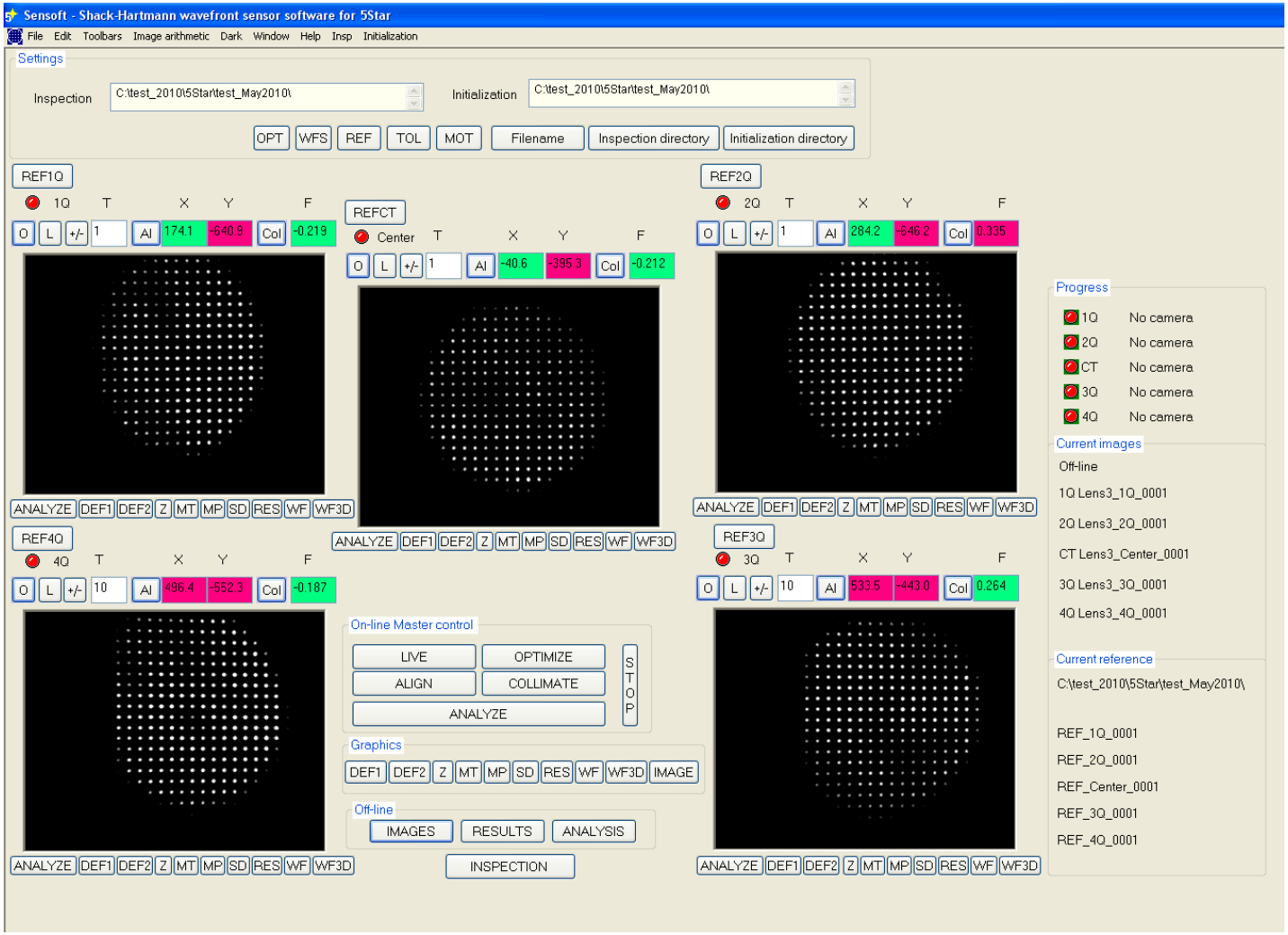
SpotOptics

5STAR

The superior class instrument and software

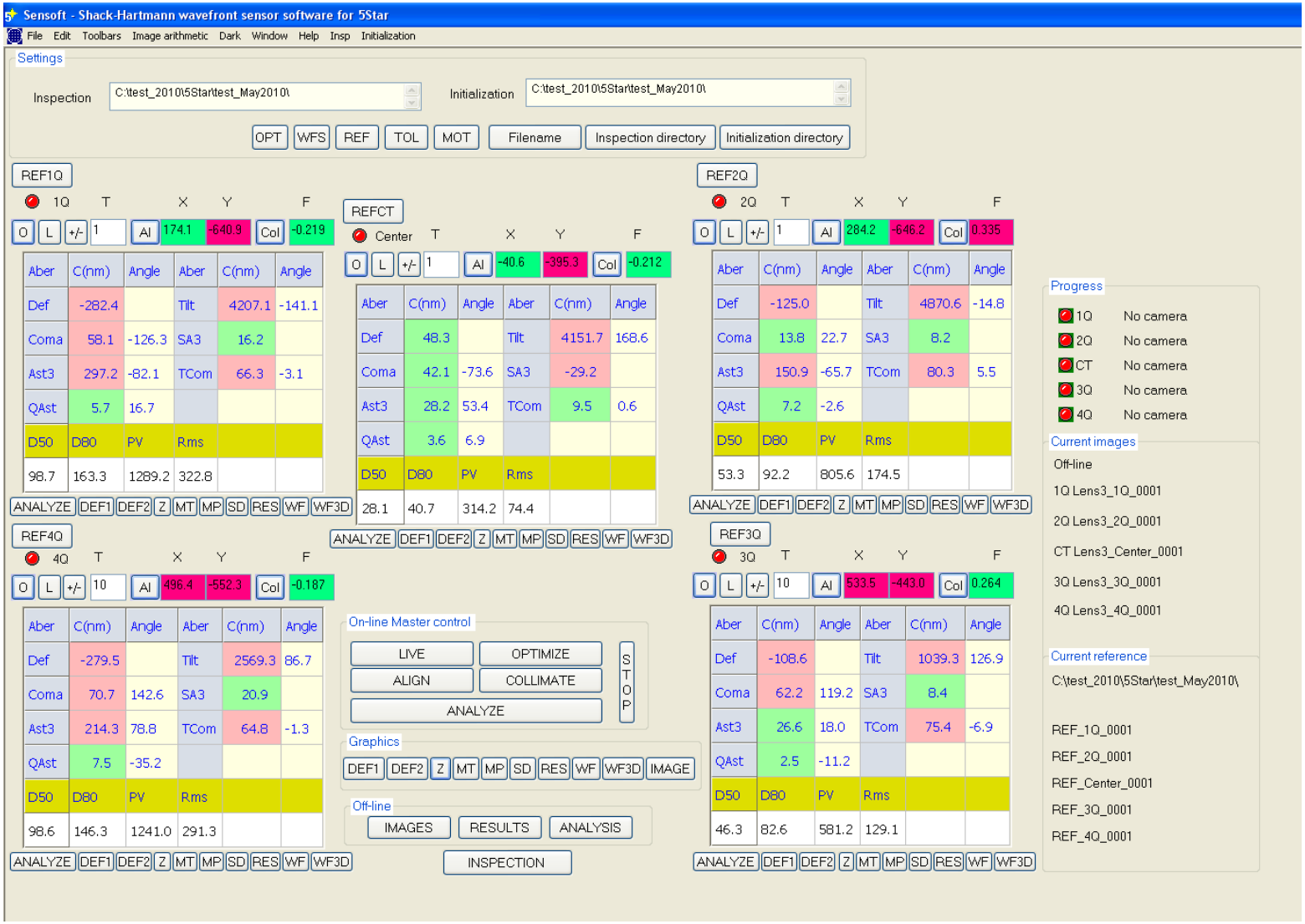
On-axis and off-axis test in one single shot

- 5 cameras: 1 on-axis and 4 off-axis, 5 Live Shack-Hartmann images
- On-line optimization of exposure time for 1 to 5 images
- Simultaneous on-line alignment and collimation

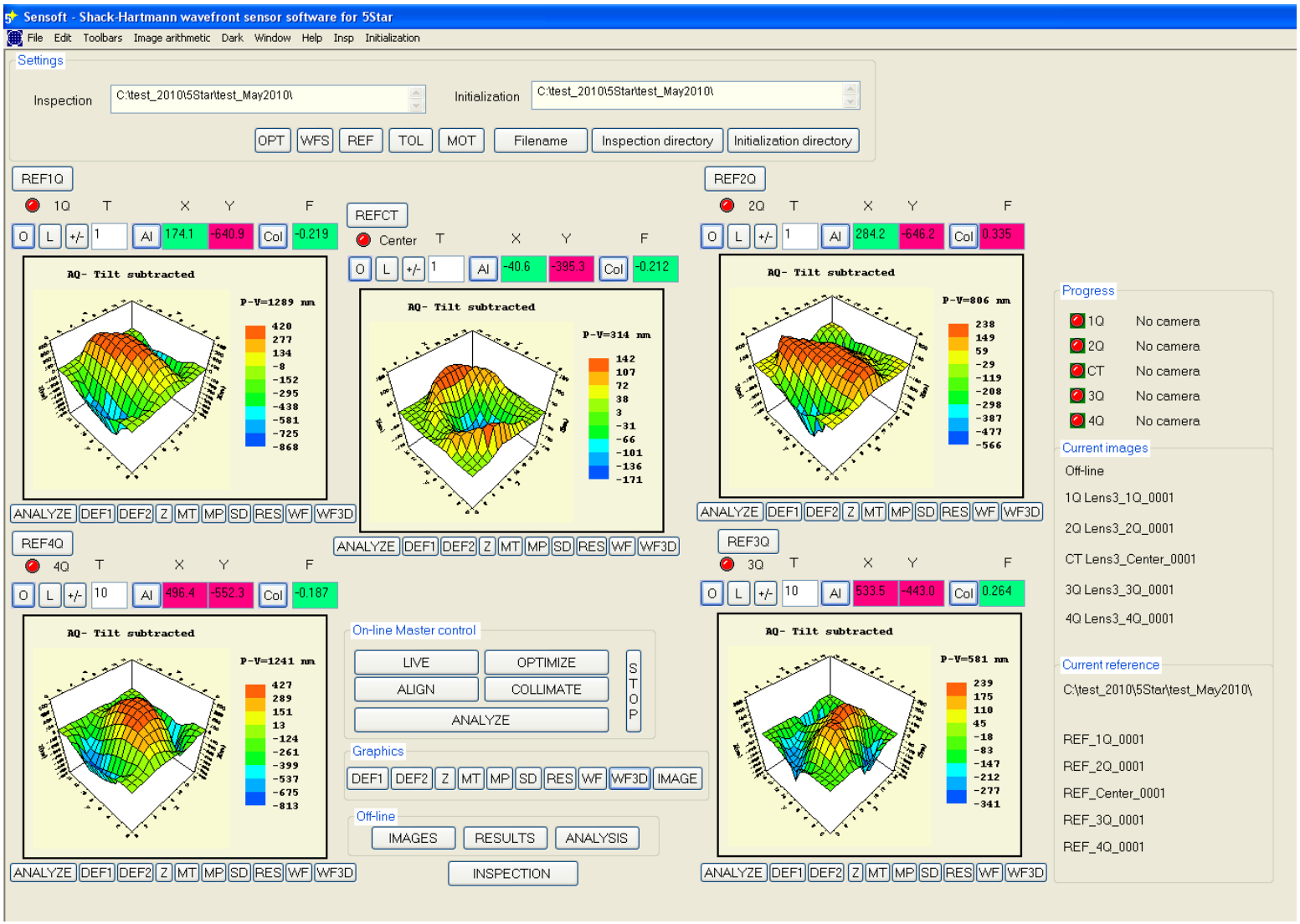


On-line and off-line analysis for 1 to 5 images (simultaneously)

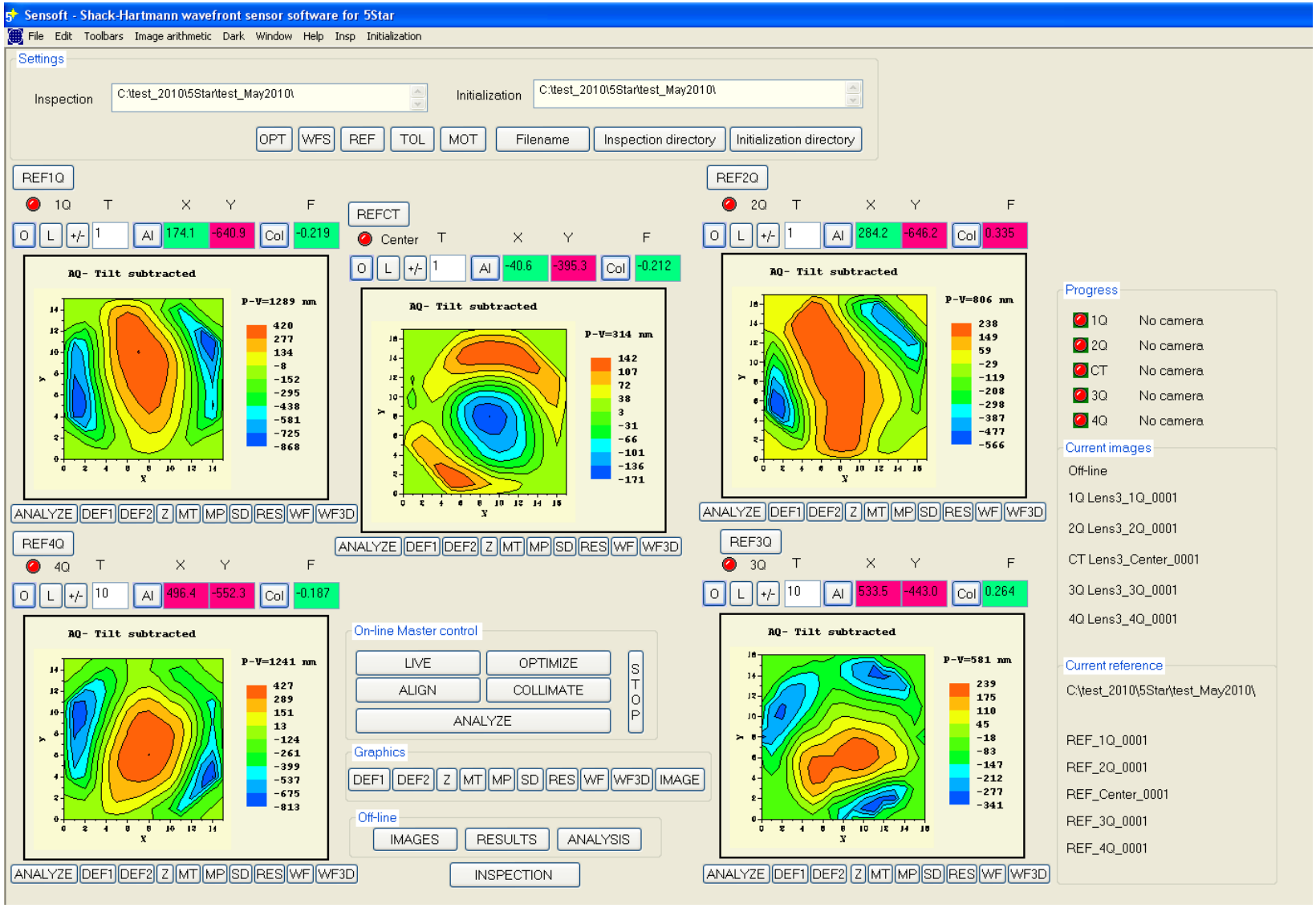
Sensoft output results: Zernike coefficients



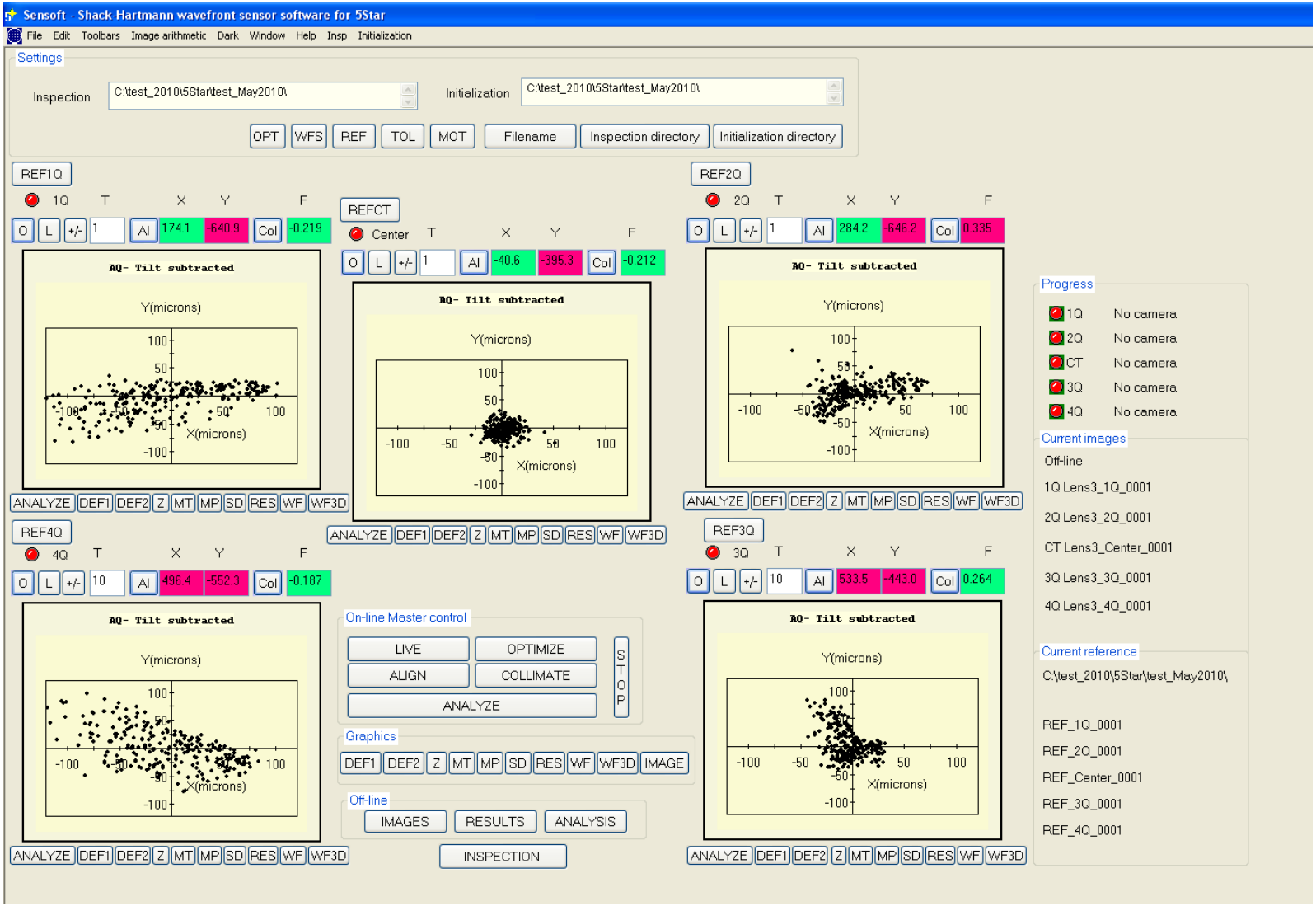
Sensoft output results: 3D of wavefront



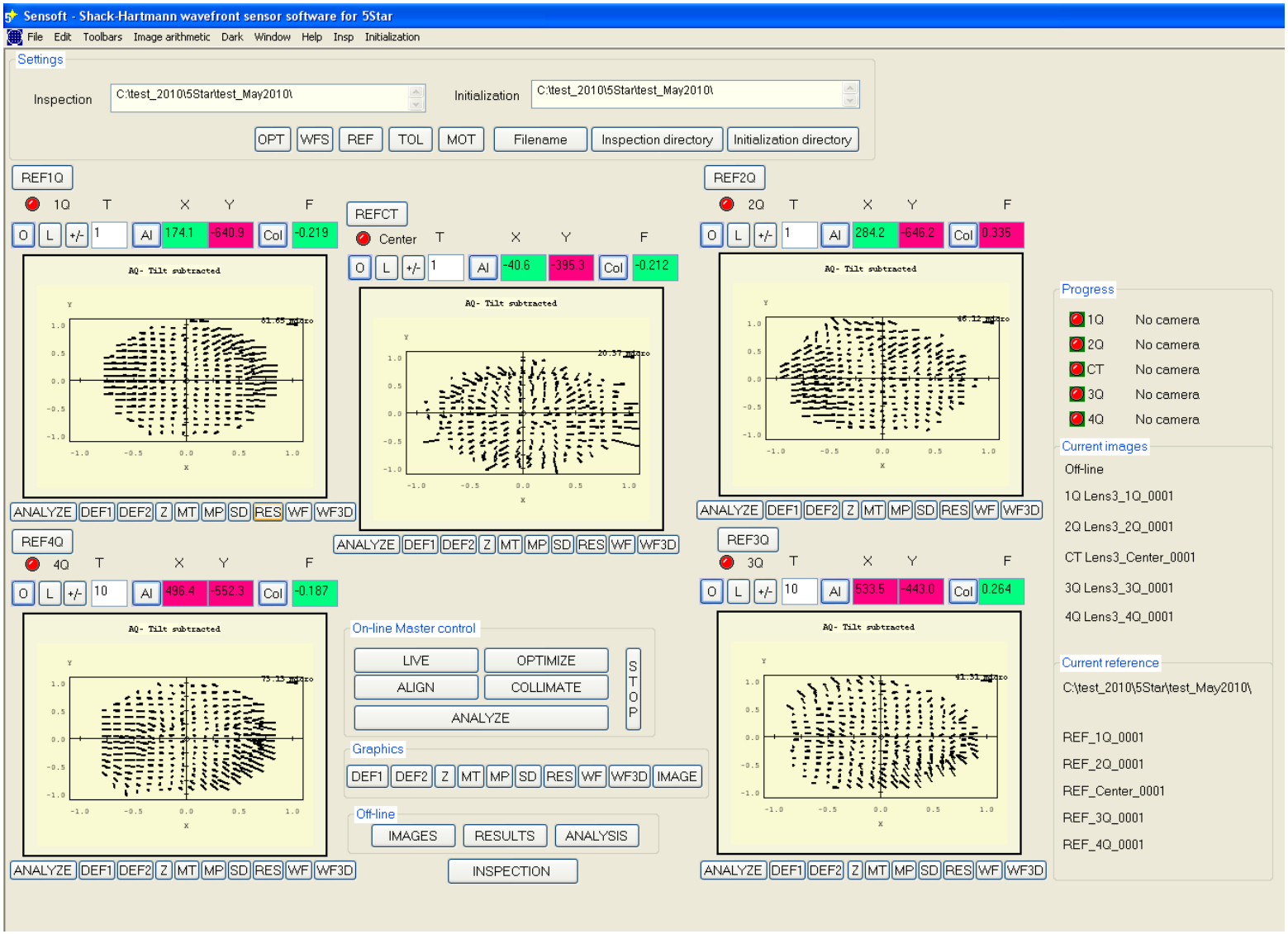
Sensoft output results: contour of wavefront



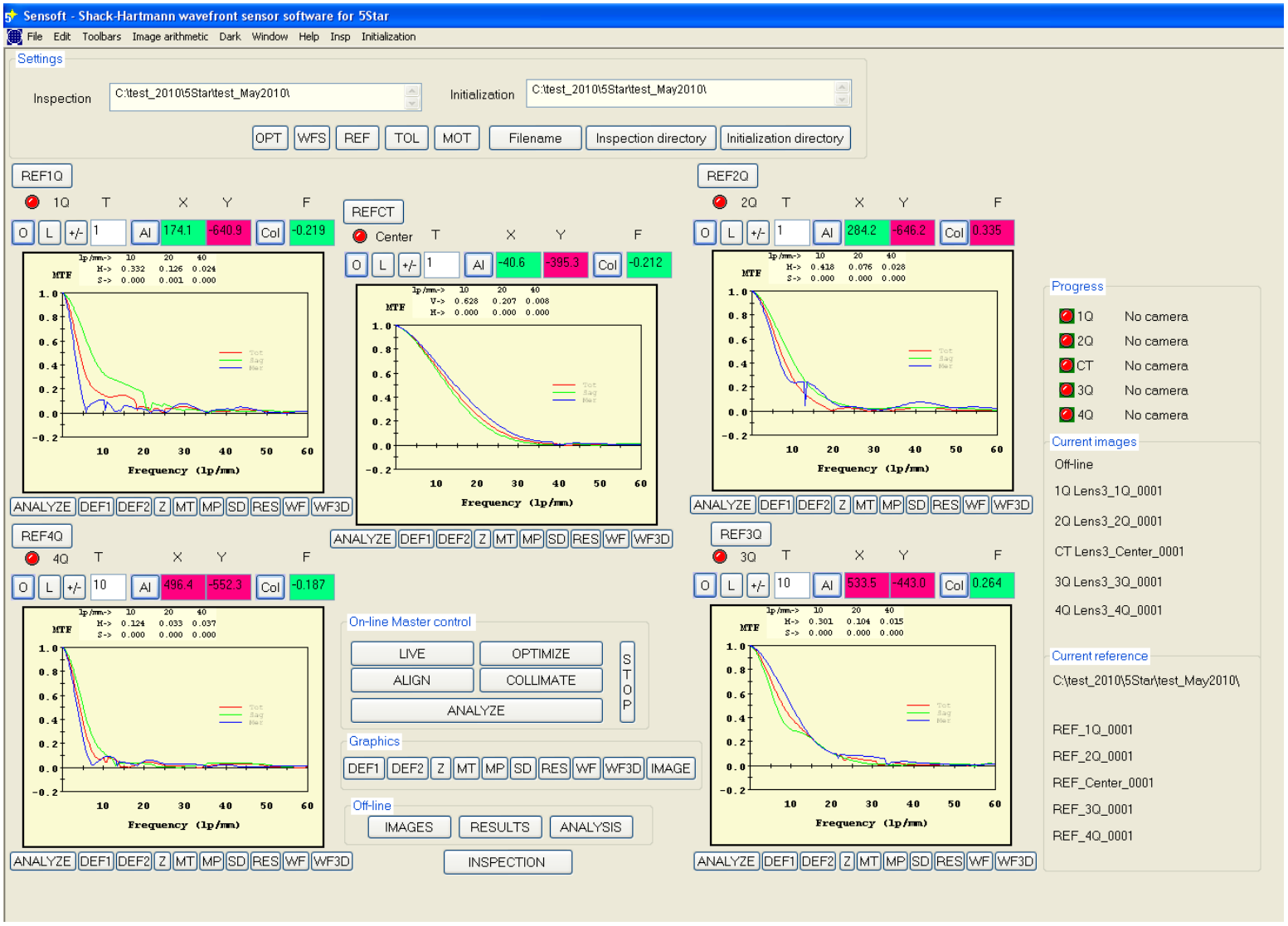
Sensoft output results: spot diagram



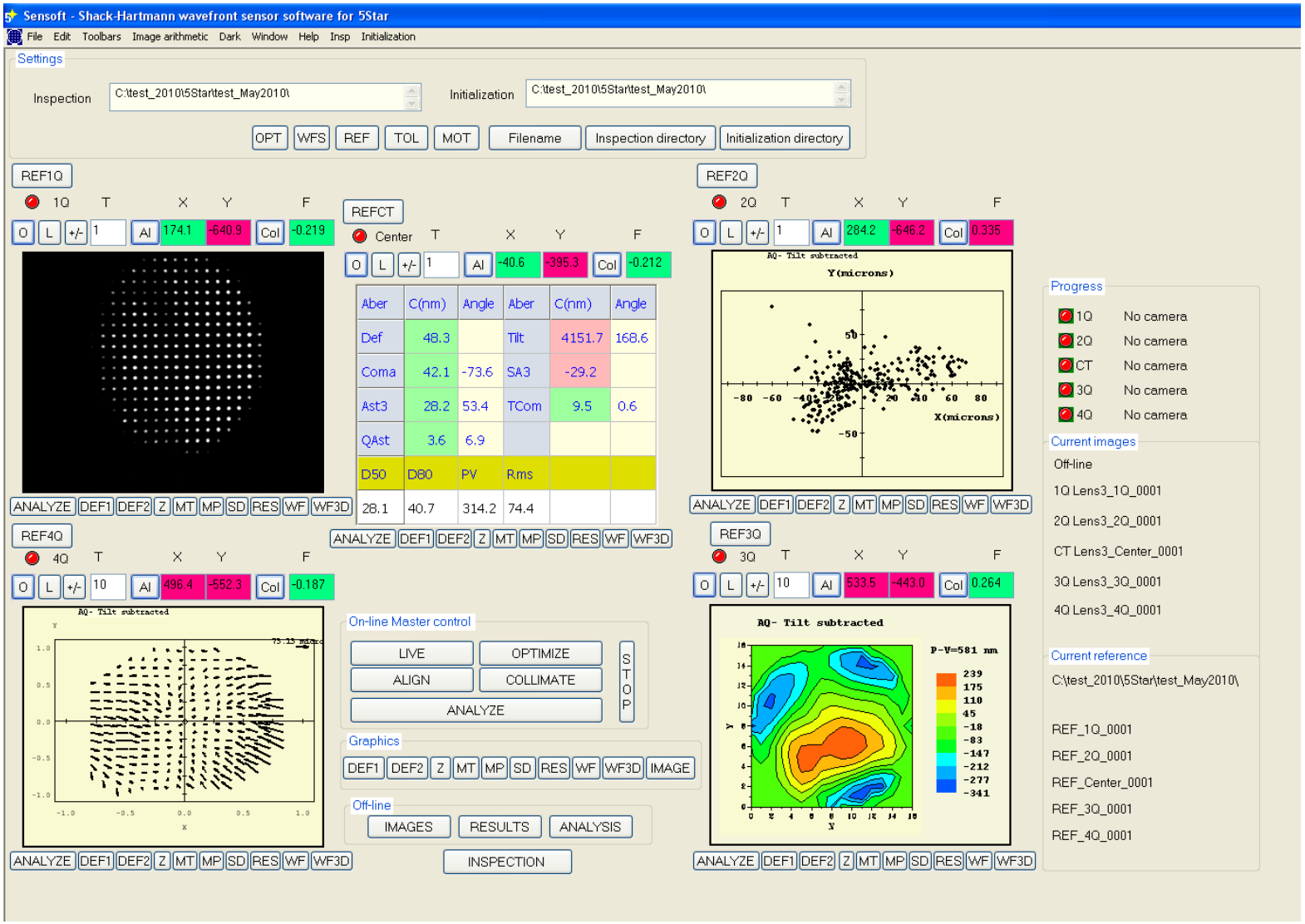
Sensoft output results: distribution of residuals over the pupil



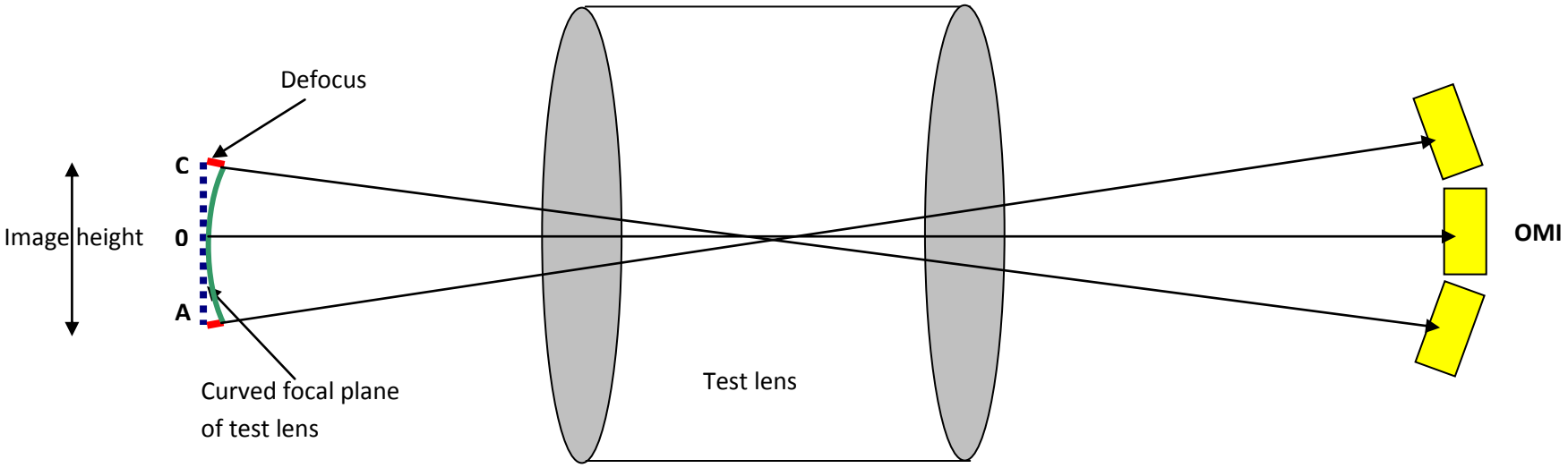
Sensoft output results: Mtf from Shack-Hartmann analysis



Sensoft output results: any combination of graphics is allowed



Measurement of image plane curvature without scanning



The ideal image plane of the test lens is flat (shown by dotted blue line), while the real image plane is shown by the green line.

The real image plane is defined as the locus of points that have the best focus at that off-axis angle.

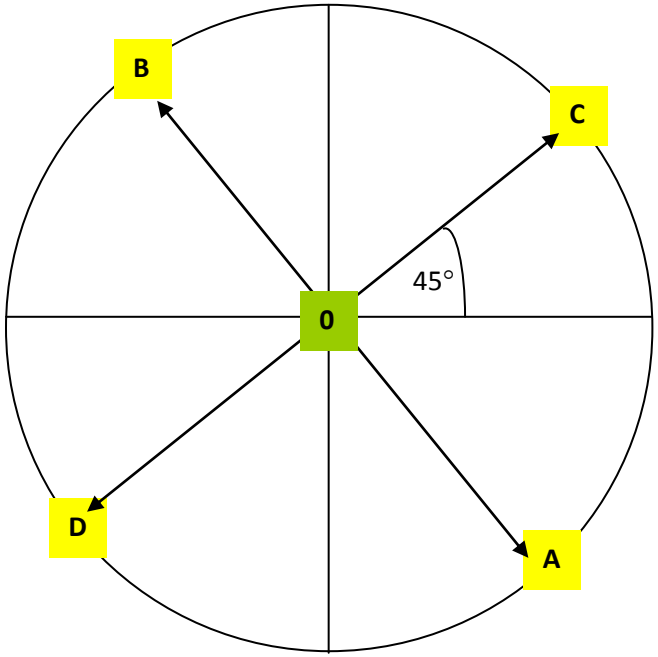
The deviation of the green line from the red blue line at off-axis points A and C is a measure of optical quality,. It is shown by the short red lines.

In the standard method, the best focus is found by mechanical scanning to measure the MTF. However, this takes time. Moreover, the MTF measurement system occupies considerable space, which is expensive in the production line.

5* is very compact. A compact instrument means more production units can be mounted.

In 5Star, pinholes are placed at 5 (or more) positions in the focal plane: thus the light emerging from the lens is parallel and galls on the OMI wavefront sensor. The figure above shows 3 of the positions (A, 0, C) while the figure below shows all 5. The software makes a full Zernike analysis and mathematically computes the best focus. No scanning is involved.

The measurement time is less than 1 second, thereby increasing productivity.



The 5 pinhole positions in the focal plane of the test lens where the measurements are made. More positions can be used if required

Comparison with real measurements