

# MAS AWARDS PROGRAM

## A Step-Program for the Basic Observation Awards

### Step-Award Levels and Recognition

#### **Polaris Level Award (One star to find them all)**

**Action:** Complete one subcomponent of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person is introduced to audience and receives paper certificate signifying the accomplishment of viewing of a subcomponent of basic observations

#### **Mizar Level Award (Double star)**

**Action:** Complete two subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of two subcomponents of basic observations

#### **Triangulum Level Award (Three bright stars)**

**Action:** Complete three subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of three subcomponents of basic observations

#### **Diamond of Virgo Level Award (Four bright stars)**

**Action:** Complete four subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of four subcomponents of basic observations

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### **Cassiopeia Level Award (Five star constellation)**

**Action:** Complete five subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of five subcomponents of basic observations

### **Castor Level Award (Three pairs of binary stars)**

**Action:** Complete six subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of six subcomponents of basic observations

### **Pleiades Level Award (Seven Sisters)**

**Action:** Complete seven subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives paper certificate signifying the accomplishment of viewing of seven subcomponents of basic observations

### **Ursa Major Level Award (Includes the Big Dipper made up of six stars plus a double star)**

**Action:** Complete all eight subcomponents of basic observations with observational notes, sketches (optional astrophotography), and descriptions

**Recognition:** Person introduced to audience and receives a paper certificate made from a higher quality paper (Diploma Grade Paper) signifying the accomplishment of viewing all eight subcomponents of basic observations

**Additional Options:** Recipient's purchase of Frame, pre-designed MAS plaque or trophy

## Guidelines for Basic Observation Award

This basic program of reading and observation, which is based in part on the Boy Scout merit badge in astronomy, will give you a working knowledge of the sky. No equipment purchase is necessary for any requirement. One notebook will be ample for all observational notes, sketches, and descriptions. An inexpensive book such as *A Field Guide to the Stars and Planets* or *Norton's Star Atlas and Reference Handbook* (or both) will be enormously helpful, as will *Sky & Telescope* magazine. Any MAS member will be happy to help you in any way. You do not need to complete the requirements in the order listed—the sky will dictate your opportunities to observe.

### Subcomponent #1 – Major Constellation Observations

Identify all of these “major” constellations

<i>Andromeda</i>	<i>Canes Venatici</i>	<i>Coma Berenices</i>	<i>Leo</i>	<i>Pisces</i>
<i>Aquarius</i>	<i>Canis Major</i>	<i>Corona Borealis</i>	<i>Libra</i>	<i>Sagittarius</i>
<i>Aquila</i>	<i>Canis Minor</i>	<i>Cygnus</i>	<i>Lyra</i>	<i>Scorpius</i>
<i>Aries</i>	<i>Capricornus</i>	<i>Draco</i>	<i>Ophiuchus</i>	<i>Taurus</i>
<i>Auriga</i>	<i>Cassiopeia</i>	<i>Eridanus</i>	<i>Orion</i>	<i>Ursa Major</i>
<i>Bootes</i>	<i>Cepheus</i>	<i>Gemini</i>	<i>Pegasus</i>	<i>Ursa Minor</i>
<i>Cancer</i>	<i>Cetus</i>	<i>Hercules</i>	<i>Perseus</i>	<i>Virgo</i>

Several will require observing sessions away from city lights, as they are invisible most or all nights in Memphis. An experienced observer will check you and initial your list as you point them out.

## Subcomponent #2 – Bright Star Observations

Identify all of these bright stars (Can be accomplished while identifying constellations)

<i>Sirius</i>	<i>Procyon</i>	<i>Antares</i>	<i>Castor</i>	<i>Denebola</i>
<i>Arcturus</i>	<i>Altair</i>	<i>Pollux</i>	<i>Bellatrix</i>	<i>Dubhe</i>
<i>Vega</i>	<i>Betelgeuse</i>	<i>Fomalhaut</i>	<i>Polaris</i>	<i>Merak</i>
<i>Capella</i>	<i>Aldebaran</i>	<i>Deneb</i>	<i>Mizar</i>	
<i>Rigel</i>	<i>Spica</i>	<i>Regulus</i>	<i>Algol</i>	

Except for Dubhe (Alpha Ursae Majoris,  $\alpha$  UMa), Merak (Beta Ursae Majoris,  $\beta$  UMa), and Algol (Beta Per,  $\beta$  Persei,  $\beta$  Per, a variable star), they are listed in order of brightness.

## Subcomponent #3 – Bright Planets Observations

Identify the 5 bright planets (Mercury, Venus, Mars, Jupiter, and Saturn). In sketches, show the position in the sky of Mars or Jupiter relative to bright stars at approximately weekly intervals at the same hour for at least 4 weeks.

## Subcomponent #4 – Lunar Observations

Within a single week, sketch the position of the moon relative to the horizon and the constellations at the same hour on 3 different evenings and explain the changes you observe.

## Subcomponent #5 – Solar Observations:

Sketch the position on the horizon of the sun at sunrise or sunset at approximately weekly intervals for at least 4 weeks around the beginning of spring or fall and for 8 weeks near the beginning of summer or winter. Explain in a diagram the changes you observe.

## **Subcomponent #6 – Solar and Lunar Phases Observations**

With the aid of diagrams, explain the relative positions of sun, earth, and moon at the times of lunar and solar eclipses and at the times of new, first quarter, full, and last quarter phases of the moon. Observe and explain earthshine.

## **Subcomponent #7 – Milky Way Observations**

Describe the Milky Way as it appears in summer and in winter. Tell why it looks the way it does at these times of the year.

## **Subcomponent #8 – Telescope Observations**

Observe through a telescope and sketch one of each of these objects: open (galactic) cluster, globular cluster, planetary nebula, diffuse nebula, and galaxy (other than our own). You do not need to buy a telescope; MAS members will be more than happy to show you these things through their telescopes.

When you have completed all the requirements, submit your notebook to the Awards Committee for review. You may do this by giving it to any member of the Board of Directors. It will, of course, be returned to you. If you have completed the requirements satisfactorily you will be awarded a handsome Certificate of Achievement.