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| Edward Little  3637 S Desert Echo Rd, Tucson, AZ 85735  Hm: 520-903-1230. Cell: 520-429-5773  [Edward.k.little@gmail.com](mailto:Edward.k.little@gmail.com) |
| Experienced Systems Engineer with a demonstrated history in optics and aerospace. Skilled in Research and Development (R&D), Optical Testing, Electro-optics, Physics, and Data Analysis. |

# Experience

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| 2016 – PresentSenior Systems Engineer, Raytheon Missiles and Defense, Tucson, AZ  * Integration and Test Engineer for exo-atmospheric kill vehicle infrared sensor. * Integration and Test Engineer for development of space qualified visible light camera system for ballistic missile defense. * Production Engineer for multi-mode missile seeker. |
| 2013 – 2015Calibration and Test Engineer, OSIRIS-REX Mission, Lunar & Planetary Lab, University of Arizona  * Tested the components of the OCAMS cameras for the OSIRIS-REX space probe and verified the compliance of the instrument with optical, mechanical, electrical, and operational requirements. * Performed test operations including optical alignment, spectral calibration, MTF testing, vibration testing, and thermal vacuum testing, of optics and CCDs for the OSIRIS-REX OCAMS cameras. * Wrote test procedures, equipment manuals, and calibration reports.  2011 – 2013Laser technician, NP Photonics  * Built and tested fiber lasers. * Performed assembly operations on fiber optics including cleaving and splicing. * Followed assembly and test procedures and worked with sophisticated test equipment including optical spectrum analyzers, oscilloscopes, and wavemeters.  2008 – 2010Service Engineer, 4D Technology  * Managed service for state-of-the-art phase-shifting interferometers. * I diagnosed problems as optical, mechanical, electrical, or software. This required understanding complex data acquisition software, data acquisition boards, and cameras. Repairs involved optical alignment of complex instruments and occasionally travel to customer sites. * I developed experiments to find root causes of instrument failures. * I designed a laser replacement to upgrade Mini-Fiz interferometers.  2006 – 2008Lead Laser Optical Technician, EOS Technologies  * Performed assembly and test of Q-switched infrared lasers including electronic, optical, and mechanical integration of components in an ESD sensitive environment. * Performed optical alignment using lasers, CCD cameras, and autocollimators. * Supervised work of other laser technicians and assemblers.  2003 – 2006electronics Technician, Smithsonian Astrophysical Observatory  * I performed electrical, electronic, and mechanical maintenance on 10-meter and VERITAS telescopes. * Built and integrated CCD camera systems, optical benches, and optical supports for telescope point spread function measurements. * Aligned telescope mirrors using laser alignment system. * Performed delicate work on complex electronics boards including surface mount (SMT) soldering. * Conducted astronomical observations with VERITAS telescopes. |

# Education

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| may 2005Bachelor of Science in Physics and Astronomy, Univerity of Arizona Several graduate courses in optical science including Optical Testing and Opto-mechanics.  Six-Sigma Greenbelt Certification |

# Skills

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| * **Computer Skills:** C, C++, IDL, Solidworks, OSLO, Zemax, Mathematica, 4Sight, Windows including Word, Works, Excel, Frontpage, Power Point * **Engineering Skills:** Knowledge of systems engineering practices including configuration management. Knowledge of drafting and engineering design skills including fabrication. Knowledge of optical design, raytracing, and tolerance analysis. Experience working with machine tools including drill presses, milling machines, and lathes. | * **Electronics Skills:** Knowledge of electricity and electronics including soldering, circuit design and integration * **Optics and Optoelectronics Skills**: CCD detectors and their characterization, spectrographs, photodiodes, image intensifiers, optical design, infrared arrays, cryogenic cooling systems and dewars, adaptive optics, astronomical instrumentation, spectral analysis, scientific programming, mathematical modeling, Interferometers, lasers, fiber optics, fiber splicing, optical spectrum analyzers, optical testing, working in clean room environment, and working with vacuum chambers. |

# Publications

**2006** Holder, J. et al. (67 coauthors including Little, E.K.) The First VERITAS Telescope *Astroparticle Physics* Volume 25, Issue 6. 391-401

**2018** Rizk, B. et. al. (55 coauthors including Little, E.) OCAMS: The OSIRIS-REx Camera Suite *Space Science Reviews*, Volume 214, Issue 1, article id. 26, 55 pp.