

CONSTELLATION CORONA BOREALIS

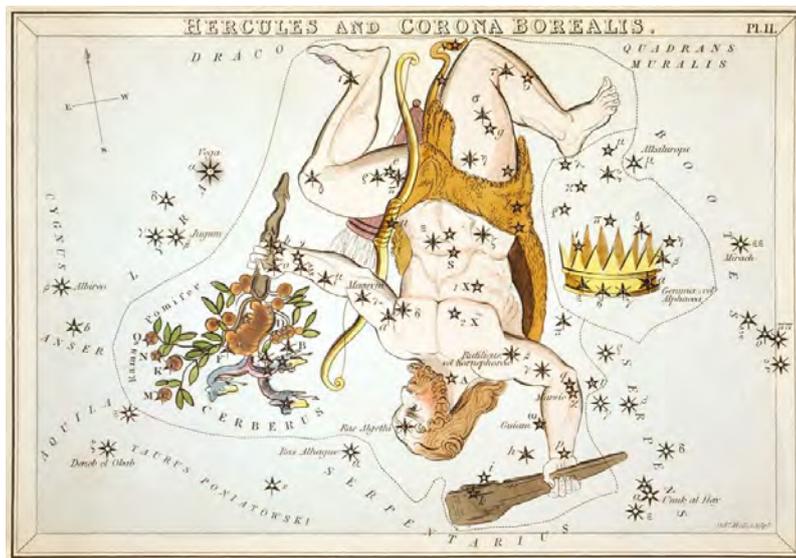
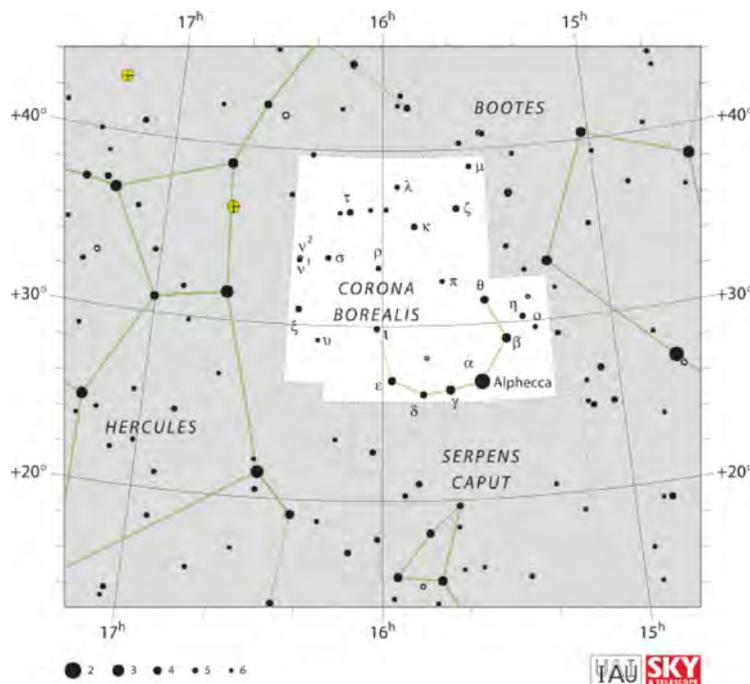
The Northern Crown

In Greek mythology, Corona Borealis was linked to the legend of Theseus and the Minotaur. It represents the Golden Crown said to have been made by **Hephaestus**, the god of fire, inlaid with precious stones given by **Dionysus** (Roman **Bacchus**, or **Liber**) to **Ariadne**, the daughter of **Minos of Crete**. The constellation contains nine principal Stars, arranged in a semicircular form. [There is another crown in the heavens depicted in **Corona Australis**, the Southern Crown, it represents the crown given by Dionysus to his mother Semele].

The story relating to Corona Borealis tells how **Daedalus** built a labyrinth, an elaborate maze-like construction, to house the Minotaur, a creature half man and half bull. Here it devoured the seven youths and seven maidens which were sent to it from Athens in tribute to king Minos of Crete, who had conquered Athens. The tribute for the Minotaur was chosen by lot. When the third repetition of the nine-year tribute came around, **Theseus** (mythical founder-king of Athens) inserted himself as one of the youths in the line-up. **He got from Ariadne, daughter of Minos, who had fallen in love with him, the famous thread that enabled him to retrace his steps back through the Labyrinth.** Once in there he slew the Minotaur, then, following back the string, he left the maze, unchained the young Athenians, and taking Ariadne, whom he had promised to marry, along with him, they sailed off from Crete to Naxos. There Theseus deserted her as she lay sleeping and sailed off in his ship without her. **Ariadne was left marooned on the island of Naxos, a castaway.** But then Dionysus came to her rescue. Deserted and weeping bitterly, as she was, Dionysus brought her help and comfort. So that she might shine among the eternal stars, he took the crown from her forehead, and set it in the sky. **It soared through the rarified air, and as it rose its jewels changed to bright fires, and took their place, retaining the appearance of a crown, as the Corona Borealis, between the kneeling Hercules and the head of the serpent that Ophiuchus holds.** This legend of Ariadne and her Crown seems to have been first recorded by **Pherecydes** early in the 5th century before Christ.

Corona Borealis is a small constellation in the Northern Celestial Hemisphere. It is one of the 48 constellations listed by the 2nd-century astronomer **Ptolemy**, and remains one of the 88 modern constellations. Its brightest stars form a semicircular arc. Its Latin name, inspired by its shape, means "northern crown". In classical mythology Corona Borealis generally represented the crown given by the god Dionysus to the Cretan princess Ariadne and set by him in the heavens. Other cultures likened the pattern to a circle of elders, an eagle's nest, a bear's den, or even a smokehole. Ptolemy also listed a southern counterpart, Corona Australis, with a similar pattern. **Covering 179 square degrees and hence 0.433% of the sky, Corona Borealis ranks 73rd of the 88 modern constellations by area.** Its position in the Northern Celestial Hemisphere means that the whole constellation is visible to observers north of 50°S. It is bordered by Boötes to the north and west, Serpens Caput to the south, and Hercules to the east.

The three-letter abbreviation for the constellation, as adopted by the International Astronomical Union in 1922, is 'CrB'. The official constellation boundaries, as set by **Eugène Delporte** in 1930, are defined by a polygon of eight segments.



Hercules and Corona Borealis, as depicted in Urania's Mirror (c.1825)

STARS

The seven stars that make up the constellation's distinctive crown-shaped pattern are all 4th-magnitude stars except for the brightest of them, *Alpha Coronae Borealis*. Also called Alphekka or Gemma, it appears as a blue-white star of magnitude 2.2. In fact, it is an Algol-type eclipsing binary that varies by 0.1 magnitude with a period of 17.4 days. The other six stars are *Theta*, *Beta*, *Gamma*, *Delta*, *Epsilon* and *Iota Coronae Borealis*. The German cartographer **Johann Bayer** gave twenty stars in Corona Borealis Bayer designations from Alpha to Upsilon in his 1603 star atlas Uranometria. *Beta Coronae Borealis* or Nusakan is a spectroscopic binary system whose two components are separated by 10 AU and orbit each other every 10.5 years. The brighter component is a rapidly oscillating Ap star, pulsating with a period of 16.2 minutes. Flanking Alpha to the east is *Gamma Coronae Borealis*, yet another binary star system, whose components orbit each other every 92.94 years and are roughly as far apart from each other as the Sun and Neptune

The yellow supergiant *R Coronae Borealis* is the prototype of a rare class of giant stars—the R Coronae Borealis variables—that are extremely hydrogen deficient, and thought to result from the merger of two white dwarfs.

T Coronae Borealis, also known as the Blaze Star, is another unusual type of variable star known as a recurrent nova.

Normally of magnitude 10, it last flared up to magnitude 2 in 1946. *ADS 9731* and *Sigma Coronae Borealis* are multiple star systems with six and five components respectively. *Zeta Coronae Borealis* was noted to be a double star by later astronomers and its components designated Zeta1 and Zeta2. *Rho Coronae Borealis* is a yellow dwarf star 56.2 light years distant with an apparent magnitude of 5.4. It belongs to the spectral class G0-2Va and is **considered a solar twin, with almost the same mass, luminosity and radius as the Sun.** **In 1997, a planet was discovered in the star's orbit.**

Five star systems have been found to have Jupiter-sized exoplanets. There are no meteor showers associated with the constellation. Corona Borealis belongs to the Ursa Major family of constellations, along with **Coma Berenices, Boötes, Camelopardalis, Canes Venatici, Draco, Leo Minor, Lynx, Ursa Major and Ursa Minor**

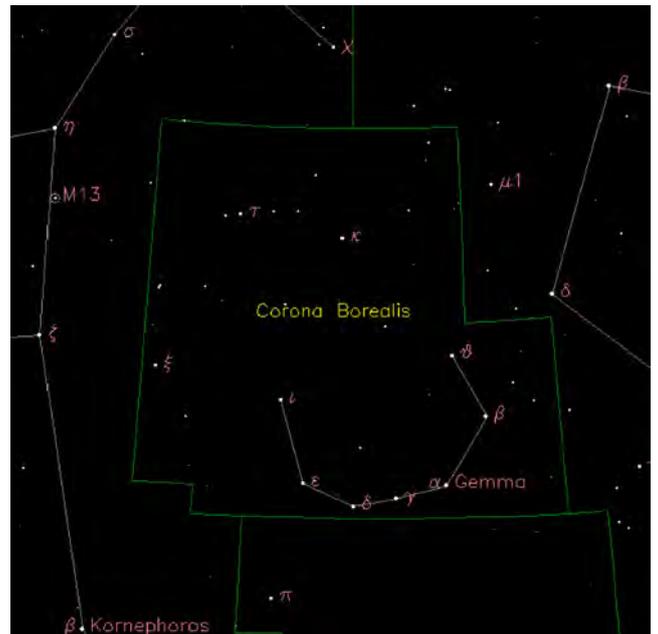
DEEP SKY OBJECTS

Corona Borealis contains few galaxies observable with amateur telescopes. NGC 6085 and 6086 are a faint spiral and elliptical galaxy respectively close enough to each other to be seen in the same visual field through a telescope.

Abell 2065 is a highly concentrated galaxy cluster one billion light-years from our Solar System containing more than 400 members, and is itself part of the larger Corona Borealis Supercluster.

Another galaxy cluster in the constellation, RX J1532.9+3021, is approximately 3.9 billion light-years from Earth. **At the cluster's centre is a large elliptical galaxy containing one of the most massive and most powerful supermassive black holes yet discovered.**

Another galaxy cluster, Abell 2162, is a member of the Hercules Supercluster.



Corona Borealis as it can be seen by the naked eye

