STRATFORD ASTRONOMY GROUP

FEBRUARY 7TH, 2023

AGENDA

- Meet and Greet
- Club NEWS and Activities (Museum and New Year Dinner)
- Club Q & A
- Equipment Lessons (connect battery and camera)
- Software and Imaging Information (running MallincamSky)
- Latest Astronomy NEWS
- WEBB NEWS
- What's UP this Month
- Show and Tell
- Astronomy Lessons
- Cosmology Lessons
- Conclusion

MEET AND GREET

Welcome

New Visitors

Regrets

PREVIOUS MEETING REVIEW

Meeting attended by 14:

Michael Burns
Colleen Devine
Tom Kinber
Rick Lyons
John Burtenshaw
Patrick Hayes
Peter Tinits
Paul Bartlett
Wolfgang Keller
Ken Roberts
Doug Fyfe
Bob Greer
Jim Kelly
Tim Pauli

CLUB NEWS AND ACTIVITIES

Group Funds

Total = $1218.45

- If you would like to contribute to the group, then please e-transfer Tim at:

timannemariepauli@gmail.com

or by cheques:

Tim Pauli

96 Front Street

Stratford, ON

N5A4H2

CLUB NEWS AND ACTIVITIES

EQUIPMENT:

STRATFORD ASTRONOMY CLUB EQUIPMENT

CLUB EQUIPMENT LOCATION:

Paul Bartlett is now storing all the group's equipment. If you wish to borrow an item, then please contact him at:

1948paul.bartlett@gmail.com

519-274-2010

UPCOMING MEETINGS

NEXT MEETING DATES

Bookings

Status: Approved

Total hours: 20

Status	Date	Start	End	Facility and spaces
~~Approved~~	~~Tue, Sep 06, 2022~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
~~Approved~~	~~Tue, Oct 04, 2022~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
~~Approved~~	~~Tue, Nov 01, 2022~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
~~Approved~~	~~Tue, Dec 06, 2022~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
~~Approved~~	~~Tue, Jan 10, 2023~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
~~Approved~~	~~Tue, Feb 07, 2023~~	~~7:00pm~~	~~9:00pm~~	~~St. Michael CSS *in Classroom 2 - Room 104*~~
Approved	Tue, Mar 07, 2023	7:00pm	9:00pm	St. Michael CSS *in Classroom 2 - Room 104*
Approved	Tue, Apr 04, 2023	7:00pm	9:00pm	St. Michael CSS *in Classroom 2 - Room 104*
Approved	Tue, May 02, 2023	7:00pm	9:00pm	St. Michael CSS *in Classroom 2 - Room 104*
Approved	Tue, Jun 06, 2023	7:00pm	9:00pm	St. Michael CSS *in Classroom 2 - Room 104*

CLUB NEWS AND ACTIVITIES

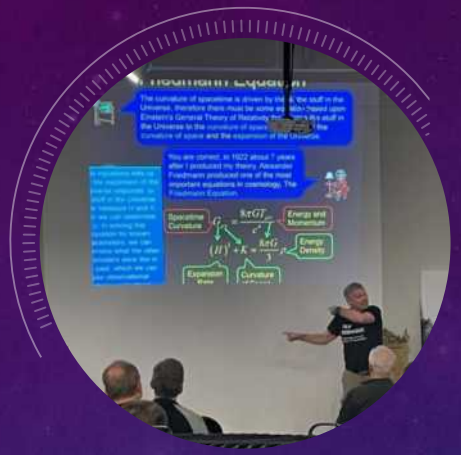
EQUIPMENT:

STRATFORD ASTRONOMY CLUB EQUIPMENT

- New Web site: (https://awptest.espubs.com/)
  Tim Pauli - Owner/Administrator
  Ken Roberts - technical contact
  Tom Kimber - Administrator/Editor
  Doug Fyfe - Administrator
  Michael Burns- Administrator
  Tom will build it on WordPress.

MUSEUM PRESENTATION

- On Jan 20, 2023 Michael Burns and Paul Bartlett gave presentations to the Stratford Perth Museum. Michael presented How large is the Universe and Paul presented Stargazing 101: The Amazing Night sky in January
- There were 42 attendees to this event. Questions were asked and the attendees seemed to have enjoyed the evening. Great outreach. We gave attendees a memorable evening.



SAG CHRISTMAS PARTY JAN 27 2023

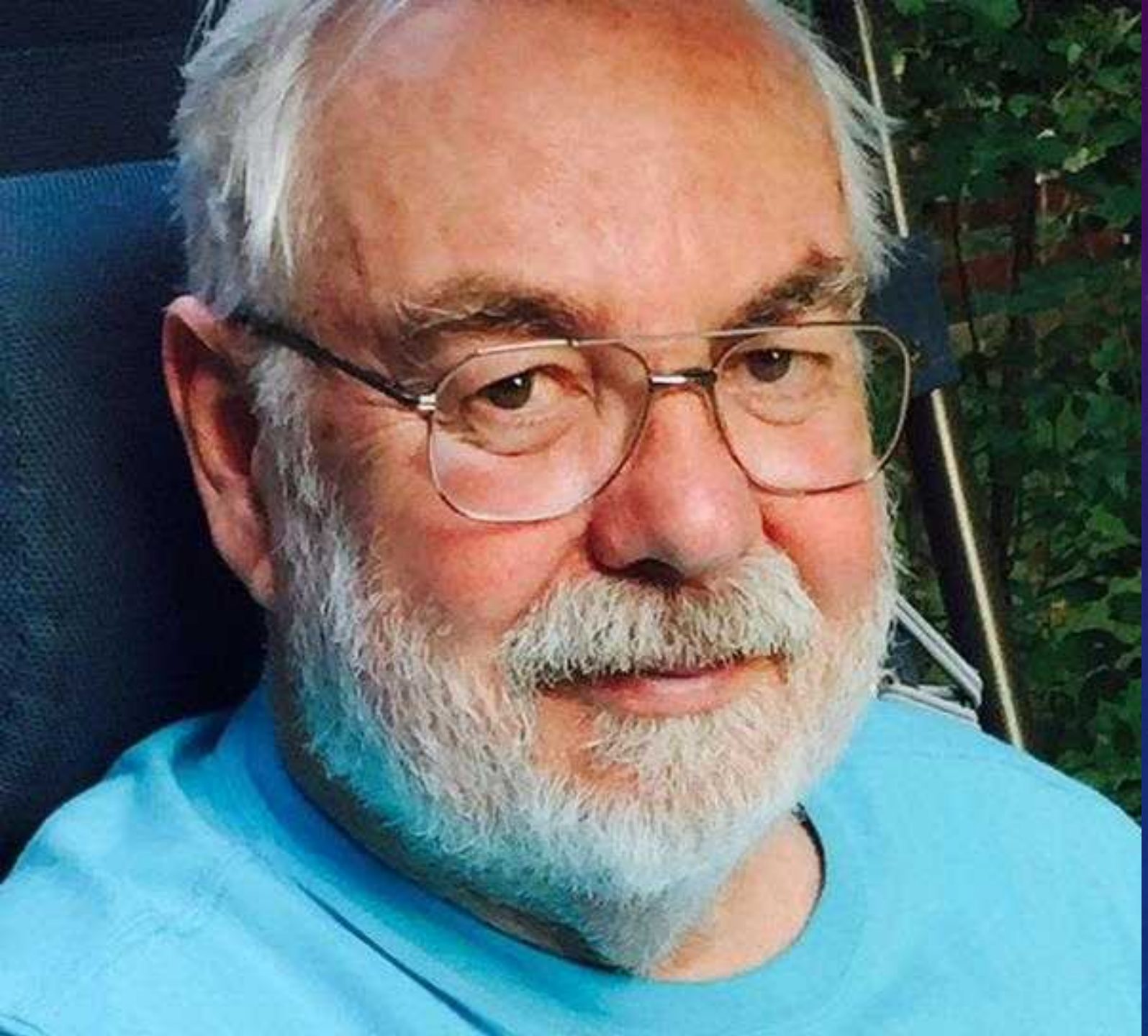
- This was another successful Christmas gathering to share a meal and fellowship after a hiatus of two years. There were 18 members in attendance at Crabby Joe's.

CLUB Q & A

- Let’s open this up for any Questions and Answers. This can include events that you are aware of .

LATEST ASTRONOMY NEWS

FEBRUARY



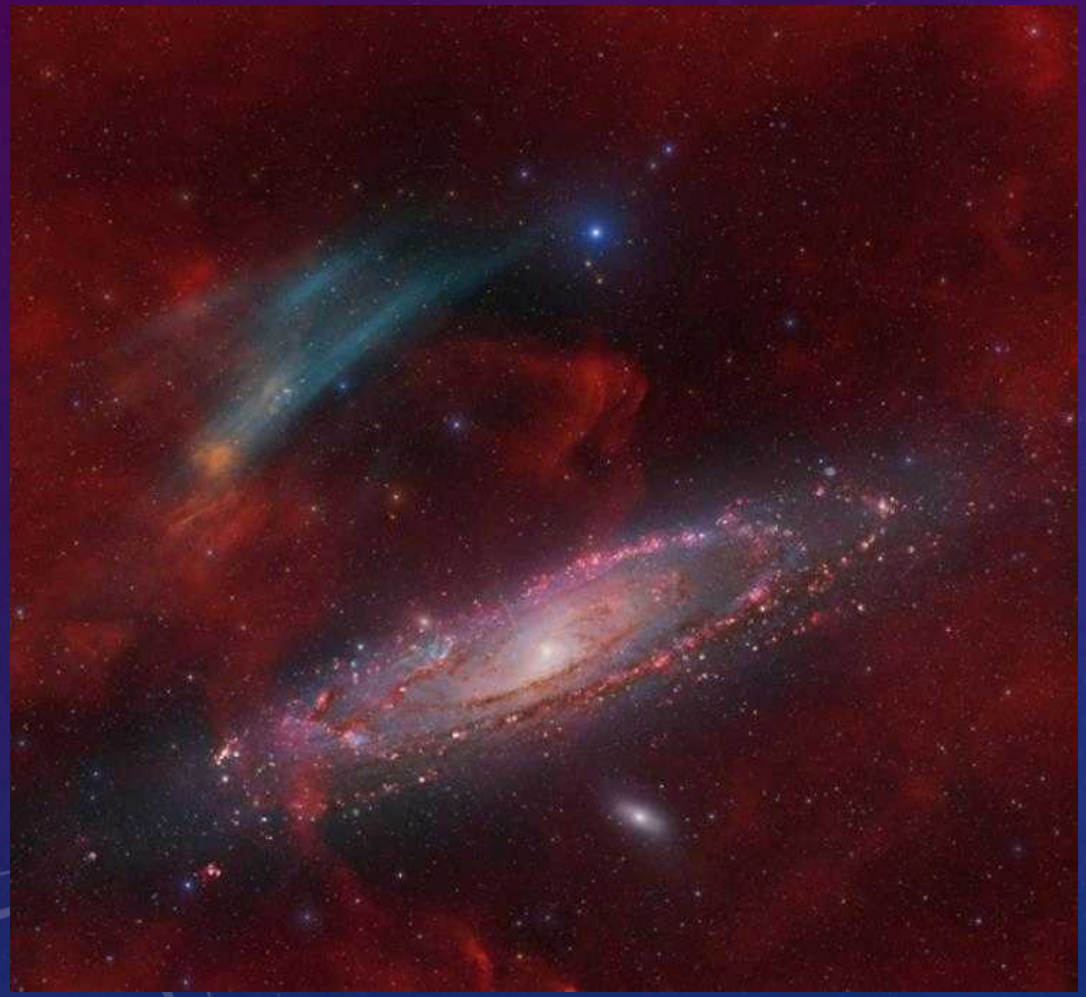
TERENCE DICKINSON, ASTRONOMY POPULARIZER AND ASTROPHOTOGRAPHER, DIES AT AGE 79

- Terence Dickinson, author of numerous popular books on astronomy and accomplished Astro-photographer, passed away Feb. 1, 2023, following a long battle with Parkinson's disease. He was 79 years old.
- Readers may be most familiar with Dickinson as the author of the *NightWatch: A Practical Guide to Viewing The Universe* (Camden House, 1983), as the guide has helped tens of thousands of people get started in the hobby of amateur astronomy. It has been in print through several editions for forty years.

CAMERA CAPTURES NIGHT SKY SPIRAL AFTER SPACEX ROCKET LAUNCH: JAN 18

- **Images captured with the Subaru-Asahi telescope at Hawaii's Mauna Kea Observatory show a mysterious 'whirlpool' move across the night sky. The National Astronomical Observatory of Japan said the phenomenon was probably related to the SpaceX satellite launch from Cape Canaveral in Florida earlier in the day**

Amateur astronomers discover enormous nebula near Andromeda



AI Despite being one of the most venerable and prominent objects in the night sky, the Andromeda Galaxy (M31) still has surprises. And a group of amateur astronomers have uncovered the latest: a previously unknown emission nebula lying just southeast of Andromeda and spanning half the width of the galaxy itself.

The feature was discovered in images taken last year with an Oxygen-III (OIII) filter by French astroimager Yann Sainty, who worked with Marcel Drechsler and Xavier Strottner to process and analzye the data. They have designated the feature Strottner-Drechsler-Sainty Object 1.

They then worked with a team of professional astronomers and other astroimagers to confirm the find. The team published their results in Research Notes of the AAS last month — as well as a stunning, highly-processed image on the astroimaging site Astrobin (see on left).

“While working on the Andromeda project, Yann Sainty did something that few Astro photographers before him have done — he used an OIII filter to better bring out the faint HII regions,” said Drechsler. “Since an OIII filter is relatively new territory in astrophotography,

AI is helping us search for intelligent alien life—and we've found 8 strange new signals

AI is now used in virtually all areas of science to help researchers with routine classification tasks. It's also helping our team of radio astronomers broaden the search for extraterrestrial life, and results so far have been promising.

Discovering alien signals with AI

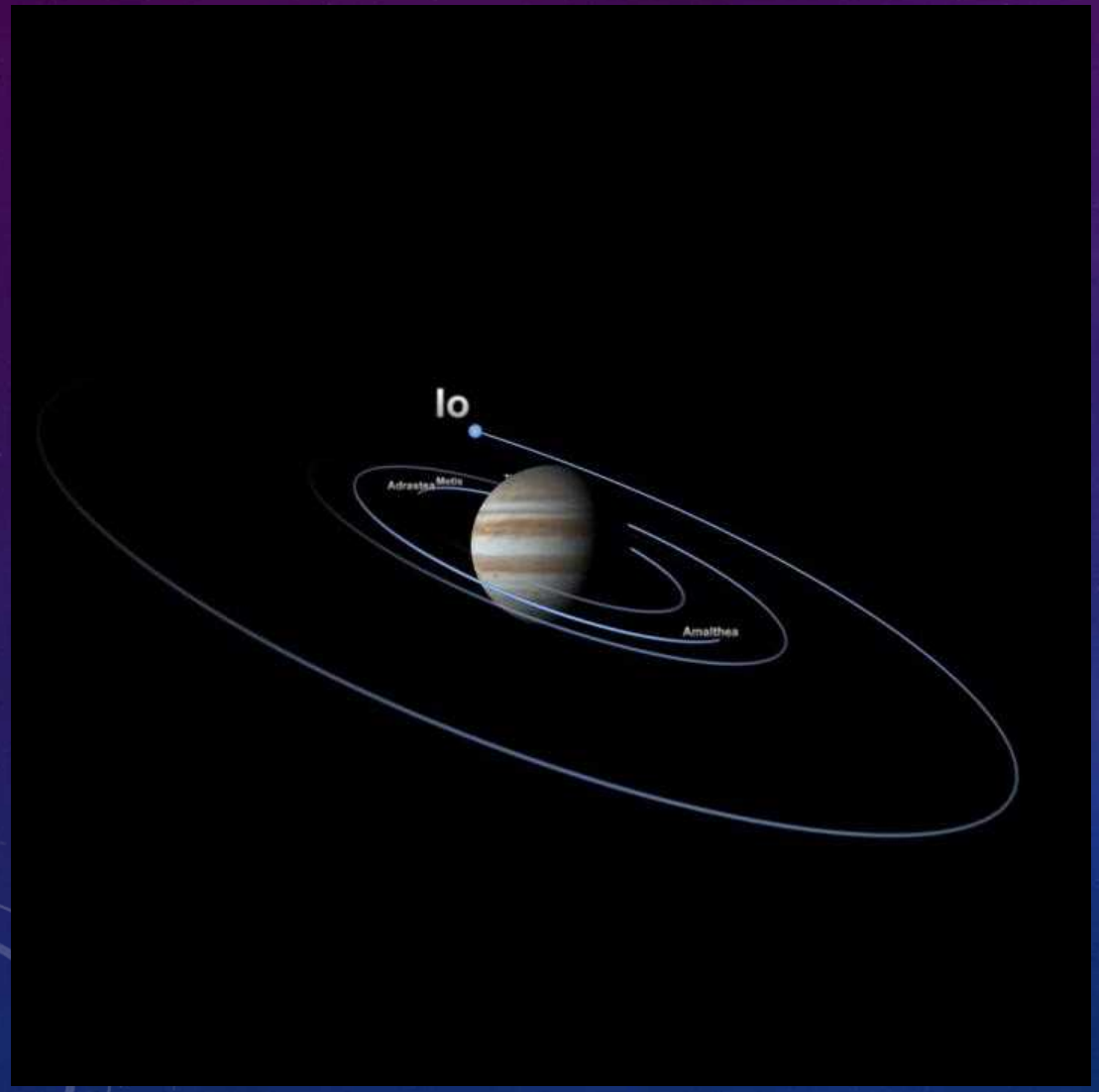
As scientists searching for evidence of intelligent life beyond Earth, we have built an AI system that beats classical algorithms in signal detection tasks. Our AI was trained to search through data from radio telescopes for signals that couldn't be generated by natural astrophysical processes.

When we fed our AI a previously studied dataset, it discovered eight signals of interest the classic algorithm missed. To be clear, these signals are probably not from extraterrestrial intelligence, and are more likely rare cases of radio interference.

Not so intelligent

AI algorithms do not "understand" or "think". They do excel at pattern recognition, and have proven exceedingly useful for tasks such as classification—but they don't have the ability to problem solve. They only do the specific tasks they were trained to do.

Jupiter now has 92 moons — more than any other planet in our solar system



Astronomers have discovered 12 new moons around Jupiter, putting the total count at a record-breaking 92. That's more than any other planet in our solar system. Saturn, the one-time leader, comes in a close second with 83 confirmed moons.

The Jupiter moons were added recently to a list kept by the International Astronomical Union's Minor Planet Center, said Scott Sheppard of the Carnegie Institution, who was part of the team.

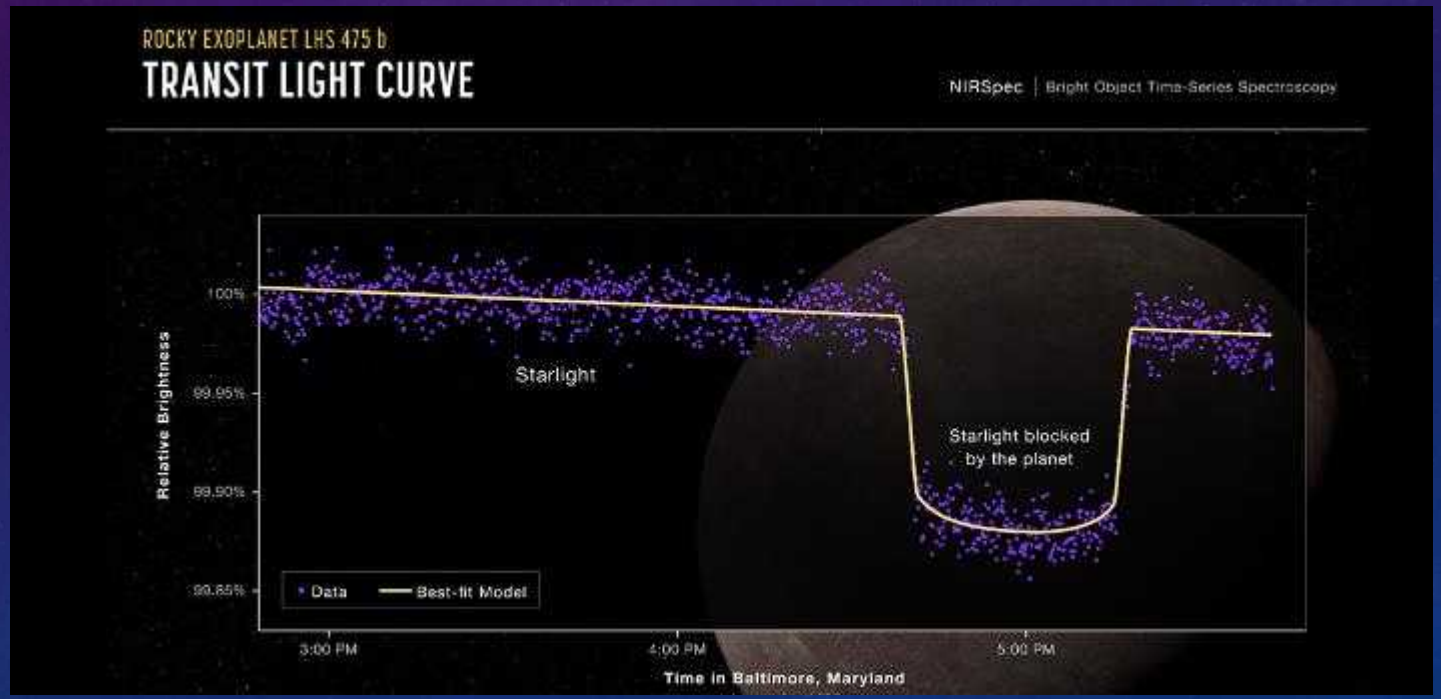
JAMES WEBB TELESCOPE

LATEST NEWS

NASA'S WEBB CONFIRMS ITS FIRST EXOPLANET

JANUARY 11

Researchers confirmed an exoplanet, a planet that orbits another star, using NASA's James Webb Space Telescope for the first time. Formally classified as LHS 475 b, the planet is almost exactly the same size as our own, clocking in at 99% of Earth's diameter. The research team is led by Kevin Stevenson and Jacob Lustig-Yaeger, both of the Johns Hopkins University Applied Physics Laboratory in Laurel, Maryland.

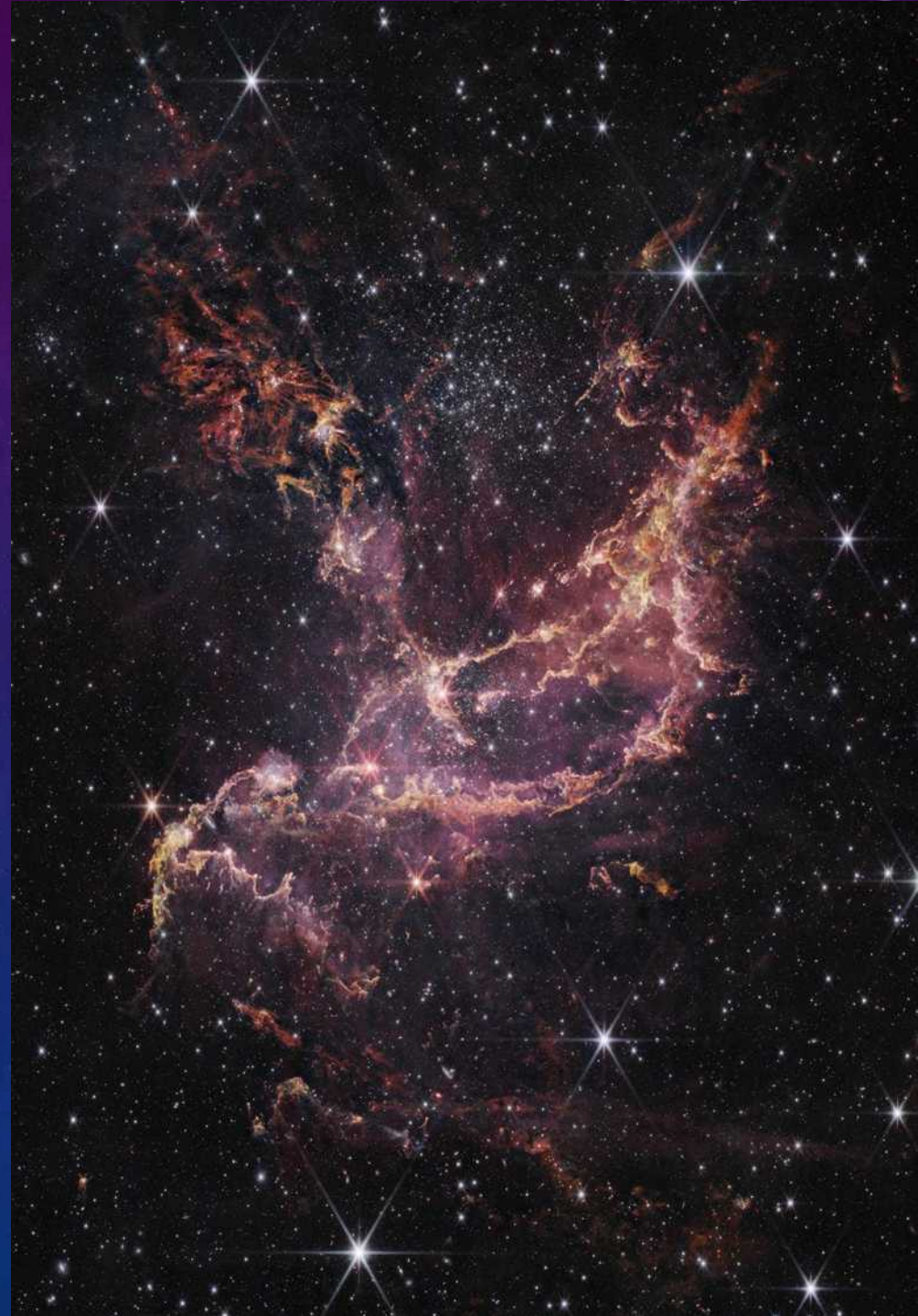


NASA'S WEBB UNCOVERS STAR FORMATION IN CLUSTER'S DUSTY RIBBONS

JANUARY 11

NGC 346, shown here in this image from NASA's James Webb Space Telescope Near-Infrared Camera (NIRCam), is a dynamic star cluster that lies within a nebula 200,000 light years away. Webb reveals the presence of many more building blocks than previously expected, not only for stars, but also planets, in the form of clouds packed with dust and hydrogen. The plumes and arcs of gas in this image contains two types of hydrogen. The pink gas represents energized hydrogen, which is typically as hot as around 10,000 °C or more, while the more orange gas represents dense, molecular hydrogen, which is much colder at around -200 °C or less and associated dust.

By observing protostars still in the process of forming, researchers can learn if the star formation process in the SMC is different from what we observe in our own Milky Way. Previous infrared studies of NGC 346 have focused on protostars heavier than about 5 to 8 times the mass of our Sun.



NASA'S WEBB JAMES WEBB PIERCES THE COLD HEART OF THE CHAMELEON

FEBRUARY 02

Stars form when massive clouds of cold gas and dust fragment, condense, and collapse. As the density in a small part of the cloud grows high enough, the pressure skyrockets until it ignites the fusion process that forms the fiery heart of a new star. As the nascent star grows, it becomes encircled by a protoplanetary disk made of the same material that formed the star. This disk is what eventually gives birth to the planets, asteroids, and comets around the new sun.

This gorgeous new image from the James Webb Space Telescope (JWST) features the molecular cloud Chameleon I, one of the nearest star-forming regions to Earth, located just 626 light-years away. At upper left is a young protostar called Ced 110 IRS 4, whose light illuminates the dense, bluish cloud at the infrared wavelengths Webb observes. Just visible through the cloud at center are several small, point-like background stars, mostly obscured by the cold material.

WHAT'S UP

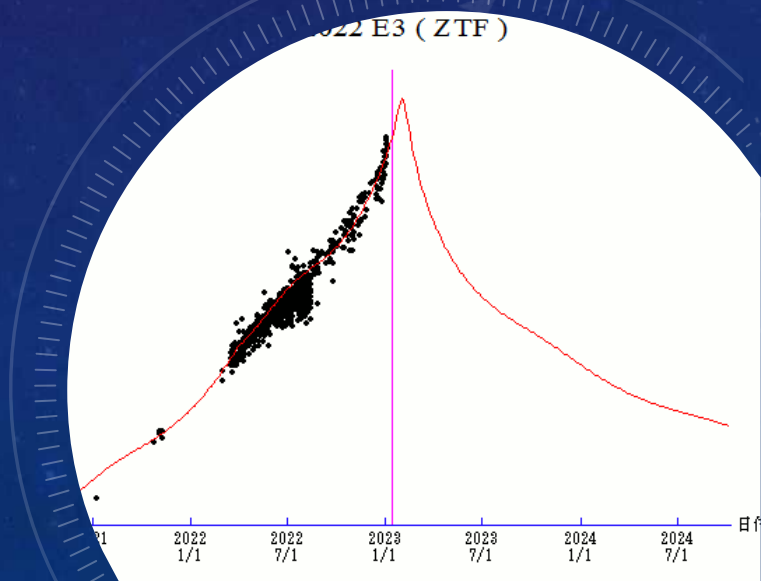
STRATFORD ASTRONOMY GROUP

WHAT'S UP FOR FEBRUARY

This is a month of "Almost for us"

FEBRUARY – COMET C/2022 E3 (ZTF) A NAKED EYE COMET?

- The comet, named C/2022 E3 (ZTF), is currently passing through the inner solar system. It will make its closest approach to the sun, or perihelion, on Jan. 12, and will then whip past Earth making its closest passage of our planet, its perigee, between Feb. 1 and Feb. 2. Then it will move on out. It has become naked eye visible (if only the clouds would behave)



HEY, THERE BE A MOON OVERHEAD

MOON PHASES FOR THE MONTH OF FEBRUARY

FEBRUARY 14: BRILLIANT VENUS PASSES BLUE NEPTUNE

In the western evening sky on Tuesday, Feb. 14, the orbital motion of the brilliant planet Venus will carry it closely past the far fainter blue speck of Neptune. On Wednesday, Neptune will be positioned a half finger's width above (or 0.6 degrees to the celestial east-northeast of) the bright planet. On Wednesday, Neptune will instead be the same distance below (or west-southwest of) Venus. On both nights, they'll be cozy enough to share the view in a backyard telescope (small green circle).

FEBRUARY 21: EARTHSHINE MOON AND PLANETS (AFTER SUNSET)

On Tuesday, Feb. 21, the slender crescent of the young moon will form a line below Venus and Jupiter — setting up a wonderful widefield photo opportunity in the western sky after sunset. The moon, which will be positioned a generous palm's width below Venus, may exhibit Earthshine. Sometimes called the Ashen Glow or the Old Moon in the New Moon's Arms, the phenomenon is visible within a day or two of new moon, when sunlight reflected off Earth and back toward the moon slightly brightens the unlit portion of the moon's Earth-facing hemisphere.

FEBRUARY 25: LUNAR LIBRATION REVEALS ELUSIVE OCEANS (EVENING)

- Due to the moon's orbital inclination and ellipticity, it tilts up and down and sways left-to-right by up to 7 degrees while keeping the same hemisphere pointed towards Earth at all times. Over time, this lunar libration effect lets us see 59% of the moon's total surface without leaving the Earth. You can observe libration yourself by noting the way major features move toward and away from the limb of the moon, and up and down.
- Mare Crisium is a 345-mile (556 km) diameter basin that is easy to see using your unaided eyes, binoculars and telescopes. It is located near the eastern edge of the moon, just north of the moon's equator (the up-down red curve). On Saturday, Feb. 25, libration will shift Mare Crisium farther from the moon's edge.

FEBRUARY 28 – VENUS AND JUPITER SHARE A CLOSE ENCOUNTER

In the early evening hours of Feb. 28, Jupiter and Venus will begin a celestial dance that will culminate on March 2 in a planetary conjunction (when two planets appear extremely close together as observed from Earth). On the 28th, at around 7:30 p.m. EST, the bright pair will be low in the sky, so seek out an unblocked western horizon to capture this planetary "tango at dusk."

SHOW AND TELL

EQUIPMENT LESSONS

SOFTWARE AND IMAGING LESSONS