wavefront sensing portfolio

Hybrid Architecture Active Wavefront Sensing & Control

Description

This technology is a method for performing relatively high speed wavefront sensing and control to overcome thermal instabilities in a segmented primary mirror telescope. It utilizes the on-board Fine Guidance Sensor to minimize expense and complexity. It beam splits the image of the guide star (or uses a single defocus guide star image) to perform wavefront sensing using phase retrieval techniques.

Features and Benefits

- The technique can greatly improve the thermal stability/fine phasing architecture of a UV-optical telescope.
- Using the fine guidance sensor star image for guiding and fine phasing, the need for other more complex ways of achieving very accurate sensing and control for UV-optical applications is eliminated.
- The technique is less expensive to implement than edge sensors, laser trusses, or a center of curvature null.

Applications

This method could be implemented on ground segmented observatories using a laser guide star or other similar schemes.

For More Information

If you are interested in more information or want to pursue transfer of this technology, GSC-15758-1, please contact:

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