

Making quick-look movies: Jaime's recipe

From mn/astro/lapalma

Jaime's IDL reduction object can be used to create quicklook movies. This can be done even while observing (which is very useful to judge what is going on with the target and seeing) but one should keep an eye on the camera data rate diagnostics on the live screen to check that the quicklook production does not interfere with the observations.

CRISPRED

What used to be know as Jaime's pipeline is now more formalized into the CRISPRED reduction pipeline

Use the /scratch disk on royac22 to produce quicklook movies and do initial reductions.

create an output dir under the /scratch/ITA/ :

```
[obs@royac22]{/scratch/ITA}>mkdir -p 2014.06.16/RED
[obs@royac22]{/scratch/ITA}>cd 2014.06.16/RED/
```

start IDL

```
IDL> red_setupworkdir, root_dir='/data/camera1/ITA/2014.06.16'
```

this will create the config.txt file and a file called doit.pro which lists a number of useful commands. See also the CRISPRED wiki page (http://dubshen.astro.su.se/wiki/index.php?title=CRISPRED#Setting_up_a_work_directory) in Stockholm.

For quicklook we are only interested in the Crisp-T camera (camXXV) so therefore we only point to /data/camera1 (and that is where the data is during observing).

define the object

```
IDL> a=crispred()
```

If you have gains and darks from an earlier day, load them and produce the quicklook movie:

```
IDL> fzread,dark,'../../2014.06.15/RED/darks/camXXV.dark',h
IDL> fzread,gain,'../../2014.06.15/RED/gaintables/camXXV.6563.6563_-0800.lc4.gain',h
IDL> a->quicklook_movie, dark=dark, gain=gain
```

This will produce a series of png images under

```
./movies/6563.6563_-0800.lc4/07:08:51/
```

If there are no earlier flats, or you want to check that your flats work ok (for example in Halpα to see of the large scale corner fringes are removed), then you need to sum today's darks and flats. Have a look in your doit.pro file.

Copy/Paste from doit.pro in IDL:

```
a = crispred("config.txt")
root_dir = "/data/camera1/ITA/2014.06.16/"
a -> sumdark, /check
a -> setflatdir, root_dir+"Flats/17:18:41" ; Crisp-T (6563)
a -> sumflat, /check
```

```
a -> makegains
```

After this, CRISPRED will know where to find the dark and appropriate gains so you can start

```
IDL> a->quicklook_movie
```

To speed things up, you can also sum flats only for one specific state of interest so that you do not have to wait until all other flats are summed. For example for Halpha blue wing only to check that the flats remove the large scale corner fringes as good as possible:

```
IDL> a->sumflat, cam='Crisp-T', ustat='6563.6563_-1200.1c4',/check
```

To speed things up **a lot**, you can also use the *pattern* and *ssh_find* options of the quicklook_movie command (NOTE: only seems to work on the current crisped code at La Palma), e.g. by doing the find for a specific wavelength on the camera1 computer:

```
IDL> a->quicklook_movie, pattern='8542_-1200.1c4', ssh_find=['root@camera1',  
'/data/ITA/2015.09.27/Science/15:15:34']
```

(You need to put the full path name on ssh_find. Afterwards, it will still ask you which data set you want to use. If you choose a different directory from what you put on ssh_find, it will segfault and exit IDL.)

HINT: if you do this on a large dataset of 1+ hours of data, it may take a long time for the quicklook_movie to read all the files and give you the choice of polarization. It may be useful to run this once soon after starting observing (as discovered from doing it to verify pointing with IRIS, Co-pointing_with_IRIS). If you do, rerunning later does not seem to get stuck scanning the whole directory.

Jaime's Recipe

June 2014: most of what is below is still valid but a bit more streamlined as described above

In principle, one should create a folder in royac21 (which has a scratch disk). Something like:
/scratch/jaime/2011.06.05

Then, you just have to create a text file with the folders where the data are located. Since we have 4 store machines, you can use wildcards like: /data/store?/...

In this case:

```
data_dir = /data/store?/ISP/2011.06.05/SCI-6302/15:47:46/  
dark_dir = /data/store?/ISP/2011.06.05/DARKS/17:20:26/  
flat_dir = /data/store?/ISP/2011.06.05/FLATS/6300/17:23:32/  
cam_t = Crisp-T  
cam_r = Crisp-R  
cam_wb = Crisp-WB  
out_dir = /scrath/jaime/2011.06.05
```

Now the first thing would be to sum darks and flats. From IDL:

```
.r crisped
a=crisped('config.txt')
a->sumdark
a->sumflat
a->makegains
```

The sumflat command will create the sums for the flats (dark corrected). Mind that the WB is usually in a separate time stamp folder, so by default it won't find the WB images. If you want to create the WB flat anyway, just run first with the config.txt pointing to the narrow band flats and then edit the file and run again a=reduc('config.txt') and the command a->sumflat (it won't erase anything!)

Remember that if you change anything in config.txt, you always have to recreate the object:

```
a=crisped('config.txt')
```

```
a->quicklook_movie
```

In the last step, the script will detect the observed wavelengths and it will ask you which one to use...It uses Crisp-T for the movies.

Basically, if you already have a gaintable and/or dark from the day before, you can use it (is is a quick-look movie anyway):

```
.r crisped
a=crisped('config.txt')

fzread, dark, '../2011.06.04/darks/camXXV.dark', h

fzread, gain, '../2011.06.04/gaintables/camXXV.6563.6563_+0000.lc4.gain', h
a->quicklook_movie, dark = dark, gain = gain
```

where dark and gain are the arrays containing the dark and gain image (not the file name!). The nice part is that you can run this command while observing and it will update the movie with the new scans that have been observed! So you can check your observations on the spot!

The script outputs a folder full of images that you can play with mplayer:

```
mplayer -fps 15 "mf://*png" -loop 0
```

or just copy the folder to your laptop and create the movie with quicktime. This movie can then be put at a public URL and linked-to from the wiki.

Some new features to quicklook_movie have been added:

- 1) for example if you want to flip the images in one or two axes, use the keywords /x_flip y /y_flip.
 - 2) by default it creates the movie using the transmitted beam. However if you specify the camera name, it will use any of the other two:
- ```
a->quicklook_movie, cam = 'Crisp-R'
```

3) If you want to clip the borders, provide the keyword clip: clip = [x0, x1,y0, y1]  
a->quicklook\_movie, clip = [100, 900, 200:800]

Of course, you can combine as many keywords as you need!

The crispred.pro file is at ~obs/jaime/newreduc/crispred.pro

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