

Name: Gangkai Poh

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Role in tasks/ What do you do for CRESST:

My role in CRESST as a postdoc is to analyze fields and plasma measurements collected by the MAVEN planetary mission to Mars and the Heliophysics Magnetospheric Multi-Scale (MMS) mission to study and understand the fundamental physics of the interaction between Mars' and Earth's plasma environment with our Sun, and its role in driving the kinetic plasma processes occurring within each space environment.

What is your background:

A little about myself: Growing up, I have always been very fascinated with everything that is about space, from planets in our solar system to the distant galaxy. My passion for space only grew larger as I enter high school. However, my participation in any space-related activities is pretty much amateur-ish. So when the opportunity appears for me to start a career in space sciences, I jumped on it immediately. I came to the United States about ten years ago from the beautiful island city-state of Singapore to study Physics and Astronomy at the University of Colorado-Boulder where I have the opportunity to work with some of the most prominent space scientists in our field at the Laboratory of Atmospheric and Space Physics (LASP). I then went on to obtain my PhD in 2017 from the University of Michigan at Ann Arbor before joining CRESST at GSFC.

Favorite part of being a CRESST Scientist:

My favorite part of being a CRESST Scientist is the opportunity to be part of a larger research community with a team of wonderful supporting staff helping us to create a conducive work experience and environment at GSFC.

Highlight of research as a CRESST Scientist:

My research interest has always been broad and usually not limited to a specific area of space sciences. I like to joke that I am currently collecting "planets" in a way that I have worked with data analysis of various missions, from MESSENGER mission to Mercury to the MMS mission studying magnetic reconnection at Earth (yes! Earth is also a planet) to the MAVEN mission to Mars. My research topic also ranges broadly from morphology and structure of planetary magnetic field to plasma physics processes on different scale levels (e.g. magnetic reconnection and plasma instabilities etc) and data-simulation comparison.

Some of my publications:

Poh, G., Sun, W., Clink, K. M., et al. (2020). Large-amplitude oscillatory motion of Mercury's cross-tail current sheet. *Journal of Geophysical Research: Space Physics*, <https://doi.org/10.1029/2020JA027783>

Poh, G., J. A. Slavin, S. Lu, et al. 2019. "Dissipation of Earthward Propagating Flux Rope Through Reconnection with Geomagnetic Field: An MMS Case Study." *Journal of Geophysical Research: Space Physics*, 2018JA026451 [10.1029/2018ja026451]

Poh, G., J. A. Slavin, X. Jia, et al. 2018. "Transport of Mass and Energy in Mercury's Plasma Sheet." *Geophysical Research Letters*, 45 (22): 12,163-12,170 [10.1029/2018gl080601]

I had attended and presented my research in major conferences such as the annual AGU, EGU and AOGS conferences, in addition to other more specialized science workshops, such as the annual GEM workshop. I also make it a point to convene a session in the AOGS conference every year on specific topic such as magnetic flux ropes, with the goal of inviting scientists from both Heliophysics, Solar and Planetary Science working on the specific session topic to present their individual research and exchange research/scientific ideas. I strongly believe in engaging in scientific discussion across multiple disciplines to foster collaborations.

To Contact Gangkai to learn more about his work or collaboration, he can be reached at:

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