Simulated Telescope Lab 2 – Telescopic Observations: Lab Report Grading Rubric

Purpose of Document: The following document outlines the requirements, expectations, and related point values for writing the Telescope Laboratory Report when you have done the simulated version of our T-Labs using Stellarium. How many points each section of the lab report and the benchmarks for earning those points are provided to help guide you to producing a high-quality lab report.

General Lab Report Structure
The Simulated Telescope Lab Report is broken into three main sections totaling 100 pts:

I. Introduction [10 pts] - One to two paragraphs depending on student style choice.
II. Methods Section [20 pts] - One to two paragraphs depending on student style choice.
III. Observations of FIVE objects [50 pts]; 10 pts per object - One paragraph per observed object
IV. Concluding Remarks [20 pts] - One to two paragraphs depending on student style choice.

Below are the standards for earning points for each section of the lab report. The points earned for each section are given as point range corresponding to benchmark categories of Excellent, Good, Adequate, Poor, and Unacceptable.

General Benchmark Requirements

Excellent [Nearly full or full marks]
An excellent lab report section is well-written in complete sentences with proper grammar that has been proofread to remove typos. Each required section item is discussed. The section reads smoothly.

Good [High to nearly full marks]
A good lab report section is well-written in complete sentences with proper grammar. A few typos and mistakes exist but are rare. Nearly all to all section items are addressed, but it may not always read smoothly between sentences.

Adequate [Slightly less than half to nearly high marks]
An adequate lab report section is written in complete sentences. The text may contain some grammatical errors and have a moderate to large number of typos. The section neglected a few of the required discussion points, but on the whole addresses most of them.

Poor [Few to less than half marks]
A poor lab report section is not written in complete sentences (for example, is just a bullet point list). It contains a large number of grammatical errors and typos. The section only discusses a minimum of the required discussion points.

Unacceptable [Zero points awarded]
Section is missing entirely or unreadable.
Introduction [10 pts]
The student address each of the following:

- A description of what the program Stellarium is.
- A list of the objects you observed using the simulated telescope.

Points for each Benchmark:
Excellent: 9 - 10 pts awarded
Good: 7 - 8 pts awarded
Adequate: 4 - 6 pts awarded
Poor: 1 - 3 pts awarded
Unacceptable: 0 pts awarded

Methods Section [20 pts]
The method section needs to contain a description of the following:

- General description of how you set up the Simulated Telescope Lab with Stellarium. This should include what type of telescope you simulated and what simulated eye pieces were created.
- How did you find each object in your target list using Stellarium? How did you display the information you needed to record?

Points for each Benchmark:
Excellent: 18 - 20 pts awarded
Good: 13 - 16 pts awarded
Adequate: 8 - 12 pts awarded
Poor: 1 - 7 pts awarded
Unacceptable: 0 pts awarded

Results Section [5 x 10 = 50 pts]
Each object is graded separately in this section. Much of this information must be research by the student at home. For each object, the student must answer the following in any order they wish:

- Was simulated eyepiece was used for each object
- What type of object is this (planet, star, binary star, planetary nebula, star cluster [open or globular?], other nebula, galaxy, etc.)?
  - Provide details as to what that object type is. For example, if it is a globular cluster of stars, what is a globular cluster? [The internet and Wikipedia are your friend here]
- What are some of the interesting observable properties of the object and could you make them out in your simulated telescopic view? Do this by comparing your simulated view to a higher quality image taken with a professional telescope.
- How bright is the object (both apparent and absolute)? That is, what are the object’s apparent and absolute magnitudes? Would it be visible to the naked eye in dark skies? The human magnitude limit is apparent magnitude 6.0
• How far away from Earth is the object?
• Where is the star located? What constellation is it in and what are its celestial coordinates (Right Ascension and Declination).

Points for each Benchmark per object:

Excellent: 9 - 10 pts awarded
Good: 7 - 8 pts awarded
Adequate: 4 - 6 pts awarded
Poor: 1 - 3 pts awarded
Unacceptable: 0 pts awarded

Concluding Remarks [20 pts]
The concluding remarks section is the student’s chance to describe your impressions of the simulated T-Lab experience. For full marks, the student needs to address the following:

• A summary of the T-lab experience including answering:
  o What educational value did the simulated T-Lab provide?
  o What are your personal impressions of the T-Lab? Was it enjoyable, disappointing, cool, boring, etc.?
  o Are you excited to get the chance to look through a telescope in the future instead of seeing these objects via a simulation?
• What could have made the simulated T-Lab better?
• Please feel free to add any additional remarks as well. This is not required for full marks.

Points for each Benchmark:

Excellent: 18 - 20 pts awarded
Good: 13 - 16 pts awarded
Adequate: 8 - 12 pts awarded
Poor: 1 - 7 pts awarded
Unacceptable: 0 pts awarded