SOCIETY OF PHYSICS STUDENTS
An organization of the American Institute of Physics

Marsh W. White Award Proposal

Project Proposal Title	DIY Celestial Observation
Name of School	Saint Joseph's University
SPS Chapter Number	6186
Total Amount Requested	600$

Abstract

The Saint Joseph's University SPS chapter will host an Astronomy Night where community members, K–12 students, and teachers can observe celestial objects, build simple telescopes, and learn the physics of optical instruments. This interactive event makes astronomy accessible and sparks curiosity for learners of all backgrounds.

Proposal Statement

Overview of Proposed Project/Activity/Event

The project will consist of inviting people from and around Saint Joseph's university for an astronomy night where participants will learn about the physics of how telescopes work. After a short lecture, the participants will be split into groups where they will construct their own telescopes followed by a brief troubleshooting/testing period. Then they will be invited outside to use university telescopes, and self-constructed telescopes to look at the sky on a clear night and observe planetary objects. SPS members will teach them how to operate the different telescopes and guide them to see different celestial objects in the night sky. There will also be challenges given for participants to identify and find different celestial objects. The project aims to engage community members in having a deeper understanding of astronomy. We hope to inspire younger members to get interested in astronomy and the physics of the tools behind it. We hope to offer a fun time for community members who don't have access to powerful telescopes. The event will be targeted at students at Saint Joseoph's University and students, and teachers and parents of a nearby middle/elementary school, as well as graduates from the Physics Wonder Girls camp. The inspiration behind this project is from basic astronomy nights that our chapter hosts for Saint Joseph's University, and from learning about outreach events from the recent SPS national meeting Outreach Workshop that was attended by some of our chapter's members. Our chapter is in a good position to host this event because we often host astronomy nights and are experienced at using telescopes.

How Proposed Activity Promotes Interest in Physics

This project is highly appropriate for a Marsh White Award because astronomy naturally excites curiosity without requiring advanced physics knowledge. Observing the night sky and building simple telescopes provide an accessible entry point for students and community members who may have no prior exposure to physics. Challenges and games will be issued to further engage interest. By combining hands-on telescope construction with real astronomical observations and a clear explanation of how telescopes work, the event makes physics approachable, interactive, and enjoyable. This directly supports the award's mission to promote interest in physics among the general public by engaging participants through wonder, exploration, and practical physics applications.

Plan for Carrying Out Proposed Project/Activity/Event

Personnel- Christian Ottesen will be running the event and notifying community members of the Event. The progress will be monitored by the 2026 SPS president, who will be determined in December 2025.

Marketing- The event will be marketed by putting up flyers around Saint Joseph's University campus. There will also be Instagram posts on the SPS Instagram page. We will also contact local STEM teachers to participate in the event. Graduates of the Physics Wonder Girls camp will be notified and invited to the event. We will also advertise in local areas such as libraries and community centers. The event will also be listed on the university calendar. The neighboring middle/elementary school will also be notified of the event. There will also be an online registration link for the event so we can gauge how many participants will be present. We hope to have around 50 participants.

SPS Participation- There will be at least 5 SPS members helping with the event with various roles, such as monitoring the assembly of the telescopes, helping participants operate the telescopes, and giving a lecture on the physics of the telescopes. An SPS member will also have the role of taking photographs of the event. We will also ask Saint Joseph University astronomy faculty to help with the event.

Expertise- Jack Schaivo (junior physics major) and Colin Carry (senior physics major) have experience using university telescopes and have hosted SPS astronomy nights in the past. We will also be requesting help from astronomy professors to help educate on the topic of astronomy. There will be a training session prior to the event for other SPS members participating to teach them how to operate the university telescopes and assembled telescopes.

Project/Activity/Event Timeline

- Supplies for the event must be ordered before February 10 to ensure a timely arrival
- By the end of March, a room/location will be booked for the event and approval from the University will be acquired for an outdoor space to set up the telescopes. The neighboring middle/elementary school will also be contacted by this date
- By April 1st, advertising the event will begin, hanging flyers and
- Throughout the week of April 7-11, materials will be organized and prepared for the event and presenters will prepare their presentation.
- Between April 15-17, presenters will give presentations to volunteers for the event and prepare everyone to teach others about the assembly, operation and physics of telescopes.
- "DIY Celestial Observation" event Tuesday April 21st 7:30 p.m. – 9:00 p.m. (a backup date will also be scheduled depending on weather)

Activity Evaluation Plan

1. Attendance and Participation Records
We will keep accurate records of the number of attendees, including students, faculty, and community members. Participation in the different components of the event—telescope observations, telescope-building kits, and the optics lecture—will also be documented. These numbers will help us gauge the event's reach and identify which activities attract the most engagement.
2. Participant Surveys
A brief, optional survey will be distributed at the end of the event (both in paper form and via QR code). The survey will include questions about participants' prior experience with astronomy, their understanding of telescope concepts, and whether the event increased their interest in physics. It will also ask respondents which activity—observing through university telescopes, building their own telescope, or attending the lecture—was most impactful. The survey will include open-ended questions to gather qualitative feedback.
3. Feedback From Key Participants
We will solicit feedback from volunteers, faculty advisors, and student presenters to assess the event's educational effectiveness and logistical success. Their observations will help identify strengths, areas for improvement, and the ways in which the event fostered enthusiasm for physics.
4. Post-Event Reflection and Reporting
Following the event, the chapter officers and SPS members will review attendance data, survey responses, and qualitative feedback. This reflection will be used to evaluate how well the event met the Marsh W. White Award's goal of promoting interest in physics and to improve future outreach events.

Budget Justification

The items listed in the budget will be purchased on Amazon, with the majority of funds allocated to high-quality telescope construction kits (Galileo scopes). Kits include a 20× eyepiece and a custom optical accessory that can be assembled either as a 2× Barlow lens—providing a magnification of 50×—or as a 17× Galilean eyepiece that offers a right-side-up field of view like what Galileo observed. These components allow participants to explore how different lens combinations affect magnification, orientation, and field of view, giving them a hands-on introduction to core principles in geometric optics. Including these versatile optical elements greatly enhances the educational value of the kits and supports the Marsh W. White Award's mission. Purchasing a large quantity of kits is essential to ensure that participants can work individually or in small groups. This prevents overcrowding, encourages deeper engagement, and allows SPS members to provide close guidance as participants assemble their

telescopes. A small portion of funds will be used to provide snacks for participants, such as insomnia cookies. Offering refreshments helps create a welcoming environment that encourages attendees, especially those without physics backgrounds, to stay longer, interact with volunteers, and participate in the event. All university telescopes will be borrowed from the Saint Joseph's University Physics Department at no cost.