

**Figure 1:** *Monochromatic on  $-$  axis PSF in log irradiance, normalized to the peak irradiance value.*

# Monochromatic Normalized Irradiance (Radial Average)

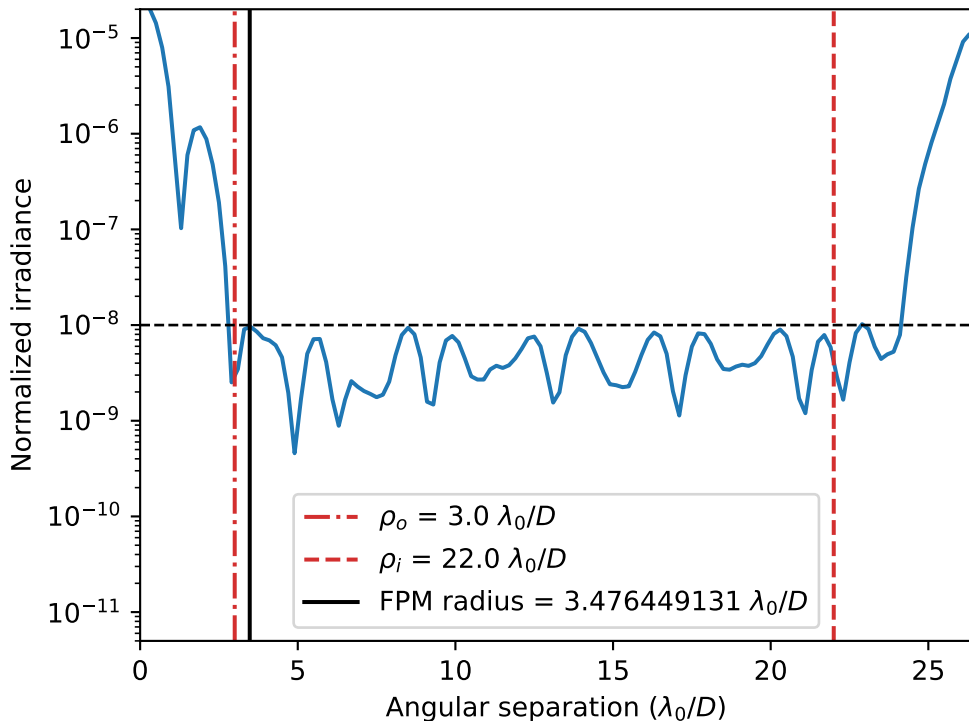
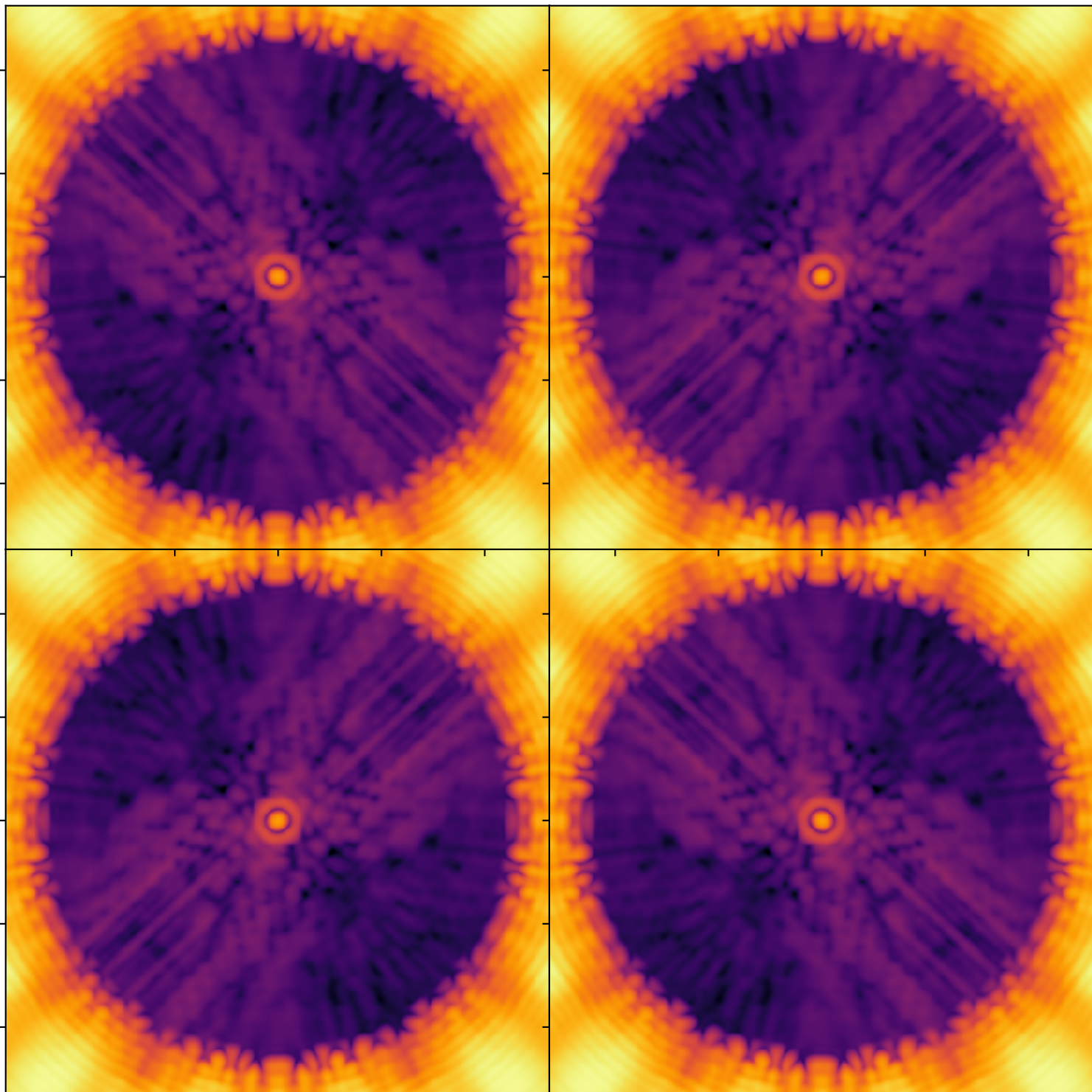


Figure 2: Monochromatic on – axis PSF azimuthally averaged over angular separations  $0.1$ - $37.3 \lambda/D$ , normalized to the peak irradiance. The vertical, solid black line at separation  $3.476449131 \lambda/D$  marks the radius of the FPM occulting spot. The vertical, redlines at  $3.0$  and  $22.0 \lambda/D$  respectively indicate the radii of the inner and outermost constraints applied during the apodizer optimization.



### APLC Analysis Summary

APLC design	2.51188643150958%
nPup	1168 x 1168 pixels
Gap padding (multiplicative)	
Oversampling (grey levels)	
Telescope	GPI
Lyot stop inner diameter (% of inscribed circle)	0.08
Lyot stop outer diameter (% of inscribed circle)	0.012
Bandpass	2.51188643150958%
# wavelengths	3
FPM radius (grayscale)	3.476449131 $\lambda$ /D
nFPM	1168 pixels
IWA — OWA	3.0—22.0 $\lambda$ /D

Optimizer called with the following parameters:

- ▷ Pupil file: GPI/Primary\_GPI\_grey\_oversamp04\_symmetric\_N1168.fits
- ▷ Lyot stop file: GPI/LS\_GPI\_080m12\_03\_grey\_oversamp04\_notabs\_N1168.fits

## ***Analysis Summary***

Apodizer &  
Telescope Aperture

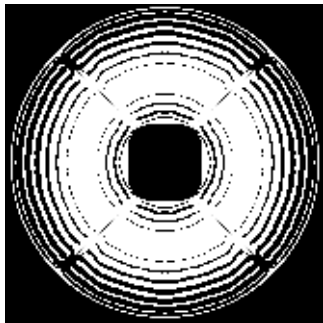


Image plane

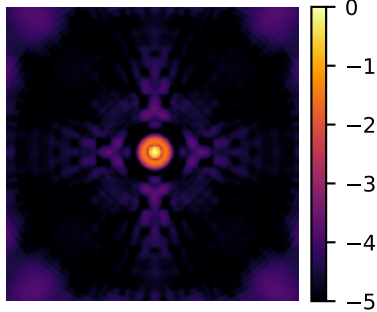
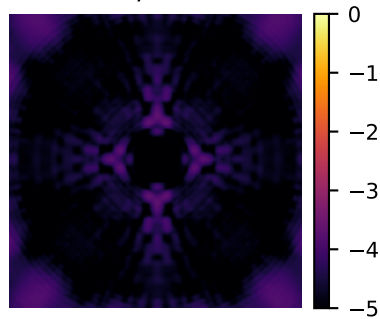
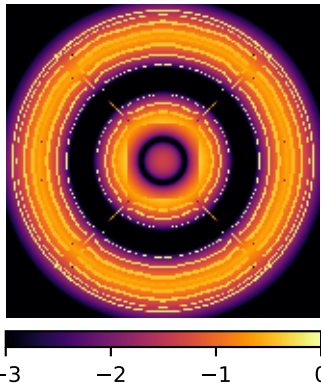


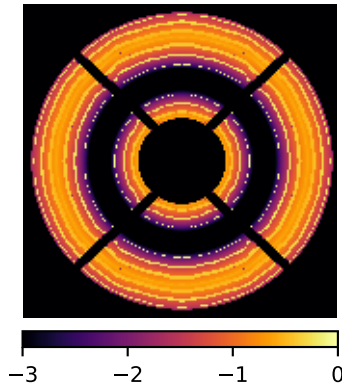
Image plane  
w/FPM



Lyot plane



Lyot plane  
w/lyot stop



Final image plane

