Subject: Re: combing fits files and taking the median average
Posted by Craig Markwardt on Tue, 17 Jul 2012 15:13:51 GMT
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On Tuesday, July 17, 2012 10:45:33 AM UTC-4, Mandy Bailey wrote:
> On Tuesday, 17 July 2012 15:24:07 UTC+1, Craig Markwardt wrote:
> > On Tuesday, July 17, 2012 10:09:10 AM UTC-4, Mandy Bailey wrote:
> > > I'm new to IDL but slowly getting the hang of things. I have four fits files, each being spectra of the same targets taken on consecutive nights. I would like to combine these into one file to analyse but I want the median average not just the average. For the latter I could simply add each file together and divide by 4 of course but I cannot see a way to take the median average when combining the files.
> > >
> > > The routine MEDIAN doesn't appear to work for combining multiple images as far as I can see.
> > >
> > > Any ideas gratefully received, thanks
> > > Mandy
> >
> > You can stack the images into a 3D image, and then use the DIMENSION keyword of MEDIAN().
> >
> > Example,
> > img_3d = dblarr(nx,ny,3)
> > img_3d(*,*,0) = img_1
> > img_3d(*,*,1) = img_2
> > img_3d(*,*,2) = img_3
> >
> > img_med = median(img_3d, 3)
> >
> > You may have bigger problems though. If your images need to be registered then the problem becomes a lot harder.
> >
> > Craig
>
> Thanks Craig
>
> I'm not sure if the images need to be registered to be honest. Also each fits file actually contains the information from 400 separate fibres which I think is complicating things too. I have been able to read each fibre from the fits file and plot the individual spectra but I think I can improve my s/n in each spectrum by stacking the files and taking the median average which would be more accurate for my purposes than simply taking the average.
>
> I'll try what you suggest and see what happens though.
>
> Thanks, Mandy

If it were me and I knew there were offsets - even small offsets - I would process each spectrum

separately, align it to a common wavelength scale using a (hopefully) strong reference feature, then interpolate to a common grid, and finally do your stacking.

But surely someone in your field has already done something like this?

Craig
