

# NASA/HEAT Rice U Status Report – May 2021

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- ***New Proposal Submitted***

We were told we were no longer part of the HEAT team, and that we had two weeks to submit our own proposals if we wanted to continue NASA outreach. With great difficulty (while managing end-of-semester duties), we submitted a proposal for the “Texas Eclipse Activation Network”. We created a new website <http://texaseclipse.net> with locations and timing of eclipse sites around Texas for the 2023 and 2024 eclipses. We will work under the HEAT group until our present contract runs out (early August). We would like to request a short no-cost extension if possible to do as much as we can in preparation for these crucial eclipses across Texas.



*Paths for the eclipses of 2023 (annular) and 2024 (total) as they cross Texas. The center line of the annular eclipse (which passes from northwest to southeast) is shown green, with limits or annularity in orange and 85% solar coverage limits shown in light purple. The center line of the total eclipse is shown in blue with limits of totality in orange and 90% coverage limits shown in dark purple. The combination covers essentially all of Texas. Maps and limits based on [http://xjubier.free.fr/en/site\\_pages/solar\\_eclipses/ASE\\_2023\\_GoogleMapFull.html](http://xjubier.free.fr/en/site_pages/solar_eclipses/ASE_2023_GoogleMapFull.html) and [http://xjubier.free.fr/en/site\\_pages/solar\\_eclipses/TSE\\_2024\\_GoogleMapFull.html](http://xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2024_GoogleMapFull.html).*

- ***Education: ASTR530 class finishes, 3 new MST alumni***

We presently have 4 teachers and one undergraduate students completed ASTR 530, with two additional auditors. Three had partial support from this program. In addition, three other teachers finished up their Master of Science Teaching degree this spring. One is an African-American NASA/JSC employee, and two others are local teachers. In addition, we helped with the Master of Space Studies degree of Feni Pandya. We are very sad that these may be the last NASA-sponsored teachers, which may result in the effective end of the Master of Science Teaching program, since the NASA tuition support (and the concomitant Rice 85% discount), made it possible for the teachers to afford the classes. Mary Ann’s project was to create curriculum for an after school elementary science program; Christine’s was to create an all new Astronomy curriculum for her school district, aligned with TEKS. Jakarda created a chemistry curriculum for NASA programs.

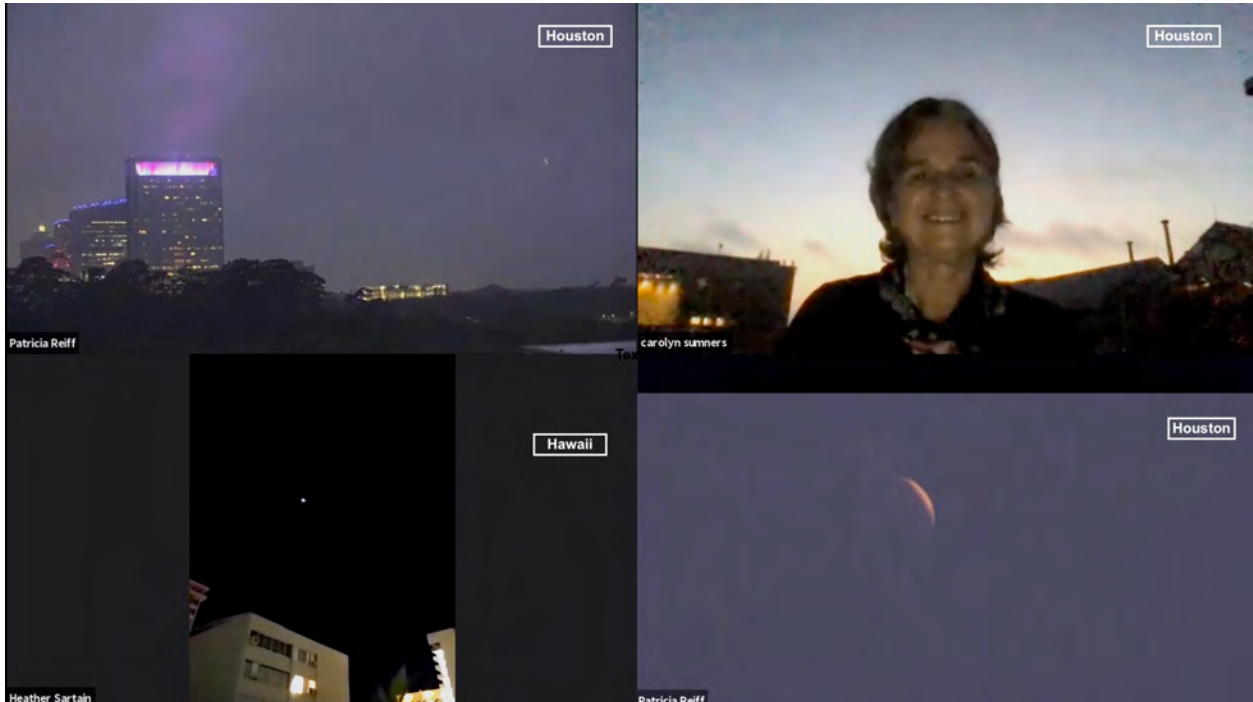


*New alumni of the Master of Science Teaching Program. From left: Jakarda Varnado (first black graduate and first NASA employee graduate); Feni Pandya (Master of Space Studies, not supported by NASA); Umbelina Cantu, administrator; Patricia Reiff, Advisor; Christine Fendley (High School Astronomy Teacher); Mary Ann Dibbert Quintana (Elementary Teacher).*

### ***Lunar Eclipse Live Feed: May 30***

We live streamed the total lunar eclipse from the roof of the Houston Museum of Natural Science. In Houston as in much of the central US, the eclipse was a selenelion, where the red light of the rising sun is EXACTLY the same red light that refracts through the earth's atmosphere, painting the eclipsed moon red. We updated our Selenelion diagram to show this better (see below). The weather forecast was poor so we did not do a lot of advertising ahead of time, but 85 people registered for our live lunar zoom event. We showed our lunar eclipse animations and our eclipse graphics (see below), as well as live images. Unfortunately, the moon went behind a cloud just at totality, but we had great images anyway.

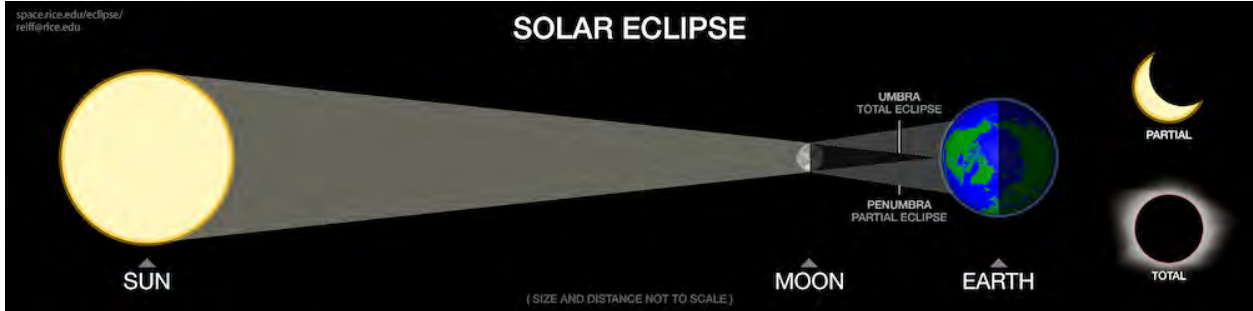
Registered users: General public: 85



Screen shot from our Zoom just as totality is about to begin: top left, wide view of the Medical Center with the barely visible moon at the right; top right, Dr Summers with the red glow of dawn behind her; bottom right: closeup of the nearly-totally eclipsed moon with the reddish dawn sky coming up; bottom left: same time, but from Hawaii. There it was near midngith and the sky was dark for the entire eclipse.

***New Eclipse Diagrams Published:***

Because of the lunar eclipse May 30 and the annular eclipse June 10, we updated our eclipse diagrams. These were shown at our live event and we shared them with our teacher networks, preparing them for both the lunar eclipse and the annular eclipse. These are available in full size from: [https://space.rice.edu/eclipse/eclipse\\_graphics.html](https://space.rice.edu/eclipse/eclipse_graphics.html)



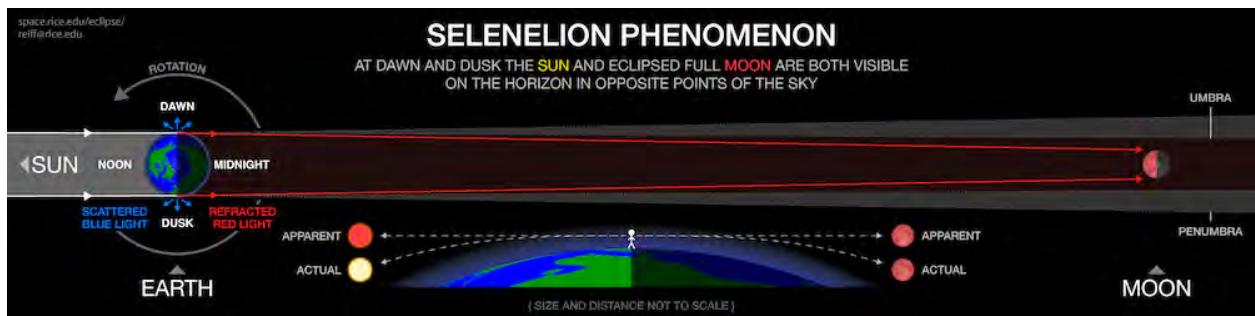
*Solar eclipse diagram*



*Annular eclipse diagram*



*Lunar eclipse diagram*



*Selenelion lunar eclipse diagram*

Links to our new eclipse diagrams and lunar and annular eclipse information were sent to our e-teacher network (11,000 teachers); our eclipse network (768 eclipse aficionados); and to our planetarium networks (450).