

CONSTELLATION CANES VENATICI

the two hunting dogs

Canes Venatici represents two dogs, two hounds, or two greyhounds, on a leash or brache (two hounds in leash are known as a brache, which is the same word as brace, meaning pair, and embrace). Here the leash is held by Bootes, the Herdsman or Bear Driver as they together pursue the Great Bear, Ursa Major, as it circles the Pole. The Polish astronomer **Johannes Hevelius** formed this constellation in 1687 from a scattering of faint stars beneath the tail of Ursa Major, where the hounds are snapping at the heels of the Great Bear. The constellation's two brightest stars, Alpha and Beta Canum Venaticorum, lie in the southern dog. Ptolemy had listed both these stars in the *Almagest* as among the "unformed" stars outside the figure of the Great Bear, not belonging to any particular constellation, so they were free to be used in a new figure. Earlier in the 17th century the Dutch astronomer **Petrus Plancius** had introduced a new constellation called Jordanus, the river Jordan, that started in this area, but Hevelius replaced it with Canes Venatici, Leo Minor and Lynx. The constellation first appeared in the 1690 *Prodromus* of Hevelius. The northern of the two hunting dogs was named Asterion, and was sometimes regarded as an independent constellation or at least an asterism. The southern dog was named Chara. **Flamsteed** followed in the use of these names, and the Hounds are now well established in the recognition of astronomers, as is the case with most of the stellar creations of Hevelius, which were generally placed where needed. But the idea of dogs being held by Boötes was not original to Hevelius. A star chart published in 1533 by the German astronomer **Peter Apian** showed Boötes with two dogs at his heels and holding their leash in his right hand.

Canes Venatici is one of the 88 official modern constellations. Created by Johannes Hevelius in 1687 its name is Latin for "hunting dogs", and the constellation is often depicted in illustrations as representing the dogs of Boötes the Herdsman, a neighbouring constellation.

Canes Venatici is bordered by Ursa Major to the north and west, Coma Berenices to the south, and Boötes to the east. The three-letter abbreviation for the constellation, as adopted by the International Astronomical Union in 1922, is 'CVn'.

The official constellation boundaries, as set by **Eugène Delporte** in 1930, are defined by a polygon of 14 sides. Covering 465 square degrees, it ranks 38th of the 88 constellations in size.

STARS

Canes Venatici contains no bright stars

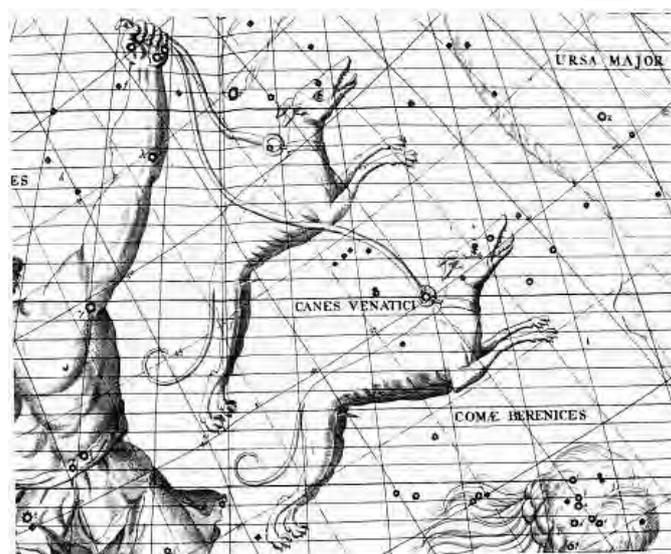
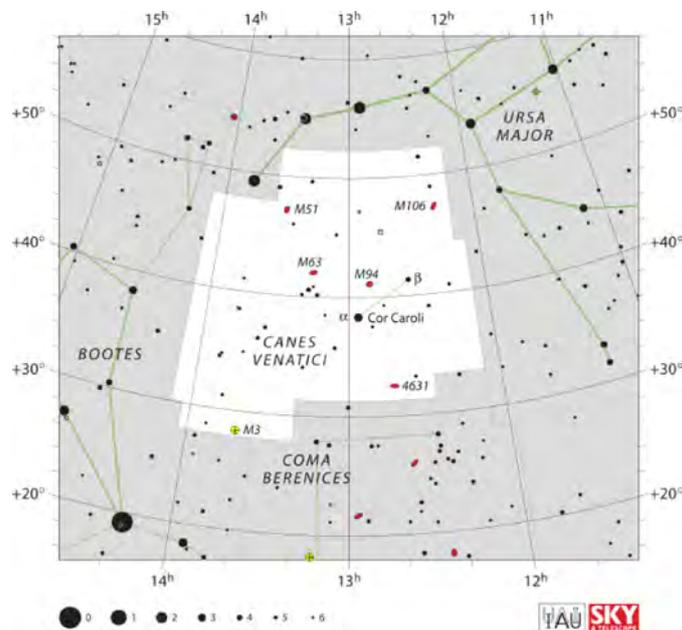
alpha CVn (Cor Caroli) at magnitude 2.9 is the constellation's brightest star, named by **Sir Charles Scarborough** in memory of King Charles I, the deposed king of Britain. Legend has it that the star was brighter than usual during the Restoration, as Charles II returned to England to take the throne. Cor Caroli is a wide double star, 110 light-years from Earth. The primary also has an unusually strong variable magnetic field.

β CVn (Chara) is a yellow-hued main sequence star of magnitude 4.2, 27 light-years from Earth. Its common name comes from the word for "joy".

γ CVn (La Superba) is a semiregular variable star that varies between magnitudes 5.0 and 6.5 over a period of around 158 days. It is a carbon star and is famous for being deep red.

AM CVn, a very blue star of magnitude 14, is the prototype of a special class of cataclysmic variable stars, in which the companion star is a white dwarf, rather than a main sequence star.

RS CVn is the prototype of a special class of binary stars of chromospherically active and optically variable components.



DEEP-SKY OBJECTS

- The Giant Void (Supervoid), is an extremely large void (part of the universe containing very few galaxies) within the vicinity of this constellation. It may possibly be the largest void ever discovered, slightly larger than the Eridanus Supervoid and 1,200 times the volume of expected typical voids. It was discovered in 1988 in a deep-sky survey.
- Canes Venatici contains five Messier objects, including four galaxies. The more significant are
 - the Whirlpool Galaxy (M51, NGC 5194) and NGC 5195, a small barred spiral galaxy that is seen face on. This was the first galaxy recognised as having a spiral structure, being first observed by **Lord Rosse** in 1845. It is a face-on spiral galaxy 37 million light-years from Earth. Widely considered to be one of the most beautiful galaxies visible, M51 has many star-forming regions and nebulae in its arms, colouring them pink and blue in contrast to the older yellow core. M51 has a smaller companion, NGC 5195, that has very few star-forming regions and thus appears yellow. It is passing behind M51 and may be the cause of the larger galaxy's prodigious star formation.
 - NGC 4631 is a barred spiral galaxy, which is one of the largest and brightest edge-on galaxies in the sky
 - M63, NGC 5055, the Sunflower Galaxy, named for its appearance in large amateur telescopes. It is a spiral galaxy with an integrated magnitude of 9.0.
 - M94 also classified as NGC 4736, is a face-on spiral galaxy 15 million light-years from Earth. It has very tight spiral arms and a bright core. The outskirts of the galaxy are incredibly luminous in the ultraviolet because of a ring of new stars surrounding the core, 7,000 light-years in diameter. Though astronomers are not sure what has caused this ring of new stars, some hypothesize that it is from shock waves caused by a bar that is thus far invisible
 - M3 (NGC 5272) is a globular cluster 32,000 light-years from Earth. It is 18' in diameter, and at magnitude 6.3 is bright enough to be seen with binoculars. It can even be seen with the naked eye under particularly dark skies



Messier 51, the Whirlpool Galaxy NGC 5194 and 5195 taken by the Hubble Space Telescope.



NGC 4631 taken by the Hubble Space Telescope.

HISTORY

Where the southern dog's lead is attached to its collar lies the star Alpha Canum Venaticorum, known as Cor Caroli, meaning Charles's Heart, in honour of King Charles I of England. It was given this title by **Sir Charles Scarborough**, physician to King Charles II, before the constellation Canes Venatici was formed. The name first appeared on a chart of 1673 by the English cartographer **Francis Lamb**, who labelled it Cor Caroli Regis Martyris, a reference to the fact that King Charles I was beheaded (or 'martyred', as Lamb loyally put it). Lamb and others, such as the Englishman **Edward Sherburne** in 1675, drew a heart around the star surmounted by a crown, turning it into a mini-constellation. **Johann Bode**, in his Uranographia atlas, retained the heart and crown on the neck of the southern dog, but erred by calling the star Cor Caroli II. Because of all this there has been much confusion over which King Charles the star is supposed to commemorate, but it definitely refers to the first King Charles.

In Bode's Uranographia, the names of the dogs are engraved on their collars Ak from Ridpath notes

