

Galaxy Classification

Introduction

When stars are viewed through a telescope, they appear as bright points of light without any apparent size or structure. However, there are some objects in the sky that, when viewed through a telescope, look like "fuzzy" clouds. Some of these objects, like those shown in the Hubble Space Telescope image to the right, are actually islands of stars (known as galaxies) that are much farther from us than the individual stars we see in the night sky. Although Immanuel Kant first advanced the idea of "island universes" during the eighteenth century to explain observed compact clouds, it was not until the 1920's that astronomers began to develop an understanding of the nature of galaxies.

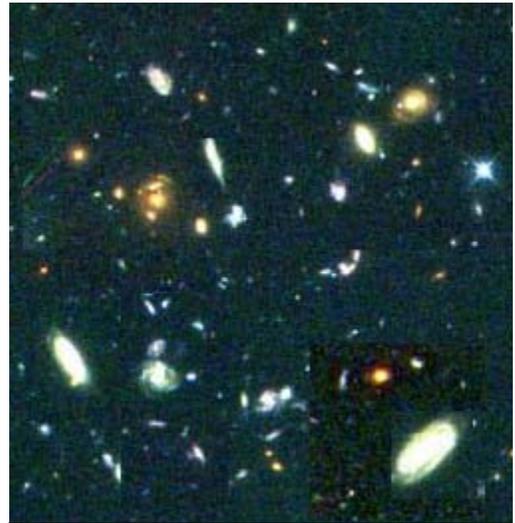


Image courtesy of NASA.

Part I: Developing a Classification Scheme

Included at the end of this activity are two sheets with pictures of fifteen galaxies. The color photos will also be shown on-screen in class. Your first task is to sort the galaxies by creating and applying a classification scheme based on appearance. Use the table below to record your results. The table has space for four categories but there is no requirement that you use all four. It is important to remember that, by focusing on different properties of the galaxies, it is expected that different groups will develop widely different classification schemes. *There are no right answers at this stage of the scientific process*, although ultimately some classification schemes are found to be more productive than others. Try to find patterns in terms of shape, color, or any other distinct features that appear in two or more images.

	Galaxy ID Numbers	Defining Characteristics <i>(provide enough detail so that anyone could use your scheme)</i>
Category I		
Category II		
Category III		
Category IV		

Part II: Applying Hubble's Classification Scheme

After you have completed Part I, pick up from your instructor the handout for Edwin Hubble's classification scheme, which was developed in the 1920's. Complete the following table according to his scheme.

Hubble's Categories	Galaxy ID Numbers	Defining Characteristics <i>(describe the characteristics used by Hubble)</i>
Elliptical		
Spiral		
Barred Spiral		
Irregular		