TOPCAT and all that

Mark Taylor, Bristol University, UK

STIL
- Public API for table I/O and processing
  http://www.starlink.ac.uk/stil/

STILTS
- Command-line tools for table manipulation
  http://www.starlink.ac.uk/stilts/

TOPCAT
- GUI table visualisation/manipulation
  http://www.starlink.ac.uk/topcat/
Outline

• 'Project' status
• Software current capabilities & recent upgrades
• Future plans
Software Status

• Starlink is terminated
• I have some continued funding
  – 12-24 months, probably (PPARC, VOTech)
• VOTable-related work includes:
  – continued support of STIL
  – continued support/development of TOPCAT
  – recent v1.0 release of STILTS
• ... continues to work
Recent TOPCAT Developments

• Crossmatching improvements
  – Now uses HEALPix not HTM (*much* faster)
  – Per-row errors for sky matching
  – Choose all or best matches
  – More choice of join types (what rows in output)

• Additional Time conversion functions
  – MJD, ISO-8601, Julian/Besselian epoch

• MySpace access now uses ACR
  – Windows access initially broken – now fixed
STILTS

- Command-line package for VOTables/tables
- Experimental release since May 2005
- VOTable-specific tools:
  - votcopy – VOTable encoding translator
  - votlint – VOTable validator
- Generic table tools (including VOTables)
  - tcopy – Table format translator
    - VOTable, FITS, SQL, CSV, ASCII, ...
  - tpipe – All-purpose table pipeline utility
    - stats, data/metadata calculations, column rearrangement, coordinate manipulation, bad value substitution, row selection, sampling, ...
Parameter system changed
  - backwardly incompatible
  - better value defaulting, more comprehensible, prompting
  - more extensible
  - more amenable to wrapping in external frameworks
    • SOAP, CEA, OPTICON, ??

New tasks
  - \texttt{tmatch2} - 2-table crossmatcher
  - \texttt{tcat} - table concatenater
  - \texttt{calc} - quick command-line expression evaluator
Future Plans I

- TOPCAT graphics improvements
  - histograms
  - multiplots
- STILTS matching facilities
  - `tmatch1`
  - `tmatchN`
- PLASTICise TOPCAT
  - communication with Aladin, VisIVO etc (see apps IG)
Future Plans II

- VOTable metadata improvements
  - STIL to keep track of GROUPs?
  - STIL to retain VOTable document structure?
- STILTS/TOPCAT log processing steps in PARAMs?
- Alternative STILTS invocation (stilsh? PyStilts?)
- Better use of UCDs in TOPCAT/STILTS?
- STC?
- TOPCAT visualisation/analysis enhancements
  - improved multivariate statistics/visualisation?
  - interface with R?
  - publication quality graphics?
- STILTS plotting tools tplot, thist (-> gif/.eps)?
Future Plans III

• Your requests/suggestions?