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ABSTRACT

TESTING OF ASPHERIC SURFACES WITH A MAGNETO-OPTIC ACTIVE COMPENSATOR

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An apparatus and method for testing aspheric surfaces is provided in which a beam of coherent light from a laser source (10) is collimated and passed through a polariser (21) before being directed onto an aspheric element (28; 38) which is immersed in a magneto-optic liquid (41) in a container (30). The apparatus also
10 includes an analyser (22), a CCD camera (51) and a computer for analysing and processing the light beam to determine the profile of the aspheric surface. A uniform magnetic field is produced in the magneto-optic liquid (41) by a solenoid (40). The magnetic field is variable by adjusting the electric current supply (44) to the solenoid (40) allowing control of the fringe spacing and the
15 sensitivity as well as the dynamic range of the testing apparatus. The apparatus may be used to determine the profile of an aspheric surface of a transmissive aspheric element (28) such as a lens, or a reflective aspheric element, such as a mirror (38). In the latter case, a beam splitter (25) may be provided.

(Fig. 1)