The Solar Eclipse Megamovie

On August 21st of 2017, a total solar eclipse will cross the US from coast to coast. Here, the Moon will cover the Sun, offering an extraordinary scenery not seen in these lands since 1918.

More than incredible views, total solar eclipses offer unique opportunities to study the solar Corona, a gaseous layer invisible to the eyes when the brightest part of the Sun is exposed. This layer hosts some of the most interesting activities of a star, many of which are still a mystery to scientists.

The Space Sciences Laboratory of UC Berkeley developed the Solar Eclipse Megamovie Project: the first citizen scientific experiment intended to obtain crowdsourced photographic data of a solar eclipse.

Sign up to be part of the project at eclipse-mega.movie

Automatic Photo System

One of the options for the participating volunteers is to build Raspberry Pi Camera setup, with software and designs developed by the Megamovie team.

Benefits:
- Affordable
- User friendly
- Automatic
- Eclipse enjoyment guaranteed
- Future educational potential

Development:
- Python script for automatic performance of the camera: contact times and bracketing mode.
- Adaptors for DSLR telephoto lenses
- RPI ensemble box
- Image processing system

After the solar eclipse, the data collected from these and other camera systems will be processed and collected into an open source database available for future investigations.

Beyond, the Raspberry Pi setups can also be used for:
- Future Solar eclipses:
  - Argentina-Chile 2019
  - Argentina-Chile 2020
  - Antarctica 2021
  - South East Asia 2023
  - Mexico-USA-Canada 2024
  - Europe-Middle East 2027
- Educational coding
- Pi camera module reuse (photography, video recording...)

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