

# Physics Department Seminar

Friday March 15<sup>th</sup>, 2013

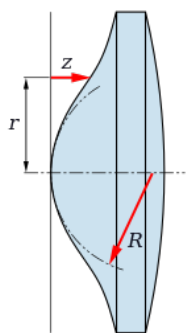
4:00pm in PhSc 108

## “Aspheres in Optics”

Mr. Benjamin Catching  
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*CSU Chico Physics Graduate 1989*



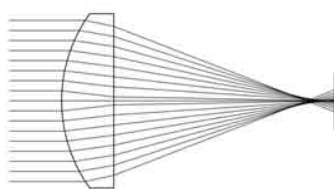
### Abstract:



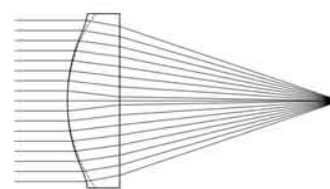
Physics and geometry conspire to make spheres nature's preferred three-dimensional shape. However, for directing and managing light, spherical lenses and mirrors are less than ideal. Modern, computer controlled optical surfacing equipment has made possible affordable and accurate aspheric surfaces for optics ranging from astronomical telescopes, to high power precision lasers to microlithography equipment which result in ever smaller and more compact semiconductors. The advantages and challenges of aspheric optics versus spherical optics are presented.

Optics with shapes of conic sections and some of their properties are presented. Some examples of aspheric optical systems are presented.

Bio: Ben Catching received his BSc in Physics from CSU, Chico 1989, and his MSc in Physics from the University of Delaware 1993. His career in optics has included ground based and space based astronomical telescopes, optics for military and defense, high power lasers, fiber optics communications, and consumer optics at the component and system level.



Sphere lens



Aspheric lens