

Curriculum Vitae for

Dr. Mark Alson Gummin

Dr. Gummin received his BS in Physics from St. Norbert College in 1985, an MS in Physics from The University of Notre Dame in 1987, and his PhD in Experimental Nuclear Physics from Oregon State University in 1992. He spent the following 6 years as a Research Physicist with the Experimental Astrophysics Group (EAG) at the Space Sciences Laboratory at the University of California, Berkeley. His primary role in the EAG was Detector System Project Scientist for the Far Ultraviolet Spectroscopic Explorer (FUSE) satellite. During this time he also acted as Detector System Project Scientist for both the



SUMER (Solar Ultraviolet Measurements of Emitted Radiation) and UVCS (Ultraviolet Coronal Spectrometer) instrument packages on SOHO (The Solar Heliospheric Observatory), a \$1.5B US/European collaboration. In addition, he designed, built, and tested hardware for numerous sounding rockets, SMEX, and other small satellite programs. He was co-experimenter on several R&D programs, and was PI on a California Space Institute grant to develop a unique Shape Memory Alloy (SMA) actuator for aerospace use. He then received additional NASA Advanced Technology Program funding to continue the SMA project, and was later awarded a US patent. He is co-chairman of the "EUV, X-ray, and Gamma-ray Instrumentation for Astronomy" and the "Ultraviolet and X-Ray Spectroscopy and Polarimetry" conferences of the International Society for Optical Engineering (SPIE). Dr. Gummin left the University in early 1998 to form his own aerospace consulting firm. The company was incorporated as ALIAS Aerospace, Inc., and currently supports the FUSE project (on-orbit operation and maintenance), the Galactic Evolution Explorer (Caltech/JPL), COS (Hubble Space Telescope, camera design, development, and test), the GOES NO/PQ Solar Environment Monitor (instrument suite development, contamination control, environmental testing, science and system oversight), and several smaller programs. He has been granted four patents to date, and has more than six additional patents pending. He is a member of the American Physical Society and the International Society for Optical Engineering.

Facilities where I've spent significant periods of time (>2 months): program support

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- GE-Panametrics** (Boston –6 years): GOES-NO/PQ Solar Environment Monitor (SEM) Suite Contamination Control Lead (designed, built, maintained thermal vacuum, bake-out, & cleanroom facilities, wrote all CC-related documents/procedures, Systems or Science Lead on all Vibration, EMI/EMC, & Thermal Vacuum Tests, calibration, materials selection, instrument assembly), SEM Science Team, EUV Systems Engineering.
- Boeing Satellite Systems** (El Segundo): GOES-NO/PQ Design Reviews, I&T of XRS/EUV and EPS/HEPAD on N&O spacecraft, environmental tests, CC and Safety training.
- National Synchrotron Light Source** (Brookhaven): GOES-NO/PQ EUV Spectrometer Instrument Calibration Scientist on beamline X23B, built and maintained local cleanroom facilities.
- UC Berkeley** (Space Sciences Lab –6 years): FUSE Detector Systems Project Scientist (lead all instrument efforts), SOHO-SUMER and SOHO-UVCS Detector Systems Project Scientist (lead all instrument efforts), SOHO-CDS, GALEX Detector System Scientist (lead several electronic systems build and test). Systems Engineering, Environmental Test Support and High Voltage Power Supply Manager on Cosmic Origins Spectrograph COS(HST), Contract Support roles on CHIPS, STEREO, & SPEAR.
- NASA GSFC** (Greenbelt): FUSE Satellite Thermal Vacuum, EMI/EMC, Vibe & Acoustic Testing. SOHO Instrument Scientist Thermal Vacuum & bakeouts, IOC and on-orbit support, GOES-NO/PQ Magnetic Test Facility testing, design reviews & meetings.
- Orbital Sciences Corp** (Dulles): Science Lead for GALEX Satellite EMI/EMC and Thermal Vacuum Tests, Instrument Scientist for In-Orbit Checkout Sims, planning, and On-Orbit Operations support (for science and instrument).
- Cape Canaveral Air Force Station** (Hangar AE, LC-17A, LC-36B): FUSE (Delta) and SOHO (Atlas) launch support.
- Applied Physics Lab** (Columbia): FUSE I&T
- John's Hopkins University** (Baltimore): FUSE design, science, & on-orbit operations
- NASA Jet Propulsion Lab** (Pasadena): GALEX I&T and 2009 Mars Smart Lander
- University of Colorado at Boulder** (CASA): FUSE Spectrograph Calibration
- Max Plank Institute for Aeronomie** (Lidau, Germany): SOHO-SUMER Instrument Calibration.
- Harvard Smithsonian Astrophysical Observatory** (Harvard): SOHO-UVCS Instrument (Telescope) Calibration Scientist.

Facilities that I know well, not listed above:

- Swales & Associates (Beltsville): FUSE, GOES
- Matra-Marconi Space (Toulouse, France): SOHO Integration & Test
- NASA Ames (Palo Alto): SOHO, FUSE, COS Shake Tests
- National Test Systems (Boxborough): GOES-N EMI/EMC and Vibration
- Ball Aerospace (Boulder): FUSE, COS, and SOHO-UVCS design reviews, misc. testing
- Lockheed Martin Palo Alto Research Lab: FUSE & COS instruments, GOES design review
- California Institute of Technology (Pasadena): GALEX Science support
- Naval Research Lab (Washington): Misc. Systems Engineering contracts