Website: https://acl.universeii.com 2, March 2023

# Astronomy Club of Lompoc

Presents

# The Sidereal Times

JWST Deep Field (see page 5)

**Meeting *News:*** The February meeting we discussed having Club members presenting astronomy subjects. Also outreach Programs for schools etc.

**Reminder: ACL Friday March 10th meeting will be held at Manzanita School Teachers lounge at 7:00 Pm.**

***Lunar Calendar:***
New Moon 21st
Full Moon 7th

**Photos in this issue are from the JWST**

The surest sign that intelligent life exists elsewhere in the universe is that it has never tried to contact us.

## Presidents Message

We had a good meeting Feb. 10, and our new/former member **Steve Ball** brought a **meteorite** to show and gave us facts about it. It was a Chondrite type of Meteorite which came from a huge Meteor explosion over NW Africa producing many fragments. We discussed how we would **welcome more member involvement** with our outreach program and I would be pleased to have any member give a short talk on their favorite astronomy subject. I need to have a talk ready each month so any help I can get would be great!

**Vahan** showed us how to use and focus binoculars, and we all agreed, we would like to hear more discussion and demonstration of both binoculars and telescopes. **Tom** brought a very nice Thank You card from Wendy Culver and her class for our club's participation in the Clarence Ruth Astronomy night. Also she gave Tom a lovely book of photos called the Art of the Cosmos which he will share with the club and several members got to look through it at the meeting.

The space craft **Lucy** will be visiting an **Asteroid** in November of this year that went by only a number. It has now officially been given a name **- Dinkinesh,** which is Ethiopian for **Lucy.** It refers to the famous 1974 discovery in Ethiopia of the most complete oldest human fossil skeleton. She was a little over 3 million years old and was only 3 and ½ feet tall but very strong with powerful arms and legs. **My March Presentation** will be about the assembling of the huge Radio Telescopes on the high Atacama desert of Chilian Andes Mt Range. Also, I will be discussing my going back in time when our club began, and going through each year of papers and newsletters I have kept for 32 years! It took about a week doing a few hours each day. I will share more at the next meeting, Yes I have been in this Astronomy Club the longest of anyone else next would-be Steve Ball and 3rd Ken Jergenson.

Hoping for Clear skies! Jana

## Events

**March 11, 18 & 25** ***Star Party at the Observatory***.

*Yes!*

**March 7** Full Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This occurs at 12:42 UTC. This Moon was known by early American tribes as the worm Moon because this was the time of year that the ground would start to soften and earthworms would appear.

**March20** March Equinox occurs at 21:17 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. First day of Spring in Northern hemisphere and first day of Fall in the southern hemisphere.

**March 21** New Moon will be located on he same side of the Earth as the Sun and will not be visible in the night sky. This occurs at 17:25 UTC. Best time to view faint objects such as nebula, clusters and Galaxy.

## Star party's and Events

**February 11, 18 & 25** ***Star Party @ observatory, Cancelled due to weather.***

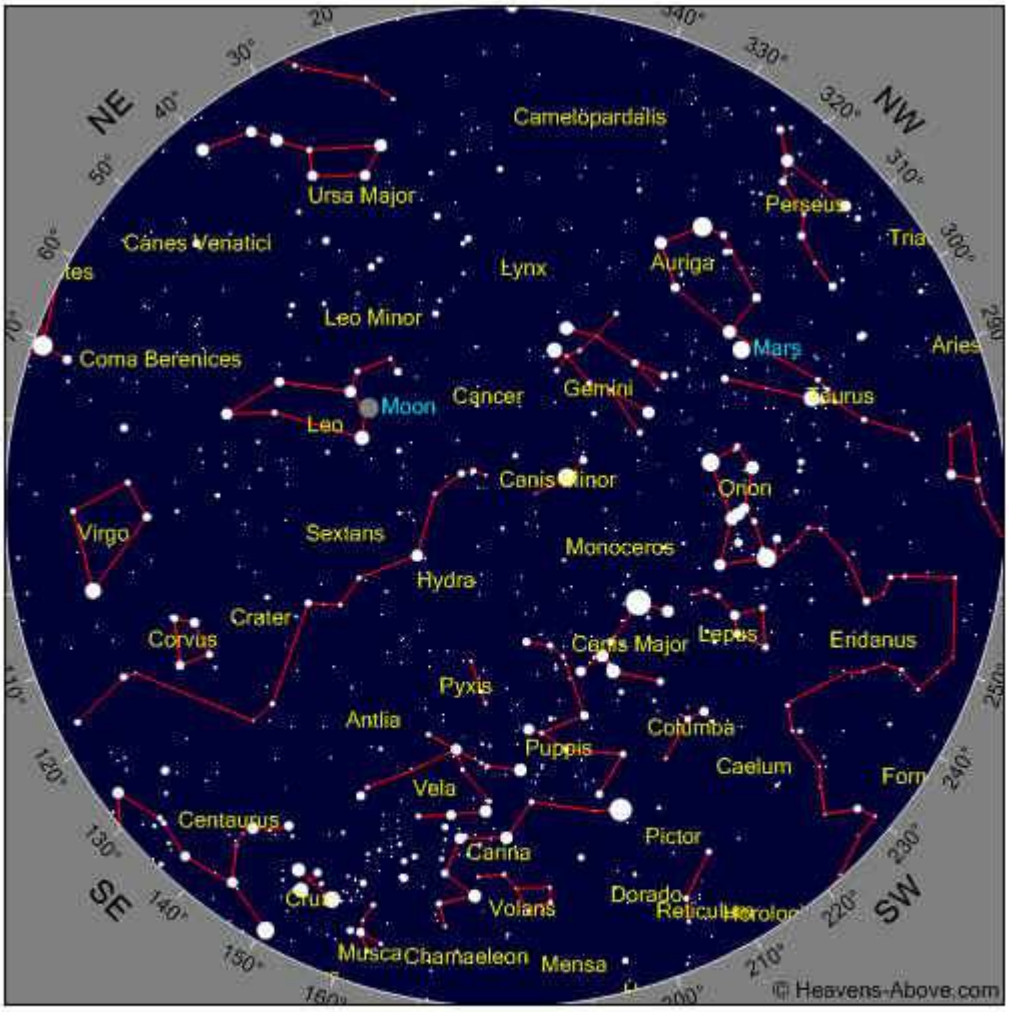
*Nuts!*

## March 2023 Moon


Full 7, New 21, Last Quarter 15 , First Quarter 29

March S**ky 2023**

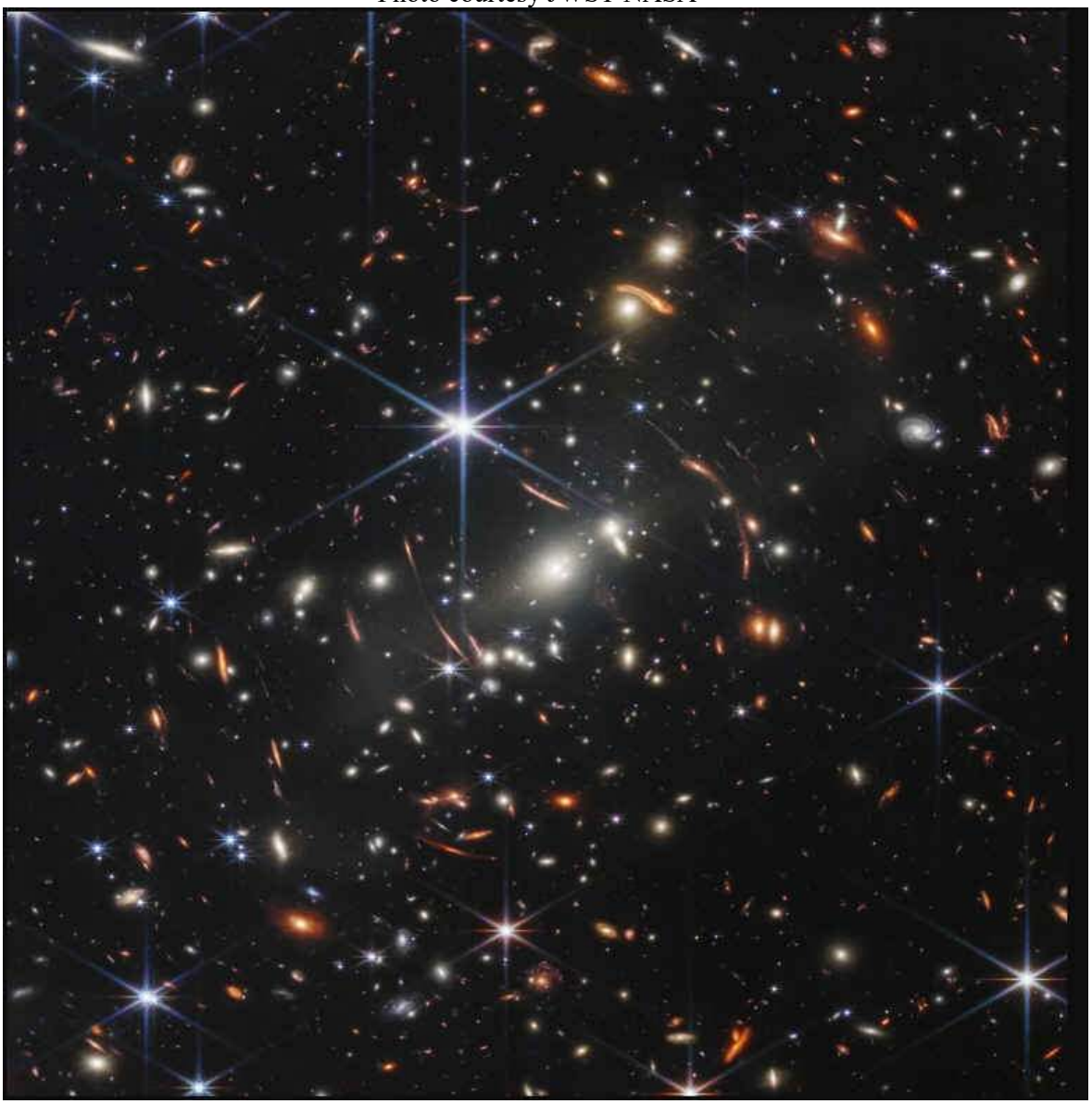
Some Objects of interest, M1, Mars, Moon, M42




**Time**

| Year | 2023 | Month | 3 | Day | 5 | Hour | 21 | Minute | 30 |
|---|---|---|---|---|---|---|---|---|---|

Photo courtesy JWST NASA

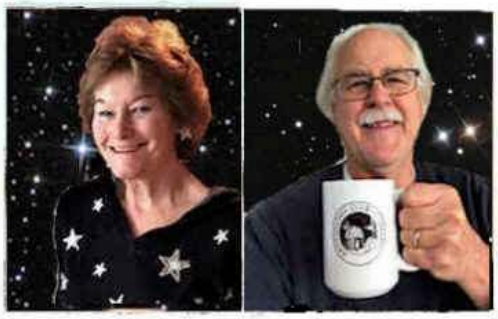


Thousands of galaxies flood this near-infrared image of galaxy cluster SMACS 0723. High-resolution imaging from NASA's James Webb Space Telescope combined with a natural effect known as gravitational lensing made this finely detailed image possible First, focus on the galaxies responsible for the lensing: the bright white elliptical galaxy at the center of the image and smaller white galaxies throughout the image. Bound together by gravity in a galaxy cluster, they are bending the light from galaxies that appear in the vast distances behind them. The combined mass of the galaxies and dark matter act as a cosmic telescope, creating magnified, contorted, and sometimes mirrored images of individual galaxies. Clear examples of mirroring are found in the prominent orange arcs to the left and right of the brightest cluster galaxy. These are lensed galaxies – each individual galaxy is shown twice in one arc. Webb's image has fully revealed their bright cores, which are filled with stars, along with orange star clusters along their edges. Not all galaxies in this field are mirrored – some are stretched. Others appear scattered by interactions with other galaxies, leaving trails of stars behind them. Webb has refined the level of detail we can observe throughout this field. Very diffuse galaxies appear like collections of loosely bound dandelion seeds aloft in a breeze.

## For What It's Worth

The James Webb Space Telescope is living up to its promise as a way back machine. The spectacularly sensitive observatory is finding and confirming galaxies more distant, and therefore existing earlier in the universe's history, than any seen before. The telescope, also known as JWST, has confirmed extreme distances to four galaxies, one of which sets a record for cosmic remoteness by shining about 13.475 billion years ago, astronomers reported December 12 at the conference. Dozens of other galaxies may have been spotted as they were just 550 million years or less after the Big Bang, meaning the light from those galaxies traveled at least 13.1 billion years before reaching the telescope. Taken together, the new observations suggest galaxies formed earlier and faster than previously thought. "We're entering a new era," says astronomer Swara Ravindranath of the Space Telescope Science Institute in Baltimore. That new era is thanks in part to JWST's ability to see very faint light. For the most distant objects, like the first stars and galaxies, their visible light is stretched by the relentless expansion of the universe into longer infrared wavelengths that are invisible to human eyes and some previous space telescopes. But now, measurements that were recently impossible are suddenly easy with JWST, researchers say."JWST is the most powerful infrared telescope that has ever been built," astrophysicist Jane Rigby said at the conference. Rigby, of NASA's Goddard Space Flight Center in Greenbelt, Md., is the JWST operations project scientist. "Almost across the board, the science performance is better than expected. "Even in the very first image, released in July, astronomers spotted galaxies whose light originated 13 billion years ago or more. But those distances were estimates. To measure the distances precisely, astronomers need spectra, measurements of how much light the galaxies emit across many wavelengths. Those measurements are slower and more difficult to make than pictures."Thanks to this glorious telescope, we're now getting spectra … for hundreds of galaxies at once," said astronomer Emma Curtis-Lake of the University of Hertfordshire in England. Among those are four of the earliest galaxies ever seen, some of which existed less than 400 million years after the Big Bang. Curtis-Lake and colleagues reported at the meeting and in a paper submitted December 8 to arXiv.org. The team spotted these record holders in a patch of sky that the Hubble Space Telescope once scoured for ultra remote galaxies. JWST confirmed the distance to that galaxy and came back with three more whose light comes The galaxies are also surprisingly pristine, chemically speaking, lacking in elements heavier than hydrogen and helium. "We don't see that in the present-day universe," says Ravindranath, who was not involved in the new discovery. It could mean that not many of the galaxies' stars have died in supernova explosions that spread heavy elements around the universe, which suggests the galaxies' original stars were not extremely massive.In another part of the sky, JWST has spotted 26 galaxies that may have existed about 550 million years or earlier after the Big Bang, astronomer Steven Finkelstein and colleagues reported at the meeting and in a paper submitted November 10 to arXiv.org."On an emotional, visceral level, looking at these images is amazing," said Finkelstein, of the University of Texas at Austin. The first of these to be discovered, dubbed Maisie's Galaxy after Finkelstein's daughter, appears to be just 380 million years after the Big Bang, the researchers reported December 1 in the *Astrophysical Journal Letters*. The most distant galaxy in the team's survey might lie as much as 130 million years earlier than Maisie. Those galaxies' distances still need to be confirmed with spectra, but the team expect to get those data in the next few weeks. from as early as 325 million years after the Big Bang.The galaxies are also surprisingly pristine, chemically speaking, lacking in elements heavier than hydrogen and helium.

## *Astronomy Club Officers*



President & Treasurer
Jana Hunking

Vice President
Tom Gerald

Secretary
Katharine Black

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## *ACL Support Personnel*

***ACL News letter Editor***
*Serf / Minion Vahan Yeterian*

***ACL Webmaster***
*Serf / Minion Aaron Anderson*
*(New Zealand)*

**Club Meeting**

**Reminder** **ACL** Club meeting March 10th 7:00 PM
Manzanita School Teachers Lounge. Masks!
Star Parties (as always weather permitting)

Other Astronomy Club Meetings and links to other sites.

**http://www.centralcoastastronomy.org/**

**http:// www.sbau.org/#AU_EVENTS_Calendar**

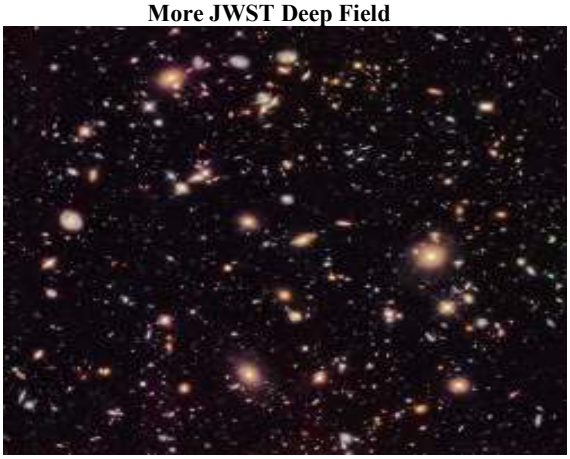
**http:// www.heavens-above.com/**

**https://spaceweather.com**

**https://www.space.com**

**https://skymaps.com**

**More JWST Deep Field**



***"Astronomy compels the soul to look upward, and leads us from this world to another". (Plato)***

**ACL Club LOGO**