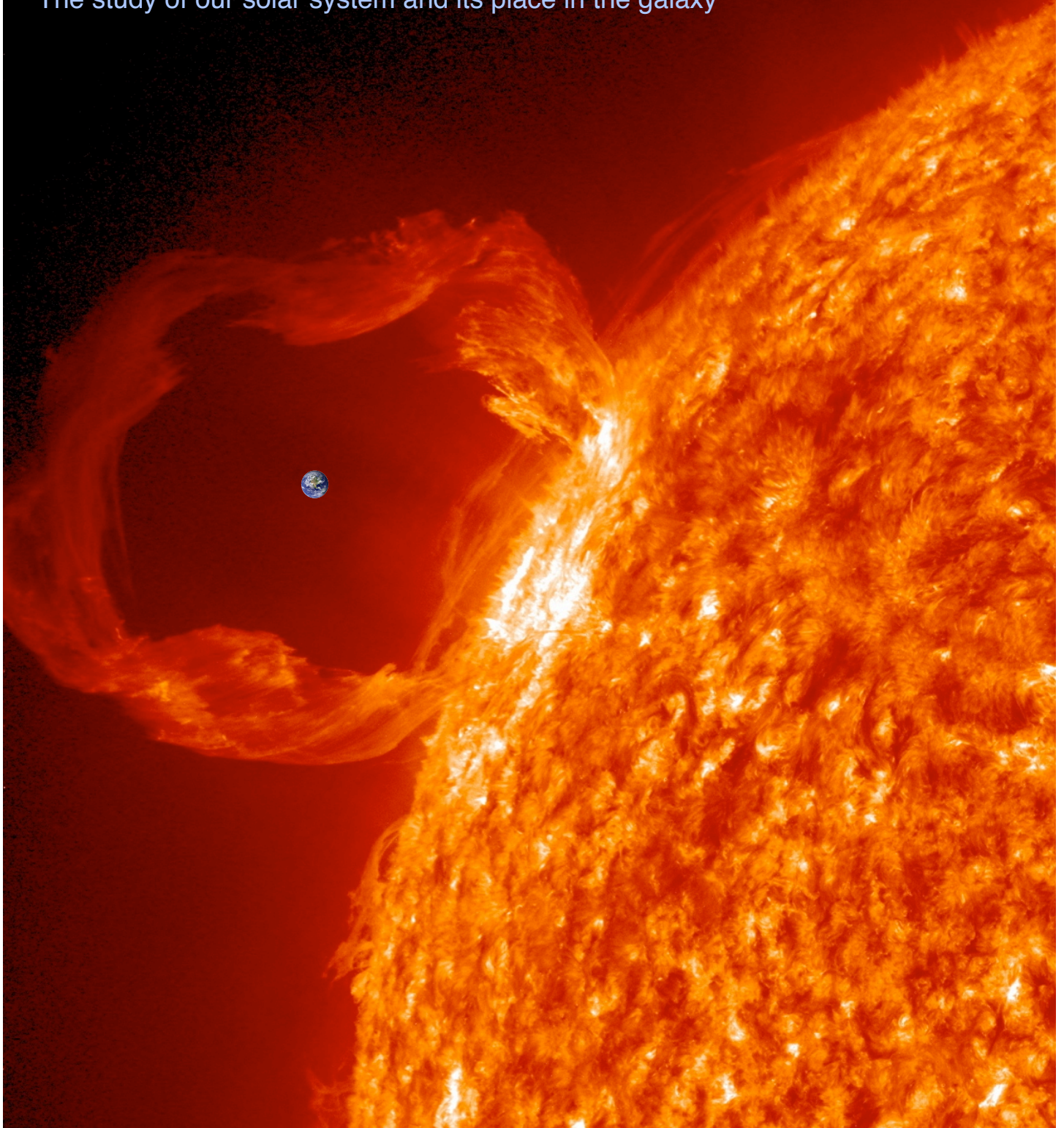


# *Heliophysics!*

- The science of how our Sun works
- The science of Earth's magnetic shield
- The key to understanding *Space Weather* and its effects on Earth
- The study of our solar system and its place in the galaxy



SDO/AIA image of the 30-March-2010 solar eruption. The blue dot is Earth approximately to scale.  
Courtesy NASA and Lockheed Martin Solar and Astrophysics Laboratory

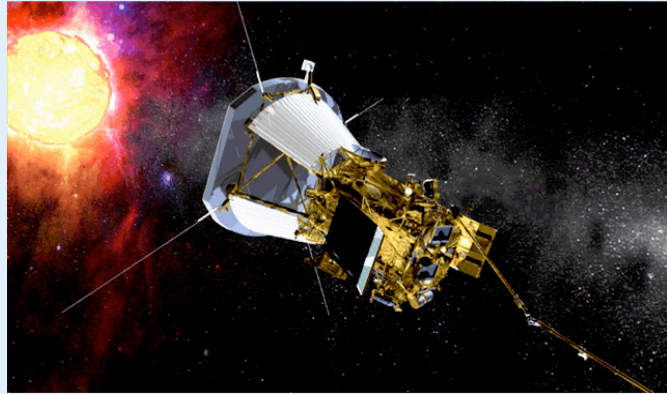


We support the exploration priorities described in the 2012 National Academy of Sciences decadal survey: **Solar and Space Physics: A Science for a Technological Society**

### Flagship facilities and missions

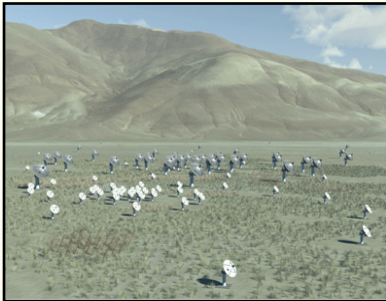


**NSF's Advanced Technology Solar Telescope (ATST)**  
The world's largest and most complex solar telescope

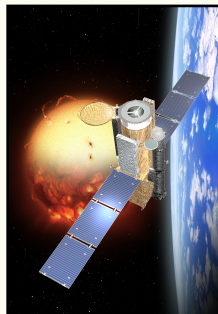


**NASA's Solar Probe Plus**  
Diving into the Sun's corona to directly measure sources of space weather

### Mid-scale facilities and missions

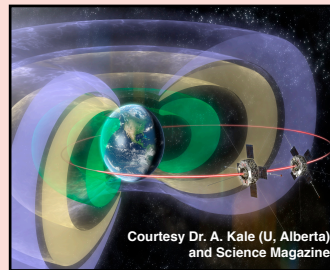


**NSF's Frequency Agile Solar Radio Telescope**  
Radio images of Solar Eruptions

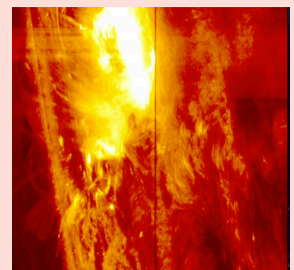


**Japanese/US/UK "Solar-C"**  
Heating of the Sun's atmosphere

### Exciting Science and Milestones

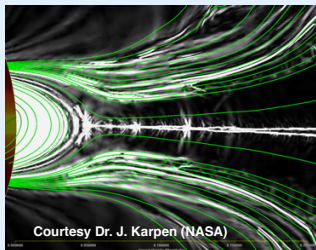


**NASA's Living with a Star Van Allen Probes** discover third radiation belt around Earth

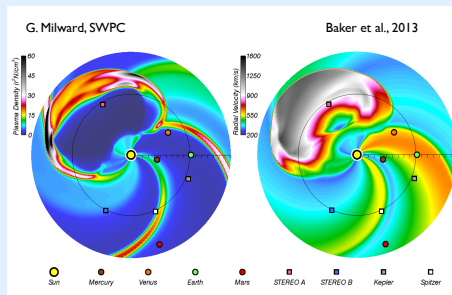


**NASA's IRIS Small Explorer Mission** captures large solar flares

### Theory and numerical modeling



**Simulations give insight into complex observations**  
Magnetic reconnection leads to a solar eruption



**Models of eruptions advance forecasting capabilities**  
The huge July 23, 2012 eruption missed Earth

### DRIVE initiative

- **Diversify observing platforms**  
Microsatellites and Mid-scale missions
- **Realize science potential**  
Sufficiently fund research and analysis (R&A)
- **Integrate platforms**  
Strengthen ties between agency disciplines
- **Venture forward**  
Science centers, technology development
- **Educate & inspire**  
Empower next generation of space researchers

**Our Message: Research & Analysis grants are the lifeblood of the next generation of space scientists. Current funding levels are inadequate to sustain US leadership. WE ARE LOSING THE NEXT GENERATION OF SCIENTISTS!**



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