

Lynx

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Lynx is a faint constellation located in the northern celestial hemisphere, bordered by Ursa Major, Auriga, Gemini, and Cancer. Named after the wild cat known for its keen vision, Lynx is notable for its lack of bright stars but contains several galaxies and deep-sky objects, making it of interest to astronomers.

Keywords: astronomy ; constellation ; IAU ; star

1. Introduction

Lynx, a constellation located in the northern hemisphere, holds a unique position in the celestial sphere. Introduced by the Polish astronomer Johannes Hevelius in the 17th century, Lynx was named after the lynx due to its faintness, requiring keen eyesight akin to that of the wild animal to discern its stars. This constellation, devoid of strong mythological associations, occupies an area of 545 square degrees and is situated between Auriga and Ursa Major.

Lynx stands out as the 28th largest constellation, encompassing a significant portion of the night sky. It borders constellations like Auriga, Camelopardalis, and Ursa Major, offering observers a celestial panorama rich in stars and deep-sky objects. Notable stars within Lynx include Alpha Lyncis, an orange giant with an apparent magnitude of 3.13, and Alsciaukat (31 Lyncis), known for its variability and spectral class K4.5 III. In terms of celestial coordinates, Lynx is situated in the second quadrant of the northern hemisphere and can be observed between latitudes of $+90^\circ$ and -55° . Its right ascension falls between 06h 16m 13.76s and 09h 42m 50.22s, while its declination ranges from $+32.97^\circ$ to $+61.96^\circ$ (**Figure 1**). Lynx's visibility peaks from late winter to late summer for northern hemisphere observers, with midnight culmination occurring around January 20th.

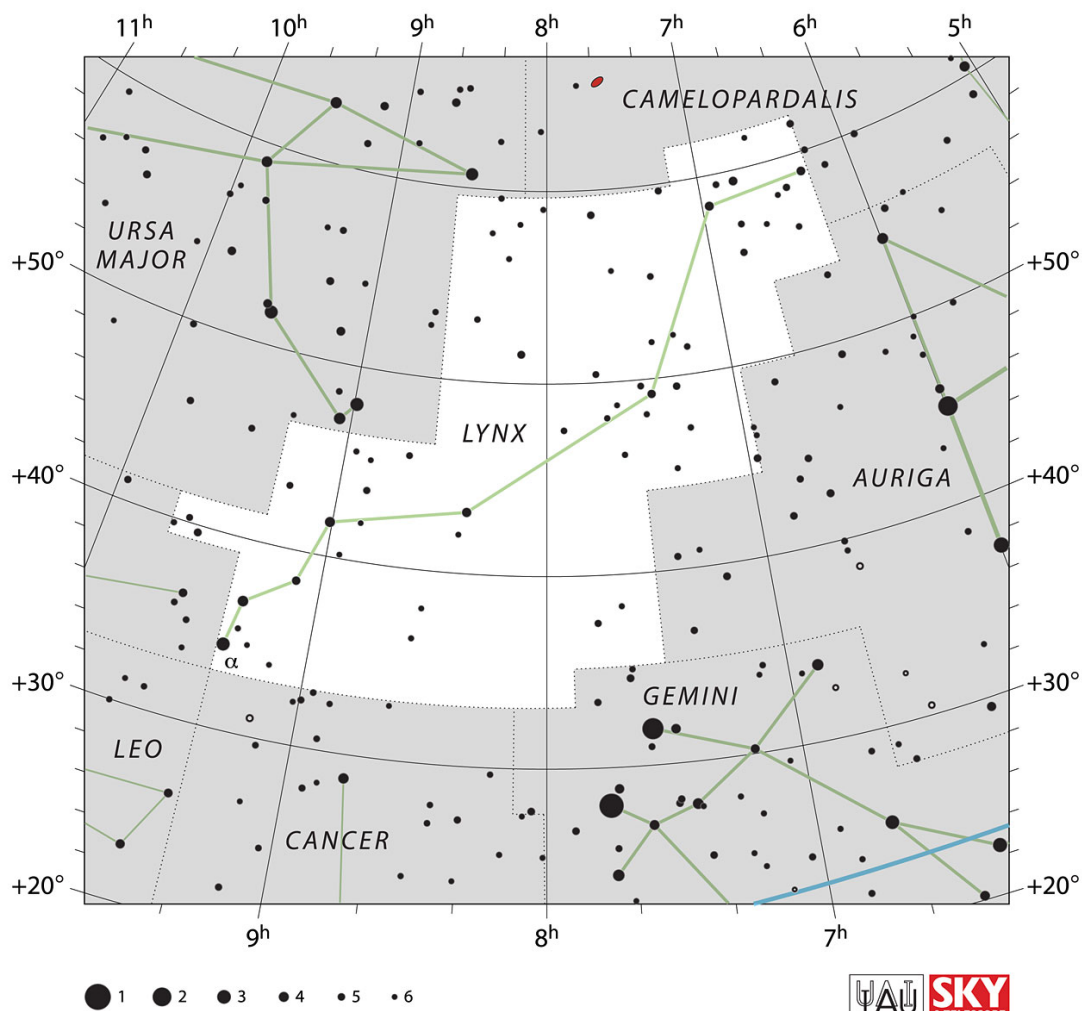


Figure 1. IAU chart of Lynx. Source: <https://www.iau.org/static/archives/images/screen/lyn.jpg>. Credit: IAU and Sky & Telescope. Reproduced under CC BY 4.0 license.

2. Historical Background

The constellation Lynx, despite its relatively recent introduction, does not have significant historical or mythological associations in ancient cultures. It was first introduced by the Polish astronomer Johannes Hevelius in the 17th century, who included it in his star atlas "Firmamentum Sobiescianum sive Uranographia" published in 1690. Hevelius named the constellation "Lynx" due to its lack of bright stars and the need for sharp eyesight to discern its faint celestial features, likening it to the keen vision of the wild cat.

In ancient times, however, the stars that comprise the Lynx constellation were likely considered part of neighboring constellations or simply overlooked due to their faintness. Without prominent stars or distinctive patterns, Lynx did not feature prominently in the mythology or celestial navigation of ancient civilizations. Despite its lack of ancient mythological associations, Lynx has garnered some attention in modern times, primarily within the realm of astronomy. Its inclusion in Johannes Hevelius' star atlas marked the beginning of its recognition as a distinct constellation in Western astronomy. Since then, Lynx has been cataloged and studied by astronomers for its celestial objects, particularly its galaxies and deep-sky phenomena.

In modern astronomical lore, Lynx is known for its association with a number of notable deep-sky objects. For example, it contains the NGC 2419, commonly known as the Intergalactic Wanderer or the "William Herschel's Ghost" due to its unusual location far beyond the confines of the Milky Way galaxy. This globular cluster is one of the most distant known objects within our galaxy and has sparked fascination among astronomers for its enigmatic nature.

Additionally, Lynx is home to several other galaxies, nebulae, and star clusters that have captured the interest of astronomers and stargazers alike. While lacking the prominence of some other constellations in terms of mythology, Lynx serves as a reminder of the vastness and diversity of the universe, inviting exploration and discovery in the realm of astronomy.

3. Notable Stars

Lynx is known more for its deep-sky objects, such as galaxies and nebulae, rather than individual stars. The stars within Lynx are generally faint and lack distinctive characteristics that would make them noteworthy in the context of stellar astronomy. Alpha Lyncis is the brightest star in the constellation Lynx and the only star in the constellation that has a Bayer designation. Here are the details about Alpha Lyncis:

- Spectral Class: K7III
- Apparent Magnitude: 3.14
- Distance from Earth: Approximately 220 light-years

Alpha Lyncis is an orange giant star, located relatively close to Earth compared to other stars in the constellation. As a K-type giant, it has exhausted the hydrogen in its core and expanded to several times the size of the Sun. Its orange hue is characteristic of cooler, older stars. Despite being the brightest star in Lynx, Alpha Lyncis is still relatively faint compared to stars in other constellations, making it challenging to spot without clear, dark skies.

4. Deep-Sky Objects

Within the constellation Lynx, astronomers have identified several captivating deep-sky objects that offer insights into the vastness and complexity of the universe.

One notable object is NGC 2419, commonly referred to as the Intergalactic Wanderer or "William Herschel's Ghost." This object, categorized as a globular cluster, holds a unique position due to its remarkable distance from the Milky Way galaxy, estimated to be approximately 300,000 light-years away. NGC 2419's extreme distance has led to speculation about its origin, with some astronomers suggesting it may be a captured satellite of our galaxy or even an extragalactic object. Its dense core and surrounding halo of stars make it a fascinating subject for study, offering insights into the dynamics and composition of globular clusters.

Another intriguing deep-sky object within Lynx is NGC 2683, affectionately known as the UFO Galaxy. This spiral galaxy's edge-on orientation gives it a distinctive disk-like appearance reminiscent of an unidentified flying object (UFO). Located approximately 25 million light-years from Earth, NGC 2683 showcases prominent dust lanes and spiral arms, providing astronomers with opportunities to study the structure and dynamics of spiral galaxies in the universe. Its striking appearance and relative proximity make it a popular target for both amateur and professional astronomers.

NGC 2537, also known as the Bear's Paw Galaxy, is a captivating spiral galaxy located within the Lynx constellation. This galaxy is notable for its striking appearance, which resembles a paw print, hence its popular nickname. Its distance from Earth is approximately 35 million light-years. NGC 2537 is characterized by its distinctive spiral arms, which wrap around a bright central bulge. The galaxy's spiral structure is emphasized by dark dust lanes, where new stars are actively forming. NGC 2537 is relatively small compared to some other spiral galaxies, but its unique morphology and proximity make it a fascinating target for astronomers. NGC 2537's spiral arms are dotted with regions of intense star formation, where young, massive stars illuminate the surrounding gas and dust clouds. These regions, known as H II regions, appear as bright knots within the galaxy's spiral arms and contribute to its overall luminosity. NGC 2537's proximity to Earth allows astronomers to study its structure and stellar population in detail, providing insights into the processes of galaxy formation and evolution.