Names:					
			Grade		

Image Analysis I

Pre-Lab Quiz

Record your team's answers as well as your reasonings and explanations.

1.		
2	 	
2.		
3.		
4.		

Part 1: Measuring the Height of the Danforth Chapel Door

1. Create a tri-color image of the Danforth Chapel: Under "Color", click "Combine Color" and determine the mixing ratio of your red, green, and blue filter images that produces the most realistic image. **Note:** You can adjust the contrast using the screen stretch tool (ctrl+h).

Note: You can adjust the contrast using the screen stretch tool (ctrl+h).

Filter	R	G	В
Value			

2. Explain how you judged that the image looked "realistic".

3. What is the angular size ("height") of the chapel door in pixels? Use the information window (ctrl + i) and set the mode to "area".

4. If the pixel scale of the image is 4' (arcminutes) / pixel, what is the angular size of the chapel door in degrees? Note: $1^\circ = 60^\circ = 3600^\circ$ (arcseconds).

5. Determine the height of the Danforth chapel door in meters if the photographer measured their distance from the chapel and it was 46 meters away. You will need to use the Small Angle Formula. Show your work and include units in your answer.

Part 2: Messier 3

- 1. Make a tricolor image of globular star cluster M3. Follow the process as before, adding the following step:
 - > Click the "Align" option in the "Combine Color" window.
 - ♦Set the "Align Mode" to "Auto star matching" and click "OK"

The last part will align the stars, which are slightly offset from one image to the next.

Filter	R	G	В
Value			

If a typical globular cluster is 30 light years in diameter, how far away is M3 located in light years? Show your work and include units in your answer.
Note: The pixel scale of the image is 0.63" / pixel.