

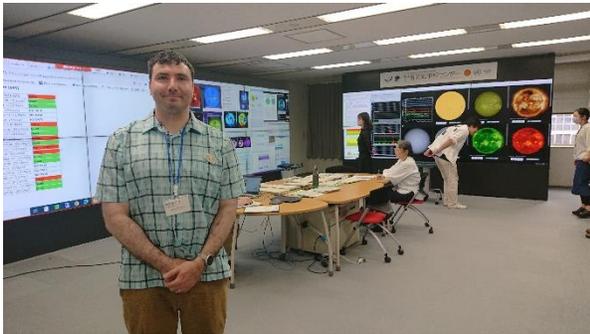
Name: Joshua Pettit

Affiliation: NASA Goddard Space Flight Center/George Mason University

Identifying the Sources of Aurora during the 2024 Mother's Day Storm

Thanks to the PBASE program, I had the wonderful opportunity to visit Japan and work with some extraordinary scientists at the National Institute for Polar Research (NIPR). I worked closely with Ryuho Kataoka and his group throughout the three weeks I was in Japan (May 11th – June 1st).

It was fortunate timing that just prior to my arrival in Japan, the Earth experienced the largest geomagnetic storm in nearly 20 years. Kataoka-san's large social media presence allowed for the inclusion of many Japanese citizens into our science. Kataoka-san received hundreds of photos from citizens of bright purple/magenta aurora. Serendipitously, we had the perfect group of researchers to



undertake what caused the color of this aurora as we all had specific specialties, allowing us to split off to get results and come back together quickly. In just the three weeks while I was in Japan, we were able to get most of a compelling paper written and within another five weeks since my departure, we were able to submit the paper.

In addition to the Mother's Day storm analysis, I had the opportunity to give seminars at both NIPR and ISEE at the university of Nagoya. This

gave me the opportunity to meet and discuss ideas with various scientists and engineers on a variety of topics related to space weather and upper atmospheric modeling. I also received a tour of the space weather operations center at the National Institute of Information and Communications Technology along with a space weather briefing I got to be part of.

My final week was attending the Japanese Geophysical Union Conference (JpGU), which I had an invited talk (thanks to the PBASE program) and a second separate contributed talk in another session. This was my first trip to JpGU and I found the conference well organized and in a great location in the Chiba prefecture. There was a lot of lively discussion in all the sessions I attended.



As my first trip to Japan, I was also had the privilege to visit many beautiful historic sites along with many tourist spots. My favorite being the Ghibli Amusement park near Nagoya. None of this would be possible without the PBASE program and Dr. Kataoka and his generous hospitality. Many thanks to everyone that helped make this trip a reality.