Steven Victor Penton

Calibration Scientist/Scientific Programmer/Astronomer

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Summary Space Scientist with 20+ years experience using and calibrating astronomical telescopes/missions.

Education

1999, University of Colorado : Ph.D. Astrophysics

1997, Research Systems, Inc : Adv. IDL Application Development Series

1994, University of Colorado : M.S. Astrophysics

1990, Florida Institute of Technology : M.S. Space Science

1989, Florida Institute of Technology : M.S. Physics (Applied Math Minor)

1987, Florida Institute of Technology : B.S. Space Science (High Honors)

Experience

2018-present : Scientific Progammer/Professional Research Associate
      Laboratory for Atmospheric and Space Physics (LASP), Boulder, CO

- Lead SORCE-SIM Data Calibration & Production Manager.
  - Develop and implement algorithms and IDL/JAVA code to calibrate SORCE-SIM Data.
- Calibration Support for TSIS-1 & CSIM.

2012-2018 : Hubble Space Telescope (HST)/Cosmic Origins Spectrograph(COS) Support Scientist
      Space Telescope Science Institute (STScI), Baltimore, MD

- HST/COS team liason to :
  - NASA Goddard Space Flight Center (GSFC): HST+COS operations, anomalies, and flight software (FSW) enhancements.
  - APT (Astronomers Programming Tool) Team (STScI)
  - HST Ground Commanding (STScI)
  - HST Science Observation Scheduling Team (STScI)
- HST Contact Scientist (CS)
  - Assist HST Guest Observers (GOs) with scientific, APT, and instrument-related (COS+STIS) questions about their observing programs. Ensure that the scientific return of the observing program is maximized by reviewing observing programs to ensure successful target acquisition and efficient program design.
- COS Instrument and Target Acquisition (TA) Expert ("Front-End Lead")
  - Monitor on-orbit TA performance and diagnose anomalies. Inform HST User Support, CSs, and GOs about issues and necessary program or policy changes.
  - Document best science observing and TA practices in the COS Instrument Handbook, and periodic community newsletters and presentations.
  - Communicate/Coordinate with HST engineers during on-going nominal engineering monitoring and anomaly recovery situations.
- HST/COS Calibration Support
  - Assist on-going calibrations efforts including wavelength and flux calibrations, and detector corrections (e.g., vignetting, geometric distortion).
  - Craft custom IDL/IRT Ray-Trace models of HST+COS to enable new central wavelength settings, and to verify focus, resolution, and other spectral parameters associated with COS operations and FUV detector LP changes.
- James Web Space Telescope Support
  - NirCAM Thermal Vacuum testing (2015-6), Target Acquisition (TA) Tiger Team (2017-present)

1999-2012, *Research Faculty: HST/COS Calibration Scientist*
      Center for Astrophysics and Space Astronomy (CASA), University of Colorado, Boulder, CO

- Comprehensive support in the integration, testing, calibration, and pipeline development of COS for HST.
- Worked closely with the instrument science team to prepare over 500 orbits of GTO observations.

1994-1999, *IDL/ENVI Scientific Programmer/Astronomer*
      Research Systems Inc. (ITTvis/Excelis, now Harris Geospatial Solutions), Boulder, CO

- C developer for scientific data formats, mathematical functions, and cartography routines featured in IDL/ENVI.

1991-1999, *Teaching/Research Assistant, APS Department*
      Center for Astrophysics and Space Astronomy (CASA), University of Colorado, Boulder, CO

1990-1991, *Scientific Software Analyst/End-to-End Calibration - NASA/EUVE (Extreme Ultra-Violet Explorer) Mission*
      Space Sciences Laboratory/Center For EUV Astrophysics, Berkeley, CA

1987-1990, *System Administrator/Research Assistant, Astrophysical Image Processing Center*
      Florida Institute of Technology, Melbourne, FL