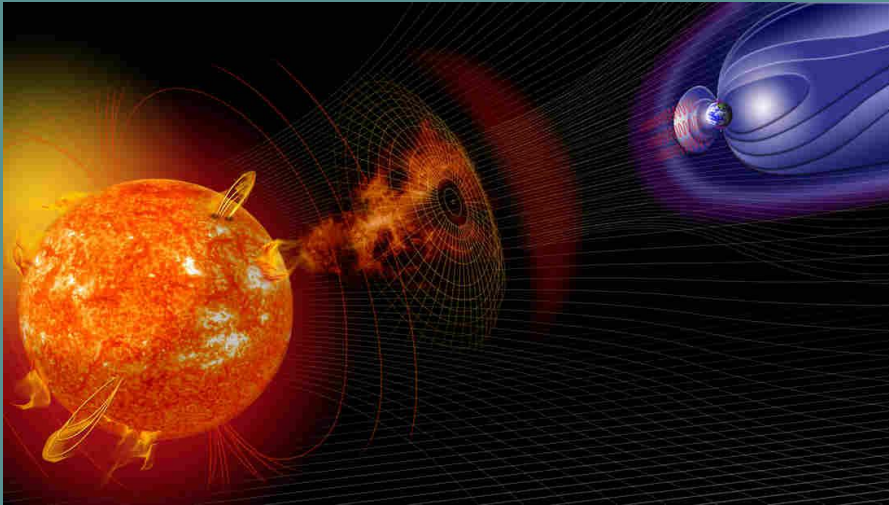# Stealth CME Detection

The Story of our Project

- Shawn works at LASP
- We reached out to scientists at LASP to ask "What's going on? How can we help?"
- That led us to our SME's

CU | **LASP**

Laboratory for Atmospheric and Space Physics
University of Colorado **Boulder**

James Mason - CU Graduate

CURRENT POSITION

I used to work at University of Colorado Boulder, Stanford University, and University of California Santa Cruz

NASA Goddard Space Flight Center

NASA Postdoctoral Program Fellow

2017 September – Present

I write open source code in python, IDL, and other languages to analyze large amounts of data collected by satellites observing the sun. Plus I'm still involved in satellite development and operations; and sounding rockets.
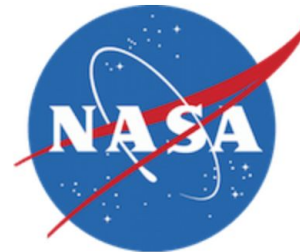
Don Woodraska - CU Expert

Current Institution

University of Colorado Boulder | CUB
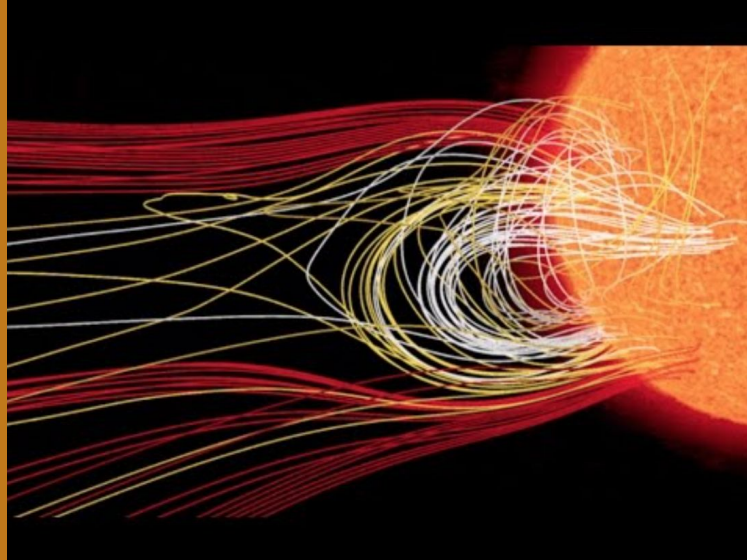Laboratory for Atmospheric and Space Physics (LASP)
Boulder, CO

Current position
Professional Research Assistant

Our Project

- Detect "Stealth CMEs"!

The Science

Prominence

Photosphere

Sunspots

Corona

Convective
Zone

Radiative
Zone

Core
(Nuclear Fusion)

Chromosphere

Solar Flares

Large
Eruptive Prominence

Large
Eruptive Prominence

Coronal Loops

18

North Pole

Magnetic
Field Lines

Direction of Rotation

South Pole

East   West

Magnetic
Loop

Magnetic
Loop

(a)   (b)   (c)

The Science (cont.)

Approx. size of Earth →
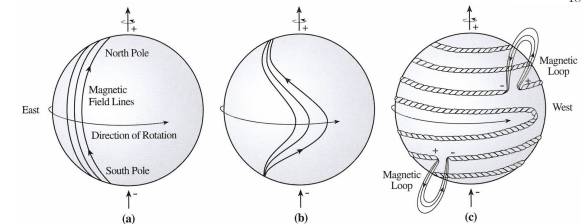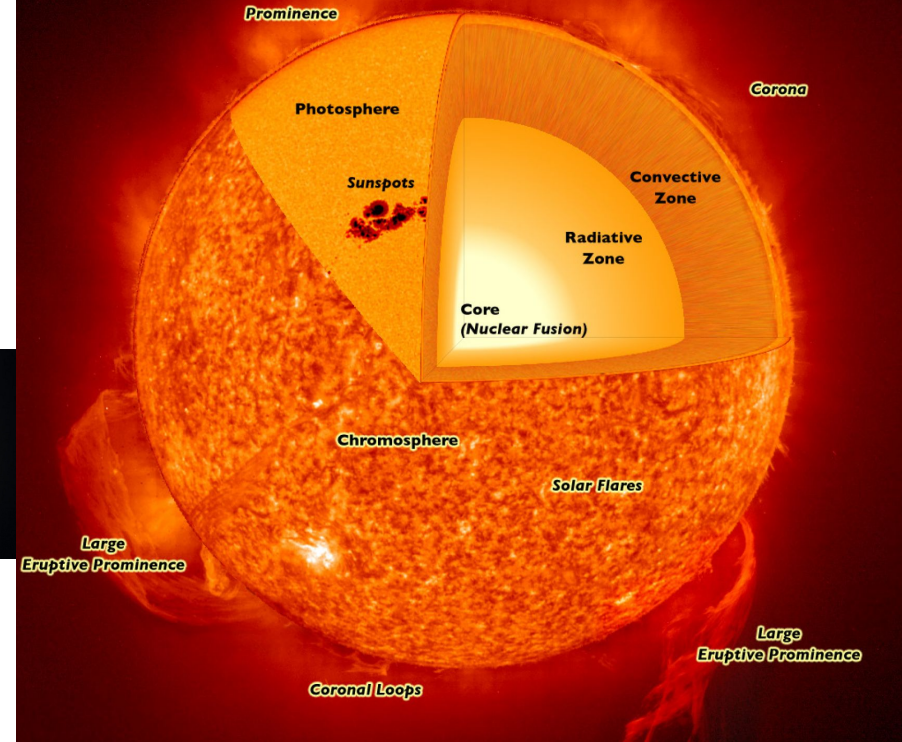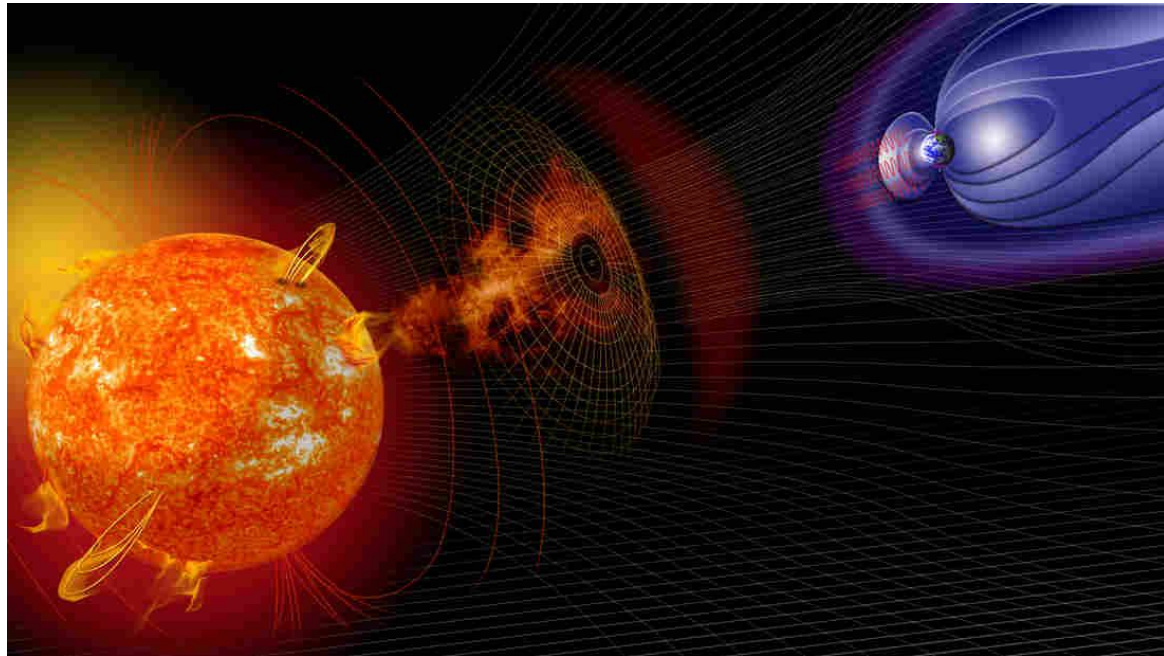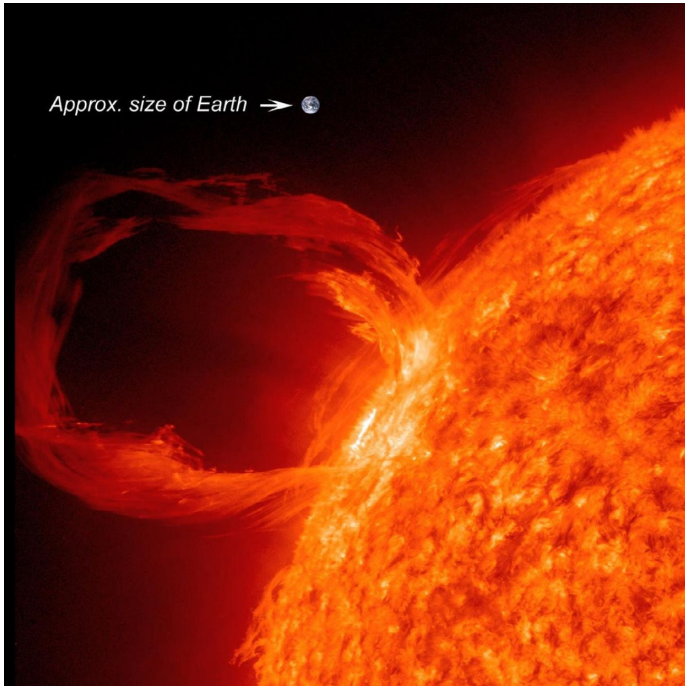
The Instrument - SDO EVE

Flow of Data
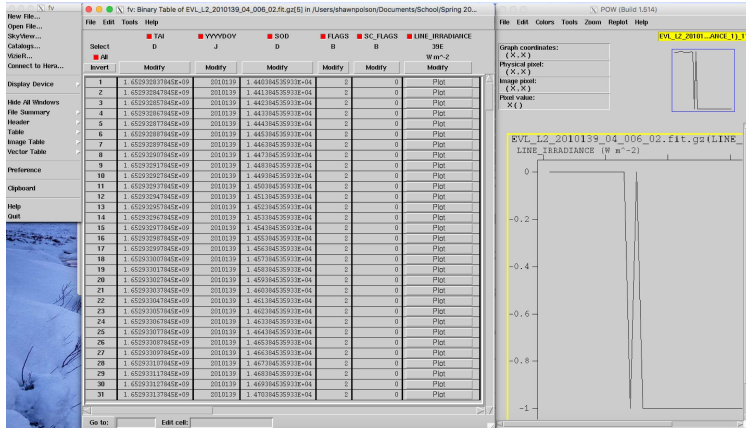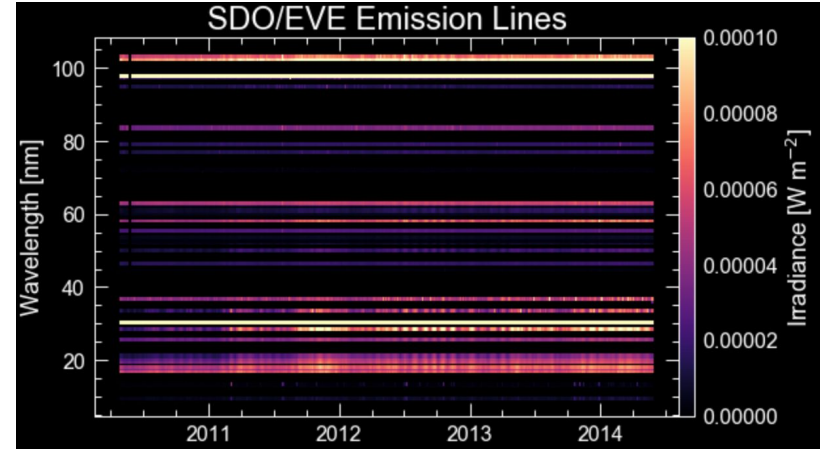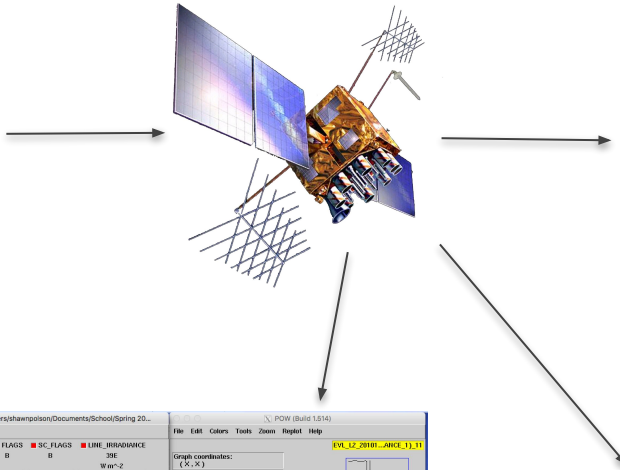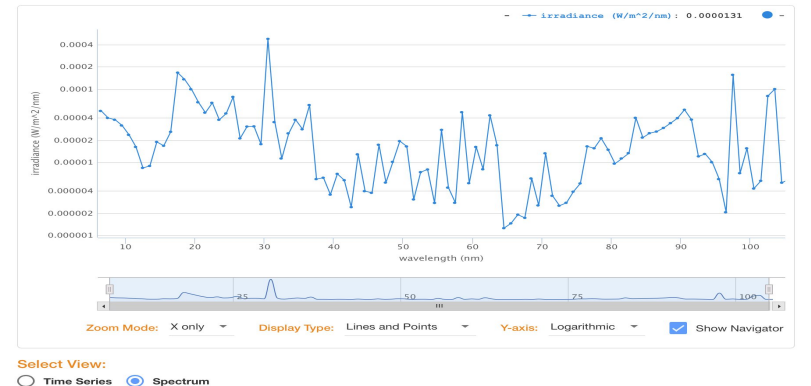
Our Goals

- Be the first humans to catalog Stealth CME events

- Help advance real space science!

- Detect coronal dimming events in SDO/EVE emission line time series data without the use of GOES solar flare event times to trigger the search

- Characterize the detected dimming events in terms of slope and depth.

How are we going to work with our data?
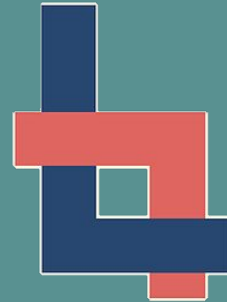
• Line ratios for slopes   • New lines temporarily appearing in spectrum   • Other signifiers?

• Work closely with SMEs to evaluate results

Questions?