

## **Dr. Dibyendu Nandi: Curriculum Vitae and Publication List**

Dr. Dibyendu Nandi

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### **Education**

- B.S. (*Physics, with First Class Honors*), St. Xavier's College, Calcutta University, 1995
- M.S. (*Physics, with First Class Honors*), Indian Institute of Science (Bangalore), 1998
- Ph.D. (*Thesis: Modeling The Solar Magnetic Cycle*), Indian Institute of Science (Bangalore), 2003

### **Employment**

- Postdoctoral Research Fellow, Montana State University, 2002-2004
- Research Scientist, Montana State University, 2005-2007
- Assistant Research Professor, Montana State University, 2007-2008
- Assistant Professor, Indian Institute of Science Education and Research-Kolkata, 2008-continuing

### **Visiting Positions**

- Institute of Mathematics, University of St Andrews, Scotland, UK, 2007
- Harvard-Smithsonian Center for Astrophysics, Harvard University, Cambridge, USA, 2008-continuing
- Montana State University, 2009-continuing

### **Awards & Distinctions**

- National Scholarship of the Government of India based on the B.S. exams: 1995
- “*Brueckner Studentship*”, Solar Physics Division of the American Astronomical Society: 2000
- “*Martin Forster Gold Medal*” for the best thesis of 2002-2003, by the Division of Physical and Mathematical Sciences, Indian Institute of Science, Bangalore: 2004
- United Kingdom British Council’s “*Researcher Exchange Programme Award*”: 2007
- American Astronomical Society Solar Physics Division’s “*Parker Lectureship*”: 2008
- “*Ramanujan Fellowship*”, Department of Science and Technology, Government of India: 2008
- “*Karen Harvey Prize*” of the American Astronomical Society’s Solar Physics Division: 2012

## **Successful Grants and Funded Projects**

- “*Stars as Suns: Unraveling Long-term Solar Variability By Stellar Dynamo Modeling*”, Funding Agency: NASA, Amount: US\$ 360,000, Role: Co-Investigator, 2005
- “*Magnetic Origins of Solar Irradiance Variations*”, Funding Agency: NASA, Amount: US\$ 318,939, Role: Principal Investigator, 2007
- “*Evolving Solar Activity on Timescales Relevant for Space Climate*”, Funding Agency: NASA, Amount: US\$ 556,570, Role: Co-Investigator, 2008
- “*Investigations in Fundamental Solar Astrophysics and Sun-Earth System Science: Ramanujan Fellowship Grant*”, Funding Agency: Department of Science and Technology, Government of India, Amount: INR 73 Lakhs, Role: Principal Investigator, 2009-2014
- “*Center of Excellence in Space Sciences*”, Funding Agency: Ministry of Human Resource Development, Amount: INR 3.93 Crore, Role: Principal Investigator, 2013-continuing

## **Professional Services & Synergistic Activities**

- Chairman, Working Group on “Impact of Magnetic Activity on Solar-Stellar Environments”, International Astronomical Union (IAU), 2013-continuing
- Vice-Chairman, Panel on Space Weather, International Committee on Space Research (COSPAR), 2012-continuing
- Co-Coordinator, Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) varsity program on Solar Evolution and Extremes, 2013-continuing
- Co-Investigator, Solar Ultraviolet Imaging Telescope (SUIT) and Science Team Member-Visible Emission Line Coronagraph (VELC), ISRO’s Aditya space mission, 2013-continuing
- Member of the “Origins of Solar Irradiance Variations” and the “Sun-Climate” NASA-LWS Targeted Research & Technology Focus Teams, 2008-2011
- Referee for multiple astrophysical and space science journals: 2002-continuing
- Reviewer of research proposals submitted to NSF and NASA: 2004-continuing
- Co-President of the special session on “*Solar System Space Climate Derived From Proxies*” in the American Geophysical Union Joint Assembly in Acapulco, Mexico, 2007
- Chairman of the Local Organizing Committee and member of the Scientific Organizing Committee of the NASA-CAWSES International Workshop on “Solar Variability, Earth’s Climate and the Space Environment”, in Bozeman-Montana, USA, 2008
- Member of the Scientific Organizing Committee of the International Space Climate Symposium Series, 2009-continuing
- Member of the Scientific Organizing Committee of the Workshop Series on Solar Influences on the Magnetosphere, Ionosphere and Heliosphere, 2011-continuing
- Chairman of the Local Organizing Committee and member of the Scientific Organizing Committee of the Fourth Space Climate Symposium, Goa, India, 2011

## **Memberships**

- International Astronomical Union
- American Astronomical Society-Solar Physics Division
- American Geophysical Union
- Committee on Space Research (COSPAR)
- Scientific Committee On Solar-Terrestrial Physics (SCOSTEP)

## Invited Lectures

- “Exploring Magnetic Activity From the Sun to the Stars”, Invited Talk, First International Symposium on Space Climate: Direct and Indirect Observations of Long-Term Solar Activity, Oulu, Finland, 20<sup>th</sup> – 23<sup>rd</sup> June, 2004
- “Meridional Circulation and the Solar Magnetic Cycle”, Invited Talk, SOHO 14 / GONG 2004 Meeting on “Helio- and Asteroseismology: Towards a Golden Future”. Yale University (New Haven), USA, 12-16<sup>th</sup> July, 2004
- “Unravelling Long-Term Solar variability and its Impacts on Space Climate: The Stars as Suns Project”, Invited Talk, International NASA Living With a Star Workshop, Goa, India, 19-24<sup>th</sup> February, 2006
- “Generation and Dynamics of Magnetic Fields in the Solar Convection Zone”, Invited Talk, International Astronomical Union General Assembly, Prague, Czech Republic, 14-25<sup>th</sup> August, 2006
- “Space Climate and the Solar-Stellar Connection: What can we learn from the Stars”, Invited Talk, Second International Symposium on Space Climate, Sinaia, Romania, 13-15<sup>th</sup> September, 2006
- “Observation and Modelling of Solar Active Region Magnetic Helicity: Implications for Subsurface Dynamics and Eruptive Activity”, Invited Talk, National Solar Observatory Sac Peak Workshop 24, Sunspot, USA, 16<sup>th</sup>-20<sup>th</sup> April, 2007
- “Long-Term Evolution of Solar Magnetic Activity Derived from Stellar Proxies”, Invited Talk, American Geophysical Union General Assembly, Acapulco, Mexico, 22<sup>nd</sup>-25<sup>th</sup> May, 2007
- “Dynamo Processes in the Heliosphere”, Tutorial lectures at the International Heliophysical Year school held in Kodaikanal Observatory, India, December, 2007
- “Kinematic Dynamo Models of the Solar Cycle”, Invited Parker Lecture, American Geophysical Union-Solar Physics Division Joint Assembly, Fort Lauderdale, USA, 27<sup>th</sup>-30<sup>th</sup> May, 2008
- “The Solar Dynamo: Origin and Evolution of the Sun’s Magnetic Fields”, 27<sup>th</sup> Meeting of the Astronomical Society of India, Bangalore, 18-20<sup>th</sup> February, 2009
- “The Science of the Sun-Earth-System”, ISRO-IISc Space Technology Cell, Indian Institute of Science, Bangalore, 17<sup>th</sup> February, 2009
- “The Physics of Solar Cycle Predictions”, Space Climate Symposium 3, Saariselka, Finland, 18-22<sup>nd</sup> March, 2009
- “The Origin and Evolution of Solar Active Region Magnetic Fields (Invited Talk)”, Asia Oceanic Geosciences Society Meeting, Singapore, 09-16<sup>th</sup> August, 2009
- “Solar Activity: From Understanding to Forecasting”, Workshop on “Solar, Cosmic Rays and Climate Connections” Institute of Advanced Studies, Hebrew University, Jerusalem, Israel, 25<sup>th</sup>-29<sup>th</sup> April, 2010
- “Space Weather and Climate: A Modeling Perspective”, Indian Institute of Geomagnetism, Navi Mumbai, 2010
- “Magnetohydrodynamic Dynamo Theory”, Set of tutorial lectures at the DST-SERC School on Space Weather, Indian Institute of Geomagnetism, Navi Mumbai, India 2010
- “Solar Cycle Predictions”, Astrophysics Division—Physical Research Laboratory, Ahmedabad, India 2010
- “Physics of Space Weather and Climate” (Institute Colloquium), Physical Research Laboratory, Ahmedabad, India, 2010
- “Dynamo Model Based Solar Cycle Predictions”, Symposium STP12 of the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP), Berlin, Germany, 2010

- “The Deep Minimum of Solar Cycle 23: A Solution to the Mystery of the Missing Sunspots”, Scientific Assembly of the Committee on Space Research (COSPAR), Bremen, Germany, 2010
- “Aditya Mission: Theoretical Modeling and Data Analysis” (Invited Talk), Team Meeting of the Space Mission “Aditya”, Bangalore, 2010
- “The Impulsive Sun and its Relevance for Earth” (Public Lecture), Bangalore City Astronomy Festival (Kalpaneya Yatre), Jawaharlal Nehru Planetarium, Bangalore, India, 2010
- “Dynamo Models of the Solar Cycle: Current Trends and Future Prospects”, Asia-Pacific Solar Physics Meeting, Bangalore, 2011
- “The Unusual Minimum of Solar Cycle 23: Origin and Heliospheric Consequences”, SCOSTEP Workshop on “Solar Influences on the Magnetosphere, Ionosphere and Atmosphere”, Sozopol, Bulgaria, 2011
- “Galileo’s Sunspots and the Story of a Stormy Star” (Public Lecture), National Students Space Challenge, Indian Institute of Technology, Kharagpur, India, 2011
- “Magnetic Fields and Solar Coronal Heating”, Workshop on “Physics of the Transition Region and Corona” Inter-University Center for Astronomy and Astrophysics, Pune, India, 2011
- “Kinematic Dynamo Models of the Solar Cycle: Past, Present and Future”, IAU Symposium 286 on “Comparative Magnetic Minima: Characterizing quiet times in the Sun and Stars”, Mendoza, Argentina, 2011
- “Forecasting the Solar Cycle”, Harvard Smithsonian Center for Astrophysics, Cambridge, USA, 2011
- “Understanding the Sun’s Magnetic Cycle”, Institut de Recherche en Astrophysique et Planétologie, University Paul-Sabatier, Toulouse, France, 2011
- “The Chronicles of a Stormy Star” (Public Lecture), National Institute of Technology, Durgapur Annual Festival, 2012
- “Exploring the Physical Basis of Solar Cycle Predictions” (Physics Department Colloquium), Indian Institute of Science, 2012
- “Indo-US Bilateral Cooperation Program in Heliophysics and Space Weather”, COSPAR General Assembly, Mysore, India, 2012
- “2-D Models of Stellar Dynamos and the Rotation Activity Relationship, Helioseismology Workshop, International Space Science Institute, Bern, Switzerland, 2012 (by remote video-conferencing)
- “Solar Magnetic Fields: A Journey from the Sun’s Interior to the Heliosphere”, International Symposium on Solar-Terrestrial Physics, IISER Pune, November 2012
- “Solar Active Regions Magnetic Fields and Waves: It takes two to Tango”, Indo-UK Workshop on Waves in the Solar Atmosphere, Indian Institute of Astrophysics, Bangalore, January 2013
- “Solar Magnetic Fields and Dynamo Theory”, Tutorial Lectures at the IUCAA Solar Outreach Workshop at Belur Math Ramakrishna Mission, Kolkata, February, 2013
- “Theoretical Investigations of Solar Activity”, Tutorial Lectures at RemSpace Workshop, Calcutta University, February, 2013
- “400 Years of the Sun”. Bonjour India Festival, IIT Gandhinagar, February 2013
- “Galileo’s Sunspots and the Story of a Stormy Star”, St. Xavier’s College Physics Department Annual Celebrations, February, 2013
- “Magnetic Coupling of the Sun’s Interior to the Heliosphere”, Fifth Workshop on Solar Influences on the Magnetosphere, Ionosphere and Heliosphere, Nessebar, Bulgaria, June, 2013

## **Teaching**

- “Fluid Mechanics and Magnetohydrodynamics”, Summer reading course for the Research Experience for Undergraduate Program, Montana State University, USA, 2004, 2005
- Instructor at Space Camp for school and college students co-sponsored by NASA and NSF, Salish Kootenai College, USA, 2006
- “Astrophysical Magnetohydrodynamics”, Co-instructor for this 500 level advanced graduate course at Department of Physics, Montana State University, Spring Semester—2007
- “Sun-Earth-System Science”, An interdisciplinary 3 Credit course for graduate students, IISER Kolkata, India, 2009
- “Numerical Methods”, Co-instructor for this 3 credit computer laboratory course for advanced undergraduate and graduate students, IISER Kolkata, 2010
- “Electromagnetism”, A 3 credit physical sciences course for undergraduate students, IISER Kolkata, India, 2010, 2011
- “Thermodynamics”, A 3 credit interdisciplinary course for undergraduate students, IISER Kolkata, 2012
- “Physics II (Thermodynamics, Electromagnetism, Special Theory of Relativity)”, A 3 credit physical sciences core course for undergraduate students, IISER Kolkata, India, 2013

## **Students Supervision**

- Undergraduate students supervised: 15  
(This includes ten NSF-REU students supervised during 2003-2007; five of them continued to pursue PhD degrees, of which four are in Solar/Plasma Physics, namely: Michael Hahn, Andres Munoz-Jaramillo, Christopher Lowder, Dario Passos)
- PhD students supervised/co-supervised at Montana State University:
  - Antonia Wilmot-Smith, Currently faculty at University of Dundee, UK
  - Anthony Yeates, Currently faculty at University of Durham, UK
  - Dario Passos, Currently postdoctoral fellow, Portuguese Science Foundation, Portugal and University of Montreal, Canada
  - Andres Munoz-Jaramillo, Currently Jack Eddy postdoctoral fellow at Harvard-Smithsonian Center for Astrophysics, USA
- Current PhD students:
  - Soumitra Hazra, IISER Kolkata

## **Dibyendu Nandi: Complete List of Publications**

1. “The Role of Magnetic Buoyancy in a Babcock-Leighton type Solar Dynamo”, Nandy, D., & Choudhuri, A.R. 2000, Journal of Astrophysics and Astronomy, Volume 21, Page 381
2. “Towards a Mean-Field Formulation of the Babcock-Leighton type Solar Dynamo. I. Alpha-Coefficient Versus Durney's Double Ring Approach”, Nandy, D., & Choudhuri, A.R. 2001, Astrophysical Journal, Volume 551, Page 576
3. “Constraints on the Solar Internal Magnetic Field from a Buoyancy Driven Solar Dynamo”, Nandy, D. 2002, Astrophysics & Space Science, Volume 282, Page 209

4. "Explaining the Latitudinal Distribution of Sunspots with a Deep Meridional Flow", Nandy, D., & Choudhuri A.R. 2002, *Science*, Volume 296, Page 1671 (See also "Online Supplemental Information" and "Unsuspected depths" – A small news-brief about this work, from the pages of *Science Magazine*)
5. "Solar Dynamo Models with Realistic Internal Rotation", Choudhuri, A.R., & Nandy, D. 2002, in the book "Proceedings of the SOLMAG 2002 Meeting on Magnetic Coupling of the Solar Atmosphere Euro-conference and IAU Colloquium 188", Editor: H. Sawaya-Lacoste, ESA Publications Division, ESA SP-505, Page 91 [ISBN 92-9092-815-8]
6. "Insights on Turbulent Flows in the Solar Interior from the Behaviour of Dynamo Generated Magnetic Fields", Nandy, D., & Choudhuri, A.R. 2003, in the book "Turbulence, Waves, and Instabilities in the Solar Plasma" – Proceedings of the NATO Advanced Research Workshop, Editors: E. Forgács-Dajka, K. Petrovay and R. Erdélyi, Springer (Dordrecht, Netherlands), Page 21 [ISBN 9781402016592]
7. "Evidence That a Deep Meridional Flow Sets the Sunspot Cycle Period", Hathaway D.H., Nandy, D., Wilson, R.M., & Reichmann, E.J. 2003, *Astrophysical Journal*, Volume 589, Page 665 (See also "Erratum", 2004, *Astrophysical Journal*, Volume 602, Page 543)
8. "Reviewing Solar Magnetic Field Generation in the Light of Helioseismology" (Invited Review Paper), Nandy, D. 2003, in the book "Proceedings of the SOHO 12 / GONG+ 2002 Meeting on Local and Global Helioseismology: The Present and Future", Editor: H. Sawaya-Lacoste, European Space Agency Publications Division, ESA SP-517, Page 123 [ISBN 92-9092-827-1]
9. "Detection of a Taylor-like Plasma Relaxation Process in the Sun", Nandy, D., Hahn, M., Canfield, R.C., & Longcope, D.W. 2003, *Astrophysical Journal Letters*, Volume 597, Page L73
10. "Helicity of Solar Active Regions from a Dynamo Model", Choudhuri, A.R., Chatterjee, P., & Nandy, D. 2004, *Astrophysical Journal Letters*, Volume 615, Page L57
11. "Full-Sphere Simulations of a Circulation-Dominated Solar Dynamo: Exploring the Parity Issue", Chatterjee, P., Nandy, D., & Choudhuri, A.R. 2004, *Astronomy & Astrophysics*, Volume 427, Page 1019
12. "The Origin of Helicity in Solar Active Regions", Choudhuri, A.R., Chatterjee, P., & Nandy, D. 2004, in the book "Proceedings of IAU Symposium 223 on Multi-Wavelength Investigations of Solar Activity", Editors: A.V. Stepanov, E.E. Benevolenskaya and A.G. Kosovichev, Cambridge University Press (Cambridge, UK), Page 45 [ISBN 9780521851954]
13. "Full Sphere Axisymmetric Simulations of the Solar Dynamo", Nandy, D., Chatterjee, P., & Choudhuri, A.R. 2004, in the book "Proceedings of IAU Symposium 223 on Multi-Wavelength Investigations of Solar Activity", Editors: A.V. Stepanov, E.E. Benevolenskaya and A.G. Kosovichev, Cambridge University Press (Cambridge, UK), Page 133 [ISBN 9780521851954]
14. "Detection of Taylor-like Plasma Relaxation Process in the Sun and its Implication for Coronal Heating", Nandy, D., Hahn, M., Canfield, R.C., & Longcope, D.W. 2004, in the book "Proceedings of IAU Symposium 223 on Multi-Wavelength Investigations of Solar Activity", Editors: A.V. Stepanov, E.E. Benevolenskaya and A.G. Kosovichev, Cambridge University Press (Cambridge, UK), Page 473 [ISBN-13: 9780521851954]

15. "On the Tilt and Twist of Solar Active Regions", Holder, Z.A., Canfield, R.C., McMullen, R.A., Nandy, D., Howard, R.F., & Pevtsov, A.A. 2004, *Astrophysical Journal*, Volume 611, Page 1149
16. "Meridional Circulation and the Solar Magnetic Cycle" (Invited Review Paper), Nandy, D. 2004, in the book "Proceedings of the SOHO 14 / GONG 2004 Meeting on Helio- and Asteroseismology: Towards a Golden Future", Editor: D. Danesy, European Space Agency Publications Division, ESA SP-559, Page 241 [ISBN 92-9092-870-0]
17. "Exploring Magnetic Activity from the Sun to the Stars" (Invited Review Paper), Nandy, D. 2004, *Solar Physics*, Volume 224, Page 161
18. "Spatial Relationship Between Twist in Active Region Magnetic Fields and Solar Flares", Hahn, M., Gaard, S., Jibben, P., Canfield, R.C., & Nandy, D. 2005, *Astrophysical Journal*, Volume 629, Page 1135
19. "Low-order Stellar Dynamo Models", Wilmot-Smith, A.L., Martens, P.C.H., Nandy, D., Priest, E.R., & Tobias, S.M. 2005, *Monthly Notices of the Royal Astronomical Society*, Volume 363, Page 1167
20. "Unraveling Long-Term Solar Variability and its Impact on Space Climate: The Stars as Suns Project" (Invited Review Paper), Nandy, D., & Martens, P.C.H. 2006, in the book "Proceedings of the International Living with a Star Workshop", Editors: N. Gopalswamy and A. Bhattacharyya, Page 158 [ISBN: 81-87099-40-2]
21. "A Time Delay Model for Solar and Stellar Dynamos", Wilmot-Smith, A.L., Nandy, D., Hornig, G., & Martens, P.C.H. 2006, *Astrophysical Journal*, Volume 652, Page 696
22. "Magnetic Helicity and Flux Tube Dynamics in the Solar Convection Zone: Comparisons between Observation and Theory", Nandy, D. 2006, *Journal of Geophysical Research*, Volume 111, Page A12S01 [doi:10.1029/2006JA011882]
23. "Space Climate and the Solar-Stellar Connection: What can we learn from the Stars about Long-Term Solar Variability?" (Invited Review Paper), Nandy, D., & Martens, P.C.H. 2007, *Advances in Space Research*, Volume 40, Page 891
24. "Magnetic Helicity, Coronal Heating and Solar Flaring Activity: A Review of the Role of Active Region Twist" (Invited Review Paper), Nandy, D. 2008, in the book "Subsurface and Atmospheric Influences on Solar Activity", Proceedings of the National Solar Observatory Sac Peak Workshop 24, Editors: R. Howe, R. W. Komm, K. S. Balasubramaniam and G. J. D. Petrie, *Astronomical Society of the Pacific Conference Series*, Vol. 383, Page 201 [ISBN 9781583813294]
25. "Exploring the Physical Basis of Solar Cycle Predictions: Flux Transport Dynamics and Persistence of Memory in Advection versus Diffusion Dominated Solar Convection Zones", Yeates, A.R., Nandy, D., & Mackay, D.H. 2008, *Astrophysical Journal*, Volume 673, Page 544
26. "A Theoretical Model for the Magnetic Helicity of Solar Active Regions", Chatterjee, P, Choudhuri, A.R., Petrovay, K., & Nandy, D. 2008, *Advances in Space Research*, Volume 41, Page 893

27. "Kinematic Properties of Solar Coronal Mass Ejections: Correction for Projection Effects in Catalogued Satellite Measurements", Howard, T.A., Nandy, D., & Koepke, A. 2008, *Journal of Geophysical Research*, Volume 113, Page A01104 [doi 10.1029/2007JA012500]
28. "Twisted Solar Active Region Magnetic Fields as Drivers of Space Weather: Observational and Theoretical Investigations", Nandy, D., Mackay, D.H., Canfield, R.C., & Martens, P.C.H. 2008, *Journal of Atmospheric and Solar-Terrestrial Physics*, Volume 70, Page 605
29. "Helioseismic Data Inclusion in Solar Dynamo Models", Munoz-Jaramillo, A., Nandy, D., & Martens, P.C.H. 2009, *Astrophysical Journal*, 698, 461
30. "Solar Cycle Variations of Coronal Null Points: Implications for the Magnetic Breakout Model of Coronal Mass Ejections", Cook, G.R., Mackay, D.H., & Nandy, D. 2009, *Astrophysical Journal*, Volume 704, Page 1021
31. "Comparison of a Global Magnetic Evolution Model with Observations of Coronal Mass Ejections", Yeates, A.R., Attrill, G.D.R., Nandy, D., Mackay, D.H., Martens, P.C.H., & van Ballegooijen, A.A. 2010, *Astrophysical Journal*, Volume 709, Page 1238
32. "Outstanding Issues in Solar Dynamo Theory", Nandy, D. 2010, (Invited Review Paper) in the book "Magnetic Coupling between the Interior and Atmosphere of the Sun", Eds. S.S. Hasan and R.J. Rutten, Springer (Berlin), Page 86 [ISBN 978-3-642-02858-8]
33. "Empirical Modeling of Radiative versus Magnetic Flux for the Sun-as-a-Star", Preminger, D., Nandy, D., Chapman, G., & Martens, P.C.H. 2010, *Solar Physics*, Volume 264, Page 13
34. "Dynamo Processes" (Invited Book Chapter), Nandy, D. 2010, in the book "Heliophysical Processes", Eds. N. Gopalswamy, S.S. Hasan and A. Ambastha, Springer (Berlin) [ISBN: 978-3-642-11340-6]
35. "A Double-Ring Algorithm for Modeling Solar Active Regions: Unifying Kinematic Dynamo Models and Surface Flux-Transport Simulations", Munoz-Jaramillo, A., Nandy, D., Martens, P.C.H., & Yeates, A.R. 2010, *Astrophysical Journal Letters*, Volume 720, Page L20
36. "Space Climate", Eds. K. Mursula, I. Usoskin, D. Nandy & D. Marsh. 2011, special issue of the *Journal of Atmospheric and Solar-Terrestrial Physics*, Elsevier (Amsterdam), Volume 73, Issues 2-3 [ISSN 1364-6826(201102)73:2-3;1-K]
37. "Magnetic Quenching of Turbulent Diffusivity: Reconciling Mixing-length Theory Estimates with Kinematic Dynamo Models of the Solar Cycle", Munoz-Jaramillo, A., Nandy, D., & Martens, P.C.H. 2011, *Astrophysical Journal Letters*, Volume 727, Page L23
38. "The Unusual Minimum of Solar Cycle 23 Caused by Changes in the Sun's Meridional Plasma Flows", Nandy, D., Munoz-Jaramillo, A., & Martens, P.C.H. 2011, *Nature*, Volume 471, Page 80
39. "Dynamo Models of the Solar Cycle: Current Trends and Future Prospects" (Invited Review Paper), Nandy, D. 2011, in proceedings of the First Asia Pacific Solar Physics Meeting, Eds. A.R. Choudhuri and D. Banerjee, *Astronomical Society of India Conference Series*, Volume 2, Page 91 [ISBN: 978-81-922926-0-1]

41. “Modeling the Solar Cycle: What the Future Holds” (Invited Review Paper), Nandy, D. 2012, in the book “Comparative Magnetic Minima: Characterizing quiet times in the Sun and Stars” (proceedings of the International Astronomical Union Symposium 286), Editors: David Webb and Cristina Mandrini, Cambridge University Press, page 54 [ISBN-13: 9781107019867]
42. “All Quiet on the Solar Front: Origin and Heliospheric Consequences of the Unusual Minimum of Solar Cycle 23”, Nandy, D., Munoz-Jaramillo, A., & Martens, P.C.H. 2012, Sun and Geosphere, Volume 7, Page 17-21
43. “Turbulent Pumping of Magnetic Flux Reduces Solar Cycle Memory and thus Impacts Predictability of the Sun's Activity”, Karak, B.B. & Nandy, D., 2012, Astrophysical Journal Letters, Volume 761, Page L13

### **Other Publications**

Invited book review for the book “The Sun’s Heartbeat: And Other Stories from the Life of the Star That Powers Our Planet by Bob Berman”, Physics Today, June 2012 issue

“The Last Word: Dibyendu Nandi Explains the Science behind the Recent Solar Storms”, article for the BBC Knowledge Magazine, June 2012 issue

### **Media Research Coverage and Interviews**

- Research work regarding the role of meridional flows in the Sun's interior in setting the period of the sunspot cycle, featured in a NASA press release (<http://www.nasa.gov/centers/marshall/news/news/releases/2003/03-097.html>): 2003
- Solar cycle (dynamo) simulation selected as an exhibit for Education and Public Outreach purposes at NASA’s Scientific Visualization Studio and featured in SDO pre-launch outreach videos (<http://svs.gsfc.nasa.gov/search/Series/SolarDynamo.html>) (<http://www.youtube.com/watch?v=BthDupBQXpQ>): 2010
- NASA Science Podcast on “Missing Sunspots”, March, 2011 (<http://www.youtube.com/watch?v=aTBgHd8exI4>)
- News-articles and interviews related to research on the unusual lull in solar activity published in multiple media outlets including Reuters, ABC, CBC, Sydney Morning Herald, Dawn, Times of India, Telegraph, Hindu, Deccan Herald, Hindustan Times, Indian Express etc. Also covered in the following magazines: Scientific American, Sky and Telescope and Discovery. Interviews aired in: CNN-IBN, Lok Sabha TV, All India Radio (Kolkata): 2011
- “A Solar Scientist Rebuts a Cool Sunspot Prediction”, interview for Dot Earth Blogs, New York Times, June, 2011
- “Scientillating: Finding earth’s twin, Getting closer to the God particle, Challenging pi, New members in the periodic table”, interview for the cover story in the Week Magazine, January, 2012 issue