

Constellations in the Sky

Ever since people first wandered the Earth, great significance has been given to the celestial objects seen in the sky. Throughout human history and across many different cultures, names and mythical stories have been attributed to the star patterns in the night sky, thus giving birth to what we know as constellations.

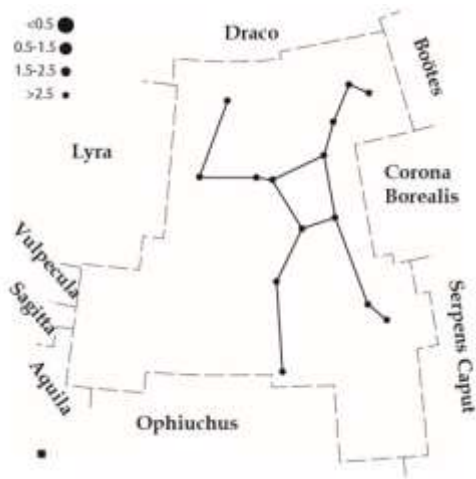
When were the first constellations recorded? Archaeological studies have identified possible astronomical markings painted on the walls in the cave system at Lascaux in southern France. Our ancestors may have recorded their view of the night sky on the walls of their cave some 17 300 years ago. It is thought that the Pleiades star cluster is represented alongside the nearby cluster of the Hyades. Was the first ever depiction of a star pattern made over seventeen millennia ago? (Rappenglück 1996)

Over half of the 88 constellations the IAU recognizes today are attributed to ancient Greek, which consolidated the earlier works by the ancient Babylonian, Egyptian and Assyrian. Forty eight of the constellations we know were recorded in the seventh and eighth books of Claudius Ptolemy's *Almagest*, although the exact origin of these constellations still remains uncertain. Ptolemy's descriptions are probably strongly influenced by the work of Eudoxus of Knidos in around 350 BC. Between the 16th and 17th century AD, European astronomers and celestial cartographers added new constellations to the 48 previously described by Ptolemy; these new constellations were mainly "new discoveries" made by the Europeans who first explored the southern hemisphere. Those who made particular contributions to the "new" constellations include the Polish-born, German astronomer Johannes Hevelius; three Dutch cartographers, Frederick de Houtman, Pieter Dirksz Keyser and Gerard Mercator; the French astronomer Nicolas Louis de Lacaille; the Flemish mapmaker Petrus Plancius and the Italian navigator Amerigo Vespucci.

Resources:

- 1) Constellations: <https://www.iau.org/public/themes/constellations/>
- 2) Constellation Card Deck: <https://facstaff.bloomu.edu/mshepard>
- 3) JPL/NASA Constellation Activities: https://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=666
- 4) Greek Myths: https://www.raritanval.edu/sites/default/files/aa_PDF%20Files/6.x%20Community%20Resources/6.4.5_SD.6.GreekMythology.pdf
- 5) Myths: <http://mythreligion.philology.upatras.gr/files/dictionary/MythsOfConstellations.pdf>
- 6) Constellations across Cultures: <https://figuresinthesky.visualcinnamon.com/>
- 7) October Night Sky: <https://nightsky.jpl.nasa.gov/docs/2022October.pdf>
- 8) Watermark image from: <https://www.datasketch.es/project/figures-in-the-sky>

Hercules (the Strong Man)

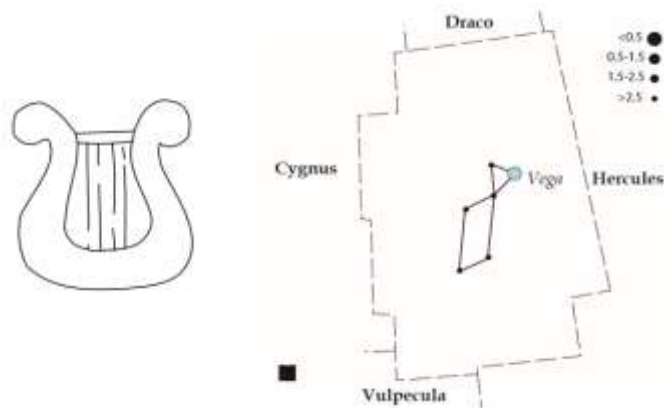


Hercules was the son of Jupiter and one of his mortal wives. His birth made Jupiter's goddess wife, Juno, so jealous that she decided to make **Hercules'** life miserable. While he was still a baby, she sent two huge snakes to kill him, but **Hercules** strangled both of them. When he had grown to manhood, Juno caused **Hercules** to become insane for a brief period during which he murdered his family. To atone for that dreadful deed, he was bound out as a slave and had to earn his freedom by successfully completing 12 heroic tasks, the labors of **Hercules**.

The twelve tasks were:

- killing the Nemean lion
- battling **Hydra** the water snake
- capturing the wild boar of Arcadia
- capturing a deer with horns of gold and hoofs of brass
- shooting a flock of man-eating birds with beaks of brass and feathers like arrows
- cleaning out 3000 cattle stables with years of accumulated filth
- capturing the Cretan bull that snorted fire
- killing the man-eating horses of King Poinedes
- seizing the jeweled belt of the Queen of the Amazons
- capturing a herd of oxen guarded by a giant with 3 heads, 6 hands, 3 bodies
- bringing back Cerberus, the fierce 3-headed dog that guarded Pluto's kingdom
- getting the golden apples of Hesperides

Lyra (the Harp)



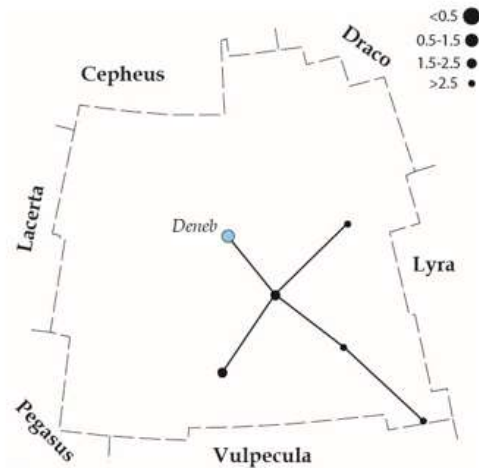
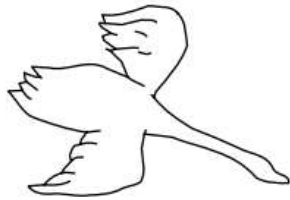
1. The infant *Hermes invented the lyre by stretching strings of cow's gut across a tortoise's shell, and he commemorated his invention by transferring the first lyre to the sky. Alternatively he gave the lyre to Apollo, who passed it on to *Orpheus, the finest musician amongst mortals, and the Muses (or Zeus at the request of the Muses) placed it in the sky in memory of Orpheus after he was torn apart by Bacchantes in Thrace.
2. According to one tradition, neighbouring Engonasin can be identified as Theseus, and Lyra then represents his lyre.
3. In one account of the story of *Arion and the dolphin, Apollo transferred Arion's lyre to the sky when he placed Arion's dolphin in the sky as **Delphinus**.

The lyre was one of the first stringed instruments used in Greece. Mercury made the first lyre and presented it to Apollo, who in turn gave it to his son Orpheus. Orpheus learned to play such sweet music on it that birds came to listen, wild beasts were tamed and sea monsters charmed by the music's spell. Orpheus married Eurydice, but shortly after their wedding she was bitten and killed by a poisonous snake. Orpheus was so grieved he went to see Pluto, ruler of the underworld, to try to use his music to soften Pluto's heart and thereby, rescue Eurydice.

He was able to overcome all the dangers on route to Hades, and when he reached Pluto, his music brought the underworld king under its spell. Pluto gave Orpheus permission to take Eurydice back to Earth but only if Orpheus went first and never turned back to see if she was following. He agreed to these conditions, but when they were almost at the end of their walk, Orpheus could no longer hear Eurydice's footsteps. Fearing something had happened to her, he turned back to look. A great stone dropped down to block the path and hid Eurydice forever from his sight. For years Orpheus roamed the woods, playing only sad tunes. Many a maiden fell in love with him but he remained true to Eurydice's memory.

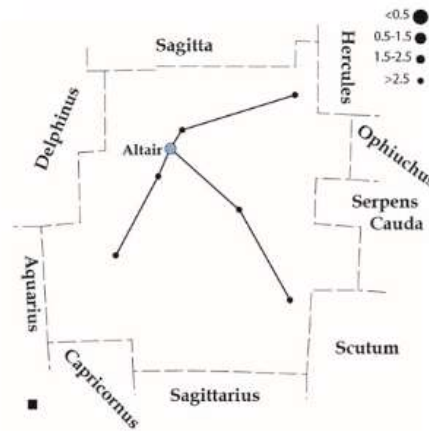
Finally a group of maidens angered by his lack of attentiveness killed Orpheus and tossed his lyre into the river. Jupiter sent a vulture to bring back the lyre and he placed it in the heavens as a constellation. The vulture is represented by the bright blue star Vega, which means "falling bird."

Cygnus (The Swan)



1. When *Nemesis tried to escape the advances of Zeus by transforming herself into many different forms and finally into a swan, Zeus accordingly changed himself into a swan and so raped her. He flew up into the sky afterwards while still in the form of a swan, and commemorated the episode by placing an image of himself in the heavens as the bird. In another version, he turned himself into a swan to seduce Nemesis, and told Aphrodite to pursue him in the form of an eagle. He pretended to take refuge with Nemesis who embraced him and then fell asleep; Zeus raped her while she was asleep and flew away. In this case he placed two images in the sky, of himself as **Cygnus** and of Aphrodite as the neighbouring Eagle. In his *Helen*, Euripides tells a similar story of Zeus and Leda, and in some late sources, Zeus is said to have placed the image in the sky after having intercourse as a swan with *Leda.
2. Because swans are musical birds, a swan was placed in the stars next to **Lyra** in honour of Apollo. The reputed musicality of swans, which were said to sing most sweetly just before their death, was a feature of Greek folklore.
3. *Cycnus, king of Liguria, who was a gifted musician, so mourned for his dead friend *Phaethon that he aroused the pity of Apollo, who transformed him into a swan (as a musical bird and his namesake) and then transferred him to the heavens.

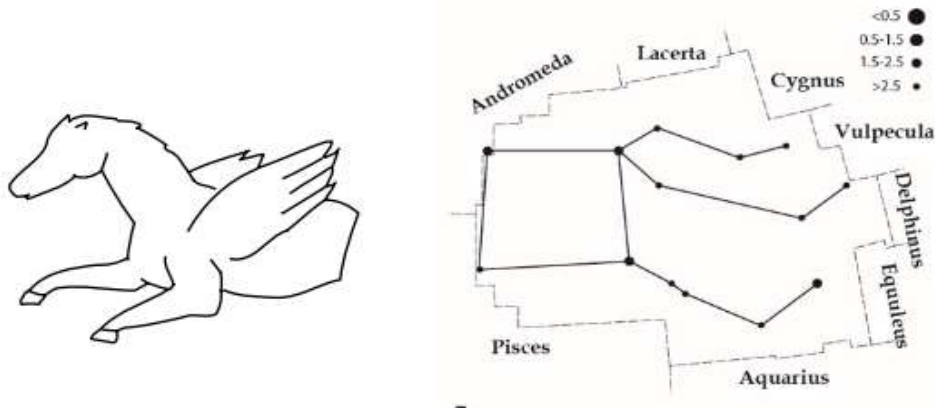
Aquila (The Eagle)



1. This is the eagle that abducted *Ganymede for Zeus, who rewarded it by placing it amongst the stars. He considered it worthy of that honour, furthermore, because the eagle is the king of the birds and the only bird that can fly directly towards the sun. In one late account, this eagle was originally a beautiful youth called *Aetus, who was a companion of Zeus during his early life in Crete and was subsequently transformed into an eagle (aetos) by the jealous Hera.
2. According to a Naxian tale, the infant Zeus was secretly conveyed from Crete to Naxos and was reared on the island. When he came of age and wanted to launch his war against the Titans, he offered a sacrifice, and an eagle appeared. Recognizing this as a favourable omen, Zeus placed the eagle amongst the stars.
3. This was an eagle which brought nectar to the infant Zeus, who subsequently rewarded it by placing it in the sky.
4. Hermes once fell in love with Aphrodite, but she rejected him and he became disheartened. Zeus took pity on him and arranged that an eagle should steal Aphrodite's slipper as she was bathing in the river Achelous and then take it to Hermes in Egypt. When the goddess came to recover it, Hermes achieved his desire and showed his gratitude to the eagle by placing it in the sky. (A version of the folk-tale usually associated with *Rhodopis.)

The eagle was Jupiter's favorite bird and was given many difficult tasks to do. The most difficult task was when he had to fly back to Mount Olympus burdened by the weight of a young man, Ganymede, whom he had been sent to find. Ganymede would become the new cupbearer of the Gods.

Pegasus (the Flying Horse)



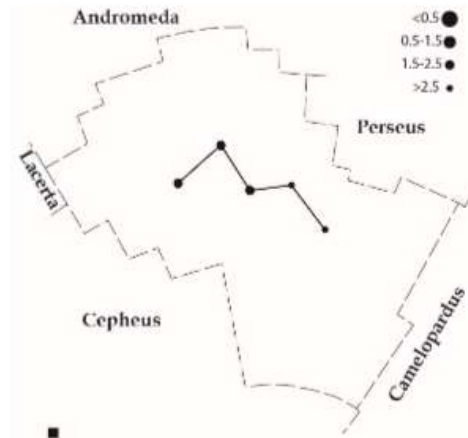
An incomplete figure of a horse, showing only its head, forefeet and the front half of its body. Although it was often identified as Pegasus, and Ptolemy referred to its wings, the constellation-figure was not given as winged in earlier Greek sources.

1. According to Aratus, this is the horse that created *Hippocrene ('Horse's Spring') on Mount Helicon in Boeotia; the unnamed horse caused the spring to gush forth by stamping the ground with its forefoot.
2. This *Pegasus: When Bellerophon tried to fly up to the heavens on Pegasus, he was unwise enough to look downwards and fell off in a fright, but the winged horse continued on his way and can still be seen in the sky. According to Hyginus, Zeus established him amongst the constellations after he arrived there. Although this was initially cited as an alternative identification to the previous, it was later assumed that Pegasus and the horse that created the spring were one and the same. Accordingly, it was said that Pegasus visited Mount Helicon after carrying Bellerophon back from his adventures in Asia Minor, and that he created the spring to quench his own or his master's thirst.
3. This is the transformed *Hippe: Artemis turned her into a horse to prevent her from being discovered by her father Cheiron when she gave birth to illegitimate twins; the goddess then transferred her to the heavens because of the piety of herself and her father, placing her in a part of the sky where she would be invisible to her father (represented by Centaurus in the southern sky).

The most famous of the myths about **Pegasus** describes it as the winged horse which carried **Perseus** through the sky as he returned the head of the Medusa. Neptune, who had loved Medusa when she was young and pretty, created **Pegasus** from white beach sand, rainbow-colored foam of breaking waves, and drops of blood from the severed head of Medusa. So perhaps the reason why **Pegasus** is shown with half a body may be to represent the newly created horse just rising out of the sea with half its body still hidden beneath the waves.

Pegasus was also the favorite steed of Jupiter, who sent all his thunderbolts via **Pegasus**. Jupiter presented **Pegasus** to the Muses on Mt. Helicon. One day, as he pranced about there, a casual kick of one hoof caused the famous spring of Hippocrene to gush forth on the mountain top. Its waters had the magic power of inspiring whoever drank them to gain the gift of writing poetry.

Cassiopeia (the Queen)

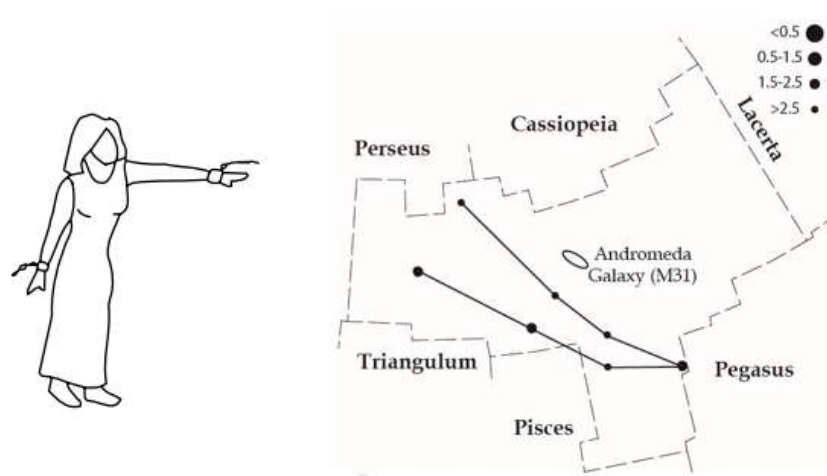


Cassiopeia was a beautiful woman who was fond of boasting about her beauty. The maidens who attended King Neptune in his underwater kingdom learned that she boasted of being more beautiful than any of them. They demanded Neptune punish her.

Neptune sent a monster sea serpent, **Cetus**, to terrify all who lived along the coast of the country ruled by King **Cepheus** and Queen **Cassiopeia**. The Serpent snatched women and children whom he found on the shore. Troubled by this problem in his kingdom, King **Cepheus** went to an oracle to find out how he could rid his kingdom of this horrible monster. The oracle's answer was that only if he sacrificed his daughter, **Andromeda**, to the serpent would the maidens feel they had been avenged for the way **Cassiopeia** had insulted them and ask Neptune to recall the serpent.

Cassiopeia was placed in the heavens to be punished rather than honored. She swings every half night around the North Star. She is upside down in the chair in which she is seated, hanging on for dear life in a position most humiliating for a queen of old who was so proud of her beauty.

Andromeda (The Princess), Perseus, and associated constellations



Daughter of King **Cepheus** and Queen **Cassiopeia**. She is seen stretched out at full length and chained by her ankles and wrists to a rocky island where she is being offered as a sacrifice to **Cetus**, the Sea Monster.

As **Perseus** was returning to Greece with the Gorgon's head, he rescued his future wife, **Andromeda**, from a sea-monster. All the main characters in the story are portrayed in this group of constellations. **Andromeda's** mother **Cassiopeia** boasted that she was more beautiful than the Nereids and so provoked Poseidon to send a sea-monster against the land. On the advice of an oracle from Zeus Ammon, **Cepheus**, the king of the Ethiopians, exposed his daughter Andromeda by the seashore. Seeing **Andromeda** tied to a rock by the shore, **Perseus** fell in love with her and killed the monster with his sword or sickle; the monster himself, **Cetus**, can be found in the southern sky. Athena placed the figures in the sky to commemorate **Perseus'** noble deed. As a constellation figure, **Cassiopeia** is seated on her throne as she watches the drama with her arms stretched out in alarm. Hyginus notes that she seems to be carried through the sky upside down as a punishment for her impiety in claiming to rival the Nereids. **Cepheus** is standing, and, in ancient illustrations, he too has his arms outstretched. The unfortunate **Andromeda** is bound to a sea-cliff by her outstretched arms. **Perseus** has the Gorgon's head in his left hand and the weapon (which looks more like a short sword than a sickle) raised in his right hand.