

# **Equipment Instruction Manual Series**

## **AST 205: Planets in the Universe**

**Canon 60D**

**V01, 2013 Sept 15**



Figure 1: The Canon 60D camera



Figure 2: Remove lens cover

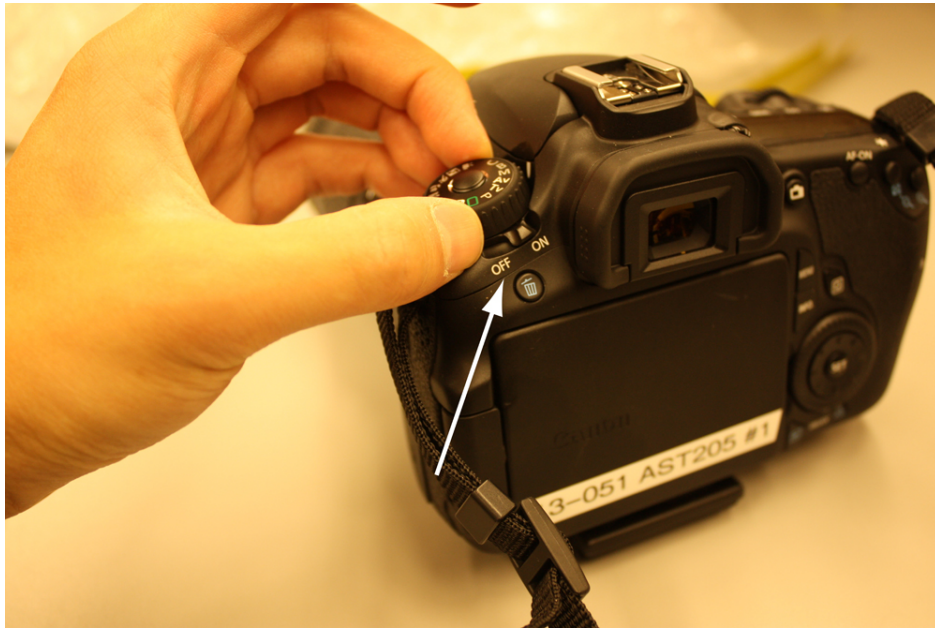


Figure 3: Turn the camera on



Figure 4: Set up the lens for astronomy images: 1) Change to manual focus - there is not enough light for autofocus to work.





Figure 5: Set up the lens for astronomy images: 2) Turn off image stabilisation, since we will be using a tripod.



Figure 6: Set up the lens for astronomy images: 3) Unlock the lens so we can change zoom and focus.





Figure 7: To change the exposure mode, press on the central button, and then twist the knob. During day time testing, we will change the mode to **P** for 'Programmed Auto'.



Figure 8: To change the zoom, twist this part of the lens - this changes the focal length of the lens.



Figure 9: You will need to refocus by twisting this part. Remember we have switched autofocus off.



Figure 10: Press this button to operate the shutter and take an image





Figure 11: Connect the remote shutter control. During night time, we will use the remote control to take images. This prevents camera movement when the shutter is pressed.

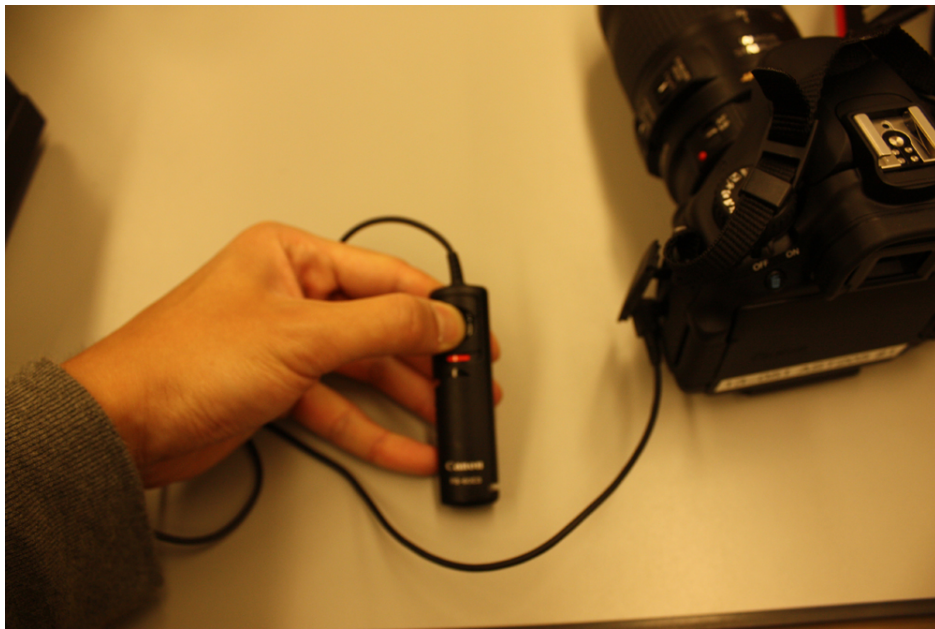


Figure 12: You can also lock the shutter when the camera is in **B** mode to have an indefinitely long exposure.





Figure 13: You can open the display to view the image, or to use live view



Figure 14: To view images you have just taken, press this button



Figure 15: To access live-view, press here. This turns the camera into a video camera, and is very useful for focusing. Try to focus using live-view on a very bright star



Figure 16: To take photos of faint objects, like stars, we need to use 'M' Mode for Manual



Figure 17: Change the exposure time by twisting this dial. For the moon, an exposure time of a fraction of a second is fine. To take images of stars, exposure times should be around 30 seconds (30"). A longer exposure time gathers more light, but is more demanding on an accurate polar alignment and dark sky background. Try different exposure times to see what works best for the conditions. You can also choose the **B** setting to have an indefinite exposure time.





Figure 18: To change the ISO, press ISO and then use the dial to change the values. Change the ISO to a more sensitive setting, such as 1600 or 3200. You should experiment with this to get the best result.



Figure 19: To change the focal ratio, press the '\*' button and twist the dial at the same time. A smaller focal ratio gives a wider aperture, and allows more light to get through. We usually use the smallest focal ratio available.