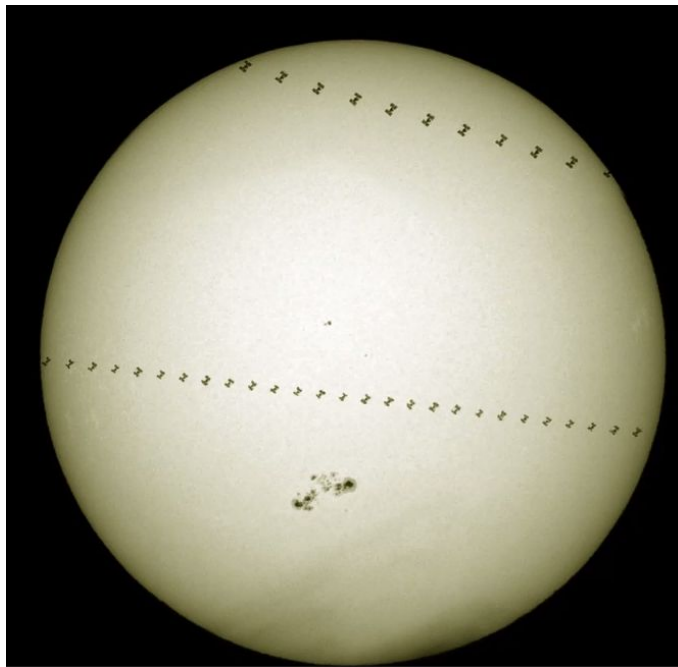


## Meeting Minutes 9/25/2020

- General Club Announcements
  - ATOMM
    - Tutoring for physics, astronomy, and math by experienced graduate students (over Zoom!)
    - M (2-4 pm) Yujing Qin
    - T (noon - 2 pm) Ryan Keenan
    - W (1-2 pm) Ryan
    - Th (2-3 pm) Yujing
  - Complete the Active Members Form during meetings!!!
  - Gamenight! Tonight! Play Jackbox and Among Us!!!
  - The Art of Planetary Science 2020 starts tonight at 5pm
    - Register for the Zoom link
    - 6 pm - Interpretation of Astronomical Images with Adam Block
    - 7 pm - Tucson Sky and Moon Tonight with Lucas Snyder
    - 8 pm - Indie/psych rock with undergraduate band Satellite Mirage
  - TIMESTEP
    - Next meeting: Scientific Coding: Research and Examples Part 1 and 2
    - Led by Dr. Tim Eifler
    - When/Where: Wednesday, September 23rd and 30th over Zoom at 5 pm
    - You must register your UA email in advance to receive the Zoom link
- What Up Astronomy Club with Yancy
  - Jupiter and Saturn in the sky, South sky!
  - The Moon will be nice and close to the two gas giants
  - Sunday Sept 27th at 7:41pm, Io will emerge from the Jovian shadow
  - Tuesday sept 29th:7:11pm Great Red Spot Meridian, 8:20pm Io transit
  - Sagittarius - great area of the sky to look at a lot of cool galactic objects
    - Center of the galaxy
    - M8 and M20 are a couple of cool nebulae to look at through a telescope
    - M20 the Trifid Nebula
      - Actually 3 nebulae in one
      - Ionized hydrogen = HII, Molecular Hydrogen = H<sub>2</sub>
      - Different filters create different colors in the image
      - Red = HII
        - Down in the center, there's a very hot and massive star putting out a lot of UV light
        - The UV light ionizes the hydrogen, creating a recombination line
      - Blue = dust causes scattering, reflection nebula
        - Foreground bright star creates a reflection off of the nebula due to scattering of light towards us (think the pleiades)
        - Dust can absorb and scatter UV and Optical light
  - Mars and Mira
    - Mira is reaching the peak of its light curve in October

- Lots of variable stars being observed
    - Can see Venus moving in the sky relative to Regulus in early October
  - Astronomy Question of the Week with Don



- Double transit of the ISS taken in 2015
    - Is it authentic? What could you measure and learn?
    - Could find how many degrees per second the ISS moves, then figure out how fast the ISS is moving
    - Two passes ~ hour and a half apart
    - Why is there a separation between the passes?
    - In effect, it is 3D, can figure out how far away the ISS is between the two passes
    - You need to be in the right place at the right time to see it in real life
  - What's up from Mars?
    - Can you tell which is farther and which is closer
    - In the picture
    - Phobos, Deimos, and Aldebaran
  - Sunday night
    - The Golden Handle on the Moon
    - The rim of a crater
    - Happens once a month, about four days before the Full Moon
- Astro News of the Week with Savannah
  - <https://astronomy.com/news/2020/09/astronomers-find-evidence-of-an-extragalactic-exoplanet>
  - A planet the size of Saturn found around a neutron star / black hole in an entirely different galaxy
  - In the Whirlpool Galaxy
  - Found via the planet passing in front of the X-ray source

- Only an exoplanet candidate
- The conditions to find an exoplanet can be very particular, so we are very lucky to find this one!
- Special Presentation with Binh: Ludwig Boltzmann
  - Discovered the Second Law of Thermodynamics
  - Excellent science communicator
  - Had a hostile work environment, contributing to his mental health decline
  - Took his like on a family vacation to Italy
  - Bipolar Depression
  - Doing STEM can take a toll on your mental health
  - Make sure to take care of yourself, and check in on your friends :)
  - Resources:
    - Counseling & Psych Services (CAPS): <https://health.arizona.edu/counseling-psych-services>
    - Self Help Resources: <https://health.arizona.edu/self-help-resources>
    - National Suicide Prevention Hotline: <https://suicidepreventionlifeline.org/>
- Meet the Messiers with Sean
  - Messier M8, the Lagoon Nebula
  - In the Sagittarius Constellation, 15 different Messier variables in it
  - 12 clusters and 3 nebulae
  - Apparent Magnitude of 6
  - 5,200 light years from Earth
  - Commonly known as the Lagoon Nebula, M8 was discovered in 1654 by the Italian astronomer Giovanni Battista Hodierna
  - M8 includes a tornado-like structure caused by a hot O-type star that emanates ultraviolet light
- AstroKahoot
- Game Night! 5pm right after the meeting