

Student Guide to the Galaxy Zoo: Becoming a Zooite

Participating in the Galaxy Zoo allows you to contribute to the scientific process that is answering some of the big questions about the universe. In so doing, you become a Zooite. The Galaxy Zoo website provides the tools and knowledge to become a Zooite, so let's start there:

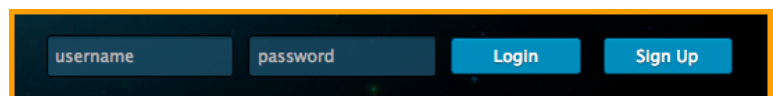
Step 1 – Find the Galaxy Zoo website

You may have the link to the Galaxy Zoo available on your computer. If you do, write the location of the link here.

If you do not have a live link, type www.galaxyzoo.org into your web browser.

Step 2 – Login

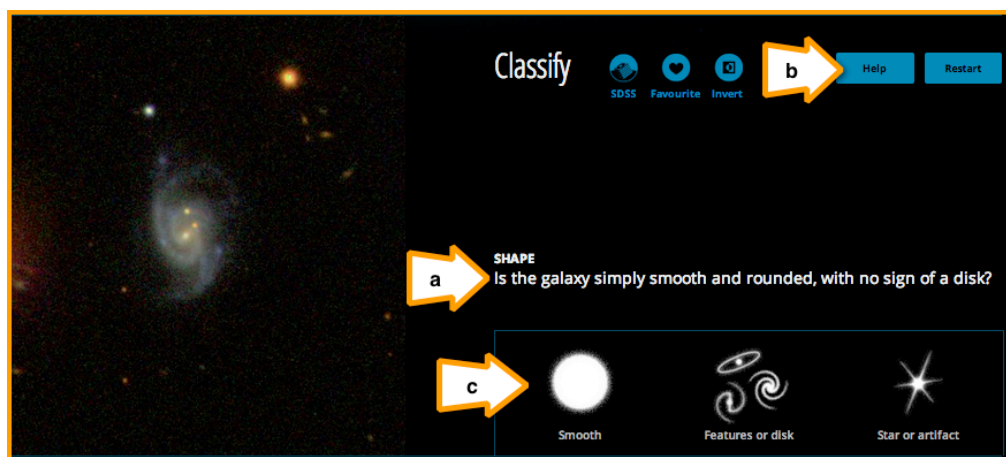
Enter your username and password that your teacher provides in the appropriate box at the top right of the home page. Don't forget to write them down someplace safe.

A screenshot of the Galaxy Zoo login interface. It features a dark background with a yellow border. There are two input fields: one labeled 'username' and another labeled 'password'. To the right of these fields are two buttons: 'Login' and 'Sign Up'.

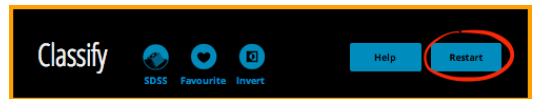
Step 3 – Classify

Once you login, you can jump right into classifying objects. The Galaxy Zoo will present you with the image of a galaxy and ask you a series of questions. Your job is to answer those questions as carefully as you can. The steps you take will always be the same:

- Read the question and the answer choices
- Consult **Help** to view examples
- Make a choice



When you have finished with one question, the next question appears and you repeat the steps. If you change your mind and would like to start over, click **Restart**.

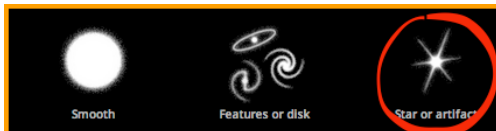


How do we know it's a galaxy anyway?

Remember, when you are looking through very large telescopes, most of what you will see are galaxies. The pictures at the left show you how bright stars appear in the Galaxy Zoo. What you are seeing is a result of bright light bouncing around the inside of the telescope and too much light hitting the camera.

The Galaxy Zoo computers use step-by-step series of commands and calculations that are referred to as **algorithms** to choose galaxies included in the Zoo. There are many different kinds of algorithms. Because of the way bright starlight spreads out in some images, the algorithm

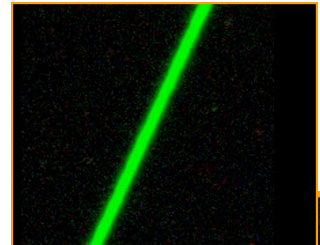
for choosing galaxies in the Galaxy Zoo sometimes includes bright stars. It is your job to identify these mistakes by selecting **Star of artifact**.



Other things that are not galaxies

Occasionally, you may also see bands of bright light crossing the image. These are made by rapidly moving objects such as satellites or meteors. They appear as different colors because of the way the camera is constructed to capture color images not because the object is that color.

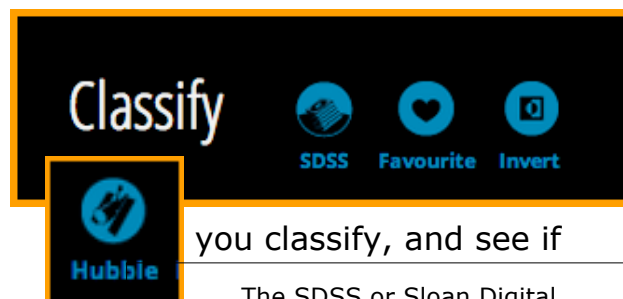
The top image is evenly bright indicating a meteor was recorded as it burned up in the atmosphere. The other two are different examples of satellites wobbling in their orbits. Notice the beaded patterns of brightness.



Additional Tools

1. SDSS or Hubble Images

When a new image is presented for you to classify, Galaxy Zoo lets you know where the image came from. To the right of the image, next to the word **Classify**, you see either **SDSS** or **Hubble** depending upon the source of the image.



Pay attention to this information as you can see some differences.

you classify, and see if

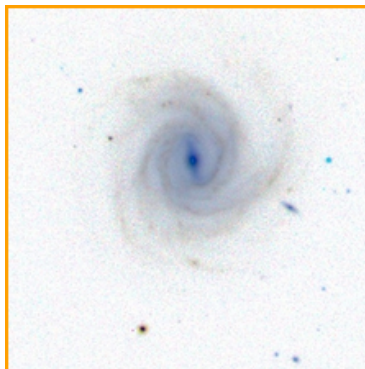
2. Favourites

As you classify images, you will find some that look interesting for one reason or another. When you click **Favourite**, the object you are currently classifying is added to your collection. Your **Favourites** can be accessed by selecting the **Profile** link at the top of the page.

The SDSS or Sloan Digital SkySurvey is a project that has been capturing images of very distant galaxies since 2000 from a ground-based telescope in New Mexico. Thousands of scientific papers have been written using SDSS data explaining new discoveries about the way the universe is organized. To find out more about the SDSS, go to www.sdss.org. The Hubble Space telescope has been orbiting Earth since 1990, sending back exciting images of the universe and capturing light from faint, distant galaxies for astronomical research. Check out www.hubblesite.org for more information.

3. Invert Images –

A tool that is available on the same line as **Favourite** is **Invert**. This tool changes the colors used to view the image to black on white. The brighter areas appear black and the background sky, white. This is very useful when inspecting a galaxy closely. Sometimes features of a galaxy stand out better when viewed with inverted colors.



For additional help, see the examples page titled *Zookeeping – Examples from the Galaxy Zoo*.