Subject: Re: PSF Energy inside circle
Posted by wlandsman on Wed, 23 Jul 2008 20:52:41 GMT
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On Jul 23, 2:03 pm, Michael Aye <kmichael....@googlemail.com> wrote:
> Dear all,

> So how could I find and integrate the next "ring" of pixels? How would
> I even calculate the ever growing circumference correctly, taking into
> account that I have to sum up ever more pixels?

The options mentioned so far seem fine for large radii. For small radii, the use of integer pixel values can introduce "noise" since a pixel must be either entirely within or outside the circle. The program aper.pro
(http://idlastro.gsfc.nasa.gov/ftp/pro/idlphot/aper.pro)
sums using partial pixels, using the exact overlap area of a pixel with a circle.

The program is somewhat awkward to use, in part because it is very old, and in part because it propagates error sources. But if you want to compute the flux within 10 concentric circles centered at the position [500.2, 500.5] with radii of 3, 3.5, 4, 4.5, ... 7.5 then the following is a start:

```
IDL> apr = 3. + findgen(10)/2.
IDL> aper,im, 500.2, 500.5, flux, eflux, sky,skyerr, 1, apr,/
flux,setsky=0
IDL> plot, apr, flux     ;plot encircled flux vs. radius
```

In this case I force the "sky" (background) to have a value of zero. You can have aper.pro compute the background by giving it an inner and outer "sky" radii far from the central source. --Wayne