Newsletter of the Physical Research Laboratory

THE SPECTRUM

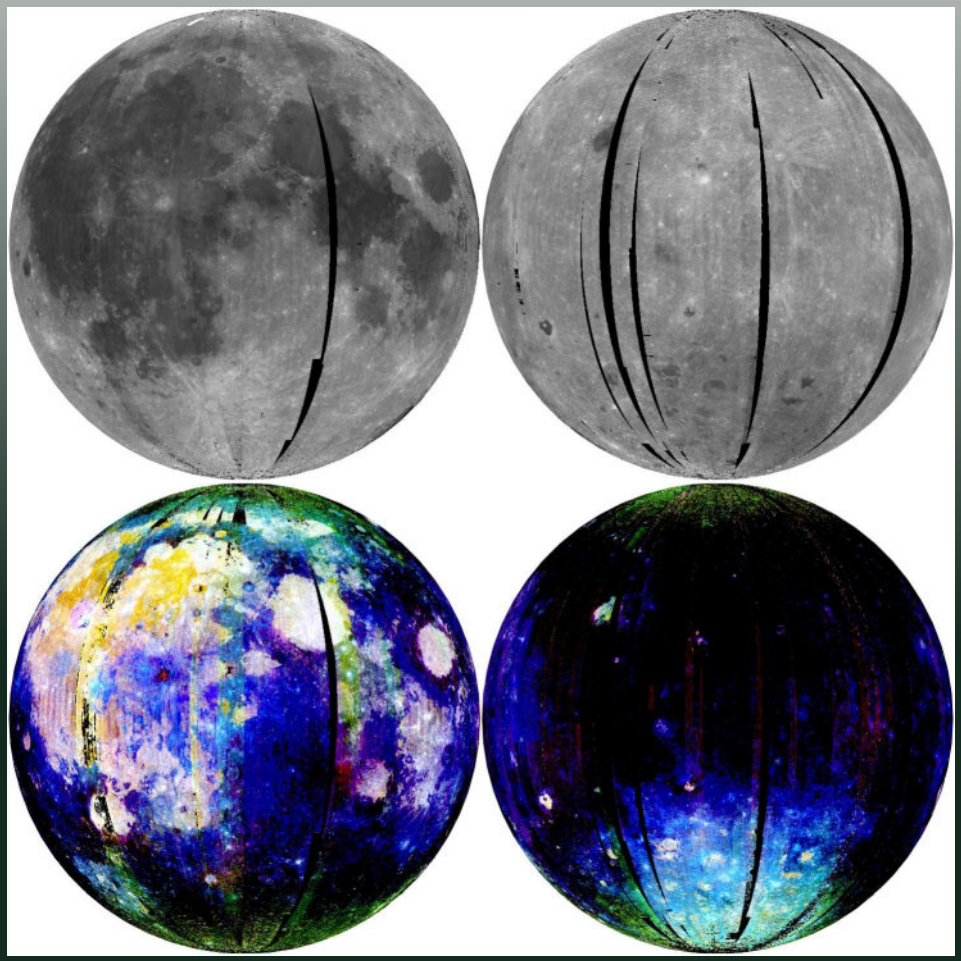

Image of the Month

Lunar albedo images (top panel) at 1.5 wavelength (Data: M^3) with corresponding FCC images (bottom panel) for the nearside (left) and farside (right).

February 2026

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The Author

Satyandra M. Sharma

Identification and characterization of the topside bulge of the Venusian ionosphere

(***Satyandra M. Sharma***, *Varun Sheel, Martin Pätzold)*

Venus has no intrinsic magnetic field, so its ionosphere is directly exposed to the solar wind, making it an ideal natural laboratory for studying space weather–atmosphere interactions. One long-standing feature reported since the Mariner, Venera, and Pioneer Venus Orbiter era is a localized enhancement in topside electron density—commonly called a "bulge"—typically appearing between 160 and 200 km altitude. In this work, we investigate the nature of this bulge using more than 200 dayside electron density profiles obtained from the Venus Radio Science experiment (VeRa) onboard Venus Express. To ensure a consistent and reproducible identification, we developed an automated gradient-based classification approach that categorizes bulge morphology into three types: a clear secondary peak above the V2 layer (Type 1), a shoulder-like enhancement (Type 2), and a subtle signature detectable only through Chapman-fit residuals (Type 3). The bulge is present in over 80% of the analyzed profiles, occurring more frequently during low solar activity and at lower solar zenith angles. Type 1 bulges are restricted to low latitudes (within ±40°N), highlighting strong spatial control. The bulge peak altitude decreases with increasing solar zenith angle, suggesting thermospheric cooling toward the terminator as a key factor.

Overall, the observed occurrence patterns and morphology point toward external forcing —particularly solar wind interaction—rather than purely local photochemical production.

Source/Reference of the Work: https://doi.org/10.1016/j.icarus.2025.116920

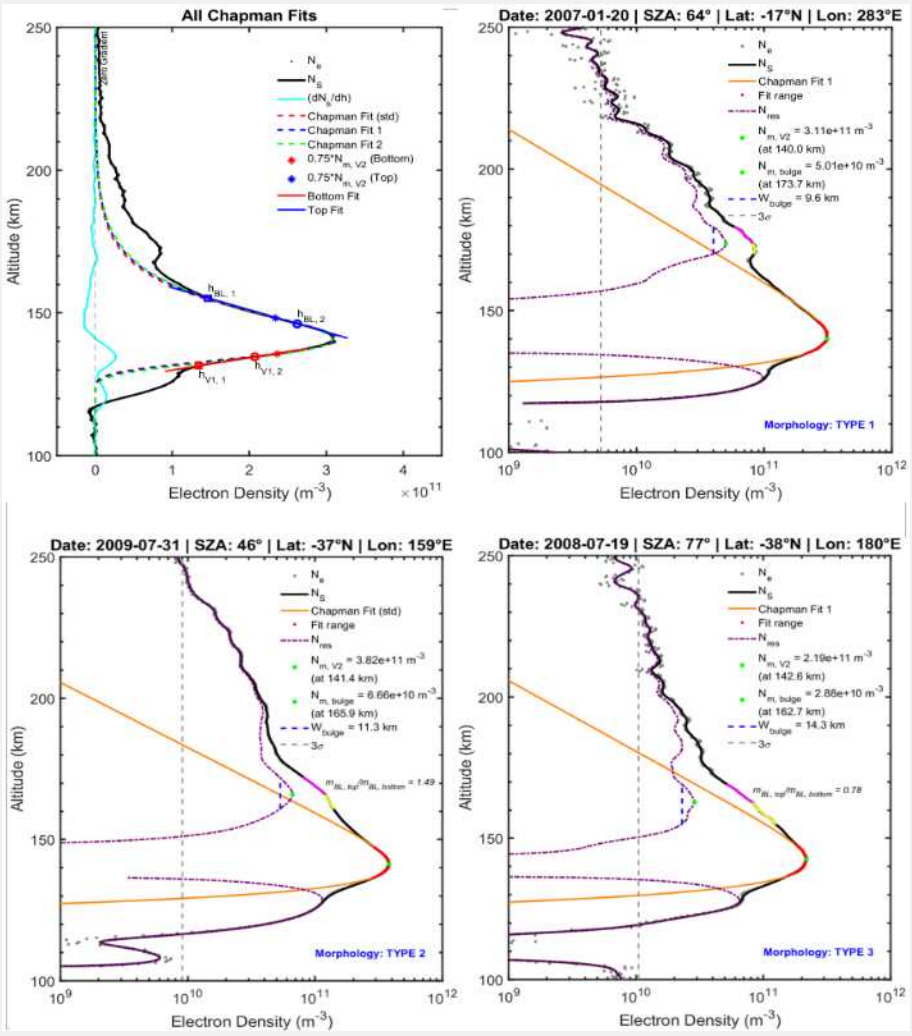

Figure Caption: (a) Illustration of different boundary selections for Chapman fitting; (b) Type 1 — The bulge appears as a distinct secondary peak located above the main V2 layer; (c) Type 2 — The bulge shows as a shoulder-like enhancement near the V2 peak; and (d) Type 3 — No visually distinct bulge is present.

The Author

Dibyendu Misra

An Integrated Framework for Global Detection and Quantification of Lunar Pyroclastic Deposits

(***Dibyendu Misra***, *Megha Bhatt, Marcel Hess, and Christian Wöhler)*

Lunar pyroclastic deposits (LPDs) primarily composed of Fe–Ti–bearing volcanic glasses, are considered as one of the best proxies to understand the primitive mantle composition. It exhibits very low albedo, homogeneous textures and are commonly associated with extensional volcanic landform. However, these characteristics are often insufficient to differentiate LPDs from the morphologically identical mare deposits. Additionally, overlapping spectral signature with the common lunar minerals (e.g., olivine, pyroxene) in the visible to near-infrared wavelength range create challenges in identification of lunar volcanic glasses within a mafic mineral mixture.

In this study, we present an integrated framework for the systematic identification of LPDs by combining morphological context with a newly developed spectral-parameter–based false color composite (FCC) scheme derived from Moon Mineralogy Mapper (M^3) data. In addition, we introduce, for the first time, a probabilistic hyperspectral unmixing approach to estimate volcanic glass as well as associated mineral abundances within an LPD. We validated this framework using the well-studied regional pyroclastic deposit at the Aristarchus crater region. Our results successfully identify the spatial extent of the pyroclastic materials and estimated ~75 wt.% volcanic glass abundances across that area.

The framework was further applied to the fully calibrated global M^3 mosaic, leading to the successful detection and estimation of volcanic glasses abundances of several previously known localized (e.g., Atlas, Alphonsus) and regional (e.g., Sinus Aestuum, Vaporum, Sulpicius Gallus) LPDs. Overall, the proposed methodology implies comprehensive and qualitative identification and quantitative characterization of LPDs across the Moon contributing to a better understanding of the lunar evolutionary processes.

Source/Reference of the Work: https://doi.org/10.3847/PSJ/ae317c

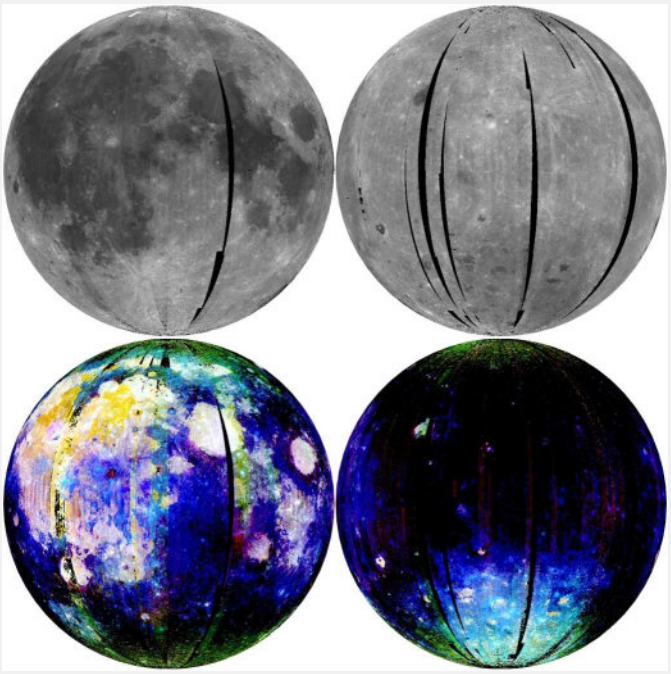

Figure Caption: Lunar albedo images (top panel) at 1.5 wavelength (Data: M^3) with corresponding FCC images (bottom panel) for the nearside (left) and farside (right). In the FCC images, derived avg. BD at 1.05-1.20 , 0.90-1.05 and 2.00-2.30 wavelength ranges are mapped to the red, green, and blue channel, respectively.

The Author

Kamran Ansari

Global assessment of aerosol radiative effects: New insights from observations, reanalysis, and climate models

(***Kamran Ansari***, *S. Ramachandran, and R. Cherian)*

Atmospheric aerosols, the tiny solid and/or liquid particles suspended in air, are ubiquitous in the atmosphere. The interaction of aerosols with radiation and clouds can significantly influence Earth's energy balance and climate. Aerosols continue to be the most uncertain climate driver in quantifying the present-day climate and future projections. An integrated analysis of key optical and radiative properties of aerosols utilizing multi-source data from observations, reanalysis and climate models, and quantifying the biases on regional and seasonal scales can substantially reduce this uncertainty. In a first-of-its-kind study, a globally comprehensive investigation using AErosol RObotic NETwork (AERONET), MODerate resolution Imaging Spectroradiometer (MODIS), Ozone Monitoring Instrument (OMI), Clouds and the Earth's Radiant Energy System (CERES), Modern-Era Retrospective Analysis for Research and Applications-2 (MERRA-2), and Coupled Model Intercomparison Project Phase 6 (CMIP6) datasets was conducted, which revealed that aerosol direct radiative effect (DRE) is highest over South Asia due to high aerosol loading and absorption, followed by North America and Europe and is lowest over Australia. Collocated validations reveal that MERRA-2 outperforms CERES in reproducing AERONET DRE globally; however, both datasets exhibit substantial biases over Asia. This study, utilizing multi-platform datasets, provides crucial global insights into aerosol direct radiative effects quantifying the regional and seasonal biases, which are essential to fine-tune and improve model simulations of aerosols for accurately assessing aerosol-climate interactions.

Source/Reference of the Work: https://doi.org/10.1016/j.scitotenv.2025.180871

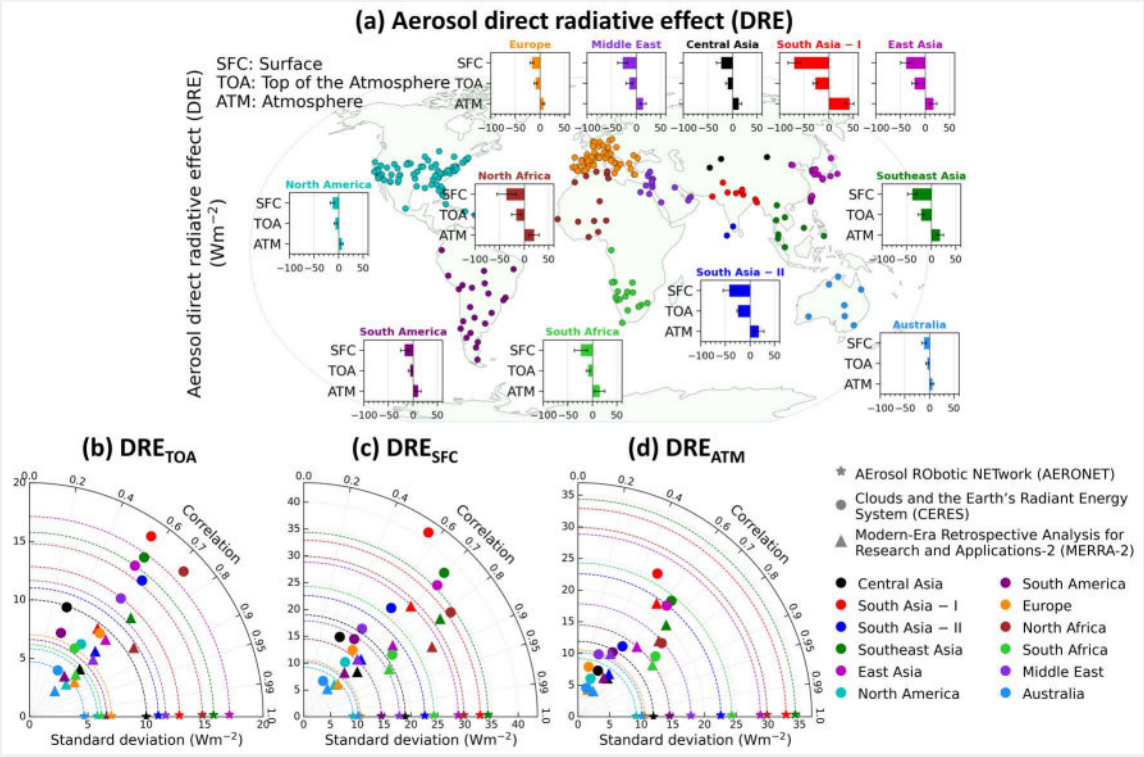

Figure Caption: (a) Annual mean aerosol direct radiative effect (DRE; in Wm^{-2}) at the surface (DRESFC), top of the atmosphere (DRETOA), and in the atmosphere (DREATM) across different regions of the globe. Taylor diagram for collocated comparison of CERES retrieved and MERRA-2 simulated (b) DRETOA, (c), DRESFC, and (d) DREATM with respect to AERONET. Colors of each symbol correspond to different regions of the globe.

The Author

Venkatesh Kavutarapu

Distinct impacts of the extreme space weather events of 2024 on the low latitude ionospheric dynamics in the Indian sector

(***K. Venkatesh***, *D. Pallamraju, D. Chakrabarty, G.K. Seemala, and Sudha Kapali)*

Two extreme space weather events occurred on May 10, 2024 and October 10, 2024 triggered severe modifications in the geospace environment leading to super geomagnetic storms of class G5 and G4, respectively. These severe storms provided a unique opportunity to investigate the distinct nature of storm induced impacts on the ionosphere-thermosphere dynamics. The impacts of these two super severe geomagnetic storms on the low latitude ionospheric dynamics are investigated using ground and space based measurements over the Indian longitude sector. During the recovery phase of the May storm, a positive storm effect is seen in Total Electron Content (TEC) variations around the equatorial latitudes with negative storm effect over the low latitudes, as indicated in the figure. Further, a strong negative storm effect is seen in the TEC over the low latitudes during the recovery phase of the October storm, without any significant impact near the equatorial region. Co-located observations of GPS-TEC and digisonde revealed that the negative storm effect is strong in the topside ionosphere compared to that in the bottom side ionosphere during both the storms. It took longer for the recovery from the negative storm effect in the topside ionosphere compared with that in the bottom side ionosphere. The suppression of EIA was stronger during the storm of October (as shown in Figure) than that during the May. From the analysis of the thermospheric wind observations, it is found that, inter hemispheric winds from summer (northern) hemisphere to wither (southern) hemisphere complemented the effects of thermospheric composition changes and hence the impact of O/N2 ratio played significant role on the TEC variations during the May storm. In contrast, during the month of October, with weak background inter hemispheric winds, the disturbance dynamo electric fields and over shielding electric fields dominated the impact of thermospheric compositional changes that resulted in the modifications in the low latitude ionospheric TEC and strong suppression of EIA. Results from this study demonstrate the complex nature of super storm induced effects and their seasonal dependence on the backdrop of varying conditions of the coupled ionosphere-thermosphere system.

Source/Reference of the Work: https://doi.org/10.1029/2025JA034121

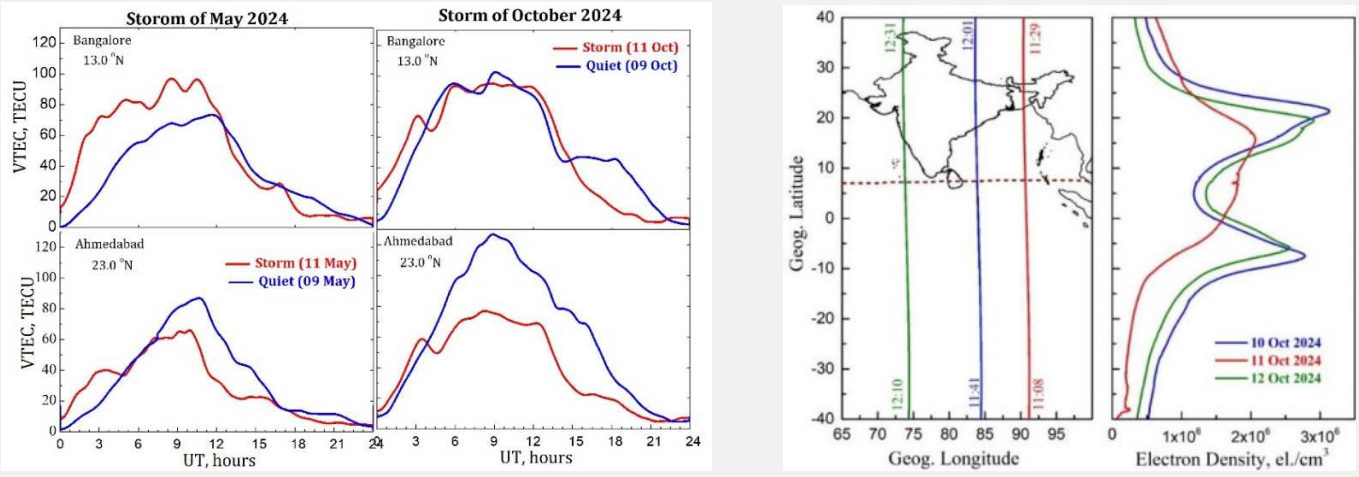

Figure Caption: (Left) Ionospheric Total Electron Content Variations around the trough (Bangalore) and crest (Ahmedabad) of EIA during May and October storms. (Right) Latitudinal profiles of electron density from Swarm satellite depicting the suppression of EIA during the storm of October 2024.

The Author

Komal

First Insights into Unveiling Altitude-Specific Dynamics and Seasonal Behavior of Dual Green Line Dayglow Emission Regions

(***Komal***, *Duggirala Pallamraju, and Pradip Suryawanshi)*

Monitoring how airglow emissions vary temporally within the ionosphere–thermosphere (I-T) region provides vital insights into upper atmospheric dynamics, as these emissions are highly sensitive to fluctuations in species density, composition, and temperature. Neutral winds, tides, and atmospheric waves modulate atomic oxygen at emission altitudes, embedding distinct signatures within the airglow intensity. The atomic oxygen green line (557.7 nm), among the most prominent features in the visible airglow spectrum, spans an altitude range of approximately 80–300 km. Its vertical profile is characterized by a unique dual-peak morphology: a lower peak in the E region (~100–105 km) and an upper peak in the F region (~130–145 km), enabling a comparative analysis of the distinct dynamical regimes at these altitudes. To investigate the relative contributions of photochemistry and neutral dynamics across these regions, we analyzed brightness and seasonal variations of emissions in this two regions under geomagnetically quiet conditions using a two-year dataset. This study integrates ground-based observations from the Multi-wavelength Imaging Spectrograph with an Echelle grating (MISE) with Volume Emission Rates (VER) simulated via the GLOW model, utilizing local electron densities from a collocated Digisonde in Ahmedabad as primary inputs. Our findings reveal that while the E-region peak is predominantly governed by photochemistry and electron density, the F-region peak is strongly modulated by meridional winds, underscoring the increasing dominance of neutral dynamics at higher altitudes. Notably, the F-region emission consistently outpaces the E-region intensity, maintaining a seasonal ratio between 1.8 and 2.4.

Source/Reference of the Work: https://doi.org/10.1029/2025JA034112

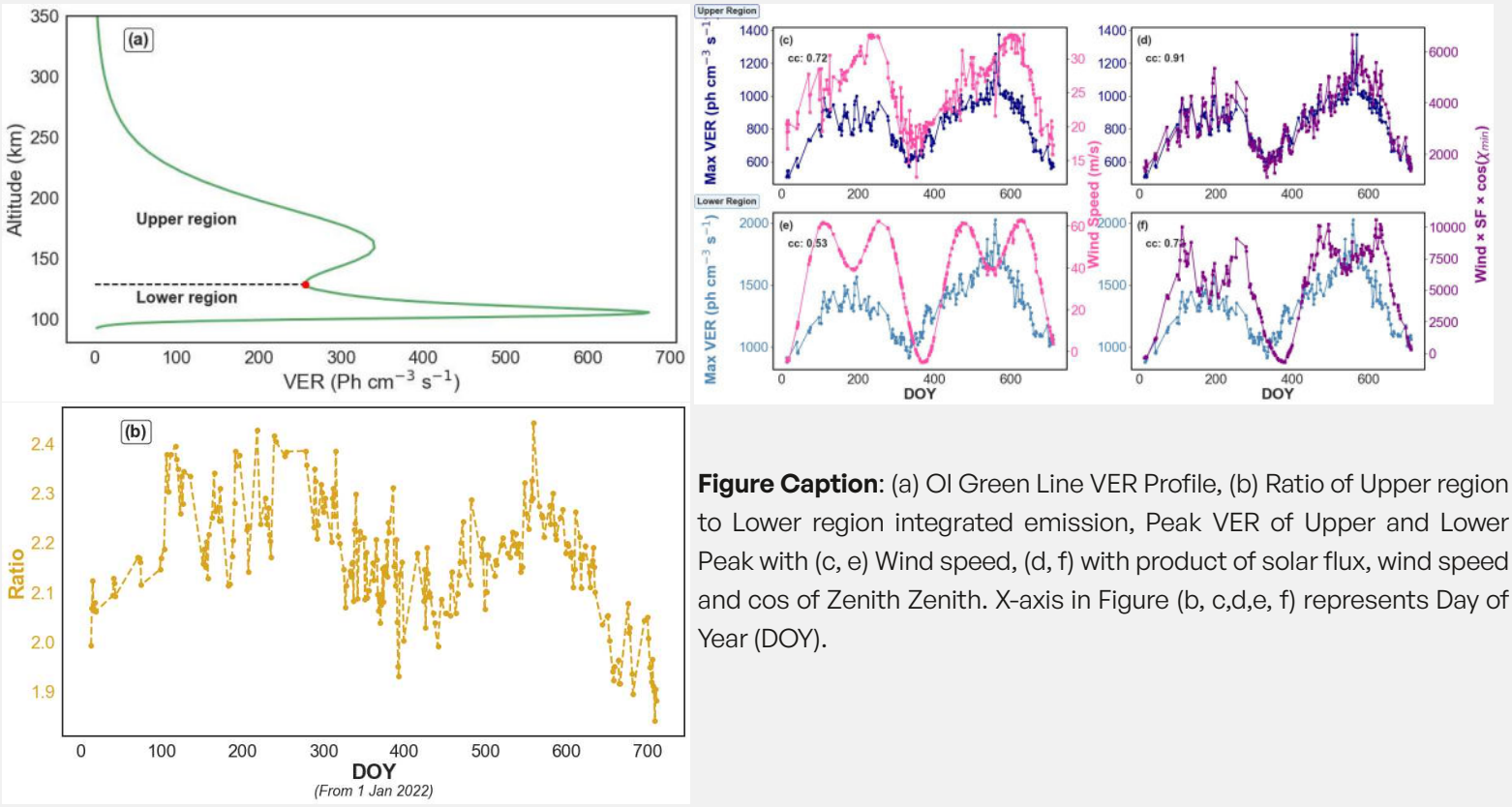

Figure Caption: (a) OI Green Line VER Profile, (b) Ratio of Upper region to Lower region integrated emission, Peak VER of Upper and Lower Peak with (c, e) Wind speed, (d, f) with product of solar flux, wind speed and cos of Zenith Zenith. X-axis in Figure (b, c,d,e, f) represents Day of Year (DOY).

The Author

Debashis Pachhar

Neutrinoless double beta decay and Fermion masses from Grand Unified Theory

*(PS Bhupal Dev, Srubabati Goswami, **Debashis Pachhar**, and Saurabh K Shukla)*

The process of neutrino less double beta decay ($0\nu\beta\beta$) in which no neutrinos are emitted can provide a smoking gun signal for violation of lepton number – a quantum number associated with the leptons, a class of fundamental particles. Such violations are often linked to generation of masses for neutrinos. It can also differentiate between the normal ($m_3>m_2>m_1$) and inverted orderings ($m_2>m_1>m_3$) of the three neutrino mass states.

PRL scientists with collaborators from the US explores Grand Unified Theory (GUT) models based on SU(5) to explain $0\nu\beta\beta$ and fermion masses in the SM. In the minimal SU(5), scalars from 15-dimensional representations contribute to $0\nu\beta\beta$ alongside rare nucleon decay. The stringent proton decay constraints strongly suppresses the $0\nu\beta\beta$ rate. To overcome this, we introduces an SU (5) X Z_3 model that forbids problematic proton decay in the tree level, allowing to improve the $0\nu\beta\beta$ signal. However, in this case, the signal is too weak to comply with the observed neutrino masses and found that the Inverted neutrino mass ordering is disfavoured. Finally, the $0\nu\beta\beta$ signal can be improved if the minimal scenario is extended with additional scalar representation. In this extended scenario, the Inverted ordering can again be allowed from the $0\nu\beta\beta$ experiments.

Source/Reference of the Work: https://doi.org/10.1007/JHEP01(2026)061

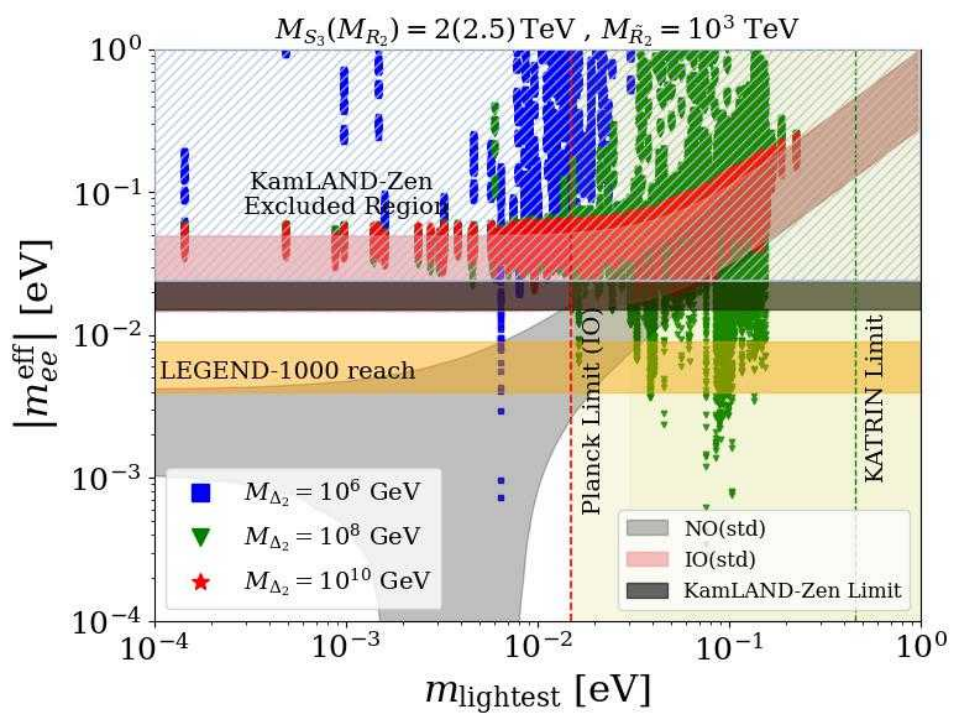

Figure Caption: Variation of $m_{\beta\beta}^{eff}$ as a function of the lightest neutrino mass for Inverted Ordering of active neutrino masses and some fixed model parameters. Blue green and red points denotes the $0\nu\beta\beta$ contribution from additional scalar with 10^6, 10^8, and 10^{10} GeV masses. The black band shows the limit on $m_{\beta\beta}^{eff}$ from KamLAND-Zen experiment.

The Author

Dharmendra Kumar Kamat

Investigation of cloud characteristics over a high-altitude region, Mt. Abu, using ground-based Lidar and satellite observations

(***Dharmendra Kumar Kamat*** *and Som Kumar Sharma)*

Clouds play an important role in controlling local weather, especially in mountainous regions where environmental conditions are complex. This study examines cloud characteristics over Mt. Abu (24.59° N, 72.71° E; ~1219 m above mean sea level), a high-altitude site in the Aravalli Range of Western India, using ground-based Lidar and satellite data. The results show that clouds were present about 23% of the time during 2023. Cloud occurrence was highest in the monsoon season (~43%), followed by the pre-monsoon (~19%), post-monsoon (~7%), and winter (~4%). During the monsoon, cloud occurrence peaked in the afternoon (13:00-15:00 LT), exceeding 60% in July and August. The pre- and post-monsoon seasons showed moderate cloud peaks around midday (~25%), while winter months had very low cloud occurrence, generally below 10%, with little daily variation. The average cloud base height (CBH) was lowest during the monsoon (780 ± 1370 m) and highest in winter (4620 ± 2390 m). Shallow clouds within the boundary layer, below 2 km, were common during the pre-monsoon and monsoon seasons. Low-visibility conditions (vertical visibility < 100 m), mainly due to mist, occurred most frequently in July (~21%) and August (~36%). Winter fog events were less common and were mainly caused by nighttime cooling under stable atmospheric conditions (see Figure). Satellite observations from Moderate Resolution Imaging Spectroradiometer (MODIS) showed that cirrostratus was the most common cloud type (~30%) during overpasses. Differences were also observed between the CBH estimated from MODIS and that measured by ground-based Lidar. Overall, the study highlights the complex nature of cloud behavior in mountainous regions and underscores the importance of continuous, high-resolution observations to improve cloud representation in weather and climate models.

Source/Reference of the Work: https://doi.org/10.1007/s00704-025-05985-z

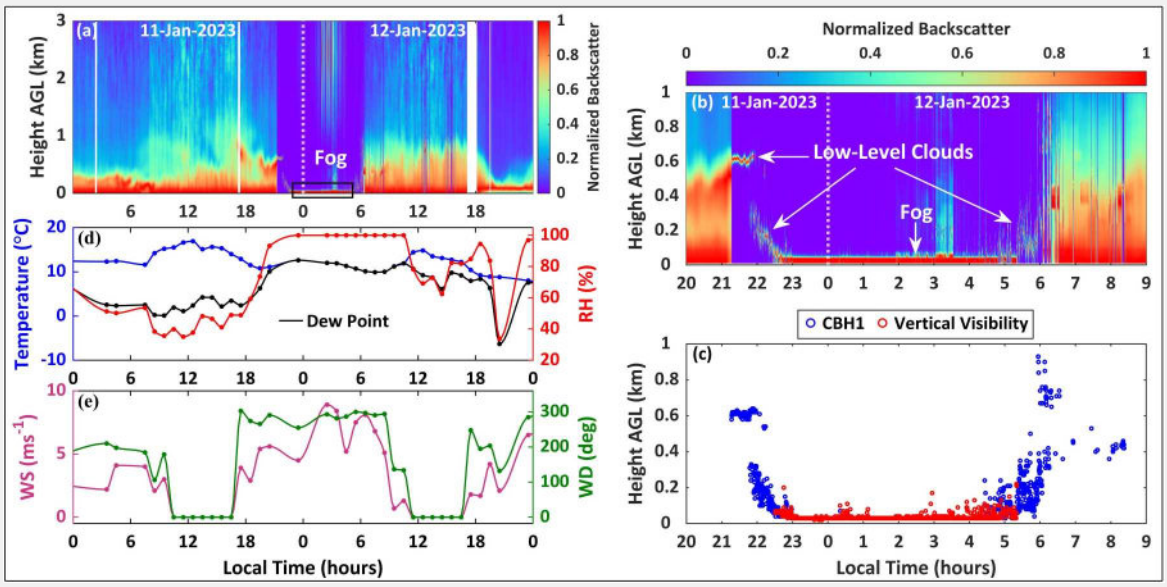

Figure Caption: (a) Normalized backscatter profiles from the Ceilometer Lidar at Mt. Abu on 11–12 January 2023. White gaps represent missing data. The enhanced near-surface backscatter observed from around 23:00 LT on 11 January indicates the onset of fog. (b) Formation of low-level clouds and fog during the nighttime over Mt. Abu. (c) Temporal variation of the cloud base height (CBH, blue circles) and vertical visibility (red circles) during the fog event. (d) Time series of air temperature and relative humidity (RH), along with dew point temperature. (e) Variation of wind speed (WS) and wind direction (WD) during the same period.

Synergy for Effective Technology Utilization (SETU) - 2026

The CNIT Division organized an event titled “Synergy for Effective Technology Utilization (SETU) 2026” on January 02, 2026, in a hybrid mode from 09:30 to 11:30. Around 65 participants attended the session, with discussions conducted 70% in Hindi and 30% in English.

Ms. Srishti Sharma extended a warm welcome to all attendees and provided an overview of the session, underscoring the initiative’s role in fostering stronger connections between the CNIT Division and the PRL community to enhance IT services. She explained that the event has been designed to inaugurate PRL’s newly developed website, announce the launch of new IT services, and establish a platform for meaningful knowledge exchange among participants.

Dr. Varun, Chair of the Computer Committee, opened the session by recalling the CNIT division’s beginnings as a modest computer center. In its early years, the facility relied on the IBM RS/6000, a system that marked the institution’s first serious step into high-performance computing. With its informal structure, the center fostered collaboration among faculty, researchers, and students, creating a culture of openness where innovation could thrive. This spirit of shared exploration established CNIT as a hub for computational research and technological advancement.

He then highlighted CNIT’s remarkable HPC journey, evolving from the RS/6000 workstation to today’s cutting-edge 1 PetaFlop system. Each generational leap—from early clusters to massively parallel architectures—expanded the scope of research and discovery. Dr. Varun emphasized that CNIT’s strategic adoption of open-source technologies has been central to this progress, ensuring long-term reliability, flexibility, and sustainability. By combining advanced hardware with open-source software, CNIT has built a resilient computational ecosystem that continues to empower transformative breakthroughs across science and technology.

Prof. Anil Bhardwaj, Director PRL, inaugurated the newly developed PRL website, warmly welcoming the gathering and stressing the importance of digital resilience in today’s fast-changing technological era. He praised the CNIT Division for advancing computational infrastructure, secure networking, and IT-enabled services, noting that these efforts are essential for sustaining scientific excellence. He highlighted initiatives such as PASS for archiving scientific knowledge, SIEM for proactive cybersecurity monitoring, and the interactive awareness series “Chai Pe Byte,” which educates users on cyber threats and emerging technologies.

Looking ahead, Prof. Bhardwaj emphasized the long-term vision of adopting Linux operating systems, whose open-source foundation ensures flexibility, stability, and security while reducing reliance on proprietary upgrades. He acknowledged CNIT’s strategic commitment to open-source technologies, which foster sustainability, adaptability, and cost-effectiveness.

To mark the launch of the new services established by the CNIT Division, Mr. Prashant Jangid, Mr. Girish Padia, Mr. Tejas Sarvaiya, Mr. Rahul Sharma, Mr. Atul Manke and Mr. Jigar Raval delivered a series of insightful talks. They highlighted the division’s overall activities, its way forward and key initiatives in strengthening digital resilience. The

sessions focused on the adoption of advanced technologies Web Content Management & Dissemination, the creation of secure archival systems, and proactive cybersecurity measures. Speakers also shared experiences from Advanced Persistent Threat (APT) awareness programs and presented a real-life APT case uncovered during monitoring, emphasizing the importance of visibility, layered protection, and proactive detection in safeguarding PRL's digital ecosystem.

Chair/Co-Chair of various scientific division/sections, Chair, PPEG, Co-Chair, IT-Cyber Security Committee, PRL and other senior faculties graced the event. All the session proved highly beneficial and given insights of New Website and its automation in content management & dissemination, newly added services – Security Information & Event Management (SIEM), PRL Archival Storage System (PASS), Biometric Access Control System (BACS) etc. All the attendees overwhelmingly expressed gratitude for the valuable insights and commanded the CNIT division's innovative "CNIT Nukkad – Chai Pe Byte" initiative.

On behalf of the CNIT Division, Mr. Alok Shrivastava expressed heartfelt gratitude to Prof. Anil Bhardwaj, Director of PRL, for his motivation and guidance. He also extended thanks to Prof. D. Pallamraju, Dean of PRL, along with Prof. Varun Sheel, Prof. Bijaya Kumar Sahoo, Prof. Namit Mahajan, and Prof. Shanmugam for their support and cooperation in making the initiative successful. Mr. Alok further acknowledged the active participation and valuable feedback from all attendees, noting that such inputs continually help the CNIT Division enhance IT services. He also appreciated the contributions of PRL members whose direct and indirect support played a vital role in making the event vibrant and successful. The collaborative efforts of the participants and the CNIT division made the session a success, laying a strong foundation for achieving the goals of SETU 2026.

The CNIT members sincerely thank Director, PRL, for his constant guidance and motivation to initiate such activities in different IT verticals. The CNIT team thank Registrar, PRL, and Dean, PRL for their support. The team also thank Prof. Bijaya Sahoo, Prof. Varun Sheel, Prof. Namit Mahajan, Dr. Shanmugam for their guidance and support in all the IT related activities and projects. From the bottom our hearts, CNIT members thank all the participants who enthusiastically participated, provided their valuable feedback and encouraged us to conduct similar events in future. CNIT also thank all the PRL users for their cooperation and help.

The detailed report of this event is available on CNIT Division's Intranet Website URL - https://prlwebsite.lan.prl.res.in/prl-eng/cnit/intranet/chaipebyte.

Glimpses of the event

Astronomical Society of India (ASI) Symposium - 005 on "Interdisciplinary Aspects of Multi-wavelength Optics and Instrumentation in Observational Sciences"

The Physical Research Laboratory (PRL), Ahmedabad, in collaboration with the Astronomical Society of India (ASI), organized the 5th ASI Symposium during 7–9 January 2026, at the PRL Navrangpura campus in Ahmedabad. The symposium focused on the pivotal role of optics and advanced instrumentation in various areas of observational sciences. The symposium brought together nearly 150 scientists, engineers, academicians, young researchers and early-career scientists, and industry participants from across the country, spanning diverse domains of academia, industry, research institutions, and national laboratories. The symposium was inaugurated by Shri A. S. Kiran Kumar, Chair, PRL's council of management, and was attended by several senior members of the Indian astronomy and space science community. A public lecture by Prof. Anil Bhardwaj, Director, PRL, was organised on the 08th January as a part of the symposium and was attended by several college students across the city.

The symposium featured invited talks, contributed talks, poster presentations, as well as industry interactions. The deliberations in the meeting covered various aspects of instrumentation for optical and near-infrared astronomy, space-based UV and X-ray astronomy, the emerging area of sub-mm astronomy in India, radio astronomy, solar physics, gravitational wave astronomy, space and atmospheric sciences, planetary sciences, and quantum technologies. Presentations at the symposium also covered the major existing facilities in these areas, including various ground-based telescopes in India, AstroSat, uGMRT, Aditya-L1, and the Chandrayaan missions. The discussions also featured the development status of various ongoing research facilities and proposed initiatives, including LIGO-India, upcoming planetary missions such as the Chandrayaan series and the Venus Orbiter mission, India's participation in the Square Kilometer Array, and the proposed National Large Optical Telescope (NLOT).

112th PRL Ka Amrut Vyakhyan and 5th Dr. Arvind Bhatnagar Memorial Lecture

The 112th episode of the PRL Ka Amrut Vyakhyan Series and the 5th Dr. Arvind Bhatnagar Memorial Lecture was delivered by Dr. Frank Hill, Senior Emeritus Scientist and Former Associate Director, National Solar Observatory (NSO), Boulder, CO, USA, on January 16, 2026 in the Seminar Hall of the Udaipur Solar Observatory (USO), Physical Research Laboratory (PRL), Udaipur. Dr. Frank Hill delivered an excellent talk on the topic "As the plasma turns – The rotation of the Sun" highlighting the importance of studying the Sun, Sun-Earth connections and hence Space Weather, Astrobiology, Exo-planets world, the ongoing Global Oscillation Network Group (GONG) Programme of the NSO, as well as the upcoming major solar observing facility of NSO, viz., the New Generation GONG (ngGONG). Thus, Dr. Hill's talk covered a variety of interesting topics related to the Sun, the associated phenomena and the solar synoptic observations, viz., the GONG facility which is essentially serving the global solar community since the last three solar cycles to deeply understand the fundamental processes that occur on the Sun and the solar activity which has great societal impact. It is a pleasure to mention here that the USO, PRL, has been a part of the international program GONG of NSO since its inception in the year 1995, and this was possible due to the efforts of Dr. Arvind Bhatnagar. This interesting lecture was attended in-person by more than one hundred students and faculty from the University and Colleges from Udaipur as well as faculty/staff/PDFs/RFs of USO, in online mode on Webex platform by the faculty/staff/PDFs/RFs from different campuses of PRL and the IIA, Bengaluru, and also colleagues on YouTube platform. There were several interesting questions asked by the inquisitive minds (students) and the others attending this lecture. Thanks to Dr. Hill for nicely answering the questions from the audience. Dr. Hill concluded his talk with showing a memorable picture of Late Dr. Arvind Bhatnagar along with his wife Mrs. Chitra Bhatnagar taken during one of his visits to USO in connection with the installation and commissioning of the GONG solar telescope at USO. This event started with the welcome by Dr. Rohan Louis along with the introduction of the Dr. Arvind Bhatnagar Memorial Lecture Series. Prof. Shibu K. Mathew, Head, USO, introduced the speaker to the audience, while the question-answer session was conducted by Prof. Brajesh Kumar and Dr. Raja A. Bayanna. The session concluded with the vote of thanks presented by Prof. Brajesh Kumar. Prof. D. Pallamraju, Dean, PRL, specially thanked Dr. Frank Hill for accepting the invitation and delivering of this lecture in-person at USO, PRL, Udaipur.

Youtube Link:
https://www.youtube.com/live/PMeXl11eceM

PRL Football Tournament 2026: A Celebration of Sportsmanship and Team Spirit

The PRL Football Tournament 2026 was held from January 19-26, 2026, bringing together players from various divisions of PRL in a spirited contest for glory. The participating divisions were Atomic, Molecular and Optical Physics (AMOPH) along with Theoretical Physics (THEPH), Planetary Sciences Division (PSDN), Astronomy and Astrophysics (ASTAS), and Geosciences Division (GSDN). In addition, two players from SPASC and two players from the Admin and Services Group participated as foreign players across these four competing teams.

The tournament followed a league-stage and knockout format, where the league leader advanced directly to the final, while the teams placed second and third competed in an eliminator to secure the remaining spot in the final. The tournament was inaugurated on January 19, 2026 by the Director, PRL, along with the Dean, PRL, with an electrifying exhibition match between Director VII and Dean VII. The match ended in a 0–0 draw, with the Dean's team emerging victorious in the penalty shootout and being awarded the Exhibition Match Shield. The inauguration ceremony featured team introductions, a ceremonial cake-cutting, and the unveiling of the exhibition trophy, setting the tone for the competitive spirit that followed.

League Stage Standings

Position	Team	P	W	L	F	A	GD	Points	Points
1	GSDN	3	3	0	5	2	+3	9	9
2	PSDN	3	2	1	2	1	+1	6	6
3	ASTAS	3	1	2	2	3	−1	3	3
4	THEPH & AMOPH	3	0	3	0	3	−3	0	0

From the league stage, GSDN advanced directly to the finals by winning all their matches, while PSDN and ASTAS competed in the eliminator.

- Eliminator: Planetary Sciences Division (PSDN) vs Astronomy & Astrophysics (ASTAS)

The match ended in a 1–1 draw in regular time, with PSDN emerging victorious 4–2 in the penalty shootout.

The grand finale was held on 26 January 2026 between the Geosciences Division (GSDN) and the Planetary Sciences Division (PSDN). The match commenced after the Republic Day celebrations, amid the high spirits of more than 200 members of the PRL family. The Director of PRL invited the CISF Chief to ceremonially kick off the match, officially marking the beginning of the final. GSDN scored two goals in the first half, leaving PSDN trailing 2–0 at halftime. However, PSDN mounted a strong comeback to level the score at 2–2 and take the match to penalties, with both teams displaying exceptional skill and determination. In the penalty shootout, PSDN held their nerve and secured the win, claiming their second title.

Following the final, trophy and award ceremony was conducted to honour outstanding performances throughout the tournament:

- Player of the Tournament: Rohit Meena (GSDN)
- Golden Boot (Top Scorer): Rohit Meena (GSDN)
- Goalkeeper of the Tournament: Soumik Kar (PSDN)
- Organiser's Fan of the Tournament: Manoj Jat, Shipra, Aditya Pandey
- Emerging Player of the Tournament: Shubham Murmu (GSDN)

Referees were also felicitated for their professionalism and excellence in officiating the matches. The organising committee extends heartfelt thanks to all participating teams, the enthusiastic audience, referees, and the staff members from Purchase, CMG, Canteen Services, Horticulture, and Cleaning Services. Their collective efforts and spirited involvement were instrumental in making the tournament a grand success. Special thanks are also extended to the Director and Dean of PRL for their continued encouragement and for gracing both the inauguration and final ceremonies with their presence and support.

इंदौर (मध्यप्रदेश) संयुक्त क्षेत्रीय राजभाषा सम्मेलन
Indore (Madhya Pradesh) Joint Regional Official Language Conference

दिनांक 20.01.2026 को इंदौर (मध्यप्रदेश) में संयुक्त क्षेत्रीय राजभाषा सम्मेलन का आयोजन किया गया था। इस सम्मेलन का स्थल देवी अहिल्याबाई विश्वविद्यालय ऑडिटोरियम, तक्षशिला केंपस, खंडवा रोड, भंवर कुवा, इंदौर (मध्यप्रदेश) था। सम्मेलन की अध्यक्षता माननीय केंद्रीय गृह राज्य मंत्री श्री बंडी संजय कुमार जी ने की। यह मध्य, पश्चिम, दक्षिण और दक्षिण पश्चिम क्षेत्रों का संयुक्त क्षेत्रीय राजभाषा सम्मेलन था।
उक्त सम्मेलन के लिए राजभाषा कार्यान्वयन से जुड़े सभी कार्मिकों और राजभाषा का काम देख रहें अन्य अधिकारियों/कर्मचारियों को भी आमंत्रित किया गया था।
राजभाषा के प्रोत्साहन को ध्यान में रखते हुए पीआरएल से उक्त सम्मेलन के लिए निम्नानुसार सदस्य नामित किए गए थे–

1. श्री प्रदीप कुमार शर्मा, वरिष्ठ प्रशासनिक अधिकारी
2. श्री अभिषेक, वरिष्ठ प्रशासनिक अधिकारी, यूएसओ
3. श्रीमती रुमकी दत्ता, उप निदेशक (रा.भा.)
4. श्री सौरभ गोयल, सहायक (राजभाषा)

इस सम्मेलन में हिंदी के सांस्कृतिक महत्व, दक्षिण भारत में हिंदी की स्वीकार्यता, एआई युग में हिंदी की उपयोगिता, अनुवाद कार्य में तकनीकी सहयोग, नराकास की भूमिका तथा राजभाषा रिपोर्टिंग पर विचार–विमर्श हुआ। यह सम्मेलन हिंदी भाषा के संवर्धन, प्रसार एवं प्रभावी राजभाषा कार्यान्वयन की दिशा में एक महत्वपूर्ण पहल सिद्ध हुआ।

सम्मेलन स्थल पर पीआरएल के सदस्यगण PRL members at the conference venue

A Joint Regional Official Language Conference was held in Indore (Madhya Pradesh) on January 20, 2026. The venue for the conference was the Devi Ahilyabai University Auditorium, Takshashila Campus, Khandwa Road, Bhanwar Kuwa, Indore (Madhya Pradesh). The conference was presided over by the Honorable Union Minister of State for Home Affairs, Shri Bandi Sanjay Kumar. This was a Joint Regional Official Language Conference for the Central, Western, Southern, and South-Western regions. All personnel involved in Official Language implementation and other officers/employees handling Official Language work were invited to the conference.

In view of the propagation of the Official Language, the following members were nominated from PRL for the said conference:

1. Shri Pradeep Kumar Sharma, Senior Administrative Officer
2. Shri Abhishek, Senior Administrative Officer, USO
3. Smt. Rumkee Dutta, Deputy Director (OL)
4. Shri Sourabh Goyal, Assistant (Official Language)

The conference included discussions on the cultural significance of Hindi, the acceptance of Hindi in South India, the utility of Hindi in the AI era, technical support in translation work, the role of TOLIC, and official language reporting. This conference proved to be an important initiative towards the promotion, dissemination, and effective implementation of the Hindi language as the Official Language.

Republic Day Celebration 2026 at PRL

Republic Day commemorates the adoption of the Constitution of India and is a day of national pride. The 77th Republic Day was celebrated on Monday, January 26, 2026, at the PRL Thaltej campus. Dr. Anil Bhardwaj, Director, PRL, hoisted the national flag, which was followed by the national anthem. In his address to the PRL family, the Director summarized the various events, activities, achievements, and honors that PRL acquired during the year. To commemorate the completion of 150 years of the national song “Vande Mataram”, Vande Mataram was sung collectively by all the present PRL members. In accordance with established practice, three merit awards were presented to the CISF, PRL. Subsequently, the children of PRL staff who secured the highest marks in Hindi in the 10th and 12th standard in the year 2025 were felicitated. Prizes were also distributed for various competitions, including the Essay Competition held during Vigilance Awareness Week, the Hindi Quiz Competition for World Hindi Day, and the Hindi Poem Writing Competition organized by the Internal Complaints Committee (PRL). To mark the occasion, tricolour balloons were released by children and PRL family members. Tree plantation was carried out by the newly joined PRL members along with other PRL staff members. The Football Final took place between the Planetary Sciences Division (PSDN) and the Geosciences Division (GSDN) after the Republic Day celebrations. The match captivated all spectators, showcasing a thrilling and high-energy football encounter. Team PSDN emerged as the champions, while Team GSDN secured the runner-up position.





Glimpses of the republic day function

3rd Workshop on Space Weather Science and Opportunities (SWSO-3) & 4th Indian Space Weather Conference (ISWC-4) January 27-30 2026

PRL conducted "3rd Workshop on Space Weather Science and Opportunities (SWSO-3)" in hybrid mode during 27-28, 2026. The workshop was focussed on introducing the fundamentals of Aeronomy, Space Weather and its applications to the students most of whom are pursuing 2nd year of Masters in Physics and allied areas.

An overwhelming response was received for participating in the workshop – with registrations of around 200 students from various institutions including IITs, NITs, IISERs, Central and State Universities. Overall, the registered students represented about 100 academic institutions spread over 25 states in the country. A total of 45 students representing more than 30 academic institutions were shortlisted for participation in in-person mode at PRL. The remaining students were invited to participate the workshop in online mode and all the lectures and interactions were made in a hybrid mode so that nearly all the participants (both online and offline) could take advantage of. All the lectures on various aspects of upper atmosphere and space weather were delivered by the faculty of PRL. The topics include atmospheric structure, mesosphere-ionosphere-thermosphere dynamics, Sun, solar wind, magnetosphere and space weather impacts on day-to-day life. Visits were organized to various labs wherein the wide variety of ground and satellite-based experiments developed in-house in PRL for space weather studies were demonstrated. A half day dedicated session was also conducted on the data analysis of observations from recent Aditya-L1 mission.

Workshop Group Photo

The workshop was followed by the "4th Indian Space Weather Conference (ISWC-4)" during January 29-30, 2026, which was inaugurated by Shri. A. S. Kiran Kumar, Chair, PRL Council of Management and Member of Space Commission. There were deliberations over a range of themes from in ISWC-4 which include, geomagnetic quiet to disturbed time Space Weather to Science from Aditya-L1 measurements to discussions on science plans for DISHA (Disturbed and quiet time Ionosphere-thermosphere System at High Altitudes) mission and payloads. A total of 72 papers were presented during ISWC-4, which include online/offline oral talks, flash talks and poster presentations. It was encouraging to note that researchers from nearly 50 academic institutions presented their papers. Among the participants 35% were females and 70% were from Non-DoS institutions. Also, it is heartening to note that 65% of the presentations were delivered by young researchers, including 25 Ph.D students. To generate a greater awareness of the data products and enthuse research community to use them for their research, invited talks were delivered by the Principal Investigators of all the science payloads from the DISHA missions.

At the end of the conference, an exam was conducted for the students who participated in workshop and conference, on their understanding of the lectures given by the PRL faculty and the invited speakers of the space missions. Best participants awards were given to both the offline and online participants. Events such as these contribute towards human resource development in this frontier area of space weather, and contribute to capacity building in the country.

PRL Amrut Rajbhasha Vyakhyaan - 32

"पीआरएल अमृत राजभाषा व्याख्यान (पर्व)" का 32वां व्याख्यान 28 जनवरी, 2026 को आयोजित किया गया था। इस अवसर पर मुख्य वक्ता डॉ. अनिल मेहता, प्रसिद्ध पर्यावरणविद् और शिक्षाविद थे ।
The 32nd lecture of "PRL Amrut Rajbhasha Vyakhyaan (PARV)" was held on January 28, 2026. The eminent speaker for the occasion was Dr. Anil Mehta, renowned environmentalist and educationist.

डॉ. अनिल मेहता एक जाने–माने एनवायरनमेंटलिस्ट और एजुकेशनिस्ट हैं, जिन्हें एनवायरनमेंटल कंज़र्वेशन और सस्टेनेबल डेवलपमेंट में 33 साल से ज़्यादा का अनुभव है। वे अभी भारत सरकार के एनवायरनमेंट, फ़ॉरेस्ट और क्लाइमेट चेंज मिनिस्ट्री (MoEFCC) की एक्सपर्ट एनवायरनमेंटल अप्रेज़ल कमेटी (EAC–इंडस्ट्री 2) के मेंबर हैं; इंडिया वॉटर पार्टनरशिप (GWP इंडिया) के जॉइंट सेक्रेटरी और बोर्ड मेंबर हैं – यह एक इंटर–गवर्नमेंटल ऑर्गनाइज़ेशन है; और भारत सरकार के एजुकेशन मिनिस्ट्री के उन्नत भारत अभियान के तहत एक्सपर्ट मेंबर (एनवायरनमेंट और सस्टेनेबिलिटी) हैं।
Dr. Anil Mehta is a renowned environmentalist and educationist with over 33 years of experience in environmental conservation and sustainable development. He is currently a member of the Expert Environmental Appraisal Committee (EAC–Industry 2) of the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India; Joint Secretary and Board Member of India Water Partnership (GWP India), an inter-governmental organization; and an expert member (Environment and Sustainability) under the Unnat Bharat Abhiyan of the Ministry of Education, Government of India.

व्याख्यान का शीर्षक था/ The vyakhyaan was titled "हरित : भारतीय पर्यावरण दर्शन, प्रकृति एवं परम्पराओं की पुनर्स्थापना"

व्याख्यान में डॉ. मेहता ने चर्चा की कि सम्पूर्ण विश्व जलवायु परिवर्तन संकट, मौसमी आपदाओं, पर्यावरणीय संकटों से त्रस्त है। जैव विविधता का निरंतर ह्रास हो रहा है। मानव जीवन एवं सम्पूर्ण जीव जगत संकट में है। इस विषम परिस्थिति का समाधान भारतीय पर्यावरण दर्शन , संस्कृति एवं परंपराओं की पुनर्स्थापना में है।
In the Vyakhyaan, Dr. Mehta discussed that the entire world is grappling with the climate change crisis, natural disasters, and environmental challenges. Biodiversity is continuously declining. Human life and all living beings are at risk. The solution to this critical situation lies in the restoration of Indian environmental philosophy, culture, and traditions.

उन्होंने आगे बताया कि दैनिक, व्यावसायिक तथा सामाजिक जीवन में भारतीय पर्यावरण मूल्यों, जीवन शैली, आचार –विचार – व्यवहार को उतार कर स्थानीय राष्ट्रीय तथा वैश्विक पर्यावरणीय चुनौतियों के सरल, सहज एवं नागरिक केंद्रित समाधान में हम सभी अपनी महत्वपूर्ण भूमिका निभा सकते है। हरित (HARIT) इसी दिशा में एक अनुकरणीय पहल है जो जलवायु शांति सुनिश्चित करेगी|
He further elaborated that by incorporating Indian environmental values, lifestyle, and ethical principles into our daily, professional, and social lives, we can all play a significant role in finding simple, practical, and citizen-centric solutions to local, national, and global environmental challenges. HARIT is an exemplary initiative in this direction that will ensure climate peace.

व्याख्यान के बाद आयोजित एक रोचक प्रश्नोत्तर सत्र ने दर्शकों को विषय पर अतिरिक्त जानकारी और नए दृष्टिकोण प्रदान किए।

An interesting Q&A session that followed the lecture, provided the audience with further information and new perspective on the topic.

Youtube Link: *https://www.youtube.com/watch?v=cDhuij2E9qw*

Martyr’s Day

In accordance with the directives from the Ministry of Home Affairs, Government of India, and the Department of Space, 30th January is observed annually as Martyrs' Day. This day commemorates the death anniversary of Mahatma Gandhi. On this occasion, a two-minute silence is to be observed across the country in memory of those who sacrificed their lives in the struggle for India’s freedom. It serves as a solemn moment to pay tribute to all individuals who fought and died for India's independence.

In line with these instructions, PRL staff members also observed a two-minute silence in remembrance of the freedom fighters on Thursday, the 30th January, 2025, at their respective workplaces

PRL Monthly Publications Digest

Atomic, Molecular and Optical Physics [2]

1. Pooja Chandravanshi, Sonali Panda, Vinitha Nimma, Indrajit Kabiraj, Ananthakrishnan V and Rajesh Kumar Kushawaha, 2026, Orbital angular momentum (OAM) beam induced N2 filamentation, Journal of Optics, Date of Publication: 28/01/2026, Impact Factor: 2.7
2. A. Chakraborty, Vaibhav Katyal and B. K. Sahoo, 2026, Investigating roles of triple excitations for high-precision determination of clock properties of alkaline-earth-metal singly charged ions, Physical Review A, Date of Publication: 23/01/2026, Impact Factor: 3.0

Astronomy & Astrophysics Division [7]

1. Meng, D., T. Liu, J. Esimbek, ..., L. K. Dewangan, ..., Y. Ma, 2026, The ALMA-QUARKS survey: Hot Molecular Cores are a long-standing phenomenon in the evolution of massive protostars, The Astrophysical Journal, Date of Publication: 30/01/2026, Impact Factor: 4.8
2. Shubhendra Nath Das, Kapil Kumar Bharadwaj, Abhijit Chakraborty, Kevikumar A. Lad, Jajaendra Siva Seshu Vera Prasad Neelam, Rishikesh Sharma, Nikitha Jithendran, Vishal Joshi, 2026, Design and development of Fabry–Pérot based wavelength calibration system for PARAS-2 spectrograph, Journal of Astronomical Telescopes, Instruments, and Systems, Date of Publication: 20/01/2026, Impact Factor: 3.1
3. Akash Sundriyal, Vishal Joshi, 2026, A Tale of Two Magnetic CVs: TESS Detection of QPOs and Accretion Variability in Swift J2113.5+5422, and the Polar Nature of LAMOST J003553.36+433341.4, monthly notices of the royal astronomical society, Date of Publication: 19/01/2026, Impact Factor: 4.8
4. Vander Donckt, M., E. Jehin, K. Aravind, C. Adami, S. Hmiddouch, J. Manfroid, S. Ganesh, Z. Benkhaldoun, A. Delsanti, 2026, Photometric and spectroscopic monitoring of the outbursting Halley-type comet 12P/Pons-Brooks, Astronomy & Astrophysics, Date of Publication: 09/01/2026, Impact Factor: 6.1
5. Dewangan, L. K., Ram K. Yadav, Saurabh Sharma, O. R. Jadhav, A. K. Maity, Paul F. Goldsmith and G. Panchal, 2026, Discovery of a rich population of compact hub-filament systems in a single star-forming complex, The Astronomical Journal, Date of Publication: 06/01/2026, Impact Factor: 5.1
6. Hwang, J., P. Sanhueza, J. M. Girart, ..., L. K. Dewangan,O. R. Jadhav, 2026, Magnetic Fields in Massive Star-forming Regions (MagMaR). VI. Magnetic Field Dragging in the Filamentary High-mass Star-forming Region G35.20-0.74N Due to Gravity, The Astronomical Journal, Date of Publication: 05/01/2026, Impact Factor: 5.1
7. Shaswata Chowdhury, M.A. Krishnakumar, Manjari Bagchi, Bhal Chandra Joshi, Nobleson K, Jibin Jose, Shantanu Desai, Manpreet Singh, Vaishnavi Vyasraj, Kuldeep Meena, Amarnath, Manoneeta Chakraborty, Shubham Kala, Debabrata Deb, Zenia Zuraiq, Arul Pandian B, Neelam Dhanda Batra, Churchil Dwivedi, Sushovan Mondal, Avinash Kumar Paladi, Kaustubh Rai, Abhimanyu Susobhanan, Adya Shukla, Aman Srivastava, Mayuresh Surnis, Hemanga Tahbildar, Keitaro Takahashi, Pratik Tarafdar, Prabu Thiagaraj, Kunjal Vara, 2026, E ects of coronal mass ejection on PSR J1022+1001 and possible mode change of PSR J2145 - 0750 in the InPTA DR2, Journal of High Energy Astrophysics, Date of Publication: 02/01/2026, Impact Factor: 10.5

Planetary Sciences Division [2]

1.Kuljeet K.Marhas, Manish N.Sanghani,Scott R. Messenger, Antariksha Mitra,and Ritesh K.Mishra, 2026, Isotopic Compositions and Elemental Abundances of Chromium in Presolar Silicon Carbide Grains from Asymptotic Giant Branch Stars, The AstroPhysical Journal, Date of Publication: 29/01/2026, Impact Factor: 5.4
2. Dibyendu Misra, Megha Bhatt, Marcel Hess and Christian Wöhler, 2026, An Integrated Framework for Global Detection and Quantification of Lunar Pyroclastic Deposits, The Planetary Science Journal, Date of Publication: 29/01/2026, Impact Factor: 4.3

Space & Atmospheric Sciences Division [4]

1. S. Mondal, A. Guharay, S. Tulasi Ram, S. Gurubaran, S. Sripathi, M. Naja, D. Pallamraju, A. K. Upadhayaya, and S. Bhattacharjee, 2026, Post Midnight Enhancement in OI 630.0 nm Airglow Emission and Plausible Link to Wave Dynamics, Journal of Geophysical Research: Space Physics, Date of Publication: 21/01/2026, Impact Factor: 2.9
2. Venkatesh, K., Pallamraju, D.,Chakrabarty, D., Seemala, G. K., &Kapali, S., 2026, Distinct impacts of the extreme space weather events of 2024 onthe low latitude ionospheric dynamics inthe Indian sector as captured by combinedspace and ground based plasmameasurements, Journal of GeophysicalResearch: Space Physics, Date of Publication: 18/01/2026, Impact Factor: 2.9
3. Shivam Parashar, Dibyendu Chakrabarty, Prashant Kumar, Abhishek Kumar, Bhas Bapat, Aveek Sarkar, P. Janardhan, Anil Bhardwaj, Santosh V. Vadawale, Manan S. Shah, Hiteshkumar L. Adalja, Arpit R. Patel, Pranav R. Adhyaru, M. Shanmugam, Swaroop B. Banerjee, K. P. Subramanian, Tinkal Ladiya, Jacob Sebastian, Bijoy Dalal, Aakash Gupta, Shiv Kumar Goyal, Neeraj Kumar Tiwari, Aaditya Sarda, Sushil Kumar, Nishant Singh,Deepak Kumar Painkra, Piyush Sharma, Abhishek J. Verma, and M. B. Dadhania, 2026, Evidence for In Situ Particle Energization during the 2024 May Event Based on the ASPEX Instrument on Board Aditya-L1, The Astrophysical Journal Letters, Date of Publication: 07/01/2026, Impact Factor: 11.7
4. Dahima, Yash, Tapaswini Sarangi, Yogeshkumar Patel, Lokesh K. Sahu, Narendra Ojha, Aditya Vaishya, 2026, Calibration and Performance Evaluation of Low-Cost Air Quality Sensors in an Urban Environment of Western India, IEEE Sensors Letters, Date of Publication: 05/01/2026, Impact Factor: 2.2

Geosciences Division [5]

1. Roy, P., Fu, C, C., Rahman, A., Lai, Y. C., Lee, H. F., Lin, C. H., Laskar, A. H., Liang, M. C., 2026, Fumarolic CO2 Dynamics: A Case Study from the Tatun Volcano Group, Taiwan, ACS Earth and Space Chemistry, Date of Publication: 23/01/2026, Impact Factor: 2.9
2. Rai, D. K., J. Kumar, A. Qasim, S. Kumar, R. Bhushan, K. Thirumalai, and A. Singh, 2026, Glacial Expansion of Deoxygenation in the Arabian Sea, Geophysical Research Letters, Date of Publication: 19/01/2026, Impact Factor: 4.6
3. Sridhar, Alpa; Tiwari, Pooja; Thakur, Biswajit; Singh, Deependra; Goswami, Vineet; Jena, Sanjit Kumar; Bhushan, Ravi; Shaikh, Saremulhaq Parwej Mosarraf; Maurya, Deepak; Chamyal, Laxman Singh, 2026, Sedimentary records of palaeohydrological variability during the Late Holocene in the Lower Narmada Basin, western India, The Depositional Record, Date of Publication: 19/01/2026, Impact Factor: 2
4. Anand, M., Chakraborty, A., Rangu, V. S., Gupta, T., and Rastogi, N., 2026, Dark aqueous processing of organics in aerosols and size-resolved fog droplets: Variations in levels, characteristics and evolution, Science of The Total Environment, Date of Publication: 15/01/2026
5. Nazirahmed, S., Sahoo, D., Saxena, H., and A. Singh, 2026, Picophytoplankton Distribution and Their Contribution to Particulate Organic Carbon in the Northern Indian Ocean, JGR: Biogeosciences, Date of Publication: 05/01/2026, Impact Factor: 3.5

Theoretical Physics Division [2]

1. P. S. Bhupal Dev, Srubabati Goswami, Debashis Pachhar and Saurabh K Shukla., 2026, Scalar-induced neutrinoless double beta decay in SU(5), Journal of High Energy Physics (2026) 030, Date of Publication: 08/01/2026, Impact Factor: 7.5
2. Namit Mahajan, 2026, In-In EFT, JHEP01 (2026) 030, Date of Publication: 05/01/2026, Impact Factor: 5.5

Awards & Honours

(1) Prof. Anil Bhardwaj, Distinguished Professor and Director, PRL has been elected as a member of the Council of the Indian National Science Academy (INSA).

(2) Dr. Ananya Rawat, Postdoctoral Fellow, USO/PRL, has won the Best poster presentation award at the ISRO-ESA Heliophysics Workshop on Aditya-L1, Solar Orbiter and Proba-3, hosted by IIST, Thiruvananthapuram, during 19-23 January, 2026.

(3) Ms. Harsha Parmar, Senior Project Assistant, Administration General section , has been awarded the "Best Paper Presentation Award" at the Official Language Seminar held on December 18-19, 2025

(4) Physical Research Laboratory, Ahmedabad has been awarded for Best Official Language Implementation for the year 2024-25 by Town Official Language Implementation Committee, Ahmedabad.

Visitors

1. Dr. Jay Sandesara, Post Doctoral Fellow from University of Wisconsin-Madison, USA visited Physical Research Laboratory, Ahmedabad on January 01, 2026 to deliver a seminar and interaction with Scientists and Research Scholars.

2. Five (5) students from IIT Bombay, Powai, Mumbai visited Udaipur Solar Observatory (USOOB), Udaipur on January 01, 2026 to see various scientific facilities of USOOB.

3. Prof. Ravindra N. Bhatt from Princeton University, Princeton, New Jersey visited Physical Research Laboratory, Ahmedabad on January 02, 2026 for Scientific discussion with PRL Scientists and interaction with Research Scholars and also to deliver a seminar.

4. Dr. Phillippe Ladislav Denis Maurin from Consulate General of France, Mumbai and Prof. Nicolas Ludovic Gascoin from Cooperation and Cultural Affairs, French Embassy, New Delhi have visited Physical Research Laboratory, Ahmedabad on January 07, 2026 in connection with Scientific and Higher Education cooperation between France and India and facilitate collaboration with French Institutions.

5. Dr. Heidy Mayerly Quitian Lara from Center for Astrochemical Studies (CAS), Max Plank Institut for Extraterrestrische Physik (MPE), Munich visited Physical Research Laboratory, Ahmedabad from January 12 to 20, 2026 in connection with collaborative experiment work in Astrochemistry and follow up experiments using SALT and HISTA.

6. Prof. Markus Boettcher of Centre for Space Research, North West University, South Africa visited Physical Research Laboratory, Ahmedabad and Infra-Red Observatory, Mount Abu from January 12-13, 2026 in connection with the Scientific discussion with PRL Scientists and interaction with Research Scholars.

7. Mr. Myungho Kook and Mr. Soren Vig Dalsgaard both from DTU Physics, Radiation Physics Section, Denmark have visited Physical Research Laboratory, Ahmedabad from January 14-16, 2026 in connection with Installation of Risoe TL/OSL Reader Machine procured from M/s. DTU Physics, Denmark.

8. Mr. Frank Hill of National Solar Observatory, Boulder, USA visited Udaipur Solar Observatory (USO), PRL, Udaipur from January 15-16, 2026 in connection with scientific discussion with the Faculty, Engineers and interaction with Research Scholars at USO.

9. Four (4) Faculty members and Twenty seven (27) students from RNT PG College, Kapasan, Udaipur visited Udaipur Solar Observatory (USOOB), Udaipur on January 16, 2026 to see various scientific facilities of USOOB and to attend PRL Ka Amrut Vyakhyaan and the Arvind Bhatnagar Memorial Lecture.

10. Six (6) Faculty members and Thirty four (34) students from Mohanlal Sukhadia University, Udaipur visited Udaipur Solar Observatory (USOOB), Udaipur on January 16, 2026 to see various scientific facilities of USOOB and to attend PRL Ka Amrut Vyakhyaan and the Arvind Bhatnagar Memorial Lecture.

11. In January 2026, a total of 111 individuals, including officials from DOS/ISRO, representatives from other Government Organizations, students from various colleges and schools, and the general public visited the Infra-Red Observatory (IRO) at PRL in Mount Abu to explore its various facilities.

Hearty welcome to our new member

Name: Dr. Sipai Nazirahmed A.

Designation: Post Doctoral Fellow

Date of Joining: 16.01.2026

Division: Geosciences Division

Voluntary Retirement

Name of the employee: Mr. R.K. Jaroli

Designation at the time of retirement: Senior Project Assistant

Date of Birth: 30.11.1966

Date of Joining: 19.11.1990

Date of relieving on Voluntary Retirement: 23.01.2026

Obituary

स्वर्गीय श्री पी. के. पिल्लै
Late Shri P.K. Pillai
Personal Assistant-C

Date of Birth: 02.12.1952

Date of Joining: 15.07.1977

Date of Retirement: 31.12.2012

Date of Death: 21.01.2026

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