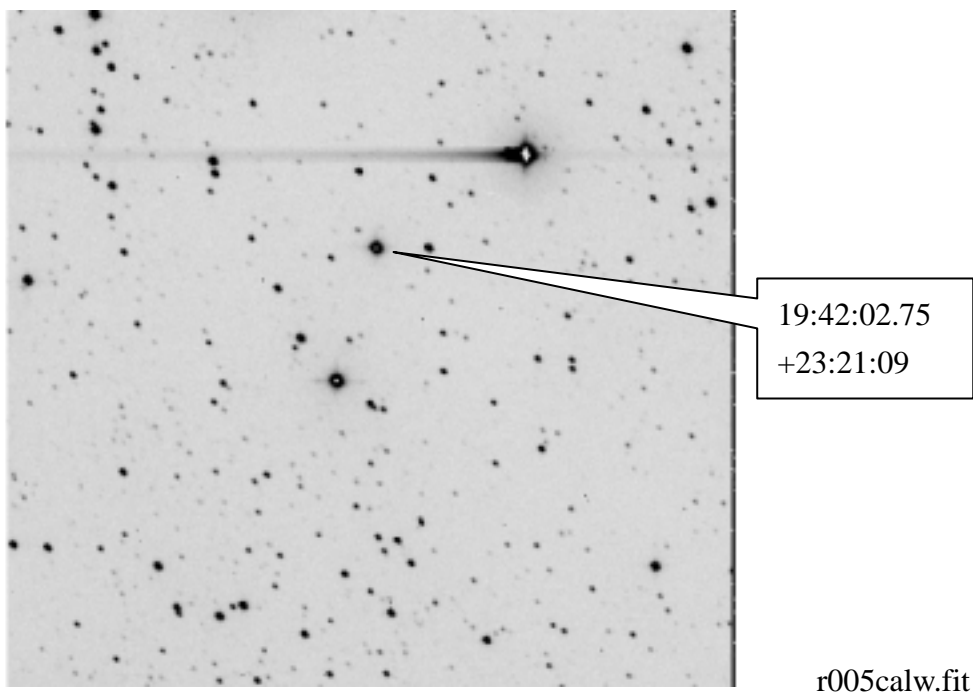
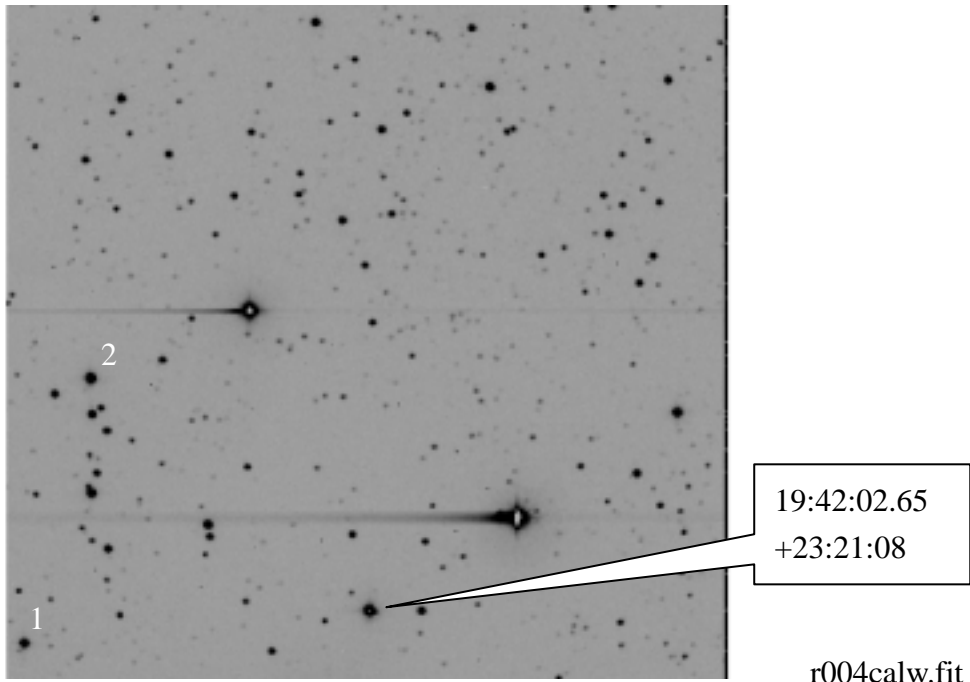


## Analysis of NGC 6823 data

I started out with what Alisher processed. The processed data all are stored in my pc, under `D:\DATA\Maidanak2001.8\AlisherProcessed\M01\M01_reduced\0.6m\aug16-17`. First of all I compared the overlapping region between pointing #4 and #5, whose images (`r004calw.fit` and `r005calw.fit`) are shown below. Note that the x-axis has to be inverted so that N is to the top and E to the left. The astronomy is good.



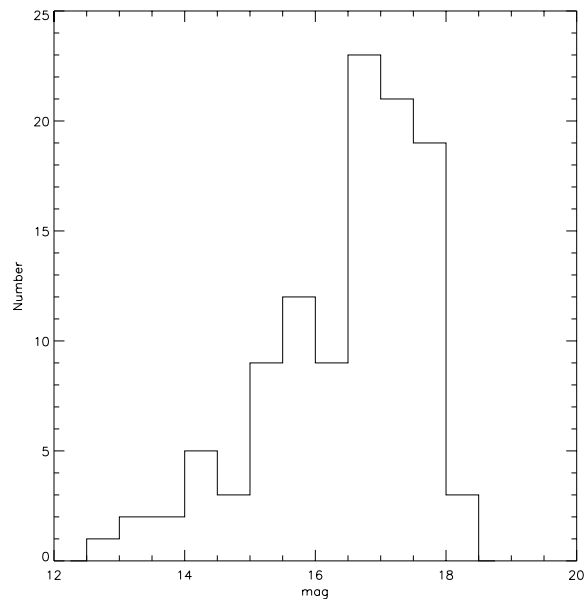
I do not know what a file with the name of xxx.cat means, but from the contents, I guessed the corresponding files are **r004calw.match** and **r005calw.match**, with the following format,

```
r004calw.fits:
# Arcsec/Pixel= 0.688046 0.687719  Rotation= -0.430596 degrees
# Optical axis= 19:42:03.144 +23:25:32.37 J2000 x= 512.00 y= 512.00
# Optical axis= 19:39:55.970 +23:18:21.29 B1950 x= 512.00 y= 512.00
# usnoa2_id  ra2000  dec2000  magc  X    Y    magi  dra  ddec  sep
1125.13935270 19:42:22.685 +23:24:52.97 13.20  903.7  458.5 -14.81 -0.25 -0.50 0.56
```

In order to read in the data, I removed the ‘.’ sign from the coordinates and deleted the summary text at the end of the file, and renamed the file to **r004.new.txt**. So to plot the file, ezplot would need to skip 5 lines and read in 14 columns.

```
1          2 3 4          5 6 7  8    9    10  11    12    13    14
1125.13935270 19 42 22.685 +23 24 52.97 13.20  903.7  458.5 -14.81 -0.25 -0.50 0.56
```

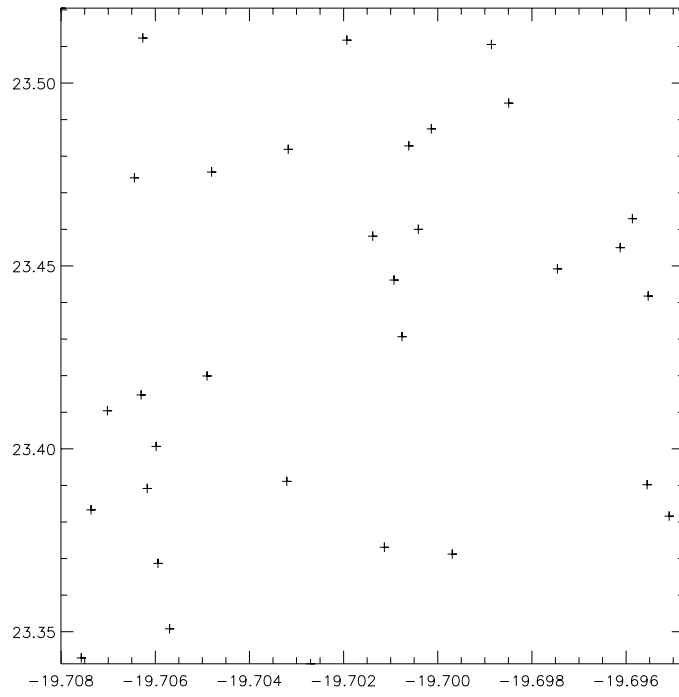
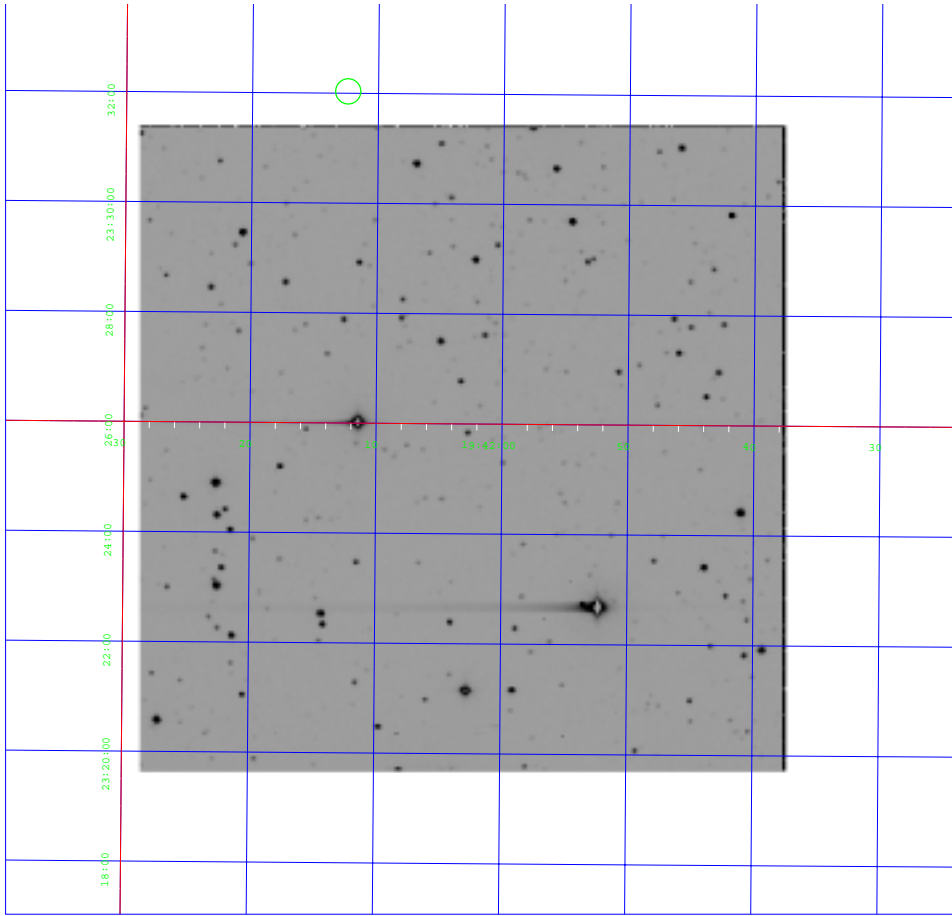
The luminosity function (column 8) of **r004** is



I sorted r004.new.txt according to flux (column 8) and the first two most brightest stars are marked 1 and 2 in the first figure above

```
1125.13940039 19 42 27.263 +23 20 34.19 12.70 997.8  82.6 -14.19  0.13 -0.26  0.28
1125.13935270 19 42 22.685 +23 24 52.97 13.20 903.7  458.5 -14.81 -0.25 -0.50  0.56
```

These do not seem right because apparently the second star should be brighter, judging from the image. I will need to ask Alisher about this.



stars brighter than 16 mag