

Ast 11 Prelab

Lab 10: Introduction to the Stars *[Note: header with title]*

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Section: Tuesday/Thursday, 11:00-12:05 *[Note: name, table, date, section]*

Introduction and Purpose *[Note: overall summary of what the lab is about]*

Stars in the sky are grouped in regions called constellations. Individual stars are named by their Bayer designation or by their Flamsteed designation. Their brightnesses are indicated by their magnitudes. We will find three specific stars in the sky, in three different constellations. The angular distances between the stars are measured in degrees, arcminutes, and arcseconds.

Procedure I *[Note: this gives a clear step-by-step explanation of the key lab steps]*

1. We will find and label the three stars on the star map, then label and highlight the constellation boundaries that contain the stars;
2. We will use a program to determine the star's Bayer and Flamsteed designations, then also their magnitudes;
3. We will measure the angular width of our hand-span, fist, 3-fingers, and pinkie (Table C);

Procedure II

4. At night, we will find the three stars, and measure the separation between the stars (Tables D, E), using the hand measures we calibrated in class.

Vocabulary *[Note: One line definitions of all the terms given in the vocabulary list in the lab.]*

Constellation—An official grouping of stars in the sky, and the boundaries that contains them. Example: Ursa major.

Asterism—an unofficial grouping of stars in the sky. Example: Big Dipper.

Linear measure—distances on a map, measured in meters, centimeters, or millimeters, etc.

Angular measure—the angular distance between two objects, for example two stars on the sky.

Degrees (angular measure)—A small amount of angular separation on the sky. There are 360 degrees in a full circle.

Arcminute—angular measure, $1/60^{\text{th}}$ of a degree.

Arcsecond—angular measure, $1/60^{\text{th}}$ of an arcminute.

Bayer designation—A star's designation, consisting of a Greek letter (alphabetized from brightest to faintest star), following by the constellation name.

Flamsteed designation—A star's designation, consisting of a number letter (increasing from west to east), following by the constellation name.

Apparent magnitude—How bright a star looks, using a magnitude scale.