

# Tres Fuentes Astronomical Viewpoint



## Tips to go stargazing

Whenever you go stargazing, be it in winter or summer, pay attention to the following recommendations for a pleasant and safe experience.



### Warm clothing.

Temperatures drop significantly at night, even on summer nights!



### Comfy shoes.

It is essential to wear comfortable, closed shoes. Do not ever wear flip-flops!



### Bring some water and food.

It is always advisable to bring some food and drinks. Remember you will probably be far away from any shop or home.



### Fully-charged phone.

It is advisable to bring your phone fully charged, to be used in case of emergency or with sky navigation apps.



### Red flashlight.

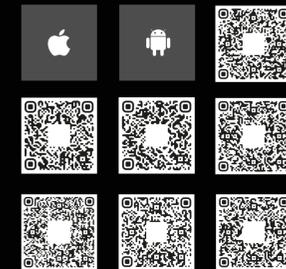
Though you can use your phone's flashlight, we recommend using red torch.



### Astronomy apps.

Download some apps on your phone to get oriented in the starry sky and identify the most important celestial objects.

## Astronomy apps



Here is a selection of apps that will help you navigate the night sky, identify constellations and spot the International Spatial Station.

## What are the circumpolar constellations?

The sky you see now is different from the sky you will see within some months, or even tonight, in a few hours. **Stars seem to move through the sky** along the night. Actually, it is the Earth that moves: it spins (rotation) and orbits the Sun (revolution), allowing us to see different areas of the space every time.

The **Pole star**, however, is special. This star is (virtually) aligned with the Earth's rotational axis and therefore, from an earthling perspective, it seems to remain stationary in the north while the other stars revolve around it.

In this celestial vault revolving around the Pole star the furthest stars rise and dip below the horizon, only visible at certain times of the year. On the contrary and depending on the observer's latitude, stars and constellations closest to the pole never get to disappear under the horizon: these are known as **circumpolar constellations** and are visible all year round.

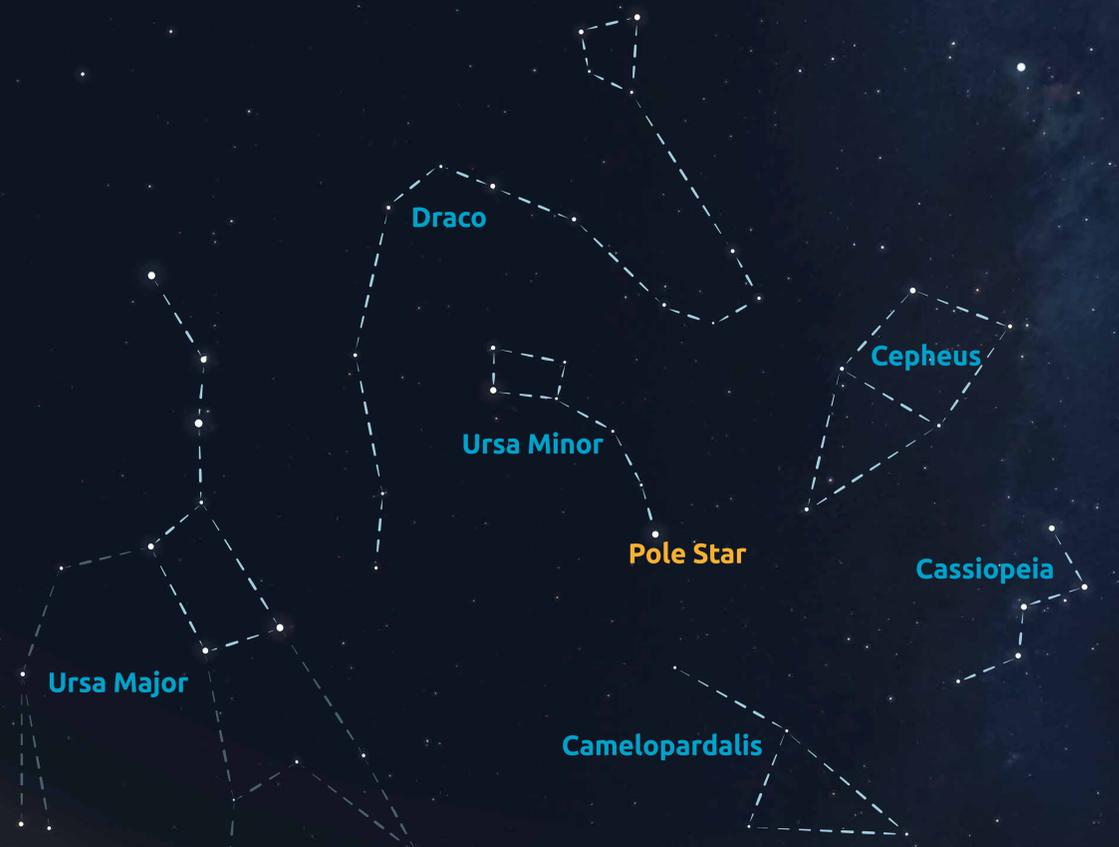
## How to find the constellations in the Northern Circumpolar Region?

### 1. Locate the Pole star

Find the Ursa Major constellation (also known as Big Dipper), take Dubhe and Merak between your fingers and extend the distance 5 times... there it is!

### 2. Explore the near perimeter

Once you have identified the Pole star, move your eyes around it to find some circumpolar constellations: **Cassiopeia, Ursa Major, Ursa Minor, Cepheus, Draco and Camelopardalis**. Check out the image to your right to help you find them.



## A night sky for every season

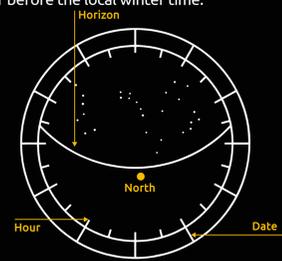
With the exception of circumpolar constellations that are visible any time of the year, the night sky we observe varies as seasons pass. Use the following illustrations to discover different constellations in every season.



## How to use a planisphere?

A celestial planisphere is a star chart device that helps you learn the sky and identify the brightest stars at any given date and time, for a given latitude. The planisphere represents stars and deep sky objects, but not planets or the Moon. How should you use a planisphere?

1. Rotate the mobile part to make the current date and current time meet at the edge of the chart. But **beware!** The time must be expressed in universal time, i.e., 2 hours before local summer time and 1 hour before the local winter time.



2. Get the planisphere (or the observer) oriented towards the north, trying to make the central hole meet the Pole star, aligning east and west as well.

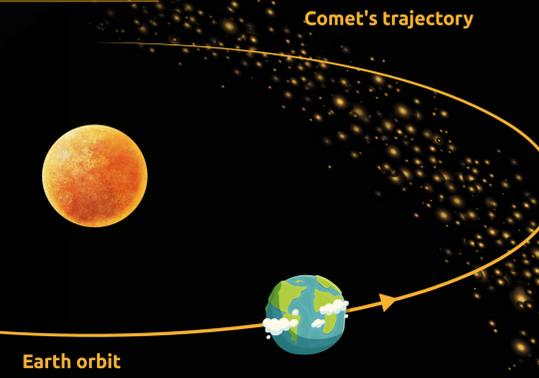
3. The resulting star chart represents the sky that can be observed from this location tonight. Try and spot the brightest stars!

## Did you know...

### ... shooting stars are not actual stars?

They are actually meteors, pieces of dust and debris from space that burn up in Earth's atmosphere, where they can create bright streaks across the night sky.

Likewise, meteor showers are caused by the Earth passing through a large number of meteoroids (or space rocks) left by a comet. The most famous meteor shower is known as the Perseids and it takes place around August 10, when hundreds of meteors can be spotted every night.



This image is not to scale

Night sky looking north in Las Navas del Marqués at midnight on August 1.

