PROJECTS 2 AND 3: TELESCOPIC OBSERVATIONS

Introduction

The purpose of these projects is to give you an opportunity to view one or more objects through the telescope at Cronyn Observatory. There is a considerable variety of objects you might look at, but for Project 2 we require you to look at only one object, then fill out and turn in the corresponding answer sheet. Then for Project 3 you do the same steps but for a different category of object. We encourage you, however, to take the opportunity to look at several objects and at as much variety as possible. This is your chance, and you should make the most of it.

These projects must both be done at Cronyn Observatory in the evening. The hours of opening will be as follows:

MONDAY TO THURSDAY from 8:00 pm to 10:00 pm;
Tuesday, Sept. 9 to Thursday, Oct. 2.

The observatory will not be open if it is excessively cloudy or raining. The building is closed at 10:00 pm; if you arrive by this time, you will be able to finish a project, weather permitting.

A demonstrator will operate the telescope for you and will discuss with you what is being seen. The choice of objects will vary during one night and from night to night, depending on what objects are available and the weather conditions.

By necessity, the telescope room is not heated; dress appropriately for being outside for at least 60 minutes.

The Project

You need to bring a pencil and a clipboard or other portable writing surface. No advance preparation is needed.

At the observatory get an answer sheet for this project from the demonstrator. There are different answer sheets for different objects, so be sure to get the correct one. Answer the questions based on what you see, and turn in the answer sheet at the observatory before you leave. The answer sheet cannot be turned in later.

Once you have done the project once and have submitted the answer sheet, you can look at other objects for the fun and the education. You may submit additional answer sheets or not, as you wish.

The Moon

Project 3-2

The moon is the most popular object for telescopic viewing by the general public. The telescope reveals a wealth of detail not visible to the naked eye. This detail makes the general nature of the moon immediately evident.

The moon will be shown through the telescope if it is suitably visible. In practice, this requires that the moon's phase be between approximately first quarter and approximately full. The reasons for this "window" will be discussed in class.

The weather conditions are very flexible for viewing the moon. If you can see the moon with your eye without constant interruption from clouds, then the weather is likely suitable.

Review for the moon.

The moon's surface is described in Zeilik & Gregory Chapter 4. For review examine the photographs of the moon. Pay particular attention to the following distinctions: photographs taken from orbit near the surface of the moon, and photographs taken from the earth. The photo credits may help you distinguish the origin of the photos.

A Planet

You may look at Mars, Jupiter or Saturn (depending on which is available) through the telescope, and sketch what you see on the appropriate answer sheet. There is an answer sheet specific to each planet. Mars is a likely planet this year, and Saturn is a remote possibility.

Follow-up to the project

Compare what you saw with images of the same planet(s) in your text book.

Other Telescopic Objects

Many interesting astronomical objects can be seen or photographed only through a telescope. The demonstrator at Cronyn Observatory will operate and adjust the telescope for you and will provide you with an opportunity to view some of the brightest or more conspicuous members of a variety of fainter objects. These include open clusters, globular clusters, double stars, planetary nebulae, and galaxies. Such objects will be discussed in lectures.

Only one object can be shown at a time, and everyone at the observatory will be given an opportunity to view before a new object is chosen. The demonstrator's choice of objects will depend on the time of night and upon the amount of sky illumination.