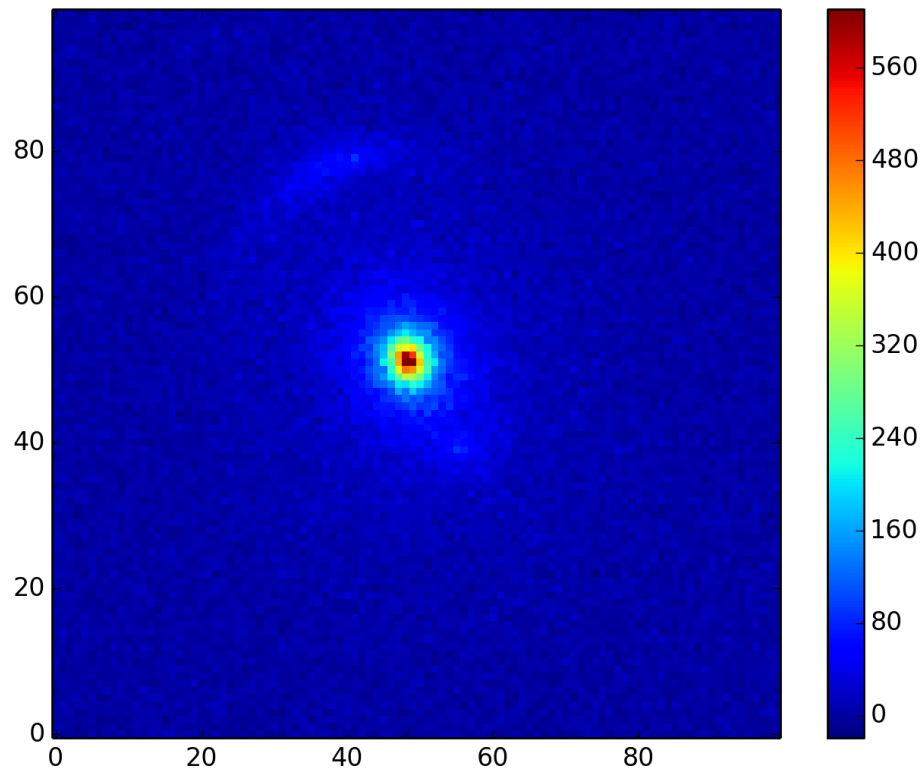


Note: the following images are all before MCMC.

1, First, I got the image without AGN. Please see it as follows (exposure time = 150s),



We can find that there is apparent arc in the image. So, if the bug exists, it's probably in the progress of adding the AGN.

2, Then, let's talk about the AGN. I added the agn like this (for example, there are two agn images in the image plane):

```
# add AGN
    agn1 = SBModels.PointSource('agn1',psf,
    {'x':sys_para[25],'y':sys_para[26]})
    mag_AGN = sys_para[31]
    AGNMag = agn1.Mag(zp)
    agn1.amp = 10.**(-0.4*(mag_AGN-AGNMag))*sys_para[27]

    agn2 = SBModels.PointSource('agn2',psf,
    {'x':sys_para[28],'y':sys_para[29]})
    mag_AGN = sys_para[31]
```

```
AGNMag = agn2.Mag(zp)
```

```
agn2.amp = 10.**(-0.4*(mag_AGN-AGNMag))*sys_para[30]
```

here, I got the agn's positions and magnify from Gravlens. sys\_para[27] and sys\_para[30] is the magnifies.

So, the problem are:

1) AGNMag = agn.Mag(zp)

here, if the exposure time is 150s, zp is zp(150s) or zp(1s)? I think it's zp(150s), namely, zp(150s)=zp(1s)+2.5\*log10(150).

2) agn's amplitude =  $10^{(-0.4*(mag\_ANG-AGNMag))}$ \*magnify, right or not?

3, then, add AGNs to the image as follows,

```
# add AGNs to the image
```

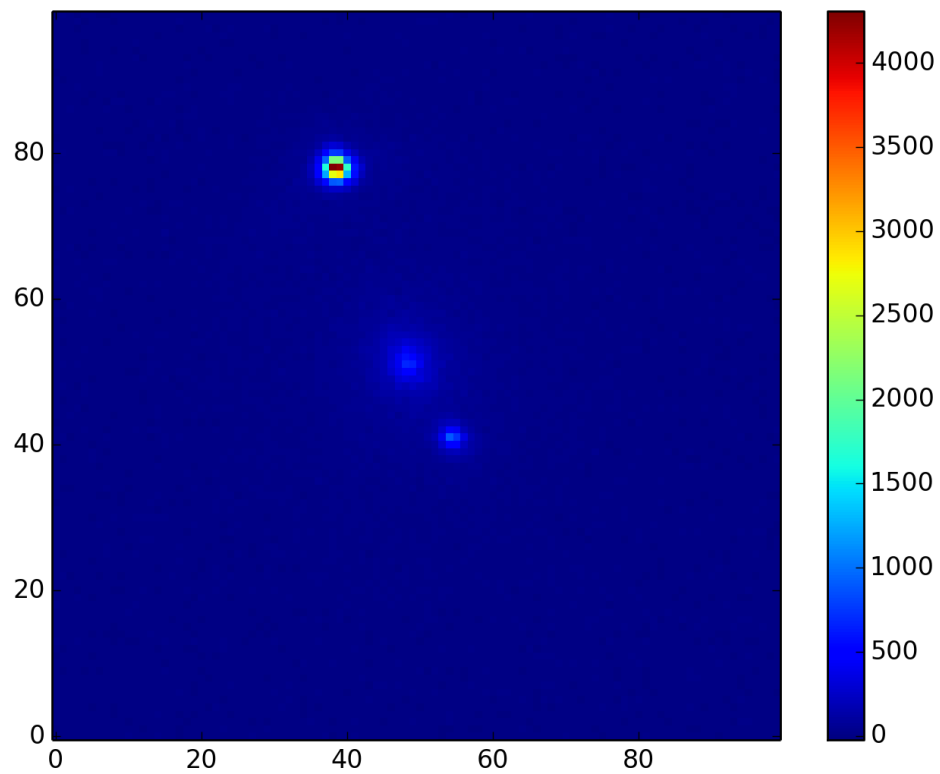
```
img +=agn1.pixeval(x,y)
```

```
img +=agn2.pixeval(x,y)
```

I think this progress is right.

4, I checked the image with agn. when open it with ds9, choose z-scale, inflect the z-scale parameters, we can see the arc.

5, the following png is for adding AGN (exposure time = 150s):



when adding the agn, the highest value is about 7 times compared with before. Because the arc's values are small, so we can't see the arc in the image. But we can see it when it is opened by ds9 z-scale.