FULL TITLE
ASP Conference Series, Vol. **VOLUME**, **YEAR OF PUBLICATION**
NAMES OF EDITORS

Astronomical Society of the Pacific Conference Series—Instructions for Authors Using LaTeX 2ε Markup

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Abstract. This guide explains step by step how to prepare your article for a proceedings in the ASP Conference Series. It assumes absolutely no prior knowledge of LaTeX on your part; however, if your article involves complicated mathematical expression or tables, you may need to refer to some of the references listed at the end of this manual. This document is a revised and much extended version of the ASP document `newpaspman.tex` and incorporates the new LaTeX standard LaTeX 2ε (hereinafter, simply LaTeX). Since this document is a manual for occasional reference, information is repeated in those sections where it is needed rather merely cross-referenced.

1. General Introduction

In order to ensure that papers received for publication from different authors are consistent in format, style, and quality, authors are required to typeset their manuscripts[1] exactly according to the following instructions. The editors will modify the electronic manuscripts as necessary to ensure that they conform to these standards in order to produce a compliant LaTeX book to be subsquently converted at ASP into a PDF file for electronic publishing.

2. Why LaTeX?

Traditionally, authors (and editors of multi-author works) would send the typed manuscript of a finished work to a publisher's editor, who would then have the manuscript "marked up" by an editor. The marked up MS would then be passed to a designer, who would choose a typeface and give a distinctive appearance to the printed page (in terms of the formatting of titles, running heads, line spacing, etc.). The MS would then be typeset by a compositor and the finished book would then be printed on paper. The computer has now almost completely revolutionized this process to the point where the entire editorial and production process can now be handled totally electronically.

From an author's point of view computers can handle markup, page design and typesetting in two ways:

[1] Although the term *manuscript* has long lost its etymological meaning of "handwritten script", it is retained here in the meaning it has had for many years in publishing, i.e., a document compiled by an author for publication, using whatever means.

1. *Visually:* Short or uncomplicated documents are compiled directly on screen so that the final output is immediately displayed. This system, used by word processing packages is often referred to as "what you see is what you get" (WYSIWYG—pronounced "wisseewig"). Such programs, however, use a large number of invisible and inaccessible commands and can be difficult to adapt to more complex documents, such as scientific papers.

2. *Logically:* Every aspect of markup, design and typography is decided by user commands in a document keyed in by the author or editor. Although this approach is in principle far more complicated and requires an initial outlay of time in mastering the system, its benefits more than outweigh the advantages for those documents requiring intricate typesetting and cross-referencing (such as scientific or academic papers, monographs and conference proceedings).

LaTeX adopts the logical approach. Authors are given either templates or instructions that provide the basic markup (sections, running heads, etc.) and page design. They then key in their text and formulae, hence acting as their own compositors. To be more specific, standard LaTeX commands do the markup (which is why LaTeX is often referred to as a markup language) and handles document styles, which define the design of the document. Other LaTeXcommands are used for keying in the text, but in reality the typography is done by the lower-level language TeX (since all LaTeX commands are in reality small macros consisting of TeX commands). Authors and volume editors don't need to be acquainted with TeX since, as far as their tasks are concerned, LaTeX does it all.

If you would like further information concerning LaTeX, you might try some of the titles listed in the references at the end of this guide. Lamport (1994) offers a general introduction to LaTeX. For a more comprehensive description, Kopka & Daly (1999) is excellent. Goossens, Mittelbach, & Samarin's *The LaTeX Companion* (1994) offers a more advanced treatment on how LaTeX may be enhanced with various plug-in macros in the public domain. LaTeX is nothing more than a user-(almost)friendly application of the lower-level typesetting language TeX, a full account of which has been published by its creator (Knuth 1986). LaTeX applications are in a continuous state of flux. If you need the latest information on the numerous LaTeX extension packages available in the public domain, you should consult the Comprehensive TeX Archive Network (CTAN) website at

`ftp://ctan.tug.org/tex-archive/` (USA)
`ftp://ftp.tex.ac.uk/tex-archive/` (UK)
`ftp://ftp.dante/de/tex-archive/` (Germany)

You should also consult `www.tug.org`.

3. LaTeX Markup Commands

To typeset your article you will need the ASP Conference Series LaTeX style file (`asp2004.sty`), this manual, and the author template file (`asptemplate.tex`).

These files can be downloaded from `www.astrosociety.org`. Authors should use the `asptemplate.tex` file as the basis for their contribution. The remainder of this section (§§2.1–2.6) describes the parts of the template file in detail.

You should use only those markup commands from LaTeX plus the several extensions provided by this style file.

> ***Important Note:*** Do *not* define any commands of your own for any reason (no `def` or `newcommand` statements). If you do so, the volume editors will need to remove them all in order to get the book macro to work properly.

If you feel that you need special commands, clear these with the editors, who will need to include the preamble in the customized book macro for the volume, which you will not have access to.

3.1. Preamble

The first piece of markup must declare the overall style of the document:

```
\documentclass[11pt,twoside]{article}
```

This by itself would arrange your text in the general LaTeX style for articles, which is not what we want. To tailor the text to ASP Conference Series style, you will need to follow this command, on a new line, with

```
\usepackage{asp2004}
```

(the `.sty` extension is understood by the compiler). If you wish to include images in your article, you will also need to call a number of image-plotting routines, the most common ones being `epsf.sty` (for encapsulated postscript files) and `psfig.sty` (for postscript files), both of which will be discussed in what follows. Include these packages in your preamble now by typing:

```
\usepackage{epsf}
\usepackage{psfig}
```

Occasionally, it is necessary to print a figure or table sideways on the page. This "landscape" orientation is made available with the `lscape` environment, which should also be invoked in the preamble:

```
\usepackage{lscape}
```

To get the running headers at the top of each page (authors' names on the left page and title on the right page), enter the following commands:

```
\markboth{authors' surnames}{title of contribution}
\pagestyle{myheadings}
```

Use surnames only (no initials). For two authors, put "and" (not an ampersand) between the two authors' surnames; for three authors, separate each author's surname with a comma, with a serial comma and the word "and" (not ampersand) before the last author; for more than three authors write the first author's surname followed by "et al." (with no preceding comma). Use a shortened version of the full title if necessary. If the running title is too long it will displace the page number beyond the text margin.

It is extremely important that you now set a number of LaTeX counters to zero so as to ensure that your Table 1 really is labeled "Table 1" when the editors compile the entire collection of articles for the volume. If you, or the editors after you, forget to do this then your first table will be labeled "Table $n+1$", where n is the number of the last table in the article preceding yours in the volume. Similarly for section, footnote, figure, and equation numbers. To avoid such problems, key in:

```
\setcounter{equation}{0}
\setcounter{figure}{0}
\setcounter{footnote}{0}
\setcounter{section}{0}
\setcounter{table}{0}
```

Below this last command, now type

```
\begin{document}
```

to identify the beginning of the main portion of the manuscript. In LaTeX it is always a good idea to type in the `\end{}` equivalent to every `\begin{}` command immediately in order to avoid irritating compilation errors, so press a dozen or so carriage returns now and type

```
\end{document}
```

The entire remainder of the document must be enclosed within these two commands.

> ***Important Note:*** No other matter should appear in the preamble, and authors are strongly discouraged from adding their own macro definitions. Any such additions will be removed by the volume editors.

3.2. Title, Byline, Abstract, and Keywords

So far you have told LaTeX to compile your article in the ASP Conference Series style and to place the authors' surnames and the abbreviated title of the article as running heads. You are now ready to tell LaTeX to print the article title, authors' names (called bylines in publishing), and addresses. The use of keywords is encouraged, although they will only be used "invisibly" in the electronic version to categorize the articles in the volume for the ADS bibliographical database.

Title of Article The title will appear in boldface just beneath the eybrow slug on the first page of your article. To typeset the title write:

```
\title{title of article}
```

Ensure that the title does not overrun the right-hand margin. To prevent this, you can insert a carriage return command (\\) where you wish to enforce a line break. For example,

```
\title{The Broad- and Narrow-Line Regions of Narrow-Line\\
Seyfert 1 Galaxies}
```

will force LaTeX to put 'Seyfert 1 Galaxies' on a separate line (LaTeX should do this without your intervention, but this doesn't always happen).

Please note that there is never a good reason to append a footnote mark to the title of an article. The usual reason why authors like to do this is to indicate that observations were made on such-and-such a telescope using a certain instrument in an observatory run by a given organization, all of which information should rightfully appear in a section describing the observations. Don't strain the reader's patience by making acknowledgements more than once.

Authors' Names and Affiliations Authors' names (bylines) are typeset with the command

`\author{`*Author's name*`}`

Authors' affiliation are specified with the command

`\affil{`*Author's affiliation(s)*`}`

The affiliation should include the full postal address of the author. The address will be broken over several lines automatically if need be; do *not* use LaTeX's `\\` command to force the line breaks unless absolutely necessary. Please use mixed case text for these fields rather than supplying all capitals.

Abstract The abstract should be enclosed in the `abstract` environment.

`\begin{abstract}`
Summary text
`\end{abstract}`

Don't include the word "abstract" at the start of your text; it is inserted automatically and will appear in boldface followed by a point. The text of the abstract should follow on from this heading (as in the abstract of this manual).

Keywords Keywords are terms in a top–down hierarchical classification system used for sorting research articles into bibliographical categories.[2] You can include keywords in your manuscript, but they will not appear on the page. Their use will be restricted purely to provide bibliographical data for ADS from the electronic version of the volume. There are several systems of keywords available, but ASP adopts the version used by the major international astronomical journals (A&A, AJ, ApJ, MNRAS, PASP, etc.). You can download this list of keywords from the web site `http://pasp.phys.uvic.ca/keywords01.html`. To include keywords in your manuscript, enclose them in the braces of the `\keywords{}` command. For keyword syntax, consult the author instructions of any major international astronomical journal.

[2]They are *not* meant to serve the purposes of standardization of terminology.

3.3. The Main Text

Dividing Your Text into Sections You can divide your text into sections, as is done in this manual. The `asp2004` style supports three levels of sectioning.

```
\section{heading}
\subsection{heading}
\subsubsection{heading}
```

The first two of these commands will produce numbered section headings in boldface set off from the following text. The third command will produce an unnumbered italicized heading with run-on text. Keep the structure of your text within the three-level hierarchy; if that is not possible, then consult the volume editors, who may have their own preferences. If you prefer not to have any of your sections numbered you should change the first two commands to:

```
\section*{heading}
\subsection*{heading}
```

Please use mixed case text for the section heads. Note that these commands delimit sections by marking the *beginning* of each section; there are no separate commands to identify the *ends*.

For the top two levels of sectioning any mathematical expression should be preceded by the command `\boldmath`, to be written outside the math environment, as shown in the example below. This ensures that the entire heading appears in boldface, hence giving a more professional look to the page. Here is an example of a heading that includes a mathematical expression typeset without using the `\boldmath` command:

```
\section*{Evolution of Elliptical Galaxies to $z = 0.6$}
```

will produce

Evolution of Elliptical Galaxies to $z = 0.6$

And here is the same example with `\boldmath`:

```
\section*{Evolution of Elliptical Galaxies to \boldmath $z = 0.6$}
```

gives

Evolution of Elliptical Galaxies to $\boldsymbol{z = 0.6}$

Typesetting the Main Text The first paragraphs in top-level and second-level sections will authomatically appear without indentation. That is intentional: please don't alter it. All subsequent paragraphs will be indented. For third-level sections, the first paragraph simply runs on from the section title with no paragraph break; all subsequent sections are indented.

In LaTeX, paragraphs are indicated either by the `\par` command or with a double carriage return. Never use the `\\` command to indicate a new paragraph, since all this will do is start a new line with no indentation, which can be confusing to the reader (and to the editor!).

Text is keyed in in the usual way. Appendix A lists most of the LaTeX textual symbols that you will ever need. LaTeX will ignore the typist's convention of a double space after points, colons and semicolons, and will adjust the spacing between words and punctuation marks according to its own internal typesetting rules. Occasionally, you will find that a word will overrun the right margin; this must be corrected since whatever overshoots the margins will not be printed in the published version. A simple way of ensuring a break in the middle of a word is to insert `\-` after the syllable where you want a linebreak. As an example, possible word breaks in the word "buckminsterfullerene" could be keyed in as follows:

```
buck\-min\-ster\-ful\-ler\-ene
```

Merriam-Webster's Collegiate Dictionary (2000), which all authors and editors working in American English should have at their side, is an excellent guide to correct word division and is also useful in this respect for British English.[3]

If you find the occasional bad word break, you can use

`\begin{sloppypar}` *text of paragraph* `\end{sloppypar}`

which will switch off the hyphenation for the offending paragraph. Don't overuse the `sloppypar` environment since it may result in some very sparse lines of text. You can also avoid bad word breaks by preceding a phrase with `\sloppy` and following it with the command `\fussy` (which switches `\sloppy` off). If none of these techniques offers an acceptable solution, it might be necessary to redraft the offending sentence.

A word needs to be said about the spacing after points. If a sentence ends with a lower case letter the correct you need do nothing except put the end point ("full stop"). If, however, the sentence contains an abbreviation that ends in a point but does not end the sentence (a common one being *etc.*), then a backslash or a tilde must link the stop and the following word in order not to leave too large a space between the abbreviation and the word. So

`Bloggs et al.  got it wrong.` → Bloggs et al. got it wrong.

We should have typed

`Bloggs et al.~got it wrong.` → Bloggs et al. got it wrong.

(the difference in this example is slight but it can be considerable for a particularly dense line of type). Keep a lookout for parenthetical phrases ending in "etc.)": if such a parenthesis occurs in mid sentence you should type `etc.)~` and not just `etc.)`.

A further complication occurs with sentences ending in capitals. LaTeX normally puts an interword—not an intersentence—space after a point preceded by a capital so as not to leave too large a space after initials in a name. You can

---

[3]See Mahoney (2002) for a list of useful aids for authors and editors.

force an intersentence space by appending the `@` symbol to any stop preceded by a capital. Hence write

```
I love vitamin C.@ It starts the day off right.
```

to get

I love vitamin C. It starts the day off right.

rather than just

```
I love vitamin C. It starts the day off right.
```

which would give

I love vitamin C. It starts the day off right.

LaTeX 2_ε organizes fonts according to *shape*, *series*, and *family* (see Table 1). Font types can be invoked either as *commands* (which can also be used to insert normal text into equations, etc.) or as *declarations* (which cannot be used in mathmode); in other words, for ordinary text use the declarations and for mathmode use the commands, as shown in Table 1. If you happen to change fonts in a paragraph, remember to enclose the declaration in curly brackets so that the declaration does not overspill into the rest of the text.

Table 1. Typefaces in LaTeX 2_ε

Command	Declaration	Both will give:
`\textup{}`	`\upshape`	Upright text
`\textit{}`	`\itshape`	*Italics*
`\textsl{}`	`\slshape`	*Slanted text*
`\textsc{}`	`\scshape`	SMALL CAPS
`\textmd{}`	`\mdseries`	A medium-weight typeface
`\textbf{}`	`\bfseries`	**Boldface**
`\textrm{}`	`\rmfamily`	Roman type
`\textsf{}`	`\sffamily`	Sans serif type
`\texttt{}`	`\ttfamily`	`Typewriter type`

Font size can be changes with the commands in Table 2. In `asp2004` style, `\normalsize` is 11 pt, and the other sizes scale accordingly.

LaTeX Booby Trap Warning: Never type "%" on its own. Doing so will remove whatever follows it until the next carriage return. If you want to write, say, 10% you must insert a backslash (\) before the "%" symbol.

Table 2. LaTeX commands for changing font size

Command	Size
`\tiny`	Tiny
`\scriptsize`	Scriptsize
`\footnotesize`	Footnotesize
`\small`	Small
`\normalsize`	Normalsize
`\large`	Large
`\Large`	Larger
`\LARGE`	Larger still
`\huge`	Yet larger
`\Huge`	Huge

If you accidentally let a lone % symbol loose in the text and then carry on typing away merrily without hitting the carriage return, you will end up with a large chunk of missing text and it might not be overly obvious why. If you find text mysteriously disappearing, it might be a good idea to do a search for lone % symbols (remembering to insert a black space before the % symbol in your search tool).

If one wishes to have an acknowledgments section, it should be set off simply with the command

```
\acknowledgments
```

The text should follow after pressing the space bar once. So write simply,

```
\acknowledgements We thank the Big Bang for making
this symposium possible.
```

to produce:

> **Acknowledgements.** We thank the Big Bang for making this symposium possible.

This will separate the acknowledgements from the previous section with a section division spacing and indent the word *Acknowledgements* in boldface. Do not use `section{Acnowledgements}` to create the acknowledgements section, which should remain unnumbered.

3.4. Mathematics

LaTeX can produce highly sophisticated pages of mathematics, but most authors will be able to get by with a very limited subset of LaTeX commands. The most common LaTeX mathematical commands are listed in Appendix B, and a number of useful macros for expressions frequently found in astronomy are listed in Appendix C. If your paper involves a lot of mathematics, then you should obtain a copy of Leslie Lamport's *LaTeX User's Guide and Reference Manual* (Lamport

1994), which caters for the most common mathematical typesetting needs of authors. A more detailed discussion of LaTeX mathematical typesetting is given in Kopka & Daly (1999). For an exhaustive discussion of the general principles of typsetting mathematics, consult the *Chicago Manual of Style* (University of Chicago Press 1993).

The commonest typsetting failings of authors are:

- Not putting mathematical variables and constants in italics, both in displayed equations and in the text itself. You should write, for example,

$$t_0 = \frac{3(t_1 + t_2 + t_3 + t_4) \pm \sqrt{H}}{12}$$

  and not

$$\mathrm{t}_0 = \frac{3(\mathrm{t}_1 + \mathrm{t}_2 + \mathrm{t}_3 + \mathrm{t}_4) \pm \sqrt{\mathrm{H}}}{12}$$

- Haphazard use of enclosures (parentheses, brackets, etc.). As a general rule, try to follow the scheme recommended in *The Chicago Manual of Style*:

$$\Big\{ \Big[\Big(\{ [(\quad)] \} \Big) \Big] \Big\}$$

Displayed equations can be typeset in many ways using the standard displayed math environments of LaTeX; these three are probably of greatest use:

```
\begin{displaymath}
\end{displaymath}
\begin{equation}
\end{equation}
\begin{eqnarray}
\end{eqnarray}
```

The `displaymath` environment will break out a single, unnumbered formula. The same effect can be obtained by enclosing the mathematical expression in the double dollar sign (`$$ . . . $$`) or inside the delimiters `\[ . . . \]`. The equation will appear the same if it is set in an `equation` environment, and it will be autonumbered by LaTeX. So

```
\begin{equation}
{\mathbold\nabla g\cdot T} = \frac{\partial g}{\partial x}
\left( -\frac{\partial f}{\partial y}\right) +
\frac{\partial g}{\partial f}\frac{\partial f}{\partial x}
= \frac{\partial (f,g)}{\partial(x,y)}
\end{equation}
```

will produce:

$$\nabla g\cdot\mathbf{T}a = \frac{\partial g}{\partial x}\left(-\frac{\partial f}{\partial y}\right) + \frac{\partial g}{\partial f}\frac{\partial f}{\partial x} = \frac{\partial(f,g)}{\partial(x,y)} \tag{1}$$

and the same equation typeset in the `displaymath` environment will suppress the equation number.

In order to set several formulae in which vertical alignment is required, use the `eqnarray` environment. This environment will automatically number each line of the equation. If you want only certain lines numbered, then you can suppress the numbering of a given line by typing `\nonumber` after it. Use `eqnarray*` if you wish to avoid all numbering. Here is an example of the `eqnarray` environment in use:

```
\begin{eqnarray}
\int\!\int\limits_R\!\int_R f\,dx\,dy\,dz & = &
\int\limits_{0}^{1}\int_{0}^{x^2}\int\limits_{0}^{x+y}
(2x - y -z) dx\,dy\,dz\nonumber\\
& = & \frac{3}{2}\int\limits_{0}^{1}\int\limits_{0}^{x^2}
\left(x^2 - y^2\right)\,dy\,dz\nonumber\\
& = & \frac{3}{2}\int\limits_{0}^{1}
\left(x^4 - \frac{x^6}{3}\right)\,dx\nonumber\\
& = & \frac{8}{35}.
\end{eqnarray}
```

would produce

$$\begin{aligned}
\int\!\int\limits_R\!\int f\,dx\,dy\,dz &= \int\limits_{0}^{1}\int\limits_{0}^{x^2}\int\limits_{0}^{x+y}(2x - y - z)\,dx\,dy\,dz \\
&= \frac{3}{2}\int\limits_{0}^{1}\int\limits_{0}^{x^2}\left(x^2 - y^2\right)\,dy\,dz \\
&= \frac{3}{2}\int\limits_{0}^{1}\left(x^4 - \frac{x^6}{3}\right)\,dx \\
&= \frac{8}{35}. \qquad (2)
\end{aligned}$$

If you need to equate a single-line expression to a multiple-line expression, or matrices and determinants, then you will need the `array` environment. Here are some examples of the `array` environment at work:

Expression involving multiple lines in a single-line equation:

```
\[
Y_l^m(\theta,\phi)
= \sqrt{{\frac{2l+1}{4\pi}}\frac{(l-|m|)!}{(l+|m|)!}}
P_l^{|m|}(\cos \theta)e^{im\phi}\times \left\{
\begin{array}{ll}
(-1)^m & \mbox{for $m \ge 0$}\\
1      & \mbox{for $m < 0$}
\end{array}
\right.
\]
```

produces

$$Y_l^m(\theta,\phi) = \sqrt{\frac{2l+1}{4\pi}\frac{(l-|m|)!}{(l+|m|)!}}P_l^{|m|}(\cos\theta)e^{im\phi} \times \left\{ \begin{array}{ll} (-1)^m & \text{for } m \geq 0 \\ 1 & \text{for } m < 0 \end{array} \right.$$

The `ll` argument indicates that the elements of the array are to be left justified. Other justifications are right justified (`r`) and centered (`c`). The expression `\right.` (the point is there intentionally) indicates that the right brace should be invisible.

Matrices and determinants:

```
\[
\left(
\begin{array}{cc}
a_{11} & a_{12}\cdots a_{1n}\\
a_{21} & a_{22}\cdots a_{2n}\\
\vdots & \vdots\hfil\ddots\hfil\vdots\\
a_{n1} & a_{n2}\cdots a_{nn}
\end{array}
\right)
\left(
\begin{array}{c}
x_1\\
x_2\\
\vdots\\
x_n
\end{array}
\right) =
\left(
\begin{array}{c}
h_1\\
H_2\\
\vdots\\
h_n
\end{array}
\right)
\]
```

gives

$$\left(\begin{array}{cc} a_{11} & a_{12}\cdots a_{1n}\\ a_{21} & a_{22}\cdots a_{2n}\\ \vdots & \vdots\hfil\ddots\hfil\vdots\\ a_{n1} & a_{n2}\cdots a_{nn} \end{array} \right) \left(\begin{array}{c} x_1\\ x_2\\ \vdots\\ x_n \end{array} \right) = \left(\begin{array}{c} h_1\\ h_2\\ \vdots\\ h_n \end{array} \right)$$

and

```
\begin{eqnarray*}
I_b & = & \frac{\left|\begin{array}{ccc}
```

```
-(R_1 + R_3) & -V & R_3\\
      R_1    &  0 & R_5\\
     -R_3    &  0 & R_3 + R_4 + R_5
\end{array}\right|}{\left|\begin{array}{ccc}
-(R_1 + R_3)    &      0     &     R_3\\
      R_1       & -(R_1 + R_2 + R_5) & R_5\\
     -R_3       &     -R_5   & R_3 + R_4 + R_5
\end{array}\right|} \\
    & = & \frac{VR_5R_3 + VR_1(R_3 + R_4 + R_5)}{\Delta}
\end{eqnarray*}
```

gives

$$
\begin{aligned}
I_b &= \frac{\left|\begin{array}{ccc}
-(R_1 + R_3) & -V & R_3\\
R_1 & 0 & R_5\\
-R_3 & 0 & R_3 + R_4 + R_5
\end{array}\right|}{\left|\begin{array}{ccc}
-(R_1 + R_3) & 0 & R_3\\
R_1 & -(R_1 + R_2 + R_5) & R_5\\
-R_3 & -R_5 & R_3 + R_4 + R_5
\end{array}\right|} \\
&= \frac{VR_5R_3 + VR_1(R_3 + R_4 + R_5)}{\Delta}
\end{aligned}
$$

To incorporate a mathematical equation or expression into a line of text, enclose it with either the `\(. . .\)` or the single `$` signs (the double dollar sign, `$$`, signs would create an unnumbered displayed equation). When typesetting mathematical expression in a line of text, instead setting in line such expressions as

$$\frac{x}{a} + \frac{y}{4a},$$

use the solidus (/) to give $x/a + y/(4a)$. Using the solidus avoids uneven line spacings. Note also that the `\( . . . \)` delimiter automatically takes care to force integral and summation limits to fit the text line; hence,

```
\( \( f(x) = A_0 +
\Sigma_{n = 1)^{\infty}\left\{ a_n \cos nx +
b_n \sin nx \right\}
\)
```

will produce $f(x) = A_0 + \Sigma_{n=1}^{\infty} \{a_n \cos nx + b_n \sin nx\}$ to fit into a line of text without causing extra line spacing.

3.5. Tables

Keep the layout of your tables as simple as possible, with single horizontal rules above and below the column headings and a third horizontal line at the bottom of the table; don't use vertical rules for separating the columns. Physical units in the column heads should appear in parentheses beneath the parameter. The caption goes at the top of the table. For single-sentence captions there should be no stop. Here is a simple table, followed by the LaTeX code to produce it:

Table 3. A simple table

Component	Velocity [km s^{-1}]	$N_{\mathrm{O\,VI}}$ [cm^{-2}]	N_{H} [cm^{-2}]	Covering factor
1	-1352	1.7×10^{15}	9.0×10^{14}	1.0
2	-599	4.1×10^{15}	2.1×10^{15}	0.9
3	-792	2.1×10^{15}	1.7×10^{15}	0.7
4	-1029	6.0×10^{15}	2.3×10^{15}	0.5

```
\begin{table}[!ht]
\caption{A simple table}
\smallskip
\begin{center}
{\small
\begin{tabular}{ccccc}
\tableline
\noalign{\smallskip}
Component & Velocity & $N_{\mathrm{O\, VI}}$
& $N_{\mathrm{H}}$ & Covering factor\\
          &[km s$^{-1}$]& [cm$^{-2}$]& [cm$^{-2}$]& \\
\noalign{\smallskip}
\tableline
\noalign{\smallskip}
1 & $-1352$ & $1.7 \times 10^{15}$ & $9.0 \times 10^{14}$ & 1.0\\
2 & $-599$  & $4.1 \times 10^{15}$ & $2.1 \times 10^{15}$ & 0.9\\
3 & $-792$  & $2.1 \times 10^{15}$ & $1.7 \times 10^{15}$ & 0.7\\
4 & $-1029$ & $6.0 \times 10^{15}$ & $2.3 \times 10^{15}$ & 0.5\\
\noalign{\smallskip}
\tableline
\end{tabular}
}
\end{center}
\end{table}
```

The `\begin{table}[!ht]` and `\end{table}` commands float the table in the document, the `[!ht]` argument causing the table to be put either at the top of the page or closest to the point in the text where these commands are invoked. The `\caption{}` command place right after the `\begin{table}` command puts the caption above the table, which is ASP house style. The `\smallskip` command inserts a small space between the caption and the table. The commands `\begin{center}` and `\end{center}` center the table between the left and right margins (although the caption remains uncentered in this sense). The table proper begins with the declaration `\begin{tabular}{ccccc}`, which starts the `tabular` environment. The five "c"s will create five centered columns. Horizontal rules are drawn using the command `\tableline`. In order to prevent the following text from being printed too close to this line you need to insert a small vertical space with the command `\noalign{\smallskip}`; the `\noalign{}` command is necessary inside the `tabular` environment. The column entries are separated by an ampersand and a carriage return `\\` must be placed at the end of each row in the table.

To subdivide column headings use the `\multicolumn{}{}{}` command, as in the following example:

Table 4. A more complicated table

Target	Type	$v \sin i$ [km s^{-1}]	
		Measured	Adopted
BH Cep	HAe/Be	97 ± 8(8); 97 ± 5(7); 98 ± 6(11)	97
49 Cet	Vega-like	183 ± 9(4); 187 ± 4(3)	186
⋮	⋮	⋮	⋮
HD 233517	Vega-like	17 ± 3(5), 16 ± 2(6); 15 ± 2(24)	15

This table was produced with the following LaTeX code:

```
\begin{table}[!ht]
\caption{A more complicated table}
\smallskip
\begin{center}
{\small
\begin{tabular}{llll}
\tableline
\noalign{\smallskip}
Target & Type & \multicolumn{2}{c}{$v\sin i$ (km s$^{-1}$)}\\
\noalign{\smallskip}
\cline{3-4}
\noalign{\smallskip}
       &      & Measured & Adopted\\
\noalign{\smallskip}
\tableline
\noalign{\smallskip}
BH Cep & HAe/Be &97 $\pm$ 8(8); 97 $\pm$ 5(7);
98 $\pm$ 6(11) & 97\\
49 Cet & Vega-like & 183 $\pm$ 9(4);
187 $\pm$ 4(3)& 186\\
$\vdots$ & $\vdots$ & $\vdots$ & $\vdots$\\
HD 233517 & Vega-like & 17 $\pm$ 3(5), 1
6 $\pm$ 2(6); 15 $\pm$ 2(24) & 15\\
\noalign{\smallskip}
\tableline
\end{tabular}
}
\end{center}
```

```
\end{table}
```

The three arguments for the `\multicolumn{}{}{}` command are: 1) column alignment (`l` = left justified, `r` = right justified, and `c` = centered), 2) the number of columns over which the entry is spread, and 3) text.

Note the use of the `\cline{3-4}` command to draw a horizontal rule for the third and fourth columns only. It is also preceded and followed by

```
\noalign{\smallskip}
```

in order to avoid a cluttered appearance.

LaTeX can produce tables of any degree of complexity and it would take many pages to describe all the possibilites here. For further information on tables, refer to Kopka & Daly (1999). There should be only one table per environment.

Finally, here is an example of a landscape table.

```
\begin{landscape}
\begin{table}[!ht]
\caption{A table in landscape mode}
\smallskip
\begin{center}
{\small
\begin{tabular}{lccccccc}
\tableline
\noalign{\smallskip}
{\itshape IRAS} name& $z$ & Type & FWHM &
\multicolumn{2}{c}{Colors in 1$\arcsec$} &
\multicolumn{2}{c}{for 1000 K dust}\\
&&&[kpc] & $J-H$ & $H-K$ & $A_V$ & $f_K$\\
\noalign{\smallskip}
\tableline
\noalign{\smallskip}
00150+4937 S & 0.148 & ? & 1.11 & 1.13 &
 1.06 & 4.61 & 0.40\\
$\vdots$&$\vdots$&$\vdots$&
$\vdots$&$\vdots$&$\vdots$&$\vdots$&$\vdots$\\
12112+0305 NE & 0.073 LINER & $<0.48$ & 1.06 &
0.97 & 4.00 & 0.45\\
\noalign{\smallskip}
\tableline
\end{tabular}
}
\end{center}
\end{table}
\end{landscape}
```

Figure 1. A more table in landscape mode

IRAS name	z	Type	FWHM	Colors in $1''$		for 1000 K dust	
			[kpc]	$J-H$	$H-K$	A_V	f_K
00150+4937 S	0.148	?	1.11	1.13	1.06	4.61	0.40
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
12112+0305 NE		LINER	< 0.48	1.06	0.97	4.00	0.45

3.6. Figures

Directory Structure Editors sometimes encounter pathnames that they cannot access (e.g., the author's home directory). Please keep all your files in the same directory to avoid the pathname problem.

Image Size Please ensure that the size of your figures is not below the limit of legibility. All text in figures must be readable at a 10% reduction. Please also ensure that your figures have no surrounding white margins: your figures should be cropped for the removal of all such margins.

Resolution For a minimum quality print of the image, the figure should be submitted with a resolution greater than 266 dpi (dots per inch). Bear in mind that line (i.e., purely black and white) diagrams (graphs, etc.) must be of a suitably higher resolution (e.g., 800 dpi) to avoid pixelation (jaggedness).

For line illustrations use vector diagrams instead of scanning a previously published line diagram wherever possible. If you do decide to scan, say, a graph ensure that all text, especially physical units, are legible with a 10% reduction. See also the subsection on font conversion for information on fonts in vector diagrams.

Color ASP Conference Series books are printed in black and white, with exceptional use being made of color where the author's institution is prepared to pay for this. However, ASP offers authors free color reproduction in the electronic version of the volume. Obviously, authors will need to submit two files to the editors for such figures, one in color and one in gray-scale for the printed version. If the author's institution is prepared to pay for full color reproduction in the printed version, then only one file need be supplied.

A problem arises when the image is to be printed out in color. The computer screen uses the three-color model of Red, Green, Blue (RGB). When color is printed, the four-color model of Cyan, Magenta, Yellow, and Black (CMYK) is used. The results in the colors being slightly different. The change is barely noticeable with photographs, but other graphics will be greatly affected. Figure 1 shows the difference (which is more clearly seen on screen). We encourage you to use RGB images, but be aware that the color may not appear exactly as it was when submitted due to the conversion.

Color Figure Captions Authors need to bear in mind, when submitting a color image for the electronic version only, that since the book will be printed in black and white they they need to provide a caption that works equally for both the color and gray-scale versions.

Font Conversion Another issue we come across is the use of Type 3 fonts within figures. The use of this type of font results in unpredictable results at the printer. Type 3 fonts are used as the default for dvips. To use the correct type (Type 1) when using dvips, add the option -Ppdf to dvips. A command might look like the following:

```
dvips -Ppdf figure.dvi
```

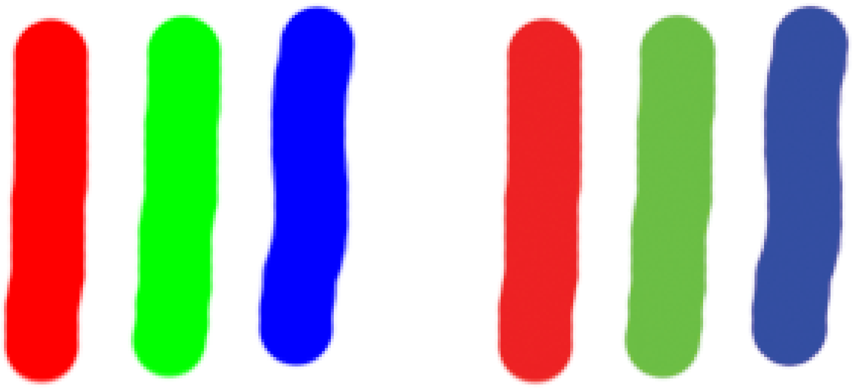

Figure 1. *Left:* RGB model. *Right:* The same in CMYK. Note that the figure in CMYK is not as bright.

For an excellent discussion of Type 3 fonts, consult the document *LaTeX Fonts and PDF Files* on the website

`http:\\www.aaai.org/Publications/Author/latex-fonts.html`

You should already have the two graphics packages `psfig.sty` and `epsf.sty` in your preamble (see §2.1). To place a figure in the text, you need to invoke the `figure` environment with the command

```
\begin{figure}[!ht]
```

(`[!ht]` ensures that the figure is placed either close to where you call it or that it goes to the top of the page). As with all `\begin{}`-type commands, you must remember to close it with

```
\end{figure}
```

ASP style supports three tools for inserting figures, depending on the complexity of the task:

- `\plotone{`*filename*`}`, which plots a single image;
- `\plottwo{`*filename1*`}{`*filename2*`}`, which plots two figures side by side; and
- `\plotfiddle{`*file*`}{`*vsize*`}{`*rot*`}{`*hsf*`}{`*vsf*`}{`*htrans*`}{`*vtrans*`}`, which, as the name suggests, allows you to "fiddle" the illustration into position.

The arguments of `\plotfiddle{`*file*`}{`*vsize*`}{`*rot*`}{`*hsf*`}{`*vsf*`}{`*htrans*`}{`*vtrans*`}` are as follows:

`vsize`	vertical white space to allow for plot, any valid LaTeX dimension
`rot`	rotation angle, in degrees, counter-clockwise
`hsf`	horizontal scale factor, percent
`vsf`	vertical scale factor, percent
`htrans`	horizontal translation, in points (in printer's jargon there are 72 points to the inch)
`vtrans`	vertical translation, in points

In ASP style, the figure captions must appear below the figures. Also, please note that the caption will be centered under the pair of graphics when `\plottwo` is used. It is not possible to caption the two plots individually with this package (neither is it ASP style to do so).

As with tables, figures will automatically be identified with arabic numerals, e.g., "Figure 1".

N.B.: For the printed version of the volume, color EPS files should be avoided if possible, and, since it is sometimes necessary to edit EPS files to make them printable, authors should try to avoid EPS files with lines longer than 1024 characters.

The `graphicx` Package Given the widely varying degrees of familiarity with LaTeX of our authors, we feel that the `\plotone`, `\plottwo`, and `\plotfiddle` commands will serve most purposes. However, those who are more *au fait* with LaTeX might wish to use the `graphicx` package. This package enables the user to wield far greater control over the importation of graphics into a `.tex` file and, apart from the usual sizing and rotational facilities, also enables the user to crop or trim an image as desired (e.g., to get rid of surrounding blank margins). The trimming facility is useful if you need to use only a part of a complete image. For an example of a how to use the manipulate `graphicx`-imported images and the trimming facility, see the document *How to Use the `graphicx` Package* (Mahoney 2005).

Pasted in Illustrations

> ***Important Note:*** Now that ASP has moved to electronic publishing, pasted in illustrations are no longer acceptable in the final version of the volume manuscript. Although future volumes, apart from being available electronically, will continue to be printed on paper, the printing process itself, in order to guarantee maximum efficiency in producing the volumes, relies solely on electronic input. The following instructions, however, may be of use for intermediate versions of your paper if there are temporary problems in getting the figure to compile properly.

Illustrations may be inserted physically in the text at the appropriate places, with the relevant caption underneath each. The finished pages are reduced by 10% before printing. Thus, illustrations will appear somewhat smaller in print.

These illustrations should appear in `figure` environments.

```
\begin{figure}
\vspace{dimen}
\caption{text}
\end{figure}
```

Space for the figure is created with the `\vspace` command; *dimen* should be a valid LaTeX dimension, e.g., "`2.5in`".

Size of Illustrations The maximum width of an illustration is normally 13.4 cm (5.25 in) so that it will fit within the width of the text area. Of course, an illustration may be smaller if appropriate. A large illustration may be placed sideways ("landscape") on the paper if necessary. This is done using the same procedure as for landscaped tables; i.e., `\begin{figure}` must be *preceded* by `\begin{landscape}` and `\end{figure}` must be *followed* by `\end{landscape}`.

4. References

4.1. In the Text

The reference system to be followed is the standard author–year system. We adopt the editorial convention of not italicizing the phrase "et al.".

Single Author Author name followed by the year in parentheses, as in Abt (1990), or author and year both in parentheses (Abt 1990).

Two Authors Author names separated by an ampersand (no comma). *Not* to be abbreviated subsequently to "Author1 et al." In parentheses use "(Author1 & Author2 1999)".

Three Authors When first mentioned in text use the format "Author1, Author2, & Author3 (year)" (note serial comma before ampersand). Subsequently, abbreviate to "Author1 et al.". When authors and year are both within parentheses use "(Author1, Author2, & Author3 1999)" or "(Author1 et al. 1999)".

More than Three Authors Use the format "Author1 et al.". Please do not use "Author1, Author2, Author3, et al.", since Authors 2 and 3 will be deleted during the copy editing! In parentheses: "(Author1 et al., 1999)".

Citing Multiple Works Inside parentheses, citations are separated by a semicolon: "(Biretta, Lo, & Young 1982; Forrest et al. 1987; Lee 1995)".

Outside of parentheses, use commas: 'According to Biretta, Lo, & Young (1982), Forrest et al. (1987), and Lee (1995), there is strong evidence to suggest that . . .'.

4.2. Reference List

The *bibliographic information* should be in the order directed by Abt (1990): author, year, journal, volume, and page. For instance, the reference for this editorial would be typed in as

```
Abt, H. 1990, ApJ, 357, 1
```

Note that there is no comma following the author name(s), there is no trailing period at the end of the reference, and the entire line is set in the body typeface (*no* font changes).

Please note the order of the bibliographical information in the following entries:

```
Biretta, J. A., Lo, K., & Young, P. J. 1982 in AIP Conf.
Proc., 83, The Galactic Center, ed. G. R. Riegler & R. D.
Blandford (New York: AIP), 91

van der Kruit, P. C., & Shostak, G. S. 1983, in IAU Symp.
100, Internal Kinematics and Dynamics of Galaxies, ed. E.
Athanassoula (Dordrecht: Reidel), 69

Garcia-Lorenzo, B., Mediavilla, E., Arribas, S., & del
Burgo, C. 1998, in ASP Conf. Ser. Vol. 152, Fiber Optics
in Astronomy III, ed. S. Arribas, E. Mediavilla \& F.
Watson (San Francisco: ASP), 185
```

Care should be taken that each literature citation in the manuscript has its counterpart in the reference list and vice versa. Care should also be given to checking the accuracy of the references—author(s), date, volume, and page number. While the accuracy of the references is the sole responsibility of the author(s), the editor(s) should nevertheless aim to ensure uniformity of presentation throughout the volume.

4.3. LaTeX Markup of References

Referencing in a text consists of *citations* in the body of the text of *sources* listed in the bibliography at the end of the text. Although LaTeX permits various ways of citing and listing bibliographical references, we would strongly urge authors to use either the `thebibliography` environment, which is described in detail below, or BibTeX.[4] The environment is admittedly complex, but it will save you from making mistakes, particularly if you are citing a large number of references; furthermore, it will cut down on the editorial chores of getting your paper into final shape for the proceedings volume.

The `thebibliography` *Environment* In standard LaTeX this environment does not support the author–year system, so it is necessary to invoke Patrick W. Daly's `natbib.sty`; this is done automatically when you compile your LaTeX file. The following examples illustrate how two commands, `\citet{}` and `\citep{}`, meet most bibliographical needs (a sample `thebibliography` list is given at the end of this section):

[4]The volume editors should make it clear to authors which system is preferred for the volume.

`\citet{knu86}`	⟶	Knuth (1986)
`\citep{knu86}`	⟶	(Knuth 1986)
`\citet*{goos94}`	⟶	Goossens, Mittelbach, & Samarin (1994)
`\citep*{goos94}`	⟶	(Goossens, Mittelbach, & Samarin 1994)
`\citet{goos94}`	⟶	Goossens et al. (1994)
`\citep{goos94}`	⟶	(Goossens et al. 1994)
`\citep[see][]{knu86}`	⟶	(see Knuth 1986)
`\citep[p.\ 427]{knu86}`	⟶	(Knuth 1986, p. 427)
`\citep[see][p.\ 427]{knu86}`	⟶	(see Knuth 1986, p. 427)

(note carefully the syntax for getting pre- and post-notes). Another extremely useful facility provided by `natbib` is the possibility of multiple citations:

`\citet{j1998,j1999}`	⟶	Jones & Bland-Hawthorn (1998, 1999)
`\citep{j1998,j1999}`	⟶	(Jones & Bland-Hawthorn 1998, 1999)
`\citet{bh1998a,bh1998b}`	⟶	Bland-Hawthorn & Jones (1998a,b)
`\citep{bh1998a,bh1998b}`	⟶	(Bland-Hawthorn & Jones 1998a,b)

You may occasionally need to mention author names without giving the dates (to avoid needlessly cluttering up the text with parentheses, for example), or to cite the date by itelf, so you may find the following commands useful:

`\citeauthor{goos94}`	⟶	Goossens et al.
`\citeauthor*{goos94}`	⟶	Goossens, Mittelbach, & Samarin
`\citeyear{goos94}`	⟶	1994
`\citeyearpar{goos94}`	⟶	(1994)

If you need to resort to "non-citations", such as "in preparation" or "private communication", you might find useful

`\citetext{in preparation}` ⟶ (in preparation)

Note that such citations as these have no place in the bibliographical list since the reader has no means of acertaining their accuracy or veracity.

If the "van" in a name like van de Hulst starts a sentence it must be capitalized. `natbib` offers the following commands for achieving this in a number of contexts:

`\Citet{vhulst}`	⟶	Van de Hulst (1981)
`\Citep{vhulst}`	⟶	(Van de Hulst 1981)
`\Citeauthor{vhulst}`	⟶	Van de Hulst

The bibliographical database called upon by all these commands can be provided either by BibTeX or by using the `thebibliography` environment, as in the following example:

```
\begin{thebibliography}{}
\bibitem[Bland-Hawthorn \& Jones(1998a)]{bh1998a}
Bland-Hawthorn, J., \& Jones, D. H. 1998a, PASA, 15, 44
\bibitem[Bland-Hawthorn \& Jones(1998b)]{bh1998b}
Bland-Hawthorn, J., \& Jones, D. H. 1998b, SPIE, 3355, 855
\bibitem[Goossens et al.(1994)Goossens, Mittelbach, \& Samarin]{goos94}
```

```
Goossens, M., Mittelbach, F., \& Samarin, A. 1994,
The \LaTeX\ Companion} (Reading, Mass.: Addison-Wesley)
SPIE, 3355, 855
\bibitem[Jones \& Bland-Hawthorn(1998)]{j1998}
Jones, D. H., \& Bland-Hawthorn, J. 1998, PASP, 110, 1059
\bibitem[Jones \& Bland-Hawthorn(1999)]{j1999}
Jones, D. H., \& Bland-Hawthorn 1999, in Looking Deep in the Southern Sky,
ed.\ R. Morganti \& W. J. Couch, 320
\bibitem[Knuth(1986)]{knu86}
 Knuth, Donald E. 1986, The \TeX book (Reading, Mass.:
Addison-Wesley)
\bibitem[Kopka \& Daly(1999)]{kop99}
Kopka, Helmut \& Daly, Patrick W. 1999, A Guide to \LaTeX,
3rd edn (Harlow: Pearson Education)
\bibitem[Lamport(1994)]{lam94}
Lamport, Leslie 1994, \LaTeX, A Document Preparation System:
User's Guide and Reference Manual, 2nd edn (Boston: Addison-Wesley)
\bibitem[Mahoney(2002)]{ma02}
in Special Session of the XXIV General Assembly
of the IAU, Astronomy for Developing Countries, ed.\ Alan H. Batten
(San Francisco: IAU), p.\ 357
\bibitem[Mahoney(2004)]{mah2004b}
Mahoney, T. J. 2004, B{\sc ib}\TeX\ for ASP Authors
\bibitem[Oxford University Press(1983)]{hart}
Oxford University Press 1983, Hart's Rules for Compositors
and Readers at the University Press Oxford, 39th edn.\
(Oxford: Oxford University Press)
\bibitem[University of Chicago Press(1993)]{ucp93}
 University of Chicago Press 1993, The Chicago Manual
of Style, 14th edn (Chicago: University of Chicago Press)
\bibitem[van de Hulst(1981)]{vhulst}
van de Hulst, H. C. 1981, Light Scattering by Small
Particles, 2nd edn (New York: Dover)
\end{thebibliography}
```

BibTeX Keying in a large bibliography is tedious and time-consuming. The BibTeX program enables you to build a bibliographical source list for all your articles (provided they are produced in LaTeX). Including a useful description of BibTeX here would make this manual too unwieldy. If you are interested in using a BibTeX source list for your article, please refer to the manual *BibTeX for ASP authors* (Mahoney 2004)

The `references` *Environment* The `asp2004.sty` style file defines a `references` environment that sets off the list of references and adjusts spacing parameters.

```
\begin{references}
\reference bibliographic information
   .
   .
\end{references}
```

This environment is simple to use but does not allow automatic cross-referencing, for which reason we advise against its use.

4.4. Abbreviations for Journals

Appendix D lists macros for many of the oft-referenced journals so that authors may use the LaTeX names rather than having to look up a particular journal's specific abbreviation. Any stylistic requirements of the editors are taken care of by the macros, so authors need not be concerned about such editorial preferences.

5. A Final Checklist before Submitting Your Article

On completion, your article must either be sent to the volume editors or posted to the ASP intranet forum for authors and editors, who will then referee and copy-edit your paper for consistency of style. Before you submit your article, it will save both you and the editors a lot of time if you go through the following checklist:

- Is the length of your article within the page limits established by the volume editors?
- Does your file compile properly with all tables and figures correctly placed and the figures of sufficiently high resolution and any included text legible?
- Have you listed all the authors' names and given their postal addresses *in full*?
- Have you included the running heads at the top of each page in accordance with the instructions in §2.1?
- Have you checked that all the references cited in the text are listed in the bibliography, and that there are no references listed that are not cited in the text?
- Have you used the one of the referencing styles given in this manual?
- Is each of your references bibliographically complete? For example, if you are citing an edited book, have you included the full name(s) of the editor(s), the publisher's name, and place of publication?
- Have you checked whether any preprints cited have now been published?
- Are your figures clear? Is the axis labeling and any superimposed text legible (your paper will be reduced in width by 10%)?
- Are your figures of sufficient resolution when you print out the postscript file (remember the 10% reduction in width)?
- Are the text, figures, and tables all within the permitted margins?

If the answer to any of the above questions is 'No', then your article is still in the preliminary draft stage and is not yet ready to be sent to the editors. It is only simple courtesy to get everything right before you submit your article.

6. Persons to Contact

For information relating to page limits, deadlines, etc., contact the volume editor(s) at the email address provided by the conference organizers.

For details concerning the volume number allocated to your proceedings volume, date of publication, questions relating to the book production process, and administrative details, contact Enid Livingston (`aspcs@byu.edu`).

All queries relating to the LaTeX style file, author's/editor's instruction manual, etc., should be directed to Terry Mahoney (`tjm@iac.es`).

7. Your Feedback

This manual has been written with the sole aim of helping you to typeset your article with the minimum of trouble. If you have any suggestions for its improvement, we would very much like to hear them. Please send any suggestions (or complaints!) to `tjm@iac.es`.

References

Abt, H. 1990, ApJ, 357, 1
Bland-Hawthorn, J., & Jones, D. H. 1998a, PASA, 15, 44
Bland-Hawthorn, J., & Jones, D. H. 1998b, SPIE, 3355, 855
Goossens, M., Mittelbach, F., & Samarin, A. 1994, The LaTeX Companion (Reading, Mass.: Addison-Wesley)
Jones, D. H., & Bland-Hawthorn, J. 1998, PASP, 110, 1059
Jones, D. H., & Bland-Hawthorn, J. 1999, in Looking Deep in the Southern Sky, ed. R. Morganti & W. J. Couch, 320
Knuth, Donald E. 1986, The TeXbook (Reading, Mass.: Addison-Wesley)
Kopka, Helmut & Daly, Patrick W. 1999, A Guide to LaTeX, 3rd edn (Harlow: Pearson Education)
Lamport, Leslie 1994, LaTeX, A Document Preparation System: User's Guide and Reference Manual, 2nd edn (Boston: Addison-Wesley)
Mahoney, T. J. 2002, in Special Session of the XXIV General Assembly of the IAU, Astronomy for Developing Countries, ed. Alan H. Batten (San Francisco: IAU), 357
Mahoney, T. J. 2004, BibTeX for ASP Authors
Mahoney, T. J. 2005, How to Use the `graphicx` Package
Merriam-Webster, Inc. 2000, Merriam-Webster's Collegiate Dictionary, 10th edn. (Springfield: Merriam-Webster)
Oxford University Press 1983, Hart's Rules for Compositors and Readers at the University Press Oxford, 39th edn. (Oxford: Oxford University Press)
University of Chicago Press 1993, The Chicago Manual of Style, 14th edn (Chicago: University of Chicago Press)
van de Hulst, H. C. 1981, Light Scattering by Small Particles, 2nd edn (New York: Dover)

Appendix A: Some Useful LaTeX Symbols and Diacritic Signs[5]

\‘{o}	$\longrightarrow$	ò
\’{o}	$\longrightarrow$	ó
\^{o}	$\longrightarrow$	ô
\"{o}	$\longrightarrow$	ö
\~{o}	$\longrightarrow$	õ
\={o}	$\longrightarrow$	ō
\.{o}	$\longrightarrow$	ȯ
\u{o}	$\longrightarrow$	ŏ
\v{o}	$\longrightarrow$	ǒ
\H{o}	$\longrightarrow$	ő
\t{oo}	$\longrightarrow$	o͡o
\c{o}	$\longrightarrow$	o̧
\d{o}	$\longrightarrow$	ọ
\b{o}	$\longrightarrow$	o̲
\oe	$\longrightarrow$	œ
\OE	$\longrightarrow$	Œ
\ae	$\longrightarrow$	æ
\AE	$\longrightarrow$	Æ
\aa	$\longrightarrow$	å
\AA	$\longrightarrow$	Å
\o	$\longrightarrow$	ø
\O	$\longrightarrow$	Ø
\l	$\longrightarrow$	ł
\L	$\longrightarrow$	Ł
\ss	$\longrightarrow$	ß
?‘	$\longrightarrow$	¿
!‘	$\longrightarrow$	¡
\dag	$\longrightarrow$	†
\ddag	$\longrightarrow$	‡
\S	$\longrightarrow$	§
\S\S	$\longrightarrow$	§§
\P	$\longrightarrow$	¶
\copyright	$\longrightarrow$	©
\pounds	$\longrightarrow$	£
\#	$\longrightarrow$	#
\$	$\longrightarrow$	$
\%	$\longrightarrow$	%
\&	$\longrightarrow$	&
_	$\longrightarrow$	_
\{	$\longrightarrow$	{
\}	$\longrightarrow$	}

[5]The vowel-ligatures *æ* and *œ* should normally be avoided. The use of *æ* should be restricted to Old English words and *œ* should be used for French words; hence, *Ælfric*, but *Aeneas* and *Aeschylus*, and *œuvre*, but *Oedipus*. The *Æ* in Ælfric is a single letter (*ash* in Old English), whereas the *Ae* in *Aeschylus* is a digraph, so we would write β *Lacertae* and not β *Lacertæ* (see Oxford University Press 1983).

Appendix B: Standard $\LaTeX\,2_\varepsilon$ Mathematics Commands

Greek Letters

`$\alpha$`	$\longrightarrow$	α
`$\beta$`	$\longrightarrow$	β
`$\gamma$`	$\longrightarrow$	γ
`$\Gamma$`	$\longrightarrow$	Γ
`$\delta$`	$\longrightarrow$	δ
`$\Delta$`	$\longrightarrow$	Δ
`$\epsilon$`	$\longrightarrow$	ϵ
`$\varepsilon$`	$\longrightarrow$	ε
`$\zeta$`	$\longrightarrow$	ζ
`$\eta$`	$\longrightarrow$	η
`$\theta$`	$\longrightarrow$	θ
`$\Theta$`	$\longrightarrow$	Θ
`$\vartheta$`	$\longrightarrow$	ϑ
`$\iota$`	$\longrightarrow$	ι
`$\kappa$`	$\longrightarrow$	κ
`$\lambda$`	$\longrightarrow$	λ
`$\Lambda$`	$\longrightarrow$	Λ
`$\mu$`	$\longrightarrow$	μ
`$\nu$`	$\longrightarrow$	ν
`$\xi$`	$\longrightarrow$	ξ
`$\Xi$`	$\longrightarrow$	Ξ
`$o$`	$\longrightarrow$	o
`$\pi$`	$\longrightarrow$	π
`$\Pi$`	$\longrightarrow$	Π
`$\varpi$`	$\longrightarrow$	ϖ
`$\rho$`	$\longrightarrow$	ρ
`$\varrho$`	$\longrightarrow$	ϱ
`$\sigma$`	$\longrightarrow$	σ
`$\Sigma$`	$\longrightarrow$	Σ
`$\varsigma$`	$\longrightarrow$	ς
`$\tau$`	$\longrightarrow$	τ
`$\upsilon$`	$\longrightarrow$	Υ
`$\phi$`	$\longrightarrow$	ϕ
`$\Phi$`	$\longrightarrow$	Φ
`$\varphi$`	$\longrightarrow$	φ
`$\chi$`	$\longrightarrow$	χ
`$\psi$`	$\longrightarrow$	ψ
`$\Psi$`	$\longrightarrow$	Ψ
`$\omega$`	$\longrightarrow$	ω
`$\Omega$`	$\longrightarrow$	Ω

Calligraphic Letters

`$\mathcal{F}$` $\longrightarrow$ $\mathcal{F}$

(uppercase letters only)

Mathematical Symbols

`$\pm$`	$\longrightarrow$	$\pm$
`$\mp$`	$\longrightarrow$	$\mp$
`$\times$`	$\longrightarrow$	$\times$
`$\div$`	$\longrightarrow$	$\div$
`$\ast$`	$\longrightarrow$	$\ast$
`$\star$`	$\longrightarrow$	$\star$
`$\circ$`	$\longrightarrow$	$\circ$
`$\bullet$`	$\longrightarrow$	$\bullet$
`$\cdot$`	$\longrightarrow$	$\cdot$
`$\cap$`	$\longrightarrow$	$\cap$
`$\cup$`	$\longrightarrow$	$\cup$
`$\uplus$`	$\longrightarrow$	$\uplus$
`$\sqcap$`	$\longrightarrow$	$\sqcap$
`$\vee$`	$\longrightarrow$	$\vee$
`$\wedge$`	$\longrightarrow$	$\wedge$
`$\setminus$`	$\longrightarrow$	$\setminus$
`$\wr$`	$\longrightarrow$	$\wr$
`$\diamond$`	$\longrightarrow$	$\diamond$
`$\bigtriangleup$`	$\longrightarrow$	$\bigtriangleup$
`$\bigtriangledown$`	$\longrightarrow$	$\bigtriangledown$
`$\triangleleft$`	$\longrightarrow$	$\triangleleft$
`$\triangleright$`	$\longrightarrow$	$\triangleright$
`$\oplus$`	$\longrightarrow$	$\oplus$
`$\$ominus`	$\longrightarrow$	$\ominus$
`$\otimes$`	$\longrightarrow$	$\otimes$
`$\oslash$`	$\longrightarrow$	$\oslash$
`$\odot$`	$\longrightarrow$	$\odot$
`$\bigcirc$`	$\longrightarrow$	$\bigcirc$
`$\dagger$`	$\longrightarrow$	$\dagger$
`$\ddagger$`	$\longrightarrow$	$\ddagger$
`$\amalg$`	$\longrightarrow$	$\amalg$
`$\leq$`	$\longrightarrow$	$\leq$
`$\prec$`	$\longrightarrow$	$\prec$
`$\preceq$`	$\longrightarrow$	$\preceq$
`$\ll$`	$\longrightarrow$	$\ll$
`$\subset$`	$\longrightarrow$	$\subset$
`$\subseteq$`	$\longrightarrow$	$\subseteq$
`$\sqsubseteq$`	$\longrightarrow$	$\sqsubseteq$
`$\in$`	$\longrightarrow$	$\in$
`$\vdash$`	$\longrightarrow$	$\vdash$
`$\geq$`	$\longrightarrow$	$\geq$
`$\succ$`	$\longrightarrow$	$\succ$
`$\succeq$`	$\longrightarrow$	$\succeq$
`$\gg$`	$\longrightarrow$	$\gg$
`$\supset$`	$\longrightarrow$	$\supset$
`$\supseteq$`	$\longrightarrow$	$\supseteq$
`$\sqsupseteq$`	$\longrightarrow$	$\sqsubseteq$
`$\ni$`	$\longrightarrow$	$\ni$
`$\dashv$`	$\longrightarrow$	$\dashv$
`$\equiv$`	$\longrightarrow$	$\equiv$

`$\sim$`	$\longrightarrow$	$\sim$
`$\simeq$`	$\longrightarrow$	$\simeq$
`$\asymp$`	$\longrightarrow$	$\asymp$
`$\approx$`	$\longrightarrow$	$\approx$
`$\cong$`	$\longrightarrow$	$\cong$
`$\neq$`	$\longrightarrow$	$\neq$
`$\doteq$`	$\longrightarrow$	$\doteq$
`$\notin$`	$\longrightarrow$	$\notin$
`$\models$`	$\longrightarrow$	$\models$
`$\perp$`	$\longrightarrow$	$\perp$
`$\mid$`	$\longrightarrow$	$\mid$
`$\parallel$`	$\longrightarrow$	$\parallel$
`$\bowtie$`	$\longrightarrow$	$\bowtie$
`$\smile$`	$\longrightarrow$	$\smile$
`$\frown$`	$\longrightarrow$	$\frown$
`$\propto$`	$\longrightarrow$	$\propto$
`$\leftarrow$`	$\longrightarrow$	$\leftarrow$
`$\Leftarrow$`	$\longrightarrow$	$\Leftarrow$
`$\rightarrow$`	$\longrightarrow$	$\rightarrow$
`$\Rightarrow$`	$\longrightarrow$	$\Rightarrow$
`$\leftrightarrow$`	$\longrightarrow$	$\leftrightarrow$
`$\Leftrightarrow$`	$\longrightarrow$	$\Leftrightarrow$
`$\mapsto$`	$\longrightarrow$	$\mapsto$
`$\hookleftarrow$`	$\longrightarrow$	$\hookleftarrow$
`$\leftharpoonup$`	$\longrightarrow$	$\leftharpoonup$
`$\lefharpoondown$`	$\longrightarrow$	$\leftharpoondown$
`$\rightleftharpoons$`	$\longrightarrow$	$\rightleftharpoons$
`$\longleftarrow$`	$\longrightarrow$	$\longleftarrow$
`$\Longleftarrow$`	$\longrightarrow$	$\Longleftarrow$
`$\longrightarrow$`	$\longrightarrow$	$\longrightarrow$
`$\Longrightarrow$`	$\longrightarrow$	$\Longrightarrow$
`$\longleftrightarrow$`	$\longrightarrow$	$\longleftrightarrow$
`$\Longleftrightarrow$`	$\longrightarrow$	$\Longleftrightarrow$
`$\longmapsto$`	$\longrightarrow$	$\longmapsto$
`$\hookrightarrow$`	$\longrightarrow$	$\hookrightarrow$
`$\rightharpoonup$`	$\longrightarrow$	$\rightharpoonup$
`$\rightharpoondown$`	$\longrightarrow$	$\rightharpoondown$
`$\uparrow$`	$\longrightarrow$	$\uparrow$
`$\Uparrow$`	$\longrightarrow$	$\Uparrow$
`$\downarrow$`	$\longrightarrow$	$\downarrow$
`$\Downarrow$`	$\longrightarrow$	$\Downarrow$
`$\updownarrow$`	$\longrightarrow$	$\updownarrow$
`$\Updownarrow$`	$\longrightarrow$	$\Updownarrow$
`$\nearrow$`	$\longrightarrow$	$\nearrow$
`$\searrow$`	$\longrightarrow$	$\searrow$
`$\swarrow$`	$\longrightarrow$	$\swarrow$
`$\nwarrow$`	$\longrightarrow$	$\nwarrow$
`$\aleph$`	$\longrightarrow$	$\aleph$
`$\hbar$`	$\longrightarrow$	$\hbar$
`$\imath$`	$\longrightarrow$	$\imath$

`$\jmath$` $\longrightarrow$ $\jmath$
`$\ell$` $\longrightarrow$ ℓ
`$\wp$` $\longrightarrow$ $\wp$
`$\Re$` $\longrightarrow$ $\Re$
`$\Im$` $\longrightarrow$ $\Im$
`$\prime$` $\longrightarrow$ $\prime$
`$\emptyset$` $\longrightarrow$ $\emptyset$
`$\nabla$` $\longrightarrow$ ∇
`$\surd$` $\longrightarrow$ $\surd$
`$\top$` $\longrightarrow$ $\top$
`$\bot$` $\longrightarrow$ $\bot$
`$\|$` $\longrightarrow$ $\|$
`$\angle$` $\longrightarrow$ $\angle$
`$\forall$` $\longrightarrow$ $\forall$
`$\exists$` $\longrightarrow$ $\exists$
`$\neg$` $\longrightarrow$ $\neg$
`$\flat$` $\longrightarrow$ $\flat$
`$\natural$` $\longrightarrow$ $\natural$
`$\sharp$` $\longrightarrow$ $\sharp$
`$\backlash$` $\longrightarrow$ $\backslash$
`$\partial$` $\longrightarrow$ ∂
`$\infty$` $\longrightarrow$ ∞
`$\triangle$` $\longrightarrow$ $\triangle$
`$\clubsuit$` $\longrightarrow$ $\clubsuit$
`$\diamondsuit$` $\longrightarrow$ $\diamondsuit$
`$\heartsuit$` $\longrightarrow$ $\heartsuit$
`$\spadesuit$` $\longrightarrow$ $\spadesuit$
`$\sum$` $\longrightarrow$ $\sum$
`$\prod$` $\longrightarrow$ $\prod$
`$\coprod$` $\longrightarrow$ $\coprod$
`$\int$` $\longrightarrow$ $\int$
`$\oint$` $\longrightarrow$ $\oint$
`$\bigcap$` $\longrightarrow$ $\bigcap$
`$\bigcup$` $\longrightarrow$ $\bigcup$
`$\bigsqcup$` $\longrightarrow$ $\bigsqcup$
`$\bigvee$` $\longrightarrow$ $\bigvee$
`$\bigwedge$` $\longrightarrow$ $\bigwedge$
`$\bigodot$` $\longrightarrow$ $\bigodot$
`$\bigotimes$` $\longrightarrow$ $\bigotimes$
`$\bigoplus$` $\longrightarrow$ $\bigoplus$
`$\biguplus$` $\longrightarrow$ $\biguplus$
`$\arccos$` $\longrightarrow$ $\arccos$
`$\arcsin$` $\longrightarrow$ $\arcsin$
`$\arctan$` $\longrightarrow$ $\arctan$
`$\cos$` $\longrightarrow$ $\cos$
`$\cosh$` $\longrightarrow$ $\cosh$
`$\cot$` $\longrightarrow$ $\cot$
`$\coth$` $\longrightarrow$ $\coth$
`$\csc$` $\longrightarrow$ $\csc$
`$\deg$` $\longrightarrow$ $^\circ$
`$\det$` $\longrightarrow$ $\det$

`$\dim$` $\longrightarrow$ $\dim$
`$\exp$` $\longrightarrow$ $\exp$
`$\gcd$` $\longrightarrow$ $\gcd$
`$\hom$` $\longrightarrow$ $\hom$
`$\inf$` $\longrightarrow$ $\inf$
`$\ker$` $\longrightarrow$ $\ker$
`$\lg$` $\longrightarrow$ $\lg$
`$\lim$` $\longrightarrow$ $\lim$
`$\liminf$` $\longrightarrow$ $\liminf$
`$\limsup$` $\longrightarrow$ $\limsup$
`$\ln$` $\longrightarrow$ $\ln$
`$\log$` $\longrightarrow$ $\log$
`$\max$` $\longrightarrow$ $\max$
`$\min$` $\longrightarrow$ $\min$
`$\Pr$` $\longrightarrow$ $\Pr$
`$\sec$` $\longrightarrow$ $\sec$
`$\sin$` $\longrightarrow$ $\sin$
`$\sinh$` $\longrightarrow$ $\sinh$
`$\sup$` $\longrightarrow$ $\sup$
`$\tan$` $\longrightarrow$ $\tan$
`$\tanh$` $\longrightarrow$ $\tanh$
`$\cdots$` $\longrightarrow$ $\cdots$
`$\vdots$` $\longrightarrow$ $\vdots$
`$\ddots$` $\longrightarrow$ $\ddots$
`$($` $\longrightarrow$ $($
`$[$` $\longrightarrow$ $[$
`$\{$` $\longrightarrow$ $\{$
`$\lfloor$` $\longrightarrow$ $\lfloor$
`$\lciel$` $\longrightarrow$ $\lceil$
`$\langle$` $\longrightarrow$ $\langle$
`$/$` $\longrightarrow$ $/$
`$|$` $\longrightarrow$ $|$
`$)$` $\longrightarrow$ $)$
`$]$` $\longrightarrow$ $]$
`$\}$` $\longrightarrow$ $\}$
`$\rfloor$` $\longrightarrow$ $\rfloor$
`$\rceil$` $\longrightarrow$ $\rceil$
`$\rangle$` $\longrightarrow$ $\rangle$
`$\backslash$` $\longrightarrow$ $\backslash$
`$\|$` $\longrightarrow$ $\|$
`$\uparrow$` $\longrightarrow$ $\uparrow$
`$\downarrow$` $\longrightarrow$ $\downarrow$
`$\updownarrow$` $\longrightarrow$ $\updownarrow$
`$\Uparrow$` $\longrightarrow$ $\Uparrow$
`$\Downarrow$` $\longrightarrow$ $\Downarrow$
`$\Updownarrow$` $\longrightarrow$ $\Updownarrow$

Examples of Math Commands Taking Arguments

`\frac{}{}:`

```
$$\frac{dz}{dx}=
-\frac{\frac{\partial(F,G)}{\partial(y,
x)}}{\frac{\partial(F,G)}{\partial(y,z)}}$$
```

$$\frac{dz}{dx}=-\frac{\frac{\partial(F,G)}{\partial(y,x)}}{\frac{\partial(F,G)}{\partial(y,z)}}$$

In fact, such "double-decker" fractions are not a good idea typographically; the preceding expression would be better represented as

```
$$\frac{dz}{dx}=
-\frac{\partial(F,G)}{\partial(y,x)}\Bigg/
\frac{\partial(F,G)}{\partial(y,z)}$$
```

$$\frac{dz}{dx}=-\frac{\partial(F,G)}{\partial(y,x)}\Bigg/\frac{\partial(F,G)}{\partial(y,z)}$$

`\underbrace{}` *and* `\overbrace{}:`

```
$$\overbrace{a + \underbrace{b + c + d} + e}$$
```

$$\overbrace{a + \underbrace{b + c + d} + e}$$

```
$$\underbrace{a +
\overbrace{b + c + d}^{123} + e}_{\alpha\beta\gamma} $$
```

$$\underbrace{a + \overbrace{b + c + d}^{123} + e}_{\alpha\beta\gamma}$$

```
$$\int \underbrace{x^2}_{u}\underbrace{e^{5x}dx}_{dv}
= \underbrace{\frac{e^{5x}}{5}}_{uv}-
\int \underbrace{\frac{2}{5}xe^{5x}}_{vdu}$$
```

$$\int \underbrace{x^2}_{u}\underbrace{e^{5x}dx}_{dv} = \underbrace{\frac{e^{5x}}{5}}_{uv}-\int \underbrace{\frac{2}{5}xe^{5x}}_{vdu}$$

`\overline{}:`

```
$$(\Delta n_i)^2 = \overline{n_i^2} - \overline{n}_i^2
 = kT\left( \frac{\partial\overline{n}_i}{\partial \mu}
\right)_{T,V}$$
```

$$(\Delta n_i)^2 = \overline{n_i^2} - \overline{n}_i^2 = kT\left(\frac{\partial\overline{n}_i}{\partial \mu} \right)_{T,V}$$

`\sqrt[]{}`

```
\sqrt[4]{\frac{2}{x}}
```

$$\sqrt[4]{\frac{2}{x}}$$

```
\frac{2}{3\sqrt[3]{x}}
```

$$\frac{2}{3\sqrt[3]{x}}$$

```
$$\sin\vartheta =\sqrt{
\left|\begin{array}{cc}
\lambda^1 & \lambda^2\\
\mu^2 & \mu^2
\end{array}\right| \times
\left| \begin{array}{cc}
\lambda_1 & \lambda_2\\
\mu_1 & \mu_2
\end{array}
\right|
} $$
```

$$\sin\vartheta =\sqrt{ \left|\begin{array}{cc} \lambda^1 & \lambda^2\\ \mu^2 & \mu^2 \end{array}\right| \times \left| \begin{array}{cc} \lambda_1 & \lambda_2\\ \mu_1 & \mu_2 \end{array} \right| }$$

Appendix C: Some Useful Mathmode Macros

The following macros produce various troublesome or laborious mathematical and astronomical symbols.

`\deg`	$\longrightarrow$	$^\circ$
`\arcmin`	$\longrightarrow$	$'$
`\arcsec`	$\longrightarrow$	$''$
`\fp`	$\longrightarrow$	$\overset{\mathrm{p}}{.}$
`\fd`	$\longrightarrow$	$\overset{\mathrm{d}}{.}$
`\fh`	$\longrightarrow$	$\overset{\mathrm{h}}{.}$
`\fm`	$\longrightarrow$	$\overset{\mathrm{m}}{.}$
`\fs`	$\longrightarrow$	$\overset{\mathrm{s}}{.}$
`\fdg`	$\longrightarrow$	$\overset{\circ}{.}$
`\farcm`	$\longrightarrow$	$\overset{\prime}{.}$
`\farcs`	$\longrightarrow$	$\overset{\prime\prime}{.}$
`\sun`	$\longrightarrow$	$\odot$
`\earth`	$\longrightarrow$	$\oplus$
`\micron`	$\longrightarrow$	$\mu\mathrm{m}$
`\la`	$\longrightarrow$	$\lesssim$
`\ga`	$\longrightarrow$	$\gtrsim$
`\onehalf`	$\longrightarrow$	$^1/_2$
`\onethird`	$\longrightarrow$	$^1/_3$
`\twothirds`	$\longrightarrow$	$^2/_3$
`\onequarter`	$\longrightarrow$	$^1/_4$
`\threequarters`	$\longrightarrow$	$^3/_4$
`\ubv`	$\longrightarrow$	UBV
`\ubvr`	$\longrightarrow$	$UBVR$
`\ubvri`	$\longrightarrow$	$UBVRI$
`\ubvrij`	$\longrightarrow$	$UBVRIJ$
`\ubvrijh`	$\longrightarrow$	$UBVRIJH$
`\ubvrijhk`	$\longrightarrow$	$UBVRIJHK$
`\ub`	$\longrightarrow$	$U-B$
`\bv`	$\longrightarrow$	$B-V$
`\vr`	$\longrightarrow$	$V-R$
`\ur`	$\longrightarrow$	$U-R$

Appendix D: Journal Abbreviations

`\aj`	Astronomical Journal (AJ)
`\araa`	Annual Review of Astronomy and Astrophysics(ARA&A)
`\apj`	Astrophysical Journal (ApJ)
`\apjs`	——, Supplement Series (ApJS)
`\ao`	Applied Optics (Appl.Optics)
`\apss`	Astrophysics and Space Science(Ap&SS)
`\aap`	Astronomy and Astrophysics (A&A)
`\aaps`	——, Supplement Series (A&AS)
`\azh`	Astronomicheskii Zhurnal (AZh)
`\baas`	Bulletin of the AAS (BAAS)
`\jrasc`	Journal of the RAS of Canada (JRASC)
`\memras`	Memoirs of the RAS (MmRAS)
`\mnras`	Monthly Notices of the RAS (MNRAS)
`\nat`	Nature (Nat)
`\pra`	Physical Review A: General Physics (Phys.Rev.A)
`\prb`	Physical Review B: Solid State (Phys.Rev.B)
`\prc`	Physical Review C (Phys.Rev.C)
`\prd`	Physical Review D (Phys.Rev.D)
`\prl`	Physical Review Letters (Phys.Rev.Lett)
`\pasp`	Publications of the ASP (PASP)
`\pasj`	Publications of the ASJ (PASJ)
`\qjras`	Quarterly Journal of the RAS (QJRAS)
`\science`	Science (Sci)
`\skytel`	Sky and Telescope (S&T)
`\sovast`	Soviet Astronomy (Soviet Ast.)
`\ssr`	Space Science Reviews (Space Sci.Rev.)
`\zap`	Zeitschrift für Astrophysik (ZAp)