Yash Sarkango

PhD Candidate
Climate and Space Sciences and Engineering
2134C Climate and Space Research Building,
2455 Hayward St., Ann Arbor – MI 48109, USA

Email sarkango@umich.edu
Citizenship Indian

Experience:

- Graduate Student / Research Assistant 2016-April 2021* (Expected)
  Advisor: Dr. Xianzhe Jia
  University of Michigan, Ann Arbor
  - Used the SWMF/BATSRUS MHD model to simulate Jupiter's magnetosphere and understand its response to the solar wind and IMF.
  - Developed tools to analyze data from simulations and in-situ measurements from the Juno spacecraft using the Python programming language.

- Grader, Introduction to Space Physics (CLASP 574) Fall 2016, 2018, 2019

- Undergraduate Research (CFD) 2014-2015
  Advisor: Dr. Sathish Shenoy
  Manipal Institute of Technology
  - Wrote MATLAB codes to solve the Navier-Stokes equations for supersonic flows over arbitrary bodies using the finite-difference method on curvilinear grids.

- Aircraft Maintenance Summer 2014
  Trainee Engineer (Intern)
  Air India Engineering Ltd, Mumbai

- Structural Analysis of High-Altitude Balloons 2013-2014
  Undergraduate, Advisors: Jayakrishnan R, Balbir Singh
  Manipal Institute of Technology
  - Designed high-altitude super-pressure balloons and analyzed their structural stability using a commercial finite-element solver.

Education:

PhD (expected), Climate and Space Sciences and Engineering 2016-2021*
University of Michigan, Ann Arbor
Advisor: Dr. Xianzhe Jia

MSE, Aerospace Engineering (Gas Dynamics) 2015-2016
University of Michigan, Ann Arbor

BTech, Aeronautical Engineering 2011-2015
Manipal Institute of Technology, India

Peer Reviewed Publications:

1. **Sarkango, Y.,** Slavin, J. A., Jia, X., DiBraccio, G. A., Gershman, D. J., Connerney, J. E. P., Kurth, W.S., and Hospodarsky, G. B. (2020). Juno Observations of Ion-Inertial Scale Flux Ropes in the Jovian Magnetotail. Geophysical Research Letters, 47, https://doi.org/10.1029/2020GL089721

2. **Sarkango, Y.,** Jia, X., & Toth, G. (2019). Global MHD simulations of the response of Jupiter's magnetosphere and ionosphere to changes in the solar wind and IMF. *Journal of Geophysical Research: Space Physics*, 124. https://doi.org/10.1029/2019JA026787

Grants and Funding:

NASA Earth and Space Science Fellowship (NESSF) 2017-2020
University of Michigan, Ann Arbor
PI – Dr. Xianzhe Jia

Scholarships:

Gold medal, Aeronautical Engineering 2015
Merit-based tuition waiver 2011-2015
Manipal Institute of Technology

Solicited Conference Presentations:

1. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., Global MHD Simulations of Jupiter's Magnetosphere: Results on Global Configuration and Plasma Circulation*, Magnetospheres of the Outer Planets (MOP) Meeting, 2017*

Poster Presentations:

1. Sarkango, Y., Jia, X., Toth, G., The response of Jupiter's coupled magnetosphere-ionosphere system to changes in the solar wind and the release of plasmoids in the magnetotail: Results from global MHD simulations. *AGU Fall Meeting*, *2019*, SM33G-3289.

2. Sarkango, Y., Jia, X., Toth, G., Impact of solar wind pressure enhancement on Jupiter's magnetosphere: Insights from global MHD simulations, *Magnetospheres of the Outer Planets (MOP) Meeting, 2019 (Sendai, Japan)*.

3. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., Influences of the Preconditioning of Jupiter's Magnetosphere on its Response to Interplanetary Shocks: Insights from Global MHD Simulations, *AGU Fall Meeting, 2018*

4. Sarkango, Y., Jia, X., Chen, Y., and Toth, G., Understanding radial transport in giant planet magnetospheres using BATSRUS*, International School/Symposium on Space Simulations, 2018 UCLA*

5. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., Response of Jupiter's magnetosphere to varying solar wind conditions: Insights from global MHD simulations, *Magnetosphere of the Outer Planets, 2018 Boulder CO*

6. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., Influence of the solar wind and IMF on Jupiter's magnetosphere: Results from global MHD simulations, *American Geophysical Union (AGU) Fall Meeting, 2017*

7. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., Global magnetohydrodynamic simulations of Jupiter's magnetosphere: General configuration and plasma convection, *Michigan Geophysical Union, 2017*

8. Sarkango, Y., Jia, X., Toth, G., Hansen, K.C., MHD Modeling of Jupiter's Magnetosphere using the Space Weather Modeling Framework (SWMF): Preliminary Results, *American Geophysical Union (AGU) Fall Meeting, 2016*

Skills:

IT skills	Python3 (5+ years) Unix/Unix-like operating systems (5+ years) Fortran programming language (4+ years) Data analysis and visualization (4+ years) MATLAB (2+ years)
Coursework: (selected)	Fluid Dynamics Plasma Physics Numerical Methods
Certification:	Deep Learning Specialization (Coursera, 2020)

Service / **Extra-curricular:**

Editor-in-chief for the college yearbook 2013-2014
Manipal Institute of Technology