MAIN NAPS (NAnçay Pre-processing Software) COMMANDS

JMM, PC – 2007/10, 2008/02

1) Introduction

One observation (= one unique scan number) comprises one or several cycles.
One cycle is described by the map file, and most of the time it includes noise diode calibrations, one ON and one OFF phase, made of individual integrations, lasting between 1 and 32 sec.

Naps is intended to do:
- data calibration
- elimination of bad integrations, or more coarsely bad cycles
- averaging of integrations
- phase arithmetic; (ON-OFF)/OFF for example
- averaging cycles
- save (i.e. all correlator banks, or all filters) to SIR format (or FITS format, CLASS-compatible).

Calibration takes into account a correction factor to cope with mirrors inclination.

2) How to connect
The working machine is nrt.obs-nancay.fr

From telesto.obs-nancay.fr (local or NX users):

Type in the ASCII terminal:
Type: ssh nrt -X -Y
(same password as for telesto)

3) A short naps session
Then type naps
(wait for the prompt NAPS>)

NAPS> set scan 113293
the scan number of the file you want to look at and save after process.

NAPS> proc scan

NAPS> show cycle n

NAPS> set result fits
Selects only the FITS format output

NAPS> save cycle
each cycle is saved, much more fits file…

NAPS> save

NAPS> exit

Command	Explanation
set duic xxx	Sets the proper owner extension for file names. Should be automatically set for users'data.
set scan xxxxx	Select the data file to process *set scan 110234-111444* takes all existing files *set scan 110120 111440 111444* for specific files
show cycle x	Displays calibrated (ON-OFF)/OFF cycle number x
set dirdata	Changes raw data directory: *set dirdata /data2/230/2007B/*
set dirfits	Changes the FITS file directory: *set dirfits /home/martin/fitsARP220*
set result sir fits set result fits	Sets output file formats to fits plus Nançay sir (default: only sir format) Selects only the FITS output
proc scan	Calculates the rms in the bandpass for each cycle; takes clip and win into account
sup cycle x	Suppress cycle x manually
ena clip set clip 50 proc scan	Enables the clipping mode (if necessary): sets the clipping level to 50 (Jy, in default cal. Mode), and does the clip on all banks
inte	Calculates the averaged of cal. (ON-OFF)/OFF
save	Same as *inte*, plus writes on disk
inte2d	Same as *inte*, plus interference elimination
save2d	Same as *save*, plus interference elimination
disp mode=x	2 dimension display of the data. See short manual
plot	Creates a PS file of the displayed data plot.
help	Displays the ascii help file (in french). Summary of all commands translated in the NRT support web site.
exit	Exit

Table 1. Short reminder of main commands.

One of the powerful tools of the NAPS software is the automatic channel elimination. The following commands disp mode=x displays the (flagged) data in time-frequency images.

Command	Explanation
disp mode=1	Displays all basic integrations (i.e. Spectra, including calibration data ; no phase arithmetics)
disp mode=2	Same, but flags channels which are polluted by interferences
disp mode=3	Displays basic integrations in (ON-OFF) mode. Polluted channels are flagged.
disp mode=4	Same + bottom 1-D plots displays cleaned spectra and the percentage of flagged data per channel
disp mode=5	Displays each cycle, after (ON-OFF) calculus.

Table 2. 2D display and bad channels elimination.

For more explanations, see short manual : naps_summary.tex (.pdf)