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ASTROPHYSICS

HARVARD & SMITHSONIAN

LightSound: A Solar Eclipse Sonification Tool

Allyson Bieryla

June 10, 2023

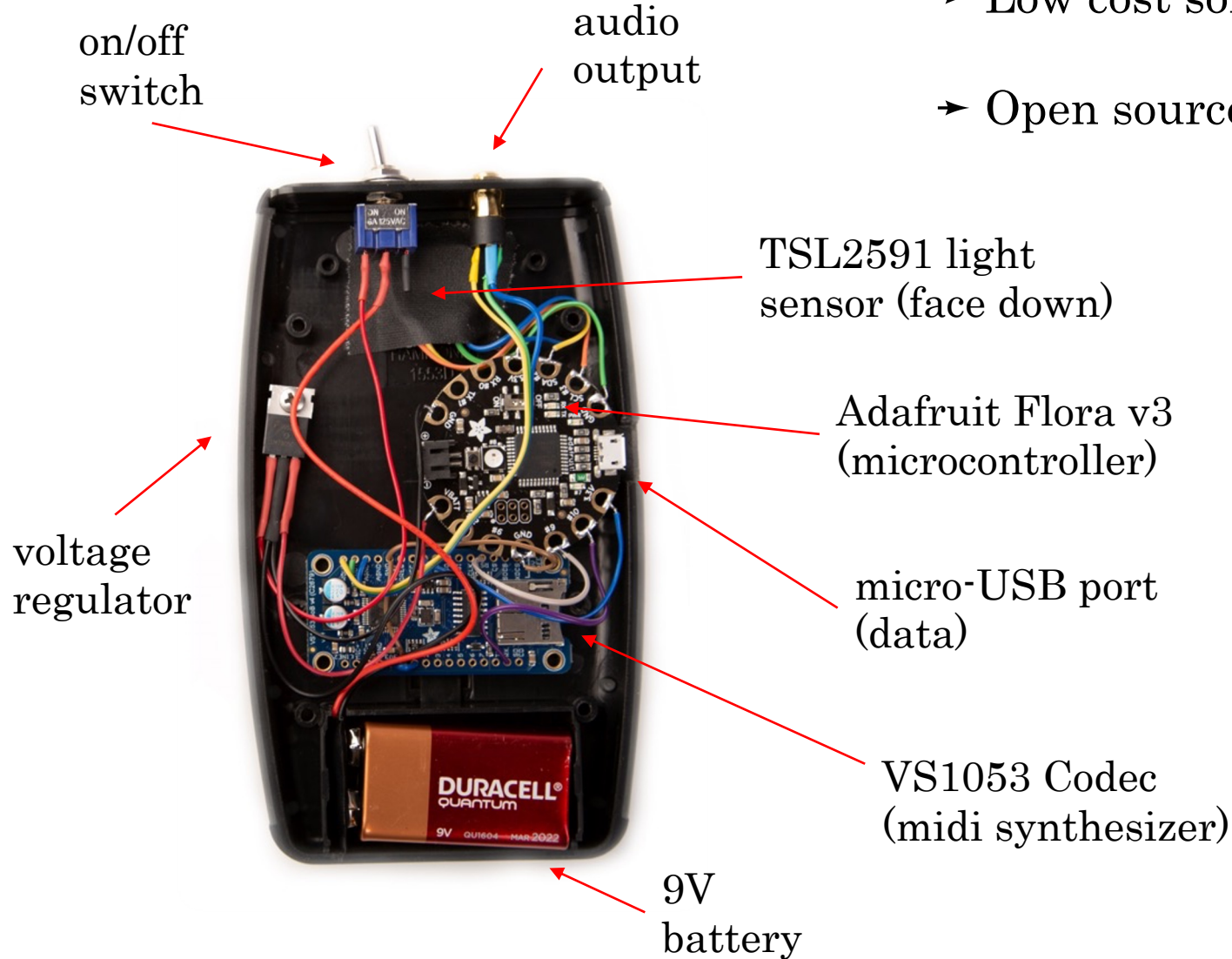


AMERICAN
ASTRONOMICAL
SOCIETY



What is LightSound?

- Low cost sonification device designed for solar eclipse
- Open source code and instructions for building



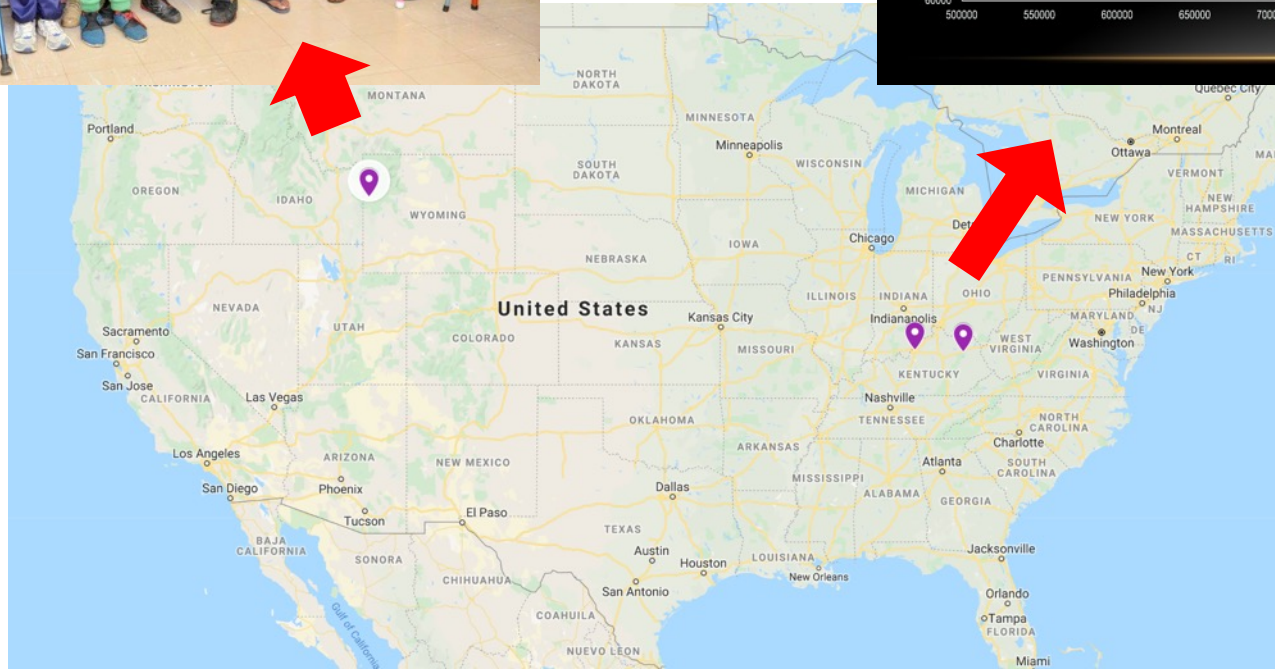
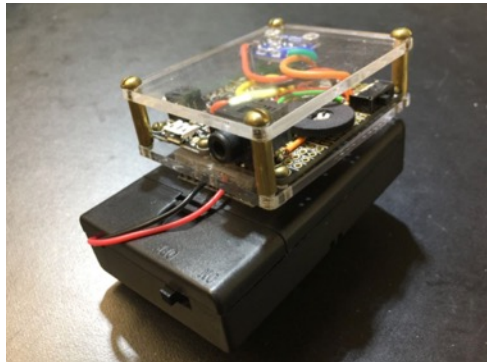
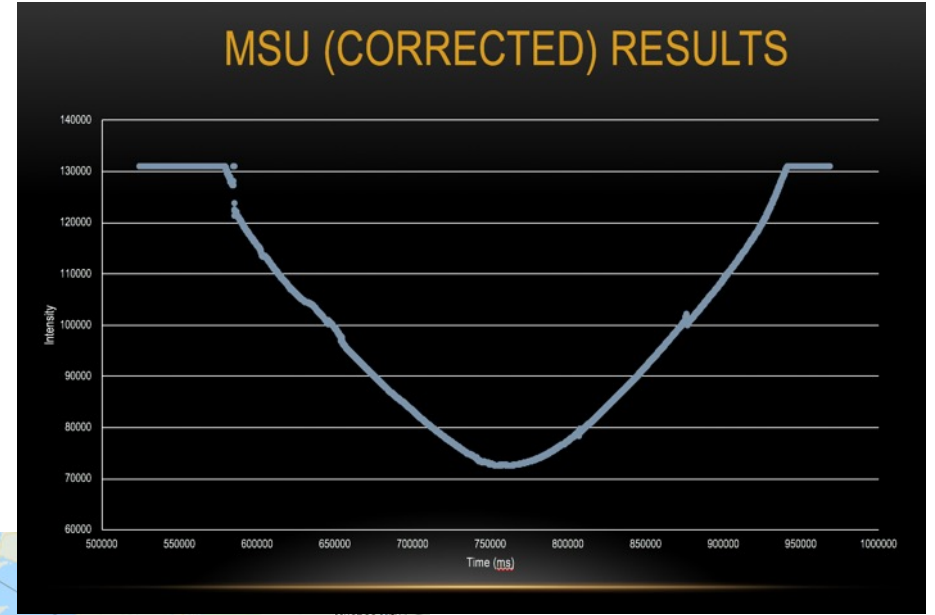
LightSound sound clip



Video demonstration of simulated eclipse

The sound starts as a high flute tone in the bright sunlight, and as the circle covers the sensor, the sound drops to a low clarinet before becoming clicks as the circle completely covers the opening. As it continues passing over, the low clarinet sound returns and the pitch rises until the flute sound returns.





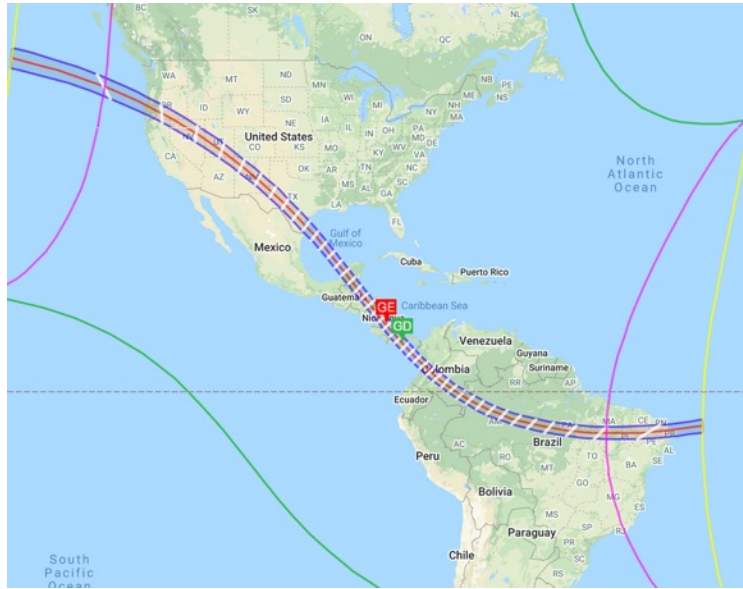
Great American Solar Eclipse August 21, 2017

One LightSound device can impact thousands!!!

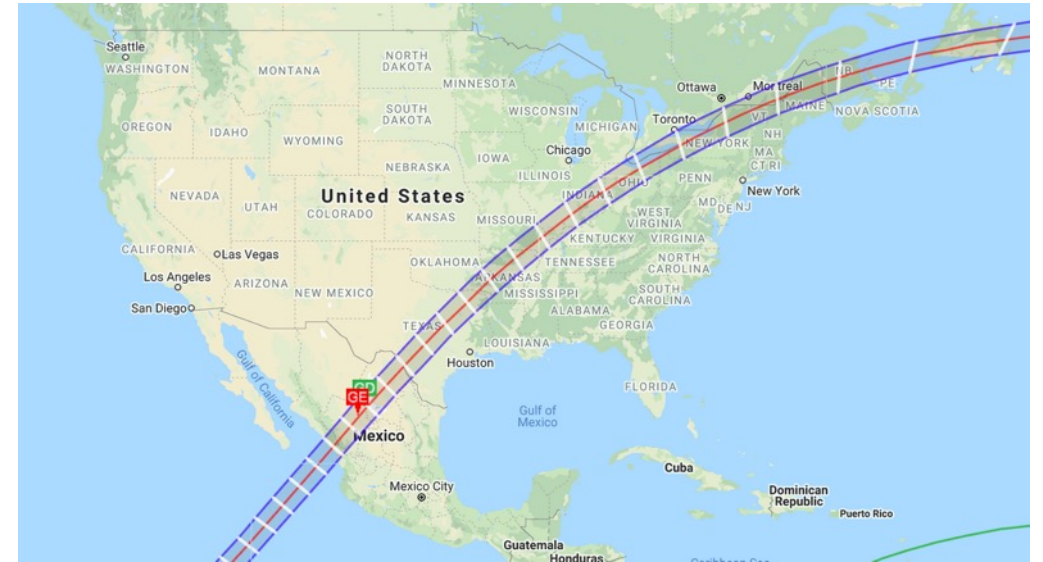


2019/2020
South American Eclipses

North American Annular Eclipse October 14, 2023



North American Total Eclipse April 8, 2024



In Progress

Goal:
100s of devices!!

We are

- ➔ Building LightSound devices
- ➔ Running Workshops
- ➔ Donating LightSounds



Scan to request
a device!



Workshops

Teach

Teach soldering and circuitry skills

Build

Build devices to be donated

Transfer

Transfer the knowledge



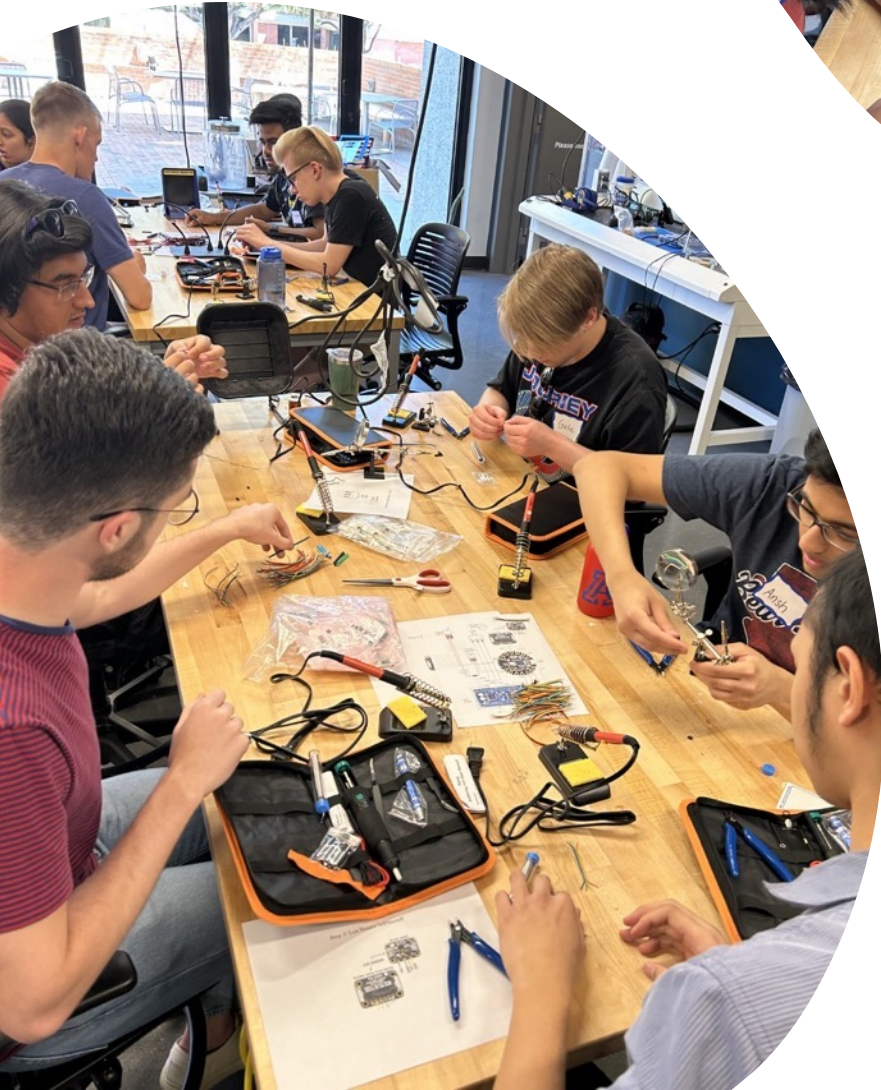
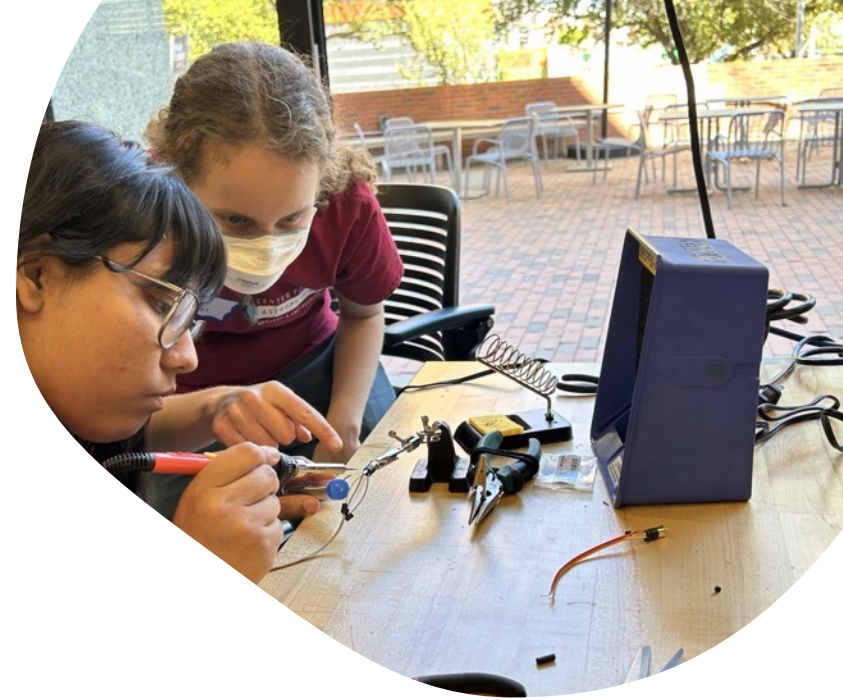
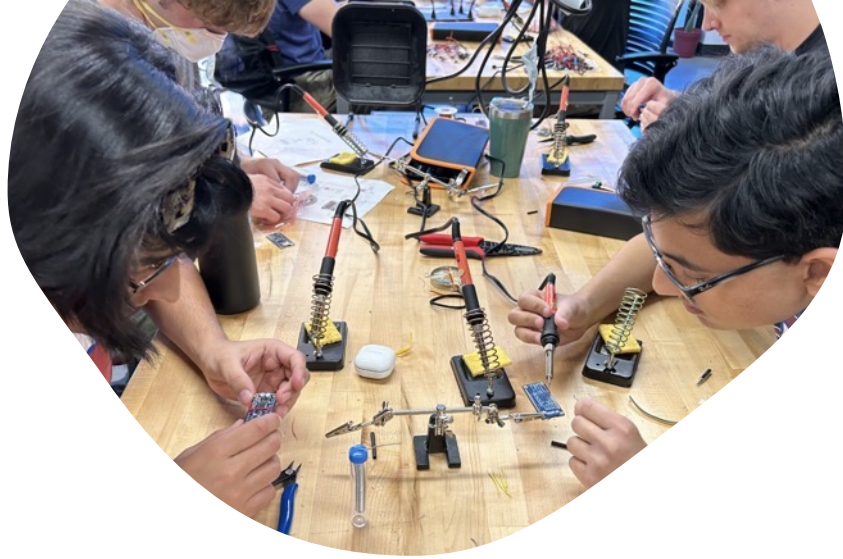
AAS 235 Workshop
Photo credit: Todd Buchanan 2020



Rochester Museum SC

Make-a-thon





Tucson Initiative for
Minoritized student
Engagement in Science
and Technology Program



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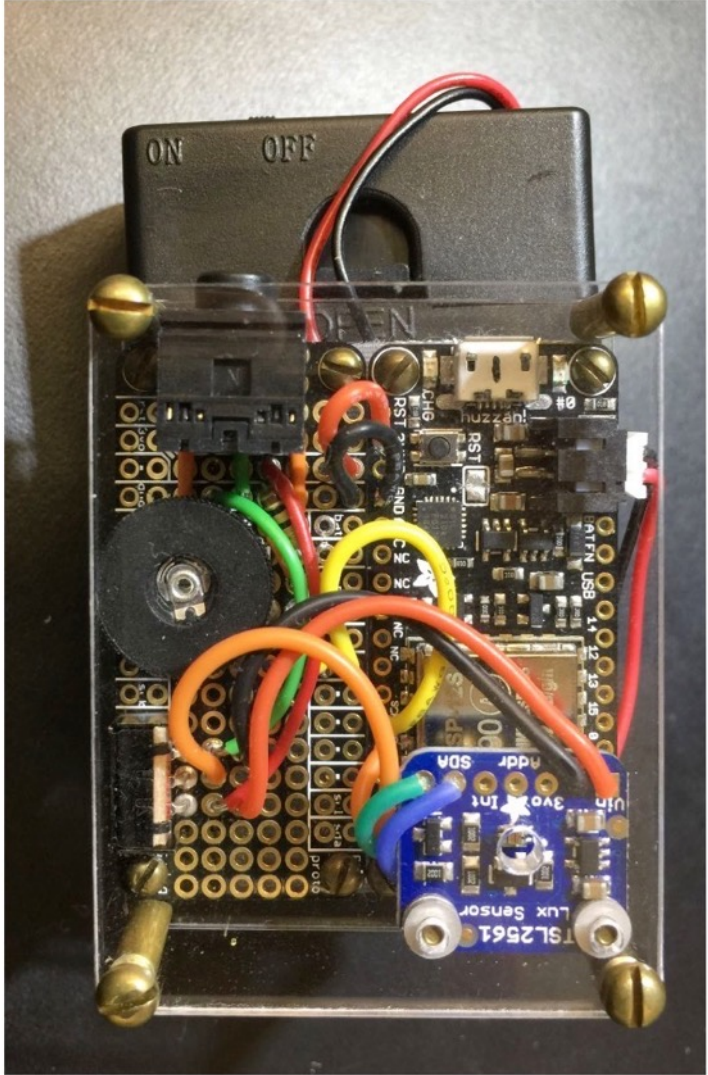
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June 14-16, 2023

July 2023

The LightSound Progression





LightSound

(eclipse sonification device)

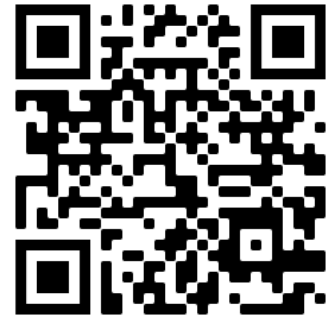


<http://astrolab.fas.harvard.edu/LightSound.html>



Orchestar

(color sonification device)



<http://astrolab.fas.harvard.edu/orchestar.html>

Allyson Bieryla (abieryla@cfa.harvard.edu)

Sóley Hyman (soleyhyman@.arizona.edu)

