

SESSION 1: ASTEROID HUNT



Asteroids are large rocks orbiting the Sun that are too small to be called planets. Using images from the Liverpool Telescope (shown on the inside cover of this booklet) you can join the hunt for asteroids. By looking at two images taken by the telescope a short time apart, you might be able to spot an asteroid moving. This is because asteroids appear to move across the sky relative to the far away objects and stars that look fixed.



LOG ON TO OUR WEBSITE

1. Go to our website: www.schoolsobservatory.org and click 'Login' at the top of the page.



2. Next enter the username and password that your STEM Club Leader will give you, and click the 'Log in' button.

Write your username here:

Congratulations you are now logged in!

Username *

Enter your The Schools' Observatory username.

Password *

Enter the password that accompanies your username.

Log in



DOWNLOAD THE IMAGES

1. If your STEM Club Leader hasn't already given you the data files, go to our website: www.schoolsobservatory.org/discover/activities/hunting_for_asteroids
2. At the bottom of the page there is a section called 'Data Files', save the following zip files and extract their contents:

NEO-190409.zip
NEO-100808.zip
NEO-100421.zip

OPEN THE IMAGES IN LTIMAGE

1. Open AstroLab in your internet browser: www.schoolsobservatory.org/astrolab
2. Click on 'File', then 'Open an Image', find the location of the saved data files from before.

Each file is named with the following format: NEO-date-code-number. The single digit number at the end dictates the order these files should be opened, for example...

NEO-190409-3878162004FM17-1-1.fits and NEO-190409-3878162004FM17-1-2.fits

Open the file beginning with NEO-190409 and with '1' at the end of its name.

3. Your image looks dark because the scaling is set such that only very bright objects appear on the screen. You are now going to change the scaling so you can see more objects.
4. Next click 'Display' from the menu at the top and select 'Scaling'.



5. You can now move the 'Maximum value' slider bar down, and as you do so you'll see more detail appear in your image in the main image window.

In the next steps you will open 3 more of the files into the Image boxes to the right of the main window.

6. Click on the plus sign (+) to the right of the main display window. Click on 'NEO190409-3878162004FM17-1-2.fits', then click 'Open'.



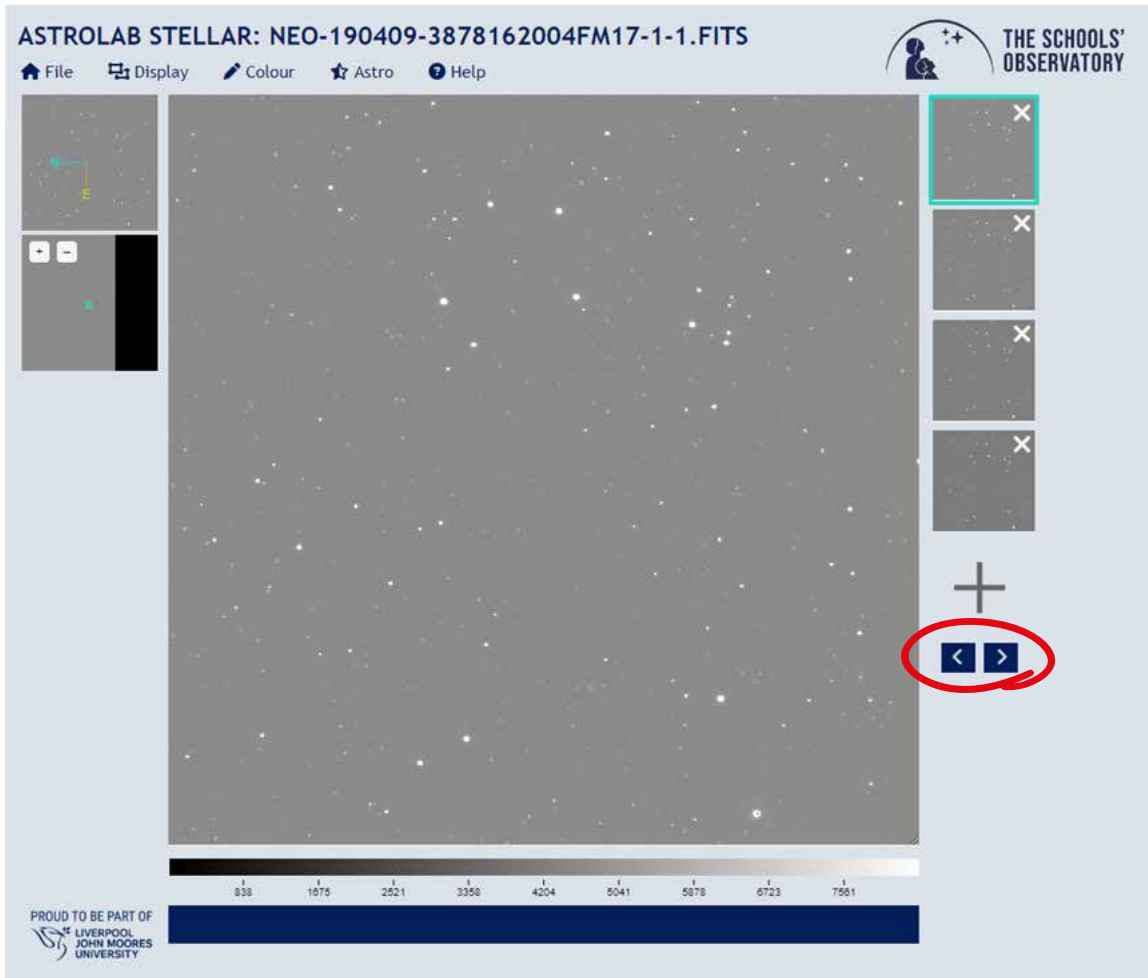
7. Repeat steps 4 and 5 to improve what you can see. Try to make the scaling the same on each of the images.
8. Repeat step 6 to open 'NEO-190409-3878162004FM17-1-3.fits', and 'NEO-190409-3878162004FM17-1-4.fits', changing the scaling on each (steps 4 and 5).



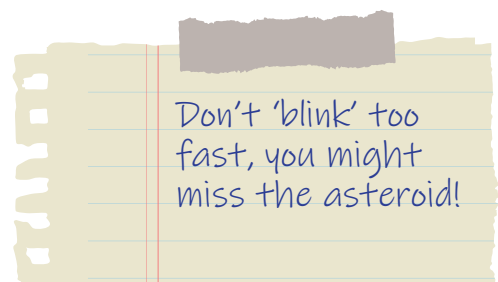
HUNT THE ASTEROID

You can now 'blink' or flick between the images – you have to look carefully at one image, then switch to another and another.

1. To move between the images press the arrow keys below the small image panes.



2. Keep clicking the arrow keys while looking at the screen and try and find the object that is moving.



Find the asteroids in the files beginning with NEO-100808 and NEO-100421.

Happy hunting!

BONUS: FINDING OTHER ASTEROIDS

When you are happy that you can find a moving object, visit our 'Download Asteroid Observations' page. You can help us track asteroids coming close to planet Earth!

www.schoolsobservatory.org/discover/projects/asteroidwatch/ast_download

