APT Tutorial – January 2001
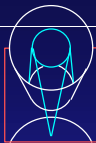
The Application

	Phase 0 Support	Phase 1 Support	Phase 2 Support	Black Box	Archival Support
Observer	What Can I Do	Propose Idea	Accepted Proposal		Archival Research
Tools Today	None	Latex Forms Exp Time	RPS2		Starview2
Tools Tomorrow	APT ?	APT	APT		APT & Starview2

APT Technical Components

Phase 1 Support
Phase 1 Proposal Editor
Duplication Checker Tool (Starview2)
Resource Estimator Tool

Phase 2 Support
Phase 2 Program Editor
Orbit Planner Tool (TransVerse)
Visit Planner Tool (Spike)
Bright Object Tool
RPS2 File Conversion Tool
Guide Star Tool

Observer

Generic Support
Visual Target Tuner Tool
Exposure Time Calculator Tool
Submission Tool
Observatory Constraint Manager Tool
Archival Research Tool (Starview2)
Top Level GUI & Architecture

Delivery Schedule

TimeLine / Tool	Cycle 10 Phase 1 Jun 2000	Cycle 10 Phase 2 Jan 2001	Cycle 11 Phase 1 Jun 2001	Cycle 11 Phase 2 Jan 2002	Cycle 12 Phase 1 Jun 2002	Cycle 12 Phase 2 Jan 2003
Visual Target Tuner	X	X	X	X	X	M
ExpTime Calculator		X	X	X	X	M
Bright Object Tool		X	M	M	M	M
Archival Research			X	M	M	M
Orbit Planner				X	X	M
Visit Planner				X	X	M
Top Level GUI				X	X	M
Architecture		X	X	X	X	M
Phase 1 Tool					M	M
Help Wizards/Tool Tips		X	X	M	M	M

X – Release doesn't contain all major capabilities (Incremental Release)
M – Contains all major capabilities (Maintenance Mode)
Detailed Schedule http://apt.stsci.edu

APT/ETC Status and Demo

Chris O'Dea
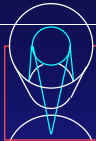
Status of APT/ETC

- ❖ Motivation & Goals
- ❖ Background
- ❖ Science Input
- ❖ Status & Plans
- ❖ How to Use the APT/ETC
- ❖ Helpful Hints

Motivation & Goals

- ❖ The web ETC has become a popular and "essential" proposal preparation tool which should be included in the APT.
- ❖ The APT ETC is a JAVA tool which provides a uniform interface and uniform output for all the instruments.
- ❖ It should be intuitive, fast, and easy to use.
- ❖ The APT ETC will allow communication with other APT tools.
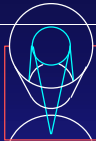
Motivation & Goals II

- ❖ Output will be both tabular and graphical.
- ❖ APT ETC will include additional functionality over the CGI ETCs.
- ❖ Eventually, the APT version will replace current web versions - with some savings due to elimination of redundant effort.

Background

- A simple ''proof-of-concept'' prototype of a Java ETC was created by the Scientist Expert Assistant (SEA) group at GSFC with some input from ACS and STIS.
- STScI took ownership of the tool in mid-2000.
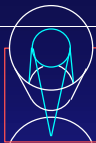
Development Effort

- Development is being carried out here at STScI by Don McLean, Anand Sivaramakrishnan, and Hemant Shukla; with management by Perry Greenfield. Leslie Zimmerman started working on testing and documentation mid-Jan.
    - debug ETC
    - add scientific functionality (one SI at a time)
    - Improve GUI

Science Input

- ❖ ETC User's group provides input on scientific requirements and user interface
    - ✦ Chris O'Dea (chair), Santiago Arribas, Francesca Boffi, Ralph Bohlin, Chris Hanley, Patricia Knezek, Kailash Sahu.
- ❖ Francesca Boffi is verifying numerical accuracy for ACS
- ❖ Your comments are welcome and encouraged.
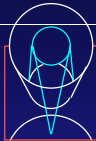
Status & Plans

- ❖ First release Jan 9, 2001 contains ACS imaging (no ramps) and spectroscopy
- ❖ Debug current release
- ❖ Add ACS ramp filters and coronograph (contingent on OCM)
- ❖ Add NICMOS and STIS (hopefully in time for Cycle 11 Phase I)

How to Use the APT ETC

- ❖ type hot-etc to start
- ❖ use Target, Instrument, and Background menus to specify exposure parameters
- ❖ calculation is carried out when you click Apply
- ❖ specify desired SNR or exposure time at bottom of main window
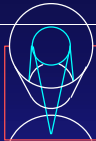
Helpful Hints I

- ❖ make sure Apply/Reset is "on" in general preferences menu
- ❖ if the ETC hangs, get out and get back in
- ❖ print table of results using menu item ETC/Show Exposure as Text and click print
- ❖ save text file of results to disk in File/Save As Text

Helpful Hints II

❖ print currently displayed plot using File/Print.
  ✦ Caution. On some systems this is a very large file
    which is slow to print.

❖ save session using File/Save As
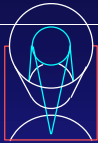
APT/VTT Demo

Ray Lucas

Motivation: Why a VTT?

❖ Part of APT, a suite of new tools for developing observing programs with HST and other space-based and ground-based observatories

❖ Our ultimate goal: Extensible observatory-independent, platform- and OS-independent Java-based interface for astronomical investigation; for showing what has been observed before and for planning future observations, overlaying various apertures on images, with ancillary capabilities as needed
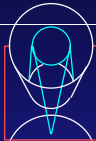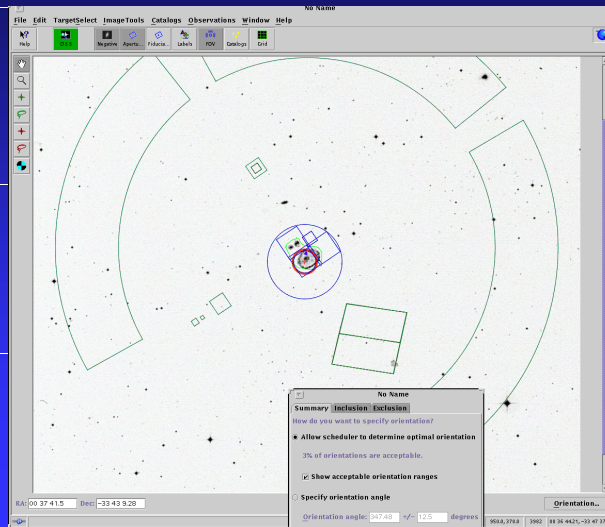
Related Projects Underway

❖ Bright Object Protection checking (Ron Downes)

❖ Starview integration: VTT to Starview & Starview to VTT (Megan Donahue)

Current Top-level VTT Screen

Starting: A Simple Script to Follow

❖ How to start?

➢ Follow instructions via links from STScI top-level page to "Observing" and then to "New Astronomer's Proposal Tool", or go directly to URL http://ra.stsci.edu/apst/apt-observing for instructions on downloading and installing on your PC, or simply type vtt on your STScI unix Solaris workstation. Once VTT is installed and started:

  ▪ First, Left click on "Help" on top toolbar
  ▪ Help contains many "how-to" instructions
  ▪ Most mouse clicks are Left clicks
  ▪ Moving cursor over icons invokes help labels

Simple script (cont'd):

- Click on Target_Search or green DSS button if you already know coords and search for an object
- Retrieve a DSS image of the target using defaults
- Use the Observations pull-down menu to add a WFPC2 observation of your target
- Click on Orientation button (lower right) and play; also try L click and drag on any corner of aperture to rotate by hand. (Similarly, L click and drag over the target position crosshair will move the aperture, and L click and drag in the image will move the image.)
- Play with include/exclude object/region (Left toolbar)

Simple script (cont'd)

- Add another observation of the same sort and drag the aperture to a new desired location and ORIENT (or you may specify new coords and a new ORIENT value by entering values in the appropriate boxes)
- Turn on Labels to see which observation is which
- Save the information in HST RPS2 format
- Turn on full focal plane FOV and parallels
- Use "Modify FOV Aper List" in "Image Tools" pulldown to correct NICMOS NIC1 and NIC2 FOVs for NIC3 focus
- Play with centroid and radial plot
- Turn on Catalogs; play with magnitude limit slider; get catalog object information, and look at ADS abstracts and articles, etc.