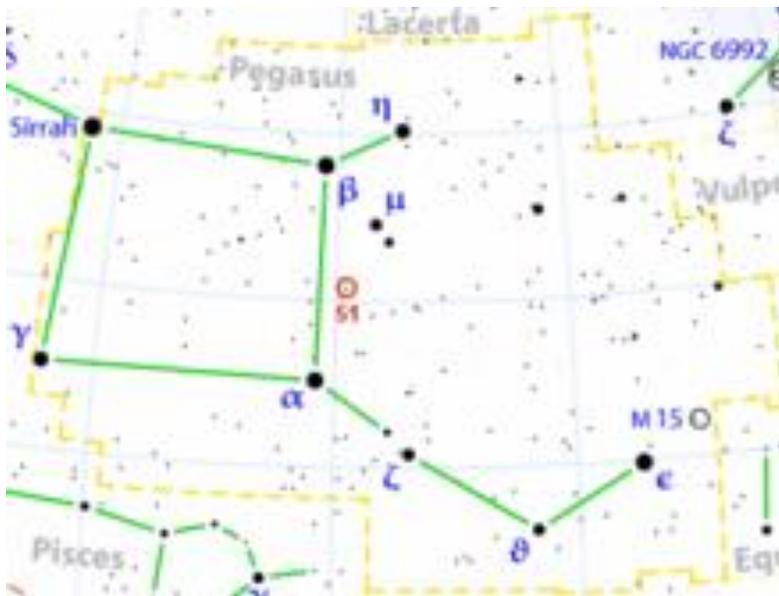


# Fall/Winter Constellation Worksheet

This is the second extension to the Spring Constellation Worksheet. It is taken for granted that patrons have reviewed and are familiar with the Constellations discussed in that write-up. If this is not the case, patrons will need to start with the Spring Constellation Activity and complete the activities through or have existing knowledge about the 5 circumpolar constellations: Big Dipper, Little Dipper, Draco, Cassiopeia, and Cepheus. The circumpolar constellations remain in our sky and can be viewed all year long and are used as reference points for finding the seasonal constellations.

## Activity 1. Pegasus (Great Square)

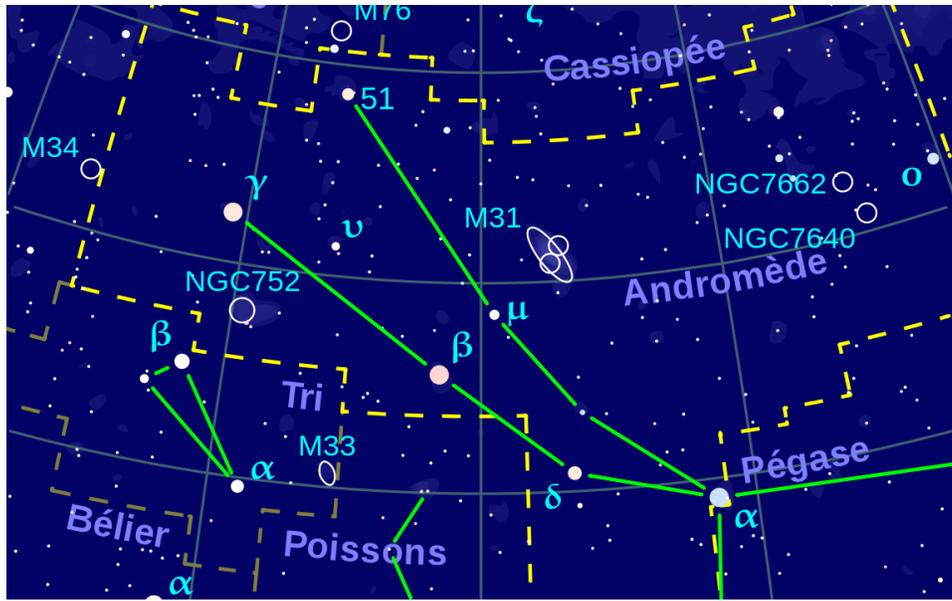
Pegasus is represented by a giant square in the sky. It is found by looking below Cassiopeia and towards the western horizon. In early fall, an arc of stars which represents the head of the horse can be seen, but by mid-October may be reaching below the horizon.



Myth: Pegasus is the winged horse. It is involved in many myths, but is probably best known for the tale of Perseus and Medusa in the “Clash of the Titans” story. In the tale, Pegasus was created by mixing the blood of Medusa with the foam and sand from the sea. Perseus then rode Pegasus home to announce his success and claim his rewards.

## Activity 2. Andromeda

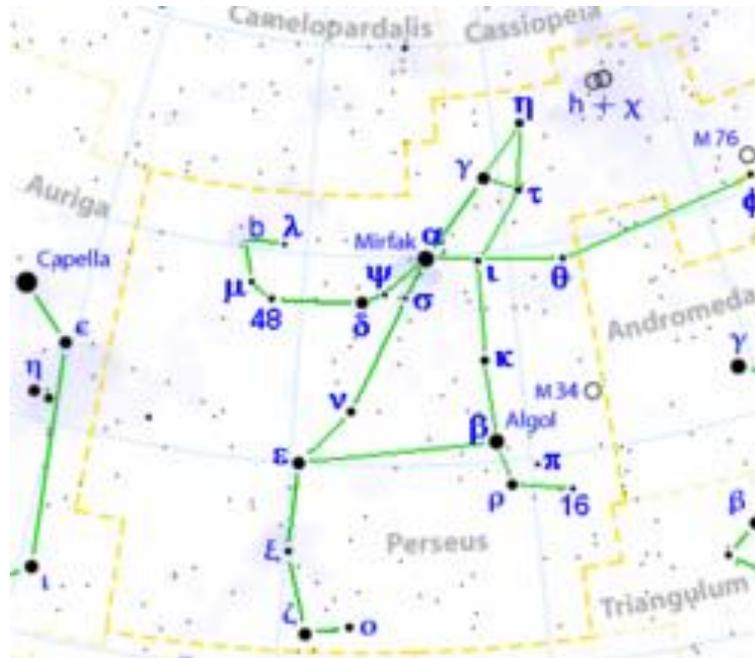
From the top left star of Pegasus, a double arc of faint stars, three stars in length, extends towards the zenith (the center point of the evening sky.) This is the constellation Andromeda. Adjacent to the northern arc of stars, the Andromeda galaxy can be found.



Myth: Andromeda is the daughter of Cassiopeia & Cepheus. Hera had commanded the royal family to chain their daughter to a rock island and sacrifice her to a sea monster. This would atone for offenses that Cassiopeia made towards the gods. Upon Perseus return on Pegasus, he saved Andromeda from her fate.

### Activity 3: Perseus

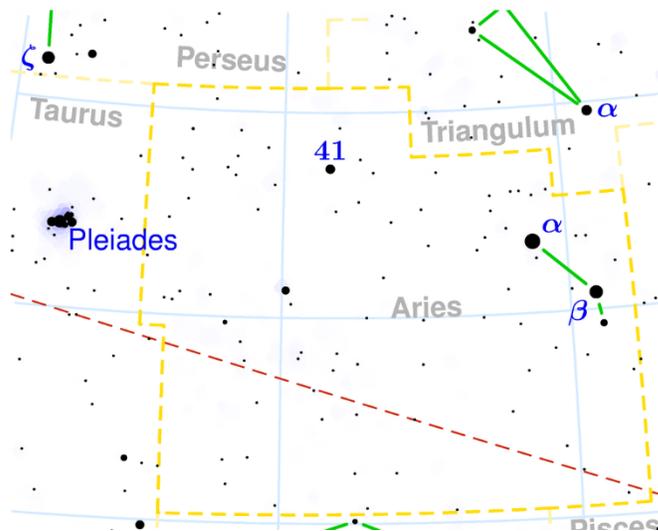
By extending the line made by the southern arc of stars in Andromeda by the distance between the last two stars of the arc, you will find a grouping of stars. You can also try moving your gaze south and a little east of Cassiopeia to find this area. There is no good description to initially define for this grouping of stars, but this is the constellation Perseus. It is supposed to be a person running. The bright star just south of the line you drew from Andromeda or the lower right star of the body is called Algol. This is a variable star that changes its brightness between a 2<sup>nd</sup> and 3<sup>rd</sup> magnitude star and back every 3 days. The variability is caused by another star passing in front of and behind Algol during this time period.



Myth: Perseus is said to be a son of Zeus. He was sent on the famous quest to kill the gorgon, Medusa. The goddess Minerva helped him by giving him a magical sword and shield which he used to kill the gorgon. Upon returning to Greece, he saved Andromeda from the sea monster Cetus. This corner of the sky is used to tell the whole adventure. Unfortunately, New Jersey is situated too far to the north to view the constellation Cetus.

#### Activity 4: Aries

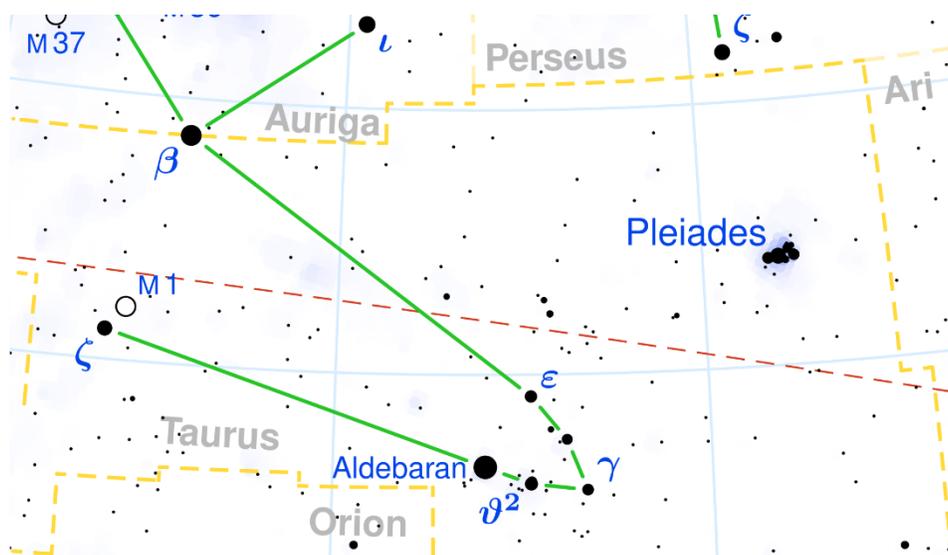
Moving south from the center point of Andromeda and west of the southern point of Perseus, you will find the three close stars that make the jagged mark that represents of the zodiac constellation of Aries.



Myth: Aries represents a ram or a goat for the myth stories. The most famous story that would use this constellation is the story of the Golden Fleece in the adventures of Jason and the Argonauts.

### Activity 5: Taurus & the Pleiades

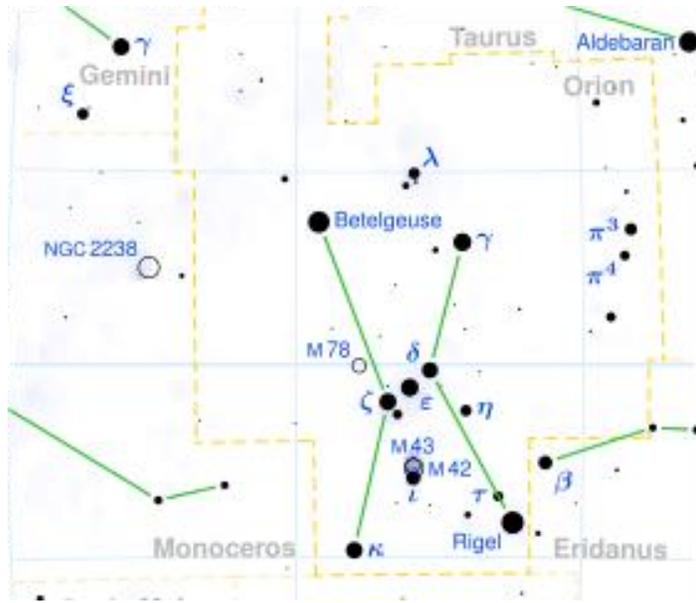
In the zenith of the sky is the large pentagram of Auriga that was described in the Spring Constellation Workshop. From the southern star in the constellation and extending to the southwest is an elongated and narrow “V”. This is the zodiac constellation of Taurus, the bull. The point or bottom of the “V” is the open star cluster called the Hyades. If you look here with binoculars, you will see several stars beyond your natural vision. Another cluster called the Pleiades can be found northwest of Taurus by moving back in the direction of Andromeda and looking for six tightly grouped stars. Again, a look here will reveal many stars beyond your natural vision.



Myth: The bull was one of the guises that Zeus would take on his visits to Earth. On one visit in this disguise, he approached the mortal female, Europa. Playing docile he laid down beside her and coaxed her to climb upon his back. Zeus then took off and ran across the sea to Crete where he revealed himself and took her as a bride. Their child was cursed to become the Minotaur.

### Activity 6: Orion

Orion is probably the most recognized constellation in the Northern Hemisphere. Located south of Auriga and Taurus, it stands out with two of the brightest stars in sky: the red giant, Betelgeuse, in the upper left corner of the constellation, and the blue-white giant, Rigel, in the lower left. Halfway between these two stars are the three stars that make up the belt within the constellation. Below the belt are three more stars in a shorter line and turned almost 90 degrees to the belt. This is called the sheath and within this area is found the famous Orion nebula.



Myth: Orion was the greatest mortal hunter of all time. Diana, goddess of the moon, was also a hunter and often hunted with Orion. Apollo, god of the sun, learned that Diana was neglecting her duties and was jealous of the time she spent with Orion. One day, Orion was swimming in a lake, Apollo put a beam of light on him and challenged Diana to hit the spot with an arrow, which she did, thereby killing Orion. Filled with sorrow, she placed Orion in a dark spot of the sky and bedecked him with bright and brilliant stars.

### Activity 7: Canis Major

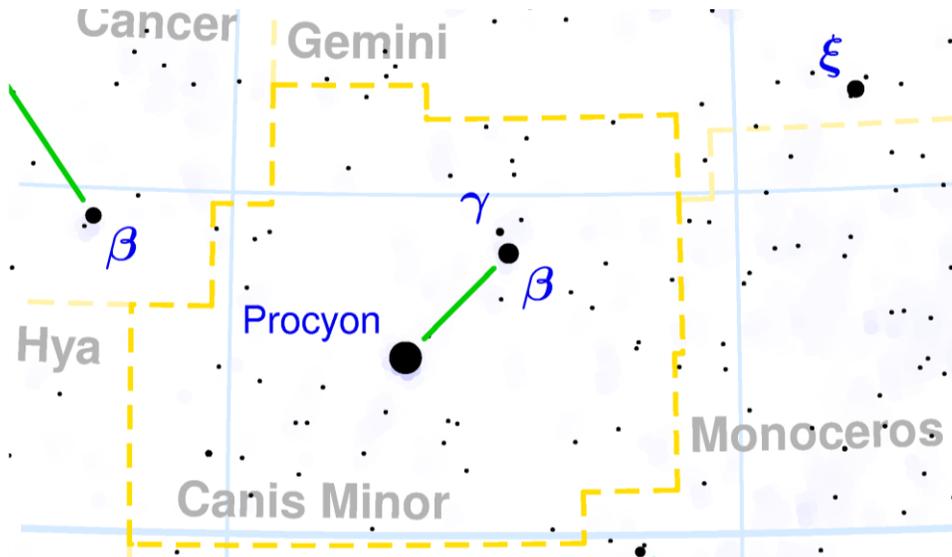
Following a line from Orion's belt towards the horizon, you will find the brightest star in the evening skies, Sirius. Only the Moon and the Sun are brighter. With a star to either side of Sirius and the pattern of stars below that looks like an upside down, lower case "y", you will define the constellation Canis Major or the "big dog." This is why Sirius is also known as the "Dog Star."



Myth: Canis Major represent the larger of the two hunting dogs that are with Orion.

### Activity 8: Canis Minor

If you use the stars that represent Orion's shoulders and move towards the east about five times the distance between these stars, you will come to another very bright star called Procyon. There is another star close to Procyon just to its northwest. These two stars make up the constellation Canis Minor or "little dog". This is also the smallest constellation in the evening skies.



Myth: Canis Minor represents the smaller of the two hunting dogs with Orion or as the pup of Canis Major.

This brings us back to the to the constellations such as Gemini, Leo, and the aforementioned Auriga. All of these constellations are covered by the Spring Constellation Workshop.