Name(s): _____ _____

_____ _____

Date: _____ Course/Section: _____

Grade: _____

Image Analysis

Learning Objectives:

Students will learn how to work within their assigned teams to complete surveys and experiments that introduce active learning concepts that will be applied in later labs.

Checklist:

☐	**Complete the pre-lab quiz with your team (if required).**
☐	**Compile a list of resources you expect to use in the lab.**
☐	**Work with your team to complete the lab exercises and activities.**
☐	**Record your results.**
☐	**Share and discuss your results with the rest of the class.**
☐	**Determine if your team's answers are reasonable.**
☐	**Submit an observation request for next week (if required).**

Pre-Lab Quiz

1.
2.
3.
4.

Part 1: Measuring the Height of the Danforth Chapel

1. Determine the mixing ratio of your red, green, and blue filter images that produces the most realistic color image. Explain how you judged whether the colors were “realistic”.

Red:		Green:		Blue:	

2. How many pixels tall is the Danforth Chapel in your image?

3. What is the angular size of the chapel from top to bottom? Explain how you determined this.

4. Determine the height of the Danforth chapel in meters and in feet. Show your work.

Height (meters):		Height (feet):	

Part 2: Determine the Motion of Comet Garradd

1. Explain why it is important to align the two images.

2. How far did Comet Garradd travel in pixels from one image to the next?

ΔX (pixels):		ΔY (pixels):	

Total:	

3. How far did Garradd travel in kilometers between the two images? Show your work.

4. Using the FITS header, determine on what date were the images taken, and how much time passed between images.

5. How fast was Garradd travelling when the pictures were taken? Explain how you found this.

6. Consider the motion of the comet in the image. What assumption was made in questions 2 and 4 to determine how fast it is moving?

Part 3: Team Image Analysis

Using the techniques you've learned in MaxIm so far, analyze a data set and answer the questions provided by the TA.

Object: