

Messier 52 and M103 Open Clusters in Cassiopeia

Messier 52 (also known as M52 or NGC 7654) is an open cluster in the Cassiopeia constellation. It was discovered by **Charles Messier** in 1774. M52 can be seen from Earth with binoculars.

OBSERVATION DATA (J2000 epoch)

Right ascension 23h 24.2m

Declination +61° 35'

Distance 5.0 kly

Apparent magnitude (V) 5.0

Apparent dimensions (V) 13.0'

Due to interstellar absorption of light, the distance to M52 is uncertain, with estimates ranging between 3,000 and 7,000 light years. One study identified 193 probable members of the cluster, with the brightest member being magnitude 11. Messier 52 is estimated to be about 35 million years old.

Cassiopeia is a constellation in the northern sky, named after the vain queen Cassiopeia in Greek mythology, who boasted about her unrivalled beauty. Cassiopeia was one of the 48 constellations listed by the 2nd-century Greek astronomer **Ptolemy**, and it remains one of the 88 modern constellations today. It is easily recognizable due to its distinctive 'W' shape, formed by five bright stars. It is opposite Ursa Major. In northern locations above latitude 34°N it is visible year-round and in the (sub)tropics it can be seen at its clearest from September to early November. Even in low southern latitudes below 25°S it can be seen low in the North.

At magnitude 2.2, Alpha Cassiopeiae, or Schedar, is generally the brightest star in Cassiopeia, though is often shaded by Gamma Cassiopeiae, which has brightened to magnitude 1.6 on occasion. The constellation hosts some of the most luminous stars known, including the yellow hypergiants Rho Cassiopeiae and V509 Cassiopeiae and white hypergiant 6 Cassiopeiae. The semiregular variable PZ Cassiopeiae is one of the largest known stars. In 1572, **Tycho Brahe's** supernova flared brightly in Cassiopeia. Cassiopeia A is a supernova remnant and the brightest extrasolar radio source in the sky at frequencies above 1 GHz. Fourteen star systems have been found to have exoplanets, one of which—HR 8832—is thought to host seven planets. A rich section of the Milky Way runs through Cassiopeia, containing a number of open clusters, young luminous galactic disc stars, and nebulae. IC 10 is an irregular galaxy that is the closest known starburst galaxy and the only one in the Local Group of galaxies.



DETAILS

Declination 77.6923447°–48.6632690°

Area 598 sq. deg.

Main stars 5

Bayer/Flamsteed stars 53

Stars with planets 14

Stars brighter than 3.00m 4

Stars within 10.00 pc (32.62 ly) 7

Brightest star a Cas (Schedar) (2.24m)

Messier objects 2, M52 and M103

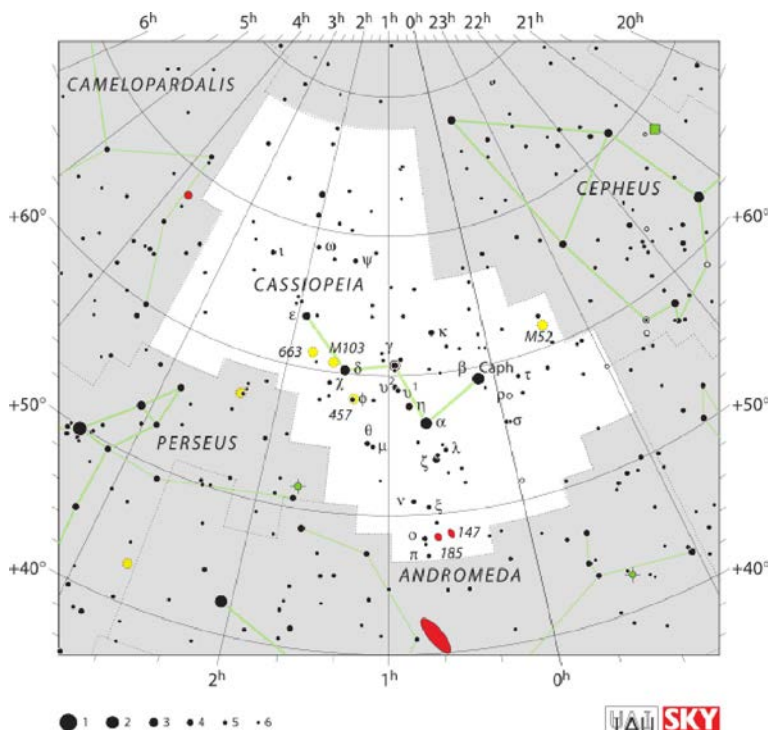
Meteor showers Perseids

Bordering constellations Camelopardalis,

Cepheus, Lacerta, Andromeda, Perseus

Visible at latitudes between +90° and -20°

Best visible at 9 p.m during the month of November.



MYTHOLOGY

The constellation is named after Cassiopeia, the queen of Aethiopia. Cassiopeia was the wife of King Cepheus of Aethiopia and mother of Princess Andromeda. Cepheus and Cassiopeia were placed next to each other among the stars, along with Andromeda. She was placed in the sky as a punishment after enraging Poseidon with the boast that her daughter Andromeda was more beautiful than the Nereids or, alternatively, that she herself was more beautiful than the sea nymphs. She was forced to wheel around the North Celestial Pole on her throne, spending half of her time clinging to it so she does not fall off, and Poseidon decreed that Andromeda should be bound to a rock as prey for the monster Cetus. Andromeda was then rescued by the hero Perseus, whom she later married.

Cassiopeia has been variously portrayed throughout her history as a constellation. In Persia, she was drawn by al-Sufi as a queen holding a staff with a crescent moon in her right hand, wearing a crown, as well as a two-humped camel. In France, she was portrayed as having a marble throne and a palm leaf in her left hand, holding her robe in her right hand.

FEATURES

The German cartographer **Johann Bayer** used the Greek letters Alpha through Omega, and then A and B, to label the most prominent 26 stars in the constellation. Upsilon was later found to be two stars and labelled Upsilon1 and Upsilon2 by **John Flamsteed**. B Cassiopeiae was in fact the supernova known as Tycho's Supernova. Within the constellation's borders, there are 157 stars brighter than or equal to apparent magnitude 6.5.

The five brightest stars of Cassiopeia – Alpha, Beta, Gamma, Delta, and Epsilon Cassiopeiae – form the characteristic W-shaped asterism. All five are prominent naked eye stars, three are noticeably variable, and a fourth is a suspected low amplitude variable. The asterism is oriented as a W when below Polaris during northern spring and summer nights. In northern winter, and when seen from southern latitudes, it is "above" Polaris (i.e. closer to the zenith) and the W appears inverted.

Alpha Cassiopeiae, traditionally called Schedar (from the Arabic Al Sadr, "the breast"), is a multiple star. The brightest companion is a magnitude 8.9 yellow dwarf widely separated from the primary, while two other companions are closer and magnitudes 13 and 14 respectively.

Beta Cassiopeiae, or Caph (meaning "hand"), is a white-hued star of magnitude 2.3, 54.7 ± 0.3 light-years from Earth. Rotating at about 92% of its critical speed, Caph completes a full rotation every 1.12 days. This is giving the star an oblate spheroid shape with an equatorial bulge that is 24% larger than the polar radius. Gamma Cassiopeiae is a type of variable star that has a variable disc of material flung off by the high rotation rate of the star. Delta Cassiopeiae, also known as Ruchbah or Rukbat, meaning "knee," is an Algol-type eclipsing binary star. Epsilon Cassiopeiae has an apparent magnitude of 3.3. It is 6.5 times as massive and 4.2 times as wide as the Sun, and belongs to a class of stars known as Be stars—rapidly spinning stars that throw off a ring or shell of matter.

DEEP-SKY OBJECTS

The other Messier object in Cassiopeia is M103, also an open cluster. M103 is far poorer than M52, with only about 25 stars included. It is more distant, at 8200 light-years from Earth and was discovered by **Pierre Méchain**. Most prominent is a closer superimposed double star of a 7th-magnitude primary and 10th mag secondary.

Right ascension 01h 33.2m - Declination +60° 42'

Distance 10 thousand light-years (3 kpc) - Apparent magnitude (V) 7.4

Apparent dimensions (V) 6.0' **William Herschel** described the region as "14 to 16 pretty large stars". AK, With EarthSky and Wikipedia Notes



Cassiopeia in her chair, as depicted in Urania's Mirror

