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Charles R. Keeton* (keeton@physics.rutgers.edu), Department of Physics & Astronomy,
136 Frelinghuysen Road, Piscataway, NJ 08854. *An astrophysical perspective on the mathematics of
gravity and light.*

Gravitational lensing provides a beautiful connection between astrophysics and mathematics. I will show examples of connections that involve catastrophe theory, complex analysis, the Poincare-Hopf index theorem, and stochastic processes. I will strive to explain how astrophysical applications both motivate and benefit from deep study of the mathematics of gravity and light. (Received September 25, 2018)