



SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

Marsh W. White Award Proposal

Project Proposal Title	Awareness for Greenbank Observatory Outreach Film Screening
Name of School	Appalachian State University
SPS Chapter Number	ZONE5-SPSChapter0216
Total Amount Requested	\$500.00

Abstract

Appalachian State University's SPS chapter is working with Go!GBO to raise awareness for Green Bank Observatory's risk of decommissioning due to funding cuts. We plan to bring an outreach documentary about their tremendous impact to Boone, because it is close to our hearts as scientists and residents of Appalachia.

Proposal Statement

Overview of Proposed Project/Activity/Event

Members of the SPS chapter at Appalachian State University are working with the effort Go!GBO to raise awareness for Green Bank Observatory. The observatory is at risk of decommission because of recent cuts in funding. Green Bank Observatory is a staple to both the economy of West Virginia and to the field of astronomy, being home to the world's largest fully steerable radio telescope. Many areas of astronomical research would be lacking essential data without the aid of their unique collection of telescopes. Large radio telescopes can only collect data in radio quiet zones so they are more scarce than optical telescopes. Greenbank is home to $\frac{1}{3}$ of the US's radio telescopes. The observatory also does a lot of STEM outreach in the local Appalachian community, especially to high school students, fostering an early passion for science in a very rural area. For these reasons and more, those invested in scientific progress should be concerned about the prospect of Greenbank Observatory being decommissioned.

These reasons are outlined by a film, Small Town Universe, created to capture life in the community surrounding the observatory and to educate about the work done at GBO. Our SPS chapter wants to bring the film to Boone, because it is close to our hearts as scientists and as residents of Appalachia. Some members of our SPS chapter have done work at Greenbank through REUs and other opportunities and they will speak about their experiences and the importance of the observatory at the event. We are interested in having a screening of the film for the wider community, not just for university students to reach as many people as possible, so we have chosen the Appalachian Theater as the venue. The theater has offered us a package that includes free admission. With this we hope to reach science-interested adults in Boone. 47.7% of Boone adults have a bachelor's degree and many people live in the town for the clear views of nature, including the night sky. This demographic is likely to be willing to lend their own individual efforts to the cause after the screening. At this event we would supply attendees with information about how to advocate for Greenbank Observatory from the Go!GBO team, a radio astronomy fact sheet, and a starchart. The former two items would be to educate about the cause and the latter is a standard educational hand out at astronomy outreach events through our program. We are hoping due to the public nature of the event, and the advertisement from the theater and our SPS club, we will reach anywhere from 50 to 100 people with this screening.

With this project we plan to inform people about radio astronomy and its importance to astrophysical research, as well as raise awareness for Greenbank Observatory, which is at risk. This will promote public interest in a less well known branch of physics research. We have many people in our chapter who have worked with GBO in our SPS chapter and are connected with Go!GBO, so we are well equipped to carry out this project.

How Proposed Activity Promotes Interest in Physics

Much of the public is outraged at recent budget slashes in the sciences, but are not well acquainted with what that really entails, or how they can help. This event will inform the public about radio astronomy and its role in astronomical research and how it relates to the field of physics as a whole. In the film, perspectives from scientists and non-scientist locals to Greenbank are shared. This screening will show the public *why* they should care about Greenbank Observatory, and how far the reach of scientific research stretches. Our goal is to bridge the gap between citizens of Appalachia and the scientists that work here. We hope this event will empower those who would not typically be connected to this issue. There are many reasons to be concerned about losing this beacon of discovery, and we are raising awareness of this. Attendees will be presented with the information and tools to become active in the astronomy community through advocating for GBO. They will not only learn about how radio telescopes collect data, what kind of data they collect, and why, but they will also learn about what scientific institutions do for their communities and for the economy. It is a holistic interest in physics that we will promote, as valuable science and as a profession worth fighting for in the midst of a time rife with anti-intellectualism.

Plan for Carrying Out Proposed Project/Activity/Event

The plan for carrying out the project is as follows:

- **Personnel:** The main SPS members working on this project will be Zacharie Zimmerman, Appalachian State's SPS Chapter Vice President, Eric Earley, the SPS Treasurer, and SPS member Ella Mayfield. Additionally, we are working with Deana White, head of the Go!GBO effort, the Director of Small Town Universe, Katie Dellamaggiore and the Appalachian Theater director, Suzanne Livesay. More SPS officers and members will volunteer to work the event, signing up to volunteer closer to when it is held. Faculty members Elise Weaver and Brooke Hester will lend their advice to planning of the event due to their expertise in outreach, but the event will be entirely organized by SPS members.
- **Marketing -** The chapter's SPS officers will collaborate on a poster to hang around Appalachian State University and around Downtown Boone. These posters will detail the date, time and location of the event, as well as appealing graphics and a QR code with information about Go!GBO. Additionally, the Appalachian Theater does advertising as part of the aforementioned free admission package. The event will be on the theater's marquee in Downtown Boone and on the theater's website. This will maximise event attendance.
- **Expertise -** Ella Mayfield, as well as other students that have worked with Greenbank Observatory through the ERIRA program will share their experiences as a part of the event. They are passionate about the cause and radio astronomy and have a valuable perspective to add.
- **Additional Fundraising-** if further funding is needed, we will plan a fundraising event to hold in January. Successful fundraising avenues in the past have been bake sales and open to the public physics demo shows with concessions.

Project/Activity/Event Timeline

To book time at the theater in the spring, we need to sign the contract with the theater by the end of January. We hope to have the majority of funds gathered by Friday December 19th, and plan any supplementary fund raising activities early the following week to execute in January when school is back in session. By Friday January 23rd, 2026, we will sign a contract to book the Appalachian Theater and secure a sure event date in either March or April. The exact date and time will be sure after this booking. In February, the SPS officers will collaboratively create a flyer to hang two weeks before the Event. Ella Mayfield and anyone else sharing their experiences with GBO will have their speech written by the end of February. A collaboration of the main team working on the project, Eric Ealrey, Zacharie Zimmerman, and Ella Mayfield will write the radio astronomy fact sheet in January and have it finished and ready to be printed by the end of February. We will do this with the help of faculty member Elise Weaver, who has participated in ERIRA radio astronomy field experience at Greenbank Observatory. We will have these printed, along with the Go!GBO promotional sheets and the star charts, two weeks before the event at a local print shop, Creative Printing and Internet Services. This time frame and method of printing will ensure the papers are high quality and that we will have them in time for the event. We will also make a google survey connected to a QR code for participants to give

feedback on the event. This survey will be set up a month before the screening and will be evaluated by faculty members with experience in outreach, Brooke Hester and Elise Weaver, before going live. An instagram post will be made on the Appalachian State Physics and Astronomy Club Instagram account one week prior to the event.

Activity Evaluation Plan

To evaluate the success of the event we will create a survey for the attendees to fill out at the end. This will not be mandatory, but will give a good temperature of whether people left feeling more knowledgeable about radio astronomy and physics as a whole. We will ask questions to ascertain what they liked and disliked about the event, whether they will tell people about GBO's struggles, if they will consider donating time or money to the cause, and if they left feeling like they learned more about astronomy and physics.

We will also count the number of tickets 'sold' (it will be a free screening but it is still ticketed) to assess the effectiveness of our advertisement. Our goal is to have at least 50 people attend. This is typical for free screenings according to the manager of the Appalachian theater, Suzanne Livesay. With that information we will learn for the future how to best publicize a large event such as this and see how much room there is for improvement.

Additionally, feedback will be taken from the volunteers, faculty members involved, and Go!GBO team on how smoothly the event ran and whether they felt it was a success.

The combination of attendee and personnel response, along with numerical data will reflect on success of the project overall.

Budget Justification

Each item in the budget is essential to the event's success. We can not have a screening without the film rights or a venue, and the SPS members working with Go!GBO agreed that having a viewing of the Small Town Universe film would be the best way to raise awareness for the cause. It shows all perspectives of the observatory's importance: scientific, economic, educational, and personal. The printing is important to give the attendees a means to further advocate for Greenbank Observatory and to learn more about what radio astronomy is and why it is important to scientific discovery. The star charts are less essential to the messaging of the project, but it is important for public outreach attendees to feel connected to science upon leaving. The star charts empower the event goers to look up and learn about astronomy without needing to ever put hands on a telescope, which is why they are a standard handout at outreach events. Additional financial support for the project will be through the Appalachian State Physics and Astronomy Club account and fundraising efforts, as outlined earlier.