

# Mastering the Messiers

After you have seen the moon, the bright planets, and a few of the sky's showpieces such as M42 or M8, what do you find next? Many amateurs then proceed through the entire list of deep sky objects that was compiled by Charles Messier over two hundred years ago. Unfortunately, some become intimidated by its numerous objects and falter on their celestial journey. It need not be that way.

Use this guide to help remove likely impediments which may prevent you from enjoying the attractions of the deep sky. Go ahead, have some observing fun while earning your Astronomical League Messier certificate. The Messiers await!

## *First things first:*

### *Observe the brighter Messier objects*

An initial stumbling block for attempting the Messier list is not knowing how various celestial objects truly appear through either a finder scope or the main eyepiece. After all, photographs just don't accurately portray what the eye sees.

When starting the list, first try finding the brightest objects in each category. You will then know what to expect from the dimmer, more challenging targets.

**Table: A few of the brighter Messiers**

Bright Messier	Type	Dimensions (minutes)	Integrated Magnitude
M13	Globular Cluster	17	5.9
M22	Globular Cluster	24	5.1
M11	Open Cluster	14	5.8
M41	Open Cluster	38	4.5
M81	Galaxy	26 x 14	6.9
M51	Galaxy	11 x 88.4	
M27	Planetary Nebula	10 x 15	7.6
M57	Planetary Nebula	1 x 2	9.7
M8	Diffuse Nebula	90 x 40	+ cluster
M17	Diffuse Nebula	46 x 37	+ cluster

## *Practice the fine art of observing*

By carefully recording what you truly see, you will become a better observer and you will be able to see detail that you would have missed with a cursory observation. Spend at least 10 minutes studying each object.

You will observe that galaxies have different axial dimensions, have unequal surface textures, and have dissimilar central regions. You will learn that they have much smaller apparent sizes than what is published.

You will find that globular clusters have differing degrees of resolvability. You will notice that they have various stellar concentrations.

You will see that planetary nebulae vary significantly in their shapes and sizes. You may detect color.

You will discover that diffuse nebulae are not uniform. You will note that many of them have associated star clusters.

As Yogi Berra once quipped, "You can observe a lot just by watching." How true!

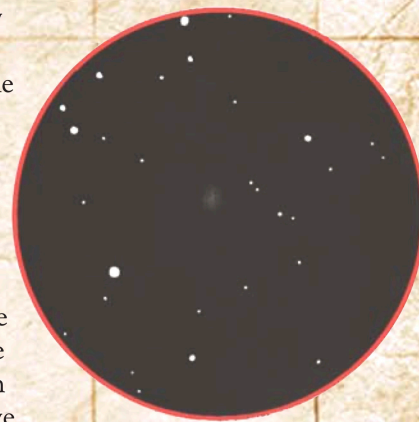
## *The Importance of surface brightness*

Most published lists of deep sky objects indicate the object's angular size and integrated magnitude. In many cases, these two values give the observer a good idea of what to expect. But a third value, surface brightness, often provides information that is equally valuable. This is nowhere more evident than with the deceptively difficult to discern "bright" galaxies of M33, M74, and M101.

All three galaxies have a large apparent size and their published magnitude values are quite bright. However, when the light from any one of them spreads across its respective area, the resulting surface brightness decreases significantly, sometimes nearly matching that of the background sky glow. Hence, it becomes difficult to see.

In general, an object that has a surface brightness of less than 13.5 magnitudes/minute<sup>2</sup> and that has an apparent diameter of greater than three arc minutes can be found in six inch or larger

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*Finderscope view of the area around M33.*



*Finderscope view of the area around M74.*

Messier	Dimensions (minutes)	Integrated Magnitude	Surface Brightness (mag./min <sup>2</sup> )
M33	70 x 41	5.71	14.1
M74	10 x 9	9.21	13.9
M101	27 x 26	7.7	14.6