

## SCOSTEP 2024 Distinguished Scientist Award



Jie Zhang

**Citation: Prof. Jie Zhang has made outstanding contributions to our understanding of the solar eruptions and coronal mass ejections, and their geoeffectiveness. He established a clear solar-terrestrial causal-effect chain for coronal mass ejections.**

Prof. Jie Zhang obtained BSc in astronomy from the University of Nanjing, China in 1990, MSc in astrophysics from the Chinese Academy of Sciences in 1993, and PhD from the University of Maryland, USA in 1999. He is full professor at the Department of Physics and Astronomy of George Mason University.

He has made outstanding contributions to our understanding of the solar eruptions and their geoeffectiveness using EUV, white light and radio observations and in-situ solar wind plasma and magnetic field measurements. His research work has provided insights on the formation of flux ropes in coronal mass ejections (CMEs), the relationship between CMEs and flares, and solar and interplanetary causes of geomagnetic storms, and tackled many puzzles in the formation of the flux rope in CMEs, the relationship between CMEs and flares, and solar and interplanetary causes of geomagnetic storms. He established a clear solar-terrestrial causal-effect chain of CMEs. For the first time, he presented the clear temporal correlation between CMEs and flares, clearly depicting how the two most powerful solar eruptive phenomena are coupled. This finding was checked and confirmed by many follow-up studies. Another important contribution of Prof. Jie Zhang was on the solar and interplanetary sources of major geomagnetic storms. In addition to the aforementioned contributions, he also carried out many pioneer works on the formation of magnetic flux rope in the low corona during a CME, the eruptive and confined flares, the magnetic helicity budget for CMEs and so on. All these studies made significant contributions to the research field of solar-terrestrial physics and earned his high reputation in the community.

He has an excellent publication record with 8209 citations (h-index 46). His 2001 paper on the temporal relationship between CMEs and flares has nearly 800 citations. His 2005 paper on the solar and interplanetary sources of major geomagnetic stores has nearly 700 citations. He has a strong record of teaching students, and has mentored 13 PhD students. He is the associate chair of research at George Mason University Department of Physics and Astronomy. He also co-founded the Space Weather Laboratory at George Mason University.

He has provided excellent leadership and support to SCOSTEP, serving as the chair of SCOSTEP/VarSITI/ISEST program from 2013-2018. He is the current co-chair of SCOSTEP PRESTO program and serves as the vice chair of the COSPAR Commission (2020-2024).

For all of his accomplishments, Professor Jie Zhang has contributed at the highest level within the field of SCOSTEP science and he is most deserving of the SCOSTEP Distinguished Scientist Award.