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

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My Portfolio

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
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**.

2023

Exoplanets around "TRAPPIST-1" through "KEPLER"
Lead · FITS Liberator & MAST
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.

Positions Held

2024 Summer Internship at *PMD, HQ, Islamabad*
2024 Dr. Khalid's assistant in *SARNET* course

Programs

2024 *ONI using OISST v2.1 dataset*, Google Earth Engine.
2024 *Orbits & Keplerian Elements in Python*, Google Colab.

Languages

Urdu	C2	mother tongue
English	C2	● ● ● ● ○

Writings

Aug. 2021 "Would you like an Omelete?".