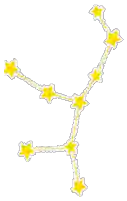


# Create a Star Wheel

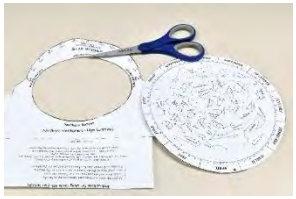
**Make a sky map and learn to identify constellations!**

**Materials Needed:**

Printout of star wheel circle and holder, scissors, tape or glue, crayons or colored pencils.

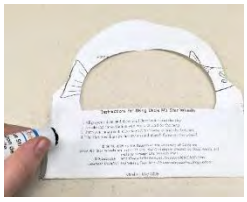
*Note:* The star wheel provided is for high latitudes, including Alaska. For star wheels designed for other latitudes, go to: www.lawrencehallofscience.org/do_science_now/science_apps_and_activities/star_wheels

**Instructions:**



**Step 1**: Cut out the star wheel circle and holder on the solid lines. Make sure to cut out the inside circle on the holder!

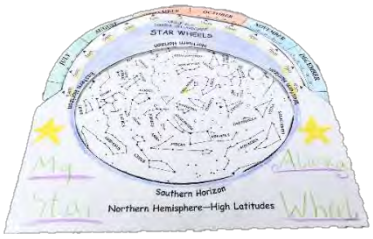
*Hint:* Glue the wheel and holder to cardstock to make it sturdier.



**Step 2:** Take the holder and fold along the dotted lines. Turn it over and glue or tape the edges.

**Step 3:** Place the star wheel inside the holder. Make sure it can rotate smoothly.

**Step 4:** Decorate your star wheel with markers, crayons, or other craft supplies. Be creative!




**Take your star wheel outside on a dark, clear night and look for constellations! Try observing the sky at different times of the night, or in different months. What do you see?**

## How To Use Your Star Wheel

- Turn the wheel to align the current month and date with the time of day.
- On the star wheel, locate the constellation you want to find.
- Turn the star wheel so that the horizon the constellation is closest to is on the bottom.
- Hold the wheel up to the sky. The star positions should match the wheel!

*Star Wheel Template courtesy of The Lawrence Hall of Science.*

UNIVERSITY OF ALASKA MUSEUM OF THE NORTH

# Stars and Constellations

*Night sky at Denali National Park.*
*NPS Photo / Jacob W. Frank*

For thousands of years, people have told stories about the patterns they see in the sky. A **constellation** is a group of stars that appears to form a pattern or picture. Although the International Astronomical Union recognizes 88 official constellations, cultures all over the world and throughout time have made different constellations from the same stars.

The 88 "official" constellations together cover all of the night sky. Astronomers consider any star within a constellation boundary to be part of that constellation, even if it is not part of the actual picture.

*Right: Image from NASA.*

**Did You Know?** An **asterism** is a group of stars that form a pattern, but is not one of the 88 official constellations. The Big Dipper is a well-known asterism; it is part of the constellation Ursa Major.

*Right: Image from Lunar & Planetary Institute.*

The stars appear to move in the sky because of the Earth's rotation. As Earth spins, the stars appear to move from east to west. If observed through the year, the constellations shift gradually to the west. This is caused by Earth's orbit around our Sun. In the summer, viewers are looking in a different direction than they are during the winter.


*Philips' Planisphere, ca. 1900.*
*H. Raab, Wikimedia Commons.*

One way to locate constellations in the sky is with a **star wheel** (also called a planisphere). A star wheel is a map of the sky that can be adjusted to display positions of the stars for a specific time and location. Since which stars you can see depends on your latitude, some star wheels are made for different locations.

## Discover More About Constellations:

www.youtube.com/watch?&v=1sZ15SUeS9w

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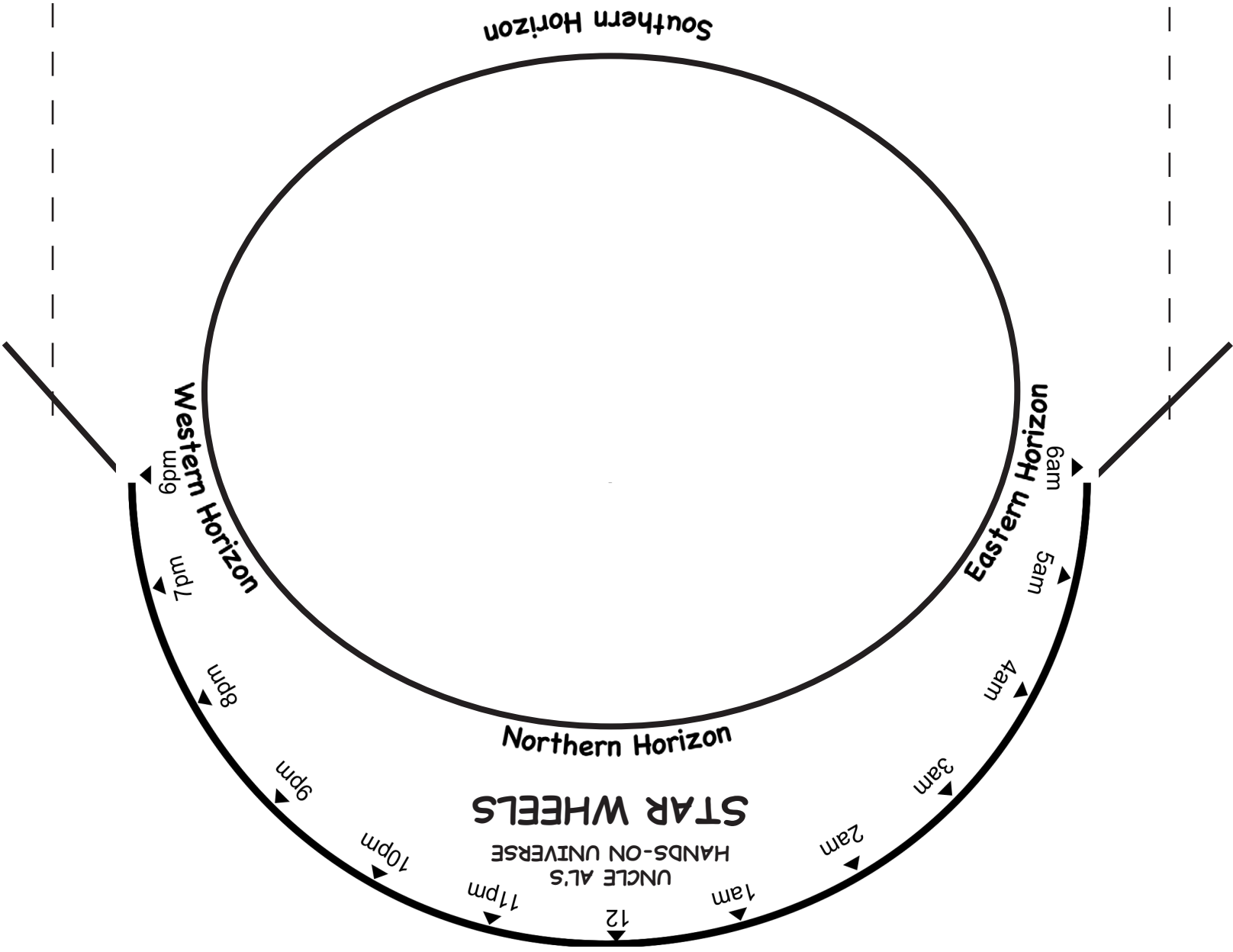
## Instructions for Using Uncle Al's Star Wheels

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.

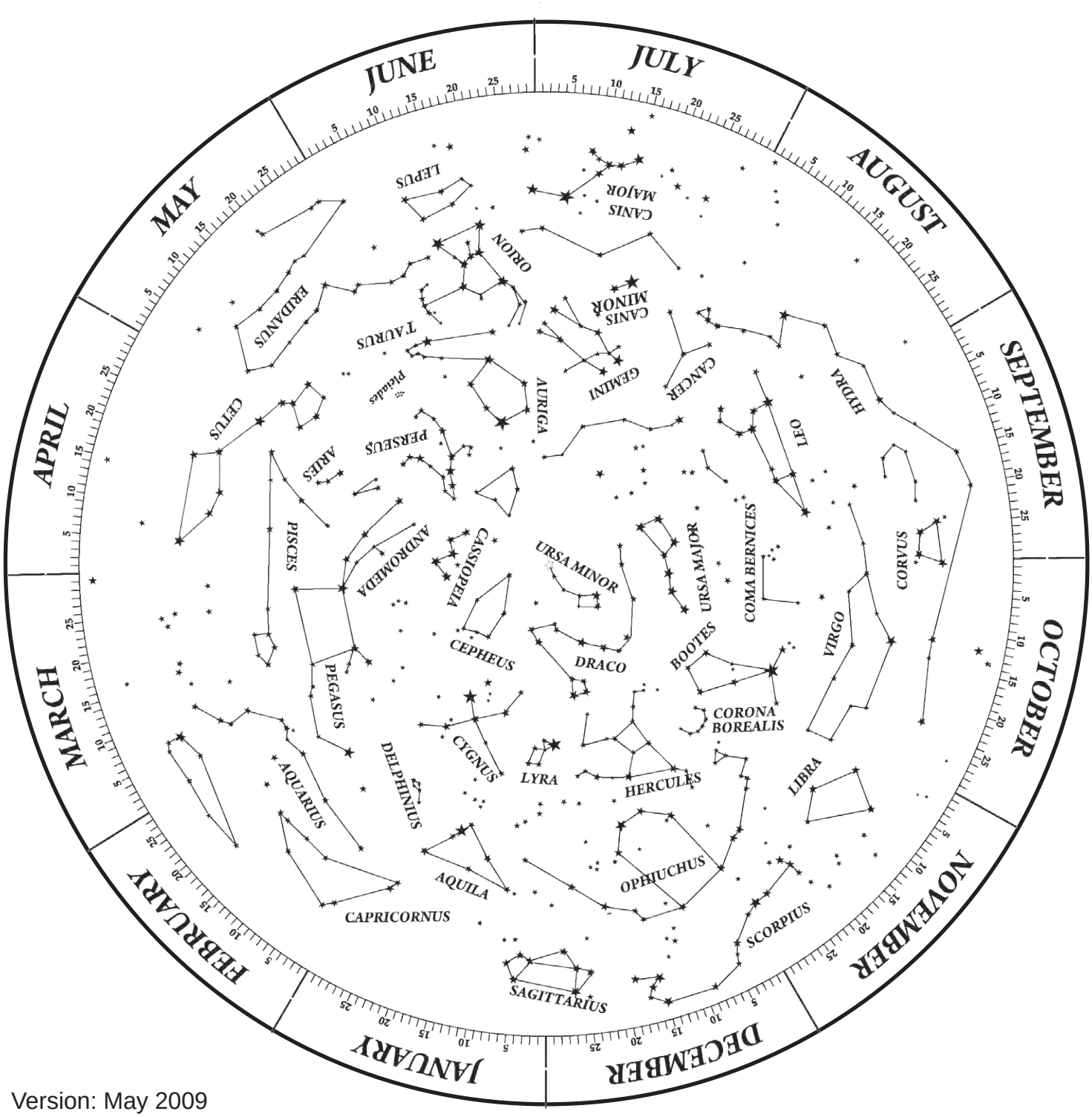

Uncle Al's Star Wheels are based on LHS Sky Challengers created by Budd Wentz and available through LHS Museum Store
510-642-1016 http://www.lhs.berkeley.edu/pass/ast110&111&121.html
Download Uncle'Al's Sky Wheels from http://lhs.berkeley.edu/hou/img/uncleal

Version: May 2009

Northern Hemisphere—High Latitudes




Star Wheel Holder




Version: May 2009

## INSTRUCTIONS FOR ASSEMBLING UNCLE AL'S STAR WHEELS

Step 1: Print out all pages either on heavy cardstock or paste them onto a file folder or any other sturdy piece of cardboard.

Step 2: Cut along the black outer circle of the Star Wheel and along the solid lines on the Star Wheel Holder. Remove the interior oval shape on the Star Wheel Holder.

Step 3: On the Star Wheel Holder, fold the cardboard along the dashed lines.

Step 4: Tape or staple along the edges of the Star Wheel Holder forming a pocket.

Step 5: Place the Star Wheel in the Star Wheel Holder.



Uncle Al's HOU Star Wheels are based on LHS Sky Challengers created by Budd Wentz and available through the LHS Discovery Corner Store 510-642-1016

http://lhs.berkeley.edu/pass/AST110&111&121.html

Download Uncle'Al's Sky Wheels from http://lhs.berkeley.edu/starclock/skywheel.html