ADDRESSING THE OPTICAL DESIGN AND ANALYSIS NEEDS OF CORPORATE, BUSINESS, EDUCATIONAL, GOVERNMENTAL, AND INDIVIDUAL USERS.

Optica Software News

The Barnhart family has a second child!

Optica Software News

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Schools: for a single department within a college or university or for use throughout the entire college or university campus.

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Non-profit organizations

We are offering 20% off Rayica™ and LensLab™ now through May 28, 2006 if you order online. You may order with ease through our website store to receive your software today. **Online Special:** Each order placed ONLINE through April 30, 2006, will qualify to receive a $25 gift card from Amazon.com (two orders = two gift cards).
Real Time Sliders Are Coming!

Using the GUIKit of Mathematica®®, we are working on an exciting new way to display your optical system in real-time as a “SliderWindow”.

Here, each user-defined parameter becomes a slider bar that you can drag to change its value. The SliderWindow enables the user to quickly visualize how changes to different system parameters will affect the outcome of the optical model. This also opens the door to novice users that have no working knowledge of Mathematica®® or our software to be able to quickly evaluate and explore a previously created SliderWindow model. We will release a preliminary version of SliderWindow to our registered Annual Support Plan users.

![Figure 1. Starting configuration of optical system.](image1)

![Figure 2. Changed configuration of optical system.](image2)
GUI Reports: The Parabolic Mirror Example

The graphics above show the output from a parabolic mirror example and an off-axis parabolic mirror example. The OffAxis -> {100,0} option is needed to create the off-axis parabolic mirror example. The LensLab™ and Rayica™ script for this off-axis parabolic mirror is as follows:

```
DrawSystem[{
    Move[CircleOfRays[20, NumberOfRays -> 5], {0, -100}, 180],
    Move[ParabolicMirror[100, 100, 10], OffAxis -> {100,0}], {-50,0} ,180],
    Boundary[{-150,-150-100}, {100,100,100}]}
];
```

Using the Rayica™ and LensLab™ GUI in development we can recreate this example easily by selecting component dialogs from the main menu bar. After inputing values for focal length, aperture, thickness and off-axis, a button can be clicked to recreate the script. You can then view the component or send the script over to the optical system table in the main menu. The EditRow button can be clicked to make changes to the settings. The component dialogs show all the defaults for options, so users can opt to make changes if needed.

This is one way to use the GUI; however, you can also input variable names for components or values previously defined in your Mathematica notebook, and component dialogs and system tables. You can also input or change the table and script areas directly.
Q&A Mailbox

Q: Can you model Gaussian beams in the Rayica™ and Wavica™ package? How does this work?

A: Rayica and Wavica both model Gaussian beams using the built-in GaussianBeam function. However, Rayica and Wavica use GaussianBeam in very different ways. In Rayica, GaussianBeam is used to generate a ray-trace representation of a Gaussian beam. In Wavica, however, the GaussianBeam function is used find an analytical model for Gaussian beam propagation through an optical system. The GaussianBeam function lets you define either the starting spot size and divergence of the beam or the starting complex beam parameter.

Donald Barnhart, Ph.D. – Optica Software Lead Developer
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CLEO 2006

We are scheduled to attend the upcoming CLEO/QELS conference in Long Beach, California where you can visit us at booth T41. Our lead developer Donald Barnhart will be on-site for questions and short demonstrations. Be sure to stop by and pick up an Optica Software mini Frisbee during your visit.

Our online survey recipient for April 2006 is Gustaw Szawiola, from The Poznan University of Technology - Poland, who won the Rayica-Wavica Bundle with it’s newest features. Please continue to fill out the survey for your chance to win. For more details on how to participate please visit our homepage.

Our lead developer Donald Barnhart will be giving a demonstration and presentation the afternoon of May 22nd at the Jet Propulsion Laboratory in Pasadena, California. If you are interested in attending, please contact us for time and location.

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Exhibit Event Schedule

CLEO/QELS Conference
Long Beach, CA
May 21-26, 2006
CLEO/QELS Exhibit
Booth #T41

International Optical Design Conference
Vancouver, BC Canada
June 4-8, 2006
International Optical Design Conference Exhibit

Optics & Photonics
San Diego, CA
August 13-17, 2006
Optics & Photonics Exhibit

Frontiers in Optics
Rochester, NY
October 10-11, 2006
Frontiers in Optics Exhibit