

**1: Image Processing**

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All questions should be answered in a script file using cell mode.

(a) Import the image titled 'galaxy\_from\_hubble.jpg'. This is an image taken by the Hubble Telescope, which is super cool.

(b) Create matrices that show the red, green, and blue components of this image individually. Display a histogram for each color, labelling the title and axes appropriately.

(c) Convert the image to grayscale. Crop that image into four sections, and display the histogram for each section.

Why would we want to do this? Give one piece of information that we can find this way.

**Directions** All questions should be answered in a single script using cell mode. Please see the example MATLAB files that have been posted to Blackboard from past weeks for examples in formatting. Any functions will be turned in as separate .m files.

You must turn this assignment in to Blackboard as a published pdf. Create a script to complete the homework assignment, taking care to control what is output to the command window. The code should be **well commented** so that it is easy to follow along.