

# Shah Ali Haider Shanto

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## RESEARCH INTEREST

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I am deeply interested in research involving energy and environmental sustainability with a focus on energy generation and storage, biofuel, renewable energy, and sustainable material research.

## EDUCATION - GPA 3.65 - *Cum Laude*

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### **Stony Brook University**

Stony Brook, NY

*Bachelor of Science in Physics*

*August 2018 - May 2022*

*Bachelor of Science in Astronomy and Planetary Sciences*

*August 2018 - May 2022*

## RESEARCH EXPERIENCE

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### **Undergraduate Research**

Summer 2021

*Exploring The Tremaine Weinberg Method to Determine The Density Wave Pattern Speed of the M83*

*Stony Brook University, Dr. Jin Koda*

- Generated density and iso-contour velocity plots using stellar and gas simulation data
- Compared the plots with CO emissions of the galaxy.
- Used the Tremaine Weinberg Method to determine the Density Wave pattern speed of the galaxy.

## PRESENTATIONS

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*'There Is Still Hope ?'- Presentation on Trappist-1 System*

Fall 2021

*Stony Brook University, NY*

## RELEVANT COURSEWORK

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PARTICLE PHYSICS

SPRING 2022

COSMOLOGY

FALL 2021

GALAXIES

SPRING 2021

QUANTUM MECHANICS

SPRING 2021

THERMODYNAMICS

SPRING 2021

ELECTROMAGNETISM

FALL 2020

## TECHNICAL SKILLS

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**Languages:** Python/Jupyter, Fortran, C/C++, Matlab, Mathematica, Html5, CSS, Javascript

**Operating Systems:** macOS, Windows, LINUX

**Software:** Latex, DS9/IRAF, Git

**Observing:** Performed Photometry and Spectroscopy using Mount Stony Brook Observatory's 14-inch telescope

## PROFESSIONAL MEMBERSHIP

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Sigma Pi Sigma | American Honor Society for Physics & Astronomy

Society of Physics Students (SPS)

American Astronomical Society (AAS)

## WORK EXPERIENCE

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### Physics Lab Assistant

August 2020-May 2022

*Physics Department, Stony Brook University*

- Manage upper-division physics labs, especially during off-hours of supervisor
- Set up and dismantle lab equipment.
- Distribute extra equipment to graduate teaching assistants and help them with any extra information regarding the experiment or equipment.
- Sort lab equipment and report broken apparatus.
- Fix broken/faulty equipment.

### Social Media Intern

August 2020-December 2020

*Stony Brook University*

- Make posters and illustrations for the official Stony Brook University Instagram account.
- Research on latest Social Media additions such as Twitter Fleets, Instagram Reels and Tiktok FYP, etc
- Attend events around campus and take photos to post on social media.

### Business Intern

Summer 2019

*Ultra Washing and Dyeing Ltd*

- Co-managed around 200 employees in the washing and dyeing industry.
- Make a website for the industry
- Sort an algorithm to maximize profit from minimal resources.

## OUTREACH

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### **Photojournalism**

March 2020 - May 2022

*SBU STATESMEN*

- Take photo pitches for Stony Brook University's Official Newspaper
- One of my most prestigious photographs can be found in this article:  
<https://www.sbstatesman.com/2021/04/06/students-can-schedule-appointment-for-johnson-johnson-covid-19-vaccine/>

## EXTRACURRICULAR ACTIVITIES

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### **Hiking**

*SBU ENVIRONMENT CLUB*

- Go on weekly hikes on local national parks and beaches.
- Participate in clean-ups.

### **Disaster Housing Construction**

*ASBO / SBP USA*

- Help build houses that were destroyed by Hurricane Harvey in Houston, Texas.
- Learned to use power tools such as electrical saw, hole digger, drills etc.

## OTHER INFORMATION

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LinkedIn : <https://www.linkedin.com/in/shah-ali-haider-shanto-6892a6203/>