CZTI NOISE REDUCTION,
by cztipoc

1. Install the new version of pipeline “release_1.1” in your system.
2. If you have the configured ~/.bashrc file for the old pipeline, then
   - Comment the old as1czt variable's path.
   - Add following line to ~/.bashrc file

     export as1czt={Path up to the release_1.1 folder}/czti_pipeline/czti/

3. Add following Path for Noise_Cleaning to ~/.bashrc file

```
export CZTNOISECLEAN=<noise_basedir>
export PATH="$PATH:${CZTNOISECLEAN}/bin/"

Example:
export CZTNOISECLEAN=/home/cztipoc/Desktop/noise_codes/
export PATH="$PATH:${CZTNOISECLEAN}/bin/"
```

4. Execute following commands in terminal

```
source ~/.bashrc
cd  $as1czt
cd ../
./InstallLibs
cd $as1czt
make
cd scripts
chmod +x cztpipeline
cd  $CZTNOISECLEAN
make
```

5. Execute the below command to generate light-curves,

“clean_data.sh” script will generate the lightcurves in the directory where the event file & mkf files are located. (Both event & mkf files should be in the same directory).

Example:

clean_data.sh {MKF File} {SAAThreshold File} {.evt} {caldb_badpix file} {bunch.fits} {noiseReductionThreshold file} {caldb_lld file}

The input files required for clean_data.sh are:

i. MKF File with Path
ii. saaThreshold text file with Path from config directory
iii. Event File after pha2energy
iv. Badpix file from CALDB directory
v. Bunch fits file
vi. noiseReductionThreshold file from config directory
vii. LLD file from CALDB directory

The output files from clean_data.sh are:

Lightcurves for The energy ranges:

- 0-50
- 50-100
- 100-1000

Example:

clean_data.sh ~/sample_data/AS1G07_074T01_9000001426czt_level2.mkf ${CZTNOISECLEAN}/config/saaThreshold ~/sample_data/AS1G07_074T01_9000001426cztM0_level2.evt ${CALDB}/as1/czti/bcf/AS1cztbadpix20160908v01.fits ~/sample_data/AS1G07_074T01_9000001426cztM0_level2_bunch.fits ${CZTNOISECLEAN}/config/noiseReductionThreshold ${CALDB}/as1/czti/bcf/AS1cztlld20160517v01.fits