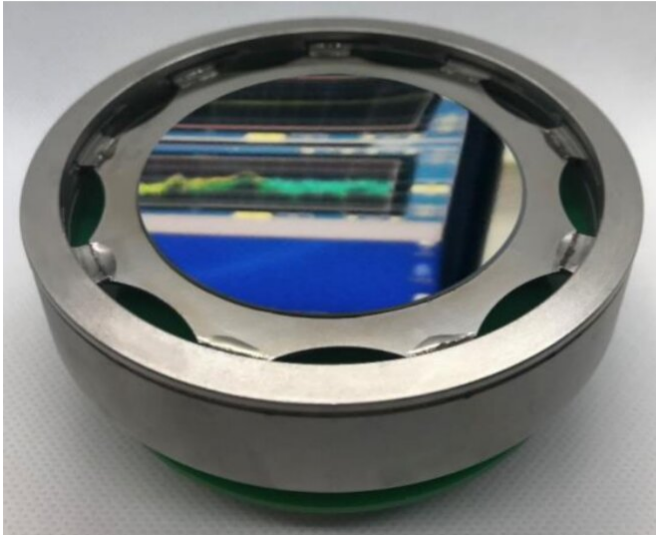


Image: Shape-shifting mirror

12 November 2020



Optics in Germany through ESA's General Support Technology Programme—readying promising technologies for space and commercial markets—and tested against launch stresses in ESA's Mechanical Systems Laboratory.

Provided by European Space Agency

Credit: European Space Agency

This bendable space mirror can have its shape shifted to compensate for manufacturing or alignment errors within orbital telescopes or temperature-driven distortions.

Very large space telescopes are necessary to increase image resolution and sensitivity, whether for deep space exoplanet detection or sharpened views of the terrestrial environment. But large instruments will be harder to align and more sensitive to the absence of gravity and the environmental extremes of space. Being able to actively correct a [telescope mirror](#)'s shape offers a way forward.

Piezoelectric actuators placed under this prototype 50 mm mirror serve to deform its shape. The resulting change in [shape](#) is invisible to the [naked eye](#), around a thousandth of a millimetre or less, but it will still enable previously impossible missions to take place.

A set of ten mirrors were produced by OHB-System and the Muenster University of Applied

APA citation: Image: Shape-shifting mirror (2020, November 12) retrieved 18 May 2021 from <https://phys.org/news/2020-11-image-shape-shifting-mirror.html>

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