

Observe Our 2 Galactic Neighbors with Binoculars

- a December 2026 Sky Event from the [Astronomy Club of Asheville](#)

This month, during the dark moonless nights of **December 1-10**, two relatively close neighboring galaxies will be visible with binoculars, high overhead in the early evening sky from a dark location.

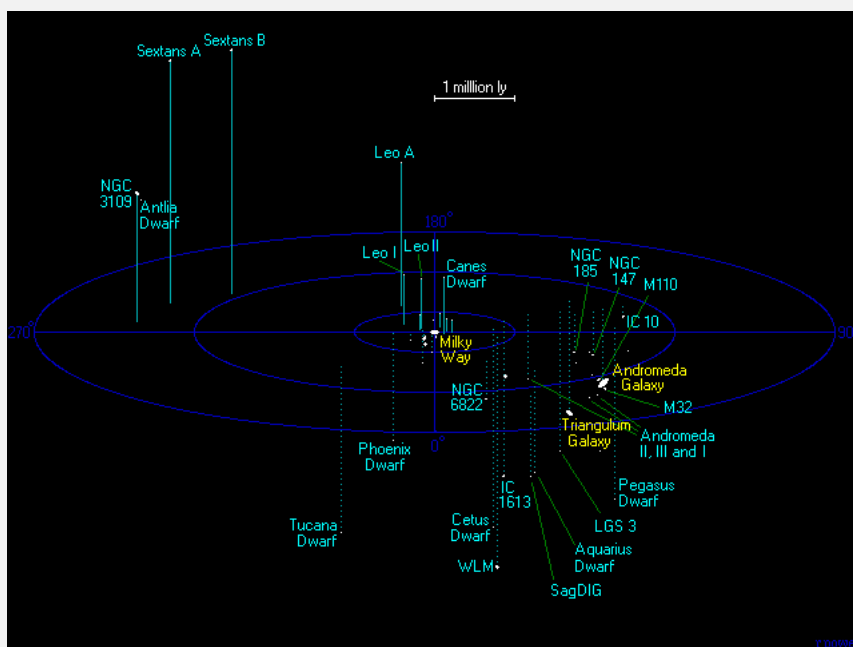
Our Milky Way galaxy is part of a group of galaxies called the **Local Group**. Our local group of galaxies contains 3 large galaxies, including the Milky Way, along with 50 or more much smaller galaxies, called “dwarf” galaxies. Many of those dwarf galaxies are satellites of the 3 large galaxies, like the Large and Small Magellanic Cloud galaxies that are gravitationally bound to our Milky Way and visible with your unaided eyes in Earth’s southern hemisphere.

The 2 other large galaxies in our local group include the Andromeda Galaxy (the largest member and closest to our Milky Way) and the Triangulum Galaxy (the smallest member). These two companion galaxies lie in the same general direction in our night sky.

What is the Local Group? It’s a gravitationally bound system of the galaxies nearest to our Milky Way. Image via [Wikimedia Commons](#) (CC BY-SA 2.5 DEED).

The Local Group of galaxies are all located within roughly 5 million light-years of space around us. The Local Group’s diameter is about 10 million light-years.

Andromeda Galaxy is about 2.5 million light years away, while the much smaller Triangulum Galaxy lies at a distance of about 3 million light years. Yes, there are reports of folks seeing both of these galaxies with their unaided eyes but observing them with binoculars is much easier.



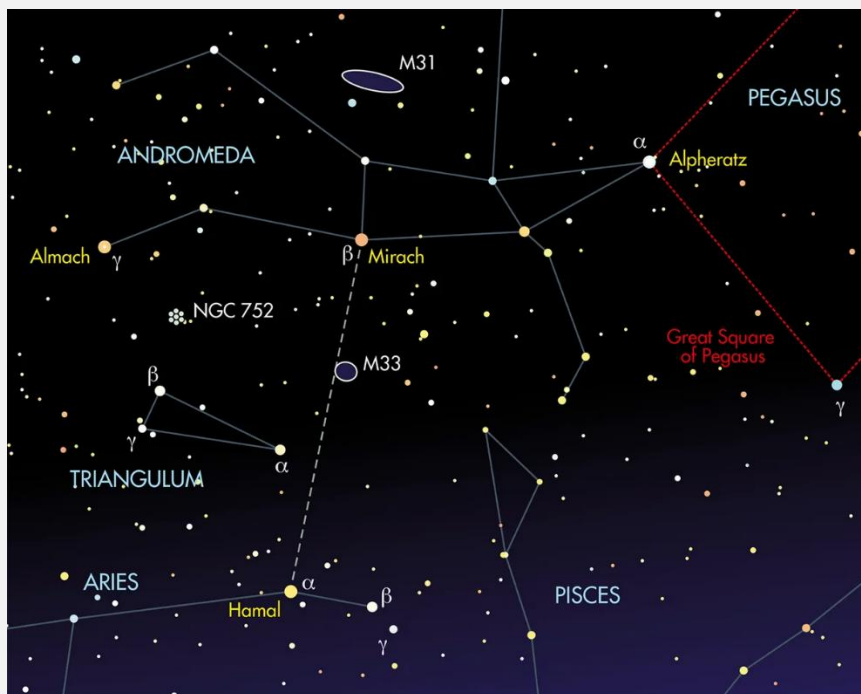
These 2 neighboring large galaxies are commonly referred to by their Messier catalog designations: **M31 (Andromeda Galaxy)** and **M33 (Triangulum Galaxy)**.

On these early December nights, you will find both M31 and M33 high overhead after dusk as darkness sets in. Make sure you choose a dark location away from any outdoor lighting and away from any immediate urban area skyglow. In addition to a pair of binoculars with apertures of 40mm or more, you will find this effort easier with a

reclining, foldable, outdoor lounge chair, so that you can lie back, more easily hold those binoculars steadily, and avoid any neck strain.

Begin your search for our 2 neighboring galaxies by locating the great square of Pegasus high overhead. Next shift your gaze into the adjacent constellation Andromeda, from which M31 obtains its name. M31 is larger, closer, and much brighter to spot than M33; so, begin by locating it first, by sweeping your binoculars in the direction shown on the chart to the right.

You should easily spot the large glow of Andromeda's spiral disk which is angled at 77° (90° is edge-on) relative to our point of view here on Earth.



Next sweep your binoculars toward the bright star Mirach (Beta Andromedae), which shines at an approximate magnitude of 2.0. Continue your binocular sweep past Mirach in the same direction. As you will see on the chart above, M33 is about the same distance from Mirach as M31.

Be patient, as M33 is much fainter than M31. M33 is a “face-on” spiral; so, its light is spread over a large area and thus has an extremely low surface brightness. But under dark skies, it is clearly discernable in 7x magnification binoculars. M33 is located in the constellation Triangulum, which explains its moniker the “Triangulum Galaxy”.

On the next page you will find images of our 2 large neighbors in our Local Group, taken by Astronomy Club of Asheville club members using small telescopes.



M31 or NGC224, The Andromeda Galaxy, is a barred spiral galaxy that is the largest member of the Local Group of galaxies. It is approximately 2.5 million light years from Earth and is about 200,000 light years across. It is located in the Andromeda constellation and covers about 3 degrees of the sky (about 6 full moon widths). There are two companion dwarf galaxies in the image: M32, just above and left of the center, and M110, to the lower right of the center. Photo by club member Vince Castello.



M33, the Triangulum Galaxy, a spiral galaxy about 3.0 million light years away and part of the Local Group. Photo by club member Tom Engwall, remotely captured at his setup in Castellón, Spain in September 2022.