
Subject: Re: Fractional Pixels Origin?

Posted by [JD Smith](#) on Thu, 16 Feb 2006 22:48:35 GMT

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On Wed, 15 Feb 2006 21:31:13 +0000, Wayne Landsman wrote:

>
> "CJCrockett" <ccrockett@astro.umd.edu> wrote in message
> news:1140036794.188403.185210@g14g2000cwa.googlegroups.com...
>> A quick question. Does anyone know, definitively, what origin IDL uses
>> when defining fractional pixels? Is (0.0,0.0) the center, bottom left,
>> or other, of the pixel?
>>
>>
> As David said, this is a convention which is set outside of IDL, but
> seeing that you have a "astro" E-mail address I'll say that the FITS
> convention is that [0,0] locates the center of the pixel. (This differs
> from most other image processing standards where [0.,0.] defines the lower
> lefthand corner.)

There are actually 3 conventions in common use, with the center of the lower-left pixel at [0.0,0.0], [0.5,0.5], and [1.0,1.0]. In the first case, you have negative fractional pixels as valid. In the last case, [0.,0.] isn't valid.

Only the middle case gets it right in my opinion. I call this the "ruler convention". I.e. if you had a ruler marked in pixels and fractional pixels, you would lay it down on the screen or page, and could directly read out the fractional pixel location.

FITS does indeed use [0.0,0.0]. I'd urge those of you making the choice for your programs to save the world confusion, and adopt the "natural" choice: pixels centered on [a.5,b.5].

JD
