Outline

- Online Demo of AG system
- Practical Session
- Discussion Session
  - the good
  - the bad
  - suggestions and lessons learned

AstroGrid 2006.3 Release: Aug 2006

Image Discovery with AstroScope

- Workbench
  - AstroScope
  - Heliscope for solar
- Search on a position
  - RA, Dec
  - Object Name
- Investigate and explore data sources
  - images: Aladin
  - catalogues: TopCat
  - spectra: Splat, VOSpec
- Try: Arp 220

Examples to follow:

- http://www2.astrogrid.org/science/data-access
- http://www2.astrogrid.org/science/data-access-worksheet
- http://www2.astrogrid.org/science/examples-stars/gphscatalogue-images
Python Scripting

- Command line access to Astrogrid
- Utilises python
- Slides: Eduardo Gonzalez Gonzales
  - AstroGrid science team
  - eglez@ast.cam.ac.uk

What is Python?

- Programming language: interpreted, object oriented, high-level, dynamic semantics
- Simple, easy to learn, read, use
- Short code (compared to e.g. C/Java)
- Extensible in C/C++/Fortran/java/anyother
- Extremely portable (PalmOS, WindowsCE, OS/2, PlayStation, BeOS, VMS, ...)
- PRODUCTIVITY

What is Python?

```
import sys
print "Introduction to Python's features.
help -> Python's own help system.
object -> Details about object. Object also works, try prints more.

>>> a, b = 20, 29
>>> a, b = b, a
>>> print a, b
29 20

>>> def gcd(a,b):
...     while a > b:
...         a,b = b,a
...     return b
...     ...
>>> print gcd(28,296)
```

Capabilities

- MySpace read, write, list, delete
- Registry query, xquery, resolve
- CEA & JES: query, execute, monitor
- SIAP, SSAP, SkyQuery
- PLASTIC
- Simbad resolver, Vizier, NED
- Control workbench UI from command line

Connecting to the ACR server

This can be added into a module astrogrid.py and imported from other scripts.

Getting help
Getting help

Querying the registry

Running an application

More Examples

- Save to / load from MySpace
- List MySpace contents
- Return status of submitted jobs

See more examples in:
http://wiki.astrogrid.org/pub/Astrogrid/AcrRecipes/examples.zip
**Suggested Python Exercises**

- Given an input list of coordinates (or object names):
  - Search selected services (SDSS, ...) for images, retrieve results and images to MySpace.
  - Search for catalogues (SDSS, 2MASS, ...) and query them returning results to MySpace
- Run SExtractor on images, cross match catalogues

**Suggested Python Exercises**

- Backup contents of MySpace to local disk
- Batch upload directory contents to MySpace
- List submitted jobs, delete those canceled or terminated in error
- Send a VOTable to TOPCAT using PLASTIC