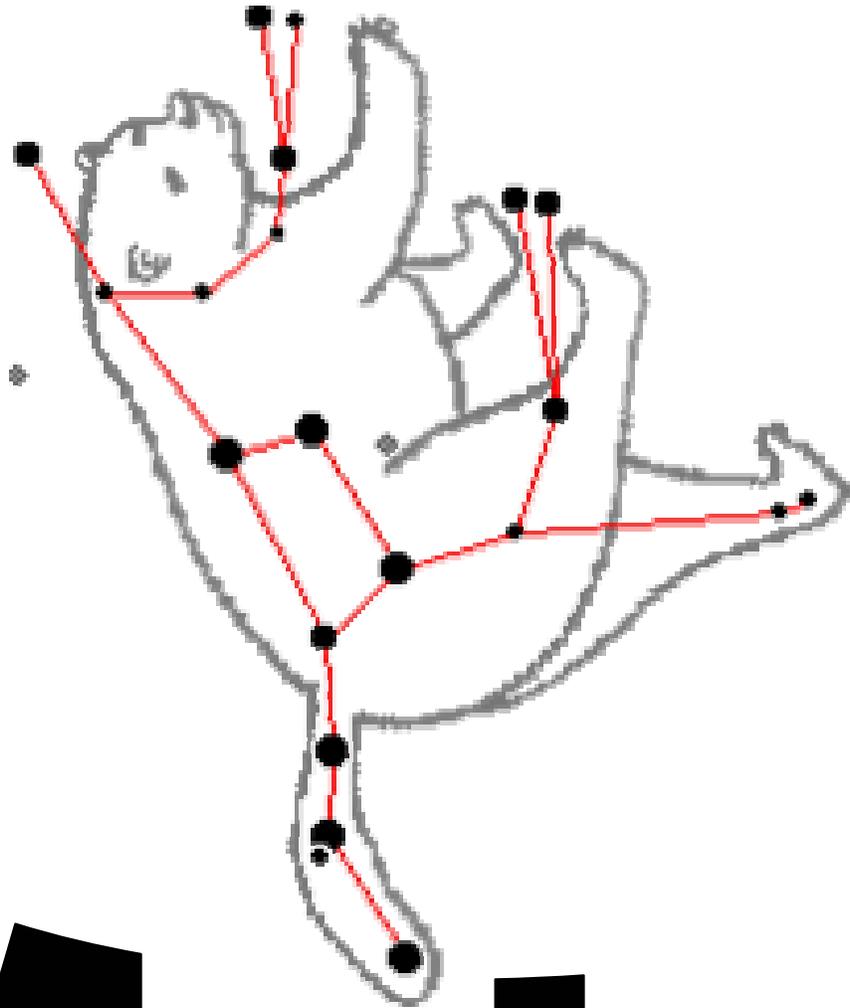
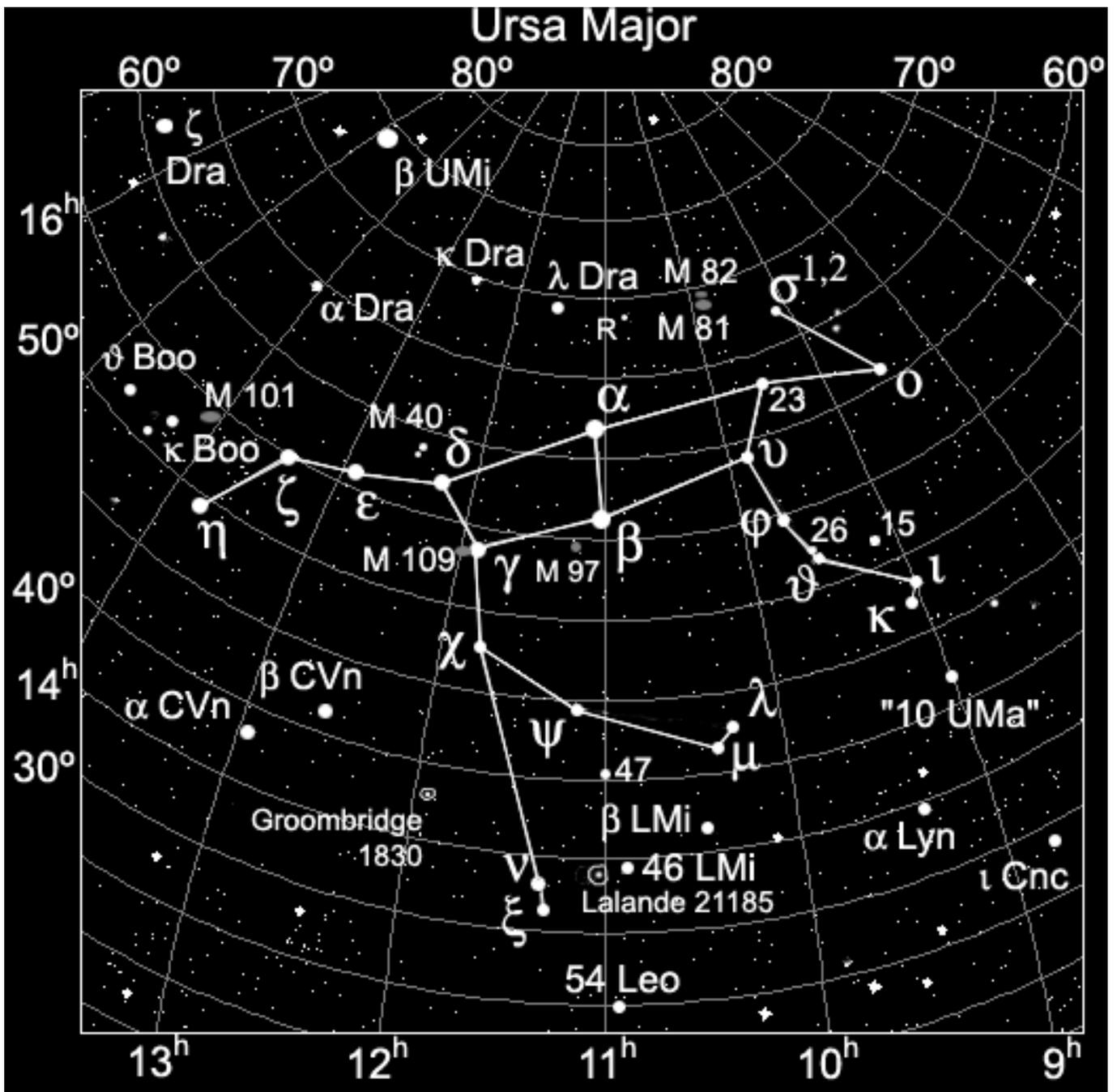


Ursa



Major

The Brightest Stars in Ursa Major



Overview

Ursa Major is a constellation visible throughout the year in the northern hemisphere. Its name means "Great Bear" in Latin, and is derived from the legend of Callisto. Its seven brightest stars form a famous asterism known in North America as the Big Dipper, because the major stars can be seen to follow the rough outline of a large ladle, or dipper; this is recognized as a grouping of stars in many cultures throughout the eras. In the United Kingdom it is commonly known as the Plough, and was sometimes called by the old name King Charles's Wain ('wain' meaning 'wagon').

History and Mythology

Zeus, King of the Gods, fell in love with the beautiful Callisto, a young woman who was a hunter. When Hera, Zeus' wife, heard of what has happening she was furious and set out after Callisto. On finding her, Hera said, "Your beauty, of which my husband speaks so tenderly, is no more!" Whereupon Hera changed Callisto into a bear but left Callisto with her human feelings rather than those of a bear. Callisto roamed the forest day and night in constant fear of the hunters and in fear of other wild beasts, although she was now one.

One day Callisto found herself face-to-face with a young and handsome hunter and suddenly recognized him as her son, Arcas. She rose up on her hind legs to embrace her son. Thinking that the bear was about to attack him, Arcas raised his spear and was about to hurl it and kill his mother. Zeus happened to be looking down on the scene from his position on Mt. Olympus and instantly turned Arcas into a bear also. Zeus then grasped each bear by its tail and tugged and tugged until he had managed to lift both high into the sky, Callisto as Ursa Major and her son Arcas as Ursa Minor. This tugging of tails over such a long journey through the sky stretched both tails and explains why our celestial bears, unlike earthly ones, have long tails. The tail of Arcas became even longer since he was continuously swung around the sky by the end-star in his tail, Polaris.

On discovering that her husband had given Callisto and Arcas honored places in heaven, Hera was furious. She went down to Earth to visit her friend the ocean god, Oceanus. "How dare Zeus give these two an honored place in heaven?" Hera fumed. "They have now displaced me, Queen of Heaven, from my place in the sky. I ask you forever keep these two penned so that they may never wander far."

Oceanus was sympathetic and promised that he would grant Hera her wish. He would see to it that "the couple never would be permitted to enter our water in their wandering," in other words, that the bears forever would be forbidden to set below the horizon of the sea as other constellations do. To this day both the Lesser Bear and the Greater Bear are held high in the sky near the Pole Star, never permitted to sink beneath the sea horizon.

The North American Indians also chose bears for these two constellations. They called them Okuri and Paukunawa, both meaning "Bear." This was before any contact with Europeans

The middle star in the dipper's handle is Mizar, which is actually a double star. Alcor is so close to Mizar that they appear to be one star but Alcor is not Mizar's companion star. In some ancient armies, these stars were used as an eye test. If you could see two separate stars your eyesight was good, if not, you had poor eyesight.

In ancient England, Ursa Major was King Arthur's home and was called Arthur's Chariot. The Irish named Ursa Major after one of their early kings, calling it King David's Chariot. And in France it was the Great Chariot.

Features

- This constellation is most famous for the asterism Big Dipper, build by the stars alpha UMa, beta UMa, gamma UMa, delta UMa, epsilon UMa, zeta UMa and eta UMa.
- Brightest star is Dubhe
- Above 41deg north it never sets. It can be seen as far south as -30deg latitude.
- Best viewing in April
- Ranked 3rd for most area covered in sky at 1280 sq. degrees; only Hydra (1303 sq.deg) and Virgo (1294 sq.deg) cover more of the sky.
- 47 Ursae Majoris has a planetary system with 3 confirmed planets ranging from 0.76 to 2.54 times the mass of Jupiter.
- The middle star in the dipper's handle is Mizar, which is actually a double star. Alcor is so close to Mizar that they appear to be one star but Alcor is not Mizar's companion star.
- Bordered by 8 consellations - Draco, Camelopardalis, Lynx, Leo Minor, Leo, Coma Berenices, Canes Venatici, Boötes
- Important guide for finding other stars and constellations:
 - Following the line leading from alpha UMa to beta UMa, one can find easily the pole star (Polaris, alphastar of the Little Bear).
 - The constellation Charioteer (Auriga) can be found when following the line leading from delta UMa to alpha UMa. It's leading directly to alpha Aur (Capella).
 - Sweeping down from the handle one reaches Arcturus (α Boötis) and Spica (α Virginis). A mnemonic for this is "Follow the arc to Arcturus, and speed on to Spica."
 - Drawing a line from delta UMa to beta UMa and beyond, you will find alpha Gem (Castor in the constellation Twins).
- Arab Culture - "Leaps of the Gazelle" - a series of 3 pairs of stars.
 - v and ξ Ursae Majoris, Alula Borealis and Australis, the "first leap";
 - λ and μ Ursae Majoris, Tania Borealis and Australis, the "second leap";
 - ι and κ Ursae Majoris, Talitha Borealis and Australis, the "third leap."
- 2 minor meteor showers:
 - Alpha Ursa Majorids - This meteor stream seems to produce a weak meteor shower during August 9 to 30. The maximum occurs during August 13 to 14, from an average radiant of RA=165 deg, DEC=+63 deg, and tends to produce meteors at the rate of 4 per hour. There is evidence that this shower may be strong telescopically and with radar, but few details are available. The orbit of this meteor stream is very similar to that of comet Alcock (C/1959 Q1).
 - Leonids-Ursids - Although visual radiants of this stream are a distinct rarity, it is interesting that its strongest support for existing is based on several photographic meteors detected during the 1950's.

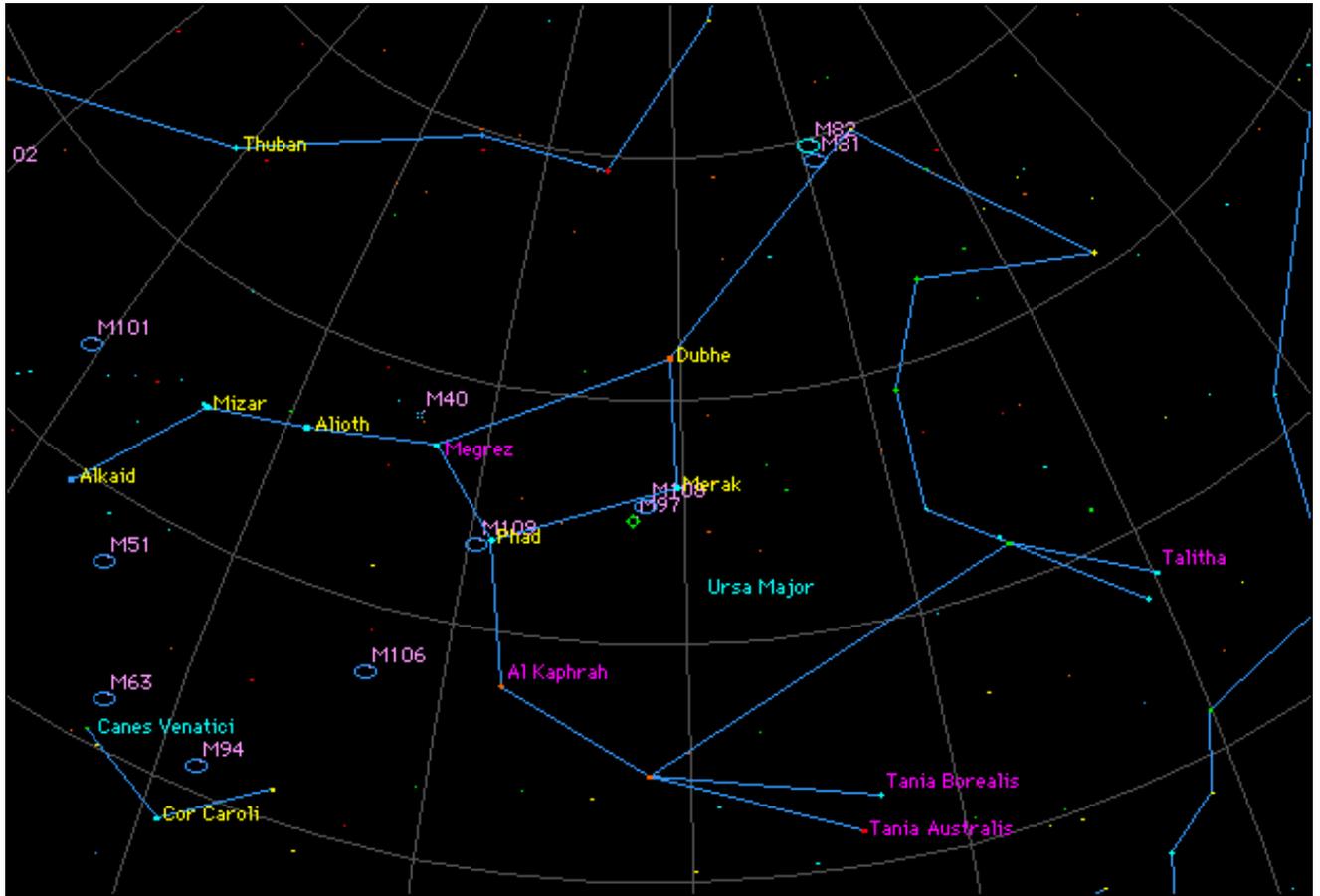
Major Deep Sky Objects

Messier Objects

- M40 – Winnecke 4 – Double Star
- M81 – Bode’s Galaxy – Spiral Galaxy
- M82 – Cigar Galaxy – Irregular Galaxy
- M97 – Owl Nebula – Planetary Nebula
- M101 – Pinwheel Galaxy – Spiral Galaxy
- M108 – *unnamed* – Spiral Galaxy
- M109 – *unnamed* – Spiral Galaxy

NGC Objects

2681	Spiral Galaxy	10.3 mag	3726	Spiral Galaxy	10.4 mag
2742	Spiral Galaxy	11.7	3729	Spiral Galaxy	11.4
2768	Elliptical Galaxy	10.0	3877	Spiral Galaxy	10.9
2787	Spiral Galaxy	10.8	3893	Spiral Galaxy	11.0
2841	Spiral Galaxy	9.3	3941	Elliptical Galaxy	9.8
2950	Spiral Galaxy	11.0	3945	Spiral Galaxy	10.6
2976	Spiral Galaxy	10.2	3949	Spiral Galaxy	11.0
2985	Spiral Galaxy	10.5	3953	Spiral Galaxy	10.1
3077	Elliptical Galaxy	9.9	4026	Elliptical Galaxy	10.7
3079	Spiral Galaxy	10.6	4036	Elliptical Galaxy	10.6
3184	Spiral Galaxy	9.8	4041	Spiral Galaxy	11.1
3310	Spiral Galaxy	10.9	4051	Spiral Galaxy	10.3
3631	Spiral Galaxy	10.4	4088	Spiral Galaxy	10.5
3675	Spiral Galaxy	10.6	4111	Elliptical Galaxy	10.8
3718	Spiral Galaxy	10.5	5322	Elliptical Galaxy	10.0



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