




Faculty Details proforma for DU Web-site

Title	Prof.	First Name	T R	Last Name	Seshadri	Photograph
Designation		Professor				
Address		109 Vaishali Pitampura Delhi – 110 088				
Phone No Office						
Residence		011-27315329				
Mobile		9971954775				
Email		seshadri.tr@gmail.com				
Web-Page						
Educational Qualifications						
Degree		Institution			Year	
5 year integrated M.S (Physics)		Indian Institute of Technology, Delhi			1983	
Ph. D		Tata Institute of Fundamental Research, Mumbai			1989	
Career Profile						
Post Doctoral Experience:						
Institution		Position held		Name of the project		
Physical Research Laboratory		Research Associate June 1989- Oct 1990		Institute fellowship		
Astronomy Centre, University of Sussex, UK		Nehru Centenary Fellowship		Common Wealth		
Dept of Physics and Astrophysics, Univ of Delhi		Research Associate October 1990 - Oct 1992		CSIR RA		
Permanent Position Held:						
Institution		Position Held		Period		
Harish-Chandra Research Institute, Allahabad		Fellow (Faculty Position)		Nov 1992-Nov 1997		
Harish-Chandra Research Institute, Allahabad		Reader		Nov. 97 – Dec 2001		
Department of Physics and Astrophysics, University of Delhi, Delhi		Reader		Dec 2001 - Aug 2008		
Department of Physics and Astrophysics, University of Delhi, Delhi		Professor		Aug 2008 – till date		
Administrative Assignments						
Coordinator IUCAA Resource Centre, Delhi University Interim Governing Council of the University Health Centre						
Areas of Interest / Specialization						

Astrophysics and Cosmology.
Cosmic Microwave Background Radiation,
Large-scale Structures in the Universe,
Cosmic Reionization,
Late time Acceleration of the Universe.

Subjects Taught

Theory:

Classical Mechanics – M.Sc (Previous)
Quantum Mechanics-M.Sc (Previous)
Statistical Mechanics-M.Sc (Previous)
Astronomy and Astrophysics – I
General theory of relativity and Cosmology I
General Theory of Relativity and Cosmology II
Introductory Physics -M.Tech (Nanoscience and Nanotechnology)

Laboratory:

Waves and Optics – M.Sc (Previous)
Observational Astronomy M.Sc (final)
Computer Lab (Core)

Research Guidance

Research students: Completed: 6 Submitted 1 working presently: 4

Sr. No	Title of thesis	Date of Regd.	Status (awarded/ submitted/ ongoing)	Name of the student
1	A Theoretical Study of Dark Energy Parameters in Cosmology.	25/09/2003	Awarded (Nov 2009)	Sanil Unnikrishnan
2	Nature of Clustering of Large scale structures	25-09-2003	awarded	Jaswant Kumar
3	Study of Light Curves of Some Variable Stars	24-04-2006	Awarded (July, 2011)	Sukanta Deb
4	Cosmological models for accelerated expansion.	19.03.2008	Awarded.	Shruti Thakur
5	Probing Primordial Fields in the Universe	19-03- 2008	Awarded	Pranjal Trivedi
6	Cosmological magnetogenesis	27-10- 2009	Awarded	Kumar Atmjeet
7	Some aspects of cosmology in higher dimensions	27- 10- 2009	Awarded	Isha Pahwa
8	Cosmology and Astrophysics from Higher Dimensional theories	23-10- 2010	Submitted	Sampurnanand jha
9	Cosmic Reionization and its Observational Consequences	13-10-2011	ongoing	Bidisha Bandyopadhyay
10	Magnetic Fields and the Ionization History of the Universe	11-09-2014	ongoing	Ramkishor Sharma
11	Neutrino Interactions in Cosmology and Astrophysics	10-02-2015	ongoing	Rajni Sharma
12	Astrophysical Magnetic Fields	05-01-2016	ongoing	Sunil Malik

13	Nature and Origin of Cosmological Magnetic Fields	06.01.2016	ongoing	Sandhya Jagannathan
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Publications Profile

Refereed international Publications: 45 in Journals

Books: Vignettes in Cosmology (edited L. Sriramkumar and **T R Seshadri**) World Scientific

List of Papers publications (in reverse chronology)

1. Helical cosmological magnetic fields from extra-dimensions
(Kumar Atmjeet, Isha Pahwa, **T. R. Seshadri** and K. Subramanian)
Physical Review D91 (2015) 103006
2. Cosmological magnetogenesis from extra-dimensional Gauss-Bonnet gravity
(Kumar Atmjeet, Isha Pahwa, **T. R. Seshadri** and K. Subramanian)
Physical Review D89 (2014) 063002
3. Primordial magnetic field limits from the CMB trispectrum: Scalar modes and Planck constraints
(Pranjal Trivedi, K. Subramanian and **T R Seshadri**)
Physical Review D89 (2014) 043523
4. Thawing versus tracker behaviour: observational evidence
(Shruti Thakur, Akhilesh Nautiyal, Anjan A. Sen and **T. R. Seshadri**,)
Monthly Notices of the Royal Astronomical Society 227 (2012) 988
5. Cosmic Microwave Background Trispectrum and Primordial Magnetic Field Limits
(Pranjal Trivedi ; **T R Seshadri**, K. Subramanian)
Physical Review Letters, 108 (2012) 231301
6. Late-time acceleration in higher dimensional cosmology
(Isha Pahwa, Debajyoti Choudhury and **T R Seshadri**)
Journal of Cosmology and Astroparticle Physic , issue 9 (2011)
7. Non-minimally coupled $f(R)$ cosmology
(Shruti Thakur, Anjan A. Sen and **T R Seshadri**)
Physics Letters B, 696 (2011) 309
8. Primordial magnetic field limits from cosmic microwave background bis-spectrum of magnetic passive scalar modes
(Pranjal Trivedi, K. Subramanian and **T R Seshadri**)
Physical Review D82 (2010) 123006
9. A CCD photometric study of the late type contact binary EK Comae Berenices
(Sukanta Deb, Harinder P Singh, **T R Seshadri** and Ranjan Gupta)
New Astronomy, 15 (2010) 662

10. A CCD photometric study of the newly discovered contact binary ASAS 134738+0410.1 (Sukanta Deb, Harinder P Singh, **T R Seshadri** and Ranjan Gupta)
Bull. Astr. Soc. India, 38 (2010) 77

Conference Organization/ Presentations (in the last three years)

Conference Organized:

Cosmology Today: Present observational constraints on cosmological parameters, Wrokshop, IUCAA Resource Centre, University of Delhi, Jan 28th to Feb 1, 2013

Presentations and Talks delivered:

Probing the Universe with the Cosmic Microwave Background Radiation, ARIES, 26th June 2015

Density Perturbations in “Workshop on Cosmology with Large-scale Structures”, CTP, Jamia Millia Islamia, Jan 2015

CMB Polarization and the Bicep2 Results, Indian Institute of Space Science and Technology, Trivandrum, Kerala, 6th May 2014

CMP Polarization and the Bicep2, Physics Soceity, St Stephens College, 21st April 2014

Cosmological discoveries with the background radiation, NOESIS, Sri Venkateswara College, University of Delhi, 25th March 2015

Polarization of the CMB

March 16, 2014 Astronomical Society of India Meeting (ASI) Mohali, March 20-22, 2014

Cosmic Microwave Background Radiation, Physics Society, Kirori Mal College, University of Delhi, 10th February 2014

Structures in the Universe, Physics Society, Ramjas College, University of Delhi, 23rd January, 2014

Learning about the Universe through the Cosmic Microwave Background Radiation. *Physics Colloquium at IIT Kanpur, January 17, 2014*

Cosmology Today: Present observational constraints on cosmological parameters, Wrokshop, IUCAA Resource Centre, University of Delhi, Jan 28th to Feb 1, 2013

History of the Universe, Astronomy Week, Indian Institute of Technology, Delhi, 20th September, 2013

Nature and Evolution of Galaxies, The beginnings of the Universe, Vidyut, Miranda House, University of Delhi, 16th and 17th January 2013

Polarization of the CMB, School on Cosmology, BITS Pilani, 12 th November 2013.

Probing Primordial Magnetic Fields with Cosmic Microwave Background Radiation
IIT Madras, May 17, 2012

Physics of Expanding Universe : From the cosmic microwave background radiation, Refresher course,

University of Delhi, 1st October 2012

Probing Cosmic Magnetic Fields with CMBR

Cosmic Microwave Background Non Gaussianity as a probe of Primordial Magnetic Fields
Aspects of Cosmology, April 9 to 11, Indian Institute of Astrophysics, Bangalore

Late Time Acceleration of the Universe from Higher Dimensional Cosmological models,
IUCAA Associate Fest, Department of Phys and Astrophys, University of Delhi. 25-29 June, 2012

Physics of Expanding Universe and the Cosmic Microwave Background Radiation
Inter University Accelerator Centre (IUAC), New Delhi, May 15 2012

Physics of Stars, International Year of Astronomy,
Physics Society, Miranda House, Delhi University, 18th November 2009

CMB Non-Gaussianity from Cosmic Magnetic Fields,
Meeting of the Associates, IUCAA, Pune, 11th August 2011

CMB as a probe of Cosmic Magnetic fields,
Raman Research Institute (RRI), Bangalore, 29th July 2011.

Physics of Expanding Universe – and the Cosmic Microwave background, International year of
Astronomy, Physics Society, St Stephans College, 4th December 2009.

Physics of Stars,
School of Physical Sciences, Jawaharlal Nehru University (JNU) New Delhi, 20th October 2010

Brief History of the Universe
Physics Society, Hindu college, Delhi University, Jan 31, 2012,

Structure and evolution of stars,
Physics Society, Acharya Narendra Dev (AND), Delhi University, 17th August 2012,

Cosmic Accelerated Expansion in Higher Dimensional Cosmological models
Jayant@75 at Inter University Centre for Astronomy and Astrophysics (IUCAA), July 18, 2013 to celebrate the
75th birthday of Prof. Jayant Narlikar

Probing Cosmic Magnetic Fields Using Cosmi Microwave Background (CMB)
Indian Institute of Science, Bangaluru, Oct 4, 2011

CMB Non Gaussianity from Cosmic Magnetic Fields,

Indo UK meeting on confronting particle – cosmology with Planck and LHC, IUCAA, Pune, 12 th August 2011

Constraining Primordial Magnetic fields using Cosmic Microwave Background Radiation,
Indian Institute of Astrophysics (IIA), Bangalore, 19th November, 2012

Research Projects (Major Grants/Research Collaboration)

Sr. No.	Title of Project	Funding Agency	Status (completed)	Amount
1.	Cosmic microwave background radiation as a probe for large scale matter distribution and primordial magnetic fields in the universe	Department of Science and Technology (DST)	2005-2008	8 lacs
2.	Accelerated expansion of the Universe: Its origin and its observational consequences	Centre for Scientific and Industrial Research (CSIR)	Aug 2011- Jan 2015	9.28 Lacs sanctioned till now.

Programmes taken up involving inter-institutional collaboration: (Only travel support for students)

Collaborations: Inter University Centre for Astronomy and Astrophysics (IUCAA), Pune
Raman Research Institute (RRI), Bangalore.
Centre for theoretical Physics, (CTP), Jamia Milia Islamia

Awards and Distinctions

Visiting Associate of IUCAA, Pune from 2002

Association With Professional Bodies

Life Member:
Member of the Astronomy Society of India

