

NASA/HEAT Rice U Status Report – April 2022

Patricia H. Reiff, Rice University

- ***Eclipse Workshop at NSTA – Houston April 1, 2022***

We did an eclipse training workshop at NSTA on April 1. Because we missed the deadline to do a normal workshop, we had to pay extra to do an “exhibitor workshop”. My cooperating company, MTPE, paid for the expenses and for the all of the eclipse glasses that were given away. Rice University paid for the printing of the map handouts. Two of my teachers in my ASTR502 class helped with the workshop. Note all booth and workshop expenses were paid for my company. In the booth we showed the fulldome eclipse training animations paid for by the grant, plus previewed the new “Fortward! To the Moon” Artemis video created by Fiske under NASA support.

Participants:

Teachers: 37 in workshop; 411 total including those that came by the booth
Also, other exhibitors and convention staff came by and got materials too.

Materials Distributed: Eclipse glasses and eclipse maps (pack of 25 per teacher at the workshop) (925).

At Booth: Eclipse glasses with maps (450)

- ***Annular Eclipse and Artemis Animations Additional Distribution***

The annular and total eclipse animations, plus the Artemis animations, are continuing to be distributed.

We did not send out any new notices to our eclipse planetarians list this month and have provided digital copies to 60 planetariums so far.

Planetarians can sign up to get any of our animations for free here:

<https://forms.gle/sS8q31qFSDRnhnbX7>

Annular eclipse animation info and links:

https://space.rice.edu/eclipse/eclipse_animations.html **Note** the descriptions and links to the individual pieces are given in October 2021 report.

Recipients of the animations April 2022:

Two planetariums downloaded the animations in April: (one from WA 98117 and one from NY 14094).

People can sign up here: <http://eepurl.com/cv68Qj>

Visit by School to Observatory and Planetarium 4/8/2022

Just in case we weren't busy getting ready for Reach for the Stars, we had a group of 40 5th grade GT students from Barber's Hill ISD come to visit Rice on April 8. We broke the students into

two groups of 20. One group visited the campus observatory and saw a planetarium presentation on the solar eclipse in the Rice U Discovery Dome while the other group toured campus, and then the groups switched places. Each student got pair of eclipse glasses and an eclipse map. No cost to NASA – glasses paid for by MTPE Inc and the maps were printed by Rice University.



Left: Dr. Reiff explaining how a telescope works. Right: Dr. Reiff demonstrating safe use of eclipse glasses to observe the sun safely.

Participants:

Teachers: 4. Students: 40 (roughly half hispanic).

Materials Distributed: Eclipse glasses and eclipse maps (43)

“Reach for the Stars” Event a Rousing Success

The “Reach for the Stars” event was held April 9. 198 girls and 90 adult chaperones participated. Over 100 speakers, volunteers, and exhibitors participated. Each girl got a backpack, a water bottle, and a pair of eclipse glasses. The final report was previously submitted but is attached.

Rice, NASA and partners inspire girls to “Reach for the Stars”



Dr. Nicola Fox, Head of the Heliospheric Physics Division at NASA Headquarters, presented the keynote address.

On Saturday, April 9, 198 middle-school girls and 90 adult chaperones enjoyed a day of STEM learning and fun on the Rice campus at our “Reach for the Stars” Festival (<https://space.rice.edu/ReachForTheStars>). The event, a sellout, with only 2 girls not being able to come, is the 14th such STEM Festival on the Rice campus. The first festival was held in 2006 when Sally Ride approached us to host one of her new “Sally Ride Science Festivals” and we have hosted the event nearly every year since. For a list of our past events and their keynote speakers, see https://space.rice.edu/ReachForTheStars/rfts_archive.html. Sally Ride herself was the keynote for the first event.

Each girl chose an “interest track”:
Space and Astronomy; Medicine;
Physical Science and Math; or
Engineering and Robotics. Each girl enjoyed one 45-minute session in the exhibits area, two hands-on workshops, one “career panel” led by women in their track; and an outdoor lunch with keynote speaker. This year the keynote speaker was Dr. Nicola (Nicky) Fox, Head of the Heliophysics Division at NASA Headquarters, and former Chief Scientist of the Parker Solar Probe, which is the closest mission ever to “touch the Sun”. She spoke about the Sun and its effects on the



Dr. Nicola Fox speaking to the girls.

Earth (“Space Weather”) and her career. She answered many questions from the delighted audience.



NASA brought both its special van and a number of exhibits, including Moon rocks. Other exhibits included geology (right).

The exhibit area included the NASA Van, NASA lunar samples, a NASA spacesuit, and many fun activities including liquid Nitrogen demos, robotic demos and physics demos. The girls could examine various kinds of geological samples, and view the Sun using a SunSpotter. Each girl got a pair of eclipse viewing glasses and an eclipse map for the annular eclipse of October 14, 2023 and the total eclipse of April 8, 2024 (both of which pass through Texas).



Prof. Patricia Reiff getting ready to show the girls how to use the special solar eclipse glasses and the eclipse map (which each girl got in her packet) as Dr. Fox finishes speaking to the girls.

The career panels, one per track, made use of the COVID-safe “PCF Tents” on campus. The panelists were:

Astronomy and Space Panel: (moderated by Dr. Carolyn Sumners of the Houston Museum of Natural Science)

Dr. Eileen Stansbery, Head of Astromaterials at NASA JSC

Jordan-Marie Dudley, Planetary Geochemist at Jacobs

Marianne Dyson, Author and former Shuttle Mission Controller

Eryn Andrews, Astronaut Trainer, JSC

Medicine Panel: (Moderated by Prof. Patricia Reiff of Rice):

Dr. Brenda Flores, Veterinary Medicine

Dr. Michelle Ludwig, Cancer Researcher at Baylor College of Medicine

Dr. Caroline Ajo-Franklin, Biomedicine professor at Rice

Engineering and Robotics Panel: (Moderated by Reiff)

Candice Bedford, Lunar and Planetary Institute

Lilibeth Mata, NASA JSC

Prof. Lisa Biswal, Chemical Engineering, Rice

Physical Science Panel: (Moderated by Sumners)

Dr. Barbara Hill, Geophysics

Prof. Kasey Yearty, Rice Chemistry

Prof. Ming Yi, Rice Physics & Astronomy



Dr. Carolyn Sumners (left) moderating the physical science panel, with (from left) Prof. Ming Yi (physicist), Dr. Barbara Hill (geologist), and Prof. Kasey Yearty (chemist) as panelists.

Each girl attended two workshops in their chosen track. The workshops which were presented this year were:

Astronomy and Space:

Prof. Penny Morris (UHD) and Prof. Julie Hoeink (Rice), "Spectroscopy"
Paige Graff and Dr. Eileen Stansbery (JSC), "Exploring Mars"

Medicine:

Dr. Ruba ElMaoued, (Baylor College of Medicine) "Using a Canteloupe for Epidural Placement"
Dr. Deeksha Bidare, (Baylor College of Medicine) "Suturing"

Engineering and Robotics:

Angela Case, (Space Center Houston) "Mars Roving"
Prof. Lisa Biswal, (Rice) "Squishy Matter Physics"

Physical Science:

Prof. Elene Bouhoutsos-Brown, (UHD) "You Light up My Life"
Prof. Kasey Yearty, (Rice) "Fun with Chemistry"



The girls learning suturing (left) and robotics (right) in two of the eight hands-on workshops.

This year and last, because of COVID protocols, we made use of the PCF tents on the Rice campus, which can hold 50 people at 6 foot spacing, and groups of girls stayed together. Since the COVID protocols had been relaxed, we were also able to let the chaperones attend the panels and the workshops. No COVID cases have been reported to us as a result of the event.

The event could not have happened with the generous support of our sponsors and donors. The prime sponsor this year was Cheniere Energy, with additional support from Rice University, NASA HEAT, Prof. Emeritus Neal Lane, Discovery Dome, and several individual donors. This allowed us to keep the registration fee (\$10) far below the actual cost per student, and allowed 54 girls and 10 chaperones to participate at no cost. No girl was refused financial support who requested it. The event sold out well in advance, but we held back free slots until the final day

of registration to maximize attendance of deserving girls and only then released the remainder of tickets to the girls on the wait list.



Girl literally “jumping for joy” when she won the Cheniere door prize of a graphing calculator

Cheniere Energy was once again our prime sponsor for this year’s event. Catherine Mayhew shows off the “alligator” check presented to Rice in support of the event.



In addition to financial support, the event depended on many volunteers, including the Local Organizing Committee (headed by Prof. Reiff, Umbelina Cantú, and Feni Pandya), and dozens of volunteers including a group of Scholars from the University of Houston Downtown.

In summary, the event was a major success, with many chaperones coming up to us and saying “I wish we had this when I was a girl! I will be back next year!”.