



McAuliffe-Shepard Discovery Center

Astronomy Bowl V

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Participants should be familiar with the basic concepts of general observational astronomy. The questions will be based on visual identification and/or explanation of various kinds of images projected in the planetarium theater. Most, if not all, of the specifics will be found in any mid-level astronomy book or star atlas, such as Peterson's Field Guide and the like. You may also find some good resources on the web at sites with sky maps such as <http://www.astroviewer.com/interactive-night-sky-map.php> (just click the button "Start AstroViewer" at the upper left) or a suggested free download that may assist your study can be found at www.stellarium.org. To get acclimated to our domed theater environment, you could attend a "Tonight's Sky" show, presented every day at 2 PM. Call 603-271-7827 or visit www.starhop.com for pricing.

Study Guide Outline

The Astronomy Bowl competition will be organized so that each participant will answer one question per round. If the question is answered correctly, the participant will receive one point. If it is answered incorrectly, the participant receives no points. Once all rounds have been completed, the points will be added and the participants with the most points will be the winners. A tie-breaker will be provided if needed. We will start with easy questions and work toward the harder questions. For the final competition, three winners will be decided.

Section I - Constellations

The progression will be from more familiar to less familiar constellations. Medium-difficulty and advanced levels may include Southern Hemisphere constellations, if needed, to determine the winner.

Part 1: Art Figures

The progression will be from more familiar to less familiar constellations. Medium-difficulty and advanced levels will include Southern Hemisphere constellations.

Part 2: "Stick" Figures

Identify constellations from line patterns connecting stars. "Standard" stick figures are used, though some representations may vary depending on the source. The stick figures will connect stars in the constellation in the night sky. You may ask to have the lines removed once they are drawn.

Part 3: Constellation Borders

Identify a constellation contained within its traced border in the night sky. The borders of all neighboring constellations will be shown as well as all the stars visible in the night sky. (You may be handed a laser pointer and asked to trace the border occupied by a particular constellation.)

Part 4: Locate the Constellation

(You will be given the name of a constellation and asked to circle the general area of it in the sky.) There will be no borders, artwork or stick figures shown. You will be handed a laser pointer and asked to circle the constellation.

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Section II - The Moon (New This Year)

Be familiar with the motions and phases of the Moon, how they appear in the sky, the general time of day and position in the sky a particular phase may have. Know the major maria (English or Latin names). You may be asked to name an indicated “sea” or asked to circle a special “sea”.

Section III - Messier Objects

From the 18th-century list compiled by Charles Messier, identify images projected on the theater dome. These deep-space objects include open and globular clusters, nebulae and galaxies. The easier ones with names in addition to their “M” number will be used first (e.g. the Ring Nebula or the Andromeda Galaxy).

Section IV - Individual Stars

Identify and/or point to the brightest and/or more popular stars in the night sky. A star may be circled and you will be asked to name it, or a name may be given and you are asked to circle it with a provided laser pointer. (Some popular stars from the southern hemisphere may be used for the higher difficulty levels.)

Section V - Lines in the Sky

Identify/describe celestial sphere mapping lines (ecliptic, meridian, celestial equator, right ascension, declination, etc.) that are projected against the night sky.

Section VI - Earth Orientations

Given some information relative to the sky being projected, you will be asked to provide additional information such as general location (e.g. near the equator), direction (e.g. facing south), poles (e.g. north pole), seasons (e.g. it is spring), time (e.g. it is around midnight), etc.

Section VII - Planet, Moon, Comet and Asteroid Identification

Identify planets and their moons, popular comets and asteroids in the Solar System. Images of an object in our Solar System will be displayed and you will be asked to name the object. These images may be surface features in visible light, false color or various parts of the electromagnetic spectrum.

*** Check back to the Astronomy Bowl web page occasionally to see if there are any study guide or other informational updates (<http://www.starhop.com>). Consider attending a “Tonight's Sky” show for theater familiarization.