

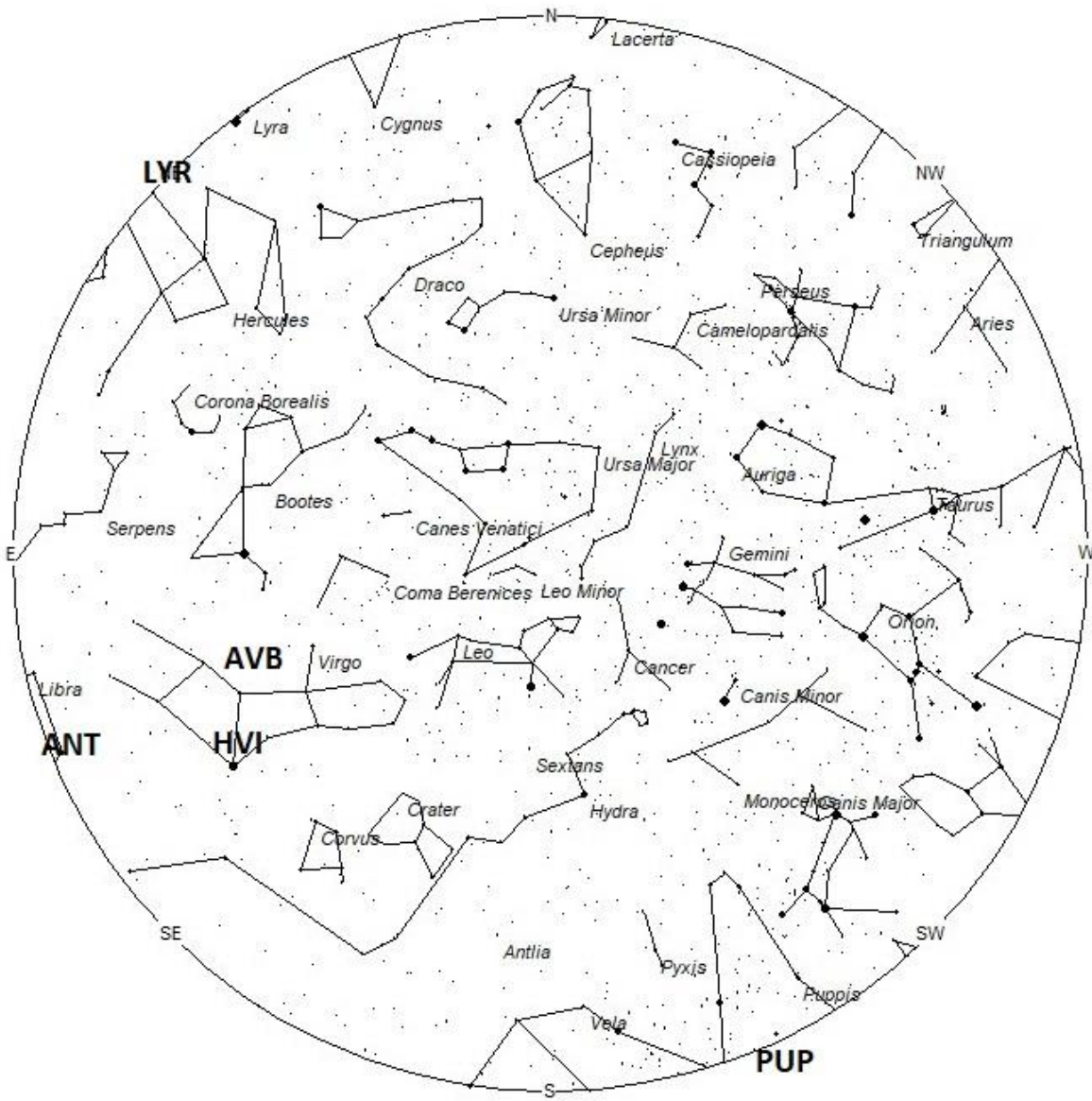
Meteor Activity Outlook for April 19-25, 2025



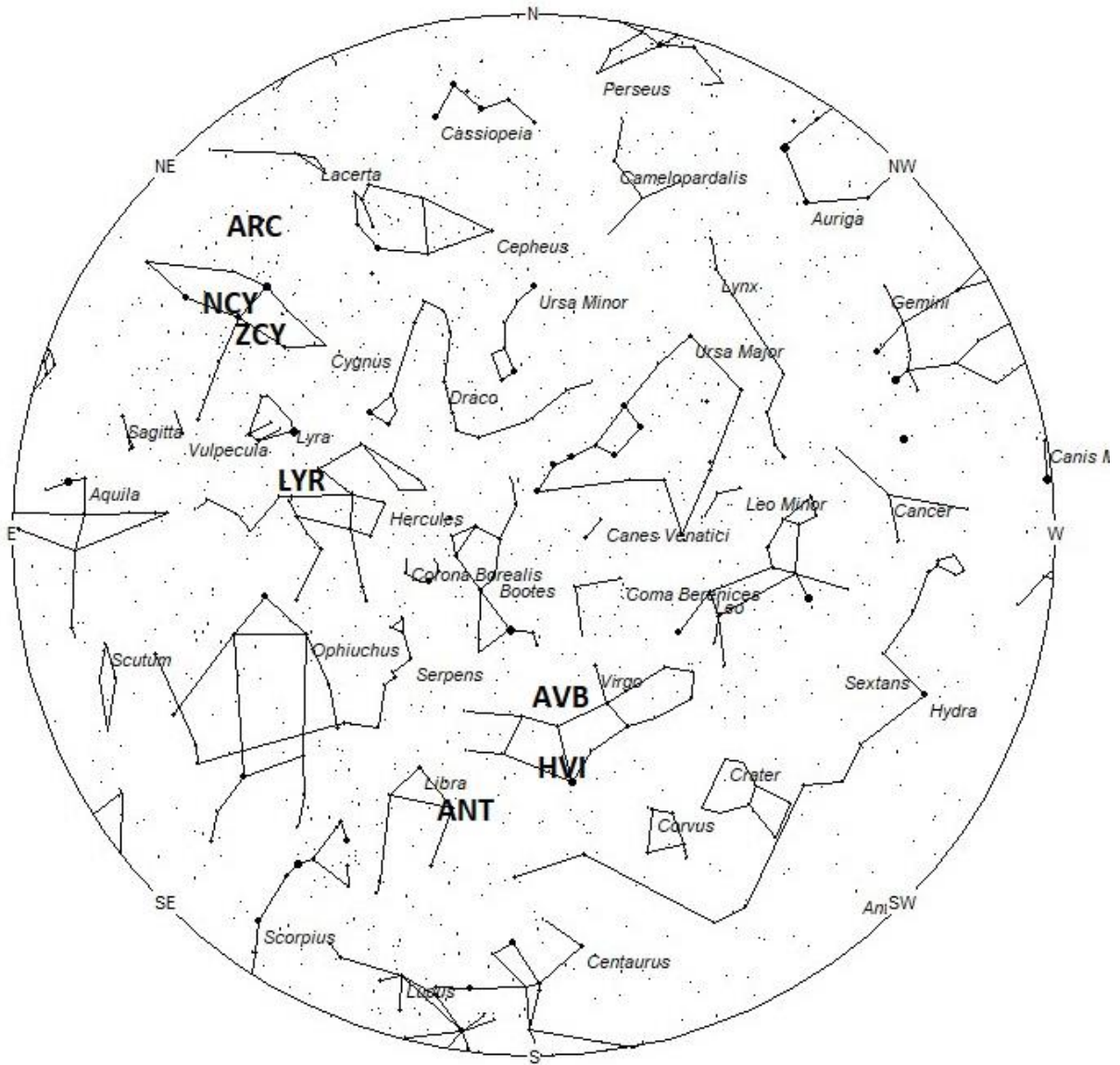
Mike Roberts captured this long, bright fireball on December 26, 2024, at 1837 GMT (18:37 UT) from Llanyre, Wales. ©Mike Roberts

During this period, the moon reaches its last quarter phase on Monday April 21st. At that time the moon will lie 90 degrees west of the sun and will rise near 03:00 local daylight-saving time (LDST). As the week progresses the waning crescent moon will rise later in the morning sky allowing the potential observer more time to view under a moonless sky. The estimated total hourly rates for evening observers this weekend should be 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 5 as seen from mid-northern latitudes (45N) and 8 as seen from tropical southern locations (25S). 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. Rates are reduced during the morning hours 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.

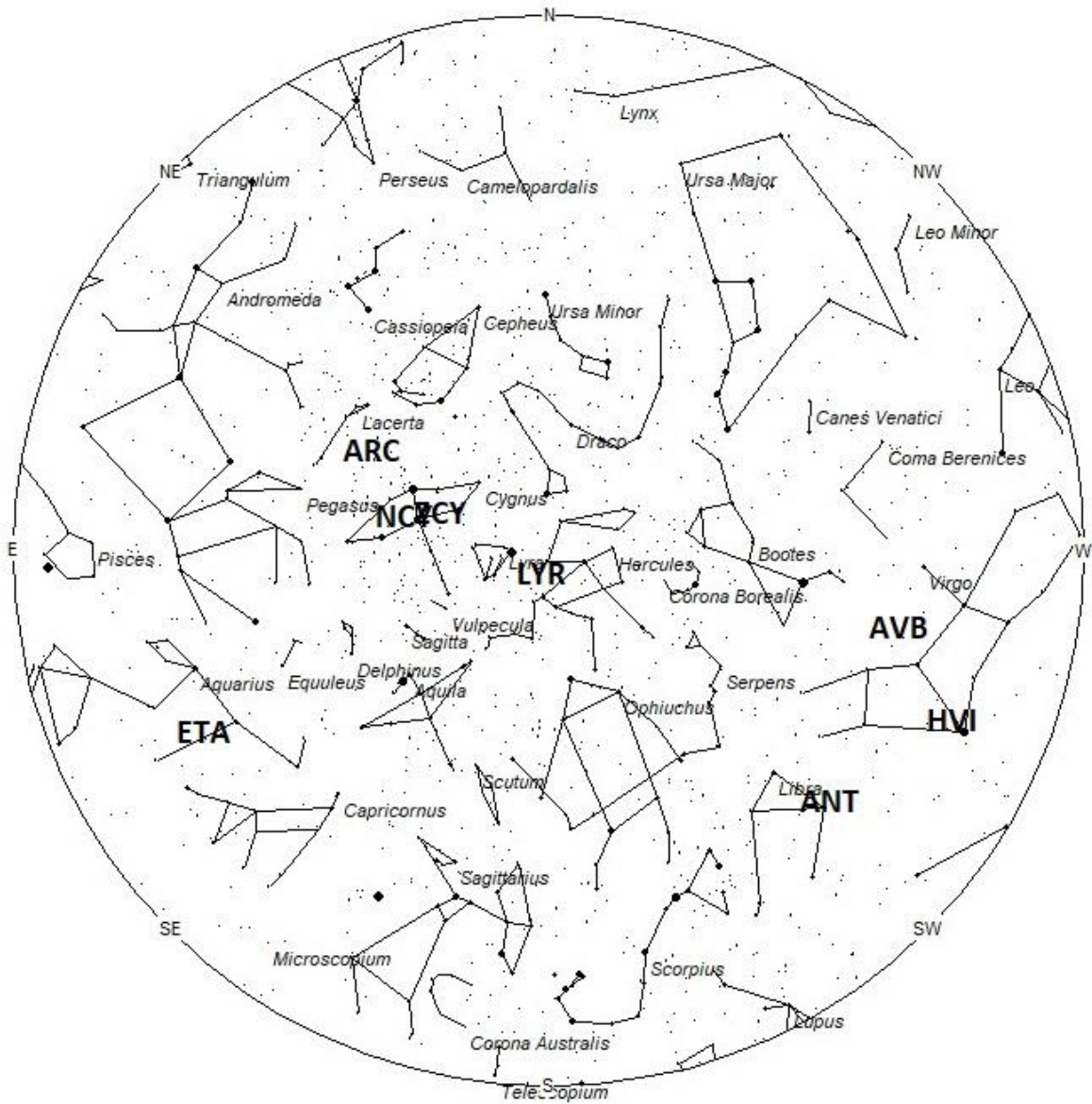
The radiant (the area of the sky where meteors appear to shoot from) positions and rates listed below are exact for Saturday night/Sunday morning April 19/20. These positions do not change greatly day to day so the listed coordinates may be used during this entire period. Most star atlases (available online and at bookstores 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 21:00 Local Daylight-Saving Time



Radiant Positions at 01:00 Local Daylight-Saving Time



Radiant Positions at 05:00 Local Daylight-Saving Time

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

The **pi Puppids (PPU)** are predicted to reach maximum activity on April 23rd from a radiant located at 07:22 (110) -45. This area of the sky is located in central Puppis, 2 degrees south of the 3rd magnitude star known as sigma Puppis. This area of the southern sky is best seen as soon as it becomes dark. Rates are variable but expected to be less than 1 per hour no matter your location. These meteors are best seen from the far southern hemisphere where the radiant lies much higher in the sky compared to observers further north. With an entry velocity of 15 km/sec., the average meteor from this source would be of very slow velocity.

The **h Virginids (HVI)** were discovered by members of SonotaCo. These meteors are active from April 20-May 04 with maximum activity predicted on May 1st. The radiant is currently located at 13:25 (201) -10. This area of the sky is located in southern Virgo, 1 degree north of the 1st magnitude star known as Spica (alpha Virginis). This area of the sky is best seen near 01:00 LDST when it is located highest in the southern sky. No matter your location, rates are expected to be less than 1 per hour. At 20km/sec. these meteors would produce meteors of medium-slow velocity. This source is also far enough from the core of the anthelion radiant to be noticed but care must be taken to differentiate between the two radiants.

The **alpha Virginids (AVB)** were first mentioned by R. B. Southworth and G. S. Hawkins in their publication known as Smithsonian Contributions to Astrophysics (1963). These meteors are active from April 6 through May 1 with maximum occurring on April 15th. The current location of this radiant is 13:30 (203) +04. This position is located in central Virgo, 6 degrees east of the 3rd magnitude star known as Minelauva (delta Virginis). This radiant is best placed near 01:00 LDST when it lies on the meridian and is highest in the southern sky. Rates at this time should be less than 1 per hour no matter your location. With an entry velocity of 19 km/sec., the average meteor from this source would be of medium- slow velocity. This source is also far enough from the core of the anthelion radiant to be noticed but care must be taken to differentiate between the two radiants.

The large **Anthelion (ANT)** radiant is currently centered at 14:48 (222) -16. This position lies in western Libra, 1 degree west of the 3rd magnitude star known as Zubenelgenubi (alpha Librae). Due to the large size of this radiant, these meteors may also be seen from eastern Virgo as well as Libra. This radiant is best placed near 02:00 LDST when it lies on the meridian and is highest in the southern sky. Rates at this time should be near 1 per hour as seen from the northern hemisphere and 2 as seen from south of the equator. With an entry velocity of 30 km/sec., the average Anthelion meteor would be of medium-slow velocity.

The **Lyrids (LYR)** are active from April 17-26 and expected to reach maximum activity on April 22nd. The radiant is currently located at 17:59 (270) +34. This area of the sky is located in eastern Hercules, 4 degrees north of the 4th magnitude star known as nu Herculis. This radiant is best placed during the last hour before dawn when it lies nearly overhead. Rates this weekend will be near 1 no matter your location. With an entry velocity of 46 km/sec., the average meteor from this source would be of medium velocity.

The **zeta Cygnids (ZCY)** were also discovered by Jürgen Rendtel and Sirko Molau of the international Meteor Organization. These meteors are active from March 21 to May 1st with maximum activity occurring on April 5th. The current position of this radiant is 20:04 (301) +41, which lies in western Cygnus, 3 degrees west of the 2nd magnitude star known as Sadr (gamma Cygni). This area of the sky is best positioned high in the east for viewing during the last dark hour prior to dawn. Hourly rates are expected to be less than 1 no matter your location. With an entry velocity of 44 km/sec., these meteors would have a medium velocity.

The **nu Cygnids (NCY)** were discovered by Jürgen Rendtel and Sirko Molau of the International Meteor Organization. These meteors are active from March 22 to April 23 with maximum activity occurring on April 21st. The current position of this radiant is 20:31 (308) +42, which lies in central Cygnus, 2 degrees northeast of the 2nd magnitude star known as Sadr (gamma Cygni). This area of the sky is best positioned high in the east for viewing during the last dark hour prior to dawn. Hourly rates are expected to be less than 1 no matter your location. With an entry velocity of 44 km/sec., these meteors would have a medium velocity.

The **April rho Cygnids (ARC)** were discovered by Dr. Peter Brown and his CMOR radar system. These meteors are active from April 20-May 11 with maximum activity occurring on April 29th. The current position of this radiant is 21:33 (323) +48, This area of the sky lies in northeastern Cygnus, 2 degrees north of the faint star known as rho Cygni. This area of the sky is best positioned for viewing high in the east during the last dark hour prior to dawn when it lies highest in the northern sky. Hourly rates are expected to be less than 1 no matter your location. With an entry velocity of 41 km/sec., these meteors would have a medium velocity.

The **eta Aquariids (ETA)** are active from April 15 through May 27 with maximum activity expected on May 4th. The radiant is currently located at 21:49 (327) -06. This area of the sky is located in western Aquarius, 3 degrees southeast of the 3rd magnitude star known as Sadalsuud (beta Aquarii). These meteors are not visible prior to 0200 LST and are best seen just before the start of dawn when the radiant lies highest in the eastern sky. Hourly rates are expected to be low (<1) this week as maximum activity is still two weeks away. With an entry velocity of 64 km/sec., the average meteor from this source would be of swift velocity.

Sporadic meteors are those meteors that cannot be associated with any known meteor shower. All meteor showers are evolving and disperse over time to the point where they are no longer recognizable. Away from the peaks of the major annual showers, these sporadic meteors make up the bulk of the activity seen each night. As seen from the mid-Northern Hemisphere (45N), one would expect to see during this period approximately 3 sporadic meteors per hour during the last hour before dawn as seen from rural observing sites. Evening rates would be near 2 per hour. As seen from the tropical Southern latitudes (25S), morning rates would be near 6 per hour as seen from rural observing sites and 3 per hour during the evening hours. Locations between these two extremes would see activity between these listed figures.

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 one, so these sources are rarely listed as visual targets in most meteor shower lists. If you are like me and wish to associate as many meteors as possible with known sources, then you will appreciate these listings. Before listing

meteors from class IV showers, you should attempt to prove these meteors belong to them and are not chance alignments of sporadic meteors. You can note parameters such as duration, length, radiant distance and the elevation of each meteor to help compute the probability of shower association. It should be remembered that slow meteors can be seen from fast showers, but fast meteors cannot be produced from slow showers. Slower showers are those with velocities less than 35/km per second. Slow meteors can appear from fast showers when they appear close to the radiant or low in the sky. The table located on page 22 of the [IMO's 2025 Meteor Shower Calendar](#) is a big help in aiding in the identification of meteors. If you record the length and duration of each meteor, you can use this chart to check the probability of the meteor belonging to a shower of known velocity. If the angular velocity is similar to the figure in the table, then your meteor probably belongs to that shower. Rates and positions in the table are exact for Saturday night/Sunday morning.

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	
pi Puppids (PPU)	Apr 23	07:22 (110) -45	15	19:00	<1 - <1	III
h Virginids (HVI)	May 01	13:25 (201) -10	20	01:00	<1 - <1	IV
alpha Virginids (AVB)	Apr 15	13:30 (203) +04	19	01:00	<1 - <1	IV
Anthelion (ANT)	-	14:48 (222) -16	30	02:00	1 - 2	II
Lyrids (LYR)	Apr 22	17:59 (270) +34	46	05:00	1 - <1	I
zeta Cygnids (ZCY)	Apr 05	20:04 (301) +41	44	07:00	<1 - <1	IV
nu Cygnids (NC Y)	Apr 21	20:31 (308) +42	44	07:00	<1 - <1	IV
April rho Cygnids (ARC)	Apr 29	21:33 (323) +48	41	08:00	<1 - <1	IV
eta Aquariids (ETA)	May 04	21:49 (327) -06	64	08:00	<1 - <1	I

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.

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.