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## Features that make other packages easier to use than CIAO

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- 9 - don't know
- 12 - IDL is much easier, because we have access to the data variables and the analyses are much more customizable.
- 19 - I'm not sure any of the systems are easier than CIAO, but that doesn't mean CIAO is necessarily easy to use. I think there is a danger in making complicated analysis software too easy. Scripts such as psextract which remove most (if not all) of the technical detail (and therefore knowledge of the system) from the user can promote bad science. People should be willing to put forth the effort to learn how the system works.
- 23 - Most CIAO analysis systems are much more user-friendly than non-CIAO X-ray analysis systems, e.g. ISIS, pwddetect, PROS. I think the CIAO documentation is really first-rate. One exception is XSPEC, which is a bit easier to use than Sherpa, although Sherpa is pretty well-documented and offers (in most areas) greater functionality.
- 27 - I use gratings; at this point there is no choice but use CIAO (until FTOOLS teams finish their prototype on grating analysis tool with ftools). So I am not sure if I can compare CIAO logically with anything.
- 28 - TARA has a gui-based interface which allows free-form data exploration starting with the level 1 events file. It's a very easy tool for first look at the data file.
- 31 - IRAF - somewhat easier because of parameter file management review and frequently used scripting (i.e. it's easy to borrow someone else's script and adapt, not that they're robust or anything)
- IDL - a lot more programmable, but fewer "tasks"
- 34 - S-Lang/ISIS: It is easy to write functions to perform the types of analysis specific to my research.
- 38 - It boils down to again spectral analysis:  
XSPEC for CCD analysis is reliable and easier to use, maybe because we were used to it for so many years  
  
ISIS seems the way to go for grating analysis. It takes some to get into it, but once that step is done it seems to be most reliable, accurate and thus promising. It would be good to see this system develop further.

## Software Survey Results – CIAO 3.4

Sherpa seems less reliable, many times I cannot figure out what it is really doing or simply doesn't work. After a while plain frustration takes over. Don't its advantage to the others.

- 39 - Xselect, probably because it handles simpler telescopes.
- 43 - ISIS: fully s-lang based; It is programmable, extensible, uniform, efficient. It provides both high-level functions useful for grating spectroscopy, and low-level ability for fine control and customization. More rapid turnaround for fixes, enhancements. Good manual, with intro examples and detailed reference guide. Small source code base, relatively easy to build. All free components.

IDL is also more flexible than ciao, and has a large function library, but has syntax ambiguities, command-line syntax differs from procedures. I sometimes use IDL for plotting, or to run pre-existing applications not yet converted to isis. IDL's primary strength now is in the large suite of multidimensional visualization functions.

- 47 - IRAF is easier to use for isophotal fitting of extended sources. ISIS is easier to use for repetitive fitting tasks.
- 51 - IRAF: I think IRAF is a little bit easier for me because of the way things are organized into different packages.

Also, IRAF is simpler and probably does not do all the things CIAO can do. for instance, I'd never be able to process a level 1 evt file in CIAO without looking up the specific threads, but when I used IRAF, I rarely had to look up instructions because it seemed more obvious how to use it.

- 53 - AIPS
- 54 - IDL and S-Lang/ISIS: I can read in the data and then write programs or scripts to do to the data exactly what I want and with clear visibility of what I've done (not hidden in someone's black box.)

58 - none

- 62 - IRAF - has an easy interpace to edit the task parameters  
SAS - has a nicer GUI and uses grace for plotting

65 - xanadu. just because i am more used to it.

- 75 - idl is easier to use because you have much better control over the data and much more flexibility because of long history of user contributed libraries and tools

- 77 - \* the scripting capabilities of IBIS are much more advanced than those of CIAO

\* for spectral fitting, it makes much more sense to continue to develop and expand XSPEC rather than throwing tons of ressources to developing another system

\* the same is true for many of the ftools capabilities - it just doesn't make sense to redevelop many of the available tools from scratch (incidentally, XMM made the same mistake)

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- 82 - XSPEC (it is simple to use and I already know it)  
IDL (more powerful and versatile in some instances)  
TARA (quicklook functionality is great)TARA
- 83 - one good feature of ftools is the style of the arguments  
e.g. && and ||
- 84 - IDL, more flexibility, less of a blackbox, consistent interface/behavior.
- 90 - It isn't harder or easier than other packages. It's all a matter of familiarity at this point, I think. I'm much more familiar with IRAF, IRAF/pros and AIPS, so those tasks are easier to use.
- 99 - arms and legs above the SAS, but for people who know IDL and/or XSPEC there is not much incentive to learn CIAO also, except for the simplest tools like firstlook and psextract.
- 102 - It happens that some tasks are "updated" while others are not. I remember once I had to run one part of a thread with an old version of ciao and the following part with a newer version because there was some incompatibility. It's not difficult, it's annoying.
- 103 - IDL. IDL scripts can be examined and modified. IDL vectors and structures work very well with the FITS file format. Much easier to understand processing in IDL and do new things with data.
- 105 - I find XSPEC easier, but this could be the result of "traditional" use.
- 107 - spectral analysis is easier with xspec. sherpa is somehow cryptic and it seems to me that there is no tutorial around.
- 108 - IDL; transparent access to data at a low level.
- 111 - sherpa is nicer than xspec, dmlist is more comprehensive than fdump
- 112 - Mathematica. It is an integrated system, with a coherent logic.  
It is well verified via millions of users.  
It is stable.  
It is extensible.
- 115 - everything that I'm aware of
- 119 - the HEASOFT package is somewhat easier (although it may be less complete) because of its structure made of large programs with many commands rather than single command tools with many option.  
On the other hand CIAO is definitely easier than IRAF/PROS, even if they share the same kind of user interface (CIAO is more stable and flexible)
- 121 - None
- 124 - \*All\* astronomical software is aggravating to use, although in different ways. I use ciao until I have a task which breaks. I switch to xspec or funtools for that task until something else breaks. I go back and see if ciao does any better now, ...

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