import numpy as np

import matplotlib.pyplot as plt

# Image size (should match your mapping arrays)

img\_size = 3000

# Create a Gaussian source in the center of the source plane

x = np.arange(img\_size)

y = np.arange(img\_size)

xx, yy = np.meshgrid(x, y)

# Center and width of source

cx, cy = img\_size // 2, img\_size // 2

sigma = 100 # Size of the galaxy

# 2D Gaussian

source\_img = np.exp(-((xx-cx)\*\*2 + (yy-cy)\*\*2) / (2 \* sigma\*\*2))