

ADASS XX - Boston

IRAF AND BEYOND

Agenda

- ◉ Welcome
- ◉ IRAF Status and Plans – M. Fitzpatrick
- ◉ Compressed FITS Kernel – R. Seaman
- ◉ IRAF Pipelines – F. Valdes
- ◉ Future System Frameworks – D. Tody
- ◉ Discussion

IRAF Project Status

- ◉ **IRAF v2.15 *Alpha* release, March 2010**
 - Extended test period (intentional due to 64-bit changes)
 - Several interim updates
 - 64-bit Port Guide available
 - ~30 External Packages also ported
- ◉ **Final v2.15 release in preparation**
- ◉ ***Roadmap* proposal for NOAO Director being developed**
- ◉ **Software development continues**
 - Pipelines for ODI, MOSAIC/NEWFIRM
 - New FITS Kernel for tile compression
 - VO Integration
 - Ongoing maintenance
- ◉ **X11IRAF Development on hold**

iraf.net Status

⦿ Entering 6th Year of Operation

- Almost 1600 registered (*and real*) users
- Avg >500 unique visits/day
- Avg >1GB/day transfer (or ~5-8 IRAF systems)
- 73,618 visits from 145 countries (but lots of bots)
- 2386 topics (> 1/day), 8533 posts (~4/day)

⦿ Getting to be time for an update

IRAF v2.15 Highlights

- ◉ 64-bit platform support
- ◉ New MEMIO interface
 - Memory debugging features
- ◉ Architecture name changes
 - Single '*linux*' arch for 32-bit systems
 - '*macintel*' now 64-bit Intel, '*macosx*' Universal 32-bit
 - Backwards compatible
- ◉ Automatic prototype checking, ANSI C code kernel/libs
- ◉ Cross-compilation support
 - Mac and Linux only
- ◉ Mixed architecture usage supported
- ◉ SVG Graphics Device for web presentation
- ◉ Simplified source builds
 - Support for toplevel *make* command
- ◉ Simplified single-user installs
- ◉ Now with TABLES goodness

64-bit IRAF Implications

◎ For Users

- Just another supported platform
- 10-15% speed increase over using 32-bit binaries
- Large image/file/memory support

◎ For Developers

- Some porting work *may* be required
 - **MUST** clean up prototype errors
 - **MUST** address use of TY_REAL in structs
 - **MAY** choose to provide 64-bit binaries

64-bit IRAF Implementation

- ◎ **We chose a *systematic* port over a *proper* one**
 - Minimize number of code changes required
 - Limit the types of code to be changed
 - Backwards interoperability a high priority
- ◎ **SPP Saves the Day**
 - Could use ILP64 model with LP64 GCC compilers
 - Automation hard, but tools can help

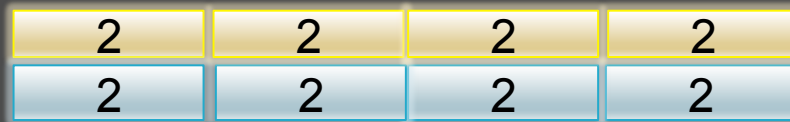
Result

Core system plus ~30 external packages ported in approx
3 man-months.

Memory Layout



Byte Address



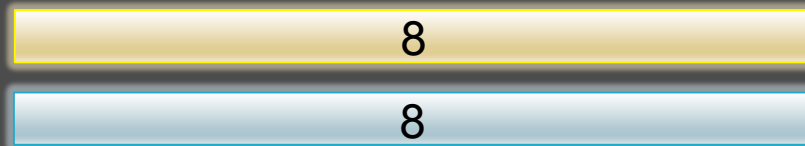
Char



Int/Long/Pointer/Struct



Real



Double

V2.15 External Packages

Not All Packages are the Same

- Active/Supported
 - MSCRED, FITSUTIL, NFEXTERN, etc
- Script-Only Packages
 - ESOWFI, CFH12K, etc
- Deprecated
 - ARED, EUV, IUE, etc
- Externally Supported
 - STSDAS/TABLES, GEMINI, RVSAO, etc
- Obsolete
 - DIGIPHOTX, NMISC, MFILTERS, etc

V2.15 Package Reorganization

⦿ Moved to Core System

- COLOR → PROTO
- VOL → PROTO

⦿ TABLES included

- libtbttables part of core system
- TTOOLS pkg now NTTOOLS in UTILITIES

⦿ Other Changes:

- FITSUTIL.NHEDIT → GMISC
- NLOCAL.BASES → UTILITIES

IRAF v2.15 Release Plans

- ◎ Originally, before ADASS
- ◎ Now, just following ADASS
 - Last-minute inclusion of tbtables/ttools
- ◎ Linux and Mac only
 - Other platforms to follow in v2.15.1
- ◎ Simplified install a separate project

Other News

What about the old website?

- *iraf.noao.edu* to get a makeover
- Look-n-Feel of NOAO
- “*Official*” distributions of software
- Content shared w/ iraf.net (announcements, RSS feeds of forum etc).
- Integrated SVN and Trac

Roadmap Questions

- ◎ **What should our 5-year strategy be?**
 - Preserve the trusted science code
- ◎ **Should catalog science be our next frontier?**
 - Interfaces to DB and distributed data
- ◎ **Is user-scriptability still an issue? What about compiled code?**
- ◎ **New Frameworks....**
 - VAO study project, other deployments
- ◎ **<Your thoughts here>**