

Smitha V. Thampi

Research Interests

*Planetary Ionospheres, Thermospheres
Space weather effects on magnetosphere-ionosphere system
Development of scientific payloads for planetary explorations*

Academic Qualification

- 2007 **Ph. D (Physics)**, University of Kerala, India.
Investigations of the equatorial and low-latitude ionosphere- thermosphere system using computerized tomography
- 2000 **M. Sc Physics**, Cochin University of Science and Technology, Kochi, India.
- 1997 **B. Sc Physics**, Mahatma Gandhi University, Kottayam, India.

Professional Experience

- 2018 — **Scientist/Engineer SF**, Space Physics Laboratory, Vikram Sarabhai Space Centre.
- 2014 —2018 **Scientist/Engineer SE**, Space Physics Laboratory, Vikram Sarabhai Space Centre.
- 2011–2014 **Reader**, Physical Research Laboratory, Ahmedabad.
- 2008–2010 **JSPS Postdoctoral Fellow**, Kyoto University, Japan.
- 2006–2008 **Research Associate**, Space Physics Laboratory, Vikram Sarabhai Space Centre.
- 2001–2006 **Research Fellow**, Space Physics Laboratory, Vikram Sarabhai Space Centre.

Awards and Honors

- **NASI Scopus Young Scientist Award**- 2017.
- Selected as member of the Indian National Young Academy of Science since 2016.
- Received the SERB (Science & Engineering Research Board, DST, Government of India) Woman Excellence Award in 2013.
- Received the URSIGASS Young Scientist Award (2011) at the XXX URSI GASS, Istanbul, Turkey
- Selected as Associate of the Indian Academy of Sciences (2011).
- Received the AP-RASC'10 Young Scientist Award at the Asia-Pacific Radio Science Conference (2010), Toyama, Japan
- Received the JSPS (Japan Society for the Promotion of Science) Post Doctoral Fellowship (April 2008 –April 2010).
- Received the best paper award for the paper presented at International Conference on the scientific and Technical Aspects of MST Radar (MST-11), held at Gadanki, India (2006).
- Received the best paper award for the paper presented at INCURSI-2007, New Delhi, India (as co-author) (2007).

Other achievements, Highlights

- Co-author of the paper which was highlighted as ISRO Story of the Week, 'Observation of Suprathermal Argon in the exosphere of Mars', March 27, 2017.
- Special Mention Award for MENCA in VSSC innovation contest, 2016 (as Team Member).
- Co-author of the paper which was highlighted as ISRO Story of the Week, 'MENCA observed the evening exosphere of Mars', May 02, 2016.
- Third Prize for the presentation on MENCA (in Hindi), VSSC Technical Hindi Seminar, 2016
 - Invited to co-chair a session at the National Space Science Symposium 2016.
- Selected as member of the ISRO study team for the definition of instruments required for solar –terrestrial –atmospheric processes using Indian satellites (2015 –).
- Invited speaker for the New Horizons @ PRL Conference (Physical Research Laboratory, Ahmedabad) in 2015
- Invited speaker for the 23rd mid-year meeting of the Indian academy of sciences at IISc, Bangalore (2012).
- Invited to chair a session at the IRI2009 International workshop, Kagoshima, Japan (2009).
- Received the best participant Award at the 1st National SERC school on GPS and Ionosphere, Osmania University, Hyderabad (2004).
- Received the ISRO Research Fellowship (2001 –2006).

Experience in National Projects

- Data Analysis, CHACE Payload, Chandrayaan-1/Moon Impact Probe mission
- Member, Science Team, MENCA Payload, Indian Mars Orbiter Mission
- Member, Science Team, INSWIM (Indian Network for Space Weather Impact Monitoring) Project by Space Physics Laboratory, VSSC.
- Co-Principal Investigator, CHACE-2 Payload, Chandrayaan-2 Mission

Professional Services/Teaching Experience:

Reviewer	Journal of Geophysical Research(Space Physics), Geophysical Research Letters, Radio Science, Journal of Atmospheric and Solar Terrestrial Physics, Advances in Space Research, EPS, JESS
Thesis Evaluator	Mahatma Gandhi University, Kottayam, Kerala, India
Member	Doctoral Committee for Six Research Fellows of SPL.
Teaching	Basic course on Upper Atmospheric Physics (to Research Fellows of PRL - 2011, 2013)

Recent Workshop/Symposia Participation

- 2017 ISRO Structured Training Program (STP) on Challenges in Space Science and Exploration, SPL, VSSC, Thiruvananthapuram.**
- 2016 ISRO-NASA Mars Data Analysis Meeting , ISRO Head Quarters, Bangalore.**
- 2016 National Space Science Symposium, VSSC, Thiruvananthapuram.**
- 2015 New Horizons @ PRL, PRL, Ahmedabad.**
- 2015 ISRO Structured Training Program (STP) on Planetary Explorations, PRL, Ahmedabad.**
- 2014 2nd Indian Venus Workshop, NGRI, Hyderabad.**
- 2014 PLANEX Seminar, PRL, Ahmedabad.**

Journal Publications

2018

Thampi., S. V., Krishnaprasad C., A. Bhardwaj, Yuni Lee, R. K. Choudhary, and T. K.Pant. "MAVEN observations of the response of Martian ionosphere to the interplanetary coronal mass ejections of March 2015". In: *Journal of Geophysical Research: Space Physics (In Press)*. DOI: 10.1029/2018JA025444.

2017

Bhardwaj, A., Smitha V. Thampi, T. P. Das, M. B. Dhanya, Neha Naik, Dinakar Prasad Vajja, P. Pradeepkumar, P. Sreelatha, J. K. Abhishek, R. Satheesh Thampi, Vipin K. Yadav, B. Sundar, Amarnath Nandi, G. Padma Padmanabhan, and A.V. Aliyas. "Observation of Suprathermal Argon in the exosphere of Mars". In: *Geophysical Research Letters*. 2016GL072001. DOI: 10.1002/2016GL072001.

2016

Bhardwaj, A., S. V. Thampi, T. P. Das, M. B. Dhanya, N. Naik, D. P. Vajja, P. Pradeepkumar, P. Sreelatha, G. Supriya, A. J. K, S. V. Mohankumar, R. S. Thampi, V. K. Yadav, B. Sundar, A. Nandi, G. P. Padmanabhan, and A. V. Aliyas. "On the evening time exosphere of Mars: Result from MENCA aboard Mars Orbiter Mission". In: *Geophysical Research Letters*. DOI: 10.1002/2016GL067707.

2016

Das, T. P., S. V. Thampi, A. Bhardwaj, S. M. Ahmed, and R. Sridharan. "First Observation on the Latitudinal and Altitudinal Distribution of Neon-20 in the Sunlit Lunar Exosphere: Results from CHACE aboard MIP/Chandrayaan-1". In: *ICARUS*. DOI: 10.1002/2016GL067707.

2016

Shreedevi, P. R., S. V. Thampi, D. Chakrabarty, R. K. Choudhary, T. K. Pant, A. Bhardwaj, and S. Mukherjee. "On the latitudinal changes in ionospheric electrodynamics and composition based on observations over the 76 –77E meridian from both hemispheres during a geomagnetic storm". In: *J. Geophys. Res. Space Physics* 121, pp. 76 –77. DOI: 10.1002/2015JA021841.

2016

Thampi, Smitha V., P. R. Shreedevi, R. K. Choudhary, Tarun Kumar Pant, D. Chakrabarty, S. Sunda, S. Mukherjee, and Anil Bhardwaj. "Direct observational evidence for disturbance dynamo on the daytime low-latitude ionosphere: A case study based on the 28 June 2013 space weather event". In: *Journal of Geophysical Research: Space Physics* 121.10. 2016JA023037, pp. 10,064–10,074. ISSN: 2169-9402. DOI: 10.1002/2016JA023037.

2015

Gupta, S. P. and S. V. Thampi. "Electrical conductivity of the stratosphere over Hyderabad, India: Results from Balloon borne measurements". In: *Indian Journal of Radio & Space Physics* 44, pp. 132 –137.

2015

Thampi, S. V., R. Sridharan, T. P. Das, S. M. Ahmed, J. A. Kamalakar, and A. Bhardwaj. "The spatial distribution of molecular Hydrogen in the lunar atmosphere –New results". In: *Planetary and Space Science* 106, pp. 142 –147. DOI: 10.1016/j.pss.2014.12.018.

2014

Thampi, S. V., M. S. Bagiya, D. Chakrabarty, Y. B. Acharya, and M. Yamamoto. "An ensemble average method to estimate absolute TEC using radio beacon-based differential phase measurements: Applicability to regions of large latitudinal gradients in plasma density". In: *Radio Sci* 49, pp. 1153 –1161. DOI: 10.1002/2014RS005372.

2013

D.Chakrabarty, M. S. Bagiya, S. V. Thampi, B. M. Pathan, and R. Sekar. "Impact of lesser rank X-ray solar flares on the equatorial electrojet under quiescent geomagnetic conditions: Case studies". In: *Journal of Atmospheric and Solar Terrestrial Physics* 105 - 106, pp. 170–180.

2013

Tsunoda, R. T., S. V. Thampi, T. T. Nguyen, and M. Yamamoto. "On validating the relationship of ionogram signatures to large-scale wave structure". In: *Journal of Atmospheric and Solar Terrestrial Physics* 103, pp. 30–35.

2012

Chakrabarty, D., M. S. Bagiya, S. V. Thampi, and K. N. Iyer. "Solar EUV flux, F10.7 Cm flux, sunspot number and the total electron content in the crest region of equatorial ionization anomaly during the deep minimum between solar cycle 23 and 24". In: *Indian Journal of Radio and Space Physics* 41, pp. 110–120.

2012

S, Tulasi Ram, M. Yamamoto, R. T. Tsunoda, S. V. Thampi, and S. Gurubaran. "On the application of differential phase measurements to study the zonal large scale wave structure (LSWS) in the ionospheric electron content". In: *Radio Science* 47. DOI: 10.1029/2011RS004870.

2012

Simi, K. G, S. V. Thampi, D. Chakrabarty, B. M. Pathan, S. R. P. Nayar, and T. K. Pant. "Extreme changes in the equatorial electrojet under the influence of interplanetary electric field and the associated modification in the low- latitude F-region plasma distribution". In: 117.A3, A03331. DOI: 10.1029/2011JA017301.

2012

Thampi, S. V., R. T. Tsunoda, L. Jose, and T. K. Pant. "Ionogram signatures of large-scale wave structure and their relation to equatorial spread F". In: *Journal of Geophysical Research* 117.A08314. DOI: 10.1029/2012JA017592.

2012

Thampi, S. V. and M. Yamamoto. "Evolution of Plasma bubbles over Vietnam region observed using the CERTO beacon on board C/NOFS satellite". In: *Indian Journal of Radio and Space Physics* 41, pp. 233–239.

2011

Bagiya, M. S., K. N. Iyer, H. P. Joshi, S. V. Thampi, T. Tsugawa, S. Ravindran, R. Sridharan, and B. M. Pathan. "Low Latitude ionospheric-thermospheric response to storm time electro-dynamical coupling between high and low latitudes". In: *Journal of Geophysical Research* 116.A01303. DOI: 10.1029/2010JA015845.

2011

Manju, G., V. Sreeja, S. Ravindran, and S. V. Thampi. "Towards Prediction of L band scintillations in the Equatorial Ionization Anomaly (EIA) Region". In: *Journal of Geophysical Research* 116.A02307. DOI: 10.1029/2010JA015893.

2011

Thampi, S. V., N. Balan, C. Lin, H. Liu, and M. Yamamoto. "Mid-latitude Summer Nighttime Anomaly (MSNA)- Observations and Model simulations". In: *Annales Geophysicae* 29, pp. 157–165.

2011

Thampi, S. V., M. Yamamoto, C. Lin, and H. Liu. "Comparison of FORMOSAT- 3/COSMIC radio occultation measurements with radio tomography". In: *Radio Science* 46.RS3001. DOI: 10.1029/2010RS004431.

2011

Tsunoda, R. T., M. Yamamoto, T. Tsugawa, T. L. Hoang, S. T. Ram, S. V. Thampi, H. D. Chau, and T. Nagatsuma. "On seeding, large-scale wave structure, equatorial spread F, and scintillations over Vietnam". In: *Geophysical Research Letters* 38.L20102. DOI: 10.1029/2011GL049173.

2010

Liu, H., S. V. Thampi, and M. Yamamoto. "Phase Reversal of the Diurnal Cycle in the Mid-latitude Ionosphere". In: *Journal of Geophysical Research* 115.A01305. DOI: doi:10.1029/2009JA014689.

2010

Thampi, S. V. and M. Yamamoto. "First results from the ionospheric tomography experiment using beacon TEC data obtained using a network along 136E longitude over Japan". In: *Earth, Planets and Space* 62, pp. 359–364.

2010

Thampi, S. V., M. Yamamoto, H. Liu, S. Saito, Y. Otsuka, and A. K. Patra. "Nighttime –like Quasi Periodic echoes induced by a partial solar eclipse". In: *Geophysical Research Letters* 37.L09107. DOI: 10.1029/2010GL042855.

2010

Tsunoda, R. T., D. M. Bubenik, S. V. Thampi, and M. Yamamoto. "On large –scale wave structure and equatorial spread F without a post-sunset rise of the F layer". In: *Geophysical Research Letters* 37.L07105. DOI: 10.1029/2009GL042357.

2009

Thampi, S. V., C. H. Lin, H. Liu, and M. Yamamoto. "First Tomographic Observations of the Mid –latitude Summer Nighttime Anomaly (MSNA) over Japan". In: *Journal of Geophysical Research* 114.A10318. DOI: 10.1029/2009JA014439.

2009

Thampi, S. V., M. Yamamoto, R. T. Tsunoda, Y. Otsuka, T. Tsugawa, J. Uemoto, and M. Ishii. "First observations of large –scale wave structure and equatorial spread F using radio beacons on the C/NOFS satellite". In: *Geophysical Research Letters* 36.L18111. DOI: 10.1029/2009GL039887.

2008

Balan, N., S. V. Thampi, K. Lynn, Y. Otsuka, H. Alleyne, Smitha S. Watanabe and M. A. Abdu, and B. G. Fejer. "F3 layer during penetration electric field". In: *Journal of Geophysical Research* 113.A00A07. DOI: doi:10.1029/2008JA013206.

2008

G. Manju, and S. Ravindran, C. V. Devasia, S. V. Thampi, and R. Sridharan. "Plasmaspheric electron content (PEC) over the low latitude regions in the Indian sector during different geophysical conditions". In: *Journal of Atmospheric and Solar Terrestrial Physics* 70, pp. 1066–1073.

2008

Thampi, S. V., S. Ravindran, T. K. Pant, C. V. Devasia, and R. Sridharan. "Seasonal Dependence of the 'Forecast Parameter' Based on the EIA Characteristics for the Prediction of Equatorial Spread F (ESF)". In: *Annales. Geophysicae* 26, pp. 1751–1757.

2008

Vineeth, C., T. K. Pant, S. V. Thampi, R. Sridharan, S. Ravindran, C. V. Devasia, K. K. Kumar, and S. Alex. "Investigation of the response of equatorial MLTI region during a partial solar eclipse through ground-based daytime optical technique". In: *Journal of Geophysical Research* 113.A03302. DOI: 10.1029/2007JA012335.

2007

Aggarwal, M., H. P. Joshi, K. N. Iyer, A. K. Patra, and S. V. Thampi. "Study of equatorial spread F using L-band and VHFradar". In: *Bull. Astr. Soc. India* 35, pp. 631 –637.

2007

Pant, T. K, D. Tiwari, C. Vineeth, S. V. Thampi, S. Sridharan, C. V. Devasia, R. Sridharan, S. Gurubaran, and R. Sekar. "Investigation of the mesopause energetics and its possible implications on the mesosphere –lower thermosphere –ionosphere (MLTI) processes through coordinated daytime airglow and radar measurements". In: *Geophysical Research Letters* 39.L15102. DOI: 10.1029/2007GL030193.

2007

Thampi, S. V., N. Balan, S. Ravindran, T. K. Pant, C. V. Devasia, P. Sreelatha, and R. Sridharan. "An additional layer in the low-latitude ionosphere in Indian longitudes: Total electron content observations and modeling". In: *Journal of Geophysical Research* A06301. DOI: 10.1029/2006JA011974.

2007

Thampi, S. V., S. Ravindran, C. V. Devasia, P. Sreelatha, T. K. Pant, R. Sridharan, V. Ratnam, A. D. Sharma, C. R. Reddi, J. Jose, and J. H. Sastri. "Coherent radio beacon experiment (CRABEX) for tomographic imaging of the equatorial ionosphere in the Indian longitudes - Preliminary results". In: *Adv. Space Res.* 40, pp. 436 –441.

2006

Thampi, S. V., S. Ravindran, T. K. Pant, C. V. Devasia, P. Sreelatha, and R. Sridharan. "Deterministic prediction of post-sunset ESF based on the strength and asymmetry of EIA from ground based TEC measurements–Preliminary results". In: *Geophysical Research Letters* 33.L13103.

2005

Thampi, S. V., S. Ravindran, C. V. D. T. K. Pant, P. Sreelatha, and R. Sridharan. "First observation of topside ionization ledges using radio beacon measurements from low earth orbiting satellites". In: *Geophysical Research Letters* 32.L11104. DOI: 10.1029/2005GL022883.

2004

Thampi, S. V., T. K. Pant, S. Ravindran, C. V. Devasia, and R. Sridharan. "Simulation Studies on the Tomographic Reconstruction of the Equatorial and Low Latitude Ionosphere in the Context of the Indian Tomography Experiment –CRABEX". In: *Annales Geophysicae* 22, pp. 3445 –3460.

2003

Jinesh, K. B., K. C. Wilson, S. V. Thampi, C. S. Kartha, K. P. Vijayakumar, T. Abe, and Y. Kashiwaba. "How quantum confinement comes in chemically deposited CdS ?–A detailed XPS investigation". In: *Physica E* 19, pp. 303 –308.