wavefront sensing portfolio

Imaging System Aperture Masks for Image Plane Exit Pupil Characterization

Description

NASA GSFC has developed a low cost and simple aperture mask architecture that characterizes an imaging systems exit pupil using image intensity variations at the systems image plane. As exit pupil characteristics are typically difficult and expensive to directly measure due to the use of powered optical elements, such as lenses and curved mirrors, the NASA developed mask eliminates the need for such components and enables exit analysis of pupil distortion and illumination characteristics.

Features and Benefits

- Inexpensive
- The masks eliminate the need for complicated optical components for exit pupil characterization
- The masks generate far-field diffraction patterns that can be analyzed to determine both exit pupil distortion and illumination characteristics.
- A new exit pupil characteristic can be measured with the mask, allowing for characterization of the absolute distance between an imaging systems detector plane and its exit pupil

Applications

- Large Telescopes
- Iris Recognition
- Interferometry

For More Information

If you are interested in more information or want to pursue transfer of this technology, GSC-16162-1, 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