

Musca

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Musca, Latin for "the fly," is a small constellation located in the southern celestial hemisphere. Representing a common household insect, Musca is one of the 12 constellations introduced by the Dutch astronomer Petrus Plancius in the late 16th century.

Keywords: astronomy ; constellation ; IAU

1. Introduction

Musca, Latin for "the fly," is a diminutive constellation situated in the southern celestial hemisphere. This celestial region was first introduced by the Dutch astronomer Petrus Plancius in the late 16th century, as part of his efforts to fill gaps in the southern sky not covered by classical Greek constellations. Despite its modest size and lack of prominent stars, Musca holds significance as one of the 88 modern constellations officially recognized by the International Astronomical Union.

Located near the southern celestial pole, Musca occupies an area of approximately 138 square degrees, making it one of the smallest constellations in the night sky. Its boundaries are defined by neighboring constellations, including Carina, Centaurus, Chamaeleon, and Crux. Celestial coordinates for Musca place it between approximately 11 and 14 hours of right ascension and -65 to -75 degrees of declination (**Figure 1**). These coordinates position the constellation in the vicinity of the southern celestial pole, making it visible primarily from southern latitudes and challenging to observe from higher northern latitudes due to its low altitude above the horizon.

While Musca lacks bright stars, it contains several interesting celestial objects worth exploring. One notable feature within the constellation is the globular cluster NGC 4833, situated near its border with Centaurus. This cluster is a dense grouping of stars, typical of globular clusters, and serves as a fascinating target for amateur astronomers.

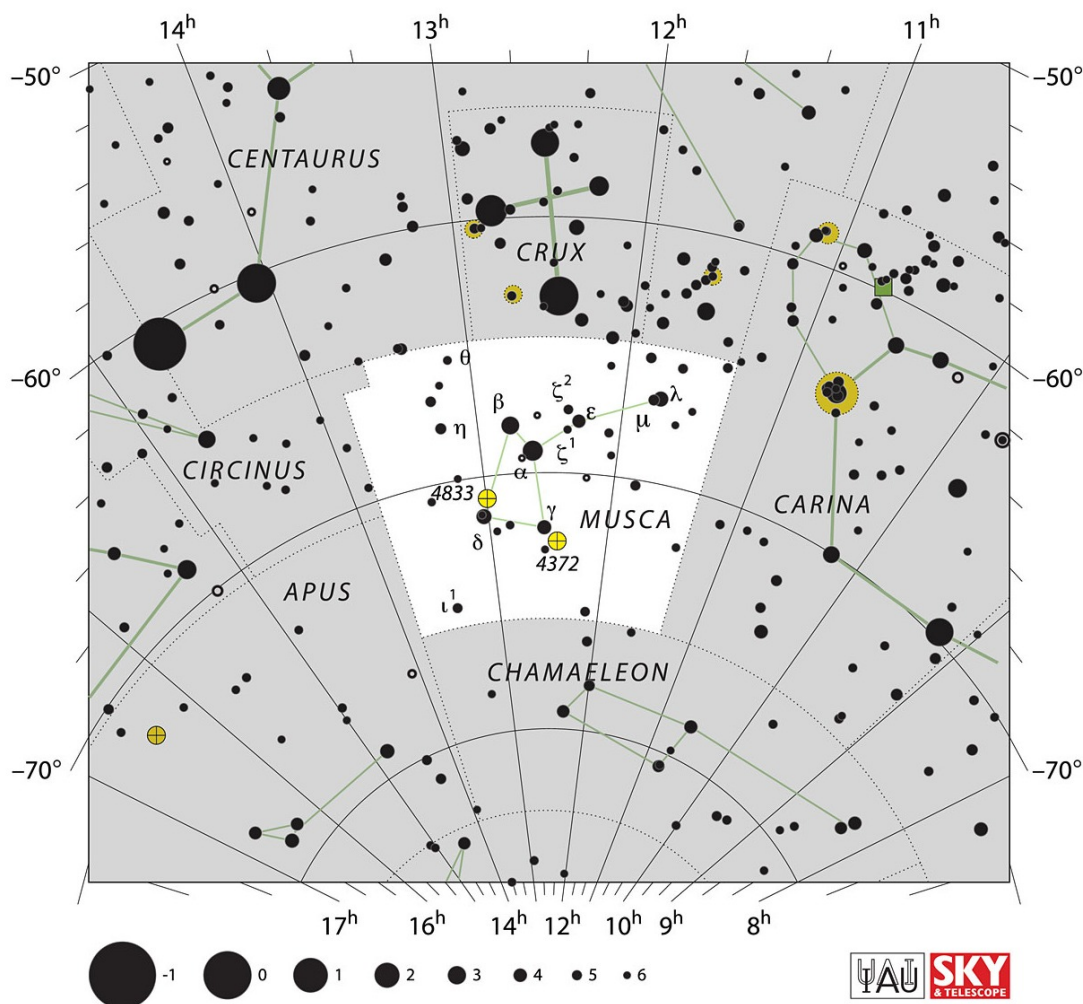


Figure 1. IAU chart of Musca. Source: <https://www.iau.org/static/archives/images/screen/mus.jpg>. Credit: IAU and Sky & Telescope. Reproduced under CC BY 4.0 license.

2. Historical Background and Mythology

Musca was first introduced in the late 16th century by the Dutch astronomer Petrus Plancius. Plancius, known for his cartographic and astronomical endeavors, created Musca along with several other constellations to fill gaps in the southern sky not covered by classical Greek constellations. These new constellations were often named after animals, mythical creatures, or objects encountered by European explorers during their voyages to the southern hemisphere.

The name "Musca," Latin for "the fly," reflects the small size and unassuming nature of the constellation. Plancius likely chose this name to symbolize one of the common insects encountered by explorers during their travels. While Musca may lack the grandeur and mythology of other constellations, its inclusion in the celestial catalog highlights the importance of exploration and discovery in shaping our understanding of the cosmos.

3. Notable Stars

Alpha Muscae (α Muscae): Alpha Muscae is the brightest star in the Musca constellation, though it is still relatively faint compared to stars in other constellations. This star is a binary system consisting of two main sequence stars orbiting each other. It is located approximately 310 light-years away from Earth and has a combined apparent magnitude of around 2.7. The primary star is a blue-white dwarf, while the companion is fainter and less massive. Alpha Muscae serves as a useful target for studying binary star systems and stellar evolution.

Beta Muscae (β Muscae): Beta Muscae is another notable star in the constellation, though it is considerably fainter than Alpha Muscae. It is classified as a blue-white giant star and is located approximately 315 light-years away from Earth. With an apparent magnitude of around 3.0, Beta Muscae is visible to the naked eye under dark sky conditions. This star represents an advanced stage in stellar evolution, as it has exhausted its core hydrogen fuel and expanded into a giant phase.

Gamma Muscae (γ Muscae): Gamma Muscae is a binary star system located in the Musca constellation. The primary star is a blue-white main sequence star, while the companion is fainter and less massive. This system is relatively close to Earth, with a distance of approximately 107 light-years, making it one of the closest stars in the constellation. Gamma Muscae has an apparent magnitude of around 3.8, making it visible to the naked eye from southern latitudes.

Zeta Muscae (ζ Muscae): Zeta Muscae is a multiple star system consisting of at least four stars. The primary component is a blue-white main sequence star, while the other members of the system are fainter and less massive. Zeta Muscae is located approximately 350 light-years away from Earth and has an apparent magnitude of around 4.4. This star system offers astronomers valuable insights into the dynamics of multiple star systems and stellar evolution.

4. Deep-Sky Objects

The Coalsack Nebula (Dark Doodad Nebula): The Coalsack Nebula is a large dark nebula located near the border of Musca with the neighboring constellation Crux. Despite its name, the Coalsack Nebula is not a true nebula but rather a dense cloud of dust and gas obscuring the light from background stars. Its dark appearance against the backdrop of the Milky Way makes it a striking sight, earning it the nickname "Dark Doodad Nebula." The Coalsack Nebula spans approximately 7 degrees across and is best observed under dark, clear skies away from light pollution.

NGC 4372 (Globular Cluster): NGC 4372 is a globular cluster situated within the boundaries of Musca. This dense grouping of stars is one of the lesser-known globular clusters in the night sky but is nonetheless a captivating sight for observers with binoculars or small telescopes. NGC 4372 contains thousands of stars densely packed into a spherical shape, forming a luminous ball of light against the darkness of space. Its relatively faint appearance and remote location make it a challenging target for amateur astronomers but a rewarding one for those who seek it out.

NGC 4833 (Globular Cluster): NGC 4833 is another globular cluster located in Musca, near its border with the constellation Puppis. This cluster is more prominent and easier to observe than NGC 4372, making it a popular target for amateur astronomers. NGC 4833 contains thousands of stars arranged in a spherical shape, with a dense core at its center. Its apparent magnitude of around 7.2 makes it visible with binoculars or small telescopes under dark sky conditions. NGC 4833 offers observers a glimpse into the densely packed stellar populations characteristic of globular clusters, providing valuable insights into stellar dynamics and evolution.