CURRICULUM VITAE

Name : Arnab Rai Choudhuri

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Date of birth : 9 November, 1956
Sex : Male
Nationality : Indian
Marital Status : Married with two sons

Educational Background :

1974–1978	Bachelor's degree student, Presidency College, Calcutta University (B. Sc. with Physics Honours, 1978)
1978–1980	Master's degree student, Indian Institute of Technology, Kanpur (M. Sc. in Physics, 1980)
1980–1985	Doctoral degree student, University of Chicago (Ph. D. in Physics, 1985) *Supervisor:* Prof. E. N. Parker

Postdoctoral Job Experience :

1985–1987	Visiting Scientist, High Altitute Observatory, National Center for Atmospheric Research, Boulder, U. S. A.

Faculty Job Experience :

1987–1990	Lecturer, Department of Physics, Indian Institute of Science, Bangalore
1990–1996	Assistant Professor, Department of Physics, Indian Institute of Science, Bangalore
1996–2002	Associate Professor, Department of Physics, Indian Institute of Science, Bangalore
2002–	Professor, Department of Physics, Indian Institute of Science, Bangalore
2000– 2007	Convenor, Joint Astronomy and Astrophysics Programme, Indian Institute of Science, Bangalore
2010–	J. C. Bose Fellow, Department of Science and Technology

Visiting Positions :

- *Summer 1989 :* Visiting Scientist, Enrico Fermi Institute, University of Chicago.
- *Summer 1991 :* Visiting Scientist, Department of Applied Mathematics, University of St. Andrews, Scotland.
- *August 1994–July 1995 (Sabbatical Leave) :* Alexander von Humboldt Fellow at Kiepenheuer Institut für Sonnenphysik, Freiburg, Germany.
- *Summer 2000 :* Visiting Professor, Department of Physics, Montana State University, Bozeman, Montana.
- *Summer 2002 :* Alexander von Humboldt Fellow, Max-Planck-Institut für Aeronomie, Lindau, Germany.
- *November–December 2004 :* Visiting Professor, Isaac Newton Institute, University of Cambridge, England.
- *Summer 2006 :* Visiting Professor, National Astronomical Observatories of China, Chinese Academy of Sciences, Beijing, China.
- *Summer 2012 :* Visiting Professor, National Astronomical Observatory of Japan, Mitaka, Tokyo, Japan.

Fellowships of Academies :

- Indian Academy of Sciences (elected FASc 2005)
- National Academy of Sciences of India (elected FNASc 2008)
- Indian National Science Academy (elected FNA 2011)
- The World Academy of Sciences (elected FTWAS 2016)

Editorial Board Responsibilities :

- *2005–2008 :* Member of the Editorial Board, *Indian Journal of Physics.*
- *2005–2008 :* Member of the Editorial Board, *Journal of Astrophysics and Astronomy.*
- *2008 :* Invited to be member of founding Editorial Board, *Research in Astronomy and Astrophysics*, launched from January 2009.

Research Interests :

- Theoretical Astrophysics
- Magnetohydrodynamics
- Solar Physics
- History of Science

Research Supervision and collaboration :

I supervised the doctoral work of the following students:

1. Sydney D'Silva (Ph. D. 1993)
2. Mausumi Dikpati (Ph. D. 1996)
3. Dibyendu Nandy (Ph. D. 2002)
4. Piyali Chatterjee (Ph. D. 2007)
5. Bidya Binay Karak (Ph. D. 2013)
6. Gopal Hazra (enrolled at present)

The following students did a part of their Ph. D. thesis with me:

1. Herve Auffret (Ph. D. student of R. Muller)
2. Dipankar Banerjee (Ph. D. student of Siraj Hasan)
3. Jie Jiang (Ph. D. student of Jingxiu Wang)
4. Sagar Chakraborty (Ph. D. student of Jayanta Bhattacharjee)

The following young persons also received training in research from me:

1. Sushan Konar
2. Asish Goel

My other (senior) collaborators: Arieh Königl, Peter Gilman, Aad van Ballegooijen, Eric Priest, Manfred Schüssler, Dana Longcope, Kristof Pertrovay, Jingxiu Wang, Kazunari Shibata, Leonid Kitchatinov, Mark Miesch.

Teaching Experience :

The list of courses taught at Indian Institute of Science:

1. Fundamentals of Astrophysics.
2. Introduction to Fluid Mechanics and Plasma Physics.
3. General Relativity and Cosmology.
4. Radiative Processes in Astrophysics.
5. High Energy Astrophysics.
6. Electromagnetic Theory.
7. Quantum Mechanics I.
8. Qauntum Mechanics II.
9. Statistical Mechanics.
10. Electricity, Magnetism and Optics (undergraduate course)

Organizational and Administrative Responsibilities :

- *1977 :* Editor of the Re-union Commemoration Volume, Physics Department, Presidency College, Calcutta.
- *1988 :* Coordinator of a Summer School for Astronomy and Astrophysics for undergraduate students selected from all over India held at Indian Institute of Science.
- *1999–2001 :* Physics representative in the Committee of IISc Young Fellowship.
- *2000–2007 :* Convenor, Joint Astronomy and Astrophysics Programme, Indian Institute of Science.
- *2003 :* Coordinator of *JAP20*, a 3-day symposium to commemorate 20 years of Joint Astronomy Programme.
- *2005 :* Principal organizer and Co-Chair, Scientific Organizing Committee, *Indo-Chinese Workshop on Recent Advances in Solar Physics* held in Bangalore.
- *2011 :* Member of SOC, Member of LOC and one of the main organizers of *First Asia-Pacific Solar Physics Meeting (APSPM)* held in Bangalore.

Special Honours :

- *1974–1980 :* Recipient of the National Science Talent Search Scholarship (NSTS) awarded by the National Council of Educational Research & Training (NCERT).
- *1980 :* Awarded Master's degree in the First Division with Distinction by the Indian Institute of Technology, Kanpur.
- *1980-1981 :* Recipient of the Shirley Farr Fellowship awarded by the Department of Astronomy and Astrophysics, University of Chicago.
- *1981 :* Awarded the Valentine Telegdi Prize for the most outstanding performance in the Physics Candidacy Examination, University of Chicago.
- *1994 :* Awarded the Alexander von Humboldt Fellowship for 1994–1995.
- *1998 :* Elected a speaker in the senior category, *Theoretical Physics Seminar Circuit (TPSC).*
- *2000–2003 :* Member of the National Committee of International Astronomical Union.
- *2001 :* Invited to be Visiting Professor in the Astrophysics Group at Raman Research Institute, Bangalore.
- *2002–2005 :* Member of the Council, Inter-University Centre for Astronomy and Astrophysics, Pune.
- *2005 :* Invited to be Member, International Steering Committee, International Heliophysical Year (2007).
- *2006 :* Was offered *Sir Rashbehari Ghosh Professorship* of physics in Calcutta University (I declined this offer).
- *2007 :* Our paper (Choudhuri, Chatterjee & Jiang 2007, PRL 98, 131103) was chosen as "Editors' suggestion" in *Physical Review Letters.*
- *2009 :* Invited to be Adjunct Professor, Indian Institute of Astrophysics.
- *2010 :* Selected for J. C. Bose Fellowship awarded by Department of Science and Technology, Government of India, for the period 2005–2010.
- *2011 :* My book *Astophysics for Physicists* was selected as an 'Outstanding Academic Title of 2010' by *Choice*, the magazine of the American Library Association.
- *2011 :* Invited to deliver the NARIT Special Lecture to commemorate the 3rd anniversary of National Astronomical Research Institute of Thailand.
- *2012 :* Our paper (Choudhuri & Karak 2012, PRL 109, 171103) was chosen as "Editors' suggestion" in *Physical Review Letters* and highlighted in *Physics.*
- *2012 :* Awarded the Rustom Choksi Award for Excellence in Research in Science by Indian Institute of Science.
- *2013 :* Elected member of the Steering Committee, Division E Sun and Heliosphere, International Astronomical Union, for the term 2013–2016.
- *2015 :* J. C. Bose Fellowship, Department of Science and Technology, renewed for the period 2015–2020.
- *2016 :* Re-appointed member of the Steering Committee, Division E Sun and Heliosphere, International Astronomical Union, for the term 2016–2019.

Invited Talks and Responsibilities in International Conferences :

- *1991 :* Invited to present a review in the conference *Theory of Sunspots* held in Cambridge, U. K., during September 1991.
- *1999 :* Invited to be a member of SOC and a lecturer at the *Workshop on Solar Physics* held in Isfahan, Iran, just before the total solar eclipse.
- *2000 :* Was invited (by J. O. Stenflo) to deliver a keynote talk in the 9th European Astronomical Society conference *European Astronomy at the turn of the Millenium* held in Moscow. Was unable to accept this invitation due to prior commitment of Visiting Professorship at Montana State University.
- *2001 :* Convener of the session 'The solar dynamo, planetary dynamos and related problems' in *IAGA-IASPEI Joint Scientific Assembly* held in Hanoi, Vietnam.
- *2003 :* Invited to deliver a reporter review on solar magnetic fields in *IUGG 2003* held in Sapporo, Japan.
- *2006 :* Invited to deliver an invited review on the solar dynamo theory in *36th COSPAR Assembly* held in Beijing, China.
- *2006 :* Invited to deliver the Inaugural Address in the meeting of Korean Astronomical Society.
- *2007 :* Invited to be member of SOC and to give an invited talk in the international conference *Challenges for Solar Cycle 24* held in Ahmedabad, India.
- *2008 :* Invited to be member of SOC for the session 'Solar Magnetic Field and Activity' in *COSPAR 2008* held in Montreal, Canada.
- *2010 :* Invited to deliver an invited talk in *Twelfth Solar-Terrestrial Symposium* held in Berlin, Germany.
- *2010 :* Invited to deliver an invited talk in *IAU 273: Physics of Sun and Star Spots* held in Ventura, California.
- *2011 :* Invited to deliver a plenary talk in *Chandrasekhar Centenary Symposium* held in Bangalore, India.
- *2011 :* Invited to deliver an invited talk in *International Space Plasma Symposium* held in Tainan, Taiwan.
- *2011 :* Invited to deliver an invited talk in *IAU 286: Comparative Magnetic Minima: Characterizing quiet times in the Sun and stars* held in Mendoza, Argentina.
- *2012 :* Main Scientific Organizer of a session 'Solar origin of the Heliospheric Magnetic Field' in 39th COSPAR Scientific Assembly held in Mysore, India.
- *2012 :* Invited to be member of SOC and to deliver an invited talk in *IAU 294: Solar and Astrophysical Dynamos and Magnetic Activity* held in Beijing, China.
- *2013 :* Invited to be member of SOC in *The 2nd Asia-Pacific Solar Physics Meeting* held in Hangzhou, China.
- *2015 :* Invited to be member of Advisory Committee, *The 3nd Asia-Pacific Solar Physics Meeting* held at Seoul National University, Korea.

Publications (Books) :

1. *The Physics of Fluids and Plasmas: An Introduction for Astrophysicists*
   Arnab Rai Choudhuri (1998)
   Cambridge University Press.
2. *Astrophysics for Physicists*
   Arnab Rai Choudhuri (2010)
   Cambridge University Press.
3. *Nature's Third Cycle: A Story of Sunspots*
   Arnab Rai Choudhuri (2015)
   Oxford University Press.

Publications (Edited books) :

1. *IAU Colloquium 179. Cyclical Evolution of Solar Magnetic Fields: Advances in Theory and Observations*
   Eds.: P. Venkatakrishnan, Oddbjorn Engvold and Arnab Rai Choudhuri (2000)
   Special issue of *Journal of Astrophysics and Astronomy*, Vol. 21.
2. *Proceedings of the First Asia-Pacific Solar Physics Meeting*
   Eds.: Arnab Rai Choudhuri and Dipankar Banerjee (2011)
   Astronomical Society of India Conference Series, Volume 2.

Publications (Papers) :

1. "The effect of closed boundary conditions on a stationary dynamo"
   A. R. Choudhuri (1984)
   Astrophysical Journal **281**, pp. 846–853.
2. "Force-free equilibria of magnetized jets"
   A. Königl and A. R. Choudhuri (1985)
   Astrophysical Journal **289**, pp. 173–187.
   ["Erratum" in *Astrophysical Journal* **305**, p. 954.]
3. "A model of the plarization position-angle swings in BL Lacertae objects"
   A. Königl and A. R. Choudhuri (1985)
   Astrophysical Journal **289**, pp. 188–192.
4. "Practising Western science outside the West: Personal observations on the Indian scene"
   A. R. Choudhuri (1985)
   Social Studies of Science **15**, pp. 475–505.

5. "The dynamics of magnetically trapped fluids. I. Implications for umbral dots and penumbral grains"
   A. R. Choudhuri (1986)
   Astrophysical Journal **302**, pp. 809–825.

6. "Magnetic energy dissipation in force-free jets"
   A. R. Choudhuri and A. Königl (1986)
   Astrophysical Journal **310**, pp. 96–103.

7. "Magnetic helicity as a constraint on coronal dissipation"
   A. R. Choudhuri (1986)
   In *Coronal and Prominence Plasmas (NASA CP 2442)* (ed.: A. I. Poland), pp. 451–456.

8. "The influence of the Coriolis force on flux tubes rising through the solar convection zone"
   A. R. Choudhuri and P. A. Gilman (1987)
   Astrophysical Journal **316**, pp. 788–800.

9. "Theoretical modelling of the fine structures in sunspots"
   A. R. Choudhuri (1987)
   In *Theoretical Problems in High Resolution Solar Physics II (NASA CP 2483)* (eds.: G. Athay and D. S. Spicer), pp. 105–106.

10. "On the coalescence of twisted flux tubes"
    A. R. Choudhuri (1988)
    Geophysical and Astrophysical Fluid Dynamics **40**, pp. 261–291.

11. "The possible role of meridional flows in suppressing magnetic buoyancy"
    A. A. van Ballegooijen and A. R. Choudhuri (1988)
    Astrophysical Journal **333**, pp. 965–977.

12. "The evolution of loop structures in flux rings within the solar convection zone"
    A. R. Choudhuri (1989)
    Solar Physics **123**, pp. 217–239.

13. "Locating the seat of the solar dynamo"
    A. R. Choudhuri (1990)
    In *Basic Plasma Processes on the Sun (IAU Symposium 142)* (eds.: E. R. Priest and V. Krishan), pp. 51–55.

14. "Effect of turbulence on emerging flux tubes in the convection zone"
    S. D'Silva and A. R. Choudhuri (1990)
    In *Basic Plasma Processes on the Sun (IAU Symposium 142)* (eds.: E. R. Priest and V. Krishan), pp. 60–61.

15. "On the possibility of an $\alpha^2\omega$-type dynamo in a thin layer inside the Sun"
    A. R. Choudhuri (1990)
    Astrophysical Journal **355**, pp. 733–744.

16. "A correction to Spruit's equation for the dynamics of thin flux tubes"
A. R. Choudhuri (1990)
Astronomy and Astrophysics **239**, pp. 335–339.

17. "Influence of turbulence on rising flux tubes in solar convection zone"
A. R. Choudhuri and S. D'Silva (1990)
Astronomy and Astrophysics **239**, pp. 326–334.

18. "The effect of Kelvin–Helmholtz instability on rising flux tubes in the convection zone"
S. D'Silva and A. R. Choudhuri (1991)
Solar Physics **136**, pp. 201–219.

19. "Stochastic fluctuations of the solar dynamo"
A. R. Choudhuri (1992)
Astronomy and Astrophysics **253**, pp. 277–285.

20. "The cluster model of sunspots"
A. R. Choudhuri (1992)
In *Sunspots: Theory and Observations* (eds.: J. H. Thomas and N. O. Weiss) (Dordrecht: Kluwer), pp. 243–257.

21. "Implications of rapid footpoint motions of photospheric flux tubes for coronal heating"
A. R. Choudhuri, H. Auffret and E. R. Priest (1993)
Solar Physics **143**, pp. 49–68.

22. "A theoretical model for the tilts of bipolar magnetic regions"
S. D'Silva and A. R. Choudhuri (1993)
Astronomy and Astrophysics **272**, pp. 621–633.

23. "Energy transport to the solar corona by magnetic kink waves"
A. R. Choudhuri, M. Dikpati and D. Banerjee (1993)
Astrophysical Journal **413**, pp. 811–825.

24. "The evolution of the Sun's poloidal field"
M. Dikpati and A. R. Choudhuri (1994)
Astronomy and Astrophysics **291**, pp. 975–989.

25. "Magnetohydrodynamic modelling of some aspects of the solar cycle"
A. R. Choudhuri (1995)
Journal of Indian Institute of Science **75** (Special Issue on Fluid Mechanics. Guest Editor: R. Narasimha), pp. 559–575.

26. "On the large-scale diffuse magnetic field of the Sun"
M. Dikpati and A. R. Choudhuri (1995)
Solar Physics **161**, pp. 9–27.

27. "The solar dynamo with meridional circulation"
A. R. Choudhuri, M. Schüssler and M. Dikpati (1995)
Astronomy and Astrophysics Letters **303**, pp. L29–L32.
["Erratum" in *Astronomy and Astrophysics* **319**, p. 362.]

28. "Magnetic fields in the Sun's interior: What do we know about them?"

    A. R. Choudhuri (1996)

    Bulletin of the Astronomical Society of India **24** (Proceedings of the International Conference on 'Windows on the Sun's Interior'), pp. 219–222.

29. "The evolution of the magnetic structure of the solar corona with the solar cycle"

    M. Dikpati, A. R. Choudhuri and P. Venkatakrishnan (1996)

    ASP Conference Series **95P** ('Solar Drivers of Interplanetary and Terrestrial Disturbances'), pp. 309–314.

30. "On the out of phase appearance of large-scale diffuse magnetic field of the Sun with respect to sunspots"

    M. Dikpati and A. R. Choudhuri (1996)

    Astrophysics and Space Science **243**, pp. 169–172.

31. "The crisis of science" (Translation of a Bengali article by S. N. Bose)

    A. R. Choudhuri (1996)

    Resonance **1**, Vol. 2 (February), pp. 92-101.

32. "Annual Review of Astronomy and Astrophysics 1996: A book review"

    A. R. Choudhuri (1998)

    Current Science **74**, p. 478.

33. "On the large-scale diffuse magnetic field of the Sun. II. The contribution of active regions"

    A. R. Choudhuri and M. Dikpati (1999)

    Solar Physics **184**, pp. 61–76.

34. "The solar dynamo"

    A. R. Choudhuri (1999)

    Current Science (Special Issue on Solar Physics. Guest Editor: B. N. Dwivedi), **77**, pp. 1475–1486.

35. "The current status of kinematic solar dynamo models"

    A. R. Choudhuri (2000)

    Journal of Astrophysics and Astronomy (Proceedings of IAU Colloquium 179), **21**, pp. 373–377.

36. "The role of magnetic buoyancy in a Babcock-Leighton type solar dynamo"

    D. Nandy and A. R. Choudhuri (2000)

    Journal of Astrophysics and Astronomy (Proceedings of IAU Colloquium 179), **21**, pp. 381–385.

37. "Towards a mean field formulation of the Babcock-Leighton type solar dynamo. I. α-coefficient versus Durney's double ring approach"

    D. Nandy and A. R. Choudhuri (2001)

    Astrophysical Journal **551**, pp. 576–585.

38. "The orientational relaxation of bipolar active regions"
    D. Longcope and A. R. Choudhuri (2002)
    Solar Physics **205**, pp. 63–92.

39. "Annual Review of Astronomy and Astrophysics 2001: A book review"
    A. R. Choudhuri (2002)
    Current Science **83**, p. 899.

40. "Diamagnetic screening of the magnetic field in accreting neutron stars"
    A. R. Choudhuri and S. Konar (2002)
    Monthly Notices of Royal Astronomical Society **332**, pp. 933–944.

41. "Explaining the latitudinal distribution of sunspots with deep meridional flow"
    D. Nandy and A. R. Choudhuri (2002)
    Science **296**, pp. 1671–1673.

42. "The solar dynamo as a model of the solar cycle"
    A. R. Choudhuri (2003)
    Chapter 6 of the book *The Dynamic Sun* (ed: B. N. Dwivedi) (Cambridge University Press), pp. 103–127.

43. "Solar dynamo models with realistic internal rotation"
    A. R. Choudhuri and D. Nandy (2003)
    In *SOLMAG 2002: Proceedings of the Magnetic Coupling of the Solar Atmosphere (IAU Colloquium 182)*, pp. 91–94.

44. "On the relation between mean field dynamo theory and flux tubes"
    A. R. Choudhuri (2003)
    Solar Physics **215**, pp. 31–55.

45. "Insights on turbulent flows in the solar interior from the behaviour of dynamo generated magnetic fields"
    D. Nandy and A. R. Choudhuri (2003)
    In *Proceedings of NATO Workshop on Turbulence (Publications of the Astronomy Department of Eötvös University 13)*, pp. 21–26.

46. "Why do millisecond pulsars have weaker magnetic fields compared to ordinary pulsars?"
    A. R. Choudhuri and S. Konar (2004)
    Current Science **86**, pp. 444–446.

47. "Diamagnetic screening of the magnetic field in accreting neutron stars. II The effect of time-dependent velocity field"
    S. Konar and A. R. Choudhuri (2004)
    Monthly Notices of Royal Astronomical Society **348**, pp. 661–668.

48. "Full-sphere simulations of a circulation-dominated solar dynamo: Exploring the parity issue"
    P. Chatterjee, D. Nandy and A. R. Choudhuri (2004)
    Astronomy and Astrophysics **427**, pp. 1019–1030.

49. "Helicity of solar active regions from a dynamo model"
A. R. Choudhuri, P. Chatterjee and D. Nandy (2004)
Astrophysical Journal Letters **615**, pp. L57–L60.

50. "The origin of helicity in solar active regions"
A. R. Choudhuri, P. Chatterjee and D. Nandy (2005)
In *Multi-Wavelength Investigations of Solar Activity (IAU Symposium 223)* (eds.: A. V. Stepnov, E. E. Benevolenskaya and A. G. Kosovichev), pp. 45–48.

51. "Reply to the comments of Dikpati et al."
A. R. Choudhuri, D. Nandy and P. Chatterjee (2005)
Astronomy and Astrophysics, **437** pp. 703–704.

52. "The user's guide to the solar dynamo code *Surya*"
A. R. Choudhuri (2005)
Available upon request.

53. "Development of twist in an emerging magnetic flux tube by poloidal field accretion"
P. Chatterjee, A. R. Choudhuri and K. Petrovay (2006)
Astronomy and Astrophysics **449** pp. 781–789.

54. "Some recent developments in solar dynamo theory"
A. R. Choudhuri (2006)
Journal of Astrophysics and Astronomy **27** (Proceedings of the International Conference on 'Transient Phenomena on the Sun and Interplanetary Medium'), pp. 79–85.

55. "The magnetic coupling between the two hemispheres of the Sun"
P. Chatterjee and A. R. Choudhuri (2006)
Solar Physics **239**, pp. 29–39.

56. "An elementary introduction to solar dynamo theory"
A. R. Choudhuri (2007)
In *Kodai School on Solar Physics (AIP Conference Proceedings 919)* (eds.: S. S. Hasan and D. Benerjee), pp. 49–73.

57. "Predicting solar cycle 24 with a solar dynamo model"
A. R. Choudhuri, P. Chatterjee and J. Jiang (2007)
Physical Review Letters **98**, 131103 (4 pp).

58. "A new explanation for the origin of trans-equatorial loops based on a dynamo model"
J. Jiang, A. R. Choudhuri and J. Wang (2007)
Solar Physics **245**, pp. 19–25.

59. "Solar activity forecast with a dynamo model"
J. Jiang, P. Chatterjee and A. R. Choudhuri (2007)
Monthly Notices of Royal Astronomical Society **381**, pp. 1527–1542.

60. "How far are we from a Standard Model of the solar dynamo?"
A. R. Choudhuri (2008)
Advances in Space Research **41**, pp. 868–873.

61. "A theoretical model for the magnetic helicity of solar active regions"
P. Chatterjee, A. R. Choudhuri, K. Petrovay and D. Nandy (2008)
Advances in Space Research **41**, pp. 893–896.

62. "Prospects for predicting cycle 24"
A. R. Choudhuri (2008)
Journal of Astrophysics and Astronomy **29** (Proceedings of the International Conference on 'Challenges for Solar Cycle 24'), pp. 41–47.

63. "The hemispheric asymmetry of solar activity during the last centure and the solar dynamo"
A. Goel and A. R. Choudhuri (2009)
Research in Astronomy and Astrophysics **9**, pp. 115–126.

64. "Why does the Sun's torsional oscillation begin before the sunspot cycle?"
S. Chakraborty, A. R. Choudhuri and P. Chatterjee (2009)
Physical Review Letters **102**, 041102 (4 pp).
["Erratum" in *Physical Review Letters* **103**, 099902.]

65. "A possible explanation of the Maunder minimum from a flux transport dynamo model"
A. R. Choudhuri and B. B. Karak (2009)
Research in Astronomy and Astrophysics **9**, pp. 953–958.

66. "The Waldmeier effect and the flux transport solar dynamo"
B. B. Karak and A. R. Choudhuri (2011)
Monthly Notices of Royal Astronomical Society **410**, pp. 1503–1512.

67. "The origin of the solar magnetic cycle"
A. R. Choudhuri (2011)
Pramana **77** (Proceedings of the Chandrasekhar Centenary Conference), pp. 77–96.

68. "Origin of solar magnetism"
A. R. Choudhuri (2011)
In *The Physics of Sun and Star Spots (IAU Symposium 273)* (eds.: D. Choudhary and K. Strassmeier), pp. 28–36.

69. "A theoretical model of torsional oscillations from a flux transport dynamo model"
P. Chatterjee, S. Chakraborty and A. R. Choudhuri (2011)
In *The Physics of Sun and Star Spots (IAU Symposium 273)* (eds.: D. Choudhary and K. Strassmeier), pp. 366–368.

70. "Possible explanations of the Maunder minimum from a flux transport dynamo model"
B. B. Karak and A. R. Choudhuri (2011)
In *The Physics of Sun and Star Spots (IAU Symposium 273)* (eds.: D. Choudhary and K. Strassmeier), pp. 430–433.

71. "Back-reactions of dynamo-generated magnetic fields: torsional oscillations and variations in meridional circulation"
A. R. Choudhuri (2011)
In *Proceedings of the First Asia-Pacific Solar Physics Meeting* (eds.: A. R. Choudhuri and D. Banerjee), pp. 131–136.

72. "Solar physics in India: developments from the nineteenth century to the present era"
S. S. Hasan, A. R. Choudhuri and S. P. Rajaguru (2011)
In *Proceedings of the First Asia-Pacific Solar Physics Meeting* (eds.: A. R. Choudhuri and D. Banerjee), pp. 367–381.

73. "Quenching of meridional circulation in flux transport dynamo models"
B. B. Karak and A. R. Choudhuri (2012)
Solar Physics **278**, pp. 137–148.

74. "Dynamo models of grand minima"
A. R. Choudhuri (2012)
In *Comparative Magnetic Minima: Characterizing Quiet Times in the Sun and Stars (IAU Symposium 286)* (eds.: C. H. Mandrini and D. F. Webb), pp. 350–359.

75. "Is meridional circulation important in modelling irregularities of the solar cycle?"
B. B. Karak and A. R. Choudhuri (2012)
In *Comparative Magnetic Minima: Characterizing Quiet Times in the Sun and Stars (IAU Symposium 286)* (eds.: C. H. Mandrini and D. F. Webb), pp. 367–371.

76. "Origin of grand minima in sunspot cycles"
A. R. Choudhuri and B. B. Karak (2012)
Physical Review Letters **109**, 171103 (5 pp).

77. "Fluctuations in the alpha-effect and grand solar minima"
S. V. Olemskoy, A. R. Choudhuri and L. L. Kitchatinov (2013)
Astronomy Reports **57**, pp. 458–468.

78. "Can superflares occur on our Sun?"
K. Shibata, H. Isobe, A. Hillier, A. R. Choudhuri and 8 co-authors (2013)
Proceedings of the Astronomical Society of Japan **65**, Article No. 49 (8 pp).

79. "Flux-transport and mean-field dynamo theories of solar cycles"
A. R. Choudhuri (2013)
In *Solar and Astrophysical Dynamos and Magnetic Activity (IAU Symposium 294)* (eds.: A. G. Kosovichev, E. de Gouveia Dal Pino and Y. Yan), pp. 37–47.

80. "Modelling grand minima of solar activity using a flux transport dynamo model"
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81. "Studies of grand minima in sunspot cycles by using a flux transport solar dynamo model"
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92. "Starspots, stellar cycles and stellar flares: Lessons from solar dynamo models"

A. R. Choudhuri (2017)

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93. "A theoretical study of the build-up of the Sun's polar magnetic field by using a 3D kinematic dynamo model"

G. Hazra, A. R. Choudhuri and M. Miesch (2017)

Astrophysical Journal (in press).

Impact of my work:

My h index is 36 according to Google Scholar, 33 according to Astrophysics Data System (ADS) and 29 according to Web of Science.

The impact of my research can be gauged from my Google Scholar page:

https://scholar.google.com/citations?user=le7tcqQAAAAJhl=en

As of 10 December 2016, there are more than 4500 total citations to my work. Some of the most highly cited papers, with the number of citations, are:

Königl and Choudhuri (1985, ApJ 289, 188): 181 citations.

Choudhuri and Gilman (1987, ApJ 316, 788): 314 citations.

Choudhuri (1989, Sol. Phys. 123, 217): 145 citations.

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Choudhuri, Schüssler and Dikpati (1995, A&A 303, L29): 415 citations.

Nandy and Choudhuri (2002, Science 296, 1671): 182 citations.

Chatterjee, Nandy and Choudhuri (2004, A&A 427, 1019): 155 citations.

Choudhuri, Chatterjee and Jiang (2007, PRL 98, 131103): 209 citations.

Extracts from reviews of my book *The Physics of Fluids and Plasmas: An Introduction for Astrophysicists***:**

"I would not hesitate to recommend this book to anybody with an interest in fluids or plasmas . . . superbly written . . . (an) original textbook which should quickly become a bestseller."

—Prof. Uriel Frisch, Observatoire de Nice, France

"The text is unique . . . combining the essential formal calculations with the simple physical concepts to give the reader an intuitive grasp of the dynamical phenomena of the active astrophysical universe."

—Prof. E.N. Parker, University of Chicago, USA

"Here at last is an excellent textbook for a theoretical course, at graduate level, in plasma astrophysics."

—Prof. N.O. Weiss, FRS, University of Cambridge, UK

"The book is well written, covering quite a large number of topics in a clear and pleasant style which makes enjoyable reading The student who reads this book will successfully gain a very good understanding of many, often referred to, astrophysical topics."

—Prof. R. M. Kulsrud, Princeton University, in *Nuclear Fusion*

". . . it is rare to find a textbook that is such a pleasure to read."

—S.M. Tobias in *Journal of Fluid Mechanics*

"This is a delightful book . . . It is a pleasure to find such potentially messy subjects as plasma physics and hydrodynamics presented as a unified whole with the grand themes well brought out . . . A copy should be available on the bookshelves of every astrophysics research group."

—A.R. Bell in *Contemporary Physics*

"This is an excellent book. The author has that rare gift of being able to make a complex subject seem not only straightforward but also fascinating . . . an absolute bargain at the price."

—Moira Jardine in *The Observatory*

Extracts from reviews of my book *Astrophysics for Physicists*:

"To Choudhuri's credit, the book is overall fairly up to date in most areas. . . *Astrophysics for Physicists* represents a useful learning framework and theoretical reference tool for the newcomer and a quick reference for those working in related areas. Overall I rate it as a solid up-to-date text."

—Prof. George Smoot, Nobel laureate, University of California Berkeley, in *Physics Today*

"With transparent physical reasoning and beautifully clear writing throughout, this book should become the standard for advanced undergraduate courses, and recommended reading for beginning graduate students. An outstanding complement to Choudhuri's previous masterwork, *The Physics of Fluids and Plasmas*."

—Prof. M.C. Begelman, University of Colorado, Author of *Gravity's Fatal Attraction: Black Holes in the Universe*

"An outstanding textbook. Choudhuri provides a lucid treatment of key physical principles underlying various branches of modern astrophysics. This book should be required reading for any serious student or practitioner of physics. "

—Prof. Ramesh Narayan, Harvard University

"This book is distinguished by a winning combination of breadth and depth. It provides an exposition of the main topics of modern astrophysics, including subjects that have not been traditionally covered in textbooks of this kind."

—Prof. Arieh Königl, University of Chicago

"Choudhuri has succeeded admirably in writing a book that covers the basics of astrophysics as well as many of its most exciting areas of research. I highly recommend it not only for advanced undergraduate courses . . . but also as supplementary reading . . . for physicists who work in other areas."

—Peter W. Milonni, in *Contemporary Physics*

". . . this book . . . largely succeeds in its objective of synthesising the diverse topics of astrophysics that a physics student will find exciting. The book is very well-written."

—Prof. Rajat K. Bhaduri, McMaster University, Author of *Structure of the Nucleus*, in *Physics in Canada*

Extracts from reviews of my popular science book *Nature's Third Cycle: A Story of Sunspots***:**

"This delightful, most unusual book on the solar magnetic cycle, provides more than a glimpse behind the professional curtains of leading scientific research, as it is also a scientific autobiography, sharing the excitement of discovery, the dismay of not being understood and believed at first, scientific debate and rivalry among leading teams, and the joy of triumph having been proven right in forecasting the behaviour of the solar cycle. It is a most enjoyable book, which I wholeheartedly recommend."

—Lidia van Driel-Gesztelyi, President, Division E Sun and Heliosphere, International Astronomical Union

"This is a highly engaging and informative account of the fascinating discoveries that have been made about the nature of the Sun and its spots, enlivened by the often colourful characters who have striven to understand it, and woven together with the author's personal story which is honestly told and frequently moving."

—Stephen Blundell, University of Oxford

"Our Sun influences the climate and space environment of the Earth in profound ways. In his wonderful popular book on science, Choudhuri describes the history and current understanding of the sunspot cycle, and skilfully weaves in the tale of his own career with its hopes and fears, difficulties and joys."

—Eric Priest, St Andrews University

"The scientific detective work investigating the structure and activity of the Sun is a mystery story that should not be missed. *Nature's Third Cycle* is an outstanding account of the case, carrying the reader from the first discoveries through the numerous stages of the puzzle to the latest results on the magnetic cycle of activity."

—Eugene Parker, University of Chicago

"No astrophysical process other than the solar cycle has left massive footprints on our living environment. Arnab tells many stories about eminent astrophysicists, their personal lives and their ceaseless striving for new understanding and scientific truth. The tales about his supervisor, the giant Eugene Parker and his own scientific career are so vivid and engaging with his own style - frank, honest, enthusiastic and ready for scientific debate."

—Jingxiu Wang, National Astronomical Observatories, Chinese Academy of Sciences

"... makes compulsive reading. Arnab Rai Choudhuri has succeeded in producing an interesting and instructive book. He writes in an engaging style and his own personal tale will carry readers through the scientific details."

—Nigel Weiss, University of Cambridge

"I recommend this book to anyone who wishes to gain an insight into the physics behind the solar cycle . . . This is the best book I have read on this topic."

—Peter Meadows, British Astronomical Association

"The book [is] an excellent account — historical, scientific and autobiographical all at the same time — an account that is not only illuminating about the Third Cycle but also makes an extremely well-told story. And it gives young students, at the threshold of their scientific careers, a feel for the nature of the human enterprise called science."

—Roddam Narasimha, *Current Science*

"Easy to read but difficult to put away . . . interesting to a broad range of readers — from high-school students and curious amateurs to serious scholars and top-level professionals."

—Ilya Usoskin, *American Journal of Physics*

"The author's account of the historical development of sunspots science and solar-dynamo theory is first rate in terms of accuracy as well as the precision of the language used to describe difficult concepts verbally . . . Choudhuri is strong in his explanations of the basic physics behind the observed phenomena."

—Simon Mitton, *The Observatory*

"I strongly recommend *Nature's Third Cycle* to readers who are interested in learning about solar activity, its effects on Earth, and the history of the field. It includes technical details and references for delving deeper into a fascinating topic, yet it is easy and enjoyable to read."

—Irina Kitiashvili, *Physics Today*

"Choudhuri (Indian Institute of Science, Bangalore) provides a very readable mixture of the physics of sunspots and the history of understanding them . . . Undergraduates and general readers interested in the human understanding of the sun and how that understanding came about will find this book worthwhile and enjoyable reading. Recommended."

—*CHOICE*