

# DAY in the LIFE of an Astronomer

Astronomers are cosmic detectives!

They observe the cosmic clues left by the universe, create evidence boards of all the facts and then come to conclusions about the mysteries of the universe.

They use the most powerful telescopes ever built as their magnifying glasses and use computers as their evidence boards to search for these hints across the cosmos.

Today, you are a professional astronomer!

**Aim:** To learn to use the software applications used by astronomers to study the universe. We will study the galaxy M66 in the neighbourhood of the Milky Way.

**Step 1:** Use DS9, a software used for looking at astronomical images, as your magnifying glass. Go to directory <directory name> on your computer and click on the file <filename.fits>. This will open the image on DS9.

**Step 2:** Click on 'Edit' on the panel above the image and select 'pan'. To move around in the image, select any region by hovering your mouse there and tap there. To zoom in, with two fingers on the trackpad, gently pull them apart and this should zoom in. Try to look at different regions in the galaxy and make a list of what you see.

**Step 3:** Estimate how many stars are visible in this image. 1,000 stars? 10,000? 100,000? 1,000,000? Write your estimate \_\_\_\_\_.

**Step 4:** What do you see if you alter the brightness of the image. Go to 'Scale' on the top panel. Select 'scale parameters'. This will open a small window with a graph. In the 'High' tab, choose a number above the number that is default. Try to experiment with that number and note down what you see. \_\_\_\_\_

**Step 5:** Let's code to find stars!

**Conclusion:** We found \_\_\_\_\_ stars in the M66 galaxy.