# Akshaya Subbanna M S

Postdoctoral Research Associate
Korea Astronomy and Space Science Institute (KASI)
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## EMPLOYMENT

**Postdoctoral Research Associate** Dec 2021 – Present
**Korea Astronomy and Space Science Institute**
*Advisor:* Dr. Thiem Hoang
*Project Description:* Understanding the dust grain alignment physics and estimation of the magnetic field strength for the Galactic centre region.

**Teaching Assistant** 2018 - 2020
**CHRIST (Deemed to be University), Bengaluru, India**
- ✓ Undergraduate and Postgraduate Physics and Astronomy Laboratory Instructor
- ✓ Python and IDL programming instructor

**Adjunct Faculty** 2017-2018
**CHRIST (Deemed to be University), Bengaluru, India**
- ✓ Postgraduate Galactic Astronomy Course

**Research Assistant** 2014-2017
**CHRIST (Deemed to be University), Bengaluru, India**
***Project:*** The Characterization and Modeling of the Ultraviolet Sky
***PI:*** Dr. Ravichandran. S, CHRIST (Deemed to be University), Bengaluru, India
***Co-PI:*** Prof. Jayant Murthy, Indian Institute of Astrophysics, Bengaluru, India.
***Responsibilities:***
- ✓ Project budget handling
- ✓ Progress and final report submissions
- ✓ Conference presentations
- ✓ Handled Astronomy and Astrophysics elective course
- ✓ Build scientific cases for external funding projects with the PIs

## EDUCATION

**Ph.D. in Physics** 2021
**CHRIST (Deemed to be University), Bengaluru, India**
*Thesis:* Study of the Diffuse Ultraviolet Background Radiation at High Galactic Latitudes
*Advisors:* Dr. Ravichandran. S (CHRIST) & Prof. Jayant Murthy (Indian Institute of Astrophysics)

**Master of Science in Physics** 2014
**CHRIST (Deemed to be University), Bengaluru, India**
- ✓ *CGPA*: 3.96/4.0
- ✓ *FIRST RANK for the University*
- ✓ *Thesis:* Study of the Diffuse Ultraviolet Background using GALEX data
  *Advisor:* Prof. Jayant Murthy (Indian Institute of Astrophysics)

**Bachelor of Science** 2012
**Jain University, Bengaluru, India**
- ✓ *CGPA*: 4.682/5
- ✓ *FIRST RANK and GOLD MEDALIST*
- ✓ Triple major in Physics, Chemistry, and Mathematics

## AWARDS

- ✓ Ministry of Human Resource Development Scholarship — 2009–2014
- ✓ Christ University Academic Excellence Scholarship — 2014
- ✓ Karnataka Science and Technology Scholarship — 2012–2014

## OBSERVING PROPOSALS

**UVIT aboard ASTROSAT**

**Far-Ultraviolet Galactic Plane Survey (FUV-GPS)** — Cycle A12

- ✓ *Role:* Co-I (PI: Rahna P.T.; Co-Is: J. Murthy, M. Das, & K. -I. Seon)
- ✓ *PID:* #A12_088 & #A12_089 (June 2022)

**Diffuse Ultraviolet Radiation in the Regions of Low Column Density** — Cycle A05

- ✓ *Role:* PI (Co-Is: J. Murthy & Ravichandran S.)
- ✓ *PID:* #A05_156 (March 2019)

## CONFERENCE PRESENTATIONS

- *Dynamics of the Galactic Centre and its Magnetic Field* — Nov 2023
  Dust Polarimetry and Applications in Astrophysics, Vietnam
- *Magnetic Field at the Galactic Centre from Multi-wavelength Polarization* — Oct 2023
  Korea Astronomical Society Fall Meeting
- *Dynamics of the Galactic Centre and its Magnetic Field (Invited, Online)* — Oct 2023
  CHRIST (Deemed to be University), India
- *Dust Grain Alignment and Disruption from Thermal Dust Polarization* — Aug 2023
  APRIM 2023, Japan
- *Grain Alignment and Magnetic Field at the Galactic Centre from Polarized Dust Emission* — Jun 2023
  SOFIA Tele-Talk Series, Online
- *Grain Alignment and Magnetic Field at the Galactic Centre* — May 2023
  Mid-West Magnetic Field Meeting 2023, Online
- *Alignment and Disruption of Dust Grains at the Galactic Centre* — Apr 2023
  Korea Astronomical Society Spring Meeting
- *Magnetic field at the Galactic Centre from Infrared Polarization* — Jul 2022
  SAGI Astrophysics Workshop, Vietnam
- *Dust scattering and molecular hydrogen at the Galactic Pole* — Oct 2019
  International Conference on Infrared Astronomy and Astrophysical Dust, India
- *Components of the diffuse ultraviolet background radiation* — Feb 2019
  37th Meeting of Astronomical Society of India
- *Diffuse radiation at the Galactic poles* — Sep 2018
  Young Astronomers' Meet, India
- *Modeling the diffuse radiation towards Galactic cirrus cloud G251.2+73.5* — Mar 2017
  35th Meeting of Astronomical Society of India
- *Study of the distribution and properties of interstellar dus* — Jul 2016
  Astronomy Research: Opportunities and Challenges workshop, India
- *Modelling of the dust scattered halos observed around bright star* — May 2016
  34th Meeting of Astronomical Society of India

## PROFESSIONAL SERVICES

**37th Meeting of the Astronomical Society of India** Feb 2019
- Local Organizing Committee member for the meeting held at CHRIST (Deemed to be University) with about 300 participants from all over India

**Young Astronomers' Meet** Sep 2018
- Scientific Organizing Committee member for the meeting held at Physical Research Laboratory, India

**Multi-wavelength observations using ASTROSAT** Dec 2017
- Local Organizing Committee member for the workshop held at CHRIST (Deemed to be University) with about 35 participants from all over India

**Stellar Astrophysics Workshop** Feb 2017
- Local Organizing Committee member for the event held at CHRIST (Deemed to be University) with about 50 participants from all over India

## SKILLS

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|---|---|
| **Programming** | IDL, Python, C, MATLAB, HTML, CSS |
| **Softwares & Tools** | IRAF, Topcat, SAOImageDS9, VisIt, Paraview, CASA, CARTA, LaTeX |
| **Datasets** | Galex, IRAS, Planck, SOFIA/HAWC+, JCMT/SCUPOL/HARP/POL2, ALMA, Herschel, Pan-STARRS1 |
| **Operating Systems** | Windows, Linux, Mac OS X |
| **Models** | 3D Radiative Transfer, Polarized Radiation Simulator (POLARIS), Magnetohydrodynamical Simulations postprocessing (Athena) |

## PUBLICATIONS

### Journal Articles

4. *Magnetic Field at the Galactic Centre from Multi-Wavelength Dust Polarization*, **Akshaya M. S.**, and Hoang T., **MNRAS**, 2024, 531, 5012.
3. *Alignment and rotational disruption of dust grains in the Galactic Centre revealed by polarized dust emission*, **Akshaya M. S.** and Hoang T., **MNRAS**, 2023, 522, 4196.
2. *Components of the Diffuse Ultraviolet Radiation at High Latitudes*, **Akshaya M. S.**, Murthy J., Ravichandran S., Henry R. C., and Overduin J., **MNRAS**, 2019, 489, 1120.
1. *The Diffuse Radiation Field at High Galactic Latitudes*, **Akshaya M. S.**, Murthy J., Ravichandran S., Henry R. C., and Overduin J., **ApJ**, 2018, 858, 101.

### Preprint

- *The Diffuse Ultraviolet and Optical Background: Status and Future Prospects*, Murthy J., **Akshaya M. S.**, and Ravichandran S., **arXiv:1909.05325**, 2019.

### Papers in Preparation

2. *Synthertic Polarization of the Central Molecular Zone using POLARIS*, **Akshaya M. S** and Hoang T.
1. *Dependence of an Unidentified Component of the Diffuse Ultraviolet Background on Galactic Coordinates*, **Akshaya M. S.**, Overduin J., Murthy J., Ravichandran S., and Henry R. C.

## REFERENCES

**Prof. Jayant Murthy**
jmurthy@yahoo.com
Senior Professor
Indian Institute of Astrophysics

**Dr. Ravichandran S**
ravichandran.s@christuniversity.in
Associate Professor
CHRIST (Deemed to be University)
Bengaluru, India

**Dr. Thiem Hoang**
thiemhoang@kasi.re.kr
Principal Researcher
Korea Astronomy and Space Science Institute