# INVESTIGATE: MEASURE THE SIZE OF A PLANET
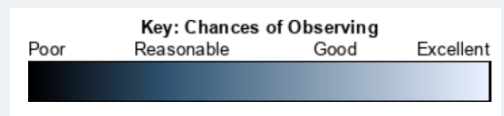
## Take your observation:

**Step 1**. Log in to The Schools' Observatory website.

**Step 2.** Head to **Go Observing** and select **Planets** from the first page.

**Step 3.** Select the **'How Big?'** option.

**Step 4.** The next screen will confirm that you want to measure the size of a planet; to proceed press **continue**.

**Step 5.** The screen will show you a selection of planets. Use the **'Chances of Observing**' colour bar to see which planets can be observed over the next few months.

**Key: Chances of Observing**

| Poor | Reasonable | Good | Excellent |

**Step 6.** Choose a planet from the list by clicking on its name.

**Step 7.** On the next screen, you will receive confirmation of the telescope request. Click on the **'Submit Observations**' button.

## Open your observation:

**Step 1.** Log into The Schools' Observatory website and head to Go Observing>**My Observations.** Once the observation is ready the **status** will update.

**Step 2.** Find your planet request and click **View Image** to open the observation details window.

**Step 3.** Select the option to **View Image** - this will open your observation directly into the AstroLab software.

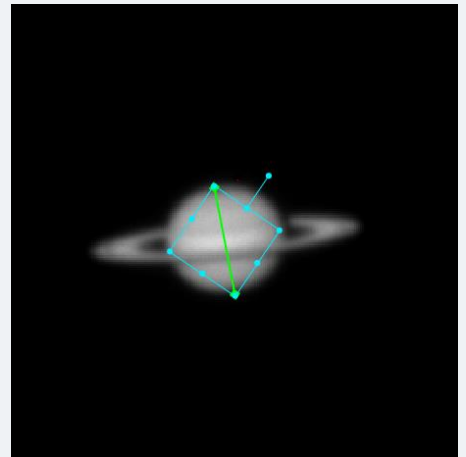AstroLab
*FITS in a browser!*

# Measure the size:

**Step 1.** Using Astrolab, zoom in on the planet by choosing **Display>Zoom in** from the menu bar.

**Step 2.** Centre the planet in your window by dragging the blue box in the top left panel over your planet.

**Step 3.** Select the **Astro>Measure Size** option from the menu bar.

**Step 4.** Select the option to **'Add Line**'.

**Step 5.** Move the line by adjusting the blue box until the green line reaches from one side of your planet to the other.

**Step 6.** Look back in the Measure Size toolbox. The software will tell you how long the line is in pixels. It also tells you the distance each pixel is equal to, this is the pixel scale. Make a note of both values.

Length of line

Pixel scale

**Step 7.** To work out the size of your planet, multiply the length of the line in pixels and the pixel scale to get the size of your planet. Don't forget to include the units.

Size of planet

$$Length\ of\ line\ \times Pixel\ scle = Real\ size\ (km)$$