just a few examples. The second magnitude stars such as Polaris are moderately bright and can be easily identified. Still fainter are the third magnitude stars. They are still easy to see even with some mist in the sky. The fourth magnitude stars are much fainter, in fact, moonlight can hide them. Therefore, stars below the third magnitude will be hard to see when the moon is illuminating the sky. The fifth magnitude stars are only seen when it is very dark and clear. Only under very favorable conditions can the sixth magnitude star be seen. These stars of the sixth magnitude represent the visible limit in observation. No stars below this limit can be seen by the unaided eye.

The first magnitude stars are approximately 2.5 times brighter than the second magnitude stars. Likewise, the second magnitude stars are 2.5 times brighter than the third magnitude stars. When 2.5 is multiplied by 2.5 a result of 6.25 is obtained. Therefore, the first magnitude star is 6.25 times brighter than a third magnitude star. The first magnitude stars are 100 times brighter than a sixth magnitude star.

## THE STAR MAPS

Star maps or charts are useful tools to aid in the identification of the constellations. Bayer was the first to make star maps representing the stars as one sees them in the sky, and Bode was the first to make monthly star maps using Bayer's idea. The following monthly star maps are provided as an aid for learning the constellations during the course of the entire year. Learning to recognize the constellations is not a hard task nor is it time consuming. It's fun!

A total of 12 star maps is enclosed — at the end of this section — one for each of the 12 months. In addition to the star maps there are 24 constellations described in detail. These constellations have the names of the stars, their magnitude, and the letter Bayer assigned to them identified for your study and use. One of the constellations, SEXTANS in Figure 14 is included to show how a typical constellation is identified according to Flamsteed's method of star identification.

These detailed constellation models can be used by the students as patterns for the building of these constellations out of "Tinker Toys." In addition to this, other activities can arise from the first activity in which the students learn the constellations. They will enjoy spending an evening in counting the number of stars in a particular region of the sky. The students will also be prompted to develop a system whereby they can compare how bright one star is in relation to another. One other activity should also be included by the teacher. Have the

students locate a particular star in reference to some building or telephone pole and note the time very accurately. The next night again sight on the same star and see at what time it appears at the same position in which it was found the night before. It will be noted that the star will be to the west of the reference point based on the observations made the preceding night. This is due to the daily difference between solar time (wrist watch time) and star time (sidereal time). This difference amounts to almost four minutes a day.

Therefore, a star directly south tonight at 9:00 P.M. will be directly south at approximately 8:56 P.M. tomorrow evening. In a period of 30 days this time difference amounts to approximately two hours. A star will cross the southern meridian two hours earlier at the end of a month than it did at the beginning of the month. This fact can also be noted in the star charts. (The following descriptions will require reference to the star charts for a better understanding.) For example, in the January Star Map, one can see the constellation LEO on the horizon in the east at 10:00 P.M. on January 1. At the end of January, the constellation is at the same position two hours earlier. On February 1, LEO is above the horizon by about 30 degress at 10:00 P.M., while by April 1, at 10:00 P.M., LEO is almost directly overhead. On July 1, LEO is setting in the western sky at 10:00 P.M.

In all of the star charts there is a + sign in the center of the chart. This + sign represents the point directly overhead or the observer's zenith.

These star maps were prepared for a latitude of 40°N. However, the maps may be used for latitudes near this. It will be noticed, however, that a star which passes directly overhead at 40°N. Latitude will not pass directly overhead at 30°N. Latitude. As an example, the star Vega in the constellation LYRA passes overhead a little to the south of the observer's zenith point in these star maps. For an observer in Washington, D. C., at a latitude of approximately 38°N., the star Vega would pass directly overhead.

Therefore, as an observer moves south from 40°N. Latitude, the stars that are in the section FACING South will pass across the sky farther from the horizon. The stars FACING North will pass across the sky at a lower altitude toward the horizon in the north. The reverse is true as the observer moves north. At the North Pole, Polaris — the Pole Star — would be directly overhead.

On the star maps some of the bright stars are given by their names. Regulus in LEO is one such case. These bright stars will serve as starting points in the identification of many of the constellations. If the observer knows that the star is Regulus, then with a little imagination and close observation the rest of the constellation can be outlined.

It will also be noted in the star maps that there are broken or dashed lines. These lines are guidelines running from one constellation, a reference constellation, to others to aid in the identification of new constellations. In the January map (refer to the chart), there are two of these guidelines running from URSA MAJOR, one of them to Polaris in URSA MINOR and on to the constellation CEPHEUS, while the other line runs to Capella in the constellation AURIGA. The areas marked by the heavy or dark lines are used to outline some of the constellations which contain numerous faint stars. In the January sky map CAMELOPARDALIS is one of the fainter constellations.

The twelve star maps are divided into four sections — FACING North, South, East and West. If the observer with a compass will face north and hold the FACING North section in front of him and look toward the northern horizon, the stars on the map will be found in that section of the sky. Then by turning east, the observer will also find the stars in this section. The same procedure will locate the constellations to the south and west.

Not all of the constellations can be seen at any one time during the year. The January map gives the time and date that the stars will appear in this position. By going back 15 days into December, around December 16, the stars can be found in the same position at 11:00 P.M. Following from this, the stars would be in this same position about midnight on December 1. In a like manner, by moving into February, the stars would be in the same position at 7:00 P.M. on the 15th of February, and at 6:00 P.M. on March 2.

By extending the times forward or backward, and changing the dates to accompany these preceding changes, the star maps can be used for later or earlier times in the evening than for those listed on the star charts.

## THE JANUARY SKY

One of the easiest constellations to identify in the sky is URSA MAJOR, or more commonly known to many as the "Big Dipper." Look at the detailed drawing of it in Figure 1 and note the star names. They will be referred to later. At this time of the year, as indicated on the January Star Map, the "Big Dipper" is located toward the northeast with its handle pointing toward the horizon. As a matter of interest, Mizar, the second star in the handle of the "dipper," was the first double star to be separated with a telescope. This was accomplished approximately 320 years ago. Once the observer can recognize this constellation, its stars can be used to point to some of the other constellations in the sky.

An imaginary line connecting the pointer stars of the bowl of the "Big Dipper," Dubhe and Merak, extended about 5-1/2 times the distance between these two stars leads one to the second magnitude star Polaris in URSA MINOR (see Figure 2). If viewing conditions are favorable, the rest of URSA MINOR's configuration can be made out. Kochab, the second magnitude star of the bowl of the "Little Dipper," was the polestar at the time of Plato while today Polaris is our polestar.

The reason for different stars marking the position of the earth's pole in the sky is due to the earth's precession. The attractions of the moon and sun on the earth's bulging equator tend to bring it into the plane with themselves, and thus to straighten up the earth's axis relative to its orbit. Because of the earth's rotation, their efforts are resisted, and the earth's axis moves slowly instead around the line joining the ecliptic poles in the direction opposite to that of the earth's rotation. This effect is like the motion produced by a spinning top. The circle inscribed in the sky is at an angle of 23-1/2° from the poles of the ecliptic. The time that it takes to complete the inscribing of the circle in the sky is approximately 26,000 years. Therefore, during this period different stars serve as polestars for the earth.

By continuing our imaginary line that was used to find Polaris, the Alpha star of CEPHEUS (refer to Figure 2) will be found. This star of third magnitude has the name ErRai. It is in this region of the sky that the future polestars will be located 2000-6000 years from now.

The bright star Capella in the constellation AURIGA (see Figure 4) can be located by using the stars Megrez and Dubhe in URSA MAJOR. Using these two bowl stars as pointers and extending an imaginary line toward the southwest, Capella can be found. Supposedly, the constellation AURIGA represents the inventor of the chariot who was so honored for his feat by being placed in the heavens. Although Capella appears as a single star, it is really a pair of yellow giant stars located 42 light years away.

In the north at this time, roughly bounded by the stars Capella, Polaris and the Epsilon star of the constellation CASSIOPEIA (refer to Figure 5) is the region of the faint constellation CAMELOPARDALIS. Do not expect to see much of this very faint constellation. Very prominent and high in the northwest sky is the constellation CASSIOPEIA, who at one time was the queen of Ethiopia. This constellation resembles a "W" against the starry background. Also during this month, CYGNUS (see Figure 6) is seen partially above the northern horizon, while DRACO (refer to Figure 7) is stretched out along the northern horizon.

In the east in the January skies for the dates and times listed, the constellation LEO is above the horizon with one of its stars Regulus becoming very prominent in the sky. The constellation "Leo the Lion" is shown in detail in Figure 8. Still toward the east but

located more toward the zenith is the constellation GEMINI (refer to Figure 9) with the two bright stars Castor and Pollux brilliantly shining against the night sky. The star Castor, located 45 light years away, is a white star which is in reality a double. It was also in this constellation that two of our nine planets have been discovered. The planet Uranus was discovered here in 1781, while it was not until 1930 that Pluto's discovery was made.

Almost due south at this time is ORION, which is depicted in Figure 10. Two very bright stars, Betelgeux and Rigel, are found in this constellation. Rigel is a giant star with a diameter 33 times that of the sun and is located 500 light years away. A much larger star is Betelgeux. Its diameter is 400 times that of the sun with its distance from the earth approaching 300 light years. The most northern star in the belt of ORION, Mintaka, lies on the celestial equator. Therefore, this star passes directly overhead at the equator. In addition, these three stars of the belt can be used as pointers for finding the stars Aldebaran and Sirius.

Extending an imaginary line toward the west from the belt one can locate Aldebaran, while in an eastward direction the imaginary line allows one to easily identify Sirius. Aldebaran is a member of the constellation TAURUS (see Figure 11), while Sirius belongs in CANIS MAJOR (refer to Figure 12). Sirius is a very bright star located approximately 8-1/2 light years away. In August when Sirius is rising at dawn, one often hears the term "dog days" which refers to this event.

Two other constellations can be found to the south of ORION by using the sword as a pointer. Running an imaginary line from the sword toward the horizon one first comes to the constellation LEPUS and farther down just above the horizon COLUMBA. It must be remembered that stars just above the horizon are much fainter than if they were higher in the sky. In fact, a star's apparent brightness is decreased by three magnitudes just above the horizon. Therefore, the constellation COLUMBA may be too faint to be easily detected.

PEGASUS (see Figure 18) is getting closer to the horizon in the western sky at this time of year. There are also two zodiac constellations in the west. They are PISCES and ARIES. ARIES is shown in Figure 11. The sun will appear to be in the constellation PISCES in March and ARIES during the month of April.

By extending an imaginary line from ANDROMEDA, also shown in Figure 15, toward the zenith, the second magnitude star Mirfak will be reached. Mirfak is a member of the constellation PERSEUS shown in Figure 13. It is from the vicinity of PERSEUS that the August meteor shower, the Persids, seem to radiate.

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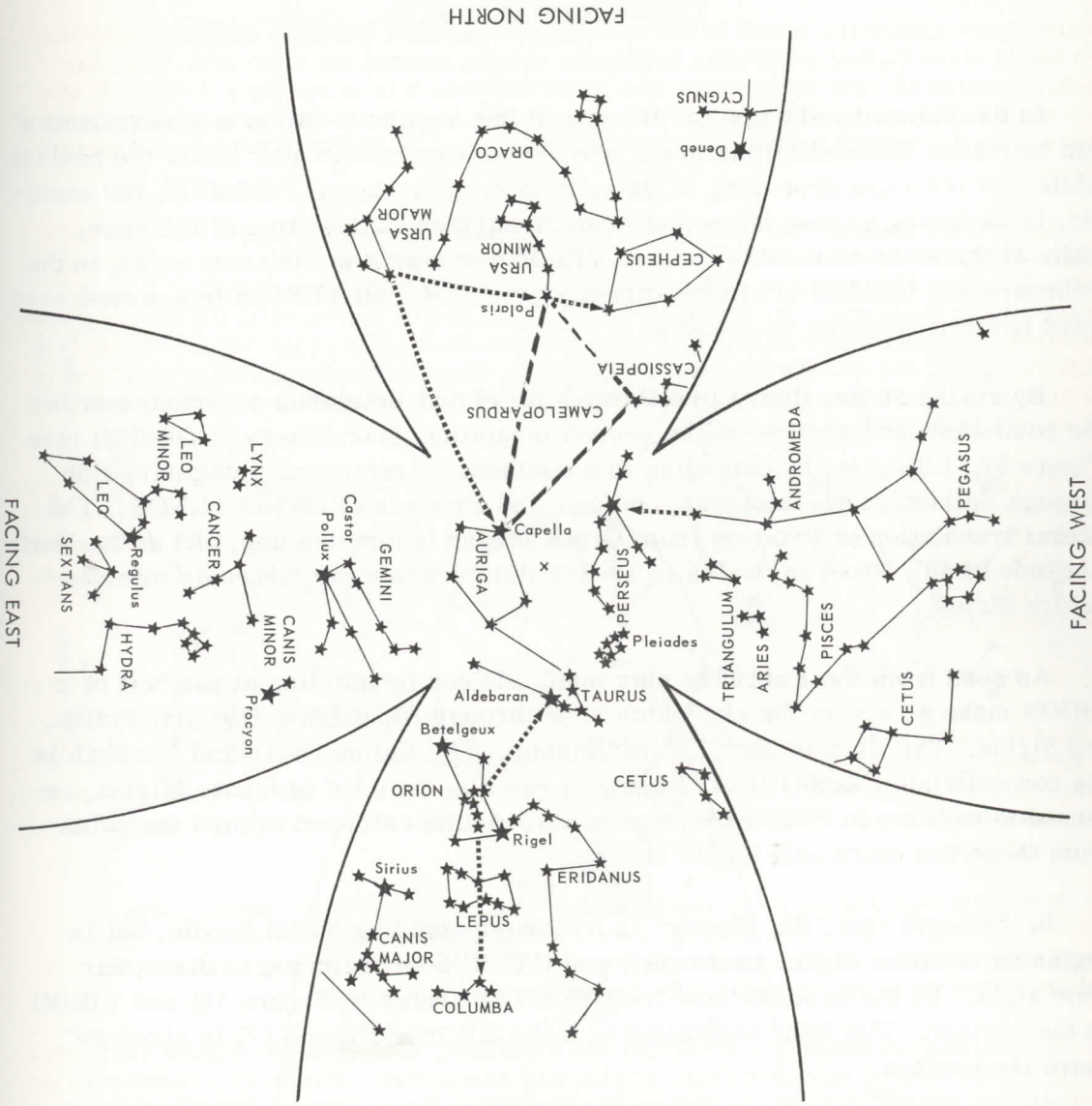



JANUARY 1 @ 10 P.M.
JANUARY 16 @ 9 P.M.
JANUARY 31 @ 8 P.M.

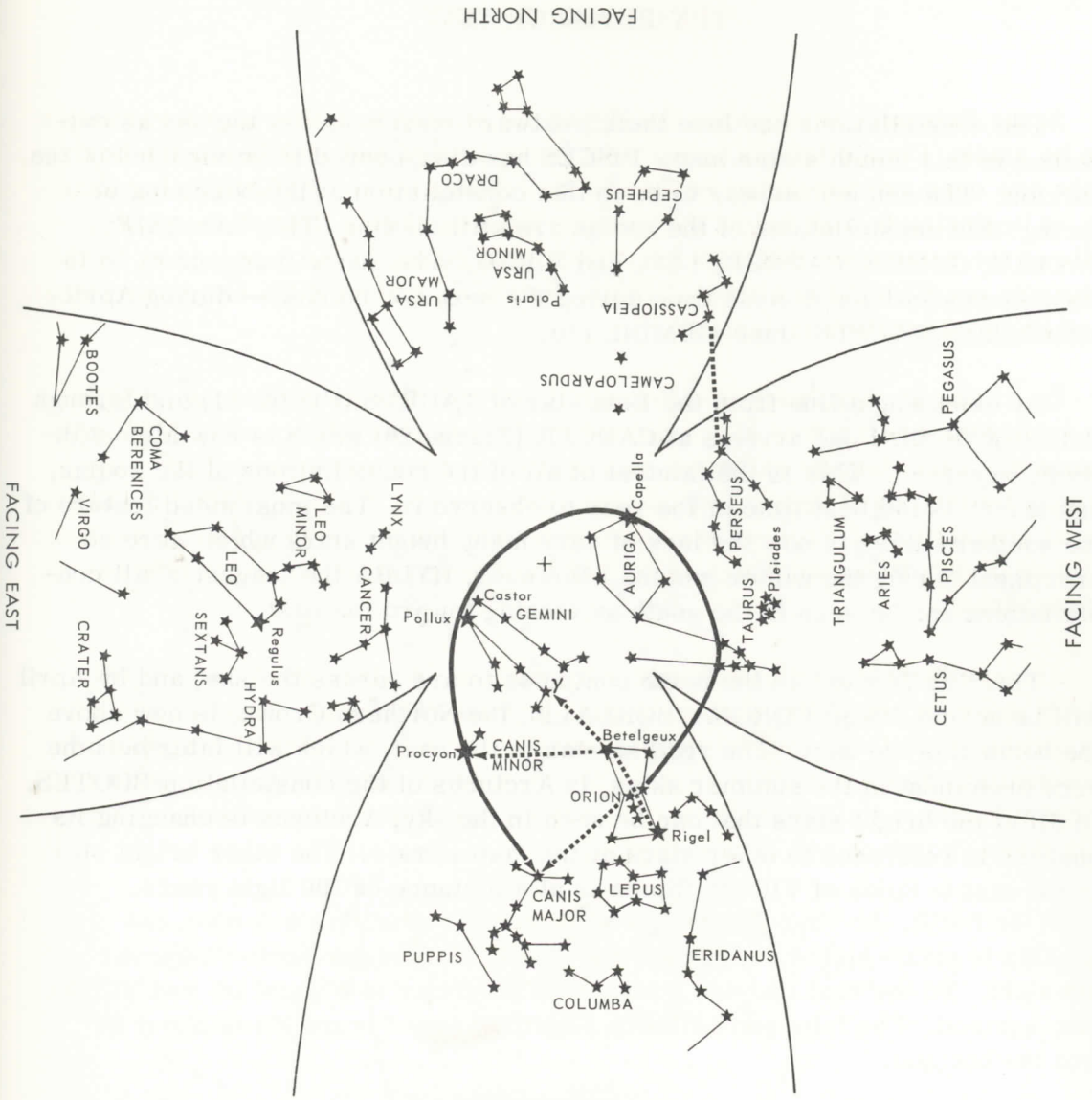
## THE FEBRUARY SKY

In the February sky and for the sky of the months to follow a generalization can be made: Constellations in the west move toward and sink below the horizon, while new ones are appearing in the east to replace them. PEGASUS, for example, is beginning to sink below the western horizon at this time of the year, while at the same time BOOTES and VIRGO are rising in the east. Also, in the February sky GEMINI is almost directly overhead, and AURIGA has moved westward from its position in January.

By arcing an imaginary line through Rigel and Betelgeux of Orion, now in the southwest, one arrives at the second magnitude star Alhera of GEMINI (see Figure 9). Likewise, by extending in a southeast direction an imaginary line through Bellatrix and Betelgeux, one can find Procyon of CANIS MINOR. The literal translation of Procyon from Greek means before the dog, and at the North Latitude of 40°, Procyon, which is 10-1/2 light years away, rises 40 minutes before Sirius.

As seen from the February star map, one can by starting at the belt of ORION make an arc in the sky which runs through Aldebaran, Capella, Pollux, and Sirius. This fact is useful to remember. The Gamma star and Ruchbah in the constellation CASSIOPEIA (Figure 5) can also be used to locate Mirfak, referred to earlier, in PERSEUS (Figure 13). A line extended toward the south from these two stars will locate Mirfak.

In the north, the "Big Dipper" is no longer standing on its handle, but is beginning to climb higher in the sky; and CYGNUS is beginning to disappear from sight. To the east one now finds BOOTES (refer to Figure 16) and VIRGO on the horizon. The faint constellation CANCER (see Figure 17) is about 60° above the horizon.



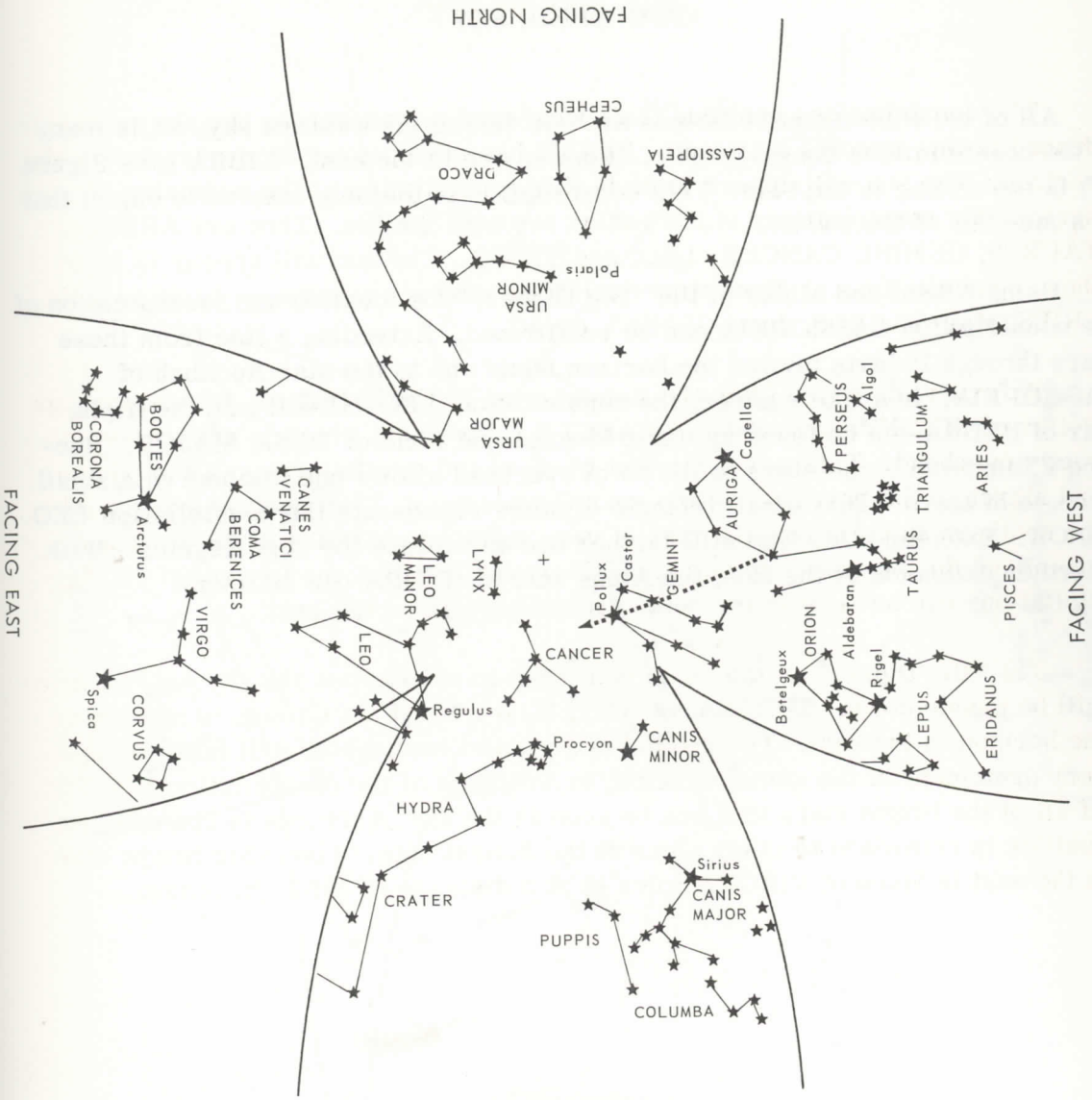

FEBRUARY 1 @ 10 P.M.
FEBRUARY 5 @ 9 P.M.
MARCH 1 @ 8 P.M.

## THE MARCH SKY

The constellations continue their westward march across the sky as evidenced in this month's star map. PISCES has disappeared from view below the horizon. The sun will appear to be in this constellation at the beginning of spring. Six constellations of the zodiac are still visible. They are ARIES, TAURUS, GEMINI, CANCER, LEO, and VIRGO. The sun will appear to be in these constellations at some time during the next six months — during April-ARIES, May-TAURUS, June-GEMINI, etc.

By extending a line from the Beta star of TAURUS (Figure 11) and through Pollux of GEMINI one arrives at CANCER (Figure 20) which is now almost directly overhead. This is the faintest of all of the constellations of the zodiac, and March is the best time of the year to observe it. The most noted feature of the southern skies is now the lack of very many bright stars which were so prominent during the winter months. However, HYDRA the longest of all constellations can be seen in the south stretching toward the east.

The "Big Dipper" in the north continues to arc across the sky, and by April will be upside down. CORONA BOREALIS, the Northern Crown, is now above the horizon in the east. The reddish star in the east, which will later become very prominent in the summer skies, is Arcturus of the constellation BOOTES. Of all of the bright stars that can be seen in the sky, Arcturus is changing its position in reference to other stars at the fastest rate. The other bright star in the east is Spica of VIRGO. Spica is at a distance of 190 light years.




FACING SOUTH

MARCH 1 @ 10 P.M.
MARCH 16 @ 9 P.M.
MARCH 31 @ 8 P.M.

## THE APRIL SKY

All of the winter constellations are now filling the western sky, while many of the constellations conspicuous of summer are in the east. LIBRA (see Figure 17) is now rising in the east. This constellation is the only inanimate object that is a member of the zodiac.

Using Alkaid and Mizar of the "Big Dipper," the location and identification of the constellation CASSIOPEIA can be reaffirmed. Extending a line from these stars through Polaris toward the horizon leads one to the star Ruchbah of CASSIOPEIA. In a like manner, the constellation LEO MINOR and the Alpha star of HYDRA can be found by using Megrez and Phad of URSA MAJOR. Running a line from these stars to the point overhead allows one to observe a small triangle of stars. This small triangle of stars represents the constellation LEO MINOR. Extending this line still farther one can locate the star Regulus. With a farther extension of the line, the Alpha star of HYDRA can be found.

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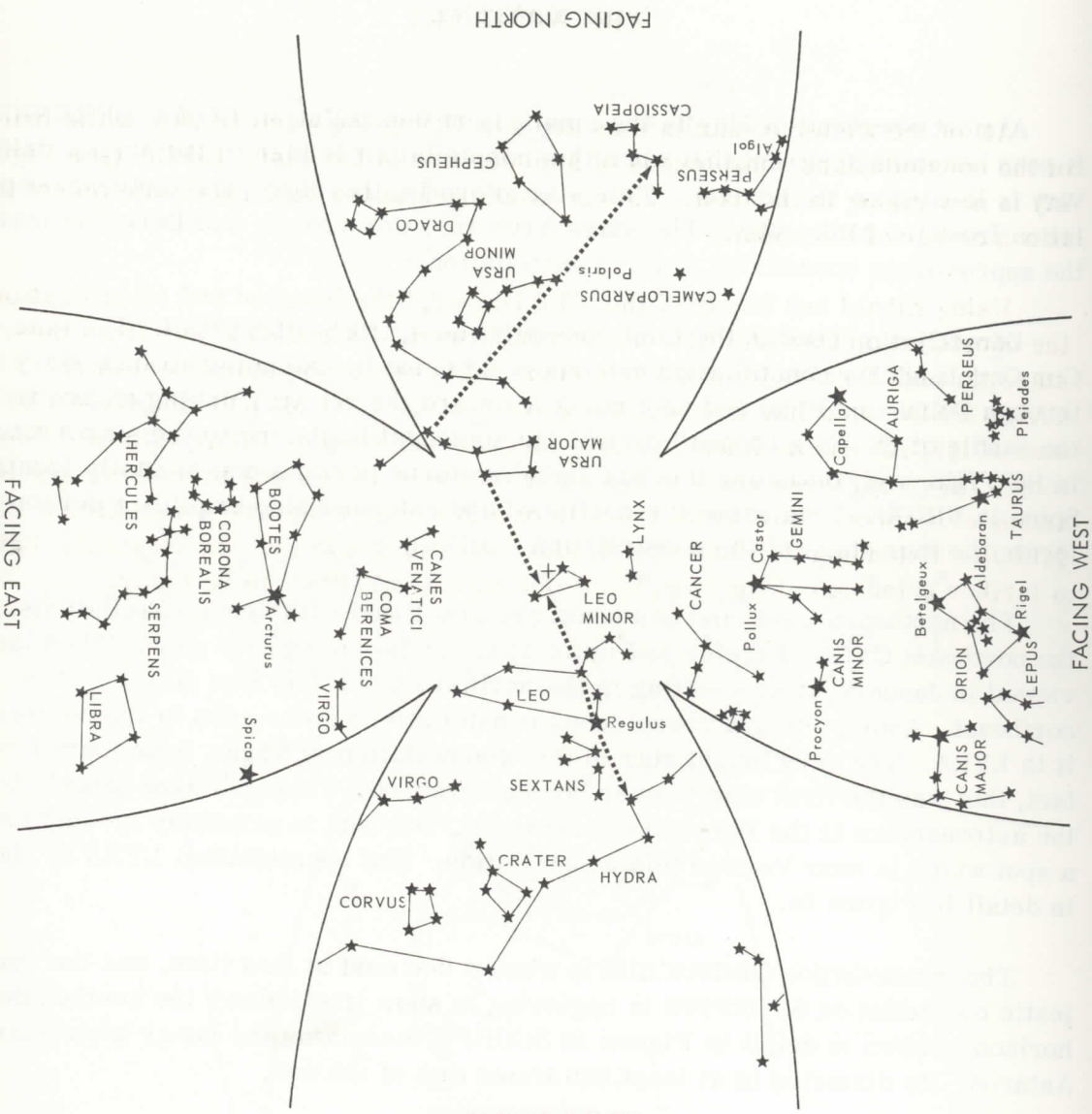


APRIL 1 @ 10 P.M.
APRIL 16 @ 9 P.M.
MAY 1 @ 8 P.M.

## THE MAY SKY

Almost overhead in May is the small, faint constellation COMA BERENICES. It soon becomes apparent that when this constellation is high in the sky the Milky Way is located on the horizon. This star group is, therefore, the farthest constellation from the Milky Way. The stars Arcturus, Cor Caroli, and Denebola mark the approximate boundaries of this constellation.

Directly overhead is the faint constellation CANES VENATICI. The star Cor Caroli of this constellation can easily be found by extending an imaginary line through Dubhe and Phad and continuing it toward the zenith. Making an arc from the handle of the "Big Dipper" toward the southeast leads one to the star Arcturus in BOOTES, and continuing this arc from Arcturus permits one to easily locate Spica in VIRGO. This same arc continued and extended also enables a person to locate the four stars of the constellation CORVUS.

The northeast, east, and southeast are now filled with new constellations. In the northeast CYGNUS (refer to Figure 6) is again coming into view. When last viewed in January, it was setting in the northwest, but it is now rising in the northeast. Another bright conspicuous constellation can be seen in the northeast. It is LYRA. The very bright star in this constellation is Vega. As a matter of fact, this was the first star to ever be photographed. This was done in 1850 by the astronomers at the Harvard Observatory. Our sun is presently moving toward a spot which is near Vega in this constellation. The constellation LYRA is shown in detail in Figure 18.

The constellation OPHIUCHUS is almost due east at this time, and the majestic constellation SCORPIUS is beginning to show itself above the southeastern horizon. Shown in detail in Figure 19 SCORPIUS contains the super-giant star Antares. Its diameter is at least 300 times that of the sun.

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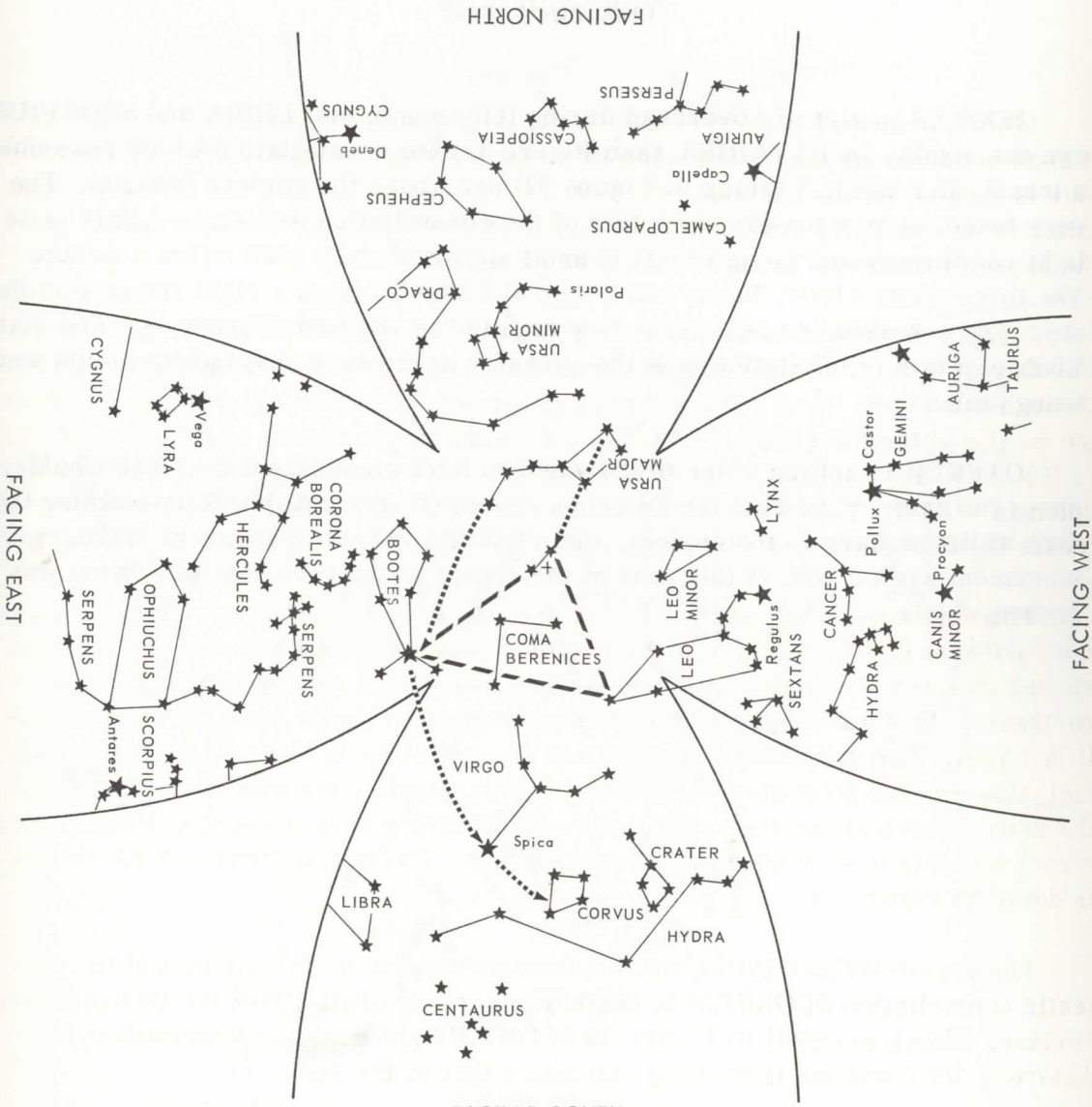


MAY 1 @ 10 P.M.
MAY 16 @ 9 P.M.
MAY 31 @ 8 P.M.

## THE JUNE SKY

BOOTES is directly overhead during this month, and LIBRA and SCORPIUS are due south. SAGITTARIUS, (see Figure 22) the constellation which resembles a teapot, and AQUILA (refer to Figure 21) are above the eastern horizon. The very bright star in the east is Altair of the constellation AQUILA. Altair is 16 light years away and is approaching us at approximately 1000 miles a minute. The three stars Altair, Vega, and Deneb of CYGNUS form a right triangle in the sky. The constellation DRACO is now high in the sky (note Figure 7). The star Thuban in this constellation was the polestar at the time that the pyramids were being built.

CANCER is getting close to the western horizon at this time. The Chaldeans chose the name "CANCER the Crab" to represent this constellation because the crab walks backward or obliquely. This typifies the sun's apparent retrograde movement when it was in this part of the zodiac at the time that this name was chosen.

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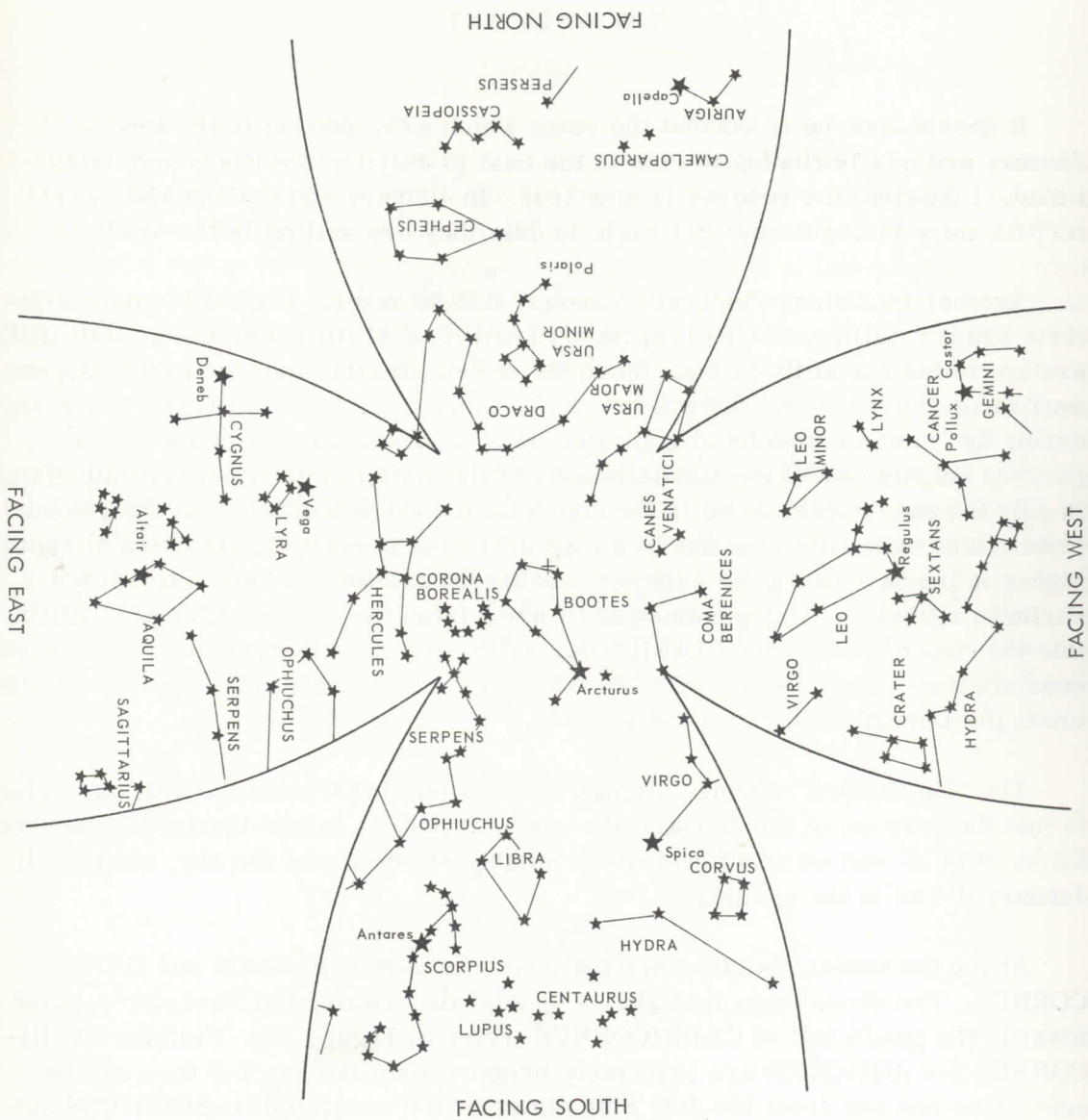


JUNE 1 @ 10 P.M.
JUNE 16 @ 9 P.M.
JULY 1 @ 8 P.M.

## THE JULY SKY

It should soon be noted that the stars which were setting in the west in January are now beginning to rise in the east in July for the times and dates listed. Likewise, the reverse is also true. In January LEO, SEXTANS, and HYDRA were rising in the east while in July they are setting in the west.

Another important observation should also be made. The zodiac constellations VIRGO, LIBRA, SCORPIUS, SAGITTARIUS, CAPRICORNUS, and AQUARIUS are low in the sky at this time. Since the moon, planets, and sun always appear near the ecliptic several deductions can be made. The moon is lower in the sky during the summer months at night than it is in January or the winter months. (Review the position of the constellations of the zodiac in the January Star Map.) In July the sun appears to be in the constellation CANCER, which if the reader remembers, will cross the sky at a high altitude. Therefore, the sun will appear higher in the sky during the summer months than it does in the winter in the northern latitudes. The sun appears to move from the constellation SCORPIUS into the constellation SAGITTARIUS during the month of December. Since these constellations cross the sky at a latitude of 40° at a low altitude, the sun will also cross the December sky at a low altitude.

The "Big Dipper" during July has its bowl pointed toward the horizon. This is just the reverse of the January sky where it had its handle toward the horizon. URSA MAJOR can be now found in the northwest section of the sky, whereas in January it was in the northeast.

Above the eastern horizon are the constellations AQUARIUS and CAPRICORNUS. The three stars in AQUILA — Alshain, Altair, and Tarazed — point towards the goat's tail of CAPRICORNUS (refer to Figure 21). Neither CAPRICORNUS nor AQUARIUS are extremely bright constellations, but they can be seen. One can see from the July Star Map that the constellation SCORPIUS can be used to find LIBRA. Extending an imaginary line as shown in the star map leads one to the fourth magnitude star of LIBRA. The two faint constellations SAGITTA and DELPHINUS (note Figure 23) are also located toward the east. These two star groups are small but easy to find.

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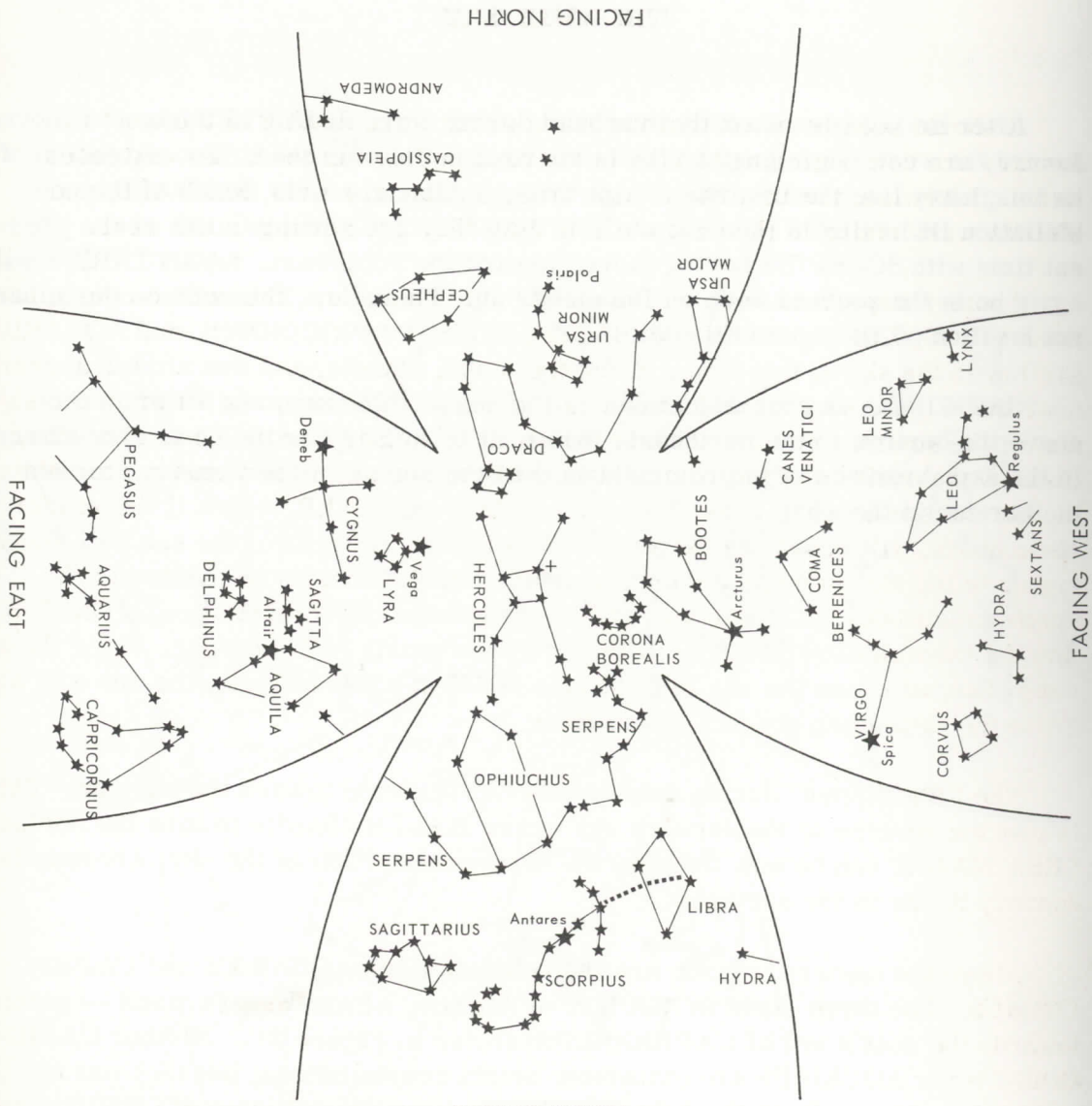


JULY 1 @ 10 P.M.
JULY 16 @ 9 P.M.
JULY 31 @ 8 P.M.

## THE AUGUST SKY

After having been directly overhead during July, HERCULES has now moved toward the west. In August LYRA is approximately overhead. The extension of an imaginary line running from Vega through Albireo meets Deneb of the constellation DELPHINUS (see Figure 23). SAGITTARIUS is due south at the present time with SCORPIUS having moved toward the southwest. SAGITTARIUS will again be in the south at noon on December 30. Therefore, this will be the apparent location of the sun on this date.

CASSIOPEIA is climbing higher in the sky at this time, and PERSEUS is above the horizon in the northeast. While PEGASUS is continuing to rise higher in the sky, Arcturus very prominent in the summer sky is now moving toward the horizon in the west.

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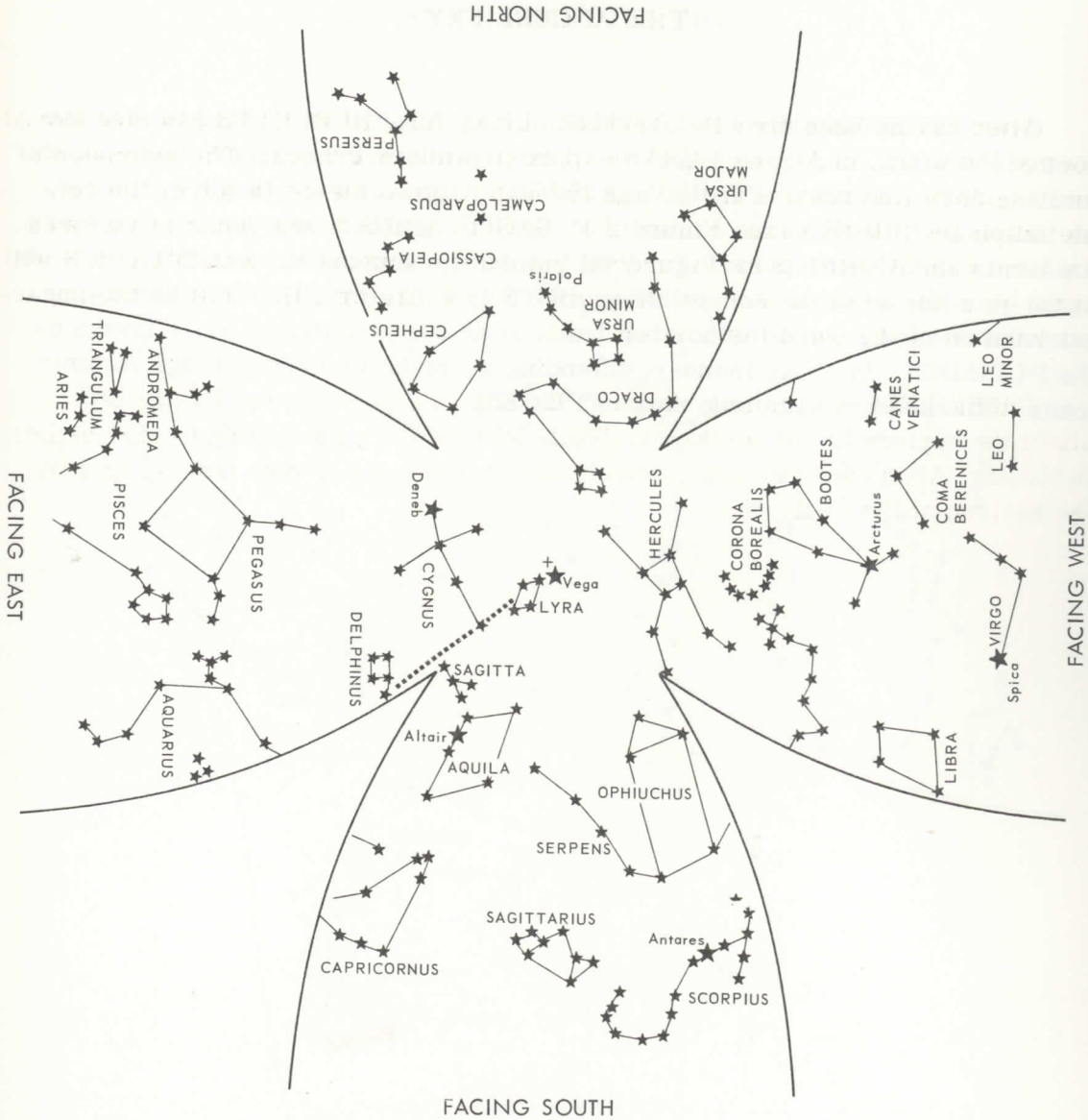


AUGUST 1 @ 10 P.M.
AUGUST 16 @ 9 P.M.
AUGUST 31 @ 8 P.M.

## THE SEPTEMBER SKY

Overhead in September is CYGNUS. URSA MAJOR is moving toward the northern horizon, and by October it will be just above the northern horizon, its location during autumn. Capella in AURIGA is again in view in the northeast. An imaginary line from the center of PEGASUS extended between the two stars Alpheratz and Algenib (note Figure 15) pointed toward the eastern horizon leads to the star Hamal in the constellation ARIES (see Figure 24). This same line extended onward toward the horizon leads to an open cluster of stars known as the PLEIADES. In a like manner, extending a line from Sheat through Algenib leads to the second magnitude star in PISCES.

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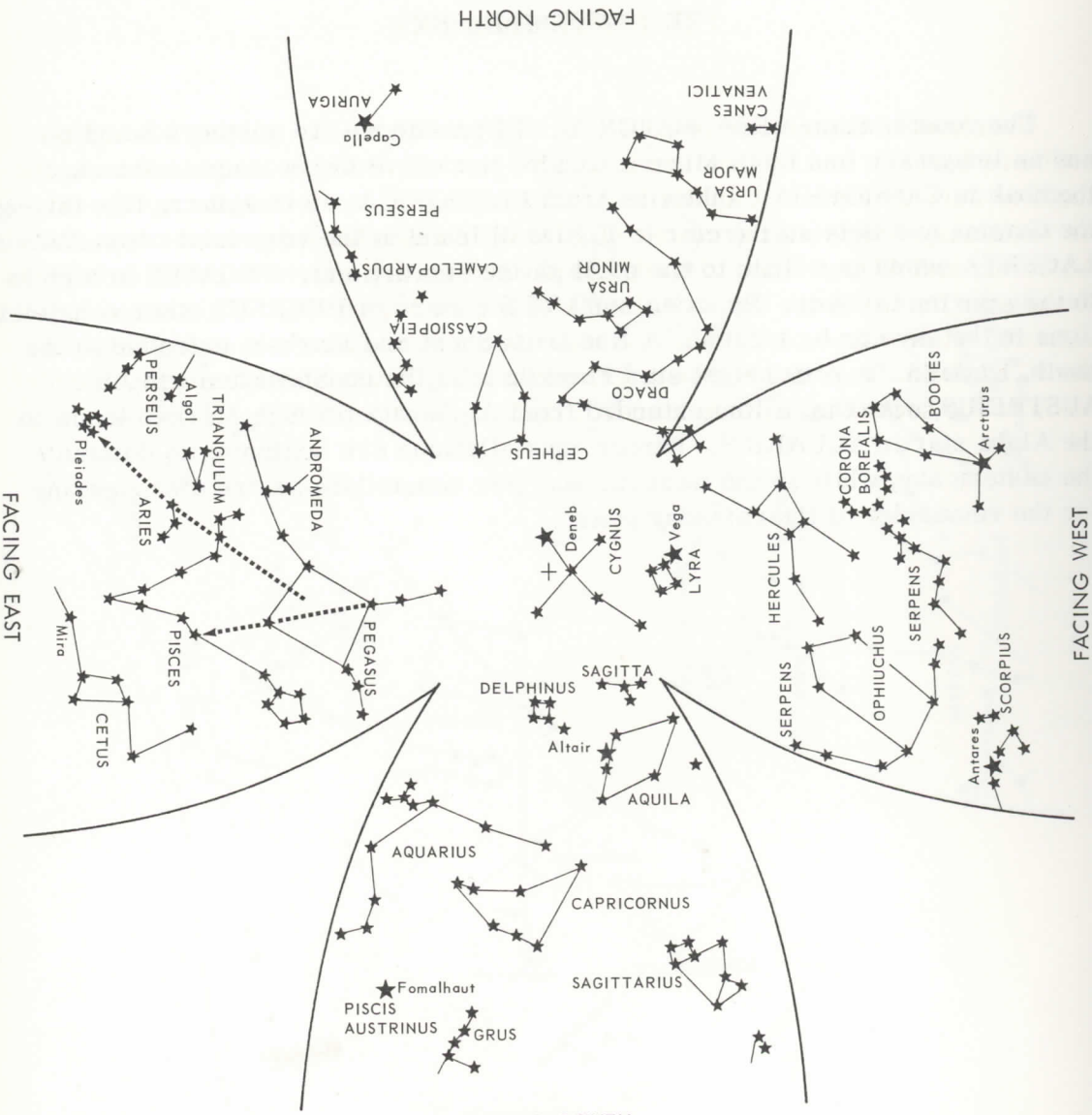
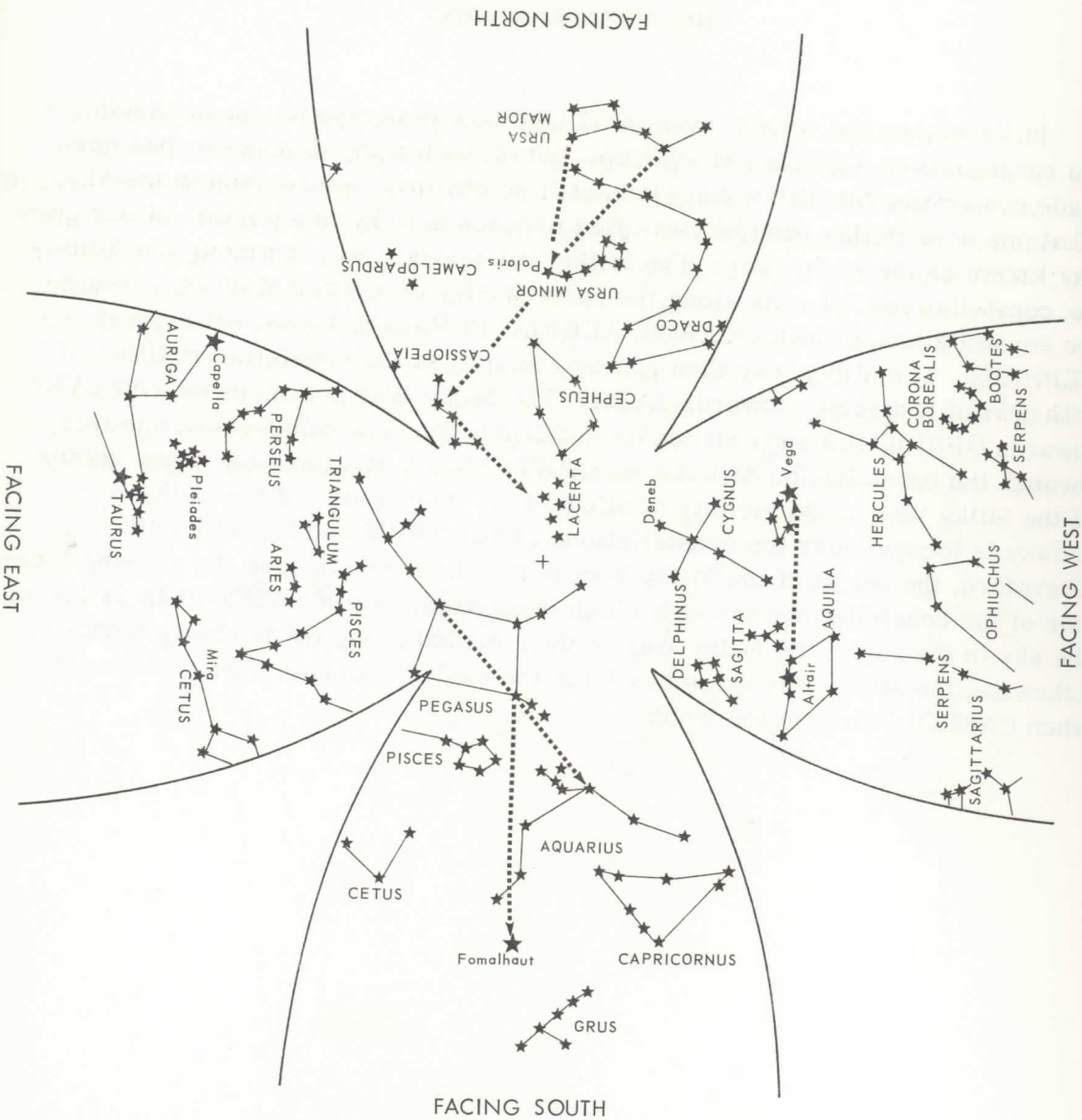



SEPTEMBER 1 @ 10 P.M.
SEPTEMBER 16 @ 9 P.M.
OCTOBER 1 @ 8 P.M.

## THE OCTOBER SKY

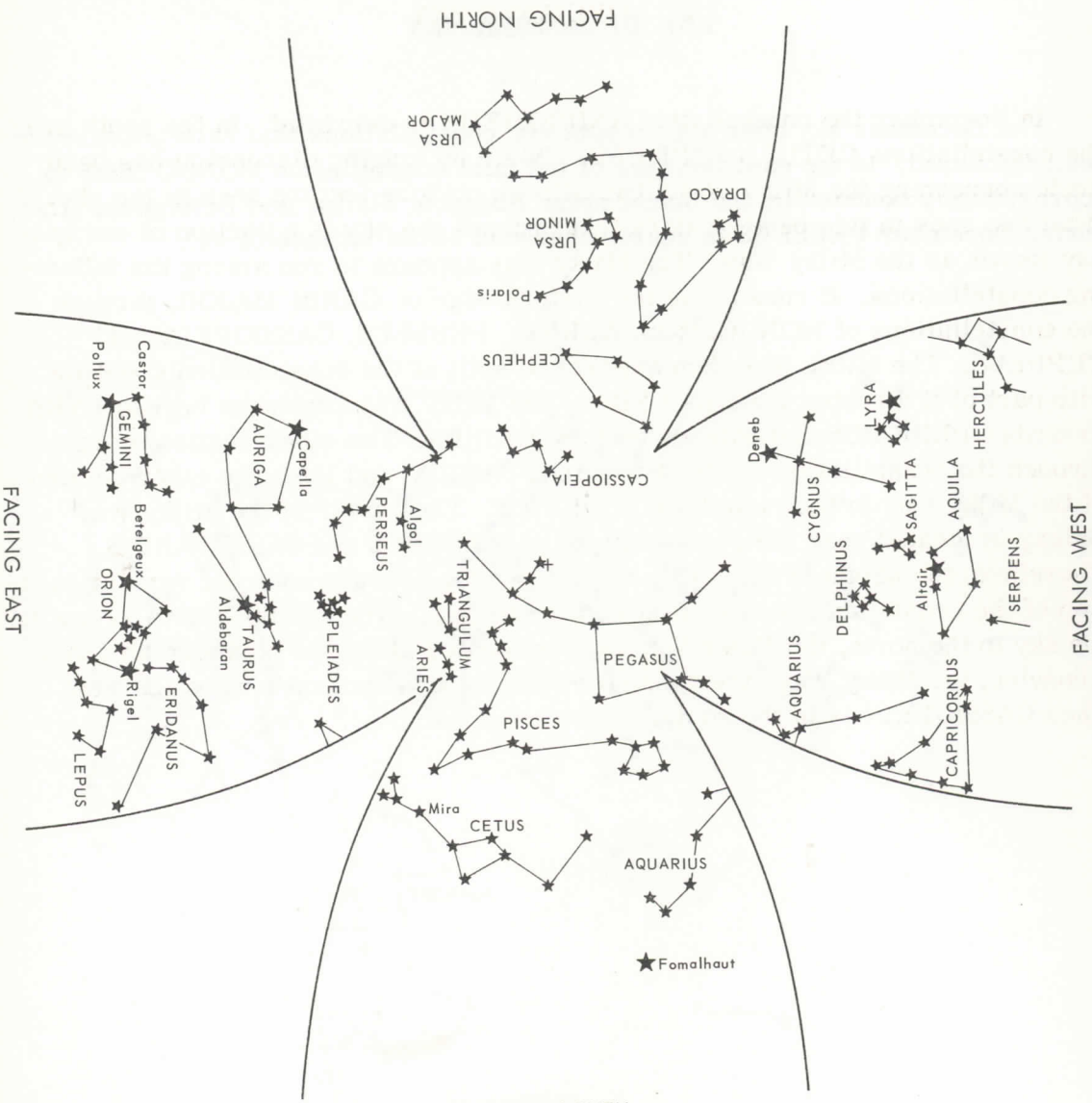
The constellation URSA MAJOR is now just above the northern horizon, and an imaginary line from Mizar extended through Polaris leads to the star Ruchbah in CASSIOPEIA. Likewise from CASSIOPEIA, an imaginary line through the Gamma and Beta star (refer to Figure 5) leads to the very faint constellation LACERTA which is a little to the north of the zenith point. PEGASUS is high in the sky during October. By using some of the stars of PEGASUS other constellations in the sky can be located. A line from Sheat and Markab, extended to the south, leads to the very bright star Fomalhaut in the constellation PISCIS AUSTRINUS, whereas, a line extended from Alpheratz through Markab leads to the Alpha star in AQUARIUS. Winter constellations are beginning to dominate the eastern sky, while in the west the summer constellations are disappearing for the remainder of the calendar year.




OCTOBER 1 @ 10 P.M.
OCTOBER 16 @ 9 P.M.
OCTOBER 31 @ 8 P.M.

## THE NOVEMBER SKY

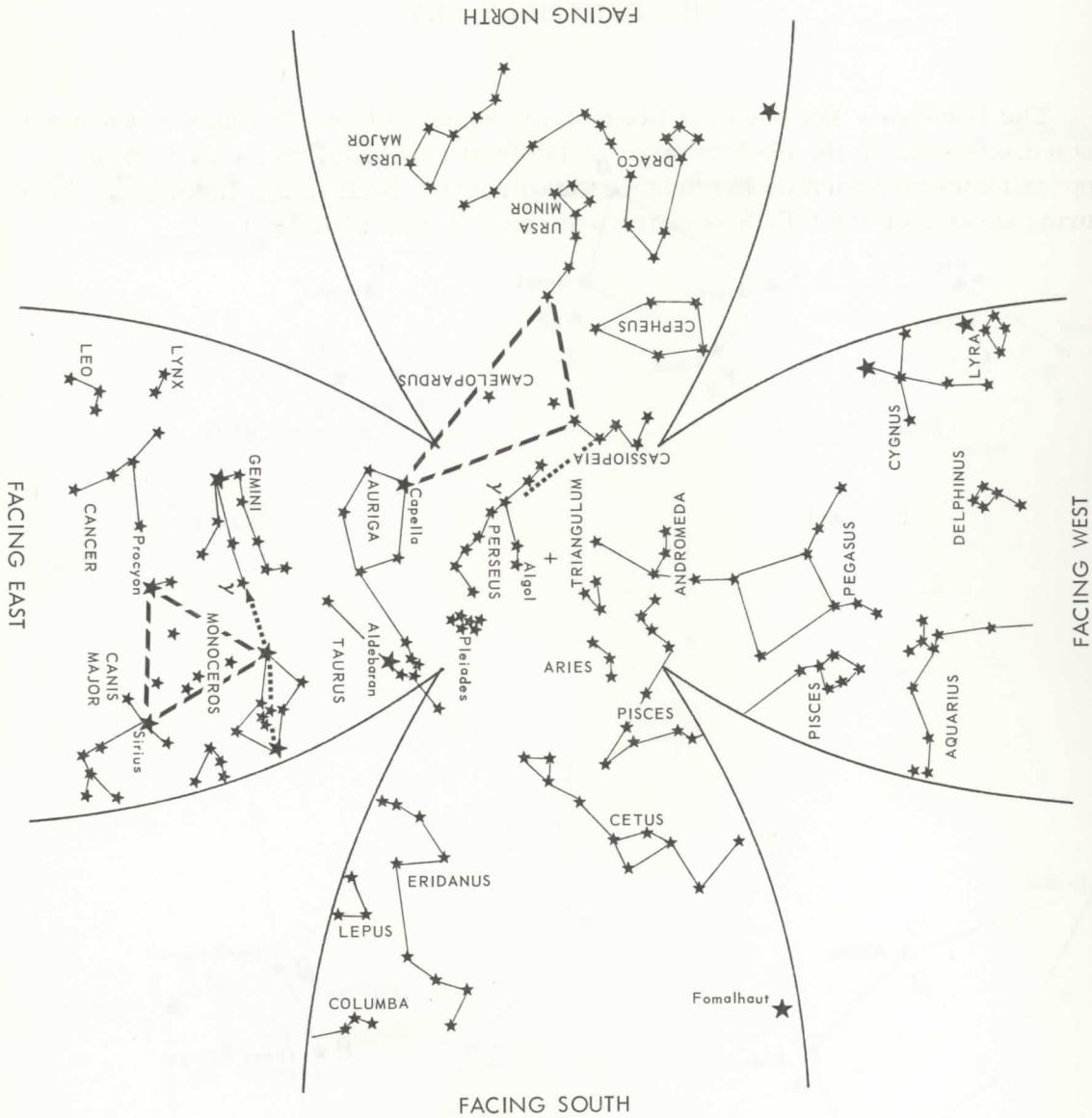
In November the constellation ANDROMEDA is overhead. In the south are the constellations CETUS and PISCES. While no lengthy discussion has been made concerning the Milky Way, it is still an obvious feature seen in the sky. What one sees in this band of stars that crosses the sky is a portion of our galaxy known as the Milky Way. The Milky Way appears to run among the following constellations. It runs along the eastern edge of CANIS MAJOR, through the constellations of MONOCEROS, AURIGA, PERSEUS, CASSIOPEIA, and CEPHEUS. The Milky Way then appears to split at the constellation CYGNUS with part of it directed towards LYRA. The Milky Way continues beyond LYRA towards OPHIUCHUS and extends on to SCORPIUS. The other section moves through the constellation AQUILA to SAGITTARIUS, and joins the other section of the Milky Way in the vicinity of SCORPIUS. The center of the Milky Way Galaxy is located near the constellations of SCORPIUS and SAGITTARIUS. Therefore, the height of the Milky Way in the sky depends upon the varying location of the constellations through which it crosses. When CASSIOPEIA is low in the sky in the north, the Milky Way is then located along the northern horizon. Likewise, the Milky Way stretches from the eastern horizon toward the west when CASSIOPEIA is in the south.



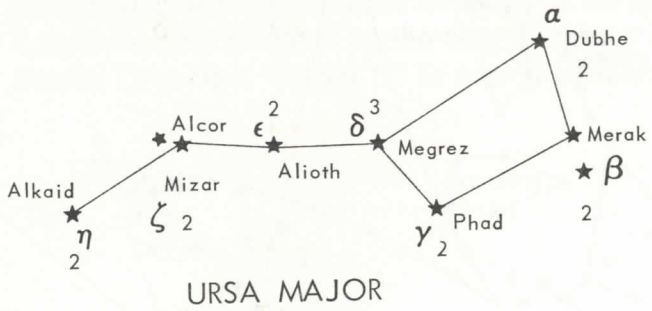

NOVEMBER 1 @ 10 P.M.
NOVEMBER 16 @ 9 P.M.
DECEMBER 1 @ 8 P.M.

## THE DECEMBER SKY

The December sky does not present any constellations that have not already been discussed. In the east the area of the faint constellation MONOCEROS is approximately bounded by the bright stars Procyon, Sirius, and Betelgeux. Also, during December PERSEUS is nearly overhead at the latitude of 40°.

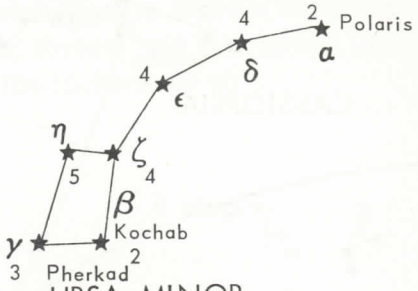



DECEMBER 1 @ 10 P.M.
DECEMBER 16 @ 9 P.M.
DECEMBER 31 @ 8 P.M.



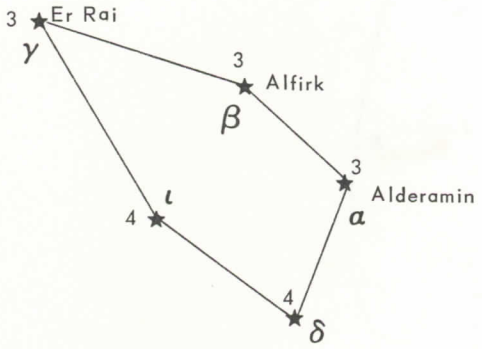

URSA MAJOR

Figure 1



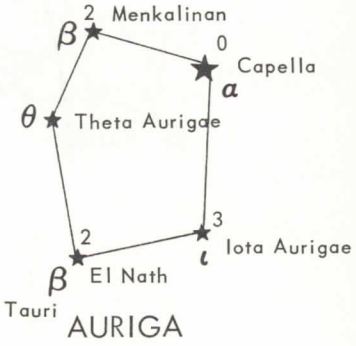

URSA MINOR

Figure 2



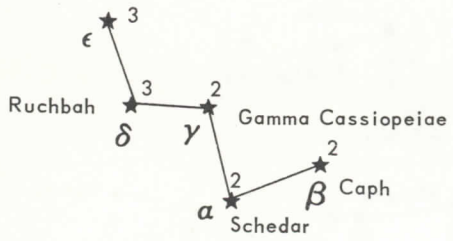

CEPHEUS

Figure 3



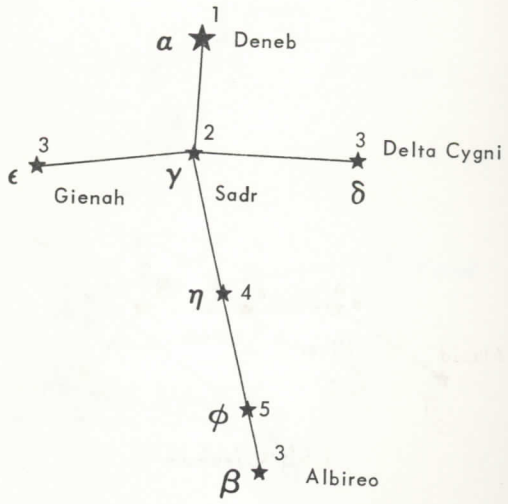

AURIGA

Figure 4



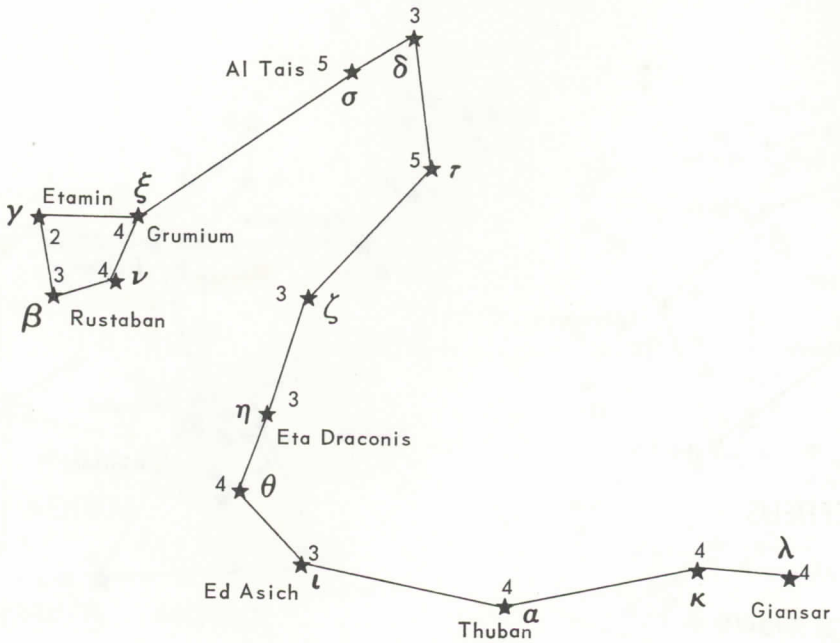

CASSIOPEIA

Figure 5




CYGNUS

Figure 6




DRACO

Figure 7

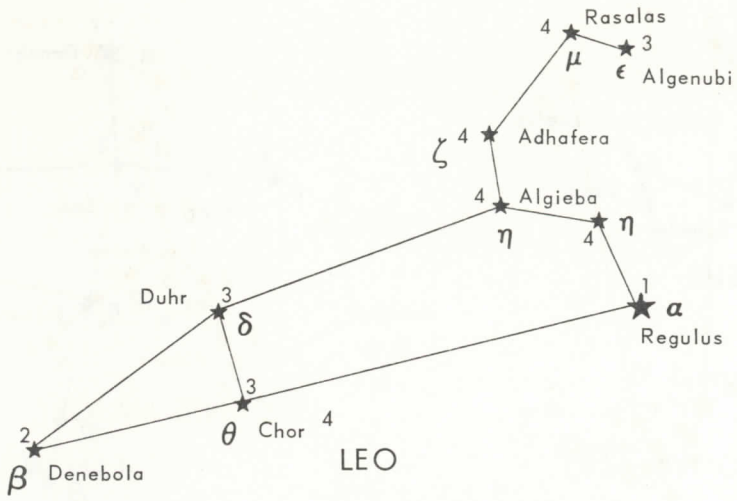
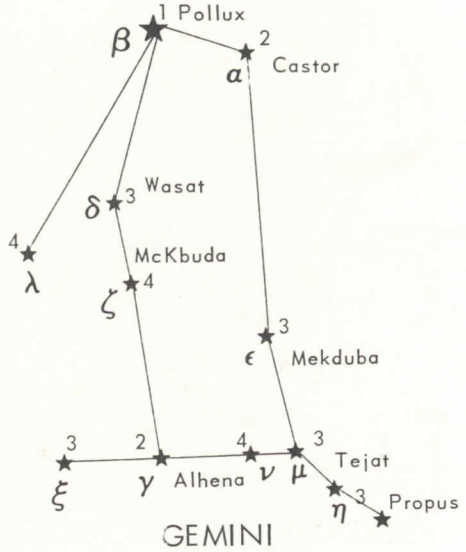



Figure 8

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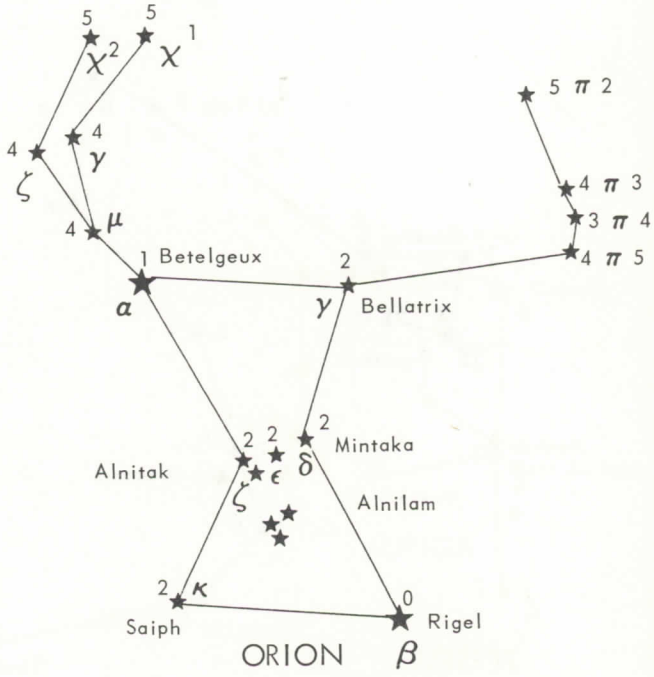
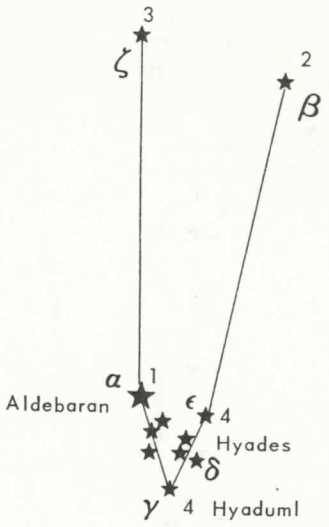
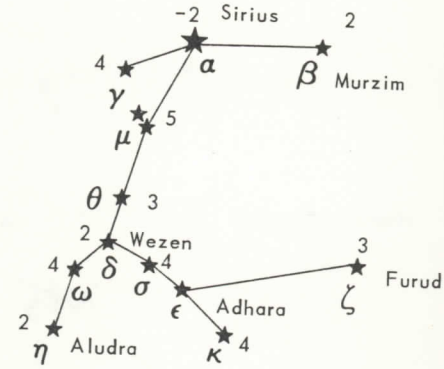



Figure 10



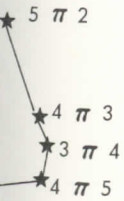

TAURUS

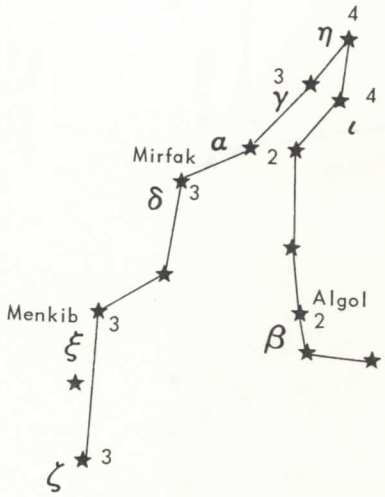
Figure 11




CANIS MAJOR

Figure 12



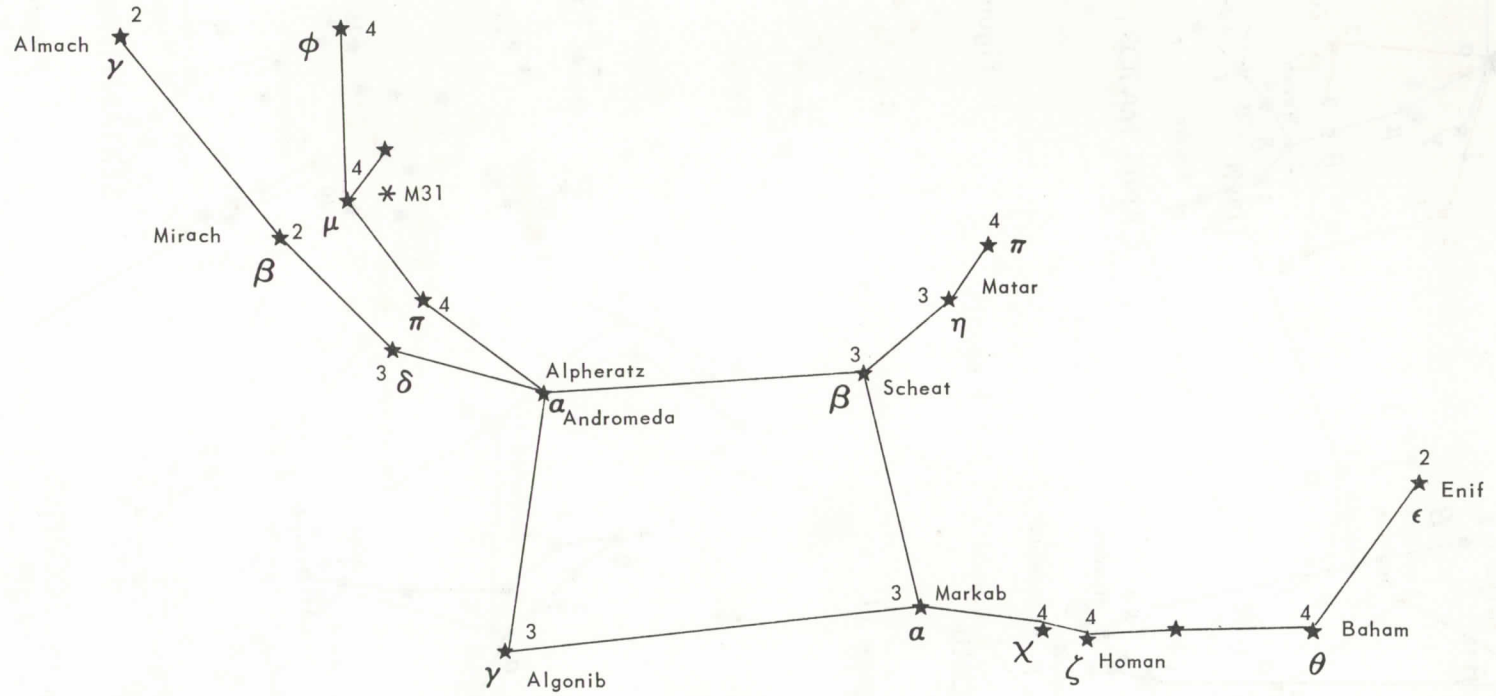




PERSEUS

Figure 13


SEXTANS

Figure 14




PEGASUS

Figure 15

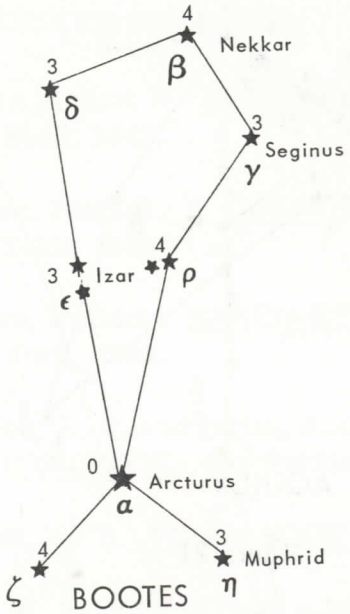



Figure 16

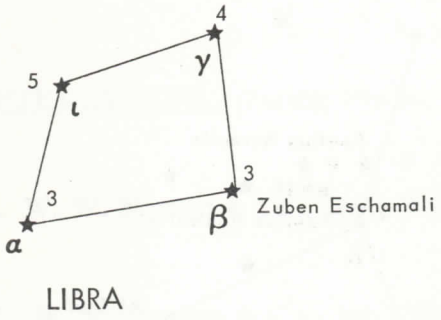



Figure 17

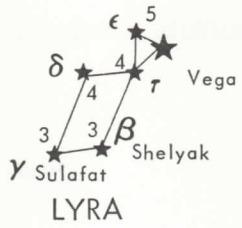



Figure 18

Figure 15

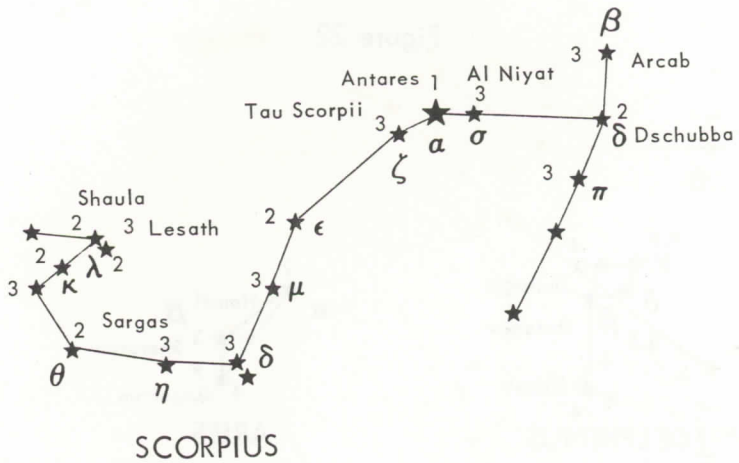
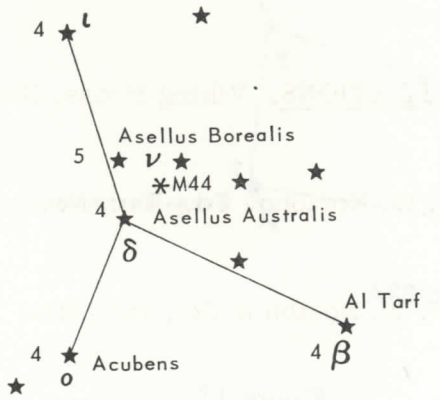
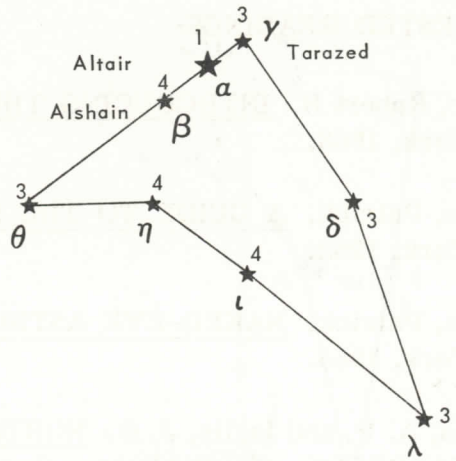



Figure 19



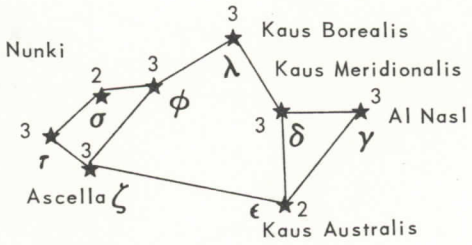

CANCER

Figure 20



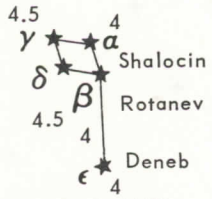

AQUILA

Figure 21



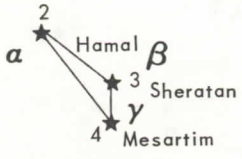

SAGITTARIUS

Figure 22




DELPHINUS

Figure 23




ARIES

Figure 24

SUGGESTED READINGS:

Baker, Robert H. INTRODUCING THE CONSTELLATIONS. Viking Press, New York, 1963.

Moore, Patrick. A GUIDE TO THE STARS. W. W. Norton & Co., Inc., New York, 1962.

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