

# Meteor Activity Outlook for February 5-11, 2022



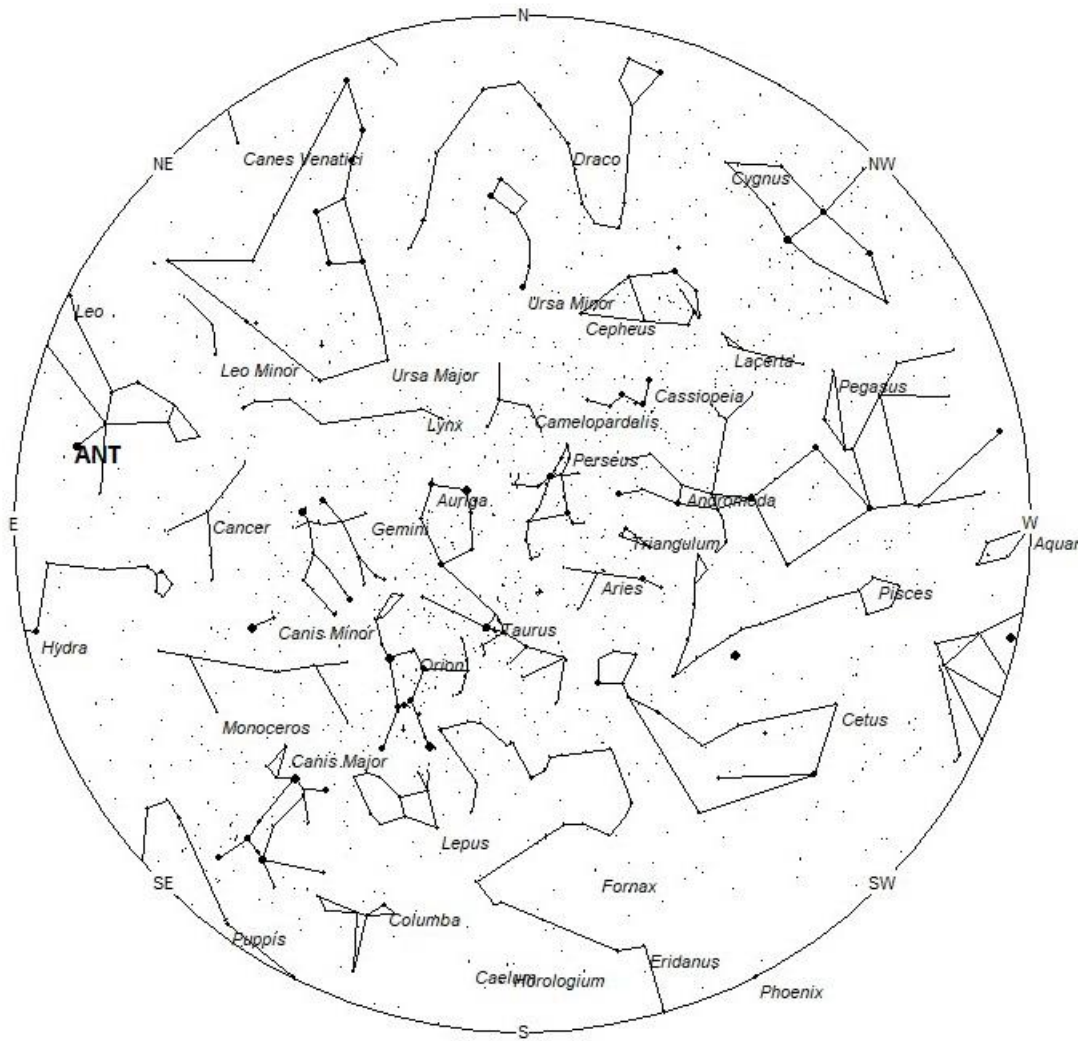
Jordan Ragsdale captured this incredibly bright fireball using his [AllSky Camera System](#) on December 5, 2021 at 1:41 CST (8:41 UT) from Eagle, Idaho, USA. More details and photos of this event are available on [the related Event page](#). ©Jordan Ragsdale

February offers the meteor observer in the Northern Hemisphere a couple of weak showers plus falling sporadic rates. This may not seem too exciting but you never know when surprises are in store. An errant earthgrazer from the Centaurid complex may shoot northward. Better yet, a bright fireball may light up the sky. February is the start of the evening fireball season, when an abundance of fireballs seem to occur. This lasts well into April as seen from the northern hemisphere. Sporadic rates are near maximum for those viewing from the Southern hemisphere. There are no strong showers this month, but sporadic rates are in excess of 10 per hour as seen from mid-southern latitudes.

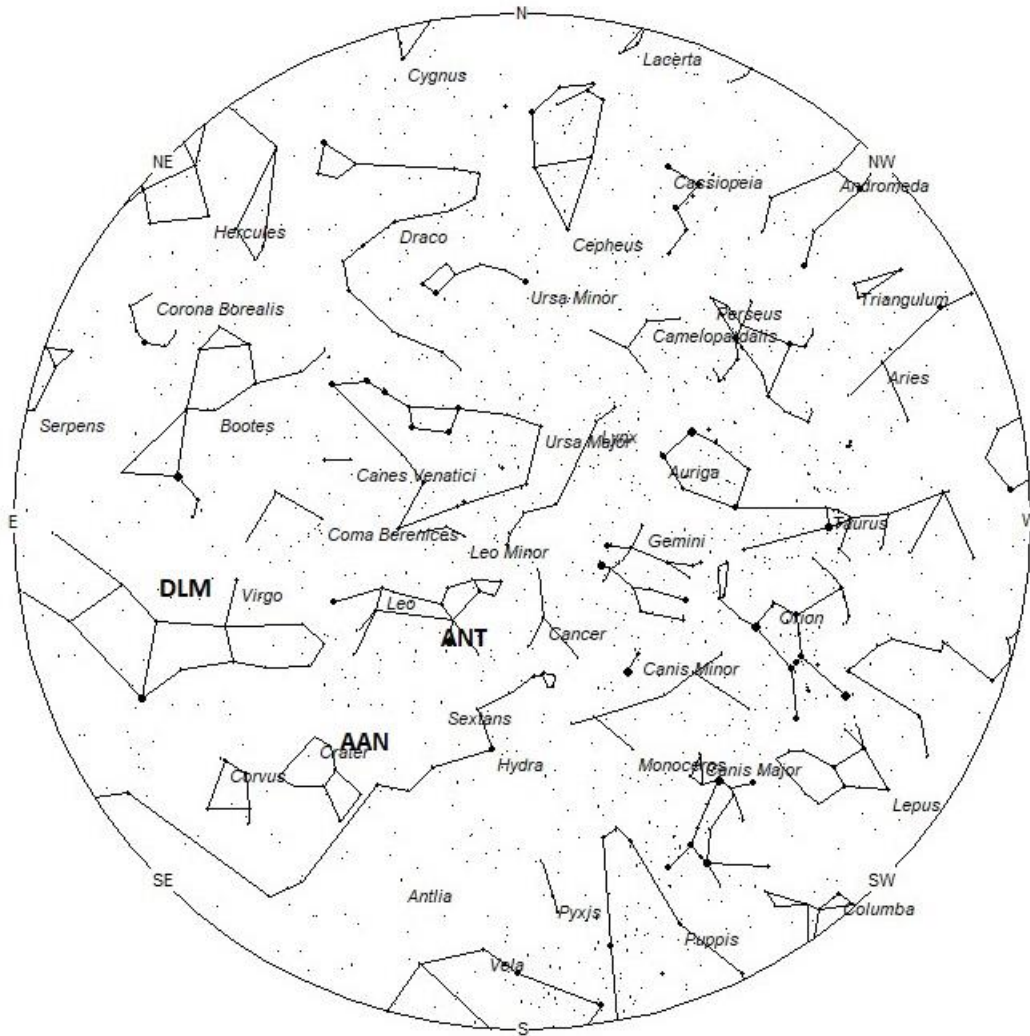
During this period, the moon reaches its first quarter phase on Tuesday February 8th. At that time the moon lies near 90 degrees east of the sun and sets near 01:00 local standard time. This weekend the waxing crescent moon will set during the early evening hours and will not interfere with meteor observing during the more active morning hours. 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 9 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. Evening rates are slightly reduced 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.

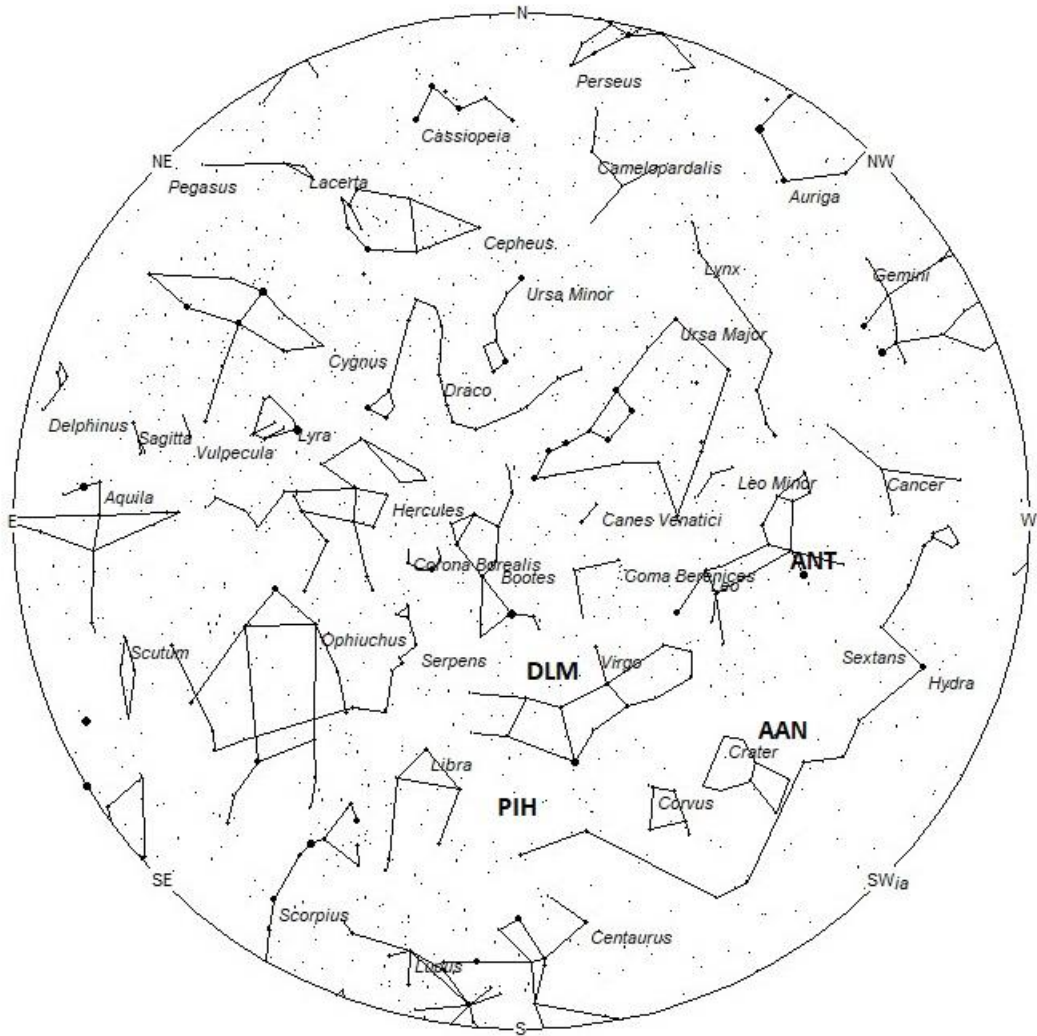
The radiant (the area of the sky where meteors appear to shoot from) positions and rates listed below are exact for Saturday night/Sunday morning February 5/6. These positions do not change greatly day to day so the listed coordinates may be used during this entire period. Most star atlases (available 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. 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 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 7pm Local Standard Time



Radiant Positions at Midnight Local Standard Time



Radiant Positions at 5am Local Standard Time

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

The large **Anthelion (ANT)** is currently centered at 10:00 (150) +12. This position lies in western Leo, just 2 degrees northwest of the 1<sup>st</sup> magnitude star known as Regulus (alpha Leonis). Due to the large size of this radiant, these meteors may also be seen from Cancer as well as western Leo. This radiant is best placed near 01:00 local standard time (LST) when it lies on the meridian and is highest in the sky. Rates at this time should be near 3 per hour as seen from the northern hemisphere and 2 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 last of the **alpha Antliids (AAN)** are expected this weekend from a radiant located at 10:46 (162) -12. This position lies on the Sextans/Hydra border, 5 degrees north of the 3rd magnitude star known as nu Hydrae. I'm not certain why these meteors were called alpha Antliids as this position lies 20 degrees north of the constellation of Antlia. These meteors are best seen near 0200 LST when the radiant lies highest above the horizon. At 44 km/sec. the alpha Antliids produce meteors of medium velocity. Expected rates this week are less than 1 per hour no matter your location.

\*Gary Kronk, Meteor Showers-An Annotated Catalog, 2<sup>nd</sup> Edition Page 45

The **December Leonis Minorids (DLM)** is a shower of long duration active from December 1<sup>st</sup> all the way through February 10th. Maximum occurred near December 19th when rates may have reached 3 an hour. During this period, I would expect hourly rates of less than 1 from a radiant located at 13:31 (203) +09. This position lies in northern Virgo, 5 degrees southeast of the 3rd magnitude star known as Vindemiatrix (epsilon Virginis). These meteors are best seen near 0500 LST when the radiant lies highest above the horizon. At 63 km/sec. the December Leonis Minorids produce mostly swift meteors. At this time of year, these meteors are synonymous with the February epsilon Virginids.

The **alpha Centaurids (ACE)** are active from January 31-February 20, with maximum activity occurring on February 8th. The radiant is currently located at 13:56 (209) -59. This position lies in southern Centaurus, 2 degrees northwest of the 1<sup>st</sup> magnitude star known as Hadar (beta Centauri). Due to the southern declination of this radiant, these meteors are not well seen in the northern hemisphere. Current hourly rates are expected to be less than 1 as seen from the Northern Hemisphere and possibly as high as 5 as seen from south of the equator. These meteors are best seen near 05:00 LST when the radiant lies highest above the horizon. At 56 km/sec. the alpha Centaurids would produce mostly swift meteors.

The **pi Hydrids (PIH)** were discovered in Dr. Peter Jenniskens and mentioned in his book *Meteor Showers and their Parent Comets*. Studies of the IMO video database by Sirko Molau and Juergen Rendtel confirmed the existence of this shower. These meteors are active from February 3-9, which maximum activity occurring on the 6th. The radiant is currently located at 14:00 (210) -21. This area of the sky is located in extreme southeastern Virgo, 6 degrees northwest of the 3rd magnitude star known as pi Hydrae. These meteors are best seen during the last dark hour prior to dawn when the radiant lies highest above the horizon in a dark sky. Current rates are expected to be near 1 per hour no matter your location. These meteors are visible over most of the Earth, with the southern



hemisphere having slightly better viewing conditions. At 55 km/sec. the pi Hydrids would produce mostly swift meteors.

As seen from the mid-northern hemisphere (45N) one would expect to see approximately 7 **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 should be near 11 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. Evening rates are reduced by moonlight during this period.

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 available at: <https://meteorshowers.seti.org/> 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.

SHOWER	DATE OF MAXIMUM ACTIVITY	CELESTIAL POSITION	ENTRY VELOCITY	CULMINATION	HOURLY RATE	CLASS
		RA (RA in Deg.) DEC	Km/Sec	Local Standard Time	North- South	
Anthelions (ANT)	---	10:00 (150) +12	30	01:00	2 - 1	II
alpha Antliids (AAN)	Feb 01	10:46 (162) -12	44	02:00	<1 - <1	IV
December Leonis Minorids (DLM)	Dec 19	13:31 (203) +09	63	05:00	<1 - <1	II
alpha Centaurids (ACE)	Feb 08	13:56 (209) -59	56	06:00	<1 - 3	II
pi Hydrids (PIH)	Feb 06	14:00 (210) -21	55	06:00	1 - 1	IV