



## Research Experience

### Post Doctoral Researcher

THE OSKAR KLEIN CENTRE, STOCKHOLM UNIVERSITY

Stockholm, Sweden

May 2024 - Present

### Assistant Professor

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

Apr 2021 - Mar 2024

### Research Associate - I (6 months)

ARYABHATTA RESEARCH INSTITUTE OF OBSERVATIONAL SCIENCES (ARIES)

Nainital, India

Sep 2020 - Mar 2021

## List of References

1. **G.C. Anupama**, Senior Professor, Indian Institute of Astrophysics, Bengaluru ([gca@iiap.res.in](mailto:gca@iiap.res.in))
2. **Koji Kawabata**, Professor, Hiroshima University, Hiroshima ([kawabtkj@hiroshima-u.ac.jp](mailto:kawabtkj@hiroshima-u.ac.jp))
3. **D. K. Sahu**, Professor, Indian Institute of Astrophysics, Bengaluru ([dks@iiap.res.in](mailto:dks@iiap.res.in))

## Education

### Doctor of Philosophy (Ph.D.), Astronomy & Astrophysics

JOINT ASTRONOMY PROGRAMME, INDIAN INSTITUTE OF SCIENCE (IISc)

- Supervisor - Prof. G.C. Anupama
- Thesis Title - Observational studies of Core-Collapse Supernovae
- Coursework CGPA - 6.4/8

Bengaluru, India

Aug 2014 - Jun 2020

### Bachelor of Engineering (B.E.), Electronics & Communications Engineering

BIRLA INSTITUTE OF TECHNOLOGY (BIT)

- CGPA - 6.55/10

Ranchi, India

Jul 2009 - Jun 2013

### Higher Secondary Examination (12th)

GOVT. MODEL SENIOR SECONDARY SCHOOL

- All India Senior School Certificate Examination (AISSE) - Central Board of Secondary Education (CBSE)
- Secured 95.8%

Port Blair, India

2008-2009

### Secondary Examination (10th)

NAVY CHILDREN SCHOOL

- All India Secondary School Examination (AISSE) - Central Board of Secondary Education (CBSE)
- Secured 91.2%

Port Blair, India

2006-2007

## Teaching Experience

### English for Physics - FY 2021

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

Apr 2021 - Aug 2021

### English for Physics - FY 2022

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

Apr 2022 - Aug 2022

## English for Physics - FY 2023

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

Apr 2023 - Aug 2023

## English Seminar for Globalisation A - FY 2022

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

11 Nov 2022

## English Seminar for Globalisation A - FY 2023

HIROSHIMA ASTROPHYSICAL SCIENCE CENTER, HIROSHIMA UNIVERSITY

Hiroshima, Japan

19 Jun 2023

## Technical Knowledge

<b>Programming</b>	Python, LaTeX, C++
<b>Analysis Softwares</b>	IRAF, ds9, Astrometry, Astromatic Suite (SExtractor, SCAMP, Swarp, PSFEx), Mathematica
<b>Data Handled</b>	3.8m Seimei Telescope, 3.6m Devasthal Optical Telescope, 2m Himalayan Chandra Telescope, 1.5m Kanata Telescope, 0.7m GROWTH-India, Swift UVOT, AstroSat UVIT, 2MASS, GalEX, Spitzer, Pan-Starrs
<b>Platforms</b>	Linux, Windows
<b>Interests</b>	Machine Learning, Data Science

## Research Interests

1. Investigation of Core-Collapse Supernovae
2. Development of Data Reduction and Analysis Scripts/Pipelines
3. Estimating Volumetric Rates of Super Luminous Supernovae
4. Investigation of Host-Environments of Core-Collapse Supernovae
5. Search for EM counterpart to GW sources

## Mentoring Experience

<b>Ketan Sand</b>	Light Curves of Core-Collapse Supernovae - <b>(Summer Project Student - IIA)</b>
<b>Sreepriya V.</b>	Investigation of Low-Luminosity SN 2005cs - <b>(Visiting Student Research Program - IIA)</b>
<b>Kyle Tregoning</b>	Improving the expanding photosphere method - <b>(GROWTH Surf - University of Maryland and IIA)</b>
<b>Brian Malkan</b>	Optical Analysis of SN 2023ixf - <b>(Case Western University and Hiroshima University)</b>

## Lead Author Publications

<b>3) SN 2018hna: 1987A-like supernova with a signature of shock breakout</b>	<i>ApJL</i> , 882, L15
AVINASH SINGH, D.K. SAHU, G.C. ANUPAMA, BRAJESH KUMAR, HARSH KUMAR, MASAYUKI YAMANAKA ET AL. [25 AUTHORS]	Sep 2019
<b>2) Observational signatures of circumstellar interaction and <sup>56</sup>Ni-mixing in the Type II Supernova 2016gfy</b>	<i>ApJ</i> , 882, 68
AVINASH SINGH, BRAJESH KUMAR, TAKASHI MORIYA, D.K. SAHU, G.C. ANUPAMA, P.J. BROWN, J.E. ANDREWS, N. SMITH	Sep 2019
<b>1) ASASSN-14dq: A fast-declining type II-P Supernova in a low-luminosity host galaxy</b>	<i>MNRAS</i> , 480, 2475
AVINASH SINGH, S. SRIVASTAV, BRAJESH KUMAR, G.C. ANUPAMA, D.K. SAHU	Oct 2018

## 2nd-Author Publications

<b>6) SN 2018gj: A Short-plateau Type II Supernova with Persistent Blue-shifted H-alpha Emission</b>	<i>ApJ</i> , 954, 155
RISHABH SINGH TEJA, AVINASH SINGH, D.K. SAHU, G.C. ANUPAMA, BRAJESH KUMAR, TATSUYA NAKAOKA, KOJI S KAWABATA, MASAYUKI YAMANAKA, ALI TAKEY, MIHO KAWABATA	Sep 2023

## 5) Far-Ultraviolet to Near-Infrared Observations of SN 2023ixf: A high energy explosion engulfed in complex circumstellar material

ApJL, 954, L12

RISHABH SINGH TEJA, **AVINASH SINGH**, JUDHAJEET BASU, G.C. ANUPAMA, D.K. SAHU, ANIRBAN DUTTA, VISHWAJEET SWAIN, TATSUYA NAKAOKA, UTKARSH PATHAK, VARUN BHALERAO, SUDHANSHU BARWAY, HARSH KUMAR, NAYANA A.J., RYO IMAZAWA, BRAJESH KUMAR, KOJI S KAWABATA

Aug 2023

## 4) SN 2020jfo: A short plateau Type II supernova from a low mass progenitor

ApJ, 934, 307

RISHABH SINGH TEJA, **AVINASH SINGH**, D.K. SAHU, G.C. ANUPAMA, BRAJESH KUMAR, NAYANA A.J

May 2022

## 3) Optical monitoring of the Type Ib Supernova SN 2017iro

ApJ, 927, 61

BRAJESH KUMAR, **AVINASH SINGH**, D.K. SAHU, G.C. ANUPAMA

Mar 2022

## 2) SN 2017hpa: A carbon-rich type Ia supernova

MNRAS, 503, 896

ANIRBAN DUTTA, **AVINASH SINGH**, G.C. ANUPAMA, D.K. SAHU, BRAJESH KUMAR

Feb 2021

## 1) ASASSN-16fp (SN 2016coi): A transitional supernova between Type Ic and broad-lined Ic

MNRAS, 473, 3776

BRAJESH KUMAR, **AVINASH SINGH**, S. SRIVASTAV, D.K. SAHU, G.C. ANUPAMA

Jan 2018

# Co-Author Publications

## 17) Bridging between type IIb and Ib supernovae: SN IIb 2022crv with a very thin Hydrogen envelope

ApJ - Accepted

ANJASHA GANGOPADHYAY, KEIICHI MAEDA, **AVINASH SINGH** ET AL.

Sep 2023

## 16) GROWTH on S190426c II: GROWTH-India Telescope search for an optical counterpart with a custom image reduction and candidate vetting pipeline

MNRAS, 516, 4517

HARSH KUMAR ET AL. [38 AUTHORS INCLUDING **AVINASH SINGH**]

Nov 2022

## 15) India's First Robotic Eye for Time-domain Astrophysics: The GROWTH-India Telescope

AJ, 164, 90

HARSH KUMAR ET AL. [38 AUTHORS INCLUDING **AVINASH SINGH**]

Sep 2022

## 14) Photometric calibrations and characterization of the 4Kx4K CCD Imager, the first-light axial port instrument for the 3.6m DOT

JApA, 43, 27K

AMIT KUMAR, S.B. PANDEY, **AVINASH SINGH** ET AL.

Jun 2022

## 13) SN 2020sck: deflagration in a carbon-oxygen white dwarf

ApJ, 925, 217

ANIRBAN DUTTA ET AL. [10 AUTHORS INCLUDING **AVINASH SINGH**]

Feb 2022

## 12) Photometric, polarimetric, and spectroscopic studies of the luminous, slow-decaying Type Ib SN 2012au

MNRAS, 507, 1229

S.B. PANDEY ET AL. [18 AUTHORS INCLUDING **AVINASH SINGH**]

Oct 2021

## 11) Intermediate Luminosity Type Iax SN 2019muj With Narrow Absorption Lines: Long-Lasting Radiation From a Possible Bound Remnant Predicted by the Weak Deflagration Model

PASJ, 73, 1295K

MIHO KAWABATA, KEIICHI MAEDA, MASAYUKI YAMANAKA, TATSUYA NAKAOKA, KOJI S. KAWABATA, KENTARO AOKI, G.C. ANUPAMA, UMUT BURGAZ, ANIRBAN DUTTA, KEISUKE ISOGAI, MASARU KINO, NAOTO KOJIGUCHI, IIDA KOTA, BRAJESH KUMAR, DAISUKE KURODA, HIROYUKI MAEHARA, KAZUYA MATSUBAYASHI, KUMIKO MORIHANA, KATSUHIRO L. MURATA, TOMOHITO OHSHIMA, MASAOKI OTSUKA, D.K. SAHU, **AVINASH SINGH**, KOJI SUGITANI, JUN TAKAHASHI, AND KENGO TAKAGI

Jul 2021

## 10) SN 2020ank - a bright and fast-evolving H-deficient superluminous supernova

MNRAS, 502, 1678

AMIT KUMAR, BRAJESH KUMAR, S.B. PANDEY, D.K. SAHU, **AVINASH SINGH**, G.C. ANUPAMA, AMAR ARYAN, RAHUL GUPTA, ANIRBAN DUTTA, KUNTAL MISRA

Jan 2021

## 9) Kilonova Luminosity Function Constraints based on Zwicky Transient Facility Searches for 13 Neutron Star Mergers

MANSI KASLIWAL ET AL. [103 AUTHORS INCLUDING AVINASH SINGH]

ApJ, 905, 145

Dec 2020

## 8) Optical studies of two stripped envelope supernovae SN 2015ap (Type Ib) and SN 2016P (Type Ic)

ANJASHA GANGOPADHYAY ET AL. [17 AUTHORS INCLUDING AVINASH SINGH]

MNRAS, 497, 3770

Jul 2020

## 7) Discovery and rapid follow-up observations of the unusual Type II SN 2018ivc in NGC 1068

K.A. BOSTROEM ET AL. [47 AUTHORS INCLUDING AVINASH SINGH]

ApJ, 895, 31

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## 6) Flash ionization signatures in the Type Ibn supernova SN 2019uo

A. GANGOPADHYAY ET AL. [29 AUTHORS INCLUDING AVINASH SINGH]

ApJ, 889, 2

Feb 2020

## 5) GROWTH on GW190425: Searching thousands of square degrees to identify an optical or infrared counterpart to a binary neutron star merger with the Zwicky Transient Facility and Palomar Gattini IR

MICHAEL COUGHLIN ET AL. [80 AUTHORS INCLUDING AVINASH SINGH]

ApJL, 885, L19

Nov 2019

## 4) SN 2017gmr: An energetic Type II-P supernova with asymmetries

JENNIFER E. ANDREWS, DAVID J. SAND, STEFANO VALENTI, NATHAN SMITH, RAYA DASTIDAR, D.K. SAHU, KUNTAL MISRA, AVINASH SINGH, DAICHI HIRAMATSU [AND 68 OTHERS]

ApJ, 885, 43

Nov 2019

## 3) On the observational behaviour of the highly polarized Type IIn supernova SN 2017hcc

BRAJESH KUMAR, CHAKALI ESWARIAH, AVINASH SINGH, D.K. SAHU, G.C. ANUPAMA, K.S. KAWABATA, MASAYUKI YAMANAKA, IKKI OTSUBO, S.B. PANDEY, TATSUYA NAKAOKA, MIHO KAWABATA, AMAR ARYAN, HIROSHI AKITAYA

MNRAS, 488, 3089

Sep 2019

## 2) SN 2016B a.k.a ASASSN-16ab: a transitional type II supernova

RAYA DASTIDAR, KUNTAL MISRA, MRIDWEEKA SINGH, D. K. SAHU, A. PASTORELLO, ANJASHA GANGOPADHYAY, L. TOMASELLA, S. BENETTI, G. TERRERAN, PANKAJ SANWAL, BRIJESH KUMAR, AVINASH SINGH, BRAJESH KUMAR, G. C. ANUPAMA, S. B. PANDEY

MNRAS, 486, 2850

Jun 2019

## 1) The Fast, Luminous Ultraviolet Transient AT2018cow: Extreme Supernova, or Disruption of a Star by an Intermediate-Mass Black Hole?

DANIEL A. PERLEY, PAOLO A. MAZZALI, LIN YAN, S. BRADLEY CENKO, SUVI GEZARI, KIRSTY TAGGART, NADIA BLAGORODNOVA, CHRISTOFFER FREMLING, BRENNA MOCKLER, AVINASH SINGH, NOZOMU TOMINAGA, MASAOMI TANAKA [AND 53 OTHERS]

MNRAS, 484, 1031

Mar 2019

## Talks & Posters In Conferences

### Transient & Supernova Workshop 2023

AVINASH SINGH

Kagoshima, Japan

18-21 Dec, 2023

- Talk: SN 2023ixf: Probing the 2nd Nearest Core Collapse Event in the Millennium with a Multifaceted CSM Geometry

### The First Multi-Messenger Conference 2023

AVINASH SINGH

Gero, Japan

04-06 Dec, 2023

- Poster: SN 2023ixf: Probing the 2nd Nearest Core Collapse Event in the Millennium with a Multifaceted CSM Geometry

### SuperVirtual 2023

AVINASH SINGH

Online

08 Nov, 2023

- Talk: SN 2023ixf: Probing the 2nd Nearest Core Collapse Event in the Millennium with a Multifaceted CSM Geometry

### Astronomical Society of Japan Meeting - 2023

AVINASH SINGH

Nagoya, Japan

20-22 Sep, 2023

- Talk: SN 2022jli : Multi-peaked Type Ic SN

## Seimei Users Meeting 2023

AVINASH SINGH

- Talk: Photospheric phase evolution of SN 2023ixf

Kyoto, Japan

12-13 Sep, 2023

## India/Japan internal collaboration meeting on transients and supernovae

AVINASH SINGH

- Talk: Estimating Volumetric Rates of Transients

Hiroshima, Japan

20-27 Mar, 2023

## Exploring the Transients Workshop 2022

AVINASH SINGH

- Talk: SN 2022fzg: Type II-L Supernova with a Plateau in the Ultraviolet Light Curve

Tokyo, Japan

14-16 Dec 2022

## Chile-Japan Academic Forum

AVINASH SINGH

- Talk: Estimating Volumetric Rates of Transients using ZTF

Puerto Varas, Chile

28-30 Nov 2022

## Transient Workshop 2022, Japan

AVINASH SINGH

- Talk: Applications of Machine Learning in Astronomy

Takehara, Hiroshima, Japan

22-24 Nov 2022

## Supernova Workshop 2021, Japan

AVINASH SINGH

- Invited Talk : Investigation of Core-Collapse and Super-luminous SNe

Online

Dec 2021

## SuperVirtual 2021

AVINASH SINGH, BRAJESH KUMAR, KEIICHI MAEDA, MASAYUKI YAMANAKA, TATSUYA NAKAOKA, MIHO KAWABATA, KOJI

KAWABATA, D.K. SAHU, G.C. ANUPAMA, AMIT KUMAR

- Poster : SN 2018hna: 1987A-like SN

Online

Nov 2021

## 20 years of Himalayan Chandra Telescope (HCT), Indian Institute of Astrophysics

AVINASH SINGH

- Invited Talk : Follow-up of Core-Collapse Supernovae from HCT

Bengaluru, India

Sep 2020

## Astronomical Society of India (ASI-2020) Meeting, Indian Institute of Science and Research

SHRUTIKA TIWARI, N.K. CHAKRADHARI, D.K. SAHU, BRAJESH KUMAR, AVINASH SINGH, G.C. ANUPAMA

- Poster: ASASSN-16ex: An explosion similar to super-Chandrasekhar Type Ia Supernovae

Tirupati, India

Feb 2020

## Applications of Data Science in Astrophysics and Gravitational Wave Research, Indian Institute of Information Technology

ANIRBAN DUTTA, G.C. ANUPAMA, AVINASH SINGH, BRAJESH KUMAR, D.K. SAHU, VARUN BHALLERAO

- Poster: Photometric and Spectroscopic observations of Type-Ia Supernovae

Allahabad, India

Nov 2019

## Special Seminar, Hiroshima University

AVINASH SINGH

- Talk : Observational study of Type II SN 2016gfy

Hiroshima, Japan

Oct 2019

## Time Domain Astronomy Workshop, Tohoku University

AVINASH SINGH

- Invited Talk : Observational study of Type II supernovae

Sendai, Tohoku, Japan

Oct 2019

## Astronomical Society of India (ASI-2019) Meeting, CHRIST (Deemed to be University)

AVINASH SINGH

- Talk : Slow-declining Type II SN 2016gfy
- Poster: Optical monitoring of Type IIb SN 2017gkk [Brajesh Kumar, Avinash Singh et al.]

Bengaluru, India

Feb 2019

## Indo-French School 3 - Spectroscopy & Polarimetry, CRAL-Observatoire de Lyon & IUCAA

AVINASH SINGH, ATHIRA S.K., KAUSHAL SHARMA, SORABH CHHABRA, MRIDUSMITA B., FENCY

- Talk : Stellar Parameterization and Classification using Artificial Neural Networks (ANN)

Pune, India

Jul 2017

## Astronomical Society of India (ASI-2016) Meeting, Kashmir University

AVINASH SINGH, BRAJESH KUMAR, G.C. ANUPAMA, D.K. SAHU, SHUBHAM SRIVASTAV

- Poster: Optical observations of the Type IIP SN ASASSN-14dq

Srinagar, India

May 2016

## Schools & Workshops

## ZTF Summer School - MultiMessenger Astrophysics

Minnesota, USA

UNIVERSITY OF MINNESOTA

Jul. 2022

- The school covered hands-on experience and training in processing data from ZTF and other transient survey data using modern data science techniques such as Bayesian inference, time-series analysis, and machine learning.

## The 35th Jerusalem Winter School in Theoretical Physics: Physics of Astronomical Transients

Jerusalem, Israel

ISRAEL INSTITUTE OF ADVANCED STUDIES (IIAS)

Dec. 2017

- School covered general understanding of various transient events like GRBs, Supernovae, Novae, TDEs, etc.

## Indo-French School 3 - Spectroscopy & Polarimetry

Pune, India

CRAL-OBSERVATOIRE DE LYON & INTER-UNIVERSITY CENTRE FOR ASTRONOMY & ASTROPHYSICS (IUCAA)

Jul. 2017

- Project Work - 'Stellar Parameterization and Classification using Artificial Neural Networks (ANN)' (Guide - Dr. Kaushal Sharma, IUCAA)
- Learned basics of designing a spectrograph and a polarimeter

## Data Intensive Science (DIS) Workshop

Pune, India

INTER-UNIVERSITY CENTRE FOR ASTRONOMY & ASTROPHYSICS (IUCAA)

Feb. 2017

- Workshop covered programming using Python, data visualization, machine learning, deep learning techniques, and big data methods.

# Observational Proposals

## Observation of low-redshift supernovae (ToO proposal)

2m HCT, Hanle, India

2015 CYCLE1, 2016 CYCLE1, 2016 CYCLE2, 2016 CYCLE3, 2017 CYCLE1

- PI - Shubham Srivastav
- Co-PI - **Avinash Singh**, Brajesh Kumar, G.C. Anupama, D.K. Sahu

## Investigation of explosion site metallicity and CSM velocity of interacting transients.

2m HCT, Hanle, India

2016 CYCLE3

- PI - Brajesh Kumar
- Co-PI - Shubham Srivastav, **Avinash Singh**

## Observation of Supernovae in the Nebular phase

2m HCT, Hanle, India

2017 CYCLE2, 2017 CYCLE3, 2018 CYCLE1, 2018 CYCLE 2, 2018 CYCLE 3, 2019 CYCLE 1

- PI - **Avinash Singh**
- Co-PI - Shubham Srivastav, Brajesh Kumar, G.C. Anupama, D.K. Sahu

## Observation of low-redshift supernovae (ToO proposal)

2m HCT, Hanle, India

2017 CYCLE2, 2017 CYCLE3, 2018 CYCLE1, 2018 CYCLE 2, 2018 CYCLE 3, 2019 CYCLE 1, 2019 CYCLE 2, 2019 CYCLE 3

- PI - D.K. Sahu
- Co-PI - G.C. Anupama, **Avinash Singh**, Brajesh Kumar

## Investigation of local environments of CCSNe and GRB host galaxies

2m HCT, Hanle, India

2018 CYCLE3, 2019 CYCLE1, 2019 CYCLE2, 2019 CYCLE3

- PI - Brajesh Kumar
- Co-PI - **Avinash Singh**, G.C. Anupama, D.K. Sahu

## Late phase Investigation of Supernovae.

3.6m DOT, Devasthal, India

2020 CYCLE2, 2021 CYCLE1, 2021 CYCLE2, 2022 CYCLE 1, 2022 CYCLE 2

- PI - D.K. Sahu
- Co-PI - **Avinash Singh**, Brajesh Kumar, G.C. Anupama, Anirban Dutta, Rishabh Teja

## Investigating the observational properties of fast-evolving luminous transients

3.6m DOT, Devasthal, India

2021 CYCLE2, 2022 CYCLE 1, 2022 CYCLE 2

- PI - Brajesh Kumar
- Co-PI - **Avinash Singh**, D.K. Sahu, G.C. Anupama, Anirban Dutta, Rishabh Teja

## Follow-up Observations of Supernovae and Explosive Stellar Transients

3.8m Seimei Telescope, Okayama,  
Japan

2022B, 2023A

- PI - Keiichi Maeda
- Co-PI - **Avinash Singh**, Masaomi Tanaka, Masayuki Yamanaka, Tatsuya Nakaoka, Koji Kawabata, Nozomu Tominaga, Anjasha Gangopadhyay, Jiang Jian, Miho Kawabata, Kenta Taguchi, Tomoki Morokuma

## Spectroscopic Follow-up for Rapid Transients Discovered by Tomo-e-Gozen High-Cadence Transient Survey

3.8m Seimei Telescope, Okayama, Japan

2022B, 2023A

- PI - Tomoki Morukuma
- Co-PI - Keiichi Maeda, Avinash Singh, Masaomi Tanaka, Masayuki Yamanaka, Tatsuya Nakaoka, Koji Kawabata, Nozomu Tominaga, Anjasha Gangopadhyay, Jiang Jian, Miho Kawabata, Kenta Taguchi

## Estimating Metallicities of Host Environments of Core-Collapse Supernovae

3.8m Seimei Telescope, Okayama, Japan

2022B, 2023A

- PI - Masayuki Yamanaka
- Co-PI - Avinash Singh, Anjasha Gangopadhyay, Keiichi Maeda, Masayuki Yamanaka, Tatsuya Nakaoka, Koji Kawabata, Miho Kawabata, Kenta Taguchi

## Investigating the Host Environments of 1987A-like Type II Supernovae arising from Blue Supergiants

8.2 m Very Large Telescope, Paranal - MUSE

P112

- PI - Avinash Singh
- Co-PI - Joseph Anderson, Rishabh Singh Teja, Timo Kravtsov, Luc Dessart, Joseph Lyman, Lluís Galbany, Hanindyo Kuncarayakti

## Extracurricular Activity / Outreach

### Let's Talk Astronomy - Community Outreach during COVID-19 Lockdown

Online

MEMBER

Apr 2020 - Jul 2020

- An astronomy outreach program conducting free online interactive sessions for school and college during COVID-19 lockdown
- The sessions were organized to give the students an overview of research in astronomy and explore the scientific and engineering challenges.
- We also discussed how to pursue research in astronomy and followed it up with a question-answer session.

### Indian Institute of Astrophysics - Outreach Committee

IIA Bengaluru, India

VOLUNTEER

Aug 2015 - Present

- Spread awareness on research in Astronomy
- Conducting outreach in various schools (mostly government schools)
- Explaining usage of science in daily life with experiments and connecting them to astronomy

### IIT Kharagpur - Kshitij-2011 Robotics Competition

IIT Kharagpur, India

PART OF A 4-MEMBER TEAM

Jan 2011

- Designed a manually controlled robot (water raft) that could retrieve objects from a flood-affected area (platforms) and bring them to safety
- Progressed till the 2nd stage of the competition

## Honors & Awards

2009	<b>State Rank 1 (Secured 95.8%) in CBSE Board Examinations(12th)</b> , Awarded by the Lieutenant Governor of Andaman and Nicobar	Port Blair, India
2009	<b>Certificate of Merit by CBSE (12th)</b> , Secured 100% in Mathematics in CBSE Exams	Port Blair, India
2008	<b>1st Prize</b> , NCERT State Level Science Quiz Competition	Port Blair, India
2008	<b>NTSE Scholar</b> , National Talent Search Examination (NTSE)	Port Blair, India
2007	<b>Certificate of Merit by CBSE (10th)</b> , Secured 100% in Mathematics in CBSE Exams	Port Blair, India

## Additional Courses

Aug 2015	<b>An Introduction To Interactive Programming In Python - Part 2</b> , Rice University	Coursera
Jul 2015	<b>An Introduction to Interactive Programming in Python - Part 1</b> , Rice University	Coursera
Mar 2014	<b>Analysing the Universe</b> , Rutgers University	Coursera
Jan 2014	<b>Classical Mechanics</b> , Massachusetts Institute of Technology	edX
Dec 2013	<b>Electricity and Magnetism</b> , Rice University	edX
Nov 2013	<b>Calculus Two: Sequences &amp; Series</b> , Ohio State University	Coursera
Oct 2013	<b>Physics 1 for Physics Majors</b> , University of Colorado Boulder	Coursera
Oct 2013	<b>Astronomy: Discovering the Universe</b> , Curtin University	Open2Study
Oct 2013	<b>From the Big Bang to Dark Energy</b> , University of Tokyo	Coursera
Sep 2013	<b>Astronomy: State of the Art</b> , University of Arizona	Udemy
Mar 2013	<b>Astrobiology and the search for Extraterrestrial life</b> , University of Edinburgh	Coursera
Jan 2013	<b>Introduction to Astronomy</b> , Duke University	Coursera

## UnderGraduate Project

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### Analysing capacity improvements In wireless networks with the help of relays

*BIT, Mesra, Ranchi*

AVINASH SINGH, SHRADDHEYA PATHAK, GAURAV VATYANI

- Comparison of different path loss models in different human settlements: Urban, Suburban, Rural
- Goodput and path loss analysis for fixed node relay networks

## Other Interests

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**Hobbies** Astrophotography, Photography, Trekking, Birding

**Sports** Badminton, Table Tennis, Snooker, Volleyball, Football