

MOSAIC PSF simulation December 2022

Request

“PSF in the Median condition for all the MOSAIC bands (central wavelength)

Band	λ central / [nm]	Band	λ central / [nm]
B	440	IY	920
V	562	J	1202
R	720	H	1638

Files in archive

Filename	Description
GLAO_Median_440nm.fits	49 GLAO PSFs in FITS format for 440nm
GLAO_Median_440nm.SUMMARY.pdf	Summary of the 49 PSFs (see below for what extra information is added to the plots)
NOAO_Median_440nm.fits	1 seeing limited PSF in FITS format for 440nm
NOAO_Median_440nm.SUMMARY.pdf	The seeing limited PSF
GLAO_Median_562nm.fits	As above but for 562nm
GLAO_Median_562nm.SUMMARY.pdf	Ditto
NOAO_Median_562nm.fits	Ditto
NOAO_Median_562nm.SUMMARY.pdf	Ditto
GLAO_Median_720nm.fits	As above but for 720nm
GLAO_Median_720nm.SUMMARY.pdf	Ditto
NOAO_Median_720nm.fits	Ditto
NOAO_Median_720nm.SUMMARY.pdf	Ditto
GLAO_Median_920nm.fits	As above but for 920nm
GLAO_Median_920nm.SUMMARY.pdf	Ditto
NOAO_Median_920nm.fits	Ditto
NOAO_Median_920nm.SUMMARY.pdf	Ditto
GLAO_Median_1202nm.fits	As above but for 1202nm
GLAO_Median_1202nm.SUMMARY.pdf	Ditto
NOAO_Median_1202nm.fits	Ditto
NOAO_Median_1202nm.SUMMARY.pdf	Ditto
GLAO_Median_1638nm.fits	As above but for 1638nm
GLAO_Median_1638nm.SUMMARY.pdf	Ditto
NOAO_Median_1638nm.fits	Ditto
NOAO_Median_1638nm.SUMMARY.pdf	Ditto

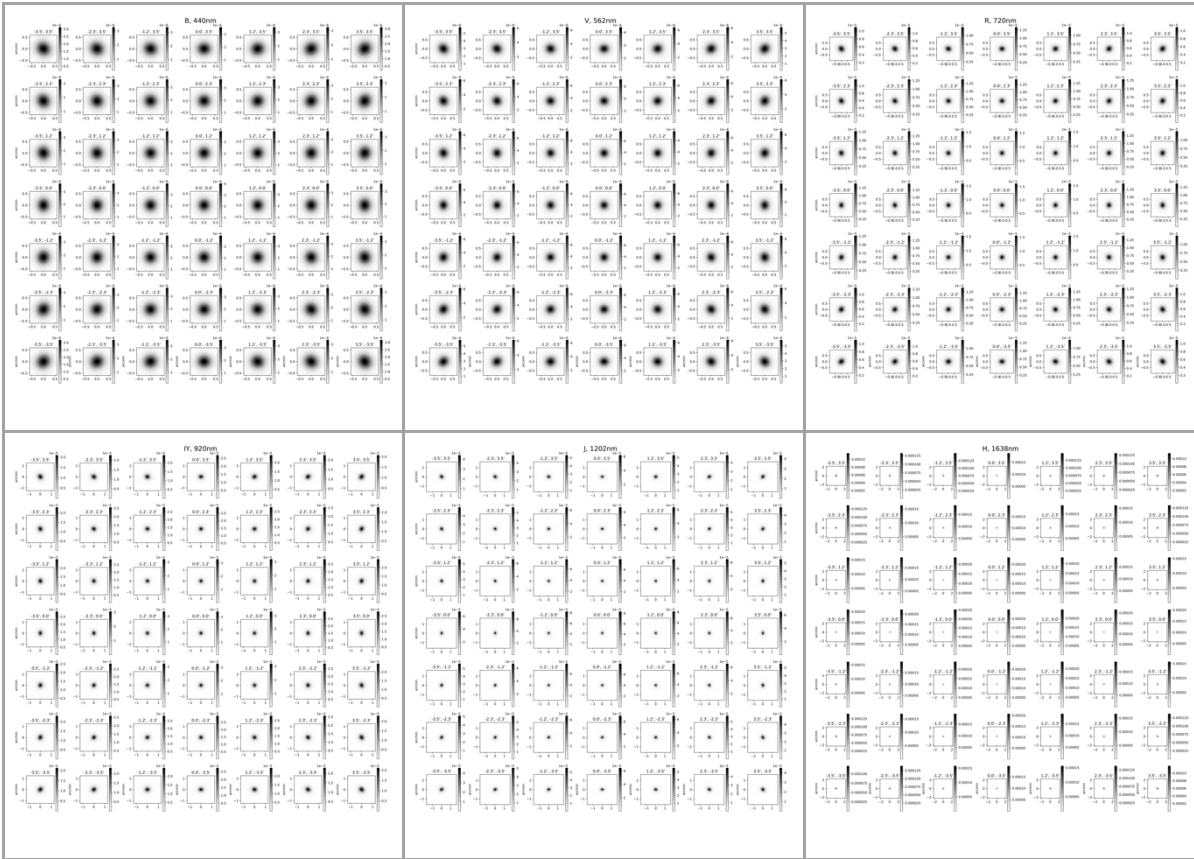
Notes for files

1. The pixel scale varies between wavelengths PSFs so they must be resampled if co-added or otherwise placed onto a common coordinate system.
The HDU keyword 'SCALE' is the pixel scale in arcseconds / pixel.
2. Each PSF is normalised to a total flux of 1, so the flux density varies: the easy way to equalize flux density after spatial resampling is to rescale the total flux to a fixed value.
3. The 25th image extension is the on-axis PSF for GLAO PSFs.

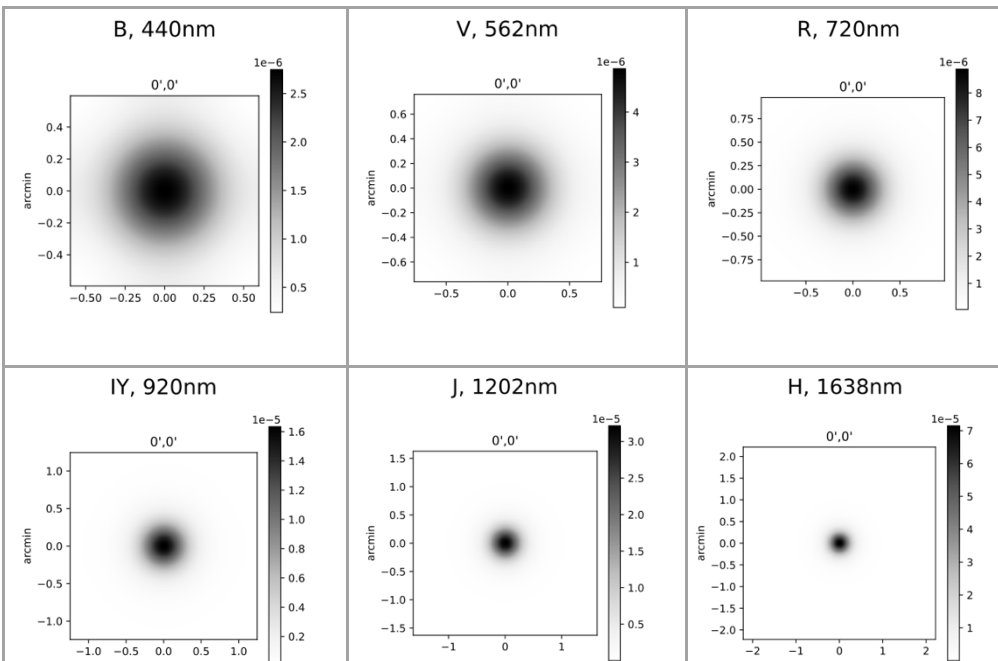
A summary of the PSFs follows: the PDF files duplicate this but add some additional information which is principally:

- A. The red dotted circle has 600mas diameter
- B. The red number corresponds to the location of the PSF within the first FITS HDU data array

C. The black values are the angle offsets and the EE within the 600mas diameter. Do not rely on the EE calculation, it is an approximation as guidance only.



The GLAO PSFs, 49 for each central wavelength, covering a grid of angular positions. The 25th PSF in the FITS file represents the on-axis position.



The seeing limited PSFs on-axis for each central wavelength.