

## Accomplishments – 2019 – Patricia H. Reiff, Rice University

1. Continued work on pathbreaking MMS mission. Paper (Webster et al., 2020) on flux ropes accepted for JGR in 2019 (published in 2020). Several AGU talks published.
2. Served as sponsor for the US Astronomy Olympiad Team; served as leader and on jury for 24<sup>th</sup> Olympiad in Romania. Several news items, including being mentioned in the Congressional record: <https://www.congress.gov/congressional-record/2019/12/09/extensions-of-remarks-section/article/E1558-4>.
3. Hosted "Reach for the Stars" STEM Festival October 12, bringing 502 middle-school girls to campus for a street fair, keynote talk by Alumna Ulyana Horodskyj, and two hands-on workshops by women scientists and engineers. Collaborated with many entities around the city and the Ride Family Foundation.  
<http://space.rice.edu/reachforthestars>
4. Reached over 7600 students, teachers and the public in person in 22 public lectures or outreach events around the country, in collaboration with the NASA Space Science Education Consortium (some with partial funding from MTPE, Inc.) (5,742 in dome; 2,086 not in dome). See details in "presentations"
5. Eleven media appearances (see details under S&L: Outside Rice): interviewed for several events for the Apollo anniversary and for Diversity in Science <http://multiverse.ssl.berkeley.edu/FullSpectrum/Reiff>

### Invited Talks

- Presentation/workshop on Digital Data, SEEC teacher conference, Feb 9, 2019 (30 teachers).
- "Living and Working in Space", Continuing Education Lecture, March 27, 2019 (240 adults).
- Presentation at NSSEC "Face to Face" meeting, GSFC, Aug 21 (40 informal educators).

### Media Appearances:

1. Interview for podcast on Apollo 11, HMNS (recorded April 3)
2. Blog on Memories of Apollo: <https://www.rice.edu/memories-apollo>
3. May 3, Patricia Reiff was interviewed by the local KTRH radio about the coming pass of asteroid Apophos: <https://ktrh.iheart.com/content/2019-05-02-beware-the-god-of-chaos/>.
4. May 16, Reiff was interviewed by KTRH radio on the discovery of moonquakes: <https://ktrh.iheart.com/content/2019-05-15-this-weekends-blue-moon-is-shrinking/>.
5. Interviewed as part of "Full Spectrum", film on diversity in science, U. C. Berkeley. <http://multiverse.ssl.berkeley.edu/FullSpectrum> . Link to Reiff interview segments: <http://multiverse.ssl.berkeley.edu/FullSpectrum/Reiff>.
6. Congressional Record noted IAO: <https://www.congress.gov/congressional-record/2019/12/09/extensions-of-remarks-section/article/E1558-4>
7. Other articles on IAO: <https://www.chron.com/neighborhood/katy/news/article/International-olympiad-draws-first-U-S-team-14871486.php>
8. Shanghai paper: [https://mp.weixin.qq.com/s?\\_biz=MzAwMzIzNzgyNA==&mid=2650631925&idx=1](https://mp.weixin.qq.com/s?_biz=MzAwMzIzNzgyNA==&mid=2650631925&idx=1)

&sn=dcbf3fca7675516b53f1b280941d1f67&chksm=8337fc5ab440754cae6254963bf5440021f573340f05b14c2fc51fca51509db0c5abf19644a9#rd

9. [https://www.coveringkaty.com/education/seven-lakes-high-school-student-participates-in-international-astronomy-olympiad/article\\_88fe11f6-0a75-11ea-ad21-6b1ec760dc58.html](https://www.coveringkaty.com/education/seven-lakes-high-school-student-participates-in-international-astronomy-olympiad/article_88fe11f6-0a75-11ea-ad21-6b1ec760dc58.html)
10. (Katy article reprinted in San Antonio paper:)  
<https://www.mysanantonio.com/neighborhood/katy/news/article/International-olympiad-draws-first-U-S-team-14871486.php>
11. “Chasing Eclipses and Learning in a Dome”, webinar with 200+ school children in India, Aug 21, 2019, archived on:  
[https://www.facebook.com/2101125326800068/posts/2432776423634955/?sfns\\_n=scwspmo](https://www.facebook.com/2101125326800068/posts/2432776423634955/?sfns_n=scwspmo)

### **Keynote Speaker**

“Space Weather, MMS, and Eclipses”, Young Engineers and Scientists, SWRI, July 24 (21 students).

### **Lectures/Conferences**

Yosemite Conference, Feb 21, 2019, “CCMC modeling of Plasmoid Disconnection”.

Presentation on MMS to Costa Rica students, March 5 (20 students and faculty)

3 science talks and one outreach talk, AGU meeting, Dec 10-13

Reiff, P. H., A. Pembroke, R. Denton, R. Torbert, J. Webster, A. Marshall, L. Rastaetter and D. DeZeeuw, “Visualizing tail disconnection and dipolarization events with MMS”, Fall AGU e-Lightning poster, <https://agu2019fallmeeting-agu.ipostersessions.com/Default.aspx?s=9F-9B-48-18-2F-D7-78-E1-02-8F-B7-46-BA-77-C0-01>, Doi: 10.1002/essoar.10502075.1 (2019).

Marshall, A., J. Burch, P. Reiff, and J. Webster, “Crescent reversal during magnetopause crossing on Nov 13, 2016”, Fall AGU e-Lightning poster, <https://agu2019fallmeeting-agu.ipostersessions.com/default.aspx?s=81-E6-65-42-B3-39-5D-21-8F-C7-1E-59-7D-52-3D-59>, Doi: 10.1002/essoar.10502082.1 (2019).

Webster, J., J. Burch, P. Reiff, A. Marshall et al., “Electron-scale magnetic islands from Adjacent Electron Diffusion Regions”, Fall AGU e-Lightning poster, <https://agu2019fallmeeting-agu.ipostersessions.com/Default.aspx?s=10-23-51-F2-24-6F-9B-DF-89-F5-DE-B3-A8-78-3B-44>, Doi: 10.1002/essoar.10502085.1 (2019).

### **Outreach Events**

1. Total Lunar eclipse, Rice Campus, 200 people in person, Jan 20, 2019
2. Workshop on Digital Data, SEEC teacher conference, Feb 9, 2019 (30 teachers).
3. Equinox at the HMNS Sundial, March 20, 2019 (30 students and families)
4. “Living and Working in Space”, Continuing Education Lecture, March 27, 2019 (240 adults).
5. “Moon, Mars and the Great Nebula of Orion”, Campus Observatory Open House, April 10, (40 public visitors)

6. NTA National meeting, St. Louis, 600 teachers in the Discovery Dome April 11-13, 2019 (over 400 new signups for our teacher network) (travel paid by MTPE, Inc.)
7. "Escape Velocity", Showed "Apollo and Beyond" in Discovery Dome, Washington DC, May 24-26 (1700 students and families), showed "Apollo and Beyond" in Discovery Dome,
8. "Moon Day" at the Buffalo Soldiers Museum, Houston, May 28 (180 students plus 32 adults)
9. "Astronomy Night on the National Mall", Showed "Apollo and Beyond" in Discovery Dome, Washington DC outside Smithsonian June 22. Over 800 visitors (mostly families)
10. ISTE national meeting, showed "Apollo and Beyond" in Discovery Dome, Philadelphia, June 23-26. Over 500 teachers through the Dome. (travel paid by MTPE, Inc.)
11. Total Solar Eclipse tour guide, Chile, July 2, 2019 (38 people in person and 709 via email)
12. Making craters, workshop for "Kids Kamp", Macedonia UMC, July 16, 45 elementary students.
13. Return to the Moon event at HMNS, July 18, (100 people).
14. Apollo 11 50<sup>th</sup> anniversary, Discovery Green, July 20, Showed "Apollo and Beyond" in Discovery Dome, 500 people.
15. YES, July 24, SWRI, 21 High school Students saw "Magnetism" and "Apollo and Beyond" in the Discovery Dome.
16. St. Mary's University students saw "Magnetism" and "Apollo and Beyond", SWRI, July 24, 2019, 24 college students.
17. "Middle East Heritage Expo", Abu Dhabi, Sept 30-Oct 2. "Apollo and Beyond" and "Amazing Astronomers of Antiquity" shown in Discovery Dome with Arabic and Turkish subtitles, 350 educators. (travel paid by MTPE, Inc.)
18. "Phases of the Moon, Venus and Charon", Campus Observatory Open House, October 4, (50 visitors)
19. "Moonlight at the Moody", showed "Apollo and Beyond" in Discovery Dome, Rice University, Oct 5, 220 adults and families.
20. "Chasing Eclipses and Learning in a Dome", webinar with 200+ school children in India, Aug 21, 2019.
21. "Reach for the Stars" STEM Festival, 502 middle school girls, 130 parents and teachers, and 200 presenters, exhibitors and volunteers. Rice University campus, October 12, 2019 (220 girls in two domes, one in the street fair also used for the eclipse workshop and one on Apollo and Beyond).
22. International Astronomy Olympiad, US National Team Sponsor, October 20-26, Piatra Neamt, Romania. (4 high school students from US plus another 200 from around the world).
23. CAST Science Teachers in Texas Conference, Dallas, Texas. Showed "Magnetism" and "Apollo and Beyond" in Discovery Dome to 405 teachers (255 new registered), Nov 21-23, 2019. (travel paid by MTPE, Inc). Gave away copies of our "Space Update" software.
24. "Apollo and Beyond" shown in "AGU Cinema", December 9-13, 2019. Approx. 200 colleagues and educators.

<b>Total reached in person</b> in public talks or outreach events: (not including media or web appearances or dome events)	2,286
Total in dome events (in person)	5,552
Total reached in person	7,838