Get Started With The Night Sky!

Getting familiarized with the night sky is a matter of practice. You gotta go out, look up, do that for a couple of months, know the constellations, and so on… I understand that you may live in the middle of a city or a suburb where the lights are too bright to spot stars. The first step is simply curiosity...

However, there are a great handful of sites that can help you with it. We think the best of all is [Stellarium](http://stellarium.org/).

Go to the website, download it on your device and we’ll be ready to start exploring with Stellarium.

**Task 1:**

Go ahead and open the Stellarium. You’re likely gonna see a landscape scenario. On the bottom left, you should see a ton of puzzling modules that may not make sense. However, for most of your purposes, you’re gonna need only a handful of them.

For a start, do check this vid out:

<https://www.youtube.com/watch?v=bYF7SR99ZOw>

Once you’re done watching, play around with Stellarium, get comfortable with its basic controls.

**Task 2:**

Turn on the constellation view mode along with the names of the constellation. Try to figure out the following ones:

1. Ursa Minor
2. Ursa Major
3. Taurus
4. Gemini
5. Orion
6. Canis Minor
7. Carinae
8. Canis Major
9. Leo
10. Virgo
11. Scorpius
12. Sagittarius

Turn off the constellation view mode and try to figure out the patterns on your own. It may be difficult in the beginning, but once you get used to it, it seriously is a bit too fun!

**Task 3:**

One of the best ways to get acquainted with the night sky is to spot and know the position of the brightest stars. Knowing the brightest 10 stars along with their constellations is a great way to start.

Try to spot them along with their constellations:

1. Sirius
2. Canopus
3. Rigil Kentaurus
4. Arcturus
5. Vega
6. Rigel
7. Procyon
8. Betelgeuse
9. Achernar

Google the names of these stars to get to know their properties. They vary a lot in terms of color, temperature, [Luminosity](https://en.wikipedia.org/wiki/Luminosity), and Radius. Can you say which one’s the hottest and which one’s the most luminous? (You can get all the properties by clicking on the individual stars in Stellarium)

**Task 4:**

Let’s work a bit with the [Ecliptic](https://en.wikipedia.org/wiki/Ecliptic#:~:text=The%20ecliptic%20is%20the%20plane,against%20the%20background%20of%20stars). It’s essentially the path the Sun traces around the earth (obviously talking in a geocentric ‘ancient greek’ sense) in a full year.

In doing so, the sun appears to sweep through some background constellations. We call them the Zodiacs.

These are:

Aries

Taurus

Gemini

Cancer

Leo

Virgo

Libra

Scorpio

Sagittarius

Capricorn

Aquariu**s**

Pisces

Spot the constellations on Stellarium. Try to spot the brightest stars in each constellation. Hard to find?

The brightest star, once clicked, will usually show its name in the following format:

“**𝝰 - (first three letters of the constellation it belongs to)”**

**Task 5:**

The different constellations that we can see differ from season to season. To get a comprehensive understanding of the constellations in each season, do check out the following playlists/videos:

1.[Summer Constellations](https://www.youtube.com/playlist?list=PL8pl68pBv2SyzZNdRBvw42eRw8lD5du9k)

2.[Winter Constellations](https://www.youtube.com/playlist?list=PL8pl68pBv2SyJPQYBvnVfQUSK5ma5baFm)

3.[Spring Constellations](https://www.youtube.com/playlist?list=PL8pl68pBv2SywM0Pt7bOezahCymk4L2YO)

4. [Autumn Constellations](https://www.youtube.com/playlist?list=PL8pl68pBv2SzzQZljy3On3KWxAC99LROT)

If you’re done with all the previous tasks, we are ready to dive into Deep Space Objects!

**Task 6:**

**Messier Objects:** Comet Hunter [Charles Messier](https://en.wikipedia.org/wiki/Charles_Messier) catalogued a list of some hundreds of deep space objects (mostly galaxies and [Nebulae](https://en.wikipedia.org/wiki/Nebula). He did that because they were often mistaken for comets and acted as ‘distractors’ for comet hunters. However, it is this elimination list for which Messier is popular today.

Our job is to find and locate major Messier Objects.

For the following objects open the ‘search’ tool and type in the object’s identity (you might want to turn on the **Deep Sky Objects** options):

1. M31
2. M44
3. M64
4. M81
5. M6
6. M1
7. M27
8. M16
9. M13
10. M8
11. M76
12. M17
13. M42
14. M101
15. M45
16. M7

For each of the Messier objects try to figure out the following:

1. Which constellation is it in?
2. What type of Object is it (Galaxy, Nebulae, [Globular Cluster](https://en.wikipedia.org/wiki/Globular_cluster#:~:text=A%20globular%20cluster%20is%20a,%2C%20globulus%E2%80%94a%20small%20sphere), [Open cluster](https://en.wikipedia.org/wiki/Open_cluster) )?
3. How far away is it?
4. Why couldn’t messier classify them as separate entities?

If you’re even more interested, explore all other Messier objects. My favorites are the grand galaxies! What are yours?

**Task 7:**

This one’s optional. If you’re interested in looking out for even more deep space objects, Stellarium has got your back! The [New General Catalogue](https://en.wikipedia.org/wiki/New_General_Catalogue) (NGC) is a catalogue of some 4800 deep space objects consisting of Galaxies, clusters, absorption and Emission Nebulae. Besides that, you can also look out for **Index Catalogues (IC)**, which are supplements of the New General Catalogue.

**Conclusion:**

Congratulations! You have learned about almost all the basic yet immensely interesting things of the night sky. You know about constellations and when they appear in the night sky. You know about the Brightest stars and you know a lot about Messier Objects too. Besides that you also learnt about Nebulae and different types of clusters too. You might want to go Stargazing soon and see all these things in reality!