

Gope

March 21, 2025

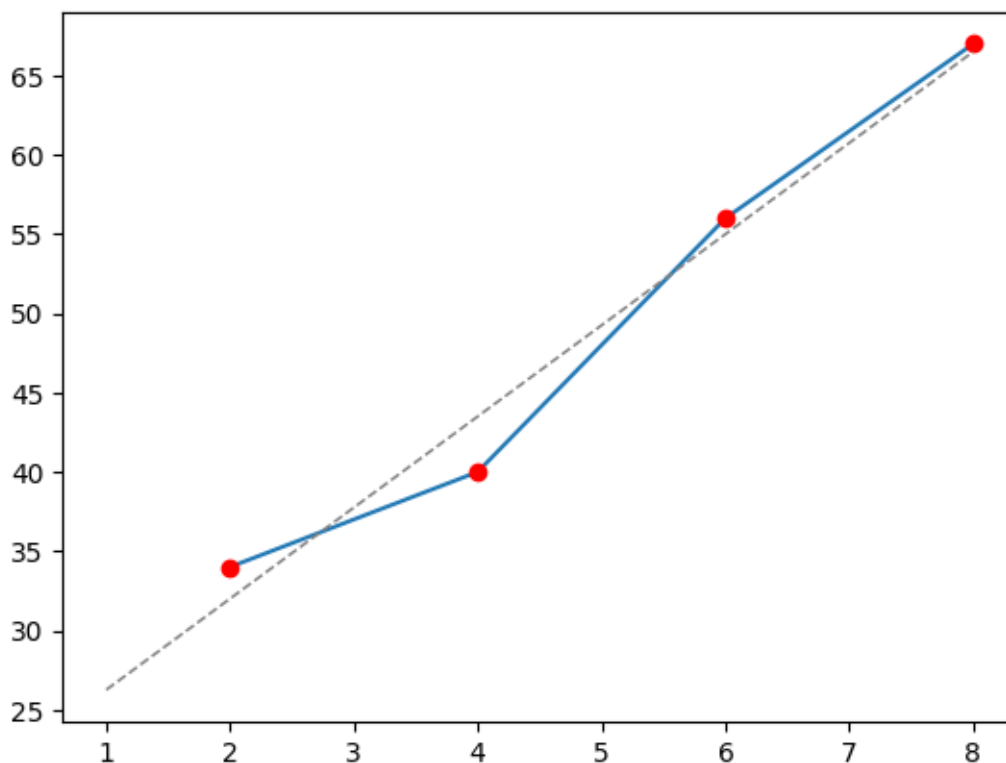
```
[9]: import numpy as np
import matplotlib.pyplot as plt
import scipy as sci
from astropy.io import fits
from astropy.io import ascii
```

```
[12]: a = np.mean([2,4,6,8])
b=[2,4,6,8]
a = np.mean(b)
c=[34, 40, 56, 67]
plt.figure()
plt.plot(b,c)
plt.plot(b,c,ls='-', color='red', marker='o')

m, inter = np.polyfit(b,c,1)
x = np.linspace(1,8,10)
# y = np.linspace(20,70,10)
print(x)
print(m)
print(inter)
plt.plot(x, (m*x + inter), ls='--', c='gray', lw=1)
```

```
[1.          1.77777778  2.55555556  3.33333333  4.11111111  4.88888889
 5.66666667  6.44444444  7.22222222  8.          ]
5.749999999999999
20.5
```

```
[12]: [<matplotlib.lines.Line2D at 0x28815691310>]
```



```
[19]: f = fits.open("C:/Users/Georgi/Downloads/NGC_3660_I_IIIaJ_dss1.fits")
f.info()
im=f[0].data
hdr=f[0].header
print(hdr)
plt.figure()
plt.imshow(im, cmap='magma', vmin=5689, vmax=19900)
```

Filename: C:/Users/Georgi/Downloads/NGC_3660_I_IIIaJ_dss1.fits

No.	Name	Ver	Type	Cards	Dimensions	Format
0	PRIMARY	1	PrimaryHDU	106	(283, 283)	int16
SIMPLE = T /FITS header						
BITPIX = 16 /No.Bits per pixel						
NAXIS = 2 /No.dimensions						
NAXIS1 = 283 /Length X axis						
NAXIS2 = 283 /Length Y axis						
DATE = '12/12/96' /Date of FITS file creation						
ORIGIN = 'CASB -- STScI' /Origin of FITS image						
PLTLABEL= 'J 8546' /Observatory plate label						
PLATEID = '0449' /GSSS Plate ID						
REGION = 'S713' /GSSS Region Name						
DATE-OBS= '09/05/83' /UT date of Observation						

```

UT      = '09:52:00.00      ' /UT time of observation
EPOCH   = 1.9833518066406E+03 /Epoch of plate
PLTRAH  =                      11 /Plate center RA
PLTRAM  =                      22 /
PLTRAS  = 3.1749320000000E+01 /
PLTDECSN= '-'                ' /Plate center Dec
PLTDECD =                      10 /
PLTDECM =                      16 /
PLTDECS = 2.7791330000000E+01 /
EQUINOX = 2.0000000000000E+03 /Julian Reference frame equinox
EXPOSURE= 6.0000000000000E+01 /Exposure time minutes
BANDPASS=                      0 /GSSS Bandpass code
PLTGRADE=                      2 /Plate grade
PLTSCALE= 6.7200000000000E+01 /Plate Scale arcsec per mm
SITELAT = '-31:16:24.00     ' /Latitude of Observatory
SITELONG= '+149:03:42.00     ' /Longitude of Observatory
TELESCOP= 'UK Schmidt (new optics)' /Telescope where plate taken
CNPIX1  =                      6306 /X corner (pixels)
CNPIX2  =                      10285 /Y corner
DATATYPE= 'INTEGER*2        ' /Type of Data
SCANIMG  = 'S713_0449_00_00.PIM' /Name of original scan
SCANNUM  =                      0 /Identifies scan of the plate
DCHOPPED=                      F /Image repaired for chopping effects
DSHEARED=                      F /Image repaired for shearing effects
DSCNDNUM=                      0 /Identifies descendant of plate scan image
XPIXELSZ= 2.5284450000000E+01 /X pixel size microns
YPIXELSZ= 2.5284450000000E+01 /Y pixel size microns
PP01     = 0.0000000000000E+00 /Orientation Coefficients
PP02     = 0.0000000000000E+00 /
PP03     = 1.7634953642038E+05 /
PP04     = 0.0000000000000E+00 /
PP05     = 0.0000000000000E+00 /
PP06     = 1.7704301422986E+05 /
AMD1     = 6.7214558020608E+01 /Plate solution x coefficients
AMD2     = -6.0629636860839E-03 /
AMD3     = 1.3348605140114E+00 /
AMD4     = -1.0338300943011E-06 /
AMD5     = 5.7287269701872E-06 /
AMD6     = -1.6520505170050E-05 /
AMD7     = 0.0000000000000E+00 /
AMD8     = 2.3076896194398E-06 /
AMD9     = -9.5956263020853E-09 /
AMD10    = 2.2136713488666E-06 /
AMD11    = -2.9503463404063E-08 /
AMD12    = 0.0000000000000E+00 /
AMD13    = 0.0000000000000E+00 /
AMD14    = 0.0000000000000E+00 /
AMD15    = 0.0000000000000E+00 /

```

```

AMDY16 = 0.00000000000000E+00 /
AMDY17 = 0.00000000000000E+00 /
AMDY18 = 0.00000000000000E+00 /
AMDY19 = 0.00000000000000E+00 /
AMDY20 = 0.00000000000000E+00 /
AMDY1 = 6.7221065417288E+01 /Plate solution y coefficients
AMDY2 = -2.2950262529661E-03 /
AMDY3 = -1.6874425724033E+00 /
AMDY4 = 2.1429933168656E-05 /
AMDY5 = -1.8194694748011E-05 /
AMDY6 = 2.3661994868025E-05 /
AMDY7 = 0.00000000000000E+00 /
AMDY8 = 2.0276127791945E-06 /
AMDY9 = 9.8115732466048E-08 /
AMDY10 = 2.3600839327751E-06 /
AMDY11 = 1.4273609656712E-07 /
AMDY12 = 0.00000000000000E+00 /
AMDY13 = 0.00000000000000E+00 /
AMDY14 = 0.00000000000000E+00 /
AMDY15 = 0.00000000000000E+00 /
AMDY16 = 0.00000000000000E+00 /
AMDY17 = 0.00000000000000E+00 /
AMDY18 = 0.00000000000000E+00 /
AMDY19 = 0.00000000000000E+00 /
AMDY20 = 0.00000000000000E+00 /

```

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= 20867 /Maximum data value

= 5689 /Minimum data value

= 'NGC 3660'

= '11 23 32.217 ' /Object Right Ascension (J2000)

OBJCTDEC= '-08 39 29.60 ' /Object Declination (J2000)

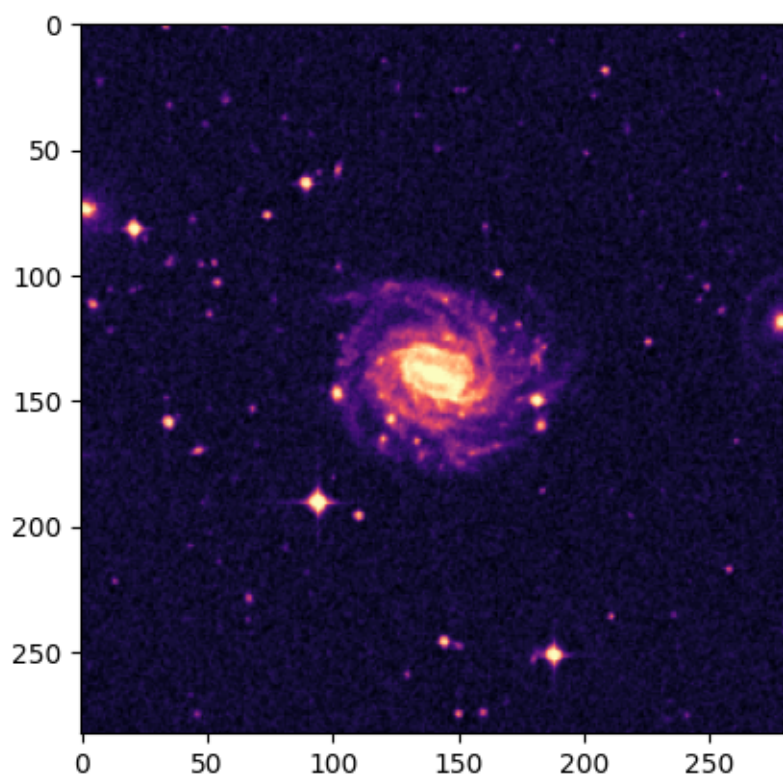
OBJCTX = 6447.32 /Object X on plate (pixels)

OBJCTY = 10426.08 /Object Y on plate (pixels)

END

DATAMAX
DATAMIN
OBJECT
OBJCTRA

```
[19]: <matplotlib.image.AxesImage at 0x2883701f390>
```



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[ ]:
```