# **Asad Arshad**

Astrophysicist & Programmer

## **About me**

An inquisitive, ambitious and creative student, with a passion of learning, always seeking new ways to understand the cosmos, while experiencing and enjoying the world of science, research and technology, as well as have fun.

## Personal

Gender: Male Nationality: Pakistani circa 2002 AD

## Areas of specialization

 Astrophysics · Scientific Research Exoplanetary Science · GIS & Remote Sensing Programming · Scientific & Fictional Writing

### Interests

Reading, Writing, Programming, Cycling and Listening to the Music during all these.

## **Application Softwares**

- Jupyter Notebooks
- · Visual Studio Code
  - FITS Liberator
  - · Microsoft Office
- · ArcGIS Pro & Desktop
- QGIS
- · Google Earth Engine & Google Earth Pro Stellarium

## On Going Projects

2025-Pre

## Down the Black Hole: A wobbly web experience

LEAD · HTML, CSS, JS 💡

As for my Bachelors final year project, I along with a friend, are currently designing a webpage that will contain information, articles, current research, illustrations from across the web, links as well as basic help to navigate data regrading BHs from sources like NASA and the things we learn as we venture in this rabbit hole.



## PAST WORK

#### 2024 Studying the effects of ENSO on Moonsoon in Pakistan

THOUGHT LEADER · Google Earth Engine ?

Our aim was to use EE datasets to calculate Oceanic Nino Index (ONI) and Standarized Precepitation Index (SPI) to see how the rainfall in moonsoon season in Punjab, Pakistan is effected by El Nino and La Nina.



#### 2024 QSOs Spectra and Virial BH masses on SDSS

Solo · SciServer 9

In this little side project, I explored the vast dataset on Spectra of QSOs through python as well as performed some stats on the BH mass dataset from Vizier.



#### Exoplanets around "TRAPPIST-1" through "KEPLER" 2023

LEAD · FITS Liberator & MAST 9

Analysing the Light curves of "TRAPPIST-1" that we made using the "Transit data" from Kepler Mission and K2 and studied the orientation and general planetary parametes of the planets in TRAPPIST system.



#### 2023 Satellite Orbits and Ground Track using "Keplerian Elements

Solo · Python & VS code 💡

We used the keplerian elements information on Satellites like Landsat and wrote a python script that calculated the path of satellite and animated the plot as well as it's ground track on a longitude and latitude axes with labels.

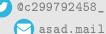


and many many more relating to orbital mechanics and mostly in GIS, Remote Sensing and Maps.

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## Positions Held

2024 Summer Internship at PMD HQ Islamabad

2024 Dr. Khalid's assistant in SARNET course

## Programs

ONI using OISST v2.1 dataset, 2024 Google Earth Engine.

2024 Orbits & Keplerian Elements in Python, Google Colab.

## LANGUAGES

Urdu English

C2 C2

mother tonque

## Writings

Aug. 2021

"Would like an you Omelete?