



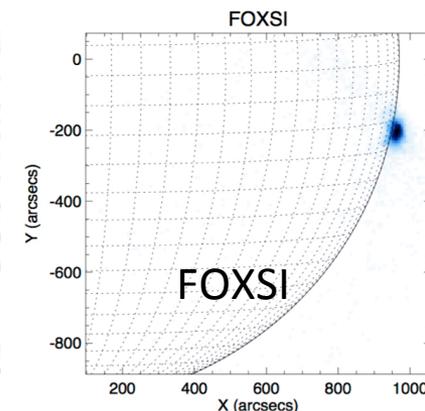
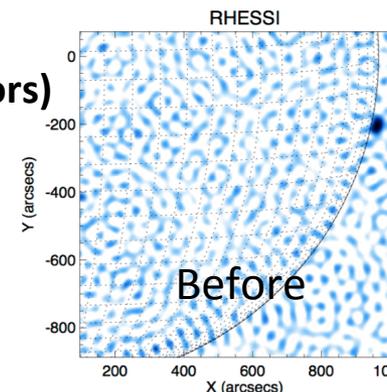
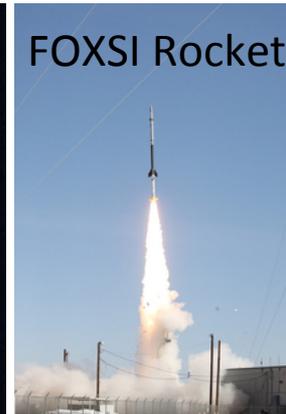
# Focusing Optics X-ray Solar Imager (FOXSI)

## “THE PATH TO A HELIO EXPLORER”

Steven Christe (671)



- The Sun is a unique laboratory to study particle acceleration which occurs throughout the Universe. The Sun is the most energetic particle accelerator in the solar system.
- **HSD will propose FOXSI to the next Small Explorer opportunity to enable our first look into the acceleration region where energetic particles are generated.**
- New technology development (grazing-incidence optics and fast hard x-ray detectors) enable direct imaging of solar x-rays, a signature of accelerated electrons.
  - **Sensitivity: ~50 times previous missions (RHESSI)**
  - **Dynamic Range: >10 times previous missions**
- Heritage
  - **FOXSI Sounding Rocket (Astro-H/NeXT detectors) (2 successful flights, Nov 2012, Dec 2014)**
  - **GSFC/MSFC HEROES Balloon (1 flight, Sept 2013)**
  - **GSFC Hard X-ray detector development currently funded by NASA APRA.**



# Background Information

- HEROES was a joint HOPE project between MSFC and GSFC which upgraded an existing telescope to observe the Sun in one year.
- FOXSI Rocket is headed by UCB Space Sciences Laboratory. Uses silicon-strip detectors developed for Astro-H.
- Both projects use high resolution optics developed by MSFC.
- GSFC Hard X-ray detector development currently funded by NASA APRA.
- Code 671 - Steven Christe (PI for HEROES, Co-I for FOXSI, PI for detector development, planned PI for SMEX AO)