

## C-14 @ f/11 - James C. Veen Observatory Temperature vs. Focus Position

### Calculating Temperature Coefficients

C-14 Classic Schmidt Cassegrain Telescope operating at native f/11. Imaging train includes Optec IFW, TCF-S focuser, Pyxis camera rotator, SBIG ST-9 CCD camera.

The star used for this run was the 4th magnitude Delta Ceti. The star was just west of the meridian at approximately 46 degrees elevation at the start of this session. Conditions were cold but clear with reasonably stable seeing.

Focus achieved using FocusMax 3.4.40  
Temperature Compensation Data wizard.  
Average HFD = 3.13 (std.dev. = 0.33)

Data taken 2011/02/03.

The linear fit to this data set is quite good with a correlation coefficient of 0.936. The slope of the line yields a temperature coefficient of 176 steps per degree C.

For the TCF-S focuser, each step is just under 2.2 microns so the temperature coefficient for this C-14 at f/11 is approximately 387 microns or nearly 0.4 mm per degree C.

Note the scatter at the upper left side of the graph is due primarily to the increased air mass as the star's elevation decreased throughout the session. The HFD for these data points approached 4 pixels. Subsequent data points were disregarded due to the larger HFD and lowered elevation of the target star in the sky.

Thanks to the GRAAA and the James C. Veen Observatory for their use of their equipment and instrumentation.

Respectfully submitted:  
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