

CONSTELLATION LEO MINOR

The little Lion

Leo Minor is a small and faint constellation in the northern celestial hemisphere. Its name is Latin for "the smaller lion", in contrast to Leo, the larger lion. It lies between the larger and more recognizable Ursa Major to the north and Leo to the south. Leo Minor was not regarded as a separate constellation by classical astronomers;

Ptolemy had some of these stars among the *amorphotai* of his Leon, (**the term means unformed and is often used to describe the spaces in the night sky populated by dim stars between prominent groups**). The constellation was formed by **Johannes Hevelius** (1611 - 1687) a councillor and mayor of Gdansk, Poland, from eighteen stars between the greater Lion (Leo) and the Bear (Ursa Major), in a long triangle with a fainter line to the south, and thus named because he said it was 'of the same nature as these adjoining constellations'.

There are 37 stars brighter than apparent magnitude 6.5 in the constellation; three are brighter than magnitude 4.5: 46 *Leonis Minoris*, an orange giant of magnitude 3.8, some 95 light-years from Earth is known as *Praecipua*.

Beta Leonis Minoris, at magnitude 4.4 is the only one in the constellation with a Bayer designation.

21 *Leonis Minoris*, the third brightest, is a rapidly rotating white main-sequence star of average magnitude 4.5.

The constellation also includes **two stars with planetary systems**, two pairs of interacting galaxies, **and the unique deep-sky object Hanny's Voorwerp** (see next page).

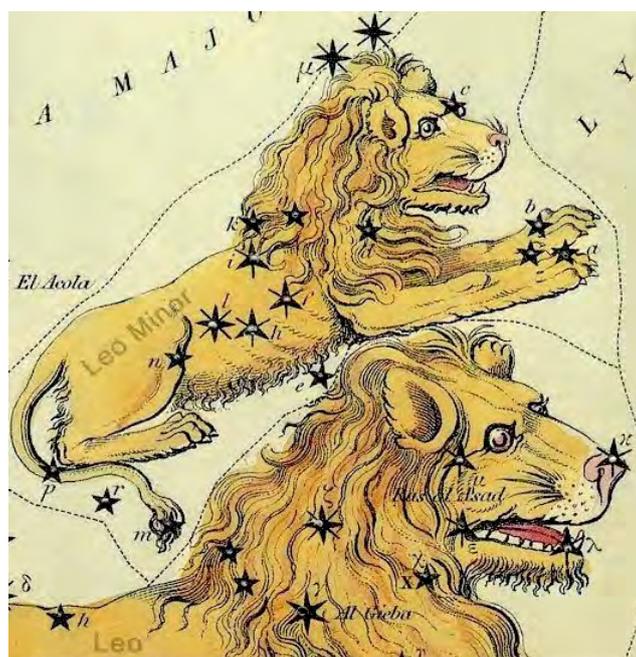
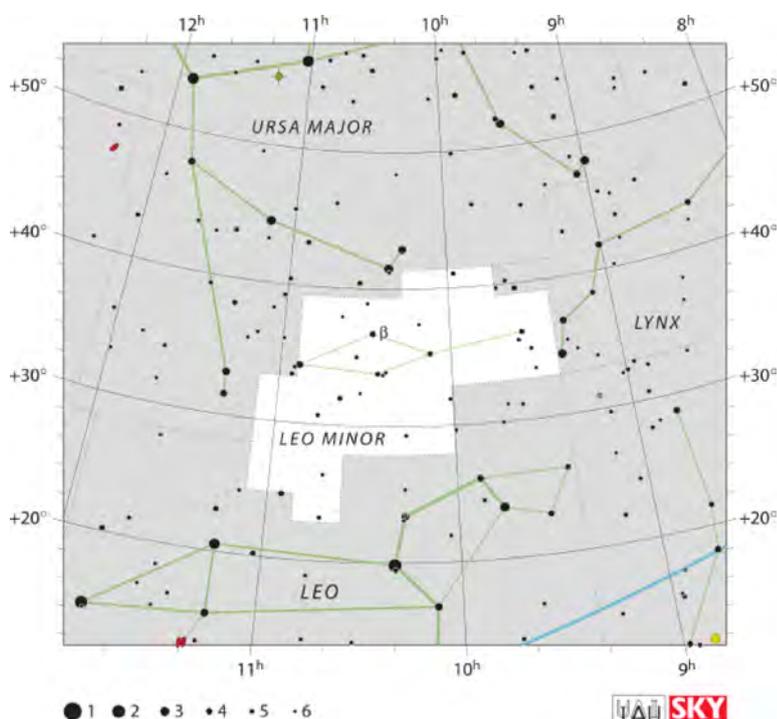
Leo Minor, the little, or Lesser Lion, is the French *Petit Lion*, the German *Kleine Lowe*, and the Italian *Leoncino*. **Proctor** arbitrarily changed the title to *Leaena*, the Lioness, but it did

not take on. According to the German astronomer **Christian Ludwig Ideler** (1766–1846, translator of **Kazwini**, an Arabian astronomy book) in early Arabia our Leo Minor was seen as a gazelle *Al Thiba' wa-Auladuha*, and *Coma Berenice* was *Al Haud*, the Pond, into which the gazelle sprang when frightened at the lashing of the Lion's tail. In this picture by Johannes Hevelius the small lion is positioned under the feet of the Great Bear, Ursa Major, and above the constellation Leo, the larger Lion.



Richard Anthony Proctor (1837 – 1888) an English astronomer, renowned for having produced the earliest maps of Mars in 1867.

The picture shows three of the Bear's paws are placed on the ground and her right front paw is lifted - not leaving a track. The Arabs called these tracks the 'three gazelle leaps'.



Leo Minor above the head of Leo, as depicted in Urania's Mirror, a set of constellation cards published ca. 1825



The gazelle is a powerful symbol in Persian and Arabic poetry and art, it symbolizes feminine beauty. In pre-Islamic mythology **Layla and Majnun** are two star-crossed lovers from warring Bedouin tribes in the Middle-East, and could therefore not marry. The story may have served as the basis for Shakespeare's play *Romeo and Juliet*. To the right of the first leap is *Praecipua* of Leo Minor, the top of the Sickle of Leo is at the bottom, while the eastern end of the modern constellation Lynx is to the far left.

In Greek Mythology Leo Minor represents the footsteps of the Great Bear, Ursa Major. Helice was a common classical name for a bear and the name Helice is cognate with the name Helen, who might be a reference to Helen of Troy. Female bears sometimes did represent a 'fallen woman' in society. **Remember, Helen of Troy, the face that launched a thousand ships, eloped with Paris, sparking the launch of those thousand ships and the siege of Troy when her husband, the Mycenaean King Menelaus, raised an army to fetch her back.** The story has been immortalised by the poet Homer in the classics of *Odyssey* and the *Iliad*.

Being a dark area of the sky with a triangle of brighter stars just visible to the naked eye in good conditions, Leo Minor has been described by **Patrick Moore** as having "a dubious claims to a separate identity". It is a small constellation bordered by Ursa Major to the north, Lynx to the west, Leo to the south, and touching the corner of Cancer to the southwest. The three-letter abbreviation for the constellation, as adopted by the **International Astronomical Union** in 1922, is 'LMi'. The official constellation boundaries, as set by **Eugène Delporte** in 1930, are defined by a polygon of 16 sides. In the equatorial coordinate system, the right ascension coordinates of these borders lie between 9h 22.4m and 11h 06.5m, while the declination coordinates are between 22.84° and 41.43°. Ranked 64th out of 88 constellations in size, Leo Minor covers an area of 232.0 square degrees, or 0.562 percent of the sky.

DEEP-SKY OBJECTS

In terms of deep-sky objects, Leo Minor contains many galaxies viewable in amateur telescopes. Located 3 degrees southeast of 38 *Leonis Minoris*, NGC 3432 is seen nearly edge on. Known as the knitting needle galaxy, it is of apparent magnitude 11.7 and measures 6.8 by 1.4 arcminutes. Located 42 million light years away, it is moving away from the Solar System at a rate of 616 km per second. In 2000, a star within the galaxy brightened to magnitude 17.4, and has since been determined to be a luminous blue variable and supernova impostor. NGC 3395 and NGC 3396 are a spiral and irregular barred spiral galaxy respectively that are interacting, located 1.33 degrees southwest of 46 *Leonis Minoris*.

Other notable deep sky objects in Leo Minor include the interacting galaxies Arp 107 and *Hanny's Voorwerp*. Arp 107 is a pair of galaxies in the process of merging, located 450 million light years away. The unique deep-sky object known as *Hanny's Voorwerp* (Hanna's small object) was discovered in Leo Minor in 2007 by Dutch school teacher **Hanny van Arkel** while participating as a volunteer in the Galaxy Zoo project. Lying near the 650 million light year-distant spiral galaxy IC 2497, it is around the same size as the Milky Way. It contains a 16,000 light year wide hole. The *voorwerp* is thought to be the visual light echo of a quasar now gone inactive, possibly as recently as 200,000 years ago. The Leonis Minorid meteor shower peaks between October 18 and October 29. The shower's parent body is the long period comet C/1739 K1. It is a minor shower, and can only be seen from the Northern Hemisphere. Leo Minor belongs to the Ursa Major family of constellations, along with *Boötes*, *Camelopardalis*, *Canes Venatici*, *Coma Berenices*, *Corona Borealis*, *Draco*, *Lynx*, *Ursa Major* and *Ursa Minor*.

A planet was discovered orbiting the star HD 87883 on August 13, 2009. HD 87883 is an orange dwarf star of 7.56 magnitude at 59 light years distant belonging to the spectral class K0V. The exoplanet is a long-period planet taking seven and a half years to complete an orbit around the star.

AK, from Wikipedia

