Making Solar Eclipse Events Accessible with LightSound

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What is LightSound?

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

- TSL2591 light sensor (face down)
- Adafruit Flora v3 (microcontroller)
- VS1053 Codec (midi synthesizer)
- 9V battery
- Voltage regulator
- Audio output
- On/off switch
- Micro-USB port (data)
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!!!
Low-cost, high impact ($60/device)

December 14, 2020
South America (100+ devices)
1. North: Pinang Island (Partial)
2. Central: National Planetarium, Kuala Lumpur (Partial)
3. South: Tanjung Piai, (Annular)
4. East Coast: Terengganu (Partial)
5. East Malaysia: Serian (Annular)

Credit: Murtaz
North American Annular Eclipse
October 14, 2023

Future Work

We are looking for people and organizations to...

➛ Build LightSound devices
➛ Run LightSound-building workshops
➛ Donate LightSounds

Researching developing packaged “kits”

Goal:
100s of devices!!

North American Total Eclipse
April 8, 2024

Plan to host workshops for educators and general community
  - Museums, national parks, schools, etc.

Expanding workshop topics
  - Training others to run LightSound workshops
  - Developing lesson plans for classrooms and public engagement events
LightSound
(eclipse sonification device)
http://astrolab.fas.harvard.edu/LightSound-IAU100.html

Orchestar
(color sonification device)
http://astrolab.fas.harvard.edu/orchestar.html

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