

Introduction to Hands-on Sessions

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Workshop workstations

Hostnames	Operating System	Accounts
scil01 - scil10 (.net4.lan)	Red Hat Enterprise Linux (RHEL) 4U5	u.: sasws1-sasws10 p.: saswks07

On each workstation number, please use the account with the same number, i.e. on scil03 use sasws3, on scil05 use sasws5, etc

The shell for all accounts is set to BASH



SAS

- Version 9.0.0 (xmmsas_20090615_1801)
- Released July 18th, 2009
- SAS public web page:
<http://xmm.vilspa.esa.es/sas/>



External Software

- Available in your \$PATH (installed in shared /usr/local)
- SAO ds9 (4.0b11) + xpa (2.1.7b1)
 - <http://hea-www.harvard.edu/RD/ds9/>
- xmgrace (5.1.14)
 - <http://plasma-gate.weizmann.ac.il/Grace/>
- HEASOFT (6.6.2) – Pre-initialized at login.
 - <http://heasarc.nasa.gov/lheasoft/>
- Perl (5.8.3) /usr/local/bin/perl
 - <http://www.cpan.org/src/>



Help and documentation

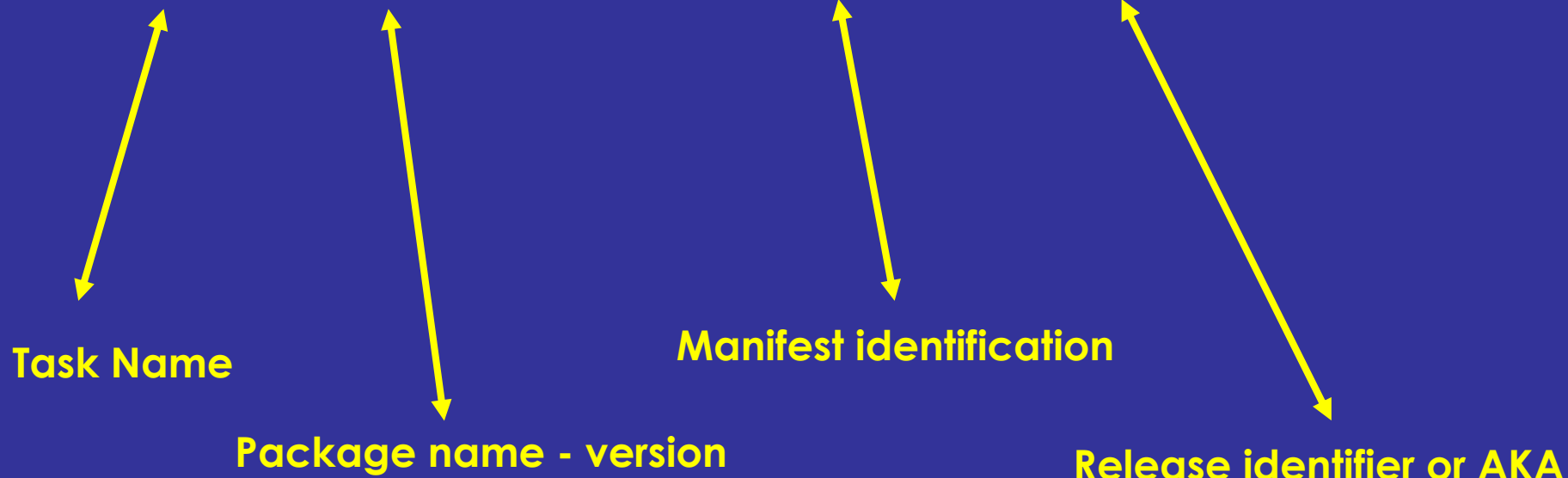
- `sashelp` command (uses Netscape by default)
- `SAS_BROWSER` to change the browser
- `sashelp --doc=<task>`
- `<task> --manpage` (do not use `--help`)
- SAS 9.0.0 On-line help (html):
<http://xmm.esac.esa.int/sas/current/doc/>
- SAS 9.0.0 User's Guide (html):
http://xmm.esac.esa.int/external/xmm_user_support/documentation/sas_usg/USG/



Quick identification of commands

xmmselect -version

xmmselect (xmmselect-2.65.1) [xmmsas_20090615_1801-9.0.0]





Example data

- Selected objects used for Scientific Validation
- Located in `/SAS_Workshop/<objectname>/`
- For each object `<objectname>`:
 - **ODF** : Whole raw data set
 - **PPS6.0**: Pipeline byproducts as available through XSA (processed with SAS 6.0).
- **XSA**



Datasets

- **AB-Dor:** K-type Zero-Age-Main-Sequence star, RGS calibration target with lot of emission lines
- **BPM 16274:** White Dwarf, OM calibration target (many OM exposures in different modes and filters)
- **G21.5-09:** Crab-like SNR, all EPICs in Full Frame, suited for spectral fitting (both individual and combined)
- **Lockman Hole:** the popular observation field in all wavelengths. EPIC source searching, population, hardness ratios.
- **Mkn 421:** BL Lac, RGS effective area calibration target, very bright continuum with almost no lines, suited for RGS spectral fitting
- **PKS0558-304:** bright quasar, different EPIC window modes, specially suited for EPIC spectral fitting
- **HD 13499:** F-Type star, OM Calibration target (wavelength calibration of grism)
- **H_z2:** OM Calibration target (grism and UV flux)
- **Timing:** Data for timing analysis (PSRB1509)



Thread definition

(Merriam-Webster's Online Dictionary)

- a filament, a group of filaments twisted together, or a filamentous length formed by spinning and twisting short textile fibers into a continuous strand
- any of various natural filaments, e.g. the *threads* of a spiderweb
- a slender stream (as of water)
- a projecting helical rib (as in a fitting or on a pipe) by which parts can be screwed together (the projecting helical rib of a screw)
- something continuous or drawn out as
 - a line of reasoning or train of thought that connects the parts in a sequence (as of ideas or events), e.g. lost the *thread* of the story
 - a continuing element, e.g. a *thread* of melancholy marked all his writing
 - a series of newsgroup messages following a single topic
 - a tenuous or feeble support, e.g. hung on by a *thread*



Thread

- An example of a sequence of SAS tasks which allow us to reduce specific XMM-Newton data
- SAS threads are available in <http://xmm.esac.esa.int/sas/current/documentation/threads/>



Program of Hands-on sessions

- Monday 29th, since 16:30:
 - Step-by-step guide to the EPIC scientific product extraction
- Tuesday 30th, since 11:20:
 - Step-by-step guide to the RGS data analysis threads.
 - Step-by-step guide to the OM analysis threads (since 14:30)
- Wednesday 1st July, since 12:15:
 - Step-by-step guide to the Spectral Fitting Thread.
- Thursday, since 12:15: Generic hands-on session.
- Friday, since 10:00: Generic hands-on session.