

KAPIL SIKKA

**MAGGIE-THE
LONGEST
STRUCTURES IN
THE MILKY WAY**

Meet Maggie: The Largest Structure in the Milky Way Located 55,000 Light-Years Away From Earth

Margaret Davis Jan 07, 2022 05:35 AM EST





Astronomers have discovered what may be the longest structure
in the Milky Way : an unusual cloud of hydrogen.

ABOUT ME



- ✓ Mentoring, guiding and teaching UPSC students since 8 years
- ✓ Polity, Indian Economy, Essay, Internal Security & Post Independence India
- ✓ Teaching Political Science Optional



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What is Maggie?

The gigantic structure, which is more than 3,900 light-years long and around 150 light-years wide, is located roughly 55,000 light-years away from the solar system.

The team named the lengthy cloud **"Maggie,"** which is short for the **Magdalena River, the longest river in Colombia.**

Juan Soler, an astronomer at the **Max Planck Institute for Astronomy (MPIA)** in **Germany** first detected the Maggie.

Astronomers discovered the cloud as part of **The HI/OH/Recombination line survey of the Milky Way (THOR)**.

The survey, which relies on data collected by the radio observatory called the **Jansky Very Large Array in New Mexico**, looks for objects outside the main plane of the Milky Way, which is the **flattened disk where most matter in the galaxy is found**.

Because Maggie is located outside that plane, the structure was much easier to spot than it normally would have been.

Gas within Maggie: All the gas was moving at the same speed and in the same direction, which confirmed that it was indeed a **single structure** and not multiple clouds sitting side by side.

Maggie isn't just bigger than other gas clouds; it's also made up of a unique form of hydrogen. Maggie is made up of **92% atomic hydrogen**, which makes it particularly interesting to researchers.

Around 8% of Maggie's hydrogen is molecular and appears to be concentrated into certain points along the cloud.



The Karl G. Jansky Very Large Array (VLA) is a centimeter-wavelength radio astronomy observatory located in central New Mexico on the Plains of San Agustin,

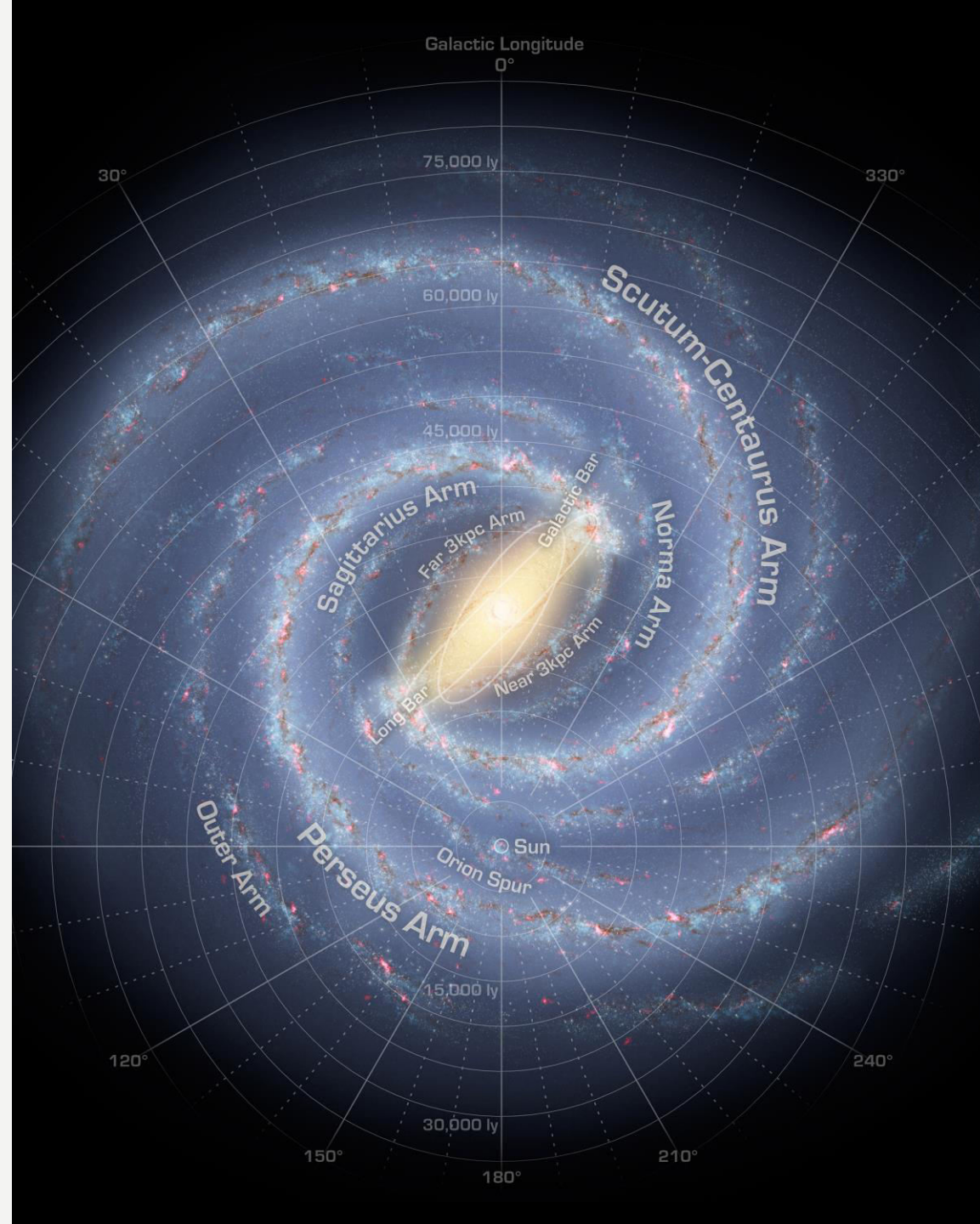
The VLA comprises twenty-eight 25-meter radio telescopes (27 of which are operational while one is always rotating through maintenance) deployed in a Y-shaped array and all the equipment, instrumentation, and computing power to function as an interferometer.

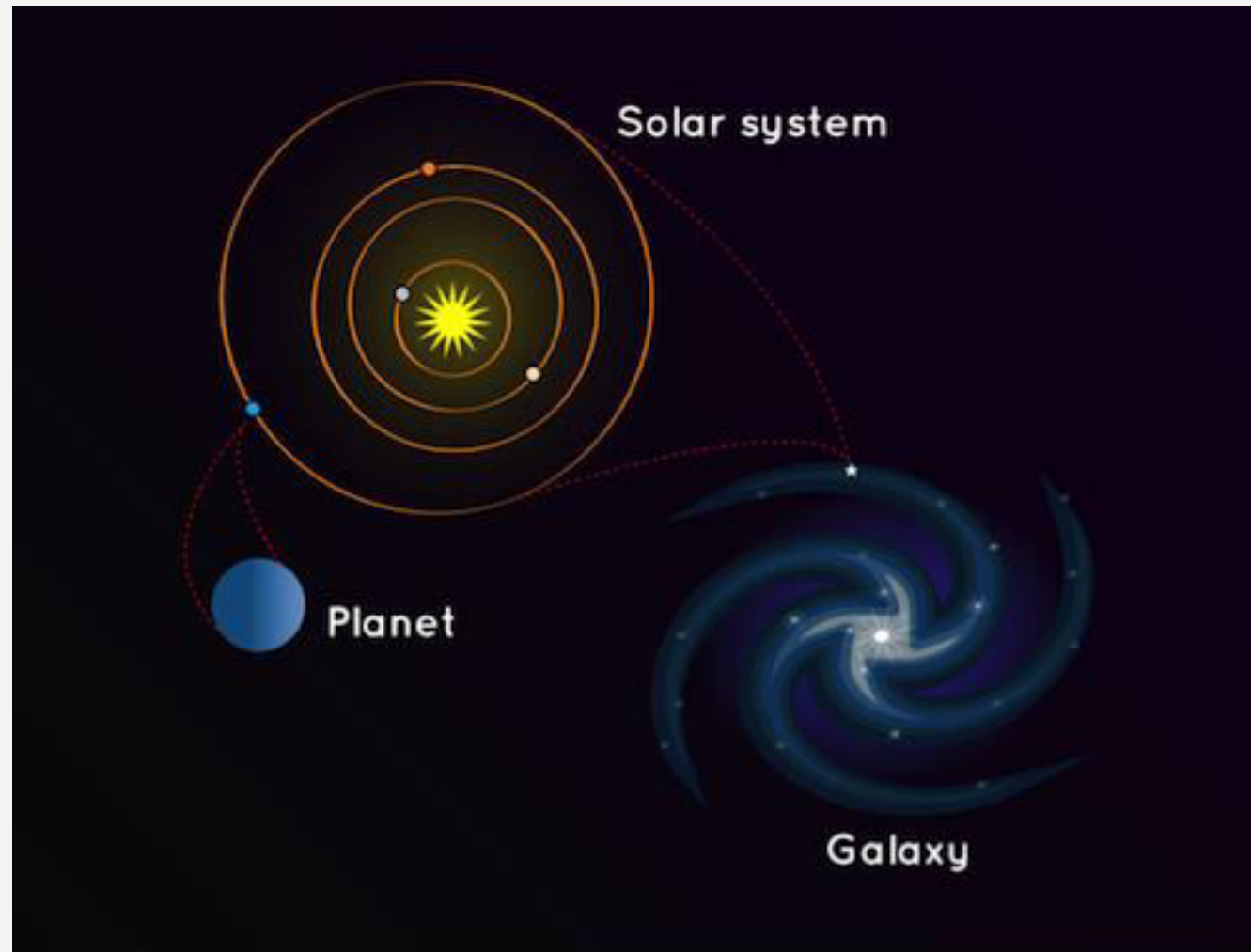


WHAT IS A GALAXY?

A **galaxy** is a huge collection of gas, dust, and *billions* of stars and their solar systems. A galaxy is held together by gravity.

Our galaxy, the Milky Way, also has a *supermassive black hole* in the middle.





MILKY WAY QUICK FACTS

- **Galaxy type:** Spiral
 - **Age:** 13.6 billion years (and counting)
 - **Size:** 100,000 light-years across
 - **Number of stars:** about 200 billion
 - **Rotation time:** 230 million years

Thank you 😊

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