

Isaac L. Trumper

Contact Information

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(603) 702-1546

EMPLOYERS AND INTERNSHIPS

NASA Goddard Space Flight Center

Greenbelt, MD

Summer Intern

May 2015 - August 2015

- Researched the capabilities and limitations of reflecting freeform surfaces in two and three mirror telescopes
- Participated in an instrument design lab where I created the optical design for a wide-FOV multispectral polarization imager
- Developed custom software to analyze performance and system characteristics of freeform optics using CodeV macros and Matlab
- Drafted an optical design for a spectrometer using freeform optics to reduce packaging size, number of components, and improve performance

Optimax Systems Inc.

Ontario, NY

Intern

October 2014 - December 2014

- Work on projects in the R&D department dealing with optics, optomechanics, and system engineering

Optikos Corporation

Wakefield, MA

Technician

May 2014 - August 2014

- Performed optical and mechanical alignment of precision components
- Carried out system level quality control for a high volume project, involved use of a theodolite
- Gained electrical engineering experience by working closely with electrical technicians and engineers
- Exposed to the real-world problems of a production project and its relation to the design process

RESEARCH AND TEACHING EXPERIENCE

University of Rochester

Rochester, NY

Laboratory Technician

January 2013 - Present

- Experimentally validated theoretical predictions made by Nodal Aberration Theory about the field dependence of Fringe Zernike trefoil using a Schmidt telescope. Presented a poster at FiO/LS 2013 in Orlando, Florida on the fabrication and implementation, and then at FiO/LS 2014 on the results
- Wavefront measurement of freeform optical surfaces using null optics, deformable mirror, and laser interferometer
- Published article in the R.E. Hopkins newsletter on the experimental results of the Schmidt telescope research
- Fabricated an aspheric plate and Fringe Zernike trefoil plate using magnetorheological finishing (MRF) techniques

Geometrical Optics Teaching Assistant

August - December 2013

- Group leader of nine students for a workshop in Geometrical optics, requiring skills in team management, teaching, and problem solving
- Completed a two credit leadership class, learning about group dynamics, learning theory, and pedagogy

Laboratory for Laser Energetics

Rochester, NY

Laboratory Technician

May - August 2012

- Knowledge of 3D CAD software used for optomechanical design and optical system layout

EDUCATION AND CO-CURRICULAR SKILLSET

University of Rochester

Rochester, NY

Bachelor of Science in Optics

May 2015

- Overall GPA: 3.84; GPA in Optics: 4.0 (Out of 4.0), Dean's List all semesters
- Laboratory experience in Geometrical Optics, Physical Optics, and Optical Instrumentation

Computer Program Knowledge

Present

- Proficiency in general engineering programs to aid in analysis of experimental results such as MATLAB, and Mathematica, as well as basic skills in LabVIEW
- In depth knowledge of optical design and analysis software such as CodeV, and MetroPro, where both programs were used in research projects
- Skilled in L^AT_EX, Microsoft Powerpoint, Excel, and Adobe Illustrator