

NASA/HEAT Rice U Status Report – December 2021

Patricia H. Reiff, Rice University

- ***Engagement: Space Weather and Eclipse talks to eclipse ship – Dec 1 and 3, 2021***

On Dec 1, Reiff presented a talk about the Sun and space weather, and on Dec 3, Reiff presented a talk on eclipses and eclipse safety. The audience was 194 passengers on “La Boreal” eclipse ship, in Antarctic waters. NO EXPENSE to the grant. Reiff paid her own way and MTPE paid for eclipse glasses for the passengers and crew.

The first talk included learning objectives on the sun and the magnetosphere, plus the effects of space weather.

1. What is the energy source of the Sun and how does it vary?
2. What is a solar flare
3. What is a CME?
4. What is the Magnetosphere?
5. How does space weather affect humans?

The second talk focussed on solar eclipses and safe solar observing.

1. What is a solar eclipse?
2. What is the difference between a total eclipse and an annular eclipse
3. How do you observe the eclipse safely
4. What part of a solar eclipse is it safe to view with naked eyes?
5. How can scientists predict what the corona during an eclipse will look like
6. How can you observe an eclipse in cloudy weather?

Participants:

General public: 194 people, half women, none disadvantaged, 15% Hispanic.

- ***Eclipse Poster at AGU meeting (e-poster) December 13***

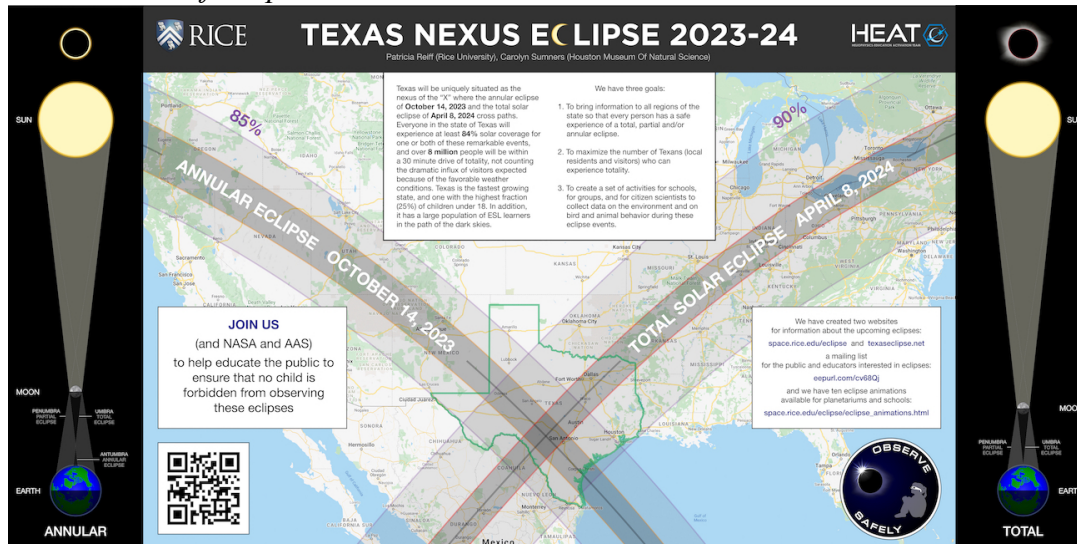
Reiff presented an e-poster at the AGU meeting. Because of an injury sustained on board ship, she was not able to be at her paper poster but was online for questions from visitors. Carolyn Ng (the poster session chair) graciously put up the paper poster and gave out eclipse glasses. The full e-poster can be viewed here:

Reiff, P. H. and Sumners, C. T., “Texas Nexus Eclipse 2023-2024, Fall 2022 AGU e-Poster, <https://agu2021fallmeeting-agu.ipostersessions.com/Default.aspx?s=A9-9A-0C-0B-96-48-F4-57-80-A6-FF-7D-73-75-1B-75>, DOI: 10.1002/essoar.10510157.1.

Learning Objectives:

1. Solar eclipses happen when the moon moves between the Earth and Sun
2. An annular eclipse happens when the moon is at apogee and is not large enough in angular size to cover the entire Sun
3. It is not safe to observe the Sun with naked eyes except during totality.
4. In an annular eclipse it is not safe to observe the sun with naked eyes at any time.

Small version of the poster:



Participants:

AGU participants: perhaps 25 visited the in person poster. Additional viewers in the online version.

(Few if any economically or physically disadvantaged)

Materials distributed:

Solar eclipse glasses (200 pc, paid for my MTPE Inc.)

• ***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 planetariums list this month and have provided digital copies to 53 planetariums so far.

Planetariums 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 December 2021:

2 planetariums downloaded the animations in December:

Four from the US: zip codes 33021 and 60443

Our eclipse information email list is now up to 743 contacts, with 201 planetariums with active subscriptions.