

CONTACT INFORMATION	Department of Sun and Heliosphere, Max Planck Institute for Solar System Research, Justus-von-Liebig-Weg 3, 37077 Göttingen, Germany	<i>Email:</i> m.wageesh30@gmail.com <i>Phone:</i> +91 9565038755
RESEARCH INTERESTS	Kinematic and thermodynamic evolution of Coronal Mass Ejections (CMEs) in the inner heliosphere, CME-CME interaction in the heliosphere and their in-situ observations at 1 AU, 3D reconstruction of CMEs, Mass loss rate from the Sun and other stars, Torsional Alfvén waves in CMEs and CIRs, Forbush decreases, Stealth CMEs, Problematic ICMEs, Geomagnetic storms and Space Weather.	
EDUCATION	<p>Physical Research Laboratory, Udaipur Solar Observatory, Udaipur, Rajasthan, India Ph.D. (Physics), Jun 2016 (degree awarded by Mohanlal Sukhadia University, Udaipur, India)</p> <ul style="list-style-type: none"> • Dissertation Topic: Evolution and Consequences of Coronal Mass Ejections in the Heliosphere • Advisor: Prof. Nandita Srivastava <p>D. D. U., Gorakhpur University, Gorakhpur, UP, India M. Sc. (Physics), first division (76%), Jun 2009. B. Sc. (Physics, Maths, & Chemistry), at M.G.P.G. college, first division (68%), Jun 2007.</p>	
ACADEMIC EXPERIENCE	<p>Max Planck Institute for Solar System Research, Göttingen-37077, Lower Saxony, Germany <i>Postdoctoral Fellow</i> (Advisor: Prof. Luca Teriaca) 05/2019 – present</p> <p>University of Science and Technology of China, Hefei-230026, Anhui, P. R. China <i>Postdoctoral Researcher</i> (Advisor: Prof. Yuming Wang) 06/2015 – 04/2019</p> <p>Udaipur Solar Observatory, Physical Research Laboratory, Udaipur-313001, Rajasthan, India <i>Postdoctoral Fellow</i> (Advisor: Prof. Nandita Srivastava) 03/2015 – 05/2015</p> <p>Physical Research Laboratory, Dept. of Space, Ahmedabad-380009, Gujarat, India <i>Research Fellow</i> (Advisor: Prof. Nandita Srivastava) 07/2010 – 03/2015</p> <p>Eshan College of Engineering, Mathura-281122, UP, India <i>Lecturer</i>, Department of Physics 02/2010 – 07/2010</p> <p>K. P. Engineering College, Agra-283202, UP, India <i>Lecturer</i>, Department of Physics 10/2009 – 02/2010</p>	
RESEARCH VISITS	<p>George Mason University, Fairfax-22030, Virginia, U.S.A. <i>Affiliate Faculty</i> (Collaborator: Prof. Jie Zhang) 12/2018 – 02/2019</p>	
HONORS AND AWARDS	<ul style="list-style-type: none"> • Research fund for the international young scientist by National Natural Science Foundation of China (NSFC), Sep 2017 • Chinese Academy of Sciences (CAS) President's International Fellowship Initiative (PIFI) for a postdoctoral researcher, Mar 2015. • Senior Research Fellow (SRF) by Physical Research Laboratory, Ahmedabad, a unit of dept. of space, govt. of India, Jul 2012 	

- Junior Research Fellow (**JRF**) by Physical Research Laboratory, Ahmedabad, a unit of dept. of space, govt. of India, Jul 2010
- National Eligibility Test (**NET**) (All India Rank: 97), Physical Sciences, by CSIR-UGC, India, Jun 2009
- National Graduate Physics Examination (**NGPE**), Gorakhpur university center, by Indian Association of Physics Teachers (IAPT), Mar 2007

PUBLICATIONS
REFEREED
JOURNALS

1. **Mishra, W.**, Srivastava, N., Wang, Y., Mirtoshev, Z., Zhang, J., and Liu, R. 2019, “Mass loss via solar wind and Coronal Mass Ejections during solar cycle 23 and 24”, *Monthly Notices of the Royal Astronomical Society*, 486, 4671
2. **Mishra, W.**, and Wang, Y. 2018, “Modeling the thermodynamic evolution of Coronal Mass Ejections using their kinematics”, *The Astrophysical Journal*, 865, 50
3. Chi, Y., Zhang, J., Shen, C., Hess, P., Liu, L., **Mishra, W.**, Wang, Y. 2018, “Observational study of an earth-affecting problematic ICME from STEREO”, *The Astrophysical Journal*, 863, 108
4. Srivastava, N., **Mishra, W.**, and Chakrabarty, D. 2018, “Interplanetary and geomagnetic consequences of interacting CMEs of June 13-14, 2012”, *Solar Physics*, 293, 5
5. Raghav, A., Kule, A., Bhaskar, A., **Mishra, W.**, Vichare, G., and Surve, S. 2018, “Torsional Alfvén wave embedded ICME magnetic cloud and corresponding geomagnetic storm”, *The Astrophysical Journal*, 860, 26
6. Zubair I. S., Raghav, A. N., Vichare, G., Bhaskar, A., and **Mishra, W.** 2018, “The identification of planar magnetic structure within ICME shock-sheath and its effect on cosmic ray variations”, *The Astrophysical Journal*, 866, 118
7. **Mishra, W.**, Wang, Y., Srivastava, N., Shen, C. 2017, “Assessing the collision nature of Coronal mass ejections in the inner heliosphere”, *The Astrophysical Journal Supplement*, 232, 5
8. **Mishra, W.**, Wang, Y., and Srivastava, N. 2016, “On Understanding the Nature of Collision of Coronal Mass Ejections Observed by STEREO”, *The Astrophysical Journal*, 831, 99
9. Vemareddy, P., Mstl, C., Rollett, T., **Mishra, W.**, Farrugia, C., and Leitner, M. 2016, “Comparison of magnetic properties in a magnetic cloud and its solar source on April 11-14 2013”, *The Astrophysical Journal*, 828, 12
10. Vemareddy, P., and **Mishra, W.** 2015, “A full study on the Sun-Earth connection of an Earth-directed CME magnetic flux rope”, *The Astrophysical Journal*, 814, 59
11. **Mishra, W.**, Srivastava, N., Singh, T. 2015, “Kinematics of interacting CMEs of 25 and 28 September 2012”, *Journal of Geophysical Research-Space Physics*, 120, 10
12. **Mishra, W.**, and Srivastava, N. 2015, “Heliospheric tracking of enhanced density structures of 2010 October 6 CME”, *Journal of Space Weather Space Climate*, 5, A20
13. **Mishra, W.**, Srivastava, N., and Chakrabarty, D. 2015, “Evolution and consequences of interacting CMEs of 2012 November 9-10 using STEREO/SECCHI and In-situ observations”, *Solar Physics*, 290, 527
14. **Mishra, W.**, and Srivastava, N. 2014, “Morphological and kinematic evolution of three interacting coronal mass ejections of 2011 February 13-15”, *The Astrophysical Journal*, 794, 64
15. **Mishra, W.**, Srivastava, N., and Davies, J. A. 2014, “A comparison of reconstruction methods for the estimation of coronal mass ejections kinematics based on SECCHI/HI observations”, *The Astrophysical Journal*, 784, 135
16. **Mishra, W.** and Srivastava, N. 2013, “Estimating the arrival time of Earth-directed coronal mass ejections at in situ spacecraft using COR and HI observations from STEREO”, *The Astrophysical Journal*, 772, 70

PUBLICATIONS
CONFERENCE
PROCEEDINGS

1. Srivastava, N., Mirtoshev, Z., **Mishra, W.** 2018, “Geomagnetic consequences of interacting CMEs of June 13-14, 2012”, *IAU Symposium Series*, 335, 65
2. **Mishra, W.**, Srivastava, N., Mirtoshev, Z., and Wang, Y. 2018, “Solar cycle variation of coronal mass ejections contribution to solar wind mass flux”, *IAU Conference Proceeding*, accepted.
3. Dave, K., **Mishra, W.**, Srivastava, N., and Jadhav, R. M. 2018, “Study of Interplanetary and Geomagnetic Response of Filament Associated CMEs”, *IAU Conference Proceeding*, accepted
4. **Mishra, W.** and Srivastava, N. 2013, “Estimating arrival time of 10 October 2010 CME using STEREO/SECCHI and in-situ observations”, *ASI Conference Series*, 10, 127

PAPERS IN
PREPARATION

1. Dave, K., Srivastava, N., **Mishra, W.**, and Jadhav, R. M. 2019 “Study of interplanetary and geomagnetic signatures of halo CMEs observed during 2011”, *Solar Physics*, (submitted)
2. **Mishra, W.**, Wang, Y., Chi, Y., and Zhang, J. “Extrapolating the internal state of a Coronal Mass Ejection from the near Sun to 1 AU”, *Frontiers in Astronomy and Space Sciences*, (to be submitted)

CONFERENCE ORAL
PRESENTATIONS

1. “Modeling the internal state of Coronal Mass Ejections (CMEs) using their kinematics”, COSPAR (COMmittee on SPace Research), Pasadena, **California, United States of America**, 14-22 Jul 2018
2. “Assessing the collision nature of coronal mass ejections in the inner heliosphere”, International Study of Earth affecting Solar Transients (ISEST) Mini-Max 2017 Workshop, **Jeju, Republic of Korea**, 18-22 Sep 2017.
3. Invited, “Understanding the nature of collision of CMEs and their geo-effectiveness”, Asia Oceania Geosciences Society (AOGS) meeting, **Singapore**, 6-11 Aug 2017
4. “Assessing the collision nature of coronal mass ejections in the inner heliosphere”, Workshop on solar eruptions, **Hefei, China**, 26-28 Jun 2017
5. “Using multiple viewpoints observations to understand the collision nature of CMEs observed on 25th October 2013”, Asia Oceania Geosciences Society (AOGS) meeting, **Beijing, China**, 31 Jul - 5 Aug 2016
6. “Consequences of Interacting Coronal Mass Ejections”, STANFORD-USTC-MIT (SUM) geo-science summer camp, **Hefei, China**, 5-15 Sep 2015
7. “Understanding the propagation of Coronal Mass Ejections”, Workshop on solar physics at the University of Science and Technology of China, **Hefei, China**, 19 Aug 2015
8. Colloquium “Kinematics and Consequences of Coronal Mass Ejections in the Heliosphere”, Physical Research Laboratory (PRL), **Ahmedabad, India**, 25 Mar 2015
9. “Evolution and Consequences of Interacting CMEs using STEREO/SECCHI and In Situ Observations”, Coupling and dynamics of the solar atmosphere meeting at Inter-University Centre for Astronomy and Astrophysics (IUCAA), **Pune, India**, 10-14 Nov 2014
10. “CME-CME interaction”, Rutherford Appleton Laboratory, **Oxford, UK**, 17-21 Mar 2014
11. Colloquium “Estimating the arrival time of Earth-directed coronal mass ejections at in situ spacecraft using COR and HI observations from STEREO”, High Altitude Observatory, Boulder, **Colorado, United States of America**, 11 Jul 2013
12. “Using Heliospheric Imaging Observations to Forecast the Arrival Time of CMEs”, 30th meeting of Astronomical Society of India, **Trivandrum, India**, 20-22 Feb 2013.
13. “Signatures and Geoeffectiveness of ICMEs”, Solar Radio Workshop at National Centre for Radio Astrophysics (NCRA), **Pune, India**, 23-25 Nov 2011

CONFERENCE
POSTER
PRESENTATIONS

1. “Modeling the thermodynamic state of a Coronal Mass Ejection (CME) using its kinematics in the heliosphere”, American Geophysical Union (AGU) meeting, **Washington D.C., United States of America**, 10-14 Dec 2018
2. “Dependency of mass loss rate of the Sun on its magnetic variability over solar cycles”, American Geophysical Union (AGU) meeting, **Washington D.C., United States of America**, 10-14 Dec 2018
3. “Solar Cycle Variation of Coronal Mass Ejections and the Near Earth Solar Wind Parameters”, International Astronomical Union (IAU) Symposium-340, **Jaipur, India**, 19-24 Feb 2018
4. “Understanding the nature of collision of Coronal Mass Ejections in the heliosphere”, American Geophysical Union (AGU) meeting, **San Francisco, United States of America**, 14-18 Dec 2015
5. “Using Heliospheric Imaging Observations to Forecast the Arrival Time of CMEs”, International Symposium on Solar-Terrestrial Physics (ISSTP), IISER, **Pune, India**, 5-9 Nov 2012
6. “Relationship between CME and ICME Characteristics as Observed by SECCHI/STEREO and In-Situ Spacecraft”, COSPAR (COmmittee on SPace Research), **Mysore, India**, 14-22 Jul 2012

ADVANCED
WORKSHOPS

1. International Study for Earth-Affecting Solar Transients (ISEST) mini-workshop, University of Science and Technology of China, **Hefei, China**, 12 Jun 2015
2. Heliophysics Summer School-2013. UCAR, High Altitude Observatory, Boulder, **Colorado, United States of America**, 12-19 Jul 2013
3. International Space Weather Winter School, National Central University, **Taiwan**, 21-26 Jan 2013
4. Physics of the Solar Transition Region and Corona. Inter-University Centre for Astronomy and Astrophysics (IUCAA), **Pune, India**, 5-7 Sep 2011

COMPUTER SKILLS

- IDL and SolarSoft
- MS Office, Excel, L^AT_EX, Origin, & gnuplot
- Windows, Linus & Mac

TRAVEL GRANTS
AND SUPPORT

1. International Astronomical Union (IAU) grant for IAUS 340, **Jaipur, India**, 18-24 Feb 2018
2. Full support from UCAR for Heliophysics Summer School, **Colorado, United States of America**, 12-19 Jul 2013
3. Partial support from National Central University for International Space Weather Winter School, **Taiwan**, 21-26 Jan 2013
4. Partial support from Rutherford Appleton laboratory for CME-CME interaction workshop, **Oxford, UK**, 17-21 Mar 2014

SPONSORED
PROJECTS

- Research Fund for International Young Scientist, National Natural Science Foundation of China (NSFC), Research project: “Evolution of an isolated CME: Its internal state and energetics”, Total grant: 40 lacs INR (grant No. 41750110481, Jan 2018 to Dec 2019)

PROFESSIONAL
SERVICE

- Reviewer: Journal of Geophysical Research (Space Physics), The Astrophysical Journal, Journal of Astrophysics and Astronomy, Astrophysics and Space Science, & Sun and Geosphere

PROFESSIONAL
MEMBERSHIPS

- Astronomical Society of India (ASI). Life membership, since 2018
- COSPAR Associate

MEDIA
RECOGNITION

- Chief guest and speaker, “Vigyan Mahotsava”, District science club-Deoria, UP, India, Dainik Jagaran & Hindustan News, 13 Mar 2018

PERSONAL
INFORMATION

- Birth Date: 10 Mar 1988
- Gender: Male
- Marital Status: Single
- Nationality: Indian
- Languages: English (fluent) & Hindi (native)
- Other Interests: Science outreach, Yoga, & Poems

SUMMARY AND
NARRATIVE

- ORCID iD: 0000-0003-2740-2280
- NASA ADS citations: 138 & h index = 7
- Google scholar citations: 167 & h index = 7
- 10 first authored publications in peer-reviewed journals.
- 2 second-authored and 4 additional co-authored publications in peer-reviewed journals.
- 4 publications as conference proceedings.

My research in the last few years has focused on the investigation of kinematic and thermodynamic evolution of coronal mass ejections (CMEs), particularly series of CMEs, and their consequences on Earth's magnetosphere. I have successfully tracked CMEs in the heliosphere primarily using STEREO/HI observations and applied several 3D reconstruction methods in conjunction with models, for improved arrival time prediction of the CMEs at the Earth. My study has identified the signatures of interaction and/or collision of CMEs in remote sensing observations and in situ measurements. Recently, I am also working on understanding the thermodynamic evolution of CMEs by improving an analytical flux rope model of the CMEs. Further, I am investigating the mass loss rate from the Sun due to solar wind and CMEs and its dependence on the solar magnetic variability.

REFERENCE
CONTACT DETAILS

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