

Observation of Stars and Constellations

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Introduction

The stars are scattered and visible all over the sky and in order to understand them a proper study is needed to be done. However, this study was conducted through the observation using Astro binocular and peripheral. This study was conducted using Stellarium 8.1.1 software and star chart which was downloaded and then used to observe the stars.

Pre Lab observation

Quiz 1: Where in the sky must you look tonight to find the stars Regulus, Arcturus, and Polaris?

1. In order to find the stars Regulus, Arcturus, and Polaris, I observe the west of the sky. This is because it was March 18, 2018, and during the month of March, the crescent moon and, therefore, the stars would be clearly visible.
2. A closer look at the chart the Mercury and Venus are the planets which are likely to be visible next to the moon.
3. The constellation which would be visible from the observation are the Orion, Aldebaran, Taurus, Leo and Cygnus.
4. *Which cluster is visible?*

The globular cluster will be visible on the far end of the west side of the sky. It will be visible through the binoculars.

Quiz 2: Research to answer the following questions.

- *How many light-years from Earth is the star Polaris? And why is the star Polaris noteworthy?*

The light-year from the Earth is 433.8 light years, and the star Polaris is noteworthy because it looks like it is always in the same spot in the sky. It is more visible and bright but not as bright as other stars in the sky.

- *What makes those two stars interesting?*

The two groups of stars are different and unique from the rest because they represent the handle and

the head and they are bright and very visible even with naked eyes compared to other stars.

- *What are the names of the two-star clusters in Taurus?*

The two clusters in Taurus are the Pleiades and the Hyades, which are visible to the naked eye.

Post Lab Observation

Quiz: 1. On what day did you make your observations? What was the weather like? What phase was the Moon in, and where was it located in the sky?

The study was conducted on March 18, 2018, at 7.30 pm local time. The weather was calm and clear, and this made it possible to observe the sky using Astro binoculars without having any difficulty. The moon was in the crescent phase and located on the west side of the sky. The observation of the moon revealed that it looks waxy y, and most features are clearly visible. The moon is generally dark except at its edge, which is a bit brighter. The crescent phase is the first phase of the moon immediately after the moon. At this phase, the moon is visible. From the observation, it is evident the sky was very clear, and therefore, stars could easily be seen scattered all over.

Quiz 2: What objects were you able to find and identify? What objects could you not find?

The objects that were clearly visible and could easily be identified were the stars, which were in clusters or constellations, planets, a splash of running meteors, and the moon as well, but it was not possible to see the sun (Clarks, 2016). A closer observation of the star revealed more details about the planet. There were several stars scattered all over the sky and could be seen in different shapes and sizes. The rings that hold different stars could also be seen. However, there are two planets closer to the moon. According to Vaughan (2018), these planets are Mercury and Venus (Vaughan, 2018). It is because the moon appears next to Mercury and Venus one day and then disappears, but Mercury and Venus disappear two days later. The sun could not be seen and was invisible using the binocular and star chart, which was used in the observation.

Quiz 3: Briefly summarize your observations of stars. e.g., their distribution, colors, brightness?

From the observation of the star, it is evident that most stars were scattered all over and mostly in groups. According to Vaughan (2018), the stars usually group or form a ring during the month of March when the moon is in the crescent phase, and therefore, the group observed is likely to be a

globular cluster. The globular cluster is when stars look to be in a group and are held by a ring in a zigzag shape. The stars were very bright and very white. Some stars indicated splashing light and moving from one direction to another. The fact that the sky was clear allowed us to easily observe and identify moving stars as well. From the observation, it could also be revealed that the north circumpolar constellations group of the star was visible from a far end. These are a group of bright stars scattered and approximated to be less than one hundred stars.

Quiz 4: What planets did you see? How did they differ from stars?

Through observation, it was easy to see the two planets such as Mercury, and Venus. The two stars appeared closer to the moon and brighter than most stars. The Mercury and Venus looked wiggle with long edges. A closer observation of the two planets revealed that the two planets appear to blink, shimmer, or twinkle, and these make them different from stars. The stars are constantly waxy and bright, and they seem to rotate along the rings. An observation also revealed that Mercury is very small compared to stars, which are more visible. It indicates that Mercury was closer to the moon and Earth. But Venus was very bright and located closer to the moon than Mercury. Venus is brighter due to the effect of the sunlight since it reflects more light from the same compared to other planets (Wyatt, 2018).

Quiz 5: Did you observe any motion of objects in the night sky, either individually or collectively? Describe what you observed.

Through proper observation, we could see some stars moving from one end to the other. The stars and the moon were also moving along their orbits. The stars move across the sky, and it takes place at intervals of a few minutes. They splash light as they move from one end to the other at a very low speed. However, there are some stars that move at a high speed (Stellarium, 2018).

Quiz 6: What constellation did you “invent”? Where can it be found in the sky?

However, using a telescope and binoculars to observe the stars, different stars could be seen in the group, and it is possible that the group seen was the Zodiac constellation. The stars formed a group that resembles different creatures, and from the observation, it is evident most stars were held together to form a group, which can either be Capricorn, Pisces, Aries, or Gemini based on the pattern formed by the stars. The Zodiac constellation is found on the west side of the sky, in the same direction the moon was found (Taylor, 2017).

Quiz 7: In summary, what did you learn about observing the night sky? (State at least three things.)

It is evident that we observe a whole solar system, which provides vividly detailed information about the composition of the stars, planets, the moon, and the way they move along their orbit. Therefore, I learned about the rotation of the moon and the composition of the stars, especially the constellation grouping of stars in the sky. Research indicates that stars are grouped together, and such grouping is what is called a constellation; therefore, most stars are barely in the hundreds (DeTray, 2018). I also learned about different planets and their arrangement in the solar system and how the reflection of the sun affects each planet. Most importantly, I learned how the stars appear in the sky, especially when the moon is in the crescent phase. The study also provided an opportunity to study the grouping or pattern of stars or constellations. I can now recognize and identify constellations through observation since I have practical experience.

References

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