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Live before our Eyes, Optical Design / Ray Tracing

(John McDonald asked Eric to do some live design ray tracing on the big screen in front of us)

CVOSA Announcement, Tue. August 18th (<u>Please RSVP</u>) At the Teledyne Science Center Auditorium 1049 Camino Dos Rios, Thousand Oaks, CA 91360

Finding Teledyne's Gate



The last bit is tricky, especially in the dark. Teledyne's driveway is right after the white horse fence. Sometimes the guard closes the gate before we have all arrived. There is a call box at the gate. He'll let you in. Park at the very top.

6:00p Mixing and Stand Up Dinner7:00p SpeakerCost: \$25 on site (if you eat dinner, free of charge if you attend just the talk)

Speaker: Eric Ford, Eidetic Optical Systems, Sun Valley, CA

Optical design is changing in our modern world. New types of lens systems have evolved over the last 10 years or so, and they require a new design approach. On the other hand, some types of lens designs have enduring qualities. In this talk we will look back on an interesting symmetrical zoom lens design found in a 1951 paper by a well-known lens designer of that era, and how it is improved during the design process to approach modern High Definition camera quality. At the other end of the time spectrum, we will also explore the current world of cell phone lens design, and how it differs from classical design methods. What has contributed the most to this difference? Optimization software! The steps through both these design processes will be shown.





Eric Ford

Eric is the founder and president of Eidetic Optical Systems. He has designed optical systems since 1970. He held engineering positions with Rockwell and Martin Marietta, and technical management positions with Texas Instruments, Optical Research Associates, and Optimum Optical Systems before starting Eidetic Optical Systems. Eric has experience in a broad range of optical design for systems from the deep UV through the IR. His expertise includes scanning and staring systems, cameras, telescope and objective

designs, laser optics for range finders, designators, reflective/catadioptric systems for FLIRS, zoom lenses, heads up displays, medical imaging and arthroscopic systems and projection TV lenses. Mr. Ford's expertise spans from conceptual design of optical systems through tolerancing, test plating, fabrication drawings, assembly, testing and troubleshooting. The Conejo-Ventura section of the Optical Society of America promotes optical science and optical engineering and facilitates communication and networking among optics professionals, students, and optics aficionados in the geography reaching roughly from Santa Barbara to Pasadena.

Upcoming dates:

• Sept 8th - Renny Fields, The Aerospace Corporation, A Convenient Marriage: Cubesats and Fiber Lasers.

• Oct. 13th - James Beletic PhD - The Physics and Technologies of High Performance Imaging Sensors, *The Heavy Lifting Behind Light Work*

• Nov. 10 William McGuigan, "Microfluidic Isolation and Fluorescence Microscopy in a Fully Automated Digital Diagnostic Instrument (Simoa HD-1 Analyzer)".

- Dec 8 Bill Southwell, Optical modeling, Rugate Filters, Novel optimization techniques
- Jan Dr. James Garnett, Uriel Solar, disruptive startup in Westlake Village