From: Frank Masci <fmasci@ipac.caltech.edu>
Subject: Re: Still-missing bright sources
Date: June 19, 2013 10:01:00 AM PDT
To: fmasci@ipac.caltech.edu

2 Attachments, 1.1 MB

Attached are new plots of snr vs mag comparing ac53 and ab41 (AllSky) for two tiles: 2657m288 (galactic center) and 0151m016, for W1 and W2. Dashed lines mark S/N=2.

Some notes:

* PSF-unc estimates are higher in AllWISE than AllSky. This drives the brighter sources to lower S/N in AllWISE and hence more are assigned upper limits. Is this expected?

* There's bimodal behavior in the S/N values at faint magnitudes, around/below the S/N=2 line, resembling a "mirror reflection". I don't understand this. And why aren't there any negative w?snr values? I assume these are computed directly from DN and not reversed from 1.0857/w?sigmpro.

* For the lower density tile, good to see a ~sqrt(2) increase in S/N for AllWISE. No surprise.

* For the high density (galactic center) tile, confusion dominates and no sqrt(n) behavior. No surprise either.

Regards, Frank

On Jun 19, 2013, at 9:47 AM, Roc Cutri wrote:

> Above snr=2, the mags are the real measurements. Below, the mags are
> the 2-sigma upper limits, so shifted to the left. This gets me every time...
>
> The negative snr's are computed during DB loading. This was a retrofit
> in pass 2 and we left it that way. You won't see them in the mdex table.

> On Jun 18, 2013, at 12:35 PM, Frank Masci wrote:
>
> Ah, galactic center too. So now there are three noise-terms working against us:
>
> high confusion +
> psf-unc (since it's supposedly bright) +
> high masking from saturation (giving low relative sqrt(n)).
>
> It would be interesting to see if these exist in lower density fields.
>
> Regards, Frank
>
> On Jun 18, 2013, at 12:28 PM, Tim Conrow wrote:
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> On Jun 18, 2013, at 122411, Frank Masci wrote:
>
> Let me probe further. I'm surmising that the combination of a high psf-unc (dependent on an initial estimate of the flux) and the fewer pixels (information) available after saturation masking will inflate the overall sigma relative to the nominal depth. But I don't know if this is happening in the right flux regime. I'll make some plots. What are the typical mags of these "new" null measurements.
>
> -- Tim
>
> On Jun 18, 2013, at 12:14 PM, Tim Conrow wrote:
> I looked at two sources in 2889p121 where it appears wphot *still* doesn't extract anything

right on the source center, and it looks like mdet did provide decent saturation radii, so the fault lies elsewhere. There are infact fluxes for these guys, so wpro took a stab at it, but the SNRs were very low, so they're upper limits. This is an upgrade on the previous situation, where no extraction was done at all, but it's still mysterious to me. I know Frank has explained this phenomenon, but I confess I still don't understand it.