



# SOCIETY OF PHYSICS STUDENTS

An organization of the American Institute of Physics

## Marsh White Award Report Template

Project Proposal Title	Solarpalooza: A Solar Viewing Experience
Name of School	University of Alaska Fairbanks
SPS Chapter Number	0093
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SPS Chapter Advisor	
Total Amount Received from SPS	\$250 received so far, \$180 expected upon completion of this report
Total Amount Expended from SPS	\$430

## Summary of Award Activities

Every year the University of Alaska Fairbanks College of Natural Science and Mathematics holds a large outreach event known as Science Potpourri. SPS and the physics department always has several demos at the event, but the past few years these haven't changed much. This year we changed things up and set up a station for solar viewing with telescopes purchased with the Marsh M. White award, as well as a gravitational potential demo with the SPS 2017 SOCK kit. These were a great addition and taught several hundred people, over the three hour event, about the physics of gravity and the sun.

## Statement of Activity

### Overview of Award Activity

**Description:** We decided to include our event into the College of Natural Science and Mathematics' annual Science Potpourri. This is a college wide event which highlights a wide range of science at the university. Physics always has several stations, but these have been the same demos for several years. This year we changed things up and set up several solar telescopes that we purchased with the Marsh M. White award, a larger Schmidt-Cassegrain telescope, and the 2017 SPS SOCK kit. The demonstrations were a combination of teaching from the physics students and participant interaction with the telescopes and gravity well.

**Outcomes:** Our goal with this event was to teach Fairbanks community members about the physics behind the sun and how UAF is involved in that research. For a first attempt at this event we feel it went very well. Well over 100 people ended up getting safe views of the sun and for most of them this was something that they had never experienced before. We were thrilled to provide these opportunities and we got lots of positive feedback, but we could have made a stronger connection to science being done at UAF.

**Audience:** Because the Science Potpourri has been run for over 20 years we had a fairly good idea of the audience we were expecting. The audience was primarily families with kids between the ages of 3 and 13. We found that for using the telescopes kids above the age of 8 were ideal, although many younger kids also enjoyed the demonstrations. If we were to have run the event separately, not involved with the Science Potpourri, this would still have been the same target audience.

**Context:** We decided to hold an event like this for the Marsh M. White award because our chapter has held several nighttime astronomy events and these have been extremely popular. With this event we were able to use our expertise from the previous events, but also offer something new that people hadn't seen before. It also was a good pairing with physics research at UAF. Much of the research is in space physics, which is primarily driven by the sun.

**Highlights:** Encounters similar to this happened several times during the event and each one was just as entertaining. At one point a mother with her son, who was around the age of 7, stopped by where we had set up the telescopes. The kid eagerly ran up and wanted to immediately look through the telescopes. For a couple of minutes the mother waited patiently, but then she clearly started to get anxious to take her child to some of the other demos. The only catch was that the kid didn't want to go. He was having too good of a time looking through the telescopes that he wouldn't go, even when his mother's voice grew more stern. Finally, the mother had to pretend to leave to get her son to finally wrench his eye from the telescope and follow her. Perhaps a future astronomer or space physicist in the making.

## Impact Assessment: How the Project/Activity/Event Promoted Interest in Physics

### Goals:

- Teach the Fairbanks community about the sun and physics involved with it – We feel that this goal was achieved. Well over 100 people stopped by our telescope station and got to see a safe view of the sun and learn a little about sunspots, the aurora, and telescopes. They also got to stop by our gravitational well demo and learn why the planets orbit the sun.
- Show the community how UAF is involved with solar physics – We don't feel that this goal was achieved as strongly as it could have been. Perhaps the next time we hold the event we can invite a physics professor to help out and explain their research and make the connection between the sun and UAF research. With the limited help we had there just wasn't enough time to go into details of the research.
- Mix up the physics demos at the UAF CNSM Science Potpourri – We were definitely able to achieve this. Our two biggest demos: the solar telescopes, and the gravitational well, were brand new this year. They were also very well received and we plan to set them up again next year.

**Assessment Plan:** Our original plan was to hold this as a separate event from the Science Potpourri. Because we ended up combining the two we weren't able to conduct all of our assessment methods. However, we were able to get some good information that will help make our future events better. We kept an estimate of the people who made it outside to the telescopes and this was between 150-200 people. For the overall event the college estimated that around 1200 people attended. This let us know that while we reached many people, if we had a more visible location and more signs we probably could have reached a lot more.

While we weren't able to hold a Facebook poll we did do a Facebook promotion before the event. This reached 3700 people and around 120 people responded to the post saying that they were going or interested in going.

In addition, through face-to-face interactions at the event we learned a lot about how things were from the participants view. For instance, we got some complaints and noticed people having trouble with the tripods on the solar telescopes. This prompted us to purchase nicer tripods when the event was finished. However, through our questions during the event we learned that a large majority of the people who attended had never seen the sun through a telescope before and that they were excited to experience this. Because of that we are planning to do this again and are also looking into getting a hydrogen-alpha solar telescope for even better views of the sun.

**Key Metrics and Reflection**

Who was the target audience of your project?	Elementary and middle school students
How many attendees/participants were directly impacted by your project? Please describe them (for example “50 third grade students” or “25 families”).	Around 50 families and between 150-200 individuals
How many students from your SPS chapter were involved in the activity, and in what capacity?	3 Students were directly involved with the telescopes, 2 more helped with the gravity demo, 2 more helped with other demos, and 3 others put on a physics play.
Was the amount of money you received from SPS sufficient to carry out the activities outlined in your proposal? Could you have used additional funding? If yes, how much would you have liked and how would the additional funding have augmented your activity?	Yes, the amounts of funds was enough to hold the event like we had envisioned.
Do you anticipate repeating this project/activity/event in the future, or having a follow-up project/activity/event? If yes, please describe.	Absolutely, we plan to make this an annual addition to the Science Potpurri.
What new relationships did you build through this project?	We interacted with a lot of Fairbanks families, many of who hadn’t heard about our organizations and the events that we hold. We also met another University employee who is interested in astronomy and was interested in helping out at some of our events.
If you were to do your project again, what would you do differently?	We found the that tripods that the telescopes came with were a little flimsy. Because we had some left over funds we purchased some nicer

**Press Coverage (if applicable)**

Our event did not receive any specific press coverage.



**Expenditures**

**Expenditure Table**

<b>Item</b>	<b>Cost</b>
Celestron EclipSmart Telescope x3	209.85
AmazonBasic Tripod x3	64.01
Folding Chair x8	95.84
Disposable Coffee Cups	31.32
Snacks	28.48
<b>Total of Expenses</b>	<b>429.5</b>

## Activity Photos



Picture 1: It was a perfect spring day to view the sun through solar safe telescopes.



Picture 2: Two event participants listen intently as UAF physics student Jason Beedle explains solar physics.





Picture 3: Fairbanks community members of all ages came to get safe views of the sun during the event.





Picture 4: Participants look on as UAF SPS members Adriana Camacho-Rodriguez and Jacob Torres demonstrate how a gravitational potential well causes planets to orbit the sun.



If you have any questions, please contact the SPS National Office Staff  
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