Subject: Re: New Image Processing Routines
Posted by David Fanning on Fri, 24 Feb 2006 05:48:14 GMT
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J.D. Smith writes:

> Looks good, David. If you really want to impress astronomers, you might
> add a few range compression methods:
>
> 1. histogram equalization (done well, is rare).

I'm not sure what "done well" means. :-)

I've implemented the algorithm for histogram matching in
Gonzalez and Woods (HistoMatch) and if I give that algorithm
a flat histogram (Replicate(1,256)), I get nearly the identical
result as the IDL Hist_Equal command. Certainly the shape of
the resulting histogram is identical. We differ only a little
bit on either end, but the results seems insignificant.

I presume that means both methods are "done well." :-)

> 2. The ASINCH scaling, which is linear at the low end, and logarithmic
> at the high end (which is about perfect for showing noise properties and
> high contrast features all at once). Robert Lupton wrote such a beast
> in IDL already:
>
> http://cheops1.uchicago.edu/idlhelp/sdssidl/plotting/tvasinh .html
>
> His website links to a little paper describing the method (which has
> some very nice properties, but occasionally produces strange-looking
> images:
>
> http://www.astro.princeton.edu/~rhl/PrettyPictures/
>
> The trick will be coming up with an easier way to set the 2 parameters
> required that affect the scaling.

I've been reading this paper the past couple of days. The algorithm
seems dead simple, but I don't yet have an intuitive feel for what
"alpha" and "nonlinearity" mean. (Although I think I am starting to
understand the latter much better than the former.) Maybe I just
don't have the right images. I've downloaded the ones used in the
paper and will fool around with those tomorrow. Maybe enlightenment
awaits. :-)

Cheers,

David

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