

TeX and LaTeX Tools for Windows PC's

- Free software for Win32 systems
- Optional .ps, .pdf, or .html output from same master `myfile.tex` source file:

```
latex myfile → .dvi → .ps
```

```
pdflatex myfile → .pdf
```

```
latex2html myfile → .html
```

- Option: emit NRAO-standard .html

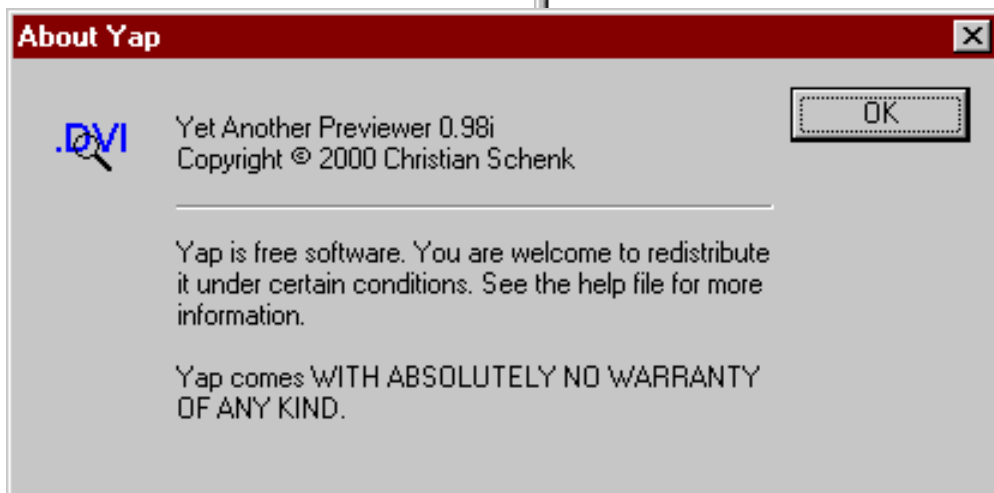
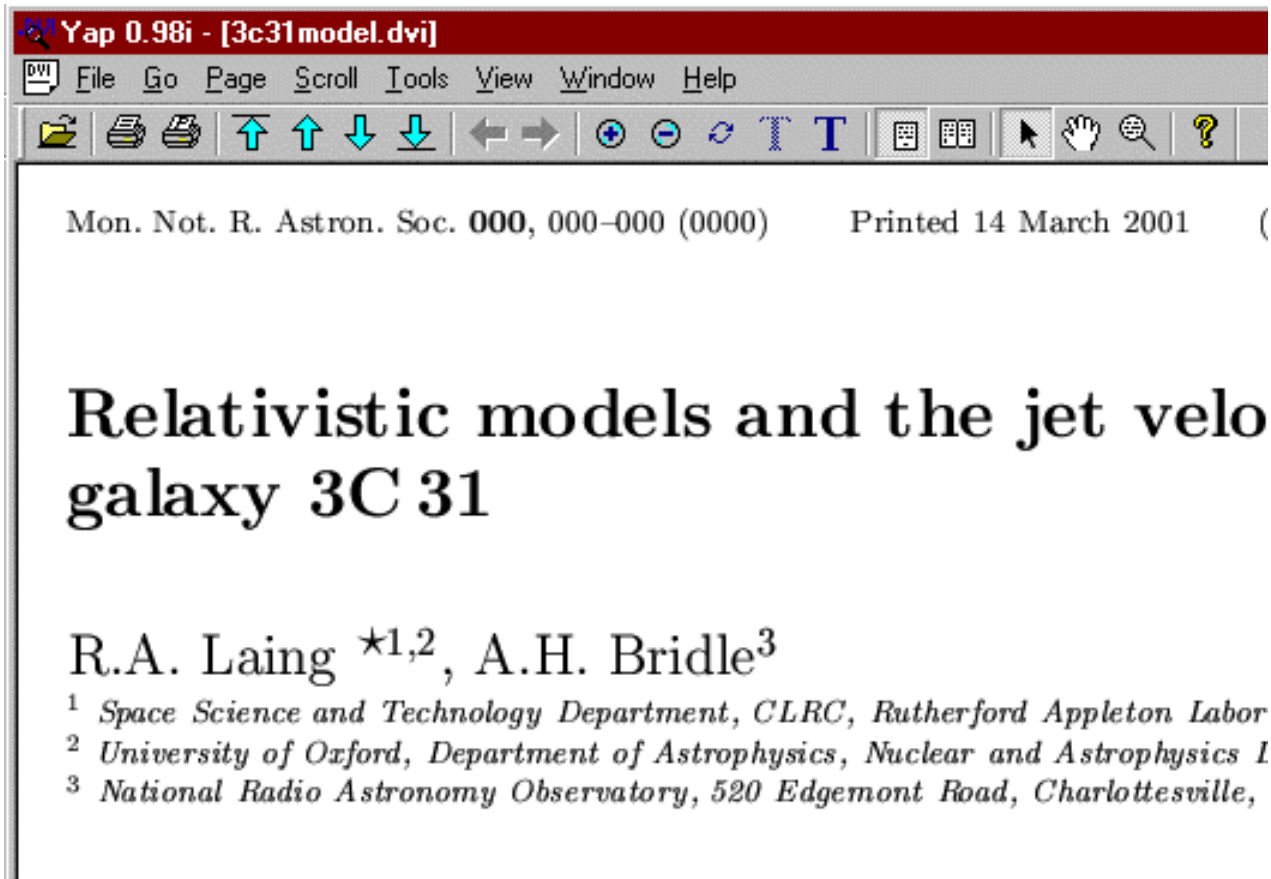


MiKTeX

- Free, open-source, download (CD coming)
- Easy installation (setup wizard)
- TeX, LaTeX2e, BibTeX, MakeIndex, TeXInfo
- public domain Type-1 fonts (Computer Modern, LaTeX, AMS math families)
- dvips, pdftex, pdflatex
- Command Prompt interface
- YAP .dvi previewer
- Texify compiler automates multiple runs

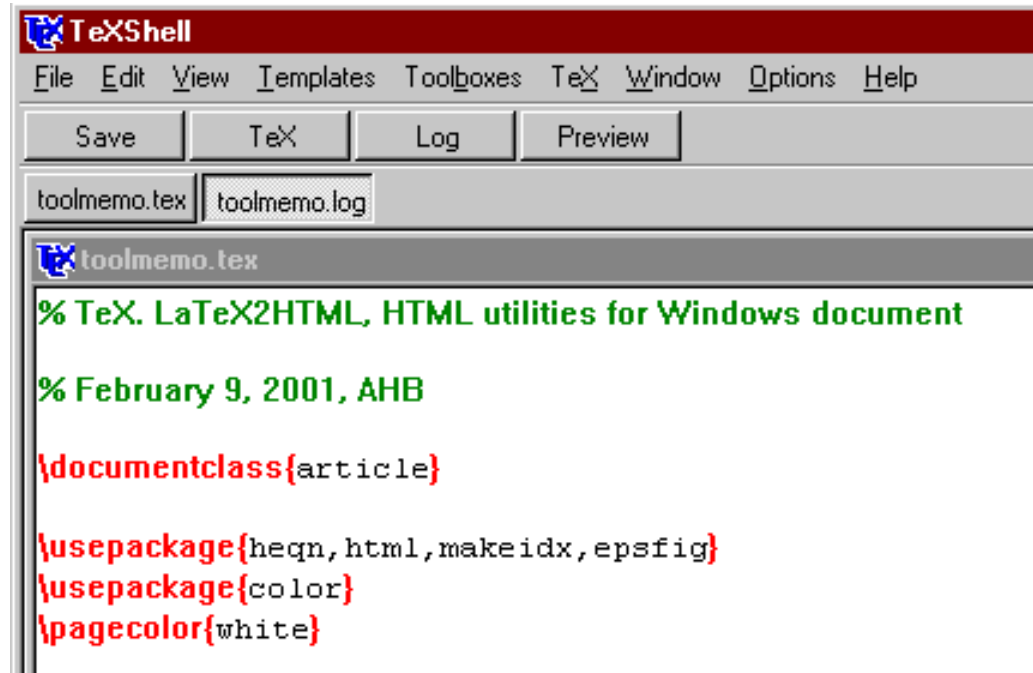


YAP .dvi preview



Windows TeX Shell

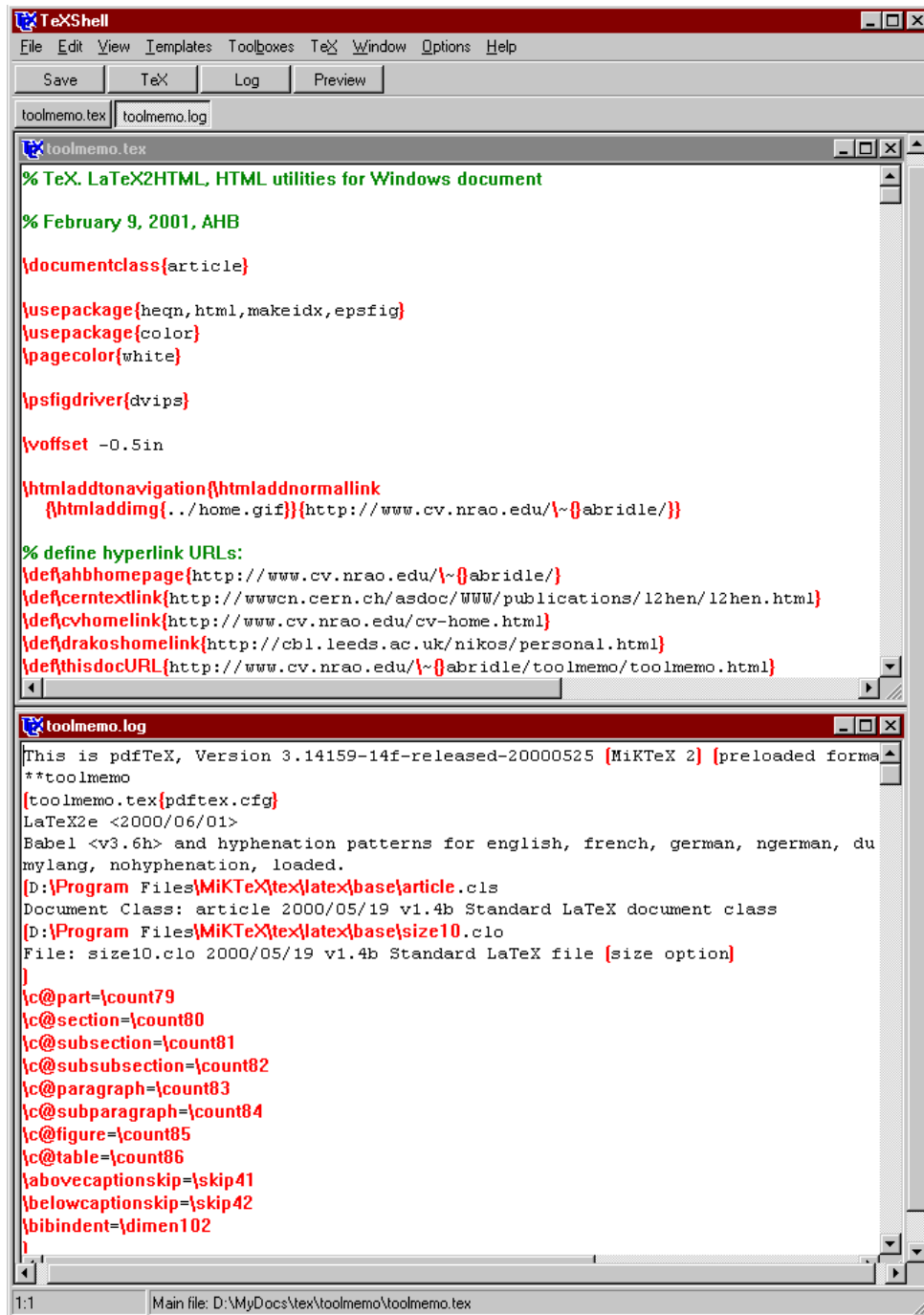
- Editor, syntax highlighting
- Templates, toolboxes
- .log display
- Cursor-aware YAP .dvi preview
- Integrates with MiKTeX



```
% TeX. LaTeX2HTML, HTML utilities for Windows document
% February 9, 2001, AHB
\documentclass{article}
\usepackage{heqn,html,makeidx,epsfig}
\usepackage{color}
\pagecolor{white}
```



Windows TeX Shell full screen



The screenshot shows the TeXShell interface with two windows. The top window, titled 'toolmemo.tex', displays LaTeX source code for a document. The code includes document class settings, package loading, and hyperlink definitions. The bottom window, titled 'toolmemo.log', shows the output of the compilation process, including the version of pdfTeX and the list of loaded files and packages.

```
TeXShell
File Edit View Templates Toolboxes TeX Window Options Help
Save TeX Log Preview
toolmemo.tex toolmemo.log
toolmemo.tex
% TeX. LaTeX2HTML, HTML utilities for Windows document
% February 9, 2001, AHB
\documentclass{article}
\usepackage{heqn,html,makeidx,epsfig}
\usepackage{color}
\pagecolor{white}
\psfigdriver{dvips}
\voffset -0.5in
\htmladdtonavigation{\htmladdnormallink
  {\htmladding{./home.gif}}{http://www.cv.nrao.edu/~\abridle/}}
% define hyperlink URLs:
\def\ahbhomepage{http://www.cv.nrao.edu/~\abridle/}
\def\cerntextlink{http://wwwcn.cern.ch/asdoc/WWW/publications/l2hen/l2hen.html}
\def\cvhomelink{http://www.cv.nrao.edu/cv-home.html}
\def\drakoshomelink{http://cbl.leeds.ac.uk/nikos/personal.html}
\def\thisdocURL{http://www.cv.nrao.edu/~\abridle/toolmemo/toolmemo.html}
toolmemo.log
This is pdfTeX, Version 3.14159-14f-released-20000525 [MiKTeX 2] (preloaded forma
**toolmemo
(toolmemo.tex{pdftex.cfg}
LaTeX2e <2000/06/01>
Babel <v3.6h> and hyphenation patterns for english, french, german, ngerman, du
mylang, nohyphenation, loaded.
[D:\Program Files\MiKTeX\tex\latex\base\article.cls
Document Class: article 2000/05/19 v1.4b Standard LaTeX document class
[D:\Program Files\MiKTeX\tex\latex\base\size10.clo
File: size10.clo 2000/05/19 v1.4b Standard LaTeX file (size option)
]
\c@part=\count79
\c@section=\count80
\c@subsection=\count81
\c@subsubsection=\count82
\c@paragraph=\count83
\c@subparagraph=\count84
\c@figure=\count85
\c@table=\count86
\abovcaptionskip=\skip41
\belowcaptionskip=\skip42
\bibindent=\dimen102
1:1 Main file: D:\MyDocs\tex\toolmemo\toolmemo.tex
```



Table 1: LaTeX/HTML Equivalencies

Any
valid
LaTeX
doc can
map
into
an
HTML
web

LaTeX	HTML
<code>\chapter</code>	<code><H1></code>
<code>\section</code>	<code><H2></code>
<code>\subsection</code>	<code><H3></code>
<code>\subsubsection</code>	<code><H4></code>
<code>\par</code>	<code><P></code>
<code>\begin{description}</code>	<code><DL></code>
<code>\begin{enumerate}</code>	<code></code>
<code>\begin{itemize}</code>	<code></code>
<code>\item</code>	<code></code>
<code>\begin{table}</code>	<code><TABLE></code>
<code>\begin{figure}</code>	<code></code>
<code>\emph{text}</code>	<code>text</code>
<code>\textit{text}</code>	<code><I>text</I></code>
<code>\textbf{text}</code>	<code>text</code>
<code>\texttt{text}</code>	<code><TT>text</TT></code>
<code>\verb text </code>	<code><PRE>text</PRE></code>
<code>\label{text}</code>	<code></code>
<code>\ref{text}</code>	<code></code>

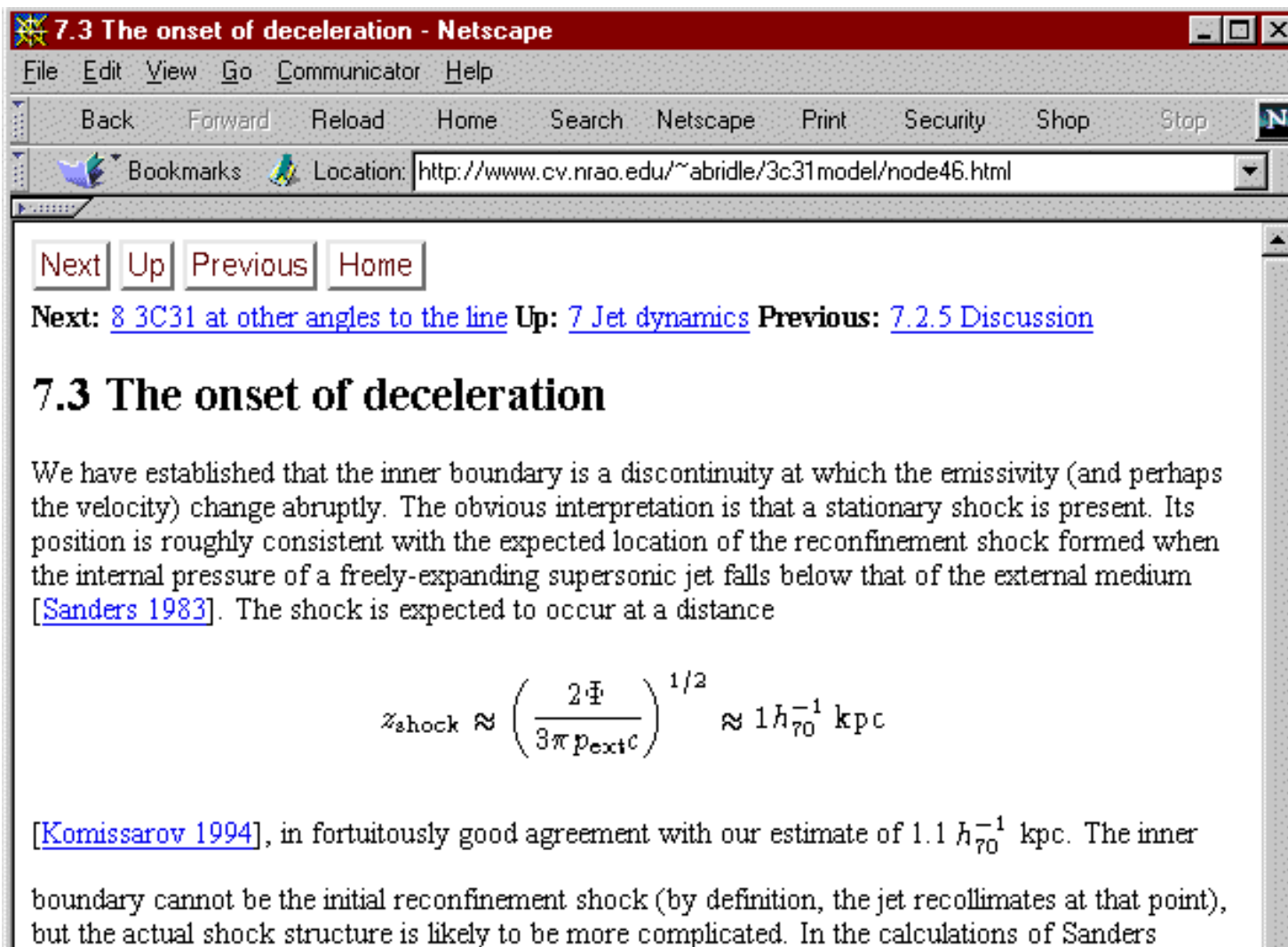


LaTeX2HTML

- Translates LaTeX document structure into HTML web pages with internal link navigation
- Symbols, graphics → transparent .gif or .png images as needed
- Conditional output lets you optimize both paper and web versions)
- → fully navigable, but not fully searchable, documents



LaTeX2HTML math output example



The screenshot shows a Netscape browser window titled "7.3 The onset of deceleration - Netscape". The address bar contains the URL "http://www.cv.nrao.edu/~abridle/3c31model/node46.html". The page content includes navigation buttons for "Next", "Up", "Previous", and "Home". Below these are links: "Next: [8 3C31 at other angles to the line](#)", "Up: [7 Jet dynamics](#)", and "Previous: [7.2.5 Discussion](#)". The main heading is "7.3 The onset of deceleration". The text describes a shock structure in a jet, mentioning Sanders (1983) and Komissarov (1994). A mathematical equation is displayed, showing the shock distance z_{shock} as a function of flux Φ and external pressure p_{ext} . The equation is:
$$z_{\text{shock}} \approx \left(\frac{2\Phi}{3\pi p_{\text{ext}} c} \right)^{1/2} \approx 1 h_{70}^{-1} \text{ kpc}$$
 The text continues to discuss the agreement with Komissarov (1994) and the complexity of the shock structure.

7.3 The onset of deceleration - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: <http://www.cv.nrao.edu/~abridle/3c31model/node46.html>

Next Up Previous Home

Next: [8 3C31 at other angles to the line](#) Up: [7 Jet dynamics](#) Previous: [7.2.5 Discussion](#)

7.3 The onset of deceleration

We have established that the inner boundary is a discontinuity at which the emissivity (and perhaps the velocity) change abruptly. The obvious interpretation is that a stationary shock is present. Its position is roughly consistent with the expected location of the reconfinement shock formed when the internal pressure of a freely-expanding supersonic jet falls below that of the external medium [[Sanders 1983](#)]. The shock is expected to occur at a distance

$$z_{\text{shock}} \approx \left(\frac{2\Phi}{3\pi p_{\text{ext}} c} \right)^{1/2} \approx 1 h_{70}^{-1} \text{ kpc}$$

[[Komissarov 1994](#)], in fortuitously good agreement with our estimate of $1.1 h_{70}^{-1}$ kpc. The inner boundary cannot be the initial reconfinement shock (by definition, the jet recollimates at that point), but the actual shock structure is likely to be more complicated. In the calculations of Sanders



LaTeX2HTML components

- Perl
- LaTeX2e engine (e.g. MiKTeX)
- Ghostscript
- netpbm
- latex2html.bat → Perl scripts

- .ini file for user customization
- html.sty → web-aware features



html.sty tools

- Link (URL) management
 - `\htmladdnormallink{URL}`
 - `\htmladdnormallinkfoot{URL}`
- Conditional text features (.ps, .pdf, .html versions separately optimized)
 - `{latexonly}`, `{htmlonly}`, `{rawhtml}` environments
 - `\hyperref{text1}{text2}{text3}{label}`
- Image/figure management
 - `\htmlimage{options}` → scale, thumbnails, etc
- Details in LaTeX2HTML Authors' Guide
 - available from `~abridle` home page



LaTeX2HTML tips

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LaTeX2HTML Authors' Guide

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[PDF Version](#)

available from ~abridle home page



LaTeX2HTML “NRAO” option

- Minor hack (by AHB) to latex2html Perl scripts as distributed
- Adds NRAO server-side includes to output .shtml
- Produces “NRAO standard” web page features from LaTeX source
- Could be added to Unix/Linux versions if desired



Example of web produced with NRAO HTML output option

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4.3 MS-Windows

L^ATEX2HTML and all of the utilities needed to run it are now available in versions for Microsoft Windows. Detailed installation instructions for L^ATEX2HTML and the associated utilities in Windows systems are available [here](#).

The configuration file is `config.bat` and the system-wide settings after installation are in `l2hconf.pm` in the root directory for the L^ATEX2HTML package. Line 187 of this file specifies the name for local (user or document specific) initialization files. I find it convenient to specify

```
$INIT_FILE_NAME = 'l2h.ini';
```

so that the initialization files have a file extension recognized as such by default under Windows.

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2001-03-02

Graphics issues

- Can't (yet) use all graphics input file formats to produce all output formats!
- TeX, LaTeX accepts .ps, .eps graphics input, best to convert other input formats to .eps
On-the-fly conversion of .jpg input IS possible with graphicx.sty and \DeclareGraphicsRule, BUT you must insert Bounding Box information in your .tex file manually for each graphic. This is more work than prior .jpg→.eps conversion!
- pdftex, pdflatex accepts .jpg, .pdf input formats, but not .ps, .eps!
- LaTeX2HTML supports epsfig.sty, graphics.sty, graphicx.sty methods for including graphics



Summary:

Free TeX-tools for Win32

- MiKTeX → basic TeX, LaTeX2e, .ps, .pdf
- TeXShell → GUI for TeX, LaTeX

- ActivePerl 623 → Perl 5.6
- Ghostscript 6.5
- netpbm
- LaTeX2HTML v.2k_1beta → .html
- "NRAO" option → .shtml, standard web pages

- All available from \\Cvsnap1\SW\texutils
- Disk Space: MiKTeX 83 Mb, total 140 Mb



TeX, LaTeX toolkit info

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TeX, LaTeX and HTML Tools for Windows PC's

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