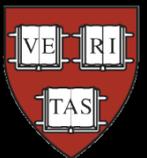


The Coronal Physics Investigator (CPI) Experiment for the International Space Station

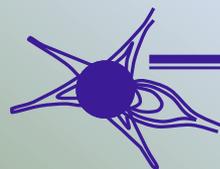
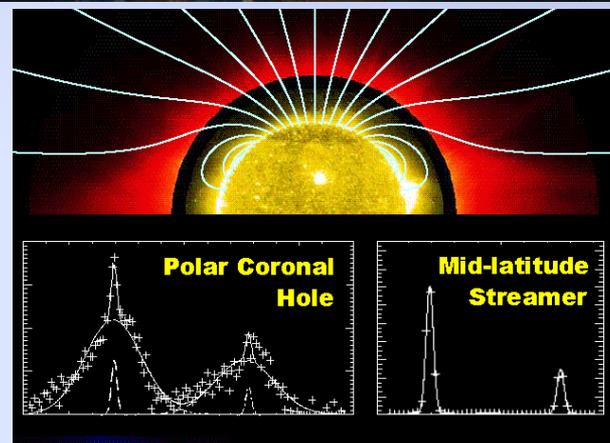
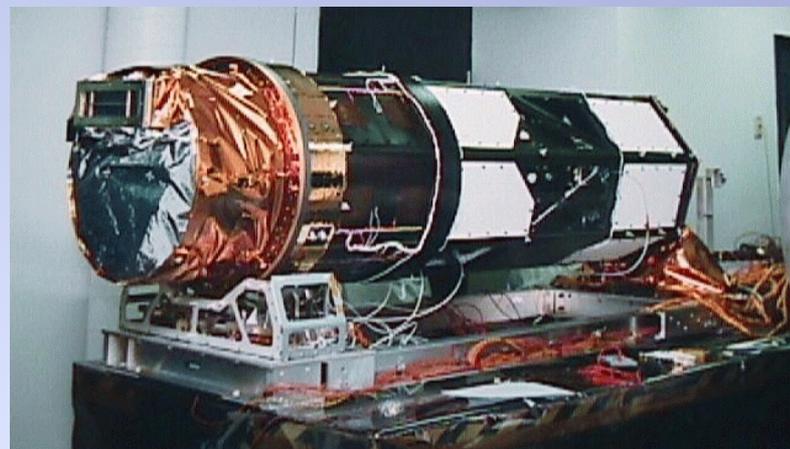


John L. Kohl
Smithsonian Astrophysical Observatory



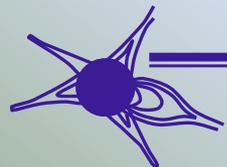
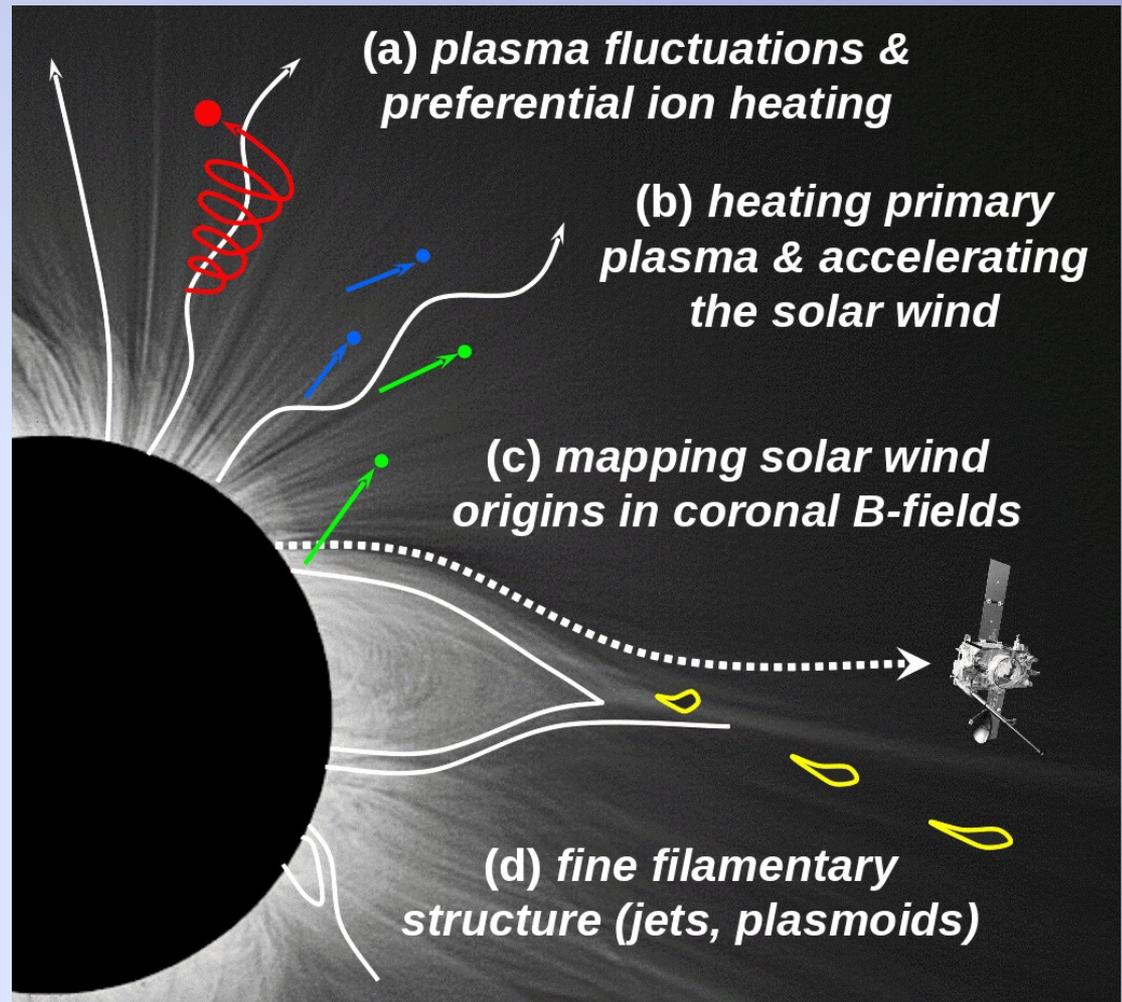
CPI is a next generation Ultraviolet Coronagraph Spectrometer with 100 times the sensitivity of UVCS/SOHO and a much broader wavelength range (25.7 – 126 nm)

- **1979–1995:** Rocket flights and Shuttle-deployed *Spartan 201* laid groundwork.
- **1996–present:** The Ultraviolet Coronagraph Spectrometer (UVCS) measured plasma properties of coronal protons, ions, and electrons between 1.5 and 10 solar radii.
- In polar coronal holes, UVCS discovered strong preferential heating of O^{5+} and Mg^{9+} and pronounced kinetic anisotropies with $T_{\text{perp}} \gg T_{\text{par}}$. The outflow velocity of O^{5+} was found to be greater than that of the protons.
- These results rekindled theoretical efforts to understand the heating of the extended corona by ion cyclotron resonance.



CPI Primary Scientific Goal

- Determine the physical processes that heat and accelerate both the major (proton, electron, helium) and minor (heavy ion) plasma components of the fast and slow solar wind.
- CPI will observe many ions never before observed in coronal holes above 1.4 solar radii.



CPI Team

Science

John Kohl: Principal Investigator, SAO

Steve Cranmer: Mission Scientist for Solar Wind Objectives, SAO

John Raymond: Mission Scientist for CME Objectives, SAO

Dan Reisenfeld: Project Scientist, UM

Paul Janzen: Instrument Scientist, UM

Aad van Ballegooijen: Co-I, SAO

Ben Chandran: Co-I, UNH

Terry Forbes: Co-I, UNH

Phil Isenberg: Co-I, UNH

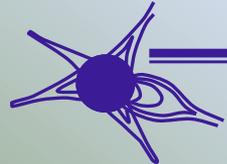
Management and Engineering

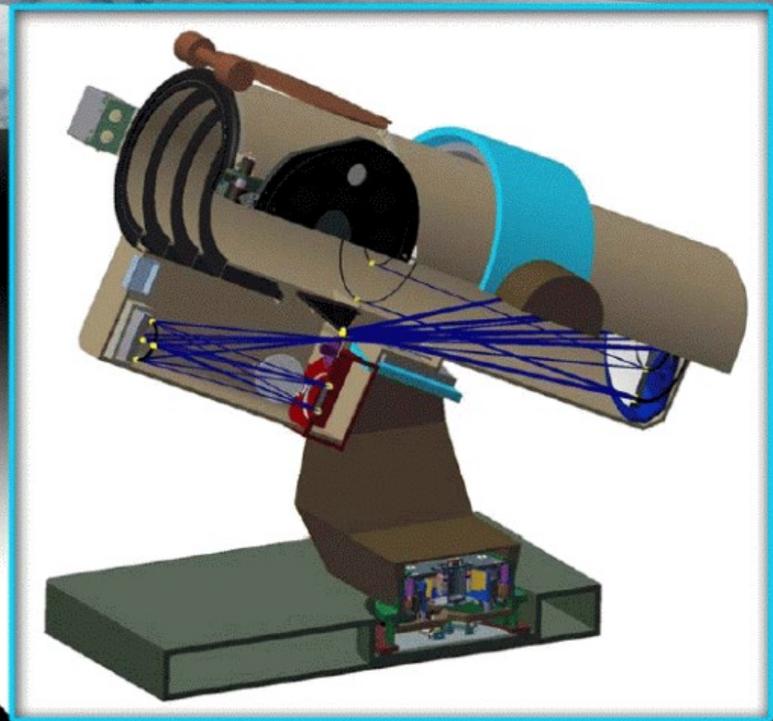
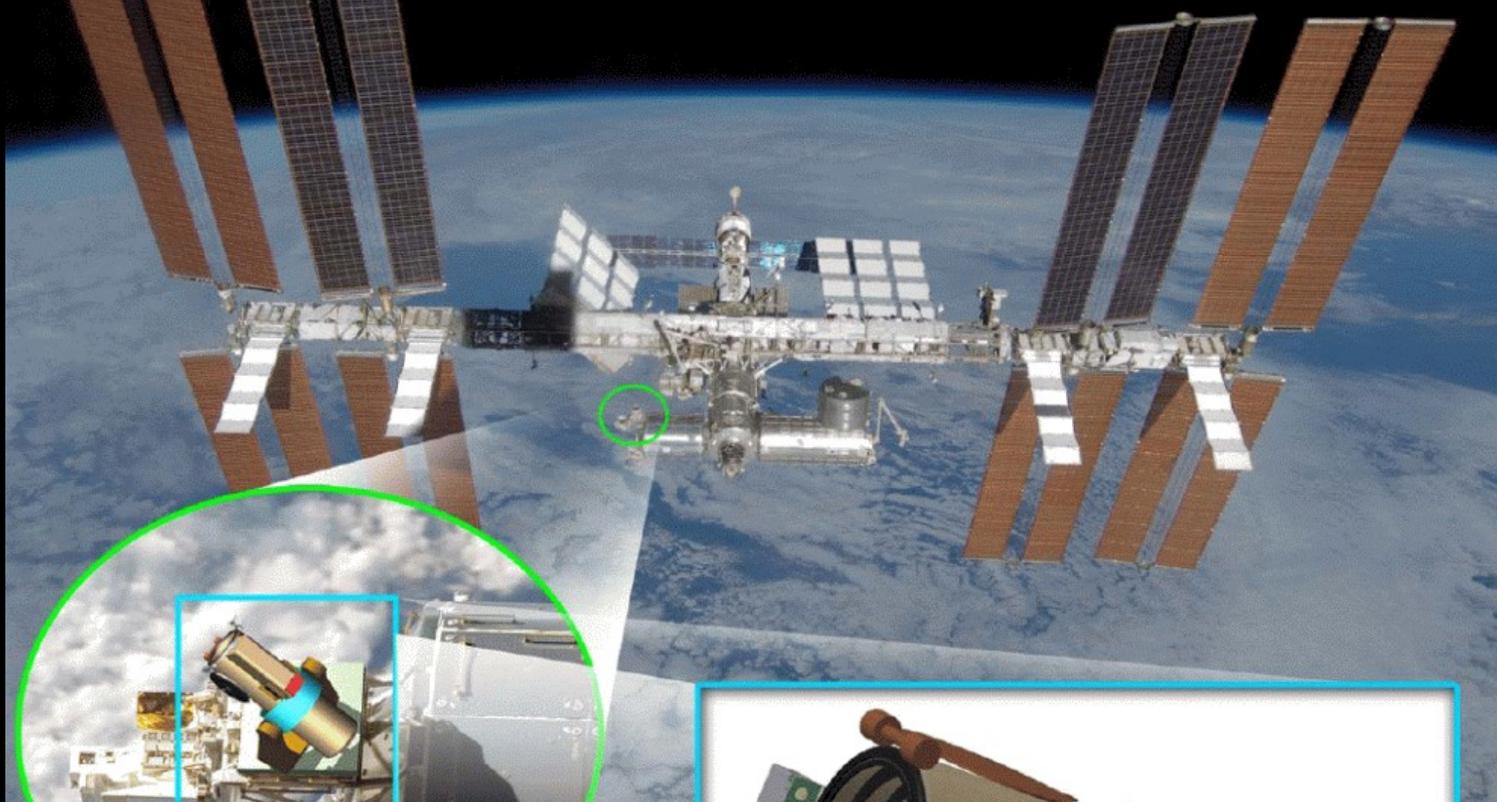
Tim Norton: Project Manager, Harvard Smithsonian CfA

Paul Cucchiaro: Payload Manager, L-3 Com IOS

Brian Rider: Payload Systems Engineer, L-3 Com IOS

Alexander Panasyuk: Software and Science Operations Manager, SAO





Coronal
Physics
Investigator