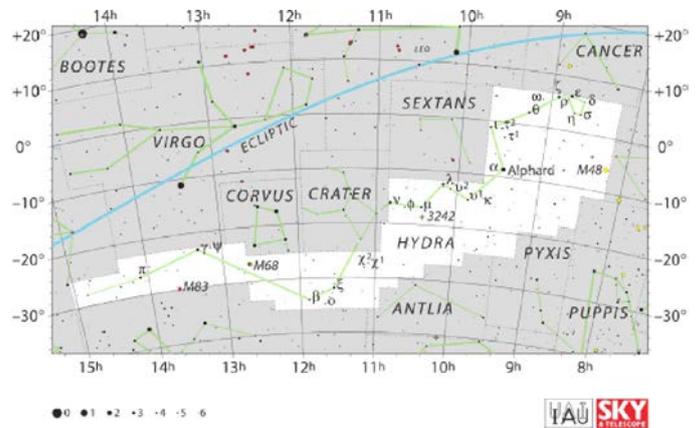


**Messier 48-68-83 Clusters in Constellation Hydra**  
 Hydra is the largest of the 88 modern constellations, measuring 1303 square degrees. Also one of the longest at over 100 degrees, its southern end abuts Libra and Centaurus and its northern end borders Cancer. It has a long history, having been included among the 48 constellations listed by the 2nd century astronomer **Ptolemy**.

The shape of Hydra resembles a twisting snake, and features as such in some Greek myths. One myth associates it with a water snake that a crow served Apollo in a cup when it was sent to fetch water; Apollo saw through the fraud, and angrily cast the crow, cup, and snake, into the sky. It is also associated with the monster Hydra, with its many heads, killed by Hercules, represented in another constellation. According to legend, if one of the hydra's heads was cut off, two more would grow in its place. However, Hercules burned out the roots of the heads he severed to prevent them from growing again, and thus overcame the hydra. The constellation should not be confused with the similarly named constellation of Hydrus.



Messier 48

OBSERVATION DATA (J2000 EPOCH)

Constellation Hydra

Right ascension 08h 13.7m

Declination  $-05^{\circ} 45'$

Distance 1.5 kly (460 Pc)

Apparent magnitude (V) 5.5

Apparent dimensions (V) 54.0'

Estimated age 300 million years

Other designations NGC 2548

Messier 48 (also known as M 48 or NGC 2548) is an open cluster in the Hydra constellation. It was discovered by **Charles Messier** in 1771.

But there is no cluster in the position indicated by Messier. The value that he gave for the right ascension matches that of NGC 2548, however, his declination is off by five degrees. Credit for discovery is sometimes given instead to **Caroline Herschel** in 1783.

M48 is visible to the naked eye under good atmospheric conditions.



Messier 68 (NGC 4590) is also a globular cluster in the equatorial constellation Hydra. It was discovered by Charles Messier in 1780. A 2012 view of M68 from the Wide Field Camera of Hubble's Advanced Camera for Surveys.

M68 is at a distance of about 33,000 light-years away from Earth and is orbiting through the Milky Way with a large eccentricity of 0.5. This orbit carries it as far as 100,000 light years from the galactic centre. It is one of the most metal-poor globular clusters, which means it has a paucity of elements other than hydrogen and helium. The



cluster may be undergoing core-collapse, and it displays signs of being in rotation. The cluster may have been acquired by the Milky Way galaxy through accretion from a satellite galaxy. All told, as of 2015 a total of 50 variable stars have been identified in this cluster; the first 28 being identified as early as 1919-1920 by American astronomer Harlow Shapley. Most of the variables are of type RR Lyrae, or periodic variables. Six of the variables are of the SX Phoenicis variety, which display short pulsating behaviour.

**William Herschel** described it as:

*"a beautiful cluster of stars, extremely rich, and so compressed that most of the stars are blended together".*

His son John noted that it was:

*"all clearly resolved into stars of 12th magnitude, very loose and ragged at the borders visible in binoculars and resolvable in medium amateur telescopes."*

Messier 83 (NGC 5236) is actually an 8th magnitude face-on spiral galaxy. It is known as the Southern Pinwheel Galaxy because of its resemblance to the Pinwheel Galaxy and easily observed in skies south of 40°N latitude. It is one of the closest and brightest barred spiral galaxies in the sky, making it visible with binoculars. It can be found by using 1, 2, 3, and 4 Centauri as guide stars. It has been host to six supernovae (SN 1923A, SN 1945B, SN 1950B, SN 1957D, SN 1968L and SN 1983N), more than any Messier object. Large amateur telescopes - above 12 inches aperture - reveal its spiral arms, bar, and small, bright nucleus. In a medium-sized amateur instrument, around 8 inches in aperture, the spiral arms become visible under good conditions. It is not perfectly symmetrical in the eyepiece, rather, the northwest side is flattened and the nucleus has a southwest-to-northeast bar. A smaller sister to the Milky Way, it is a grand design spiral galaxy 40,000 light-years across.



**Nicolas Louis de Lacaille** discovered M83 on February 23, 1752 during his stay at the Cape of Good Hope. Charles Messier added it to his catalogue of nebulous objects in March 1781. On 16 June 2008 NASA's Galaxy Evolution Explorer project reported finding large numbers of new stars in the outer reaches of the galaxy. It had hitherto been thought that these areas lacked the materials necessary for star formation.

AK, with EarthSky and Wikipedia Notes

