

Meteor Activity Outlook for August 29-September 4, 2020

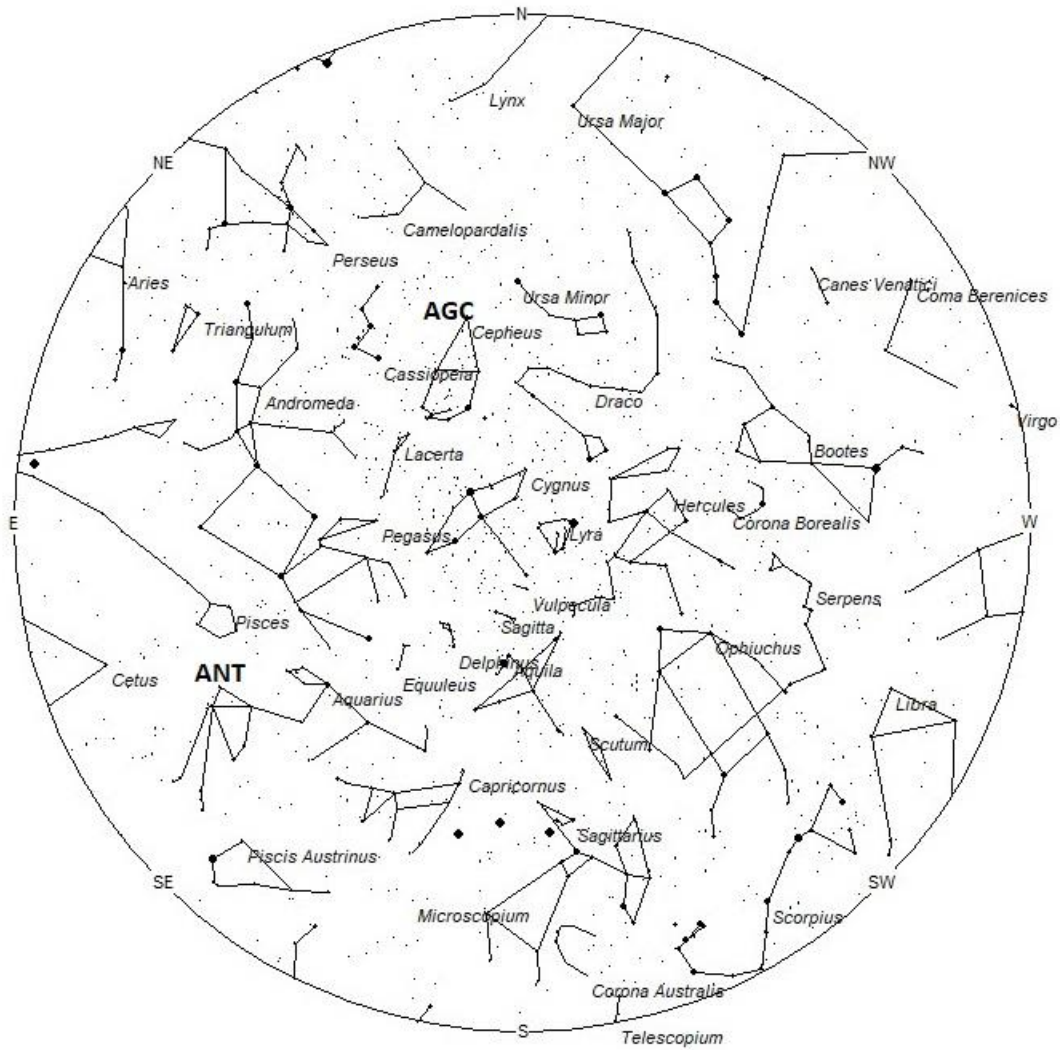


As has been the theme lately, many photographers of Comet Neowise were lucky to also capture a bright fireball shooting close to the comet. Nicolas Rossetto was photographing the comet from near Jouhe, France, on the morning of 19 July 2020. At 00:36 CEST a brilliant fireball short northward just above the Big Dipper. This fireball was seen over France, Belgium, and Germany and can be investigated at: https://fireball.amsmeteors.org/members/imo_view/event/2020/3502 Credit: Nicolas Rossetto

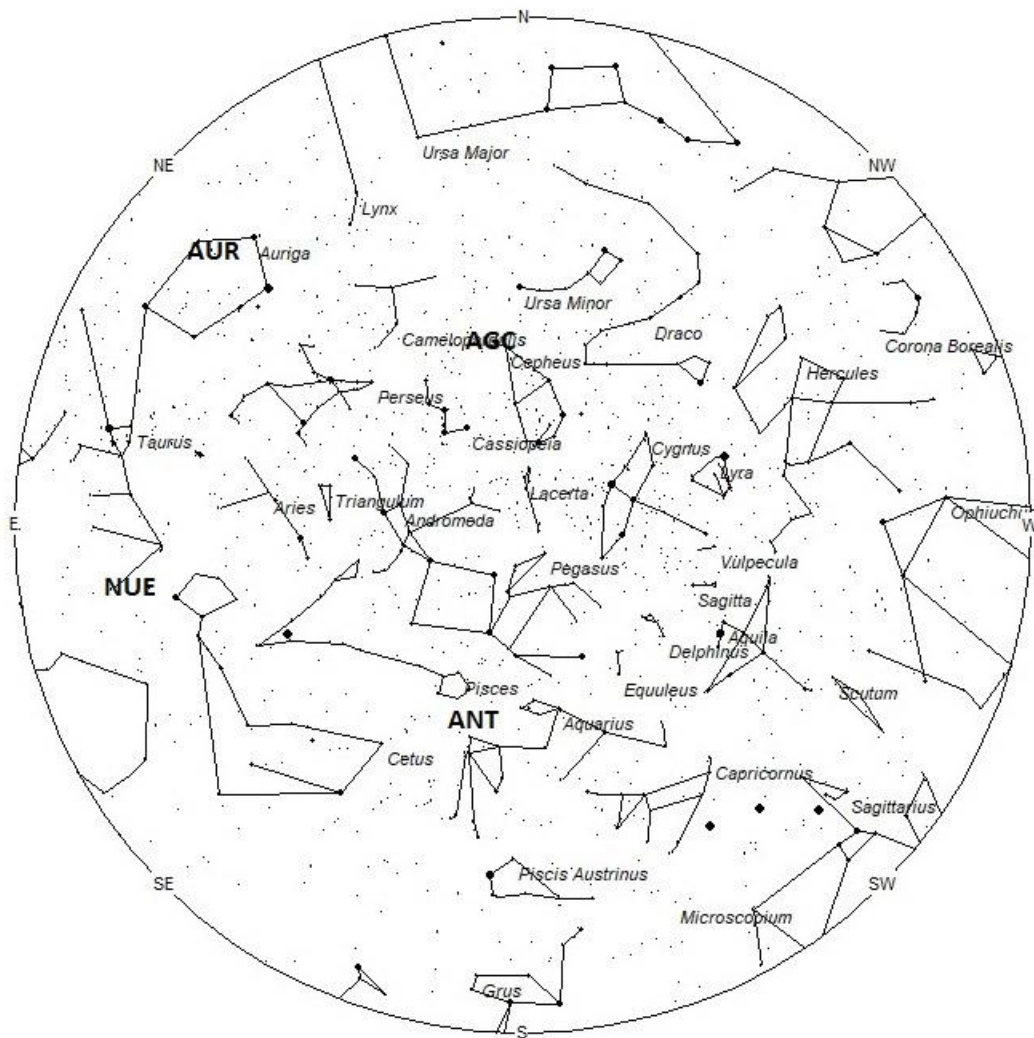
During this period, the moon reaches its full phase on Thursday September 3rd. At this time, the moon is located opposite the sun and remains above the horizon all night long. This weekend the waxing gibbous moon will set during the early morning hours, allowing a short opportunity to view meteor activity prior to 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 9 as seen from mid-northern latitudes (45N) and 7 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 August 29/30. 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

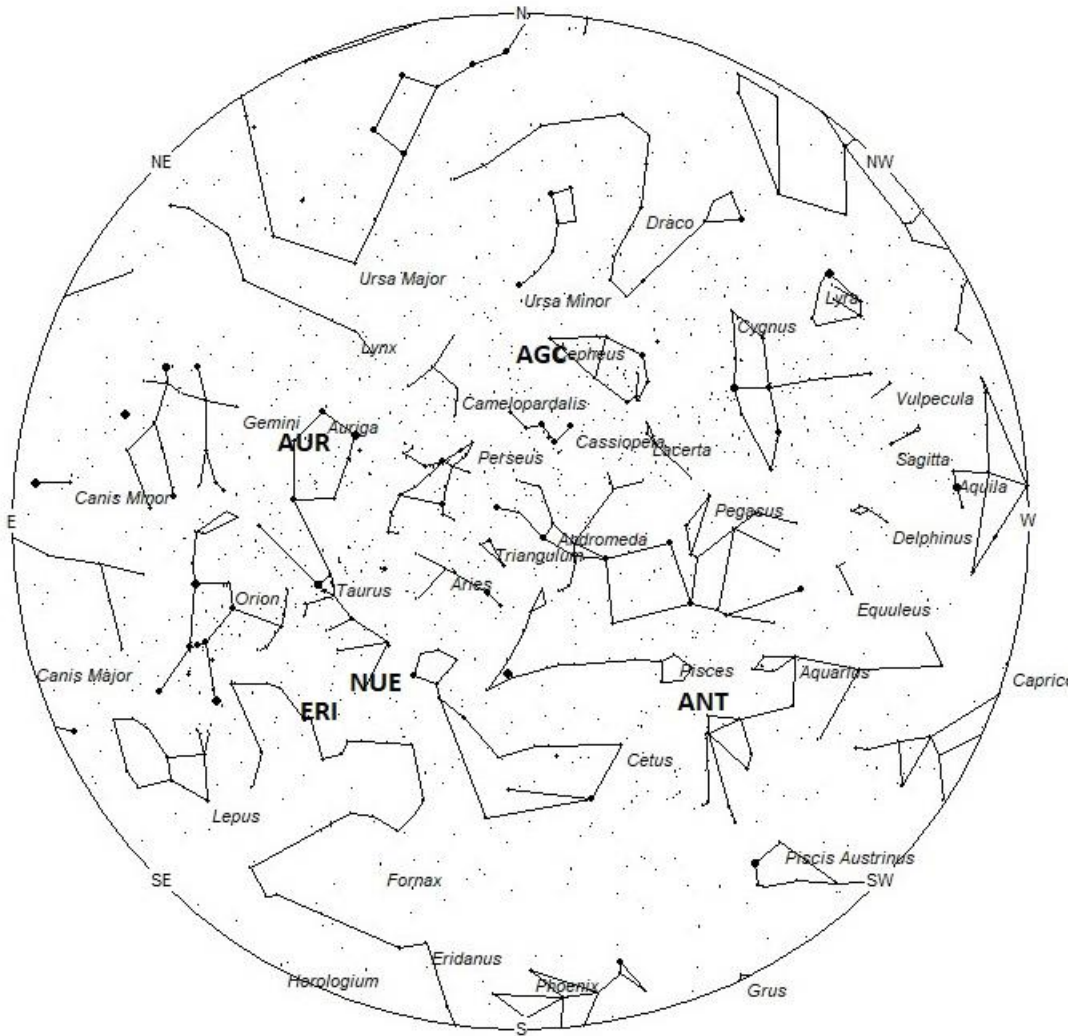
useful in showing the sky at any time of night on any date of the year. Activity from each radiant is best seen when it is positioned highest in the sky, either due north or south along the meridian, depending on your latitude. It must be remembered that meteor activity is rarely seen at the radiant 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 a 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 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 center of the large **Anthelion (ANT)** radiant is currently located at 23:16 (349) -05. This position lies in eastern Aquarius, 2 degrees north of the 4th magnitude star known as phi Aquarii. Due to the large size of this radiant, anthelion activity may also appear from western Pisces as well as central Aquarius. This radiant is best placed near 0100 local standard time (LDST), when it lies on the meridian and is located highest in the sky. Rates at this time should be near 2 per hour no matter your location. With an entry velocity of 30 km/sec., the average anthelion meteor would be of slow velocity.

The **August gamma Cepheids (AGC)** are a recent discovery by Damir Šegon and the Croatian Meteor Network team based on studying SonotaCo and CMN observations (SonotaCo 2007-2011, CMN 2007-2010). This source is listed as “working” on the IAU website but investigations by Masahiro Koseki have shown that the radiant density ratio is among the highest of all known showers.* This helps prove that this source is real, and I believe it is within reach of visual observers in the northern hemisphere. Meteors from this source are expected from August 19 through September 7, with maximum activity occurring on August 28. The current position lies at 00:05 (001) +77, which lies in northern Cepheus, 2 degrees east of the 3rd magnitude star known as Errai (gamma Cephei A). This radiant is best placed near 0200 LDST, when it lies on the meridian and is located highest in the sky. Rates at this time should be less than 1 per hour no matter your location. With an entry velocity of 44 km/sec., the average meteor would be of medium-fast velocity.

The **nu Eridanids (NUE)** were co-discovered by Japanese observers using SonotaCo 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 03:33 (053) +02, which places it in southwestern Taurus, 6 degrees southeast of the 3rd magnitude star known as Menkar (alpha Ceti). 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 less than 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 **eta Eridanids (ERI)** are active from a radiant located near 04:02 (060) -07. This position lies in northern Eridanus, 2 degrees west of the 4th magnitude star known as Beid (Omicron¹ Eridani). This source is active until September 16th, with maximum activity having occurred on August 10th. Current rates are expected to be less than 1 per hour no matter your location. 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. With an entry velocity of 65 km/sec., the average meteor from this source would be of swift speed.

The **Aurigids (AUR)** are active from a radiant located at 05:54 (088) +39. This position lies in central Auriga, near the spot occupied by the faint star known as nu Aurigae. 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 less than 1 per hour no matter your location. Maximum activity is expected on August 31st. With an entry velocity of 67 km/sec., the average meteor from this source would be of swift velocity.

Morning sporadic rates are expected to be near 6 per hour as seen from mid-northern latitudes and 4 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. Evening rates are reduced due to interfering 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	
Anthelion (ANT)	-	23:16 (349) -05	30	02:00	2 - 2	II
August gamma Cepheids (AGC)	Aug 28	00:05 (001) +77	44	03:00	<1 - <1	IV
nu Eridanids (NUE)	Sep 24	03:33 (053) +02	67	06:00	<1 - <1	IV
eta Eridanids (ERI)	Aug 10	04:02 (060) -07	65	06:00	<1 - <1	IV
Aurigids (AUR)	Aug 31	05:54 (088) +39	67	08:00	<1 - <1	II