

Celestial

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Observer

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*M45 Image by CCAS Member Lee Coombs. Ektachrome P1600,
30 min. 10" f/5 Newtonian*

Next Meeting: Thursday, June 28th
7PM at United Methodist Church,
Wesley Building. Guest speakers are
Dr. Tom Frey and Club president
Joseph Carro!

Next Star Gazing: Saturday, June 16th
at sunset at the Santa Margarita KOA.
See inside for directions and a map.

Upcoming Meeting

Thursday, June 28th in the Wesley Room, 1515 Fredericks Street, San Luis Obispo
6:45 Doors Open | 7:00 Meeting Starts



Dr. Tom Frey and CCAS President Joseph Carro will give a talk on June 28th about the definition of a binary star, the methods to measure them, and their importance. The measurement of binary stars is the foundation for all other measurements about stars, namely size, mass, and orbit. Joseph has measured more than 500 stars, and written 25 articles, all of which have been published in international journals.

Next Star Gazing

June 16, 2018 at sunset (8:20PM) at the Santa Margarita KOA

Our Sky Star Parties occur once a month, and are free and open to the public, and also weather-permitting. Check our website for all the details!

‘Dark Twin’ of the Milky Way Galaxy Discovered

A galaxy has been discovered 300 million light-years away from Earth in the Coma constellation, according to a new study.



The galaxy went unnoticed until last year because, when regarding the darkness of space, this galaxy resembles a virtually indistinguishable blob. But by looking at it with some of the world's most powerful telescopes, including the Dragonfly telescope array, researchers realized something else.

It is an incredibly large, diffuse and dim galaxy. Encircling its core is a halo made up of clusters of stars, much like what we see in the Milky Way. But this galaxy is only 0.1% stars. The researchers knew that something had to be holding those few stars in place.

"We knew as soon as we discovered the galaxy that if it were just made up of stars and no dark matter, that it would quickly disrupt and disappear," said van Dokkum, lead study author and Yale University astronomer.

A huge amount of gravity was needed to hold those stars in place, and once researchers used star velocity to measure how much mass the galaxy contained, they realized that 99.9% of the mass is dark matter.

"It's very exciting because we thought we had sort of figured out what the relationship is between galaxies and dark matter," van Dokkum said. "This discovery turns that idea on its head. Now, we found a galaxy with hundreds of times fewer stars in the galaxy with the same amount of dark matter as the Milky Way. That was entirely unexpected, and that means that there is something missing in our description of galaxy formations, and there are physics that we don't yet understand in that process."

This newly observed galaxy could hold the secrets to understanding dark matter, the hypothesized ingredient that makes up 90% of the universe. Given the fact that we know next to nothing about it, this find could open the door to our discovery and understanding of the mysterious building block.

"One of the things we are after are finding galaxies like this that are even closer to us, ideally 30 or 50 million light-years away so we could study them in detail," van Dokkum said. "We could be looking for the dark matter particle itself. Currently, people are looking at tiny dwarf galaxies that circle the Milky Way to search for the dark matter particle with X-ray and gamma ray telescopes, but nothing has been found yet. These galaxies are a million times more massive, so we have a higher chance of detecting a dark matter signal if we find one close enough to us."

CCAS Officers

Feel free to connect with us!



President: Joseph Carro

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Outreach Coordinator: Dave Majors

Treasurer: Lee Coombs

Celestial Advisor: Kent Wallace

Webmaster: Joe Richards

CCAS Contact Information

Founded in 1979, the Central Coast Astronomical Society (CCAS) is an association of people who share a common interest in astronomy and related sciences.

Central Coast Astronomical Society

PO Box 1415

San Luis Obispo, CA 93405

Website: www.centralcoastastronomy.org

Facebook: www.facebook.com/CentralCoastAstronomicalSociety

Lectures & Star Parties

MONTHLY MEETING & LECTURE

On the fourth Thursday of the month (Jan-May, Aug-Oct), we often have world-renowned professionals and amateurs in astronomy speak about their projects during our monthly meetings. The talks are informal and questions are invited.

Meetings begin at 7:30 p.m. in San Luis Obispo. For location and directions, visit our website: www.sloastro.org

OUTREACH PROGRAM

We offer a limited number of outreach programs where we bring our star party to you. These custom events include a talk about current topics in space science. After the lectures, we make our telescopes available for your group to observe the wonders of the night sky.

STAR-GAZING EVENTS

Join us for a star-gazing evening by observing the dark skies through club members' telescopes. It begins just before sunset on one Saturday each month. The Star Party is hosted in Santa Margarita. (See www.sloastro.org for dates, times and locations).

Need help operating your telescope? Bring your telescope one hour early for help on how to work your telescope by our friendly astronomers.



Why Join CCAS?

BENEFITS OF MEMBERSHIP

- Subscription to *Celestial Newsletter*, our monthly bulletin of articles and events
- Interaction with world class speakers as they present cutting edge astronomical research
- Discounts on *Sky & Telescope* and *Astronomy* magazines
- Social events, such as our annual Star-B-Que
- Club telescopes – use one of the club's loaner scopes, complete with instructional lessons
- Access to 'Members Only' are of the website containing observing tips, scope tricks, and educational articles for all levels
- Field trips – to observatories and other locations of scientific interest, such as Mt. Wilson Observatory in Pasadena, Chabot, Space and Science Center, Fremont Peak, and the Stanford Linear Accelerator Center (registration fee may be requested)
- Extended observing hours on public nights and private observing sessions exclusively for CCAS members
- Assistance from club members, and other "how-tos" to help you best enjoy amateur astronomy and astrophotography

Questions about membership or other events? Call Lee Coombs at (805) 466-2788 or visit our website at:

www.sloastro.org

How to Join

MEMBERSHIP APPLICATION

Membership is annual for each upcoming year, beginning when you first sign up. You can sign up online or mail in this form:

Membership Categories (Check one):

- \$15 Youth/Student
- \$15 Seniors
- \$20 Individual/Family

Magazine subscriptions Add specified amount to membership fee for a 1-year subscription.

- Sky & Telescope* (+ \$33) only in September
- Astronomy* (+ \$34) only available in September

Information: (PRINT CLEARLY!!)

Name(s) _____

Address _____

City _____

State, Zip _____

Home Phone _____

E-Mail _____

Newsletter Subscription:

You can choose E-Mail (recommended) or hard copy delivery for *Celestial Observer*: (check one)

- E-Mail (full color)
- Hard Copy (black & white)

Please make checks payable to Central Coast Astronomical Society and mail to P.O. Box 1415, San Luis Obispo, CA 93405.

