

## The Perseids

By: **Germán Morales Chávez**

In these early mornings, we can observe *The Perseid Meteor Shower*. This is a shower with very bright meteors (some of them fall into the category of fireballs.<sup>1</sup>), which, although it is better observed from the northern hemisphere, can still be seen from our latitudes.

This year, The Moon will be in Last Quarter, and its light will dull the weaker meteors. However, the expectation of bright meteors gives us hope that it is possible to observe an acceptable activity from the cities.<sup>2</sup>

The maximum of this meteor shower is expected for this August 11 and 12. To observe this spectacle from our region, although the radiant rises above the horizon around two in the morning, it is preferable to carry out the observation the last two hours of the night before dawn begins (between 4 and 6 early morning). Looking up at the northern sky will be enough, and also having an unobstructed view.

Besides the Perseids, there are other active showers<sup>3</sup> for that date, and of course, meteors can be seen from those showers, as well as other sporadic meteors too (not belonging to any meteor shower). Some patience is necessary, and most important not to stop looking at the sky. For this, a comfortable place to recline, with a good coat, is very helpful and highly advisable. Getting away from city lights is preferable if you are in a position to do so; any place where you can avoid city lights, especially towards the north region is advisable. No special equipment is required, and for the general public who is not planning to do a specific scientific work, they just have to enjoy the spectacle.

Bear in mind that the meteors that we see in meteor showers, in this case the Perseids, are residual particles from the passage of a comet near the Sun, which are distributed throughout an orbit in our solar system, spread around the cometary orbit. Once a year (twice in some cases), the Earth crosses the stream of particles for several days and weeks. These are particles that mostly do not reach a gram of mass, as small as a grain of rice, however, when they enter the Earth's atmosphere, they reach high temperatures that ionize the air and they turn into dust that is gradually deposited on the Earth's surface, which produces the luminous effect that we can see. *Fireballs* are somewhat larger pieces (like tiny pebbles) that were also completely incinerated. None of these we see fall to Earth like meteorites. Therefore, it is worth to exploit this brief explanation to indicate that, the term '*Meteorite Shower*' is wrong used by many amateurs and mass media, *since* meteorites are objects that, after entering the Earth's atmosphere, do not completely fall apart and ,instead, fall as small (or sometimes large) stones, especially made of iron and nickel.

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<sup>1</sup>A fireball differs from a normal meteor by its brightness, which is much higher. Commonly brighter than the bright of Venus at its peak times.

<sup>2</sup> Besides the Moon, city lights are a terrible hindrance for the meteor observation. To this must be added that in these weeks, fires in grasslands and wooded areas near the city cause a veil of smoke that dull the sky and creates a kind of veil that prevents us from seeing less bright objects. Something that also happens in other places in the region.

<sup>3</sup> Among them, we can mention the South Delta Aquarids and the Alpha Capricornids.

In the attached graphic, you can see how the sky will look like these following days. In addition, it is indicated the region where the Perseids radiant can be found.

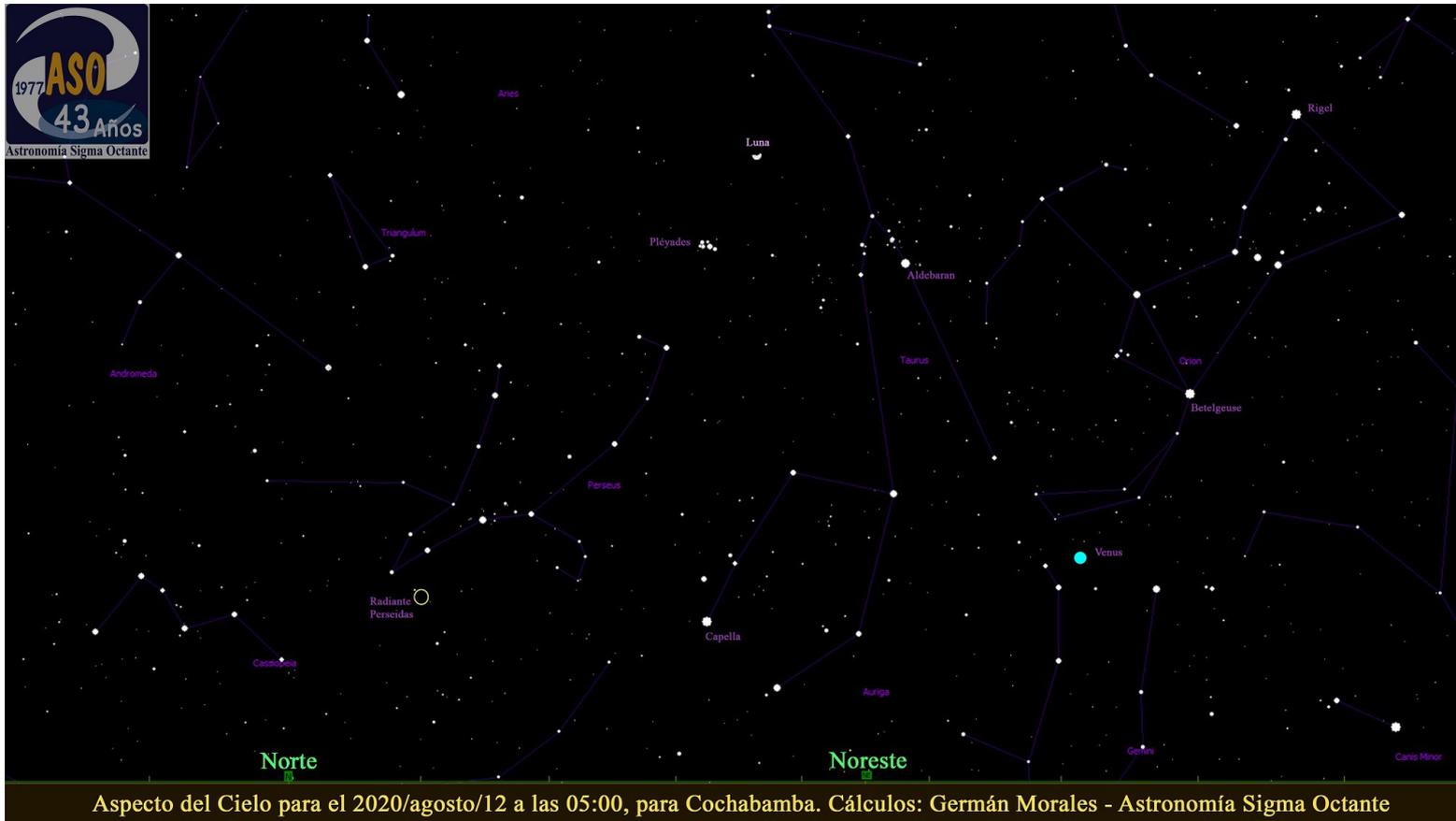


Fig. 1 The **early morning sky for Wednesday August 12**, it is useful for a few days before or after (the position of the Moon exclusively for the 12<sup>th</sup>). Several constellations can be recognized: Perseus, Taurus (where the Pleiades, and Aldebaran in the Hyades stand out), Auriga, and Orion, whose belt is known as the Three Marys. In addition, we can see Venus, which just for that day **will reach its Maximum Elongation (that is, its maximum angular separation from the Sun, in this case at dawn)**.

The radiant is that place from which the meteors seem to come; if we extend their trajectory in the sky, the Perseid meteors will appear to come from that region of the sky.

About 100 meteors per hour are expected this year (under favourable conditions, which is not our case), for us in cities, this can be reduced to about 10 meteors per hour; from regions far from city lights, for our region, this value could increase to about 20 or 30 meteors. The interested public can try to observe the Perseids between August 11 and 13, around the maximum of activity.

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