

# Astronomy 128

## Assignment 1, Thursday, Jan. 24

1. Read Chapters 1 and 2 of Elmegreen. In particular, I'd like each of you to lead the discussion on the following galaxy classifications:
  - (a) Elliott: Normal spirals
  - (b) Rabi: Barred spirals
  - (c) Roban: Ellipticals and lenticulars
  - (d) Stephanie: Irregulars, peculiars and dwarfs.

You'll find the introductory sections of the Hubble Atlas of Galaxies worth reading (pp. 7-26) as well as pp. 286-296 of Mihalas and Binney's "Galactic Astronomy: Structure and Kinematics". Both will be on reserve at Cornell.

2. To flex your classification muscles, do problem 5 at the end of Chapter 2 of Elmegreen. However, because this is the 21st century:
  - (a) Instead of using an Atlas, use the NASA Extragalactic Database (NED), located at <http://nedwww.ipac.caltech.edu/>. Choose to search for object by Name, then just enter the name (NGCxxxxx) and it will give you loads of information, including a link to online images from different instruments.
  - (b) Feel free to experiment with *Aladin* by following the link. *Aladin* is a graphical tool to analyse astronomical images. You can measure angular distances directly on the image you retrieved.
  - (c) To look up the RC3 and Shapley-Ames catalogue information, use the VizieR catalogue tool: <http://vizier.hia.nrc.ca/viz-bin/VizieR>. This is an online database of over 3000 astronomical catalogues. To get the RC3 catalogue, enter "VII/155" (the catalogue's call number) and click on the "find catalogue" button. The Shapley-Ames catalogue's call number is "VII/51/catalog". You are then taken to the catalogue's query screen, which has an entry for each column in the catalogue. Take a moment to read the note beside the morphological type entry. The link will open a window that describes how to convert the catalogue's morphological type code into the usual Hubble/deVaucouleurs notation. Once you're done reading, you should set the output layout to be "ascii table" then enter the galaxy's name in the "Target name" entry and click the "Submit Query" button. You will then get a table of all the matching objects in the catalogue (there should only be one) and you can read off the morphology code.

If you have trouble with the online stuff, come by my office and I'll take you through it.