

Circumpolar region larger in the north

Polaris, popularly known as the North Star, is the star which, by chance, happens to be almost exactly straight up from Earth's North Pole. As such, it is the only star which seems never to move, always being in the same place any time of night and every night of the year.

As Earth rotates on its axis, all the other stars appear to circle Polaris slowly in a counterclockwise direction every 24 hours. Some are near enough to Polaris that they never dip below the horizon and are always in the sky. These stars, and the constellations they form, are referred to as circumpolar, and their area of the sky is the Circumpolar Region.

The Circumpolar Region is one of the nine sky regions we'll be presenting in this column over the next year, and is the only region that varies in size depending on the geographic location of the viewer. Since Polaris doesn't move, its altitude as seen in the sky is always the same number of degrees above the horizon as the degrees of latitude from which it is seen. For example, with Waco's latitude of 31° N, Polaris is always 31 degrees above Waco's northern horizon, and all the stars within 31 degrees of Polaris form the Circumpolar Region as seen from Waco.

In Bangor, Maine, however, the Circumpolar Region would be larger. Given Bangor's latitude of 45° N, Polaris is seen at 45 degrees altitude, and thus more stars are circumpolar.

The Circumpolar Region as seen from most mid-northern latitudes (most of the U.S.) contains six constellations, all or most of each being visible all night and all year. These constellations are Ursa Minor the Little Bear, Ursa Major the Big Bear, Cassiopeia the Queen, Cepheus the King,



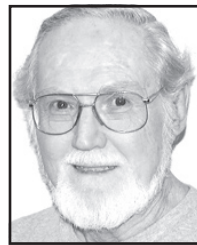
DICK CAMPBELL/Central Texas Astronomical Society
Image: Circumpolar star trails over the Meyer Observatory in Central Texas.

Draco the Dragon, and Camelopardalis the Giraffe. Owing to the seasonal variations, different constellations are prominent in the different seasons.

Ursa Minor, always at the center of the Circumpolar Region, contains the Little Dipper with Polaris at the end of the dipper's handle. In the evenings of winter, most of the Little Dipper is to Polaris' lower right with Ursa Major, which contains the well-known Big Dipper, further to the right. The Little Dipper, composed of mostly fainter stars, is far more difficult to make out than its larger and easier-to-identify counterpart.

To Polaris' left and lower left are Cassiopeia and her husband Cepheus. Cassiopeia now looks like a "M" or "W" on its side and is brighter than Cepheus which looks rather like a stick-house.

Draco, now situated between Polaris and the horizon, is now difficult to see because it is low. Above Polaris is Camelopardalis



Paul Derrick
● Stargazer

which is also hard to see, but for a different reason – it contains no bright stars.

Although all or part of all these constellations are in the night sky year-around, different ones move into prominence as the seasons progress. During the coming year we'll look at the Circumpolar Region again for its spring, summer, and fall appearances. Next month, we'll introduce the Great Winter Arc Region featuring Orion the Hunter.

Paul Derrick is an amateur astronomer who lives in Waco, Texas. His website (www.stargazerpaul.com) contains an archive of past Stargazer columns and other basic stargazing information. Contact him at paulderrickwaco@aol.com or (254) 723-6346 or write 918 N. 30th St., Waco, Texas, 76707.

January guide to the stars

You can use the chart as a guide when looking at the night sky. The chart shows the sky as it will be at 9 p.m. early in the month, 8 p.m. at mid-month, and 7 p.m. late in the month.

Hold the chart so the direction you are facing is at the bottom. For example, if you are facing north, turn the chart around so the "N" representing north is at the bottom as you hold it out in front of you. The center of the chart represents the portion of the sky you see if you look straight up.

To keep your eyes adjusted to the darkness as you look at the night sky, use a red-light flashlight to view the chart. You can make your own by putting red cellophane over the light or by coloring the lens of the flashlight with a red marker pen.

Sunday, Jan. 1 – sunrise: 8:04 a.m.; sunset: 5:31 p.m. / Sunday, Jan. 15 – sunrise: 8:03 a.m.; sunset: 5:45 p.m. Tuesday, Jan. 31 – sunrise: 7:53 a.m.; sunset: 6:03 p.m. (Times exact for Colby)

Moon: Jan. 1, first quarter; Jan. 9, full; Jan. 16, third quarter; Jan. 23, new; Jan. 30, first quarter

Night Sky Events

Held at arm's length, the width of your fist is 10° and the width of your index finger is 1°. The width of a full Moon is 1/2°.

Jan. 1 Sunday evening: The Moon is at first quarter.

2 Tuesday evening: The gibbous Moon is 5 degrees above bright Jupiter high in the south.

4 Thursday morning: The Quadrantid meteor shower peaks in the north – best between moonset (about 3:20 a.m.) and dawn.

4 Thursday: Earth is at perihelion – its nearest point to the Sun (91.4 million miles) in its annual elliptical orbit around our star.

9 Monday: The Moon is full.

13 Friday: Friday the 13th is an unlucky day for the superstitious, but you can avoid bad luck by not being superstitious.

13 Friday morning: The gibbous Moon is a fist-width (held at arm's length) to the lower right of Mars high in the southwest, and is the same distance to the lower left the next evening.

13 Friday evening: Brilliant Venus is two moonwidths to the left of much fainter Neptune low in the west southwest; seeing Neptune requires at least binoculars or a small telescope.

16 Monday morning: The third quarter Moon (lower right), the star Spica (4 degrees above the Moon), and the planet Saturn (7 degrees to their



left) form a triangle high in the south southeast.

19 Thursday morning: The crescent Moon is 4 degrees to the upper left of Scorpius' brightest star Antares low in the southeast before dawn.

23 Monday: The Moon is new – between the Sun and Earth.

25 Wednesday evening: The crescent Moon is a fist-width (9 degrees) to the lower right of Venus low in the west in the early evening, and then the same distance (8 degrees) to the upper right the next evening.

29 Sunday evening: The Moon is 7 degrees to the lower right of Jupiter high in the south, and 8 degrees above the giant planet the next evening.

30 Monday evening: The Moon is at first quarter for the second time this month.

Naked-eye Planets

The Sun, Moon and planets rise in the east and set in the west due to Earth's west-to-east rotation on its axis.

Evenings: Venus, Jupiter
Mornings: Mercury (early in the month), Saturn, Mars

• Mercury is low in the east southeast early in the month, then spends the rest of January in the Sun.

• Venus is the brilliant "evening star" in the west.

• Mars now rises before midnight and is high in the southwest in the morning.

• Jupiter, high in the southwest in the evening, sets after midnight.

• Saturn is up after midnight and high in the south southeast in the morning.

High Plains Museum exhibits A to Z history and photography

The High Plains Museum in Goodland is now showing "K is for Kansas" and "Considering the Commonplace," two traveling exhibits from the Kauffman Museum.

"K is for Kansas" explores Kansas history and culture from "A to Z" through hands-on interactive exhibits and accompanying activities. The Kansas alphabet includes the state symbols that all Kansas children study, along with fun and curious facts about the state.

"Considering the Commonplace" features the photography of Bob Regier, an artist and teacher from North Newton. Regier has traveled the main streets and back roads of Kansas with his camera, turning his eye to photograph the ordinary yet visually en-

gaging patterns of the prairie and built environment. Featuring over sixty stark photographs of Kansas, the exhibit is organized around eight themes: elegance, entrances, light and shadow, locomotion, sacred space, sentinels, signs and lines, and windows and walls.

The exhibits will be on display through March 2012.

For information or to schedule a tour, contact the museum at (785) 890-4595 or e-mail museumdir@goodlandks.us. The museum is located near downtown Goodland and features exhibits of local history. It is open 9 a.m. to 5 p.m. Monday and Wednesday through Saturday. Find out more online at www.highplainsmuseum.org.

On the Beat

COLBY POLICE

Tuesday

1:30 p.m. – Suspicious incident: employee called about message left on answering machine. Spoke to subject, options provided.

5:20 p.m. – Pedestrian under the influence report filed.

THOMAS COUNTY SHERIFF

Tuesday

10:25 a.m. – Civil forfeiture report filed for vehicle seizure.

2:35 p.m. – Helped ambulance crew in Brewster.

3:46 p.m. – Released Greg L. Brumbaugh.

6:20 p.m. – Booked Edward E. Aaron.

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