



Null Control Breadboard

Description

The null control breadboard (NCB) is a white light Michelson interferometer with a reference flat in one arm of the interferometer and a deformable mirror in the other arm. It was built to test and evaluate new deformable mirror (DM) technologies, and to develop and assess wavefront sensing and control algorithms. The mounting and placement of the beam splitter, deformable mirror, source and reference flat allow certain degrees of freedom that greatly facilitate optical alignment. The deformable mirror can be changed to test differently sized and formatted deformable mirrors from different vendors.

Features and Benefits

- Facilitates high spatial sampling of existing and future DMs in order to evaluate and compare DM technologies.
- The system has the ability to control each mirror segment at different frequencies which can improve estimation of tested surfaces with unusual shapes (ridges, steps, facets)
- Broadband or “white light” capabilities which operates similar to more of an absolute interferometer

Applications

- White Light Interferometry
- Optical Surface Metrology
- Semi-Conductor Surface Mapping
- Laser Vibrometers
- LASIK Surgery

For More Information

If you are interested in more information or want to pursue transfer of this technology, GSC-16164-1, please contact:

Enidia Santiago-Arce
Innovative Partnerships Program Office
NASA Goddard Space Flight Center
enidia.santiago-arce-1@nasa.gov
(301)-286-8497

To view Goddard’s entire portfolio of wavefront sensing technologies, please visit:
<http://ipp.gsfc.nasa.gov/wavefront>