

\$Instalando e importando o pacote:

```
In[1]: python setup.py install
```

```
Out[1]: import project_1 as projeto
```

\$Variável para utilizar a classe TUDAO contendo o caminho da pasta com os dados a serem reduzidos:

```
In[2]: x = projeto.TUDAO('/home2/ellen15/Downloads/data/')
```

\$Utilizando as funções:

```
In[3]: x.master_bias(save=False)
```

```
Out[3]: array([[287.09567261, 288.43109131, 288.09628296, ..., 317.15054321,
               314.9147644 , 314.9928894 ],
               [287.79431152, 286.50576782, 286.49328613, ..., 313.07952881,
               315.17562866, 315.28067017],
               [286.9175415 , 286.90869141, 287.59484863, ..., 316.10891724,
               314.44839478, 314.47311401],
               ...,
               [285.47119141, 286.2303772 , 286.85089111, ..., 312.75241089,
               315.2739563 , 315.29788208],
               [285.73690796, 286.86508179, 285.75009155, ..., 313.840271 ,
               314.45941162, 314.47415161],
               [285.69833374, 285.74697876, 285.37484741, ..., 313.93972778,
               313.55096436, 313.63745117]])
```

```
In[4]: x.master_bias()
```

Retorna o master\_bias.fits na pasta 'red'

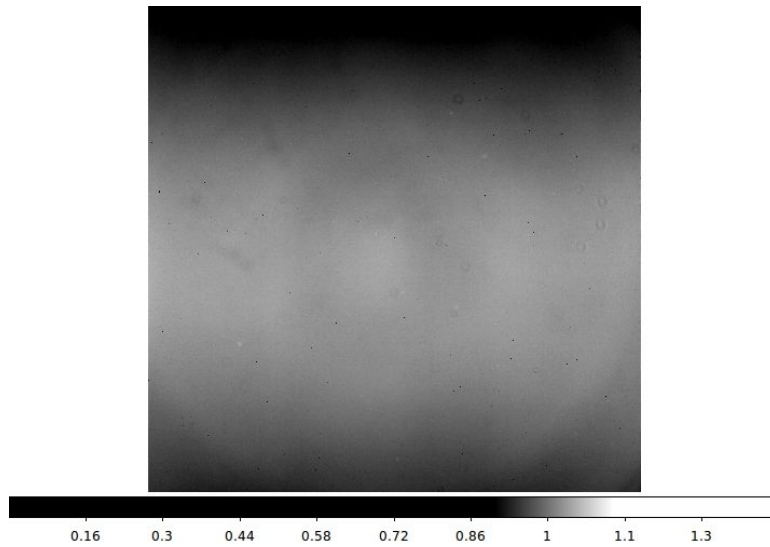
```
In[5]: x.master_flat(save=False)
```

```
Out[5]: array([[0.82529261, 1.05456044, 1.07396007, ..., 1.1030581 , 0.90177363,
               0.90184404],
               [0.68802042, 0.75555529, 0.7681383 , ..., 0.73593517, 0.79680866,
               0.79685849],
               [0.69930688, 0.85620761, 0.85769833, ..., 0.84432685, 0.85899301,
               0.85904222],
               ...,
               [0.74280457, 0.87989289, 0.8815278 , ..., 0.87747247, 0.84468012,
               0.84467013],
               [0.72539736, 0.88191738, 0.88240748, ..., 0.89235825, 0.83061645,
               0.83061525],
               [0.68739634, 0.88829393, 0.88381437, ..., 0.88267026, 0.77079757,
               0.7707917 ]])
```

In[6]: x.master\_flat()

Retorna o master\_flat.fits na pasta 'red'

Abrindo no ds9:



In[7]: x.science()

Retorna as imagens de ciência reduzidas do bias e do flat field na pasta 'science' com o nome: nomeoriginal\_red.fits.

Abrindo no ds9(imagem crua vs imagem reduzida):

