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TTO APTT OT

1. LIGHT AS WAVES, RAYS AND PHOTONS

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2. GEOMETRIC OPTICS

The thin prism: the ray approach and the wavefront approach. The lens as an assembly of prisms. Refraction at a spherical surface. Two surfaces; the simple lens. Imaging in spherical mirrors. General properties of imaging systems. Separated thin lenses in air. Ray tracing by matrices. Locating the cardinal points: position of a nodal point, focal point, principal point, focal length, the other cardinal points. Perfect imaging. Perfect imaging of surfaces. Ray and wave aberrations. Wave aberration on-axis – spherical aberration. Off-axis aberrations. The influence of aperture stops. The correction of chromatic aberration. Achromatism in separated lens systems. Adaptive optics.

3. OPTICAL INSTRUMENTS

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4. PERIODIC AND NON-PERIODIC WAVES

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