INS/ESS Training Series:
Using Python for Interactive Astronomical Data Analysis

Presented by Perry Greenfield and Robert Jedrzejewski
Auditorium 12 - 1pm

Apr 5 Tue  Reading, manipulating, and displaying image data
Apr 19 Tue  Reading and plotting 1-D spectral data
May 10 Tue  Advanced topics in using PyFITS and arrays
May 24 Tue  Using PyRAF; writing scripts and programs in Python
Jun 7 Tue  Interfacing with C programs and libraries, and other languages

For up-to-date schedule please visit: http://www.stsci.edu/hst/training

Questions? Contact rmiller@stsci.edu or plee@stsci.edu
Overall Goals

• Early emphasis on interactive data analysis
• De-emphasize learning the Python language at beginning
  – Teach as needed
  – Will gloss over some language details early-on
• More details in written tutorial
Today’s Goals

• Simple use of PyFITS
• Displaying images to DS9 and similar tools
• The minimum on Python interpreters, variables, objects and errors
• The basics of numarray (array manipulation)
What won’t be covered

• Why you should use Python for data analysis instead of IDL
  – See Appendix B of tutorial for pros and cons
  – A comparison of IDL and Python (see Appendices C & D)

• Not a “Learn to program in Python Course”
  – You will learn something about programming in Python, however.
Pick up handouts

- These Viewgraphs
- Tutorial write-up
- PyFITS functional interface cheat sheet
- Numarray manual

All available on web: follow INS training links.
Feedback

• Expect some rough edges and future evolution
• Your chance to influence the long-term look and feature set of the general tools
• Constructive feedback is extremely important
  – Unintuitive behaviors or interfaces
  – Missing functionality that is important to add
  – Improvements to documentation
  – And bug reports, of course.
• Please contact Robert or me with any questions about what is covered in the tutorials!