expected to be less than 1 meteor per night at this early stage. With an entry velocity of 15 km/sec., the average tau Herculid meteor would be of very slow velocity.

The center of the large **Anthelion (ANT)** radiant is currently located at 16:56 (254) -23. This position lies in southwestern Ophiuchus, 6 degrees northeast of the 1st magnitude orange star known as Antares (alpha Scorpii). Due to the large size of this radiant, Anthelion activity may also appear from northwestern Scorpius as well as southern Ophiuchus. This radiant is best placed near 0100 LST, when it lies on the meridian and is located highest in the sky. Rates at this time should be near 2 per hour as seen from the Northern Hemisphere and 3 per hour as seen from south of the equator. With an entry velocity of 30 km/sec., the average Anthelion meteor would be of slow velocity.

The **eta Aquariids (ETA)** are still active from a radiant located at 23:16 (349) +05. This area of the sky is located in western Pisces, 1 degree north of the 4th magnitude star known as gamma Piscium. These meteors are not visible prior to 0100 LST and are best seen just before the start of dawn when the radiant lies highest in a dark sky. Current hourly are expected to range from 2 as seen from the southern tropics to near zero as seen from high northern latitudes. With an entry velocity of 67 km/sec., the average meteor from this source would be of swift velocity.

As seen from the mid-northern hemisphere (45N) one would expect to see approximately 5 **sporadic** meteors per hour during the last hour before dawn as seen from rural observing sites. Evening rates would be near 1 per hour. As seen from the tropical southern latitudes (25S), morning rates would be near 9 per hour as seen from rural observing sites and 2 per hour during the evening hours. Locations between these two extremes would see activity between the listed figures. Rates are reduced due to moonlight.

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	
tau Herculids (TAH)	Jun 02	14:47 (222) +42	15	00:00	<1 - <1	III
Anthelion (ANT)	-	16:56 (254) -23	30	02:00	2 - 3	II
eta Aquariids (ETA)	May 05	23:16 (349) +05	67	09:00	<1 - 2	I