



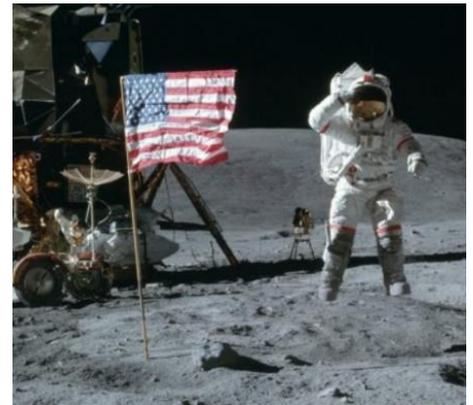
ASTRONOMY CLUB

Happy July!

July 2019

Wow! A lot going on this month. Hopefully you were able to enjoy some spectacular man-made lights in the sky on the 4th of July. Fireworks are thought to have originated in China well over 1,000 years ago and we have been enjoying them ever since. On the July 20 we celebrated one of America's greatest achievements in landing a human being on the Moon. Thanks to all the Astronomy Club members who participated in our first "Star Party" public telescope viewing. I counted over 40 attendees and we managed to see great views of Jupiter and Saturn even though we had to do it through holes in the clouds. The Perseid Meteor Shower is coming up next month so look us up for event and viewing opportunities.

- Bill



News and Current Events – What's going on in the world of space and astronomy

Ad Astra

The New Space Race is here – As we celebrate the NASA Apollo landing 50 years ago, the world is also, once again, collectively looking outward. The US, Russia, China, India as well as many private companies are looking to expand our reach and capabilities, not only in Earth orbit, but also to the Moon and even Mars.



Big year for Private Enterprise – Private companies are working hard to make 2019 a year to remember. The SpaceX is currently testing the Crew Dragon and Boeing is working on the CST-100 Starliner. Both are in propulsion testing and are hoping to conduct missions with crew onboard before the end of the year.



"I'm ready for my close-up" – Although not a "star," Saturn is definitely in the spotlight this month. After reaching "opposition" on the July 9, this beautiful planet will be visible right after sunset for the rest of the summer. Contact us for viewing opportunities.

Gadgets and Gear – Technology reviews and recommendations



Do you have “The Right Stuff”? – Ever have the desire to jump behind the controls of the actual Space Shuttle or a futuristic Space Plane? Me neither. But, if you would like to get an idea of what it is like, download **Orbital Space Flight Simulator**. This free software, for PC, is a simulator which lets you launch the Shuttle, dock with ISS or fly a Space Plane anywhere in the Solar System. While not easy, this simulator looks great and gives you a small glimpse of how technically challenging space flight can be.



Astro-tainment – Space and Media

Our review this month is of the documentary “Apollo 11.”

Of all the films documenting this historic mission, I believe this is one that you should not miss. Narrated completely from historical commentary and composed of remastered archival footage, this documentary covers the Apollo 11 mission pre-launch, the Moon landing and the return to Earth. Check this one out on Amazon Prime or see it while still in local theaters.

Wrap your brain around this... - Mind blowing facts



Think your cell phone is impressive? – The Apollo 11 guidance computer computed the course to the moon, calibrated by astronomical measurements that the astronauts made in flight. This computer communicated with 150 instruments on the ship such as the positioning thrusters and sensors while having substantially less computing power than your average cell phone. Would you trust your phone to get you to the Moon?



Papers please... – The flight to the Moon was technically “international travel” requiring the astronauts to complete customs forms listing the Moon as the departure point and “Moon rocks and dust” as declared items.



Big Money – Being a civilian, Neil Armstrong was the highest paid member of the Apollo 11 crew making just over \$30k a year. All of the astronauts also earned \$8/day per diem for the duration of the trip. Because of the extremely dangerous mission, the crew signed hundreds of postcards and envelopes to be used as “life insurance” for their families should they fail to return. Even though they made it home safely, some of these signed postcards can sell for up to \$30,000.

Become a Member!

Members of Lake Erie Nature & Science Center receive access to Astronomy Club events and resources including:

- Monthly Meetings
- Star Parties (telescope viewing)
- Movie Nights
- Telescope Loan Program

\$60/year per family

Additional Membership benefits:

- Early access program registration
- Discounts on select programs and events
- 4 free admission passes to daily shows at Schuele Planetarium
- Access to Birthday Parties and Room Rentals
- Promotional discounts to Wild Birds Unlimited (*Center location only*)

Upcoming Events

- Telescope Night – August 17 at 8:30pm
- Astronomy Club – August 21 at 6:30pm
- Nature’s Night Out – August 24 at 7:00pm
- SkyQuest – September 11 at 7:30pm

To become a member, please call 440-871-2900 or visit www.lensc.org/support.