# Ensure beta\_x and beta\_y are integer indices within the image bounds

beta\_x\_clip = np.clip(beta\_x.astype(int), 0, img\_size-1)

beta\_y\_clip = np.clip(beta\_y.astype(int), 0, img\_size-1)

# Create lensed image: each (i, j) pixel in the image plane takes its value from the mapped source coordinates

lensed\_img = source\_img[beta\_y\_clip, beta\_x\_clip]

# Display the result

plt.figure(figsize=(8, 8))

plt.imshow(lensed\_img, origin='lower', cmap='afmhot')

plt.title('MBT Simulated Gravitational Lensing (Lensed Gaussian Source)')

plt.xlabel('Pixel X')

plt.ylabel('Pixel Y')

plt.colorbar(label='Intensity')

plt.tight\_layout()

plt.show()