

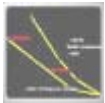
Constellations and Asterisms

Constellations have been an important part of human society and folklore since we humans lived in caves, and, probably, even before then. The fascinating figures that we see in the night sky are so large and so beautiful that we have felt a very strong urge to attach importance to them. People have done this throughout the ages by creating very interesting stories and legends in an attempt to explain where these large "pictures" in the sky came from. These stories, also known as *mythology*, behind the constellations can be as interesting as studying the constellations themselves.

There are currently eighty-eight figures in the sky that have been generally recognized as being "official" constellations by whoever it is that designates such things. We aren't going to list all of them, since that has been done in several other places on the internet. What we are going to do is pick a few of them that are easy to find no matter whether you live in the city or the country. We will tell you where to look for them and when during the year you can expect to see them. We will also give you a simple chart that you can use that should help you identify the constellation in the sky.

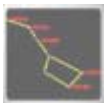
In addition to a few of the constellations, we will also give you guides to a few "asterisms", which aren't officially constellations, but are easily recognizable patterns of stars that are either parts of a larger official constellation, such as the Big Dipper, or just good landmarks, like the Summer Triangle. Enjoy your trip through these fascinating residents of our night sky!

Andromeda



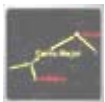
One of the most impressive sights in the winter sky, Andromeda appears high overhead during November and December. In addition to being easy to find, this constellation also has the large Andromeda galaxy as a close neighbor.

The Big Dipper



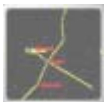
Since the Big Dipper is part of the constellation Ursa Major (The Great Bear), it is technically an asterism and not a true constellation. However, it is one of the most familiar figures in the night sky and can act as a guide to other interesting sights. It also played an important part in United States history.

Canis Major - The Great Dog



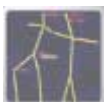
Every hunter needs hunting dogs as companions. Canis Major and Canis Minor are the hunting dogs for Orion, the Great Hunter of the sky. In addition, Canis Major is home to Sirius, the brightest star in the night sky.

Cygnus - The Swan



This great bird soars high in the night sky during the early morning in late summer and in the evening during the fall. One of Cygnus' stars is also one of the corners of the Summer Triangle asterism.

Gemini - The Twins



The Twins are companions of Orion in our night sky. Gemini is visible in the early morning skies during fall and early winter and in the evenings during winter.

Leo - The Lion



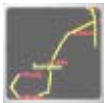
Leo is another member of the group of constellations around Orion. Its distinctive shape makes it easy to find whenever Orion is visible.

Orion - The Great Hunter



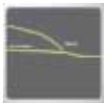
Orion is the largest constellation in the sky. This giant figure dominates the sky in the early mornings in late summer and fall, and in the evenings during the first part of winter. It also has several really interesting things you can see with just a pair of binoculars.

Scorpius - The Scorpion



Scorpius is one sign that summer is in full swing in the northern hemisphere. This beautiful constellation is in full view in the southern sky only during the months of July, August and September, but its beauty makes it worth the wait.

Taurus - The Bull



Another companion of Orion, Taurus is located directly above the Hunter in the sky. In addition to the giant red star Aldebaran, Taurus is the home of the Crab Nebula and the Pleiades cluster.

Finding the Constellations in the Sky

Although we have provided maps and charts for all of our example constellations, and given general times when you can see them, it is still very difficult to accurately show our three-dimensional sky on a flat screen like your computer monitor.

All of the constellations and asterisms we show you are actually quite large in the sky. We will use Orion as a general example. If you hold your hand out at arm's length and spread your fingers, Orion will be at least as large as your hand is.

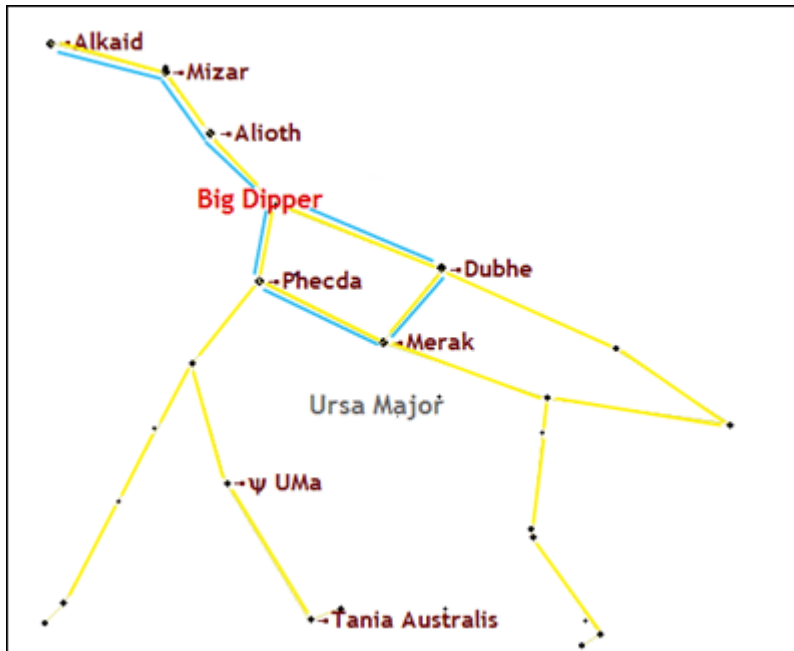
Keep this in mind when you are just getting started finding the constellations. Once you have found the really big ones, like Orion and the Big Dipper, you will get use to looking for, and recognizing, the patterns of the constellations. It's actually pretty easy once you get started.

The Big Dipper and Ursa Major

Since the Big Dipper is part of the constellation Ursa Major (The Great Bear), it is technically not a constellation. It's what is called an asterism, which is the name given to interesting star patterns that are easily recognizable, but not one of the "official" constellations.

Be that as it may, the Big Dipper is probably one of the first objects in the sky that we learn to find and identify. It's distinctive position at the top of the summer night sky and the graceful curve of its handle make it easy for almost anyone to find.

Map of Ursa Major



*Chart prepared using Starry Night and Photoshop
Map of Ursa Major and the Big Dipper*

The Big Dipper and its Companions

The Big Dipper is very impressive all by itself, but it also is very close to a number of other very interesting sights. Included in these sights, and noted on the map at right, are the Pinwheel galaxy and the Whirlpool galaxy. If you have a good pair of binoculars or a small telescope, you should be able to find these galaxies using the map we have provided. When you find them, they will usually look like a small smudge of light instead of the sharp well-defined light that you are used to seeing when you look at a star.

There are also several double stars in the Big Dipper, which you should be able to see using a small telescope. All in all, the Big Dipper is a very interesting place indeed.

Map of the Big Dipper

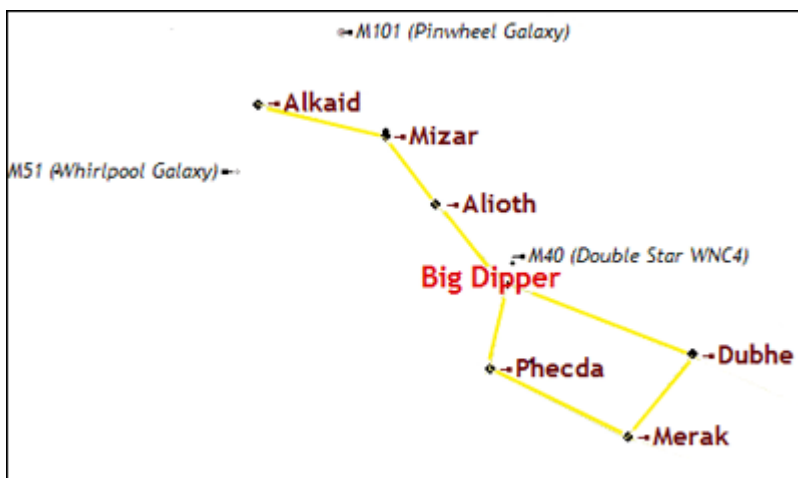


Chart prepared using Starry Night and Photoshop

Map of The Big Dipper

What Are Those Odd "M" Numbers

In several of our example constellations, like Orion, we make reference to objects like the Orion Nebula and have an "M" followed by a number. In the case of the Orion Nebula, this number is M42. The "M" stands for Charles Messier, who was a French astronomer that lived on the eighteenth century. His main passion was searching for comets and he made a list of objects in the sky that weren't comets and put them into a catalog. The objects in this catalog were identified by his initial M and a number indicating the order in which he cataloged them. This catalog, called, appropriately enough, the Messier Catalog, and is still in use today.

When Can I See the Big Dipper?

The very best time to look at the Big Dipper is in the middle of the summer, when it is easily found on any clear night in the northernmost part of the night sky. Once you are outside, look in the northern sky and try to find it handle. The arc of the handle will stand out and once you have found the handle, finding the bowl is easy. Once you have found the entire Big Dipper, use the charts we have to find Polaris and Arcturus. You will be surprised at how easy it is.

A Compass in the Sky

As you spend more time watching the sky, you will learn that the stars in one constellation can help lead you to other sky landmarks. The Big Dipper is no exception as you can use two of the stars in its "cup" to find the North Star and you can use the arc of its handle to find the giant red star Arcturus.

As the Big Dipper rotates around our north sky "pole", in what is called a "circumpolar" orbit, two of the stars in its bowl can always point the way to Polaris, the North Star. Although Polaris is not often at exactly North on a compass, it's fairly close and can help you get your directions when you are outside at night.

Terence Dickinson's book "Nightwatch", which we have a link to on the main Constellations page, has many examples of using constellations and their stars to find your way around the night sky. We recommend it highly.

The Big Dipper and Polaris

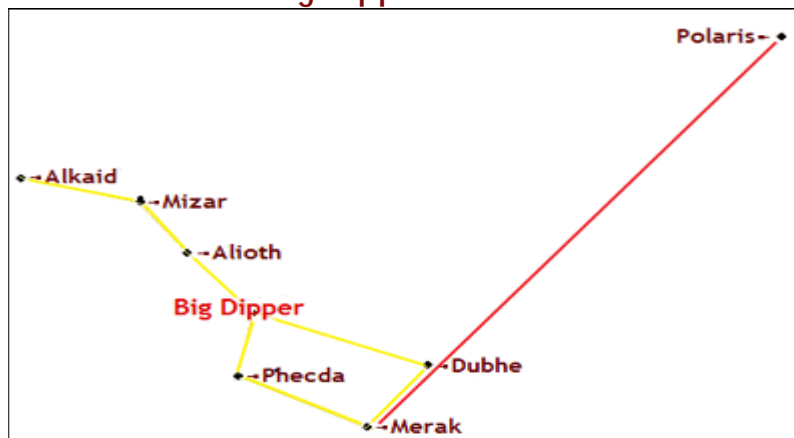


Chart prepared using Starry Night and Photoshop

If you draw a straight line using two of the stars on the bowl of the Big Dipper, you can find Polaris, the North Star.

Follow the Arc to Arcturus

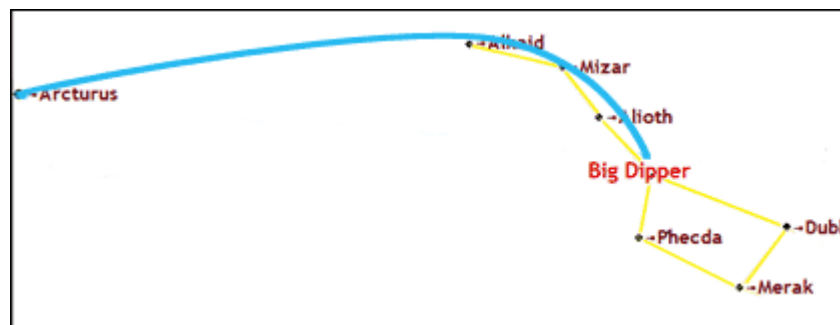


Chart prepared using Starry Night and Photoshop

If you follow the arc of the Big Dipper's handle, you will make your way to the giant red star Arcturus.

Follow the Drinking Gourd

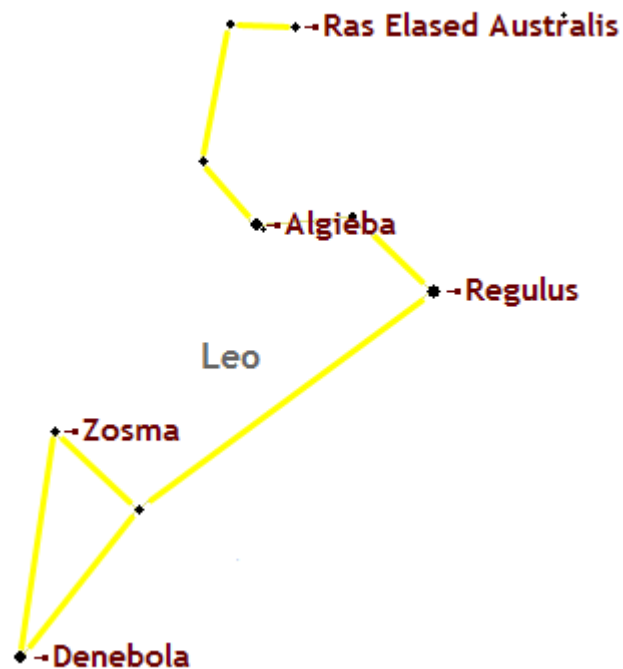
In the United States, during the nineteenth century, African-Americans that were being held as slaves in the south made very practical use of the Big Dipper's consistent northern sky location. The Big Dipper was also known as the Drinking Gourd and slaves trying to make their way to freedom used it as a guidepost to find their way North and escape the bonds of slavery.

The lyrics of folk song "Follow the Drinking Gourd" served as guide to help them find their way north and its chorus reminded them to always follow the Drinking Gourd, or Big Dipper.

Leo - The Lion

Leo is another companion to Orion in our night sky. You can easily find Leo any time that Orion is visible by looking East of the Great Hunter. Although Leo is not as large as Orion, its distinctive shape makes it very easy to pick out. If you click on the link for the map of Leo on the right, you will notice that the outline of the lion's head and the triangle formed by the stars in the lion's hindquarters are two very distinctive shapes that make this constellation very easy to spot.

Map of Leo



*Chart prepared using Starry Night and Photoshop
Map of Leo*

Regulus - the Heart of the Lion

The largest and brightest star in Leo is Regulus. This large blue star shines brightly as the heart of the lion. Although not a giant star, Regulus is still over five times as large as our Sun. A small telescope will show you that Regulus is part of what is called a "binary system". Binary stars are stars that have one or more companions that orbit around the largest star in the group, much like the planets orbit around our Sun.

All information and images in this packet were copied from Astronomy for Kids (<http://www.dustbunny.com/afk/>), but were reformatted for printing.