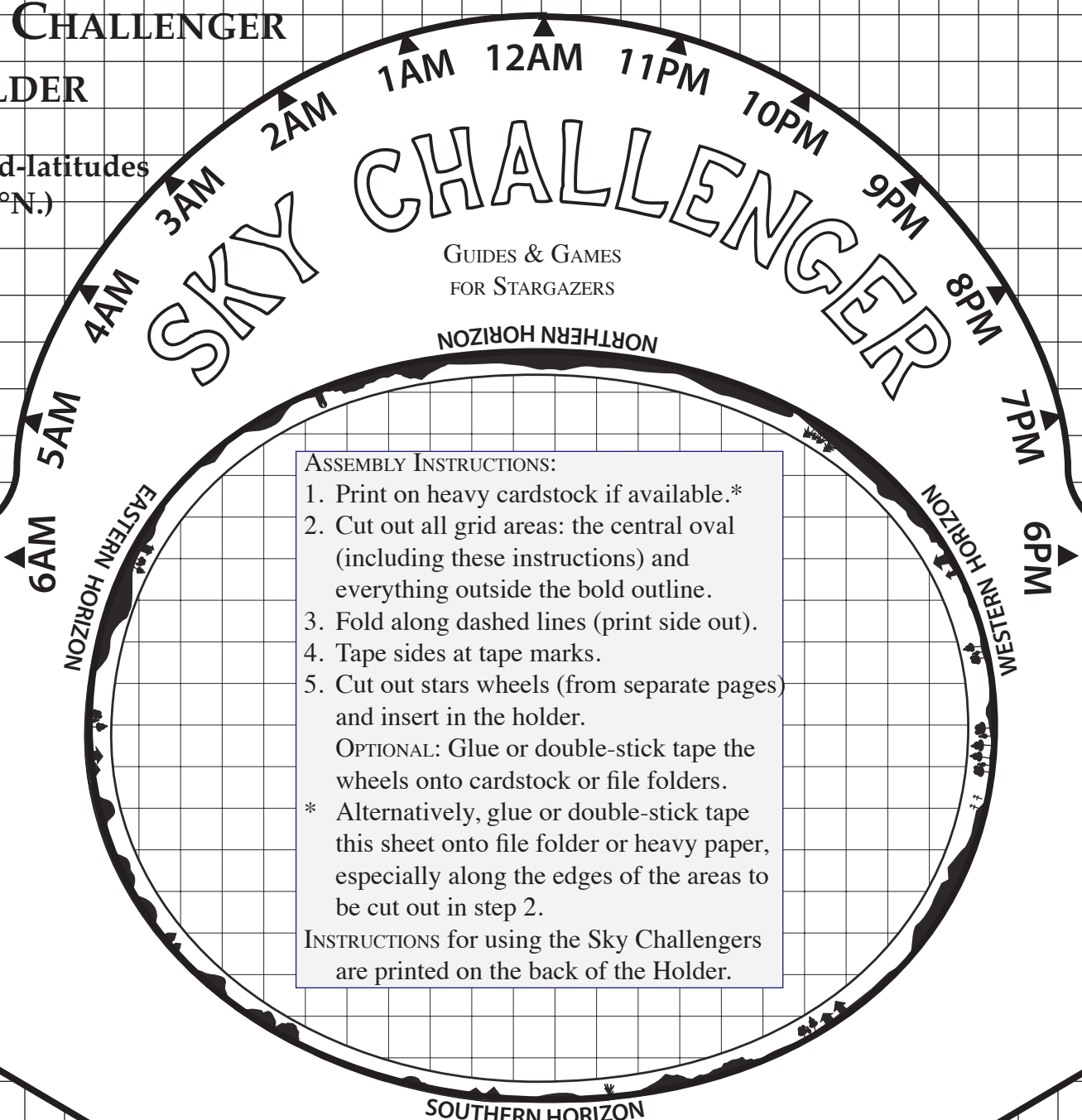


# SKY CHALLENGER HOLDER

for mid-latitudes  
(30–50°N.)

# SKY CHALLENGER

GUIDES & GAMES  
FOR STARGAZERS



**ASSEMBLY INSTRUCTIONS:**

1. Print on heavy cardstock if available.\*
2. Cut out all grid areas: the central oval (including these instructions) and everything outside the bold outline.
3. Fold along dashed lines (print side out).
4. Tape sides at tape marks.
5. Cut out stars wheels (from separate pages) and insert in the holder.

OPTIONAL: Glue or double-stick tape the wheels onto cardstock or file folders.

\* Alternatively, glue or double-stick tape this sheet onto file folder or heavy paper, especially along the edges of the areas to be cut out in step 2.

INSTRUCTIONS for using the Sky Challengers are printed on the back of the Holder.

Holder for latitudes 30°–50°N

Version: 2016

Paying the license fee entitles you to make 5 copies of SKY CHALLENGER for personal and/or group use.

© 1978, 2016 by the Regents of the University of California  
The 2016 edition of Sky Challengers are adapted from the original 1976 Sky Challengers created by Budd Wentz.  
Additional wheels are available for free at Uncle Al's Star Wheels web page [http://www.lawrencehallofscience.org/do\\_science\\_now/starwheels](http://www.lawrencehallofscience.org/do_science_now/starwheels)

1. Align your date and time, and then look up at the sky
2. Locate the constellation you want to find on the map.
3. Turn your map so the horizon it is closest to is at the bottom.
4. The star positions in the sky should match those on the wheel.

## Instructions for Using Sky Challengers

Tape

Tape

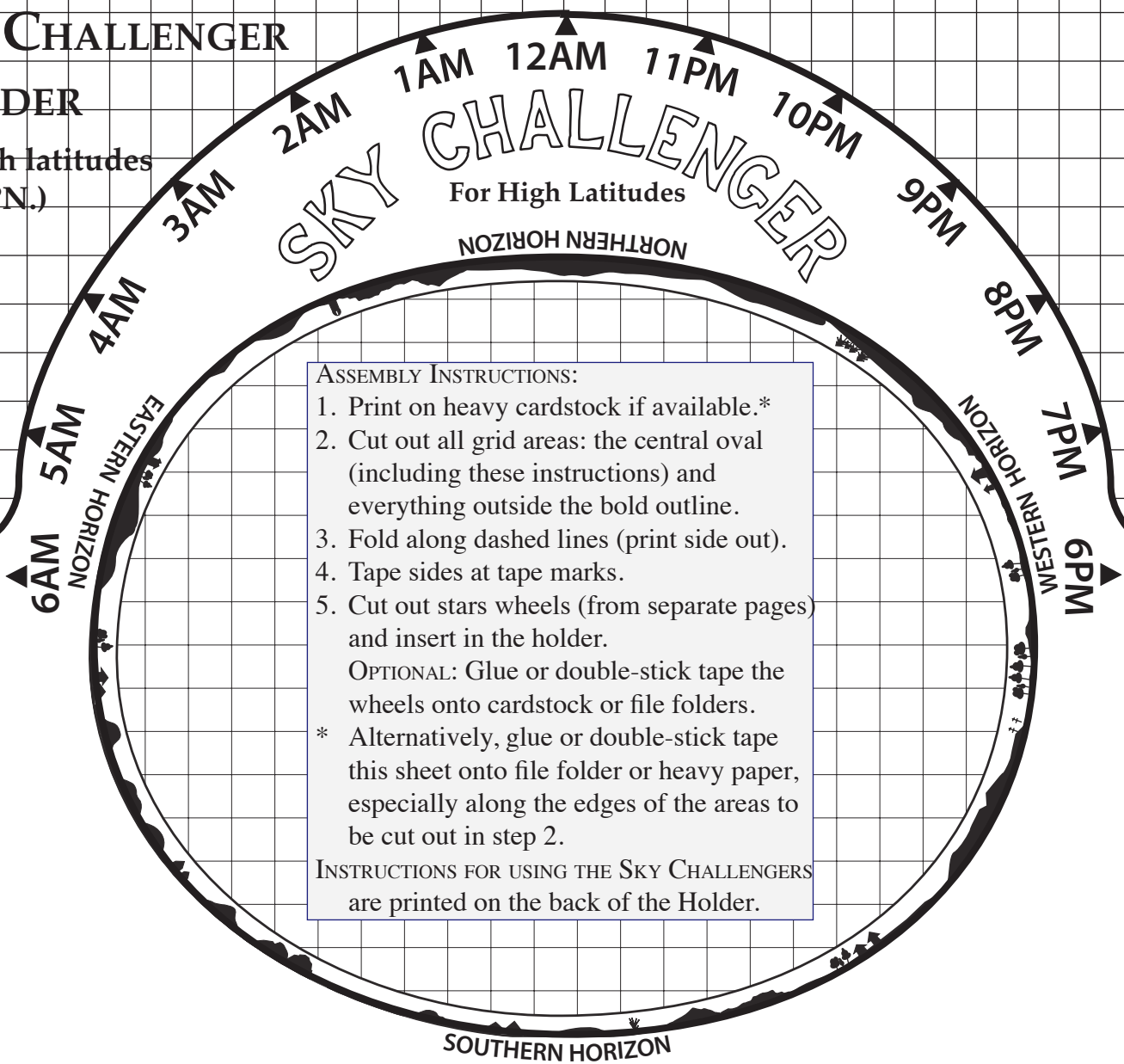
# SKY CHALLENGER

## HOLDER

for high latitudes  
(50-70°N.)

# SKY CHALLENGER

For High Latitudes



**ASSEMBLY INSTRUCTIONS:**

1. Print on heavy cardstock if available.\*
2. Cut out all grid areas: the central oval (including these instructions) and everything outside the bold outline.
3. Fold along dashed lines (print side out).
4. Tape sides at tape marks.
5. Cut out stars wheels (from separate pages) and insert in the holder.

OPTIONAL: Glue or double-stick tape the wheels onto cardstock or file folders.

\* Alternatively, glue or double-stick tape this sheet onto file folder or heavy paper, especially along the edges of the areas to be cut out in step 2.

INSTRUCTIONS FOR USING THE SKY CHALLENGERS are printed on the back of the Holder.

HOLDER FOR LATITUDES ABOUT 50°-70°N

Version: 2016

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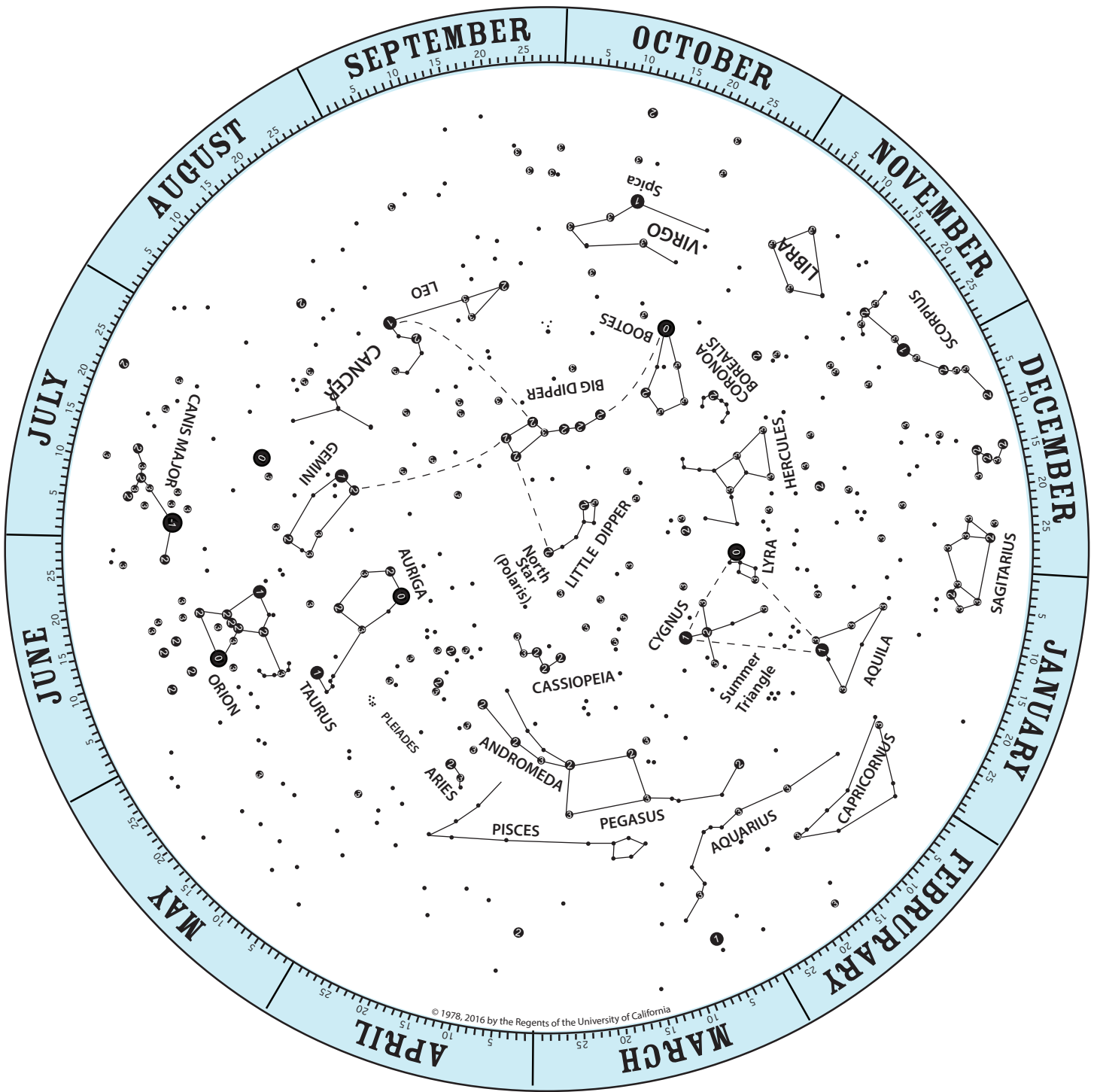
1. Align your date and time, and then look up at the sky
2. Locate the constellation you want to find on the map.
3. Turn your map so the horizon it is closest to is at the bottom.
4. The star positions in the sky should match those on the wheel.

## Instructions for Using Sky Challengers

Tape

Tape

# SKY CHALLENGER: INTRODUCTORY STAR WHEEL FRONT





## INTRODUCTORY STAR WHEEL

Try this wheel first to become acquainted with your Sky Challenger and the night sky.

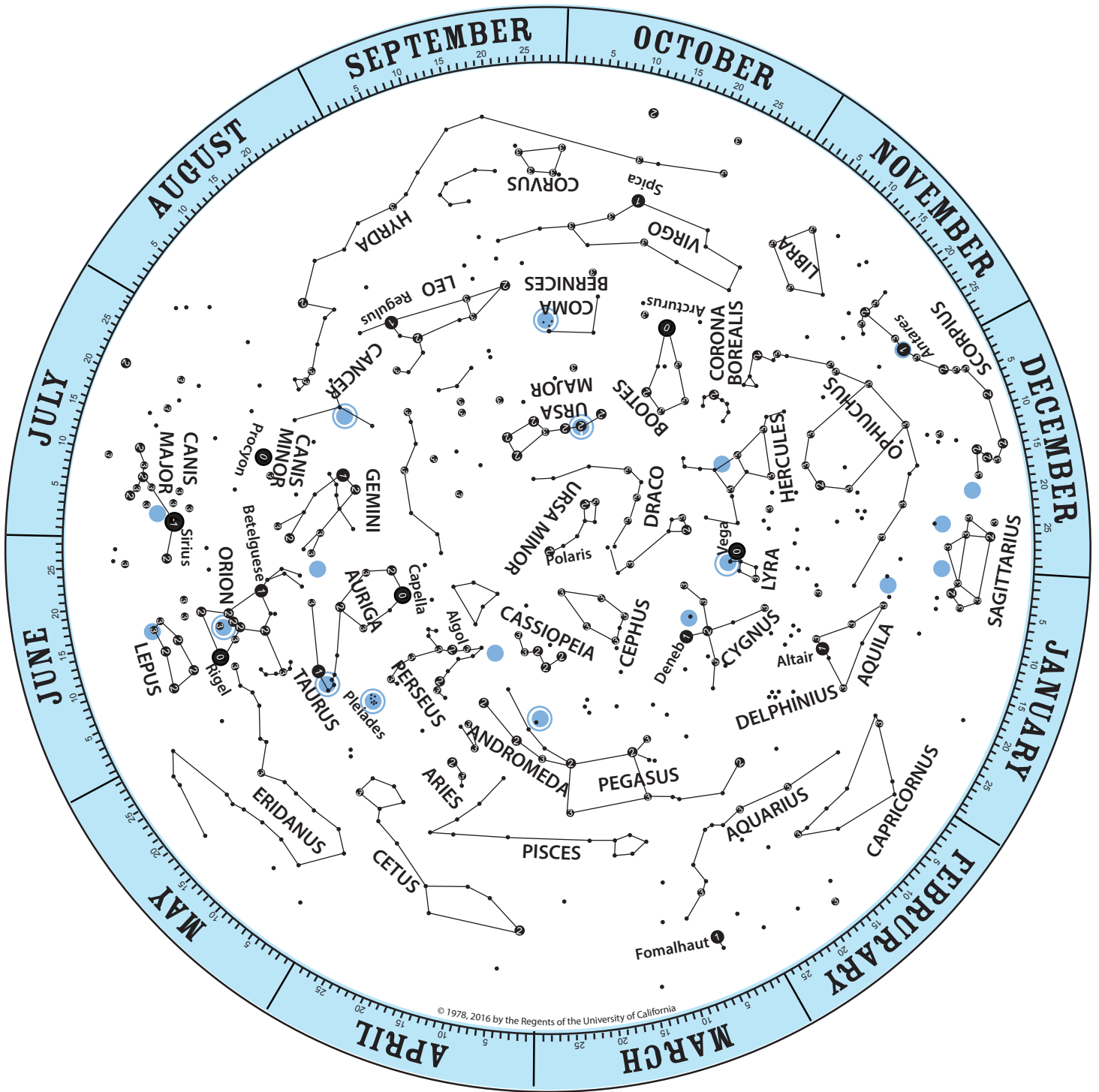
Notice the imaginary pointer lines that guide your way from the Big Dipper to the North Star and to other parts of the heavens.

Also helpful are the three bright stars that form the "summer triangle"--a good start for finding things during the warmer months.

How many of these constellations can you find?

# SKY CHALLENGER: BINOCULAR SKY TREASURE HUNT

## FRONT



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# SKY CHALLENGER: BINOCULAR SKY TREASURE HUNT

## BACK

**BINOCULAR SKY TREASURE HUNT**

Here's your treasure map to the heavens. Wherever you see a colored dot on the star map, there's something you won't want to miss. All you need is an ordinary pair of binoculars and a clear, dark night. The things that you'll be looking for are pictured around the edge of this wheel.

How many treasures can you find in tonight's sky? Happy hunting!

**Double stars** -- two stars that appear close together. Some revolve around each other, just like planets around our sun.

**Clusters of stars** -- Groupings of dozens up to several hundred stars.

**Globular clusters** -- Thousands of stars, closely packed of light through binoculars!

**Galaxies** -- Vast swarms of billions of stars located far outside our own galaxy, the Milky Way.

**Colored Stars** -- Stars come in a variety of colors, determined mostly by their temperatures.

**Nebulae** -- Glowing Clouds of gas and dust.

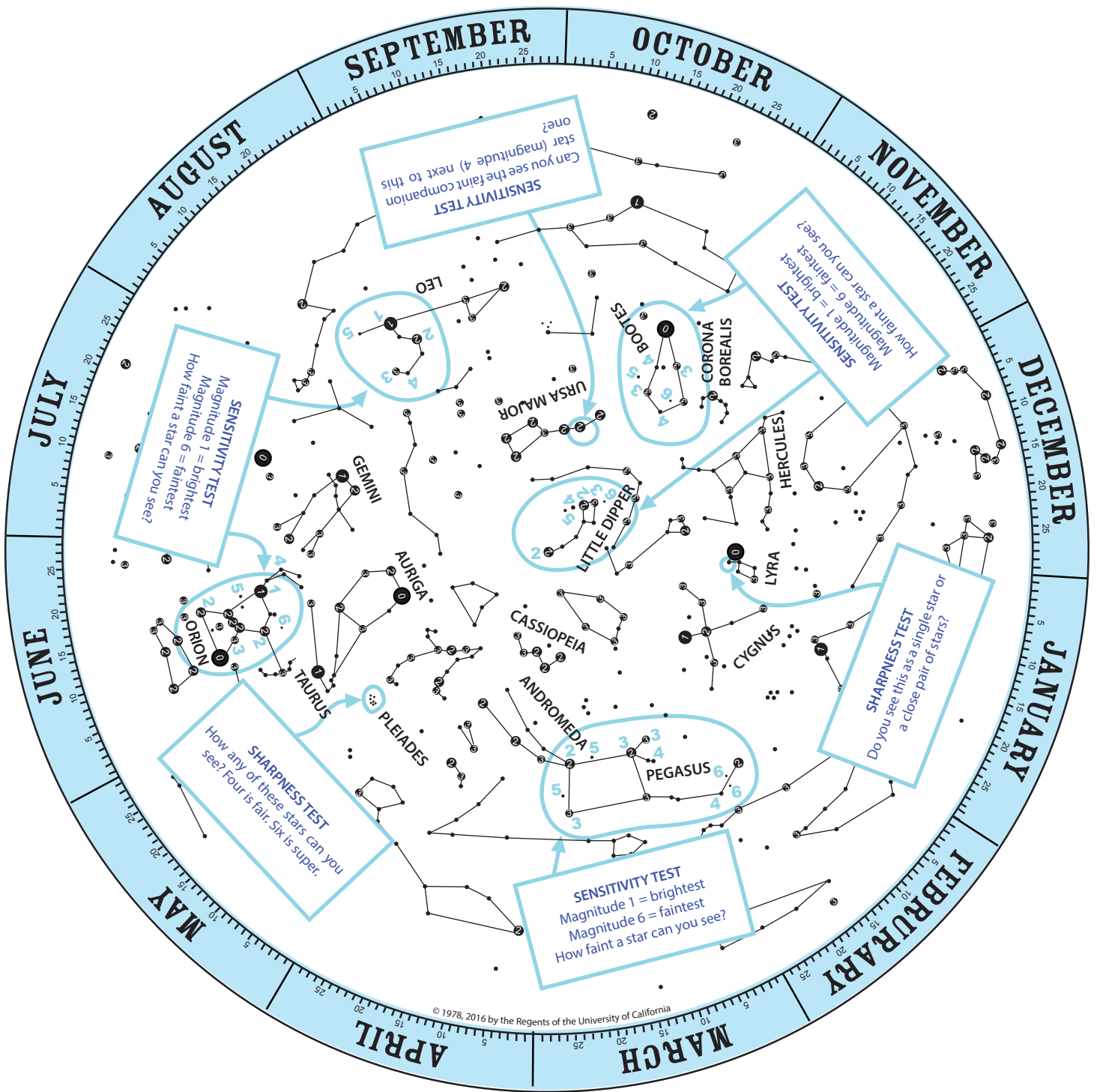
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**CONSTELLATIONS AND FEATURES:**

- SCORPIUS: cluster
- DRACO: double star
- HERCULES: globular cluster
- LIBRA: greenish star
- URSA MAJOR: double star
- CANCER: cluster
- CANIS MAJOR: cluster
- LEPUS: double star
- GEMINI: cluster
- AURIGA: clusters
- ORION: nebula
- TAURUS: nebula
- PLEIADES: cluster
- PERSEUS: cluster
- ANDROMEDA: double cluster
- CYGNUS: triple star
- CEPHUS: reddish star
- ANDROMEDA: galaxy
- AQUILA: globular cluster
- SAGITARIUS: cluster
- SAGITARIUS: globular cluster

# SKY CHALLENGER: TEST YOUR EYES, TEST YOUR SKIES

## FRONT



# SKY CHALLENGER: TEST YOUR EYES, TEST YOUR SKIES BACK

## TEST YOUR EYES

The ancient Greeks used the stars to test their eyesight. You can too. Try the simple tests shown on the other side of this wheel and compare with your friends.

**Sensitivity:** A measure of how faint a star you can see. (What happens to sensitivity after you star at a bright light?)

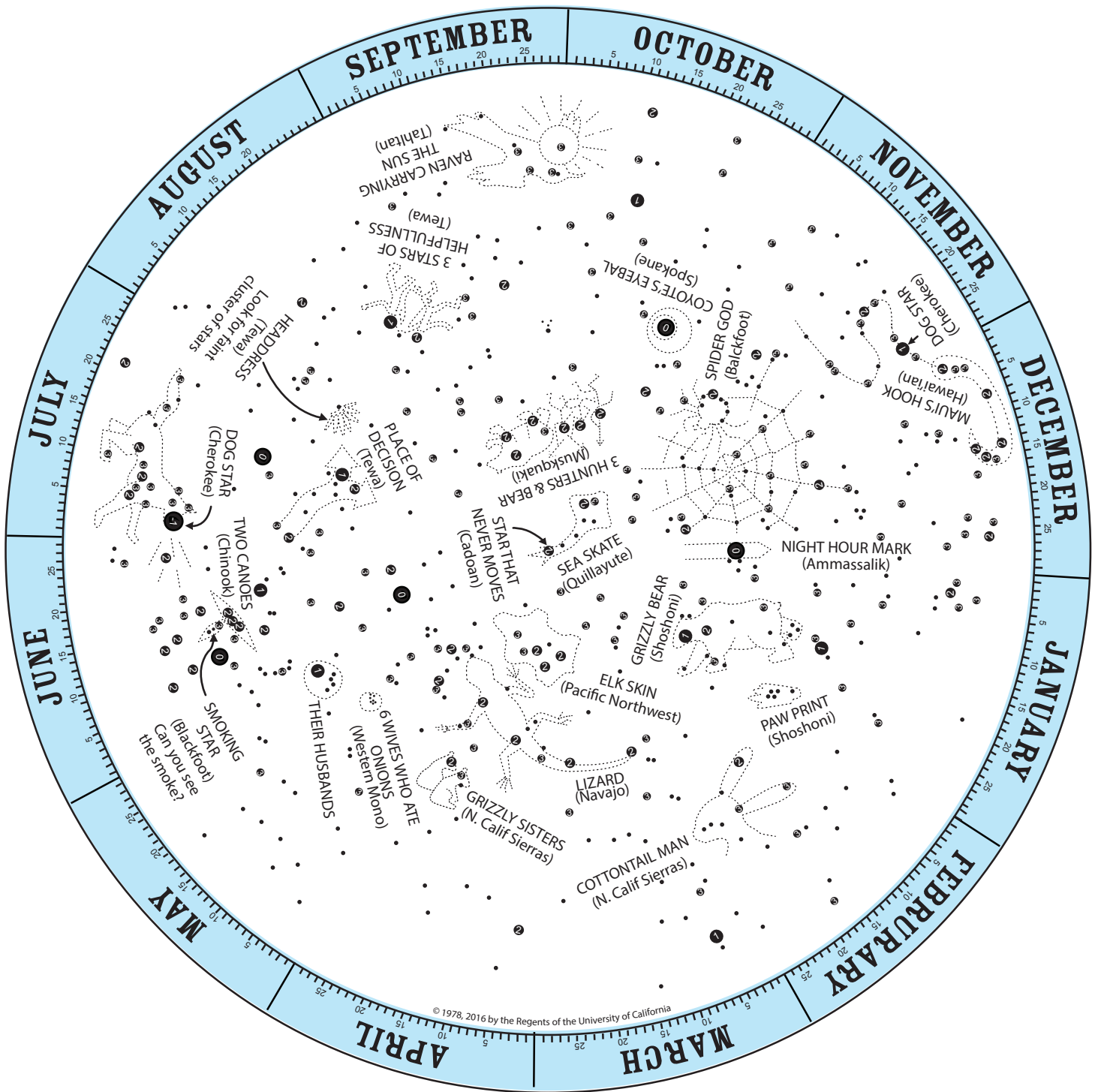
**Sharpness:** A measure of how clearly you can see.

## TEST YOUR SKIES

Some things that affect the night sky are city lights, a bright moon, turbulence, haze, smog and dust. Try the eyes tests on different nights and from different places. Keep track of your sky quality. Compare the view overhead with that near the horizon.

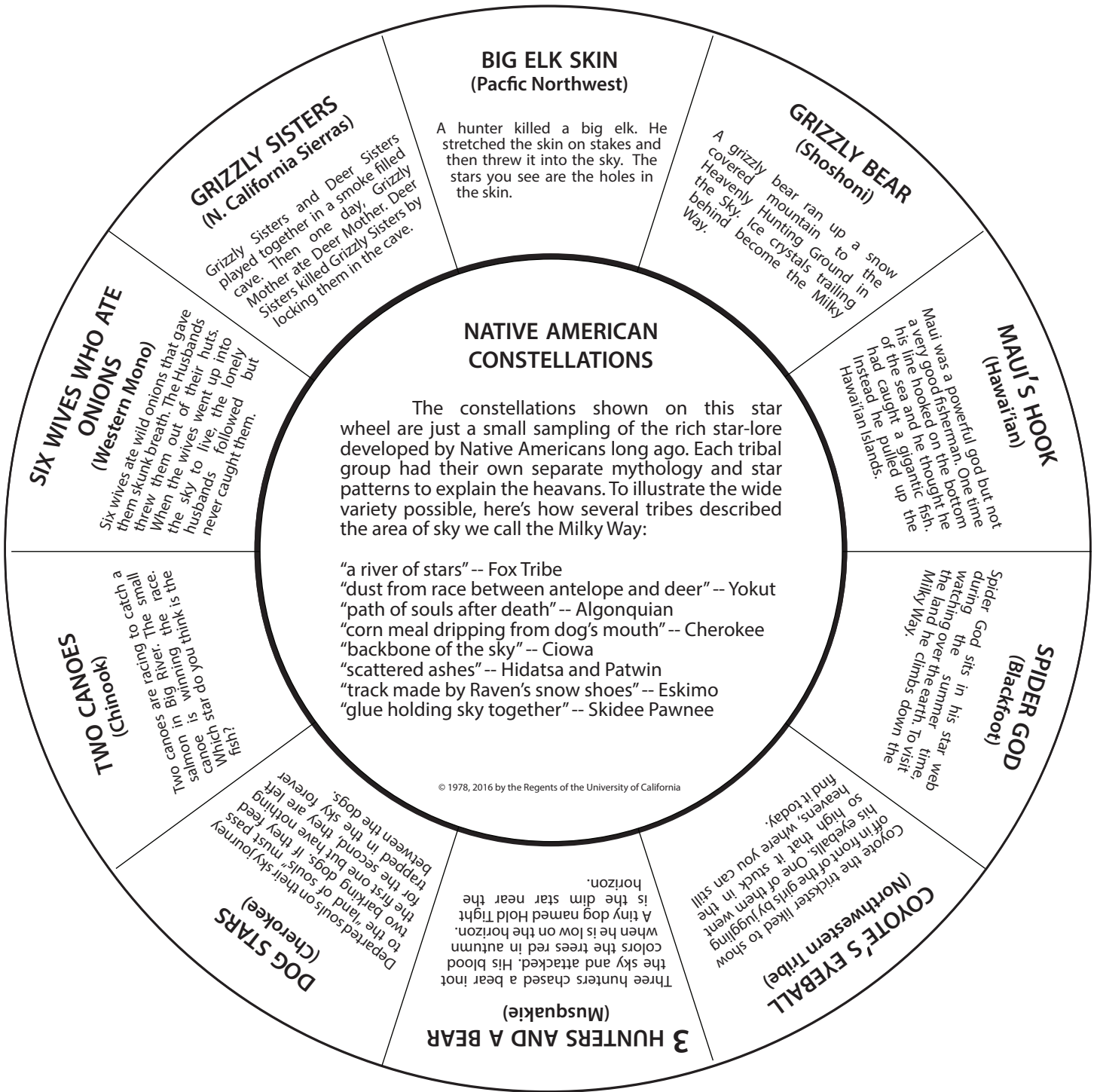


# SKY CHALLENGER: NATIVE AMERICAN CONSTELLATIONS FRONT



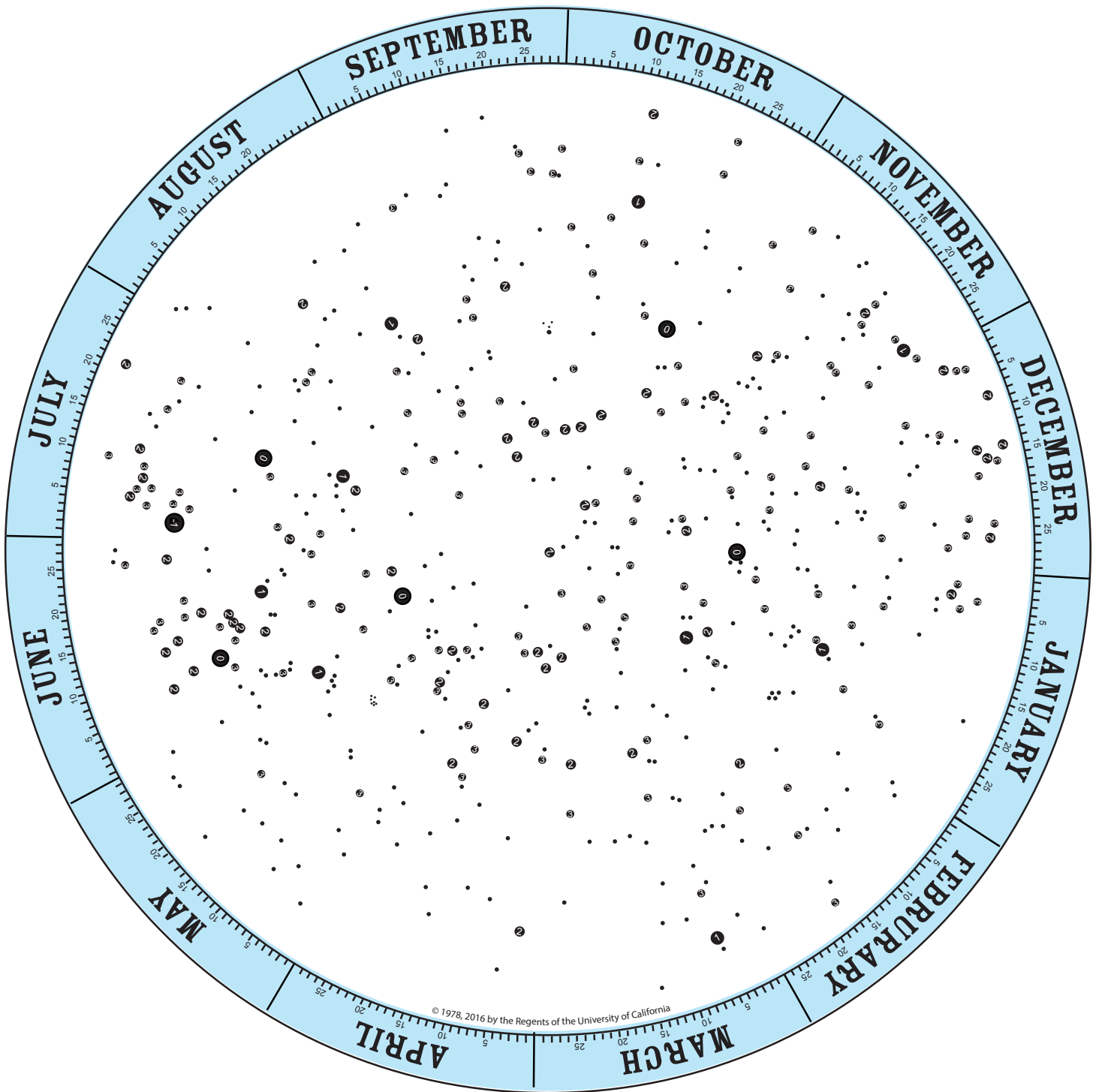
# SKY CHALLENGER: NATIVE AMERICAN CONSTELLATIONS

## BACK



# SKY CHALLENGER: INVENT YOUR OWN CONSTELLATIONS

## FRONT



# SKY CHALLENGER: INVENT YOUR OWN CONSTELLATIONS BACK

## INVENT YOUR OWN CONSTELLATIONS

There's no one correct way to draw the constellations. Here's a game for you and your friends to invent your own:

One player looks up at the stars and finds an imaginary object such as a bird or a walking crane. He or she draws it on this star wheel and says, for example, "I spy a bird."

The other players try to find the stars that form the bird. They can ask questions to get clues, but the lead player can answer only "yes" or "no."

When somebody guesses correctly, everyone draws the constellations on their wheel by connecting lines between the stars. The winning player takes the next turn at making up a constellation.

Use different stars each time.