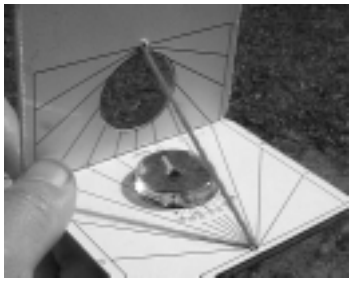
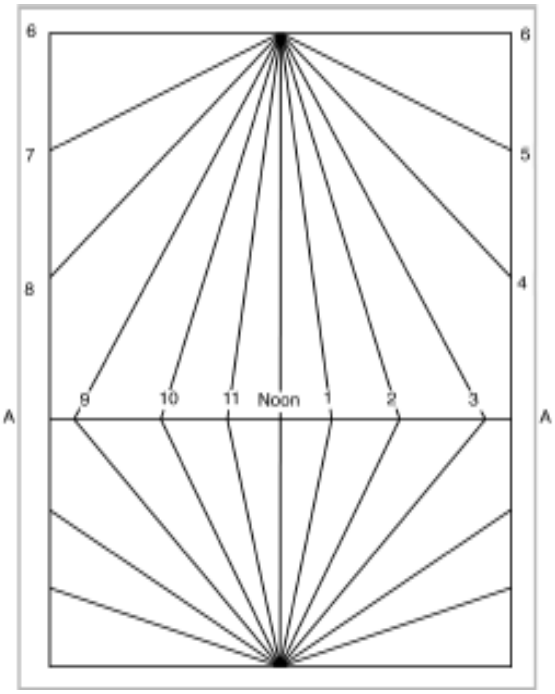
Make a sundial. Photocopy the template below. Cut out the area inside the grey rectangle. Mount on a backing that will keep it rigid. Fold along the line A-A. The plate with the numbers has to be level, with the noon line pointing true north (compass bearing 168˚). The back plate is to be at right angles to the base plate. Stretch a string between the two points where the lines intersect. The sun will then cast a shadow, indicating local time. This sundial is made for latitude 33˚ south. Used with a compass it can be portable.





Make a Planisphere

(Planisphere, a map of the celestial sphere with a device for indicating the part visible at a given time). Use this planisphere to help locate and identify some of the brightest stars and constellations.

Notice the following. Achernar, Canopus and the South Celestial Pole form an equilateral triangle. The southern Cross points both to the South Celestial Pole in one direction and Corvus in the opposite direction. The

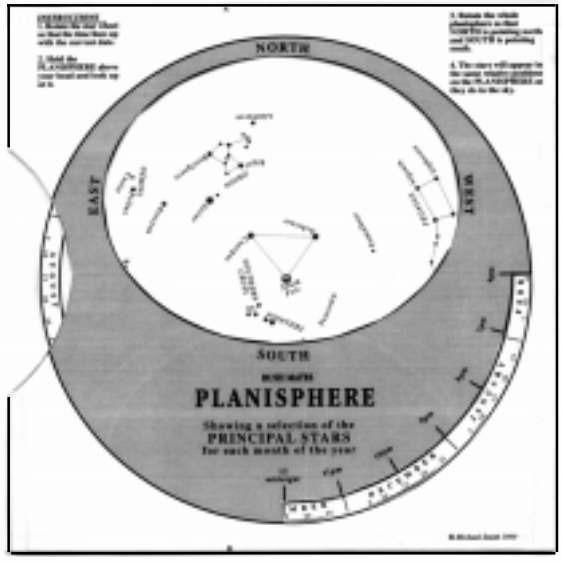
How to assemble your Planisphere

Pointers point to the top of the Southern Cross. The South Celestial Pole is mid way between the Southern Cross and Achernar. The kit consists of 3 parts, the top piece, the star wheel and the back piece.

Photocopy the kit on the next 3 pages. Glue the photocopied pages on to thin cardboard. Trim and cut each page according to the instructions on that page. Don't forget to cut out all the windows in the top piece. Make a pin hole in the centre of both the "star wheel" and the "back piece". Push a pin through these two holes and keep the pin in place with a piece if cork at the back. The wheel should be able to rotate easily.

With sticky tape, join the top piece to the back piece by lining up the A on the back piece with the A on the top piece and taping over the edge. The B on the back piece should align with the B on the top piece. You should end up with the star wheel inside a pocket. Tape up the remaining edges, leaving the exposed portion of the star wheel free to rotate.

Wait until dark.



Cut out this square and discard the rest

A

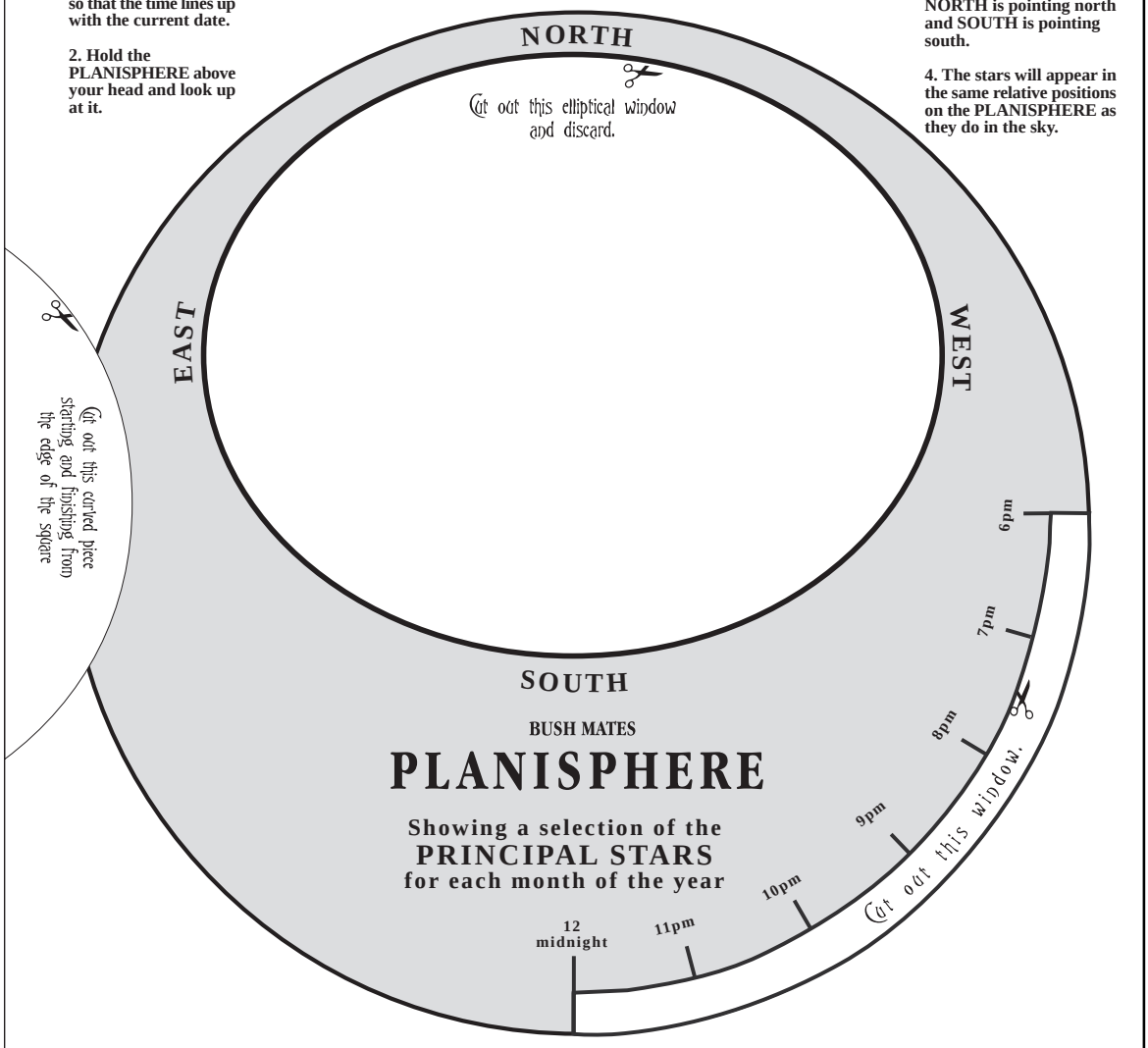
INSTRUCTIONS

1. Rotate the star wheel so that the time lines up with the current date.

2. Hold the PLANISPHERE above your head and look up at it.

3. Rotate the whole planisphere so that NORTH is pointing north and SOUTH is pointing south.

4. The stars will appear in the same relative positions on the PLANISPHERE as they do in the sky.

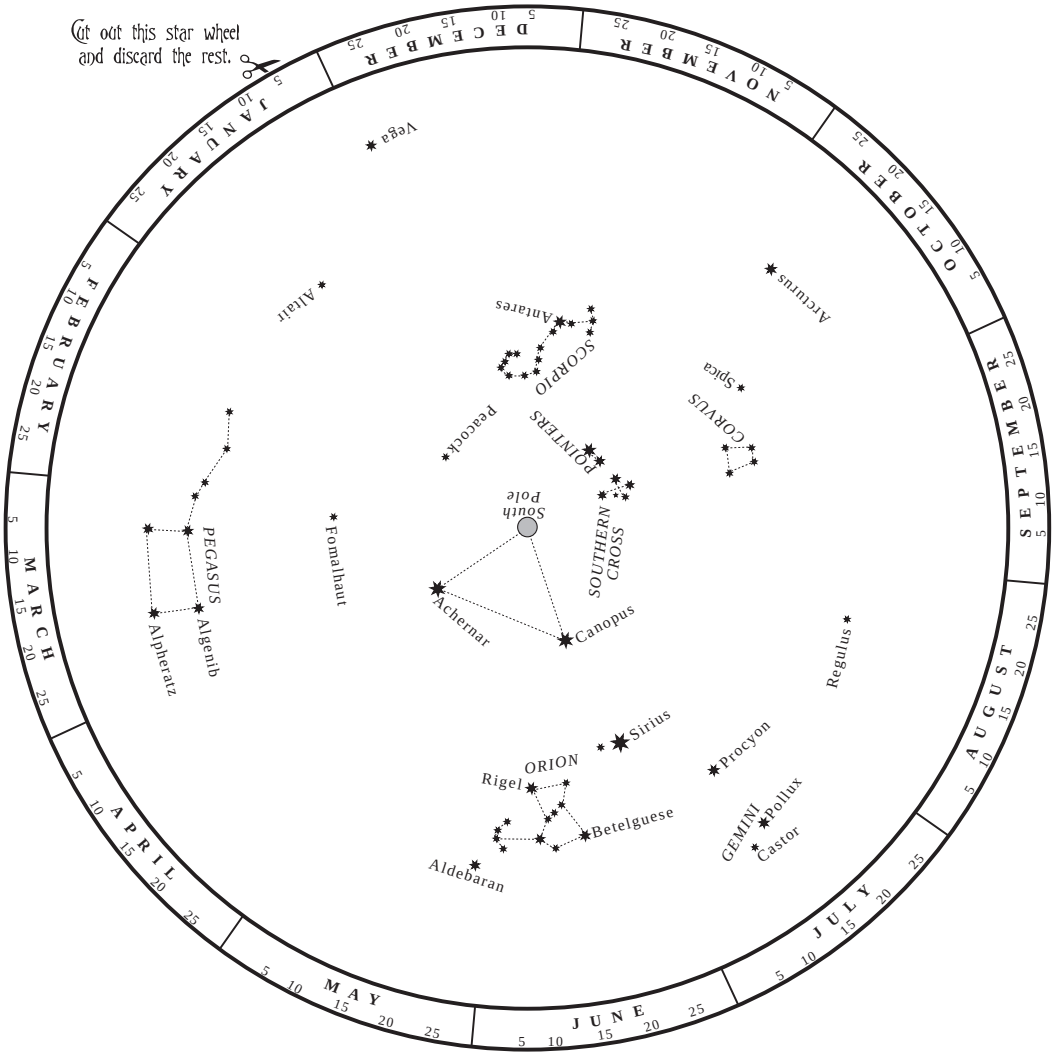


BUSH MATES

PLANISPHERE

Showing a selection of the PRINCIPAL STARS for each month of the year

B



PLANISPHERE
STAR WHEEL

Cut along this line from one edge of the page to the other, and discard the top portion.

A

Cut out this curved piece starting and finishing from the edge of the square

B

PLANISPHERE

BACK PIECE