



FRAME SHEET

CONSTELLATION DISC



INSTRUCTIONS TO ASSEMBLE AND USE A "HOME-MADE" PLANISPHERE

REQUIREMENTS:

Two sheets, one being called the Frame Sheet and the other The Constellation Sheet (as supplied).

3 pieces of card (and/or cardboard) each of which is at least the size of the sheet outlines.

A paper fixing tag of the type with fold back "wings" that can be pushed through the pieces of card to allow one piece to rotate relative to the other.

Scissors and/or cutting knife, glue and/or staples.

A thicker card will give a more durable planisphere but may be more difficult to cut-out and use.

The card from a cornflakes or soap powder packet could be used.

ASSEMBLY:

- (1) It is recommended to do a "dry run" of the construction, to familiarise oneself with the details, before getting others to do larger numbers.
- (2) Cut out the round **Constellation Disc**. This will be called **C**.
- (3) Glue it onto a strong piece of card and trim edges of card to match the paper disc **C**.
- (4) In the centre of this disc is a small dotted ring. Make a small hole here. Put this card to one side.
- (5) Cut out the **Frame Shape**. This will be called **F1**.
- (6) Glue this cut out shape (**F1**) onto a piece of card. This will still be called **F1** and again cut round the shape so that the card matches the paper.
- (7) Using **F1** as the outline shape cut another **Frame Shape** from the third piece of card. This will be called **F2**.
- (8) Place the Constellation Disc (**C**) evenly on top of card **F2**. Make a small hole in **F2** to match the hole position in **C**.
- (9) Push the paper fixing tag through the two holes and fasten at the back of **F2**.
- (10) Take card **F1** and cut out the shaded areas. They are the four strips and the oval centre piece. Help might be required from an adult to do this. Pointed scissors are an asset.
- (11) Place this last piece of card (**F1**) on top of **C** and **F2** so that the four corners (marked **N**, **S**, **E**, **W**) are matching and **C** is in the middle.
- (12) Glue and/or staple the corners **ONLY** above the letters **N**, **S**, **E**, **W** allowing the Constellation Disc (**C**) to rotate freely.

USE OF PLANISPHERE:

- (1) The **Planisphere** can then be used by rotating the Constellation Disc so that the required time and date of observation coincide on the outside edge of the Planisphere.
- (2) Hold the Planisphere overhead, with the map side downwards, and the exposed oval area will show the constellations that are visible at that particular time relative to where you are looking.
- (3) The Planisphere should be aligned correctly to the compass points for correct operation and these are shown on the Planisphere by the **N**, **S**, **E** and **W** markings.
- (4) The centre of the "cut-out" oval corresponds to the zenith (the part of the sky that is directly overhead - hence the reason for holding the Planisphere as suggested in (2)). The centre of rotation of the Constellation Disc corresponds to the Pole Star (called Polaris) which is the effective point of rotation of the sky background relative to the Earth.