Central Coast Astronomy Virtual Star Party

April 23, 2022 at 7pm Pacific

Welcome to our spring stargazing session! This handout will have information that goes along with our interactive virtual stargazing tour with Aurora, Brian & Kent. We're going to focus on objects you can see with binoculars or a small telescope, so after our session, you can simply walk outside, know where to look, and really understand what you're looking at.

Before our session starts:

Step 1: Download your free map of the night sky: *www.SkyMaps.com*
Step 2: Click this link to join in: *www.CentralCoastAstronomy.org/stargaze*

Tonight's Objects:

Leo, ancient Greek constellation.

M 95, spiral galaxy, has a visual magnitude of 9.7, a size of 7.4' x 5.0', a distance of 32.6 million light years and is 70,000 light years across. It was discovered by Pierre Mechain on March 20th 1781. M 95 is located 8.7 degrees east of Regulus (Alpha Leonis) on the underside of Leo.

M 96, spiral galaxy, has a visual magnitude of 9.2, a size of 7.6' x 5.2', a distance of 34.3 million light years and is 76,000 light years across. It was discovered Pierre Mechain on March 20th 1781. M 96 is only 42' east of M 95.

M 105, spiral galaxy, has a visual magnitude of 9.3, a size of 5.4 x 4.8', a distance of 37.9 million light years and is 55,000 light years across. It was discovered by Pierre Mechain on March 24th 1781. M 105 is about 47' NNE of M 96. Tenth magnitude galaxy NGC 3384 is only 8' ENE of M 105. M 95, M 96, M 105 and NGC 3384 are all members of the Leo I galaxy group.

Leo Trio, M 65, M 66 and NGC 3628.

M 65, spiral galaxy, has a visual magnitude of 9.3, a size of 9.3' x 2.9', a distance of 32.8 million light years and is 94,000 light years across. It was discovered by Charles Messier on March 1st 1780. M 65 is inclined 74 degrees to our line of sight. It is located about 47' ESE of 73 Leonis.

M 66, spiral galaxy, has a visual magnitude of 9.0, a size of 9.1' x 4.2', a distance of 32.8 million light years and is 87,000 light years across. It was discovered by Charles Messier on March 1st 1780. M 66 is only 20' east of M 65.

NGC 3628, edge on spiral galaxy with a dust lane, has a visual magnitude of 9.5, a size of 14.8' x 3.3', a distance of 34 million light years and is 148,000 light years across. It was discovered by William Herschel on April 8th 1784. It is 35' north of M 66.

Virgo Cluster of Galaxies.

A great cloud of galaxies stretching from southern Comma Berenices through the western side of Virgo. It is some times called the Realm of the Galaxies. We will start at the center of the Virgo Cluster of Galaxies with Markarian's Chain.

Markarian's Chain contains M 84, M 86, the Eyes (NGC 4438 & NGC 4435) and more. This area is located roughly between Denebola (Beta Leonis) and Vindemiatrix (Epislon Virginis).

M 84, elliptical galaxy, has a visual magnitude of 9.1, a size of 6.5', x 5.6', a distance of 57.8 million light years and is 110,000 light years across. It was discovered by Charles Messier on March 18th 1781. M 84 is the western most member of Markarian's Chain.

M 86, elliptical galaxy, has a visual magnitude of 8.9, a size of 8.9' x 5.8', a distance of 56.7 million light years and is 147,000 light years across. It was discovered by Charles Messier on March 18th 1781. M 86 is about 17' ENE of M 84.

NGC 4438, a disturbed spiral galaxy, largest of the Eyes, has a visual magnitude of 10.2, a size of 8.9' x 3.6', a distance of about 55 million light years and is about 140,000 light years across. It was discovered by William Herschel on April 8th 1784. NGC 4438 is about 23' east of M 86. It appears that this galaxy was disrupted by a close approach to M 86.

NGC 4435, spiral galaxy, has a visual magnitude of 10.8, a size of 3.2' x 2.0', a distance of about 55 million light years and is about 32,000 light years across. NGC 4435 was discovered by William Herschel on April 8th 1784. It is located about 4' north of NGC 4438.

Not in Markarian's Chain but considered near the center of the Virgo Cluster of Galaxies.

M 87, elliptical galaxy, has a visual magnitude of 8.6, a size of 8.3' x 6.6', a distance of 54.9 million light years and is 132,000 light years across. It was discovered by Charles Messier on March 18th 1781. M 87 is considered the most massive galaxy known, massing 2.7 billion solar masses. It has 5,700 identified globular clusters. There is a jet coming out from the center of M 87 which extends for 65,000 light years. M 87 is about 1.25 degrees SE of M 86.

Equipment Recommendations:

After a star gazing session, the first thing people want to do is buy a telescope. BUT telescopes are pretty useless unless you know where to point them! Instead, get yourself a nice pair of binoculars and do several star gazing sessions (with us virtually or in-person with your local astronomy club).

Binoculars for Astronomy:

Celestron Cometron 7x50 Binoculars ($35) – great for kids!
Orion's UltraViews 10x50 ($140)

Once you're more familiar with the patterns of the night sky, it's time to start thinking about owning a telescope. *The best telescope for you is the one you are going to use*. Here are our best recommendations for newbies to get started:

Beginner telescopes:

For kids: 8" Dobsonian Telescope: https://bi t.ly/2XEFaeK (opt for Go-To capability)
or the Classic 8" Dobsonian https://bit.ly/3ABWqmM (great for learning how to use one)

For adults: (this is really going to depend what you want to look at and what your typical "seeing conditions" are – we recommend visiting an in-person star-gazing session with your local astronomers *before* you purchase anything!)

8" Newtonian Reflector https://bit.ly/3f_3C0qS (easy to use, good all-around scope for deep sky objects, planets, moon)

8" Schmidt-Cassegrain https://bit.ly/3dJKG59 (more compact, good all-around scope for planets, galaxies, nebulae, astrophotography)
90mm Refractor https://bit.ly/37aG8lX (harder to use, best for planets and moon observing)

Get connected with your local astronomy club and get star gazing!