WRCALC Software Utility by Glenn Jolly Readme File

WRCALC is a utility for calculating the on-screen star diameter to
use in WinRoddier for a given amount of waves of defocus. It is
very useful to use this tool in your pre-planning before shooting
your data.

Instructions:
Plug in all your telescope and camera parameters and the waves of
defocus you want to use. Then, simply click the "Calc" button in
the WRCALC GUI screen.

After calculating, the "Messages" field of WRCALC will tell you what
star diameter to use when you shoot your data. Radius (diameter
divided by 2) is also shown as a handy cross-check for WinRoddier.
WR states its star sizes in radius instead of diameter.

Consult the "New WinRoddier User Manual" for instructions on how to
measure on-screen star diameters accurately when shooting WinRoddier
data.

The suggested starting defocus is 20 waves, out to 35 waves for
a good working range that will give accurate results with most
telescopes in WinRoddier.

The target range for star diameter size for best results in WinRoddier
is 100-150 pixels. Use camera binning on telescopes with longer focal
lengths and/or smaller camera pixels to achieve the target star diameter
range in WinRoddier.

Be sure to plug in the camera binning value in WRCALC's "Bin" field
to match the actual binning you use with the camera for the shoot,
or WinRoddier will grossly miscalculate the Strehl values for your
telescope.

Sanity check for WinRoddier:
Note the "mm" field in WRCALC after you have made your calculation
(immediately below the "Defocus Waves" field in WRCALC. This
should be a fairly close match to WinRoddier's Calculator button results
when you analyze your data in WR after the shoot. This value should be
within about 0.1-0.5mm of WinRoddier's mm of defocus calculation. If
it isn't, then something went wrong with your setup parameters or the
actual size of the star diameter you imaged was not close to your
pre-calculated star diameter inside WRCALC before shooting.

IMPORTANT...be sure your "Test Wavelength" value in WRCALC matches
the wavelength you use inside WinRoddier for the analysis, or you
may get inaccurate Strehl results. This is a common mistake that is
made when shooting through various color filters to analyze your
telescope at different wavelengths.

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