Yonatan Sklansky | University of Pennsylvania

yonny@sas.upenn.edu
484-983-1945

4th year, major in physics with astrophysics concentration   410 Bella Cir, Doylestown, PA 18901

Selected Coursework

Cumulative GPA: 3.65 (without 7th semester)   **In-major GPA:** 3.68

- ASTR-250   Astronomical Techniques
- PHYS-533   Modern Topics in Cosmology
- PHYS-531   Advanced Quantum Mechanics
- PHYS-516   Electromagnetic Phenomena
- PHYS-505   Cosmology
- PHYS-503   General Relativity
- PHYS-500   Math Methods of Physics
- PHYS-414   Lab in Modern Physics
- PHYS-412   Intro to Quantum Mechanics II
- PHYS-411   Intro to Quantum Mechanics I
- PHYS-401   Thermodynamics
- PHYS-362   Electromagnetism II
- PHYS-361   Electromagnetism I

Skills

- Advanced use of Python, Julia, and LaTeX, moderate use of HTML and Java, some experience in OCaml and C++
- Used computing clusters through both JupyterLab and SLURM
- Experience with machine learning libraries such as PyTorch
- Astronomical image analysis using SAOImageDS9

Experiences

4th Information Universe Conference- Groningen, Netherlands   2022

Research- University of Groningen/University of Edinburgh   2022-present
- Computationally extended 2-dimensional N-body caustic solution to 3 dimensions in python
- Currently working with Rien van de Weygaert and Job Feldbrugge on caustic analysis of cosmological simulations
- Developing caustics python package and writing paper on topological features of caustics

10-Week Theoretical Physics Summer Program- Perimeter Institute for Theoretical Physics   2022
- Took classes on quantum information, path integrals, symmetries, and numerical methods
- Final project on gravitational waves emitted from a triple black hole system

Junior Year Research and Senior Thesis- University of Pennsylvania   2021-present
- Studying large scale structure and cosmic void distributions and shapes using persistent homology
- Working with IllustrisTNG-300 simulation in Python and Julia
- Authoring and aiming to publish paper with UPenn professor Ravi K. Sheth

Teaching Assistant   2021-present
- Conducting "Peer-Led Team-Learning" sessions for introductory mechanics and electromagnetism classes
- Led introductory physics labs

Science Olympiad at UPenn and other universities   2019-present
- Wrote 10+ astronomy and circuit lab exams for high school students at all levels of competition.

High School Science Olympiad   2016-2019
- Top 20 team in the nation; over 70 individual medals from competitions including a 4th place national medal
- Astronomy, Optics, Remote Sensing, Circuit Lab, Fermi Questions

USA Astronomy and Astrophysics Organization competition   2017-2019
- Qualified for final round exam and then scored in the top 25%

Pennsylvania Governor's School for the Sciences at Carnegie Mellon   2018