

LRIS Flexure Report 2.0
2011 Sept 19

Data acquisition for flexure testing was completed by Keck Staff during a the 28-29 August 2011 weekend. Flexure tests are usually scheduled on weekends because the number of tasks involving the instrument and telescope is substantially less than week days.

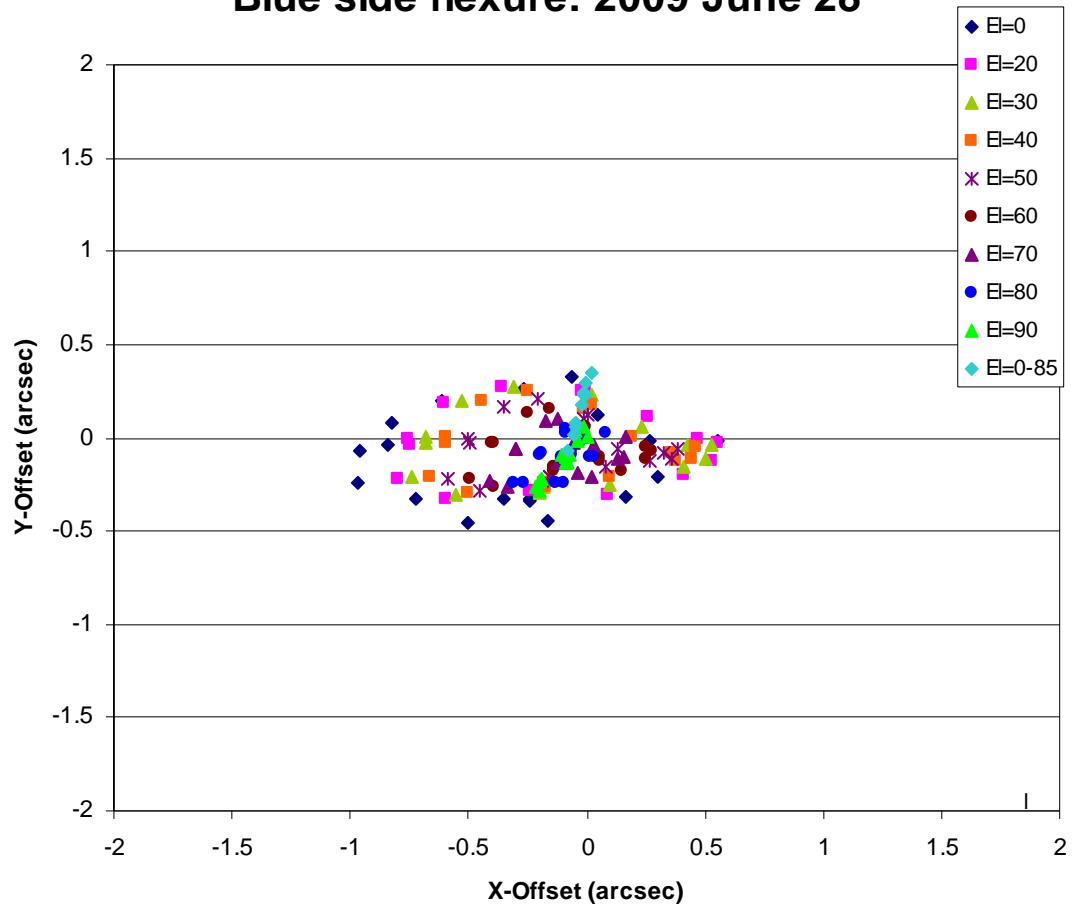
The instrument was configured to acquire internal images of the grid of holes mask as if an observer were acquiring focus data internal to the instrument. A script coordinated telescope moves with image acquisitions to acquire images of the grid of holes at rotator positions from 0-360 in steps of 30 degrees. This was repeated at elevations from 0-90 in steps of 10 degrees. The scripts used to acquire the flexure data were the same for both 2009 and 2011 data sets which makes it easier to compare the differences between LRIS Red III and II.

Below are graphs of the flexure on both the LRIS red and blue cameras. Graphs dated 2009 document the flexure following the upgrade to LRIS Red II while graphs dated 2011 document the flexure for the LRIS Red III upgrade.

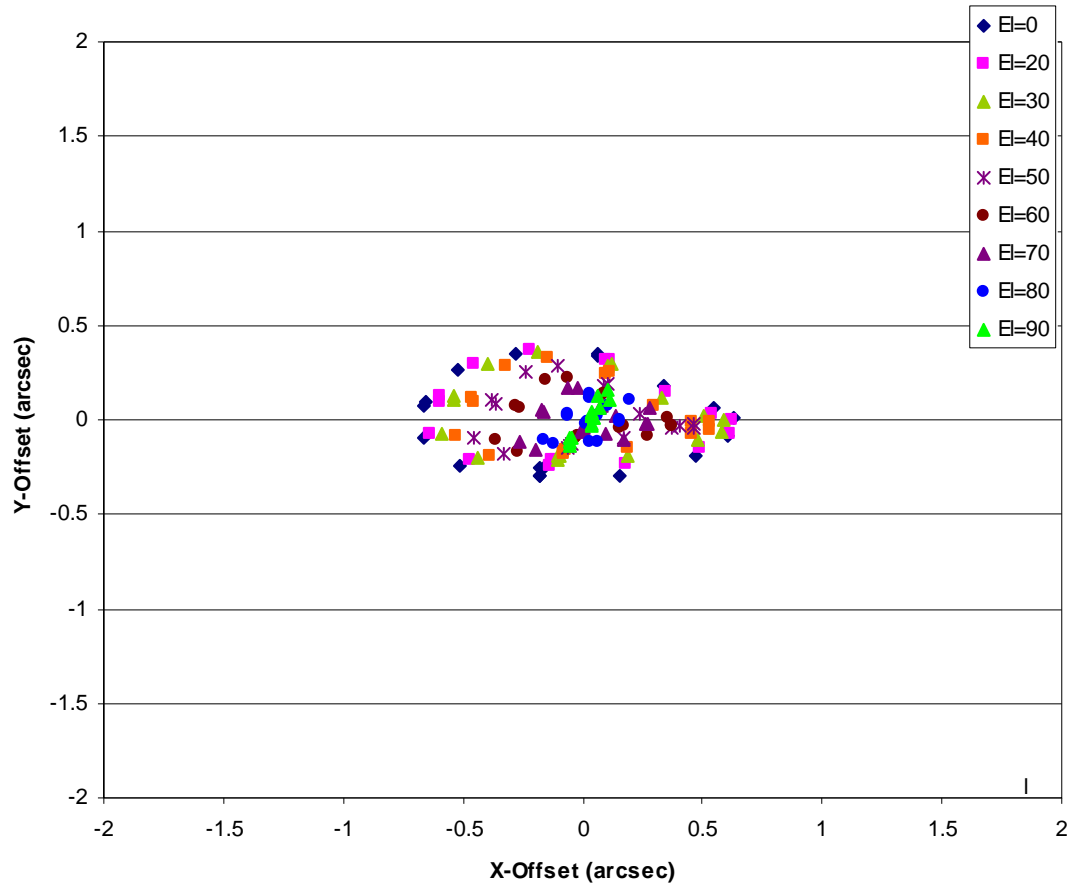
The upgrade to LRIS Red III does not significantly impact the flexure on either of the two science cameras. When comparing the flexure at a specific rotator and elevation, there are small differences of less than 0.1 arcsec. These small offsets are not random, and the last two graphs indicate that there is a mechanical difference contributing to the flexure differences on the Red side.

For the blue side:

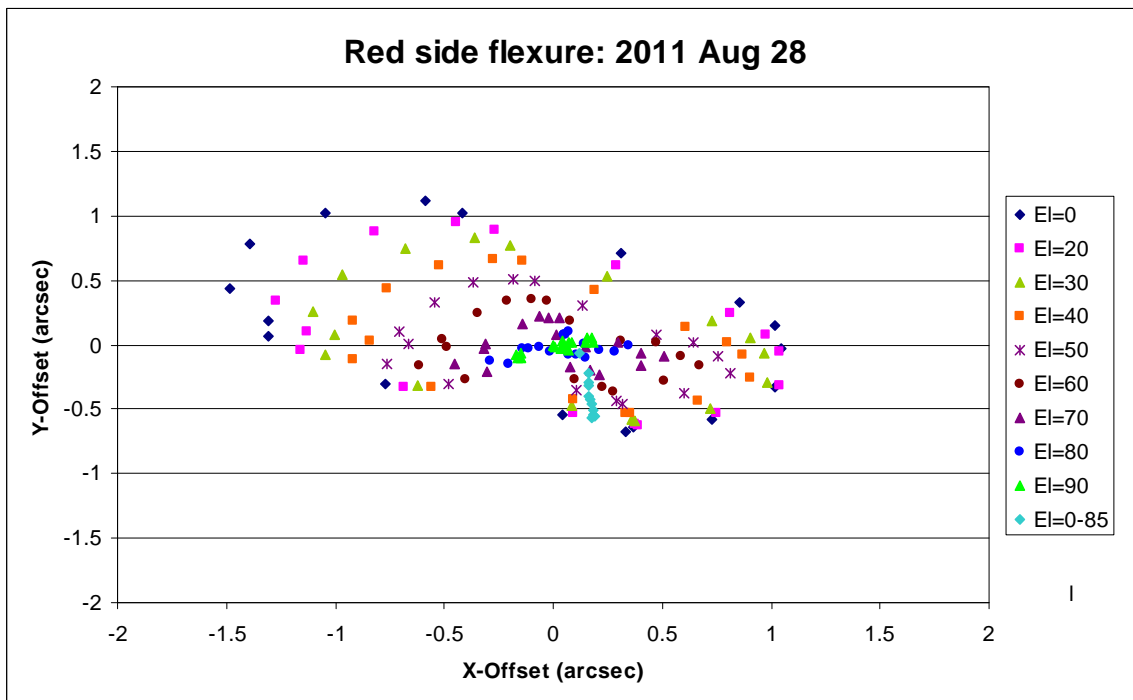
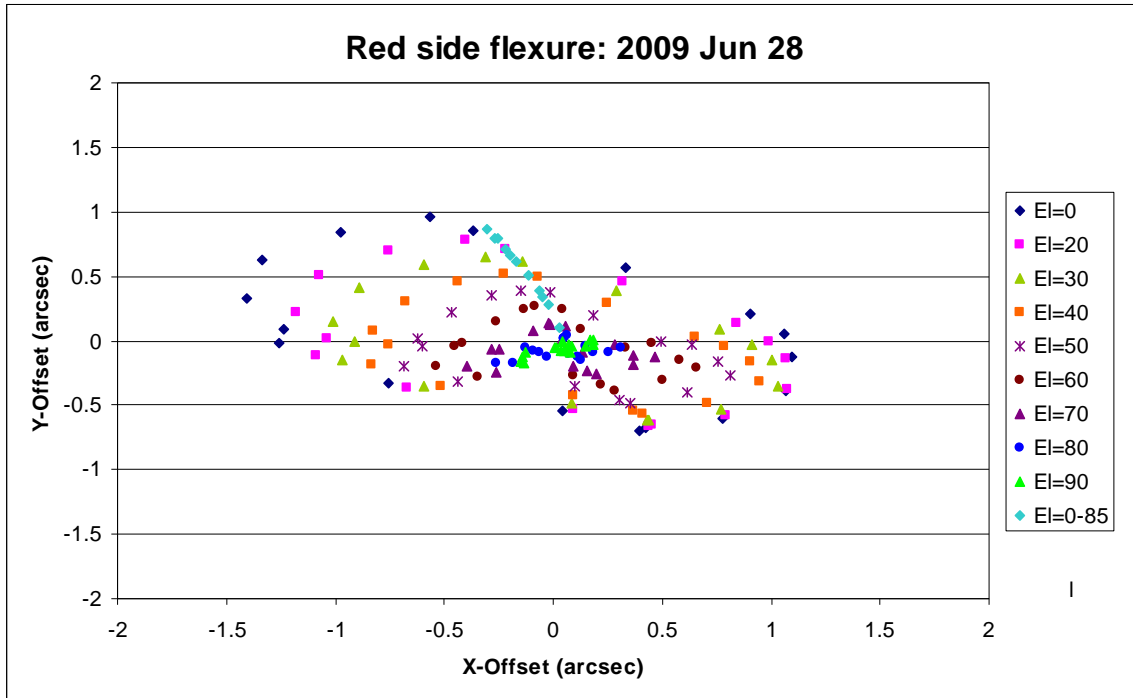
Blue side flexure: 2009 June 28



Blue side flexure: 2011 Aug 28



For the Red side:



The following two graphs show the difference in flexure between LRIS Red III and II along the x and y axes.

