ASTRONOMICAL LEAGUE OBSERVING PROGRAMS

By Aaron Clevenson, Observing Program Director

Observing is the keystone and core ingredient in Amateur Astronomy. Nothing can equal the joy and wonder of seeing new objects in the vastness of the universe. Today, with the availability of reasonably priced telescopes with very good optics, the gems of space are within reach of many people who might not have had the opportunity in the past.

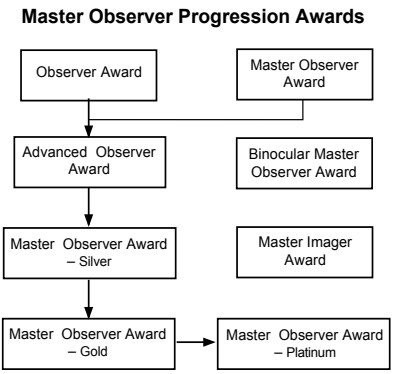
On any clear night, when we decide that we are going to observe, amateur astronomers are faced with a difficult decision: "What shall I observe tonight?" The sky is literally the limit. There are thousands of objects available to even a modest telescope, with hundreds of objects available to a typical pair of binoculars. Many objects are worth repeat visits—the Orion Nebula, the Andromeda Galaxy, and the planets. But there are so many other things worth looking at, and many can be pleasant surprises.

Observing Programs from the Astronomical League

The Astronomical League has a broad selection of Observing Programs designed to help deal with this question. Each Observing Program has a list of objects to pursue. These are not single night endeavors. Some take months to complete and some take years. The lists of objects provide a clear direction for one's observing sessions. There is enough depth and breadth to provide observing challenges for a lifetime.

The goal of the Astronomical League's Observing Program Division is to provide Observing Programs that increase the observer's knowledge about celestial objects, and, at the same time, increase the observer's observing prowess. This is done through increasing levels of difficulty and by introducing the amateur astronomer to new techniques and equipment.

The Observing Programs are designed to provide something for everyone, and they include recognition for those who complete the requirements. There are programs for the novice as well as for very experienced observers. Some programs require no equipment, some use binoculars, some require only a modest telescope, and some necessitate large "light buckets" to catch faint and challenging objects. There are Observing Programs for almost every different type of celestial object: the Sun, the Moon, the solar system, stars, star clusters, nebulae, galaxies, and many more.



Master Observer Progression

So, where should the amateur begin? The Astronomical League has provided a roadmap to help with this question as well. It is called the Master Observer Progression.

The Master Observer Award, created in 2001, recognizes those astronomers who completed a group of ten Observing Programs. At that time, there were only 15 Observing Programs to choose from, but today, with 63 different Observing Programs and Observing Awards, the

Master Observer Award has been transformed into the Master Observer Progression.

The Progression has levels to recognize amateur astronomers as their knowledge and experience grow. The levels are Observer, Master Observer—Silver, Master Observer—Gold Master, and Master Observer—Platinum. Each level has requirements that encourage observers to broaden their knowledge and to hone observing skills. They challenge observers to branch out and to try new things and to see new objects.

In most cases, the awards require the completion of the top level of each of the Observing Programs. These levels go by different names, but they are typically achieved by completing all of the objects on the object lists (often 100 of them). The lists are designed to take you through the different seasons and to explore objects throughout the sky.

The Observer Award is designed for the novice observer. It is awarded to observers who complete five required Observing Programs: *Constellation Hunter*, *Messier*, *Binocular Messier*, *Lunar*, and *Solar System*. Additionally, the observer gets to pick one additional introductory level Program from this list: *Galileo*, *Sketching*, *Sky Puppy* (for youth ten years old and younger), *Youth Astronomer* (for youth 17 years old and younger), *Beyond Polaris* (introductory program for adults), *Two in the View*, *Universe Sampler*, or *Urban*.

The Master Observer Award is for observers who have mastered the basics of observing by completing ten Observing Programs. The required Observing Programs are: *Messier*, *Binocular Messier*, *Lunar*, *Double Star*, and the *Herschel 400*. The observer chooses the additional five Observing Programs.

The Advanced Observer Award is designed to introduce the Master Observer to five additional programs that are focused on various types of stellar objects (for a total of 15). Observing Programs that the observer may choose from are: *Asterisms*, *Asteroids*, *Bright Nebulae*, *Carbon Star*, *Comets*, *Dark Nebulae*, *Earth Orbiting Satellites*, *Globular Clusters*, *Meteors*, *Open Clusters*, one of the Solar Observing Programs, *Planetary Nebulae*, and one of the Galaxy-based Observing Programs.

The top three levels of the Master Observer Progression require the completion of additional Observing Programs. Silver requires an additional five (to give a total of 20), and must include: *Lunar II*, an Outreach Award, *Sketching*, and *Sunspotters*. Gold requires an additional ten (to give a total of 30), and must include: additional Outreach, the *Herschel II*, *Hydrogen Alpha—Solar*, *Stellar Evolution*, and a Variable Star Observing Program. Platinum requires an additional ten (to give a total of 40), and must include: the top-level Outreach Award, *Dark Sky Advocate*, *Target NEO*, *Radio Astronomy* (gold level), and *Asteroid* or *Comet*.

Pursuit of the higher levels of the Master Observer Progression is not for everyone. It requires decades of dedicated effort and a good deal of tenacity, but the feeling of accomplishment from seeing thousands of objects is profound.

Master Imager Award

Image:
- a Lunar Program
- a Solar Program
- a Solar System Program (main bodies)
- a Deep Space Program
- a Scientific Study Program

\+ any 5 Observing Programs

Free Range Observing

We know that some observers enjoy freely roaming around the universe and seeing the wonders. They may not be interested in structured Observing Programs. For those amateur astronomers, the objects lists contain many jewels of the night sky, and are filled with potential targets. Other observers enjoy the structure and the challenge that the object lists provide.

Binocular Observing

Binocular Master Observer Award

Complete any 8 of these 9:
- Binocular Double Star
- Advanced Binocular Double Star
- Binocular Messier
- Binocular Variable Star
- Deep Sky Binocular
- Galileo Binocular
- Lunar Binocular Cerfticate
- Solar System Binocular Certificate
- Southern Skies Binocular

Recognizing that not all astronomers have telescopes, there is also a Binocular Master Observer Award. The observer must complete eight of the binocular-based Observing Programs. Currently, the list includes: *Binocular Double Star*, *Advanced Binocular Double Star*, *Binocular Messier*, *Binocular Variable Star*, *Deep Sky Binocular*, *Galileo*, the *Lunar Binocular Certificate*, the *Solar System Binocular Certificate*, and the *Southern Skies Binocular*.

Imaging

We also recognize that not all observers are visual observers. Many amateur astronomers prefer to image their targets. To recognize the accomplishments of these imagers, the Astronomical League has also added a Master Imager Award. To earn this award, the imager must complete ten Observing Programs through imaging. These must include: a Lunar Program, a Solar Program, and a Solar System (main bodies) Program, a Deep Space Program, and a Scientific Study Observing Program (Spectroscopy, Variable Stars, Novae, and more). The additional five can be any of the other Observing Programs that have been done through imaging.

Details on the requirements of each Observing Program and the process for receiving the certifications are on the Astronomical League's website. They differ from program to program. So, if you decide to pursue an Observing Program, it is important to be sure to understand what is required.

With the breadth of Observing Programs available, there is truly something for everyone. We hope you will expand your knowledge and skills by seeking out the objects in these programs. There is so much to see in our vast Universe, and so little time! The Universe awaits those who enter here.

For more information on the Astronomical League's Observing Programs, please access the Observe section of the League's website: www.astroleague.org, or contact an Observing Program Director through email at aaron@clevenson.org.

Aaron Clevenson teaches introductory astronomy at Lone Star College in Texas. He is also the Observatory Director at the Insperity Observatory in Humble ISD. He is one of five Observing Program Directors at the Astronomical League and has authored a number of the current Observing Programs.