

# Make a Planisphere

A planisphere is a simple hand-held device which shows a map of which stars are visible in the night sky at any particular time. By rotating a wheel, it shows how stars move across the sky through the night, and how different constellations are visible at different times of year.

The planisphere presented in this document is designed for use at a latitude of 55° N.

## What you need

- Two sheets of A4 or letter-size paper, or preferably thin card.
- Scissors or Exacto knife.
- A split-pin fastener
- Tape or glue
- Optional: one sheet of transparency, e.g. acetate designed for use with overhead projectors.

## Assembly instructions

Step 1 Print the pages at the back of this PDF which show the star wheel and the body of the planisphere, onto two separate sheets of paper, or more preferably onto thin card.

Step 2 Print the page showing the asterisk in the center of a circle on a transparency (optional).

Step 3 Cut out the star wheel and the body of the planisphere. Also cut out the shaded grey area of the planisphere's body, and optionally, the ellipse with the asterisk in the middle.

Step 4 The star wheel has a small circle at its center, and the planisphere's body has a matching small circle at the bottom. Make a small hole (about 2mm across) in each.

Step 5 Slot a split-pin fastener through the middle of the star wheel, with the head of the fastener against the printed side of the star wheel. Then slot the body of the planisphere onto the same fastener, with the printed side facing the back of the fastener. Fold the fastener down to secure the two sheets together.

Step 6 If you printed the final page of the PDF on a transparency sheet, you should now stick this grid of lines over the viewing window which you cut out from the body of the planisphere.

Step 7 Fold the body of the planisphere along the dotted line, so that the front of the star wheel shows through the window which you cut in the body.

## How to use your planisphere

Turn the star wheel until you find the point around its edge where today's date is marked, and line this point up with the current time. The viewing window now shows all of the constellations that are visible in the sky.

Go outside and face north. Holding the planisphere up to the sky, the stars marked at the bottom of the viewing window should match up with those that you see in the sky in front of you.

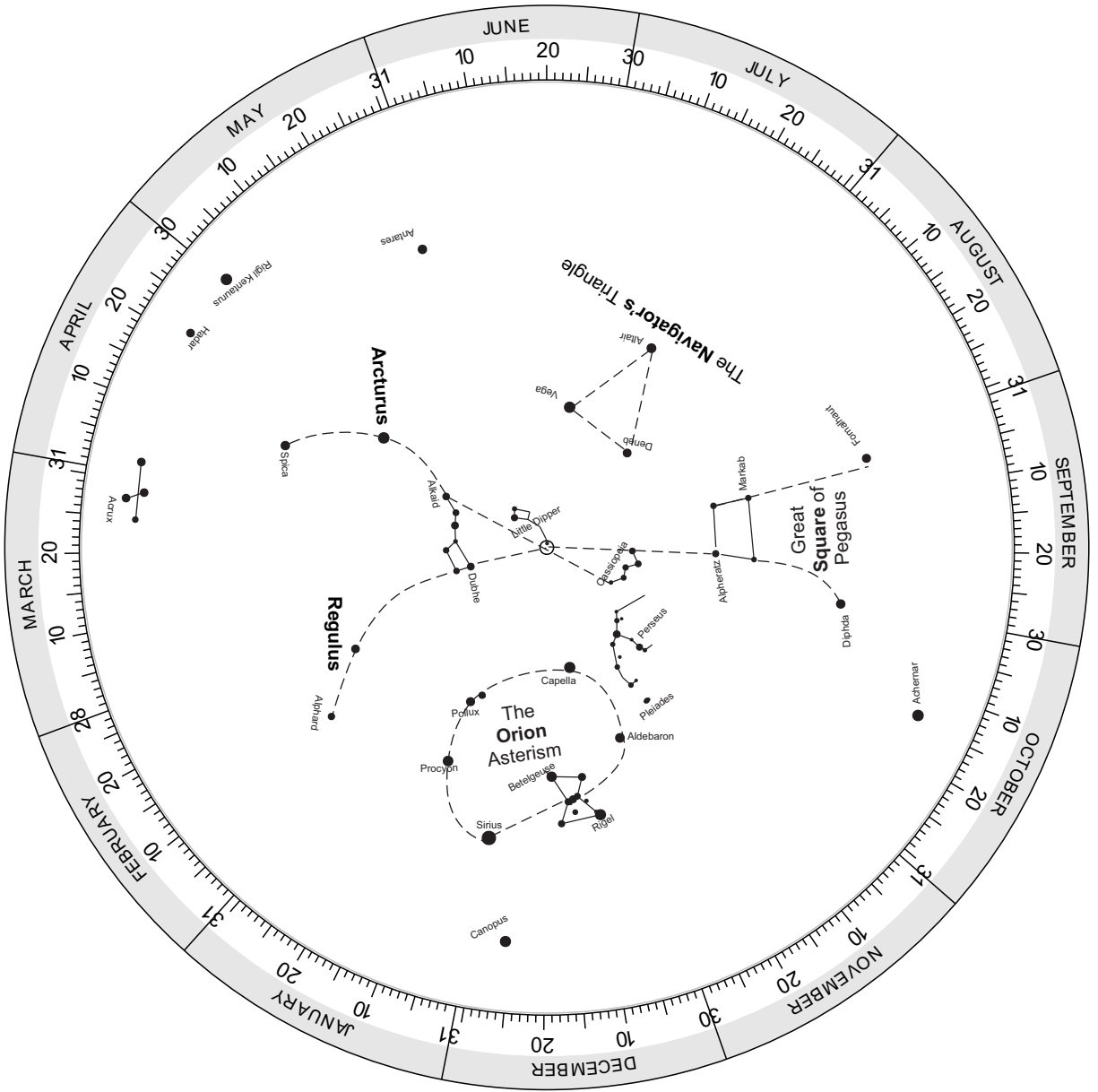
Turn to face east or west, and rotate the planisphere so that the word "East" or "West" is at the bottom of the window. Once again, the stars at the bottom of the viewing window should match up with those that you see in the sky in front of you.

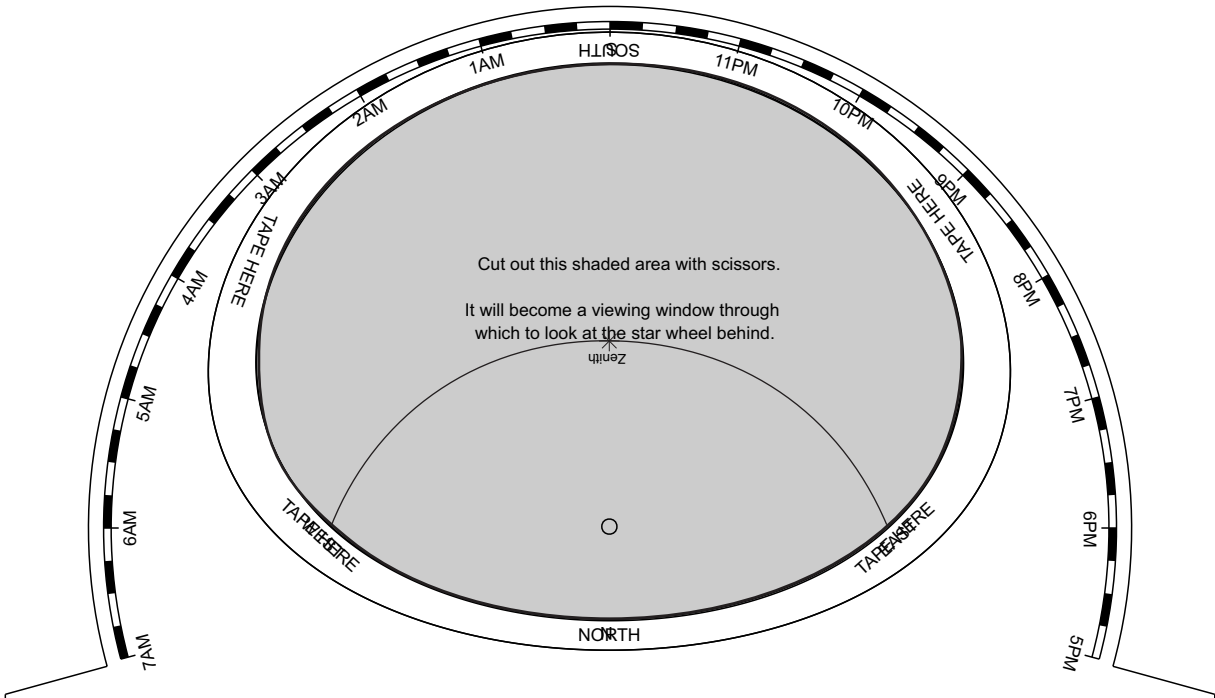
If you printed the sheet with the asterisk onto transparent plastic, it will show you where your zenith is — the point which is directly over your head.

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Original planisphere, with full constellations © 2014-2021 Dominic Ford. Distributed under the GNU General Public License, version 3.

Modifications to transform this into a planisphere optimized for navigators © 2021 Bob Goethe. Also distributed under the GNU General Public License, version 3.





# PLANISPHERE 30°N

1

Turn the starwheel until you find the point around its edge where today's date is marked, and line this point up with the current time. The viewing window now shows all of the constellations that are visible in the sky.

2

Go outside and face north. Holding the planisphere up to the sky, the stars marked at the bottom of the viewing window should match up with those that you see in the sky in front of you.

3

Turn to face east or west, and rotate the planisphere so that the word "East" or "West" is at the bottom of the window. Once again, the stars at the bottom of the viewing window should match up with those that you see in the sky in front of you.

Original planisphere © Dominic Ford 2021. Navigation-specific modifications © 2021 Bob Goethe.

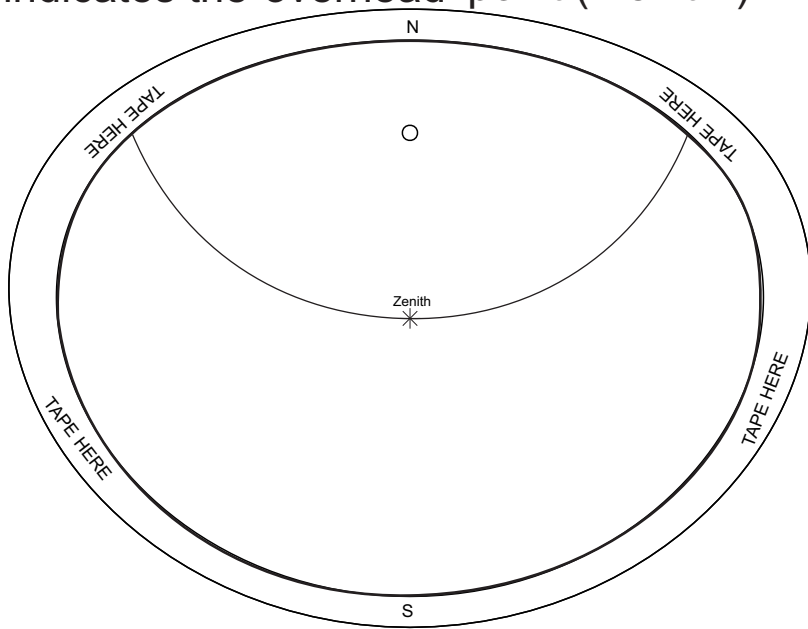
© Dominic Ford 2021.

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The constellations of the night sky revolve around the celestial poles once every 23 hour and 56 minutes. The idea of representing the night sky as a flat map, which is turned to emulate the night sky's rotation, dated back to the ancient Greek astronomer Hipparchus (circa 150 BC). The fact that this rotation takes four minutes less than the length of a day means that stars rise four minutes earlier each day, or half-an-hour earlier each week. Through the year, new constellations become visible in the pre-dawn sky, and disappear into evening twilight.



Tape this shape to the open window. It indicates the overhead point ("zenith").

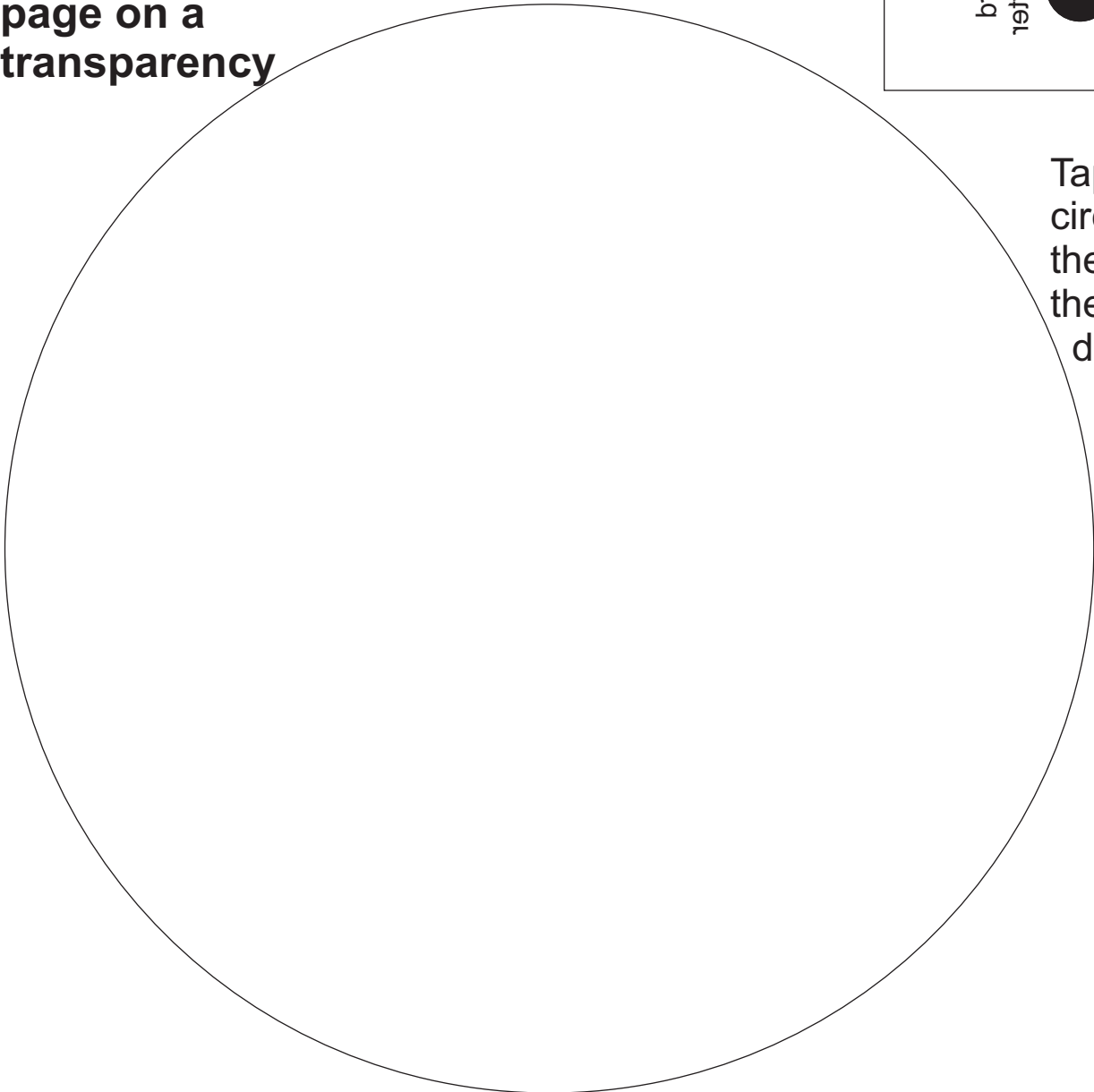


**Print this page on a transparency**

Correction 21st/22nd Time to 2nd/3rd Time =

**Moon Phases**

Moon New	
Moon First	
Moon Full	
Moon Third	



Tape this circle to the top of the star disk for marking position of planets.