**Making the Star Wheel**

For the sky map (Part 1), trim away the gray corners so that you're left with a circle 8 inches across.

For the outer sleeve (Part 2), make sure you keep the large white rectangle at the bottom; also, cut out the white oval in the middle.

To assemble your Star Wheel, fold the white rectangle at the bottom of the outer sleeve so it's underneath the front. Then staple the rectangle to the front at the locations marked by short white lines to either side of the oval. Now slip in the circular sky map so it shows through the oval. That's it!

**Using the Star Wheel**

Pick the date and hour you want to observe and set the Star Wheel so this date (on the rim of the circular disk) matches the time indicated along the edge of the outer sleeve. Use white hours when standard time is in effect and orange hours when clocks are set for daylight-saving (summer) time.

The Star Wheel's large oval shows the whole sky, and the oval's curved edge represents the horizon you're facing. Once outside, hold the Star Wheel out in front of you and look at the yellow "Facing" labels around the oval. Turn the entire wheel so that the yellow label for the direction you're facing is on the bottom, with the lettering right-side up. If you're unsure of your directions, just remember where the Sun sets; that's west.

Now the stars above the map's horizon should match the real stars in front of you. Remember that star patterns will look much larger in the sky than they do on the map. The farther up from the edge of the oval the stars appear, the higher up they'll be shining in your sky. Stars in the center of the oval will appear directly overhead.

This Star Wheel is usable for northern latitudes between 30° and 50°, which covers virtually all of the continental U.S., southern Canada, and Europe. It includes the names of the brightest stars and the most prominent constellations. Depending on how dark the sky is in your area, there may be more stars overhead than are shown on the map. Everyone's sky looks a little different. If there are fewer stars visible to you than appear on the Star Wheel, try to find an observing site that is not flooded by house or streetlight. Also, the longer you're outside, the better the chance that your eyes will adapt to the darkness and the more stars you'll be able to see.

Stars in the northern sky do not rise or set — instead, throughout the night they seem to slowly turn counterclockwise around Polaris, the North Star, which seems to stay in the same place in the sky no matter what time of night or season of the year. So let's find the North Star!

Begin by locating the Big Dipper. This giant spoon is actually part of a larger constellation called Ursa Major, the Great Bear. Find the two end stars in the Dipper's bowl — look opposite the handle. They're known as the "pointers." Why? Because a line drawn between them and extended away from the bottom of the bowl leads you to Polaris, the North Star. Now that you know how find Polaris, you also know how to find due north no matter where you are in the Northern Hemisphere!

The Moon and planets aren't shown on the map because their day-to-day movements are more involved than the motions of the stars. However, the curved line coursing across the map is called the *ecliptic*. It represents the path in the sky that brightest planets follow. If you see a bright "star" shining with a steady glow on or near this curved line, and the object isn't plotted on the Star Wheel, you're looking at a planet. The Moon likewise travels very near the ecliptic in its orbit around Earth.

No matter how well you know the sky, you'll find that a star wheel (sometimes called a *planisphere,* comes in handy for a quick check of "what's up" on any given night.