

## NEOWISE Comet

By: **Germán Morales Chávez**

The comet C/2020 F3 (NEOWISE) was discovered at the end of March 2020. It reached a brightness more than expected and offered a beautiful show for those who live in the Northern hemisphere. Because of the comet's orbit, it was not possible to observe it from our latitudes during this episode of time.

NEOWISE passed by its perihelion at the beginning of this month, reaching its maximum brightness and developing its tails, things that many people could appreciate in the pictures published in different places these last days.

Just as indicated few weeks ago, around these days, it would be possible to observe the comet from our country. However, there is the disadvantage of his loss of brightness due to his constant distancing from the Sun.

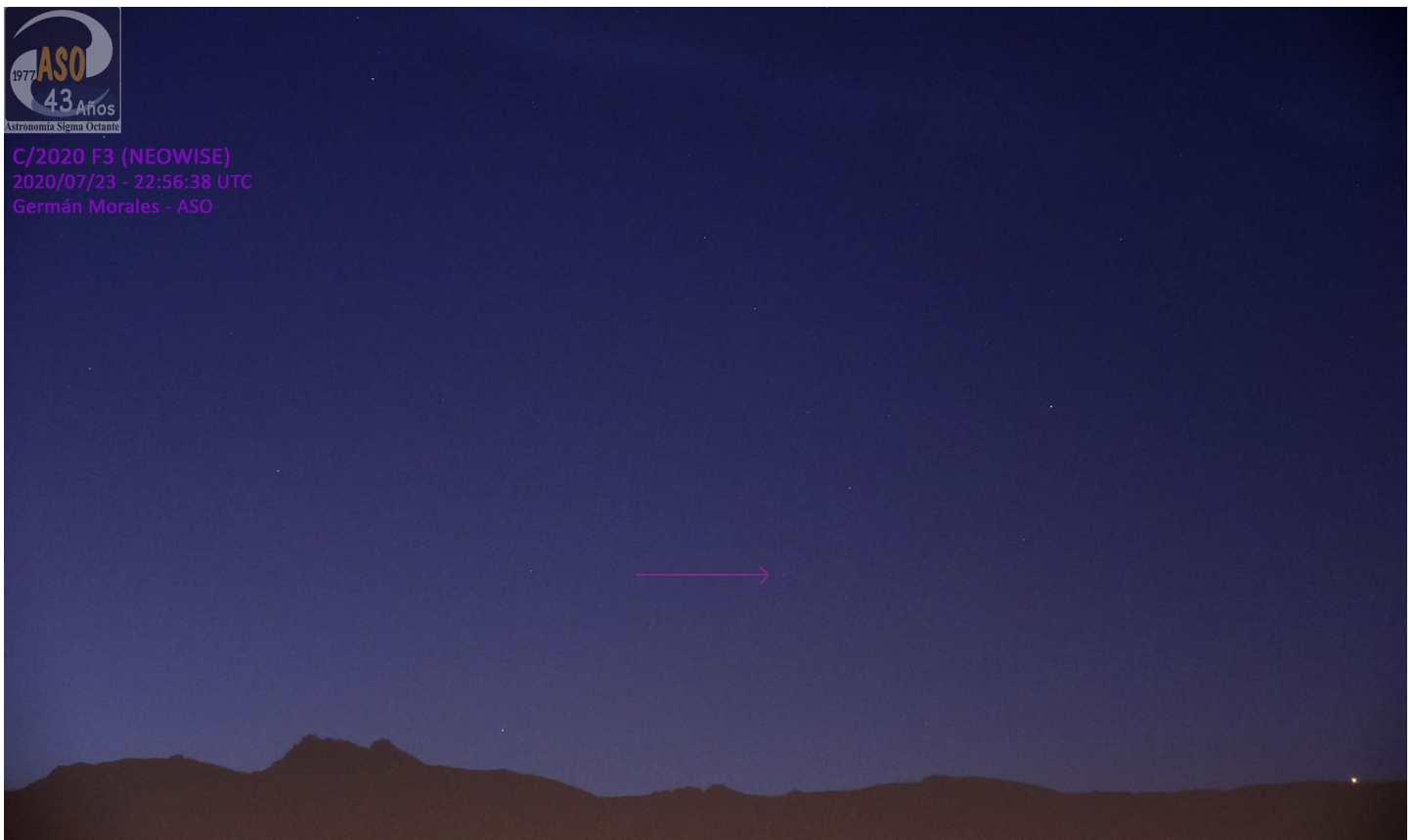


Fig. 1 Raw photograph that shows the comet with the twilight end lights. Picture took at 18:57 Thursday 23, by G. Morales. He was able to identify the comet almost 10 minutes before with more light, but barely noticeable. It was possible to observe the comet during almost 15 more minute before it got lost behind the mountains. Of course, in the first photograph where it was registered, the comet was so weak that it would not highlight enough. This can give an idea of how difficult it will be for the public to identify the comet and observe it.

It has not been possible to gather a good part of the people who belongs to ASO due to the currently social distancing restrictions; barely four people were able to do it.

Last Wednesday, Micaela Morales, Daniel Rios, and Germán Morales gathered to observe the comet, of course taking the necessary precautions. The next day, on Thursday, Rosario Moyano, Daniel Rios, Angela Barraza and Germán Morales, gathered again (within the limit of what is allowed). It was the terrace of a building that allowed evading other edifications that impede to have a good horizon. With a pair of special binoculars and a camera, ASO members took the work of locating the comet.

Other fellow members tried to do the same, however they were not able to find the comet until the date because of the disturbance of streetlights.

On Wednesday 22, we made the first attempt, the observability window was small, since when the light of the twilight already decreased enough, the comet would be close to disappear behind the mountains. The result of this attempt was negative, therefore, next day (Thursday 23) we made the second one. Due to the rapid movement of the comet, it would be found a little bit higher above the horizon. Indeed, we could distinguish it, but only by looking with binoculars and throughout photographs. It was possible for us to observe it around 15 minutes, until it got behind the mountains. This observation coincides with the day the comet was closest to Earth, aspect that is not relevant to the fact of being able to observe it or not from here.

Every day, the comet will be higher, nevertheless, every day its brightness decreases too, therefore, the anticipated is fulfilled, and the comet is not visible anymore without special instruments;

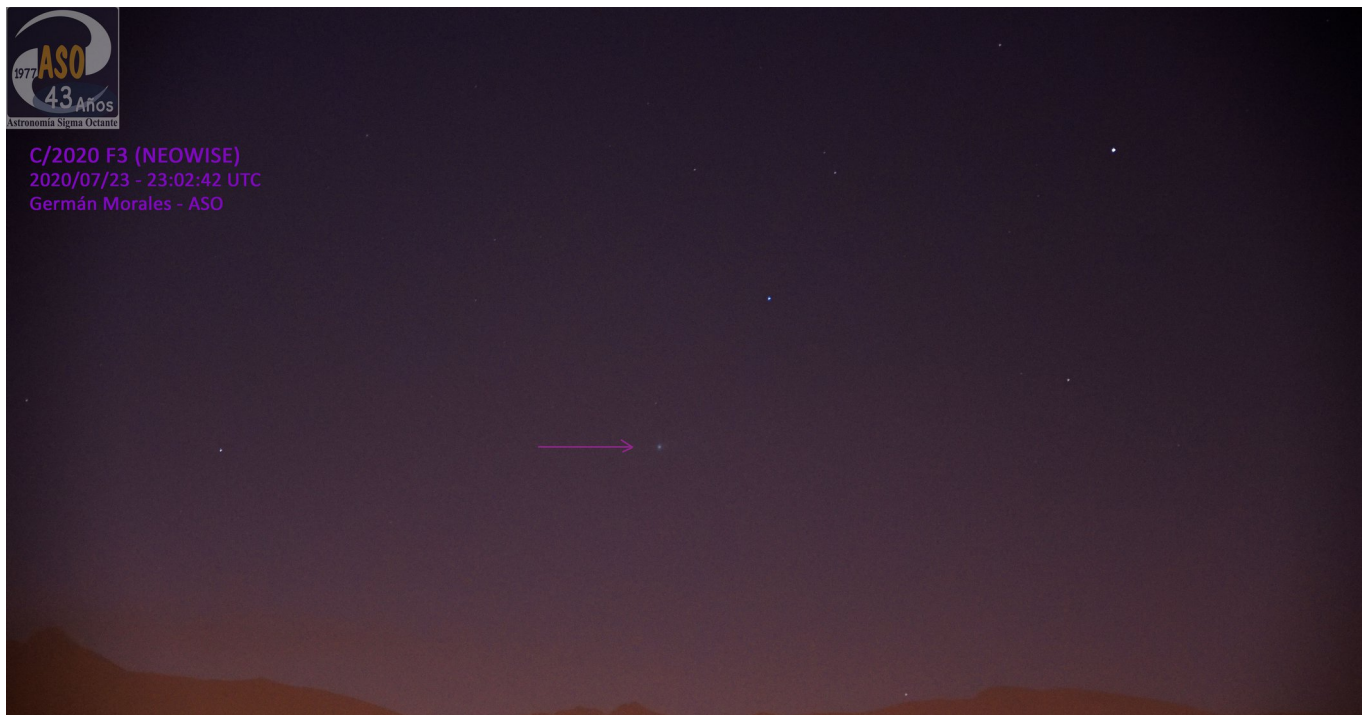


Fig. 2 Minutes after the first photograph (fig.1). The final twilight lights have already faded, but the city lights barely permit us to see the comet, its tail glimpses almost imperceptibly to the right directed a little upwards the aforementioned city lights overshadow it. The excessive and unplanned growth of cities, ours as an example, determines that basic services grow in a chaotic way; including street lighting. Light posts are planted everywhere, directing a good percentage (up to a third) of its light towards the sky, wasted energy that darkens the sky and hides from us the magnificence of the celestial vault that a century ago our grandparents could still enjoy. In this photograph (also a raw one) it has been slightly reduce the effect of the light of the city that appeared as a yellowish veil that only allowed us to perceive the mountains and the sky,

especially from cities, where light pollution barely allows us to see the comet, and it covers completely its tail. This can be seen in the photographs that have been chosen from those taken a few hours before writing this note.

Being in the countryside, with dark skies, there is the chance to observe it with the naked eye and still distinguish its tail, although not with the splendour of two weeks ago.

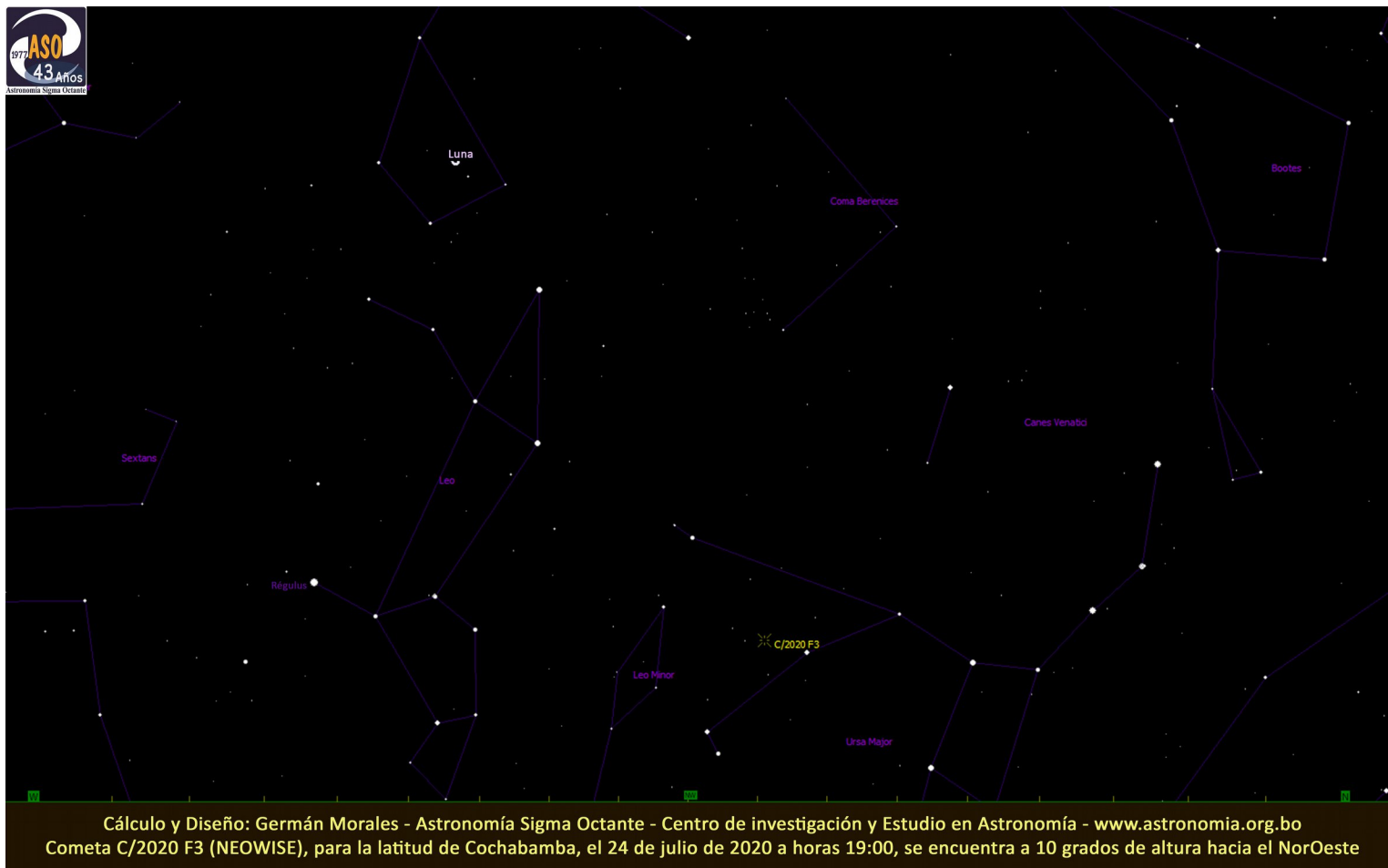
In case our readers have binoculars or small telescopes, we include two celestial charts that will allow them to locate the comet. They are adjusted for this Friday 24 and next Wednesday 29. On the intermediate and subsequent days, the positions of the comet can be easily interpolated or

extrapolated if it can be located. Of course, it will not be easy for those with no observational experience.

At the end of this note, you can find the two celestial charts that will serve those who want to locate it and make the attempt.

Unfortunately, the conditions of this comet prevented us from observing it at its best and now it becomes one of the several comets that we observe, but which are in a range of weak brightness, and diminished by city lights.

Given the current situation of sanitary restriction, we have ruled out the possibility of moving to the field to try some photographs. For those who are outskirts of town, they can observe skies that are more suitable.



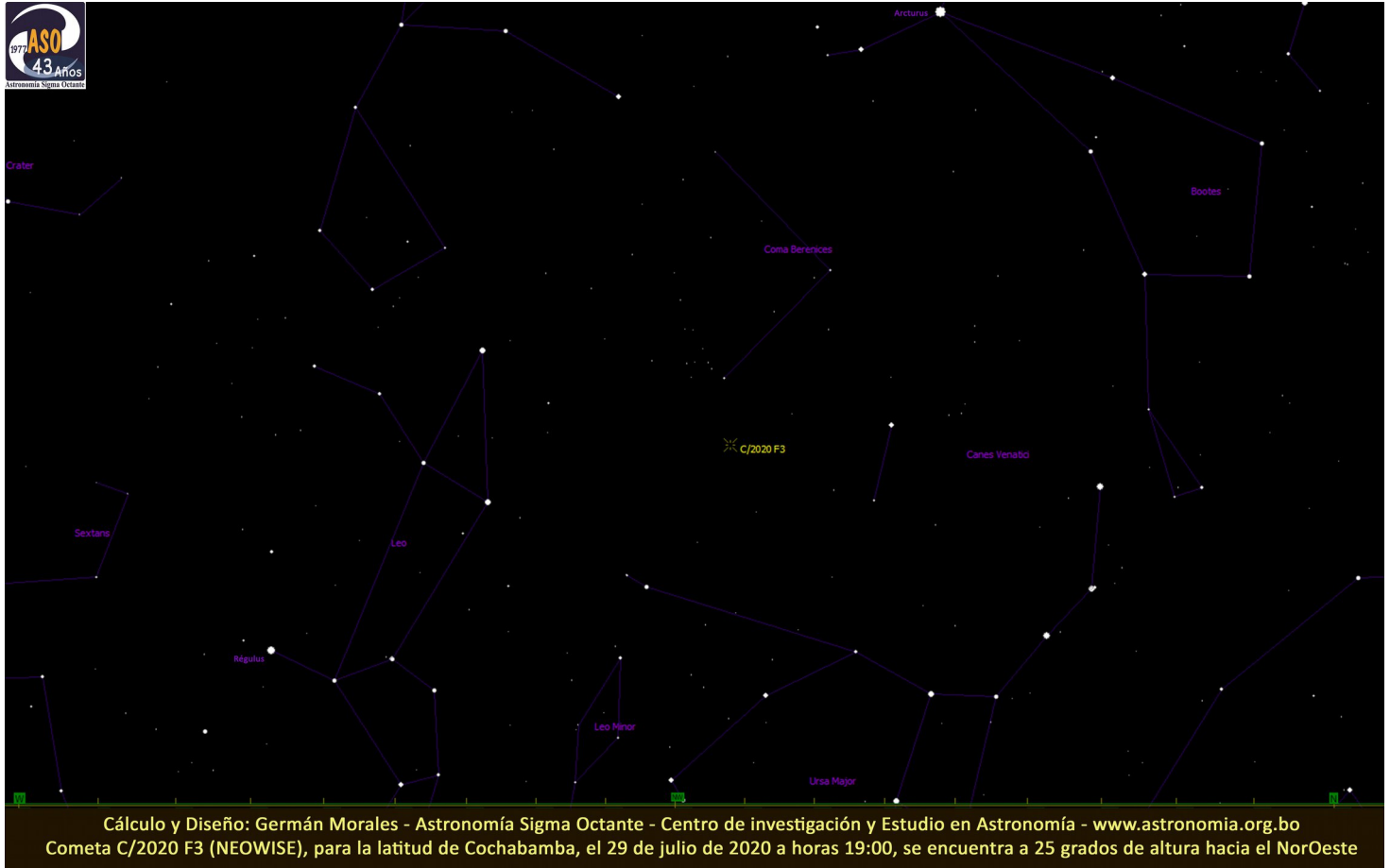
*(Calculation and design: Germán Morales – Astronomía Sigma Octante – Astronomy Research and study centre - [www.astronomia.org.bo](http://www.astronomia.org.bo) Comet c/2020 F3 (NEOWISE), for Cochabamba's latitude, July 24, 2020 at 19:00 p.m., it is 10 degrees high to the northwest.)*

Fig. 3 Thus Friday, we will be able to observe the comet for a little bit longer, up to 30 minutes. It is important to orient yourself correctly, at 19:00 to the northwest about 5° to the north, going up 10 degrees you can find the comet. As time passes, due to the Earth's rotation, as it is perceived for the whole sky, we will see that the comet descends until it is lost behind the mountains.

The position is marked by a double cross with the designation of the comet. The moon will be growing in the Virgo constellation, and it is a good opportunity to direct the binoculars or telescopes towards it and contemplate in its terminator the craters, and lunar mountains being illuminated by dawn, where the solar rays are coming after concluding the long lunar night.

The comet, if observed from the cities, can be seen as a very small diffuse cloud, something that requires some attention and some observational experience.

In summary, if you do not have an appropriate optical equipment nor an observational experience, then it would be very difficult, if not impossible, to observe the comet. Sadly, that is how things turned out to be. Furthermore, let us hope for clear skies!



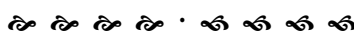
(Calculation and design: Germán Morales - Astronomía Sigma Octante – Astronomy Research and study centre- [www.astronomia.org.bo](http://www.astronomia.org.bo) Comet c/2020 F3 (NEOWISE), for Cochabamba's latitude, July 24, 2020 at 19:00 p.m., it is 25 degrees high to the northwest. )

Fig. 4 In this chart prepared for Wednesday, July 29, you can distinguish the change of position of the comet and how it is higher in the sky (at about 25 ° altitude) about 2 ° displaced closer to the northwest in azimuth. The sector of the sky in which it will be found will not have many stars that stand out, which will accentuate its presence in a sky with very weak stars, but there will be a lack of references to locate it, which are helpful for amateurs and beginners to guide themselves in its identification.

Presumably, in those 5 days of difference between the chart in figure 3 and this one, the brightness has decreased even more.

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