



# Seeing More Clearly

Twinkling stars are fun for songs but frustrating for astronomers. Current technology uses *adaptive optics* to adjust for turbulence in the atmosphere and deliver an accurate image of stars, planets, and satellites. Correcting for atmospheric distortion involves linear algebra, geometry, and statistics to determine the extent of the distortion and continually adjust deformable mirrors which refocus light waves back along their true paths.

Mathematical algorithms make possible the many real-time calculations required to clarify views both beyond earth and under the microscope. In fact, adaptive optics allowed researchers their first views of individual cells in a living eye. This has brought about the potential for better diagnostics and more accurate surgery, so that a science created to help some people see a few things more clearly may help millions see everything better.

**For More Information:** *Adaptive Optics in Astronomy*, François Roddier.

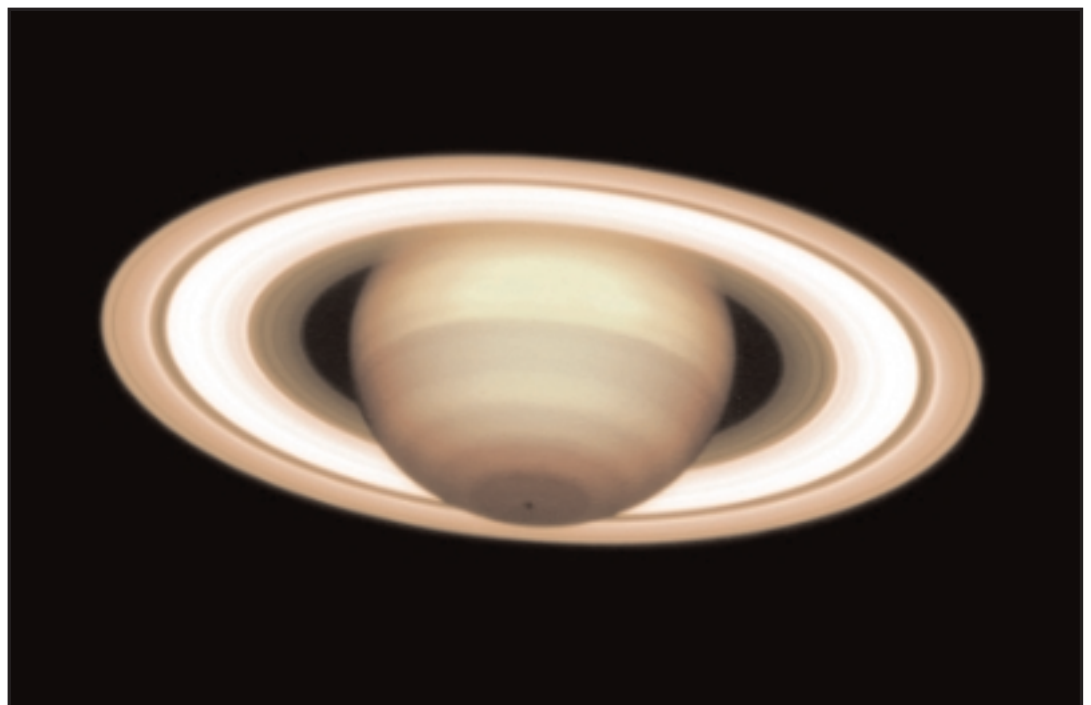


Image courtesy of the European Southern Observatory.



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