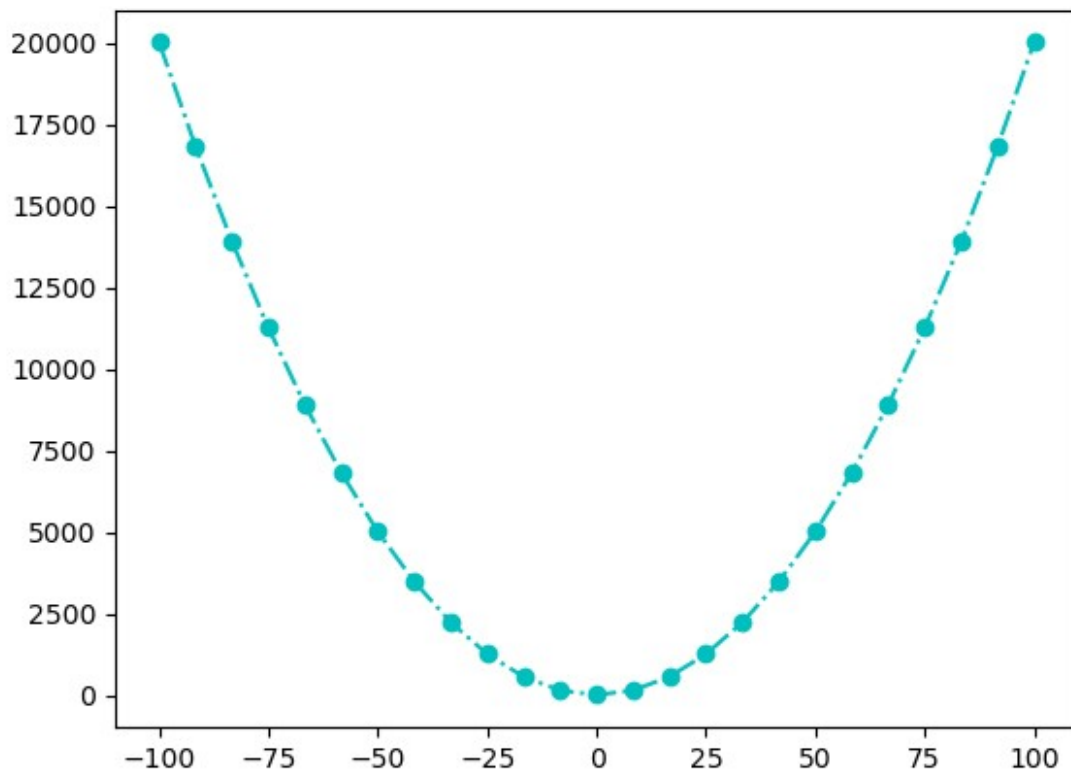```python
import numpy as np
import matplotlib.pyplot as plt

print("hello world")
a,b =3,4
print("product of a and b is: ",a*b)

hello world
product of a and b is: 12

''' i know commenting is essential but i dont need it. Thankyou '''
a= np.linspace(-100,100,25)
b=2*(a**2) + 5
plt.plot(a,b,'o-.c')
plt.show()
```



```python
from astropy.io import fits
import numpy as np
import matplotlib.pyplot as plt

file_dir=r"C:\Users\acer\Downloads\\"
img_name="pdi_pi_collapsed.fits"
img=fits.getdata(file_dir+img_name,ext=1)

fig=plt.figure(figsize=(8,8),dpi=300)
image=plt.imshow(img,origin='lower',vmin=-0.001,vmax=0.01)
```
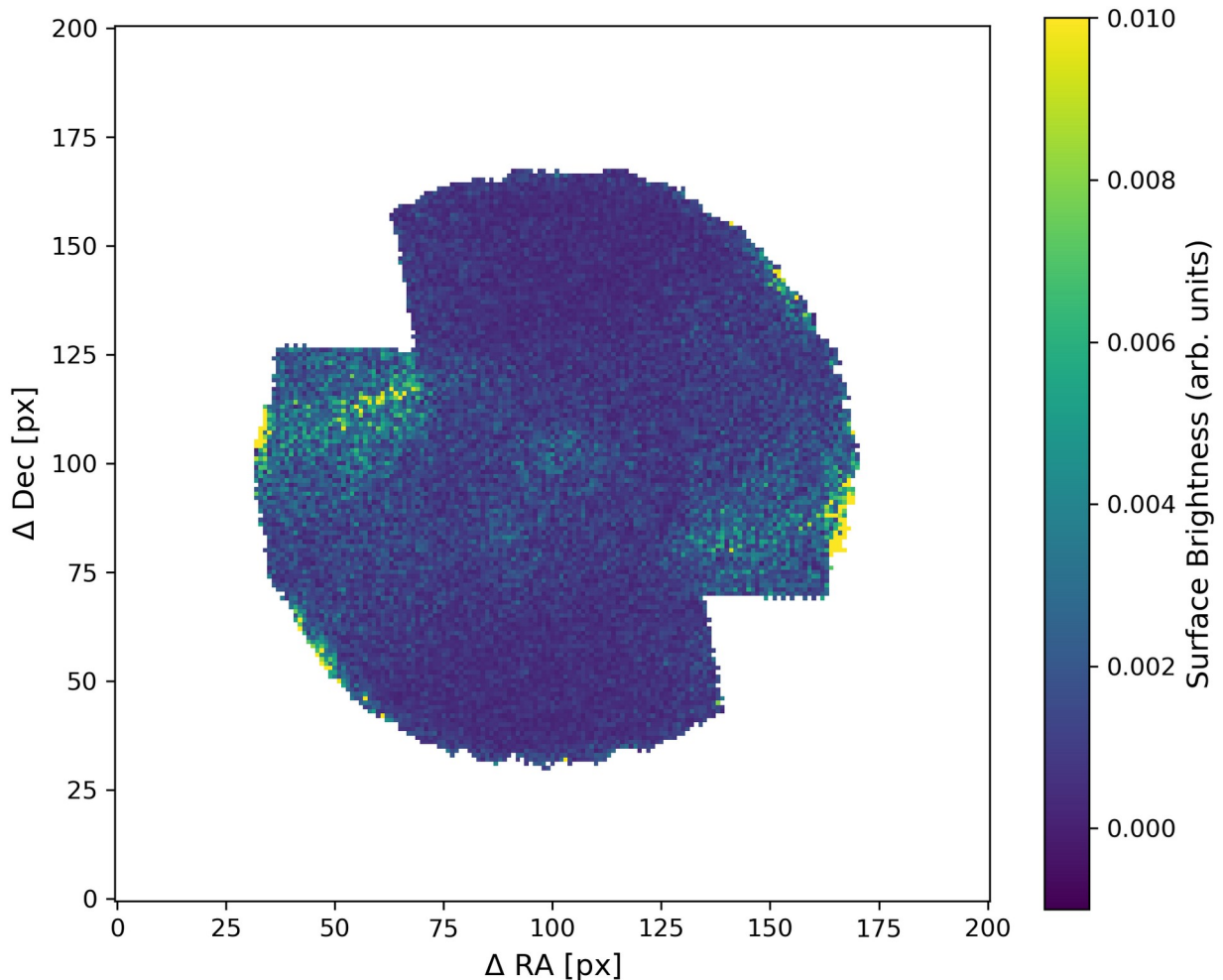
```
cbar = fig.colorbar(image,shrink=0.82)
cbar.set_label('Surface Brightness (arb. units)',
rotation=90,fontsize=12)
# plt.xlim([60,140])
# plt.ylim([60,140])
plt.xlabel(r'$\Delta$ RA [px]',fontsize=12)
plt.ylabel(r'$\Delta$ Dec [px]',fontsize=12)
plt.show()
```



```
import pandas as pd

stellar=pd.read_csv(file_dir+"closest20kstars.csv")
fig=plt.figure(figsize=[10,10])
plt.scatter(stellar['ra'],stellar['dec'],alpha=0.8, s=12, lw = 0.5, ec
= 'k', color='darkorchid')
# plt.xlim([0,362])
# plt.ylim([-75,75])
plt.xlabel('RA [$\\degree$]', fontsize = 14)
```

```
plt.ylabel('Dec [$\\degree$]', fontsize = 14)
plt.title('Closest Stars 20,000 stars from Gaia Archive (DR2)',
fontsize = 16)
plt.show()
```


Closest Stars 20,000 stars from Gaia Archive (DR2)