A SAS/xmmselect/evselect versus XANADU/xselect/fselect comparison

M. Cappi (ITeSRE – CNR; Bologna)

Outline:

Comparison of extracting standard products through

1) Command lines (fselect vs. evselect)

2) GUIs Tools (flaunch vs sas)

3) Standard User–Interface Tools
(xselect vs. xmmselect)

XANADU–ftools:V5.0.1
SAS:V5.0 (Dec. 3rd)

Left: XANADU	**Right**: SAS
Commands parameters	*Commands* parameters
actions	actions

Extracting Lightcurves

fselect   PI, etc.

.evt –––> .evt

evselect   PI, binsize,etc.

.evt –––> .ds

lcurve   binsize etc.

.evt –––> .qdp

dsplot

.ds –––> .agr

(User–CPU)Time consumed:
~1.4 s

(User–CPU)Time consumed:
~11 s

Problems: Wrong Exposure
(~2%high) (=TSTOP–TSTART)

Problems: Grace less known/used
than QDP

Left: XANADU	**Command Lines**	**Right**: SAS

Commands   parameters
            actions
		Commands parameters
		            actions

Extracting Images

fselect   PATTERN, PI, etc.
       .evt ———> .evt
	evselect PATTERN, PI,
	                    binsize, etc.
	              .evt ———> .ds

f2dhisto binsize etc. .evt ———> .ima *ds9*	*ds9*
(User–CPU)Time consumed: ~5 s	(User–CPU)Time consumed: ~19 s
Problems: None found	Problems: None found

Extracting Spectra

xselect @script	PATTERN, PI,	*evselect*	PATTERN, PI,
≈fselect	region, etc.		region, binsize, etc.
.evt ———> .pi		.evt ———> .ds	
fmodhead	TLMAX1	*fmodhead*	TLMAX1
.pi ———> .pi		.ds ———> .ds	
grppha		*grppha*	

(User–CPU)Time consumed: ~30 s

(User–CPU)Time consumed: ~18 s

Problems: counts ~1% larger due to different region extraction algorithm

Problems: BACKSCAL wrong (always 3.6e5)

Left: XANADU
Commands

GUIs Tools

Right: SAS
Commands

flaunch

sas
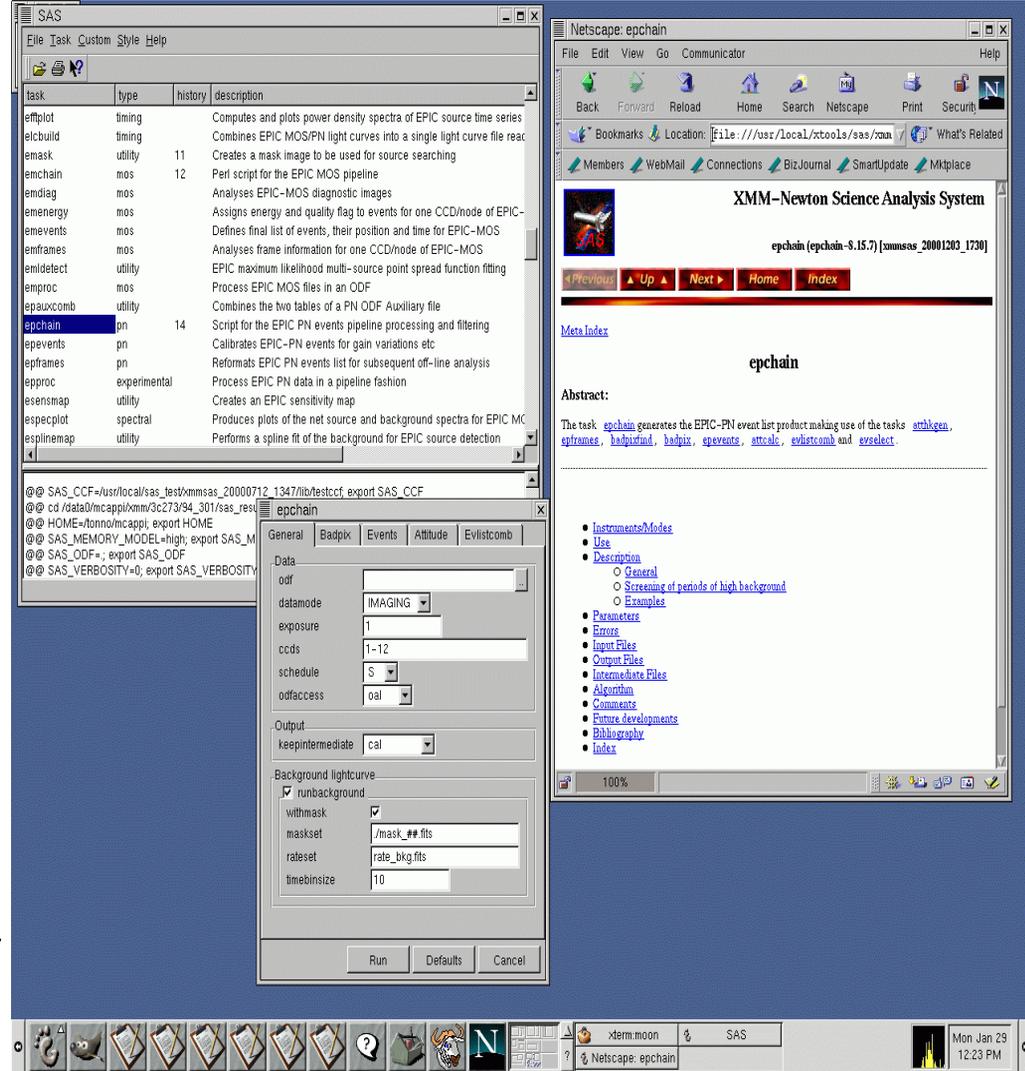
⇒Similar capabilities...(e.g both allow scripts);
but of course SAS is mandatory for XMM

Standard User–Interface/interactive Tools

Currently, two advantages of xselect:
already known to most users + allows easy scripts

**The Standard User–Interface/interactive Tools
is the most important for most GOs**

	xselect	xmmselect
Beginners $\Rightarrow$	Typing is not easy, but already known + easy to "save"	Clicking is easy, but not known + impossible to "save"
Typical $\Rightarrow$	Scripts are user–friendly (extract curve, plot image...)	Scripts are user–UNfriendly (#!/usr/bin/sh ...+ very long strings of commands)
Experts $\Rightarrow$	Scripts are powerfull + commands are fast	Scripts are powerfull but commands are slower

$\Rightarrow$ My suggestion is:
We shall really add "xmmselect logging" (for beginners) or/and "xmmselect scripting" (for typical&experts) output or/and make file scripts (for standard analysis) available to GO community.