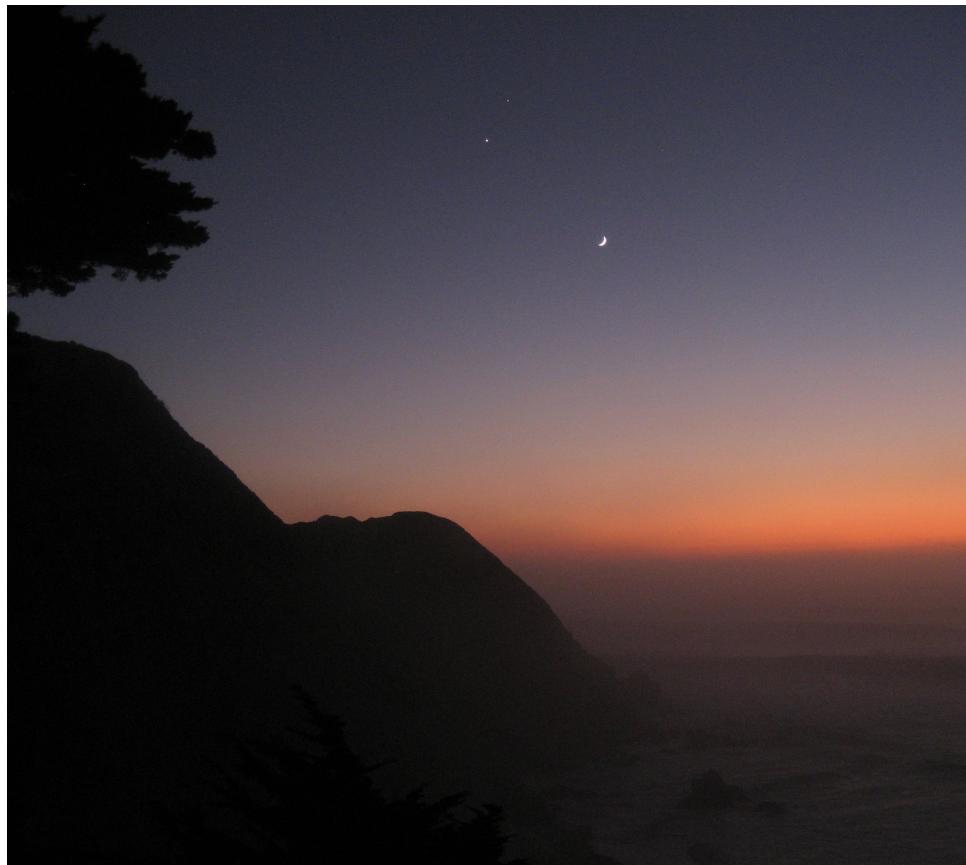ASTRONOMICAL SOCIETY OF THE PACIFIC
CONFERENCE SERIES

VOLUME 0

ASP CONFERENCE SERIES
INSTRUCTIONS FOR AUTHORS AND EDITORS

Edited by
T. J. Mahoney, Lisa B. Roper, and Jonathan Barnes

ASP CONFERENCE SERIES
INSTRUCTIONS FOR AUTHORS AND EDITORS

COVER ILLUSTRATION:

Celestial Tryst: The moon, Venus, and Jupiter in the evening sky from the coastline south of Pacifica, California on November 30, 2008.

Photographed by James Manning, the Executive Director of the Astronomical Society of the Pacific.

ASTRONOMICAL SOCIETY OF THE PACIFIC CONFERENCE SERIES

A SERIES OF BOOKS ON RECENT DEVELOPMENTS IN ASTRONOMY AND ASTROPHYSICS

Volume 0

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ASP CONFERENCE SERIES
INSTRUCTIONS FOR AUTHORS AND EDITORS

Edited by

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Part II. For Editors

Foreword

Research has been described as a conversation that goes on uninterrupted while new investigators drop in and old ones wander off. To be part of the research you must jump into the conversation. But you can't do that until you know what has been discussed and what people are interested in examining now. Keeping abreast of the "conversation" is not easy and requires time, effort, and sacrifice on the part of both "newcomers" and "old-timers." This is particularly true in astronomy, where knowledge evolves at a breathtaking rate.

The ASP is in the business of keeping the conversation alive. In that spirit we have published the ASP Conference Series since 1988. With over 400 volumes printed, we have helped the dialogue go forth in a timely and economic manner.

We thank you, the editor, for being willing to use your greater knowledge to help new and young be a part of the conversation. We, and they, recognize that you are offering a valuable service to furthering the knowledge you have helped bring about.

We thank you, the authors, for contributing time and resources necessary to ponder, study, discover, present, and write up your research in a format and manner that are worthy for a significant publication.

This manual will aid both of you in this work. Please read and follow it carefully. Just as your research requires careful attention to detail, so does its dissemination. Careful work done by authors eases editorial burden.

We wish you the best in your conference and its proceedings and stand ready to assist you in keeping the conversation alive.

J. Ward Moody
Managing Editor
ASP Conference Series

Preface

These revised instructions for authors and editors are based on the notion that it is better to preach by example rather than by precept. The previous instructions were directed to authors and editors independently and separately. With this extensive revision, however, both authors and editors will be able to appreciate one another's different roles in the production of a book of conference proceedings. By comparing the instructions with the source files, editors will gain a thorough grasp of the editorial process with LaTeX 2_ε examples to follow. By rendering article files in an acceptable format, authors will be in a better position to ease the onerous tasks of editors.

These instructions emphasize the labor-saving aspects of LaTeX 2_ε in terms of its sophisticated cross-referencing capabilities and its powerful indexing facilities. We hope that these new instructions will lighten the respective burdens of both authors and editors. We have tried our best to anticipate all possible problems that may arise in their use, but we would welcome any comments and suggestions that would lead to their future improvement.

T. J. Mahoney and Lisa B. Roper

Participants

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An example of a conference photo. From left, Michael Gibbs (ASP Board Member), Jim Manning (ASP Executive Director), and Andrew Fraknoi (ASP Member). Photo taken at the 2009 ASP annual conference in San Francisco, CA, USA, *Science Education and Outreach: Forging a Path to the Future.*

Part I

For Authors

Preparing Your Article for the ASP Conference Series[*]

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Abstract.   This is a thorough revision of the document *Astronomical Society of the Pacific Conference Series—Instructions for Authors Using LATEX 2$_\varepsilon$ Markup*. The author instructions have been entirely restructured and now incorporate instructions on preparing the BibTeX database of bibliographic references that will be needed by the editors for producing the author reference lists in the final edited version of the volume. Authors and editors alike are urged to use this and no other system, since it will result in a lessened burden on both. A further new feature provided is the use of tables that extend beyond a single page.

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 subsequently converted at the Astronomical Society of the Pacific (ASP) Conference Series office into a PDF file for electronic publishing.

We hope that you will find that all the aspects of LATEX 2$_\varepsilon$ necessary for the completion of your article will be covered in this manual; however, those readers seeking further information on LATEX 2$_\varepsilon$ are referred to the excellent book by Kopka & Daly (1999).

Please also review the online ASPCS authors' information.[2] This web page includes all the author templates and instructions in a searchable PDF as well as important information regarding copyright issues, technical resources, writing helps, a preflight tools, and a final checklist.

---

[*]Revised January 2009. Please note that if there is a conference attendee list complete with addresses, the full address for each author is not required.

[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.

[2]`http://www.aspbooks.org/author_information/`.

2.   Cautionary Note

> ***Important:*** Proceedings volumes contracted from January 2010 on-
> wards must be prepared using the 2010 macros and instructions. The
> ASP Conference Series will not provide support to authors or editors
> using earlier versions, which must now be considered obsolete.

These author instructions should be used in combination with the article template
(`aspauthor.tex`), which will correctly format your article in preparation for editing,
and the bibliographic database template (`author.bib`). You, as the author, need to
provide the editors with the following, correctly formatted, information:

- The names of all the authors of the paper as you would want them cited

- The affiliations and addresses of all the authors

- An abstract of the paper for inclusion in ADS

- The complete text of the paper and any tables referred to therein

- A full bibliographic database for all the references cited in the paper

- All the illustrations, of a quality suitable for printing (See Sect. 5 on page 25),
  referred to in the text

By now, the use of LATEX 2_ε should be fairly universal. If you are using an earlier
version of LATEX, then you will need to upgrade this to LATEX 2_ε otherwise you may
experience problems in using the ASP Conference Series style file (`asp2010.sty`). If
you have problems of this sort, consult with your local software manager.

3.   The Text

In order to complete your article you will need the following three files:[3]

- The ASP Conference Series style file (`asp2010.sty`)

- The author template (`aspauthor.tex`)

- The author bibliographic database file (`author.bib`)

3.1.   The Template File

The template file consists of six parts:

1. The preamble

2. The title of the article

3. Author information

---

[3]All downloadable from `http://www.aspbooks.org/instr_temp_mac/`.

4. The abstract

5. The main text of the article

6. The bibliography

3.1.1. The Preamble

This part of the template calls on various packages and resets counters to zero. Do not alter anything in this part of the template except for inserting author last names and a shortened title in the `\markboth{}{}` command.

> ***Important Note:*** Do *not* define any commands of your own for any reason (i.e., 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 any such command definitions in the preamble of the customized book macro for the volume, to which you will not have access.

3.1.2. The Title of the Article

Open the author template file and look for the command `\title{}`. Now enter the title of your article inside the braces.

3.1.3. Appending a Footnote to the Title

There is rarely any justification for appending a footnote to the title of an article. *Never* use a title footnote for acknowledgments (these belong exclusively in the acknowledgments section and should not appear elsewhere in the article). If, in exceptional circumstances, a footnote to the title is warranted (do consult with the editors first), then the footnote symbol (an asterisk) should be appended at the end of the title with the command `\footnotemark` (no argument is required for this command). The text of the footnote should then be given before the `\begin{abstract}` command using the command `\titlefootnote{}`.

To append an asterisked footnote to the title uncomment the line

```
%\allowtitlefootnote
```

Now scroll to just before the abstract and uncomment the line

```
%\titlefootnote{}
```

and insert the footnote text between the braces. The footnotes will thenceforth appear in arabic numerals starting from "1". This article has a title footnote by way of example.

3.1.4. Author Names and Affiliations

The new author template allows only one format for author names and affiliations. In the author template the author names and affiliations are written in the nested commands

```
\author{
\affil{}
}
```

It is the ASP style to not allow a line break to split a name or address component. To assure that a full name remains together a suitably placed line break (double slash "\\") can be used between after the name of an author that should appear at the end of a line, or a tilde character ("˜") can be placed in the space between the first and last name.

How the author names and affilliation commands are used is best illustrated with the aid of examples.

Single Author, Single Affiliation

```
\author{Joseph~Silk
\affil{Department of Physics, University of Oxford, Oxford OX1 3RH, UK}
}
```

produces

Joseph Silk
Department of Physics, University of Oxford, Oxford OX1 3RH, UK

One Author, Multiple Affiliations

```
\author{Linda~J.~Smith$^{1,2}$
\affil{$^1$Space Telescope Science Institute and European Space Agency,\\
3700 San Martin Drive, Baltimore, MD 21218, USA\\
$^2$Department of Physics and Astronomy, University College London,\\
Gower St., London WC1E 6BT, UK}
}
```

will give

Linda J. Smith[1,2]
[1]*Space Telescope Science Institute and European Space Agency,*
3700 San Martin Drive, Baltimore, MD 21218, USA
[2]*Department of Physics and Astronomy, University College London,*
Gower St., London WC1E 6BT, UK

Multiple Authors, One Affiliation

Where more than one author is involved, the last two authors must be separated by "and" (not an ampersand). For three or more authors, a serial comma must be used after the penultimate author.

```
\author{Kartik~Sheth, Lori~Spalsbury, Nick~Scoville,\\
and~the~COSMOS~Collaboration
\affil{California Institute of Technology,\\
MC 105-24, 1200 East California Boulevard, Pasadena, CA 91125, USA}
}
```

produces

Kartik Sheth, Lori Spalsbury, Nick Scoville,
and the COSMOS Collaboration
California Institute of Technology,
MC 105-24, 1200 East California Boulevard, Pasadena, CA 91125, USA

Multiple Authors, Multiple Affiliations

```
\author{Tom~Speltincx,$^1$ Eija~Laurikainen,$^1$ Heikki~Salo,$^1$
Ronald~Buta,$^2$\\ and Johan~H.~Knapen$^3$
\affil{$^1$Department of Physical Science, Division of Astronomy,\\
University of Oulu, Finland\\
$^2$Department of Physics and Astronomy, University of Alabama, USA\\
$^3$Instituto de Astrof\'\i sica de Canarias, E-38200 La Laguna,\\
Tenerife, Spain}
}
```

produces

Tom Speltincx,[1] Eija Laurikainen,[1] Heikki Salo,[1] Ronald Buta,[2]
and Johan H. Knapen[3]
[1]*Department of Physical Science, Division of Astronomy,*
University of Oulu, Finland
[2]*Department of Physics and Astronomy, University of Alabama, USA*
[3]*Instituto de Astrofísica de Canarias, E-38200 La Laguna,*
Tenerife, Spain

3.2. Dividing Your Article into Sections

Sections can be either numbered or unnumbered.

3.2.1. Numbered Sections

You can divide your text into sections, as is done in this manual. The `asp2010` style supports three levels of numbered sectioning. Top level sections are created with the following command:

`\section{`*heading*`}`

Mid-level sections are created using:

`\subsection{`*heading*`}`

Bottom level sections can be created using either

`\subsubsection{`*heading*`}`,

which starts the text, unindented, on a separate line as shown above, or with

`\altsubsubsection{`*heading*`}`,

which produces an italicized heading with run-on text. The headers are numbered in each case.

The command `\altsubsubsection{`*heading*`}` is very useful for saving space in shorter contributions, especially posters. Keep the structure of your text within the

three-tier hierarchy; if that is not possible, then consult the volume editors, who may have their preferences.

3.2.2. Unnumbered Sections

If you prefer not to have any of your sections numbered then use the following asterisked commands which suppress the numbering:

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

3.2.3. Math Expressions in Section Headers

If you type

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

you get

Evolution of Elliptical Galaxies to $z = 0.6$

To ensure that the expression $z = 0.6$ is rendered in boldface use the `\boldmath` command,

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

which gives

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

as required.

3.3. References to Sections Within the Text

If you refer to individual sections in your paper within the paper itself, then you can save time and avoid referencing errors by making use of LaTeX 2_ε's powerful internal cross-referencing capabilities. To use this capability, the `\label{}` command needs to be inserted immediately after the object to be referenced (e.g., a section, figure, or table). You need to insert a unique code inside the braces. The reference is then effected within the text by using the command `\ref{}`, which will give the number of the section, figure, or table. If you wish to refer to the page on which the object occurs, then you will need to use the command `\pageref{}`.

> ***Example:*** To get 'See Sect. 3.2 on page 7.' you write
> ```
> See Sect.\ \ref{sectioning} on page~\pageref{sectioning}.
> ```

Note that in this case, the command `\label{sectioning}` was placed just below the actual command for that section.

When alterations are made to the text, LaTeX takes care of updating the cross-references. Take note that labels require compiling the document at least twice to integrate the references correctly.

3.4. Bibliographic References

Bibliographic references consists of three tasks:

1. Compiling the list of references

2. Inserting the references into the main text

3. Listing the references in the bibliography at the end of the article

Task 1 is accomplished by creating a bibliographic data file (bib file) listing the references. Task 2 is accomplished using the `natbib` package (Daly 2007)[4] and task 3 is carried out by BibTeX (Markey 2005),[5] which takes the necessary information from the bib file (see Sect. 3.4.1).

3.4.1. Using BibTeX

How BibTeX Works. BibTeX takes care of compiling the bibliographic list at the end of the article and also gives a framework for referencing the entries within the text.[6] The package takes information from the author-provided `.bib` file and processes that information with a bibliographic style (`.bst`) file.[7] The `\bibliography{author}` command (which takes the `author.bib` file as its argument) at the end of the article then prompts LaTeX 2_ε to construct the list of references in the correct format. The `natbib` package is used in the main text to invoke the references (see Sect. 3.4.2).

The principal benefits of using BibTeX are that first, the author is not burdened with the task of correctly formatting the bibliographic list, a chore that is taken care of by BibTeX and second, once constructed, the `.bib` file can be added to progressively and applied to any other `.bst` file to meet all your future publishing requirements.

Using the `author.bib` File. To implement BibTeX in your article you will need to enter the details of your bibliographic references into the `author.bib` file that comes with these instructions.[8]

The `author.bib` file has templates for seven types of bibliographic items, each with its own set of fields:

1. Articles (fields: author, title, journal, year, volume, pages)

2. Books (fields: author, title, edition, publisher, address, year)

3. Contributions to proceedings (fields: author, title, booktitle, year, editor, pages, publisher, address, volume, series)

---

[4]http://www.ctan.org/tex-archive/macros/latex/contrib/natbib/

[5]http://tug.ctan.org/tex-archive/info/bibtex/tamethebeast/ttb_en.pdf

[6]For an exhaustive account of how BibTeX works, see Markey (2005).

[7]The ASP bibliographic style file (`asp2010.bst`) is used in order to ensure conformity with agreed standards of bibliographic referencing in astronomy. This `.bst` file is invoked in the author template. This file comes with the ASP Conference Series instructions.

[8]Download at http://www.aspbooks.org

4. Manuals (fields: author, title, year)

5. Ph.D. theses (fields: author, title, school, year)

6. Proceedings volumes (fields: title, year, editor, publisher, address, volume, series)

7. Technical reports (fields: author, title, institution, year, number)

Examples of the use of each of these classes, together with their respective fields, are to be found in the `asp2010.bib`. Note the following:

- New entries must begin with the `@` symbol, followed by an opening brace and the bibliographic code (the same one used as for the `natbib` citation in the text).

- Non-numerical character strings must be enclosed in double inverted commas.

- Numerical entries need not be enclosed in inverted commas, but blank numerical fields should be indicated by `""`.

- Each field entry must terminate with a comma.

- For articles in proceedings, the title of a proceedings volume is denoted by the field `booktitle`.

- For references to proceedings volumes the volume title is denoted by the field `title`.

- The entry must terminate with a closing brace.

- For multiple bibliographic items by the same author in a given year, it is not necessary to add "a", "b", etc., to the year; that is taken care of automatically by BibTeX.

Compiling the Bibliographic List.   When the `author.bib` file is completed, the bibliographic list is constructed through the following routine:

```
latex [authorfile]
bibtex [authorfile]
latex [authorfile]
latex [authorfile]
```

- During first execution of LaTeX 2$_\varepsilon$, there is no bibliographic information yet established, therefore there are not yet any references, but the `natbib` code of each bibliographic entry is included in the `.aux` file.

- The `bibtex` takes the bibliographic codes from the `.aux` file. The `.bst` is then applied to the bibliographic data in the `.aux` and `.bib` files, and the bibliography is written into a `.bbl` file. The entire operation is logged in the `.blg` file.

- In the second LaTeX 2$_\varepsilon$ run, the `.bbl` file is used to execute the `\bibitem` commands and the biliographical cross-references are written into the `.aux` file.

- During the third LaTeX 2$_\varepsilon$ compilation LaTeX 2$_\varepsilon$ stores the references to the bibliographic citations in the `.aux` file.

3.4.2. Inserting Bibliographic References in the Text

The reference system to be followed is the standard author–year system.

3.4.3. Single Author

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

3.4.4. Two Authors

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

3.4.5. 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). We adopt the editorial convention of not italicizing the phrase 'et al.'

3.4.6. 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).

3.4.7. 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..."

3.5. LaTeX Markup of References

Referencing in a text consists of *citations* in the body of the text of *sources* listed in the `author.bib` file. Although LaTeX permits various ways of citing and listing bibliographic references, we would strongly urge authors to use only the `natbib` package for citations in the main text in conjunction with the BibTeX package, which is described in detail in Section 3.4.1. In what follows it is particularly important to realize that the author codes (the arguments of the `natbib` commands below) are faithfully copied into the `author.bib` file in order for BibTeX to link the `natbib` citations to the bibliographic data contained in the `author.bib` file.

3.5.1. Using `natbib`

Standard LaTeX 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 bibliographic needs (Note carefully the syntax for getting pre- and post-notes.):

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

Another extremely useful facility provided by `natbib` is the possibility of multiple citations:

```
\citet{jones_blandhawthorn_1998,jones_blandhawthorn_1999}
```
⟶ Jones & Bland-Hawthorn (1998, 1999)

```
\citep{jones_blandhawthorn_1998,jones_blandhawthorn_1999}
```
⟶ (Jones & Bland-Hawthorn 1998, 1999)

```
\citet{blandhawthorn_jones_1998a,blandhawthorn_jones_1998b}
```
⟶ Bland-Hawthorn & Jones (1998a,b)

```
\citep{blandhawthorn_jones_1998a,blandhawthorn_jones_1998b}
```
⟶ (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 itself, so you may find the following commands useful:

```
\citeauthor{latexcompanion}    ⟶   Goossens et al.
\citeauthor*{latexcompanion}   ⟶   Goossens, Mittelbach, & Samarin
\citeyear{latexcompanion}      ⟶   1994
\citeyearpar{latexcompanion}   ⟶   (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 bibliographic list since the reader has no means of ascertaining 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{vandehulst_1981}        ⟶   Van de Hulst (1981)
\Citep{vandehulst_1981}        ⟶   (Van de Hulst 1981)
\Citeauthor{vandehulst_1981}   ⟶   Van de Hulst
```

3.6. Typesetting the Main Text

The first paragraphs in top-, second-, and regular third-level sections will automatically appear without indentation. That is intentional and conforms to standard publishing practices. Any deviations from this style will be reversed during the editorial process prior to printing. All subsequent paragraphs will be indented. For third-level sections using \altsubsubsection{}, 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 this will only 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.

3.6.1. Wordbreaks

Occasionally, you will find that a word will overrun the right text margin; this must be corrected since whatever overshoots the margins will not be printed in the published version. This most often occurs in long technical words or acronyms which LaTeX does not know how to split. A simple way of ensuring a break in the middle of a word is to insert \- after a syllable where a linebreak is allowed. 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 (Merriam-Webster 2003), 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.[9]

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

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

which permits larger than normal inter-word spacing for the offending paragraph while still permitting wordbreaks. 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.

3.6.2. Spacing after Periods

A word needs to be said about the spacing after points. If a sentence ends with a lower case letter you need do nothing except put the end point (period or "full stop"). If, however, a 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

---

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

the following word in order not to leave too large a space between the abbreviation and the word. So for

`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 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 the correct spacing between the point and the capital starting the next sentence.

3.6.3.   Vertical Spacing

Regarding vertical spacing, the `\vspace` command should not be used by authors to squeeze in a few more lines of text, as it will probably cause problems when added to the entire volume. Rewrite portions of the paper, if necessary, to stay within page limitations.

3.6.4.   Removal of Commented-out Text

Text that has been commented out in the LaTeX file can "reappear" when viewed in a different text editor. Authors must delete that commented-out text before sending the manuscript to the editor. Avoiding or removing LaTeX customizations and adjustments will make the editor's tasks much easier.

> *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.

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 at all 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 blank space before the % symbol in your search tool).

3.6.5.   Fonts

LaTeX 2$_\varepsilon$ 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 2ε

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 changed with the commands in Table 2. In `asp2010` style, `\normalsize` is 11 pt, and the other sizes scale accordingly.

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

3.7.   Acknowledgments Section

If you wish to have an acknowledgments section, use the command

```
\acknowledgments
```

in the template file. 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:

Acknowledgments. We thank the Big Bang for making this symposium possible.

This will separate the acknowledgments from the previous section with a section division spacing and indent the word *Acknowledgements* in boldface. Do *not* use `\section{Acknowledgments}` to create an acknowledgements section (it does not warrant and should not have full section status).

3.8.   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 and a number of useful macros for expressions frequently found in astronomy are listed in Appendix A. 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 to 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 typesetting mathematics, consult the *Chicago Manual of Style* (University of Chicago Press 2003).

The most common typesetting 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

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

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

$$\left\{ \left[\left(\{ [(\quad)] \} \right) \right] \right\}$$

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

$$\iiint\limits_R f\,dx\,dy\,dz \;=\; \int\limits_0^1\int\limits_0^{x^2}\int\limits_0^{x+y}(2x - y - z)\,dx\,dy\,dz$$

$$=\; \frac{3}{2}\int\limits_0^1\int\limits_0^{x^2}\left(x^2 - y^2\right)\,dy\,dz$$

$$=\; \frac{3}{2}\int\limits_0^1\left(x^4 - \frac{x^6}{3}\right)\,dx$$

$$=\; \frac{8}{35}. \tag{2}$$

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:

3.8.1.   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

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

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.

3.8.2.   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}
\end{array}
\right) =
\left(
\begin{array}{c}
h_1\\
H_2\\
```

```
\vdots\\
h_n
\end{array}
\right)
\]
```

gives

$$\begin{pmatrix} a_{11} & a_{12} \cdots a_{1n} \\ a_{21} & a_{22} \cdots a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} \cdots a_{nn} \end{pmatrix} \begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{pmatrix} = \begin{pmatrix} h_1 \\ h_2 \\ \vdots \\ h_n \end{pmatrix}$$

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

$$I_b \;=\; \frac{\begin{vmatrix} -(R_1 + R_3) & -V & R_3 \\ R_1 & 0 & R_5 \\ -R_3 & 0 & R_3 + R_4 + R_5 \end{vmatrix}}{\begin{vmatrix} -(R_1 + R_3) & 0 & R_3 \\ R_1 & -(R_1 + R_2 + R_5) & R_5 \\ -R_3 & -R_5 & R_3 + R_4 + R_5 \end{vmatrix}}$$

$$=\; \frac{VR_5R_3 + VR_1(R_3 + R_4 + R_5)}{\Delta}$$

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

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

use the solidus (/) to produce $x/a + y/(4a)$. 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.

4.   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 and 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 placed 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 code declaration \begin{tabular}{ccccc}, which starts the tabular environment. The five "c" characters within the braces 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	$97 \pm 8(8)$; $97 \pm 5(7)$; $98 \pm 6(11)$	97
49 Cet	Vega-like	$183 \pm 9(4)$; $187 \pm 4(3)$	186
⋮	⋮	⋮	⋮
HD 233517	Vega-like	$17 \pm 3(5)$, $16 \pm 2(6)$; $15 \pm 2(24)$	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) the number of columns over which the entry is spread, 2) column alignment (`l` = left justified, `r` = right justified, and `c` = centered), 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}{l@{\extracolsep{\fill}}ccccccc}
\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 &
{\small 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}
```

Note the @{\extracolsep{\fill}} expression after the first column positional format entry (l). This provides rubber intercolumn separation to spread the columns over the entire width of the table.

Also note that when the margin outlines are activated, the margin box will not appear properly on landscape pages.

Table 5. A table in landscape mode

| IRAS name | z | Type | FWHM [kpc] | Colors in 1″ | | | for 1000 K dust | |
				$J - H$	$H - K$		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

5. Figures

5.1. Copyrighted Images

If a figure that is not your own has been previously published, you must receive written permission from the original publisher to use the image in your paper. At the end of the figure caption include an acknowledgement of the source (Such as 'Courtesy of . . .'). A "Permission to Use" form and sample acknowledgements are available online on the Authors' Information page[10] for your convenience.

5.2. 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.

5.3. Image Size and Legibility

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. Images must also fit within the text margins (5.25 inches, 13.4 cm). See *Size of Illustrations* below for help with large images.

5.4. Resolution

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

Hairlines in graphs, charts and other illustrations do not reproduce well; use a minimum .25 point (0.0035 in.) line weight. Also, ensure that contour lines will not run together with a 10% reduction.

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.

For more complete information on image types, resolution, size and color, please see the technical documentation from our printer.[11]

---

[10]`http:\\www.aspbooks.org`

[11]Pertinent printer technical documentation can be found at these URLs:

Digital Art Guidelines:
`http://dx.sheridan.com/guidelines/digital_art.html`
Resolution information:
`http://dx.sheridan.com/advisor/effective_resolution.html`
Color information:
`http://dx.sheridan.com/advisor/cmyk_color.html`

5.5. Photographs

Photographs should be saved or scanned in `.eps` format, must be scaled and positioned to fit within margins and must be of sufficiently high resolution (266-600 ppi) to reproduce well. Remember that captions should describe the photo in black and white unless paying for color printing. If you wish to put unnumbered captions, refer to Section 5.6.

5.6. Figure Captions without Numbers

If you wish to have unnumbered figure captions, simply write the text without the `\caption{}` command, taking care to include the text *inside* the `figure` environment (i.e., it must be place before the `\end{figure}` command, not after it).

5.7. Color

ASP Conference Series books are printed in black and white, with exceptional use being made of color where the author or author's institution is prepared to pay for this. Color images may be printed in color at an additional cost for each image. Contact the volume editor for questions regarding printing images in color. ASP does offer authors free color reproduction in the electronic version of the volume which will be available at `www.aspbooks.org`. If an image is available in color, authors should submit the color image. The color will be retained on the website but converted to grayscale for the printed volume, unless the author has paid for color printing.

When converted to grayscale, many colors tend to appear the same. For example, dark shades of red, green and blue will all appear as black in a grayscale image. Yellow and light green may become white. If this will cause confusion, it may be best to redo the image or pay for color printing. If concerned about the conversion to grayscale, an author should submit an acceptable grayscale image, clearly named, along with the color image.

Another problem can arise when an 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 are slightly different. The change is barely noticeable with photographs, but other graphics may be greatly affected. To prevent tonal shifts, authors should submit images created in CMYK.

5.8. Color Figure Captions

When submitting a color image for the electronic version only, provide a caption that works equally for both the color and grayscale versions since the book will be printed in only black and white.

5.9. Font Conversion

Another typical issue 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
```

Also, please use standard Type 1 fonts (Times New Roman, Arial, etc.) for text embedded in images to avoid font problems in printing.

5.10.　Figure Placement in Text

Figures can be placed in the text using one of the convenient `asp2010.sty` figure placement macros, or they can be placed in the the text using the basic LaTeX figure commands which provide more customizeable functionality.

5.10.1.　Quick Figure Placement Commands

To quickly insert images with a caption and a reference label you can use one of the following commands. Note that if no label is required, or if no caption is desired, the corresponding argument in the command can be left blank.

For one image:

```
\articlefigure[options]{image file path and image file name}{reference label}{caption}
```

The options in this command are the same as those for the `\includegraphics` command (see section 5.12 on page 30). The most common use of this command will require no options at all.
For two images side by side:

```
\articlefiguretwo{image #1 file name}{image #2 file name}{reference label}{caption}
```

For three images side by side:

```
\articlefigurethree{image #1 file name}{image #2 file name}{image #3 file name}
{reference label}{caption}
```

For four images in a 2×2 square:

```
\articlefigurefour{image #1 file name}{image #2 file name}{image #3 file name}
{image #4 file name}{reference label}{caption}
```

For one image in landscape format on a single page:

```
\articlelandscapefigure{image file path and image file name}{reference label}{caption}
```

For two images side by side in landscape format on a single page:

```
\articlelandscapefiguretwo{image #1 file name}{image #2 file name}
{reference label}{caption}
```

5.10.2.　Placing Figures Using LaTeX Image Commands

To place a figure in the text, 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. The use of `[!ht]` helps to scale figures properly and enable text to be included on the page, rather than having the figure alone and oversized on the page. A caption can be included within the `figure` environment using the command

> `\caption{`*caption text*`}`

As with all `\begin{}`-type commands, you must remember to close it with

> `\end{figure}`

ASP style supports three basic 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 allows you to "fiddle" the illustration into position.

If possible, use `\plotone` or `\plottwo` for simplicity and to avoid editorial complications later. If `\plotfiddle` is needed for exact placement of a figure, 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

A word or two on manipulating the `\plotfiddle` command might be in order. The `vsize` parameter sets the vertical height of the space for the illustration. The origin of this space is center page (X-axis) and at the bottom of the space (Y-axis). As the name of the command suggests, it's all a question of fiddling with the parameters to get the right placement of the illustration(s). It is useful to get an initial approximate idea of how the illustration(s) will look, so it is a good idea to begin with the following set of initial parameter values:

> `\plotfiddle{filename}{8cm}{0}{50}{50}{-200}{200}`

After this, it is then just a question of "fiddling" with the individual parameters until you have the figure exactly where you want it on the page. It is useful to start with a set of initial values for `vsize`, `hsf`, `vsf`, `htrans`, and `vtrans`.

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.'

5.11. The `graphicx` Package

Given our authors' widely varying degrees of familiarity with LaTeX 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 and manipulate `graphicx`-imported images and the trimming facility, see the document *How to Use the `graphicx` Package* (p. 30).

5.12. Size of Illustrations

The maximum width of an illustration is 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}`.

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How to Use the `graphicx` Package

T. J. Mahoney

Instituto de Astrofísica de Canarias, E-38205 La Laguna, Tenerife, Spain

Abstract.   This guide explains how to import and manipulate graphics into your article for inclusion in a volume of proceedings in the ASP Conference Series.

1.   Introduction

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 `graphicx` package is useful if you need to use only a part of a complete image. This guide will take you through the various parameter ("keys") of the package and applying them to the sample figure `demo.eps`, copied from Kopka & Daly (1999).

2.   Invoking `graphicx`

The first step to take is to ensure that you have the command

    \usepackage{graphicx}

in the preamble of your article. Importing a graphic is then done by usingthe command

    \includegraphics[*key1* = . . ., *key2* = . . ., *etc.*]{*filename*}

Optional parameters—called "keys"—enable the figure to be resized, rotated, cropped, trimmed, etc. These keys and their functions are listed below.

- `scale` = *number* — a magnification factor

- `width` = *length* — the width to which the figure should be scaled[1]

- `height` = *length* — the height to which the figure should be scaled[2]

---

[1] If the height is not given, it too is scaled by the same amount.

[2] If the width is not given, it too is scaled by the same amount.

- `totalheight` = *length* — height plus depth of figure (to be used if figure is rotated)

- `keepaspectratio` = `true/false` — maintains the height/width ratio

- `angle` = *number* — angle (in degrees) by which the figure is to be rotated counterclockwise

- `origin` = *location*[3] — the point about which rotation is to occur

- `draft` = `true/false` — prevents figure from being imported, but created a named box with the dimensions of the figure (this option is used to speed up processing)

- `clip` = `true/false` — excludes whatever is outside the bounding box

- `bb` = *llx lly urx ury* — enters the bounding box coordinates, which are given by default in points (1/72 inch), manually (the bounding box might be missing or you might want to alter it)

- `viewport` = *llx lly urx ury* — specifies bounding box w.r.t. bottom left of existing bounding box; used with `clip` to select a part of the image (or to clear unwanted margins.

- `trim` = *dllx dlly durx dury* — reduces the bounding box by the amount specified

- `hiresbb` = `true/false` — reads the bounding box information from the line `%%HiResBoundingBox` in figure file

3. Experimenting with `graphicx`

Figure 1 shows the default image produced by the graphics file `demo.eps`, called using the command

```
\includegraphics{demo}
```

(note that none of the keys is used).

Figure 2 shows the same figure scaled by a factor of three and rotated by 60 degrees anticlockwise and using the command

```
\includegraphics[scale = 3, angle = 60]{demo}
```

Figure 3 shows the default image with a different aspect ratio, created by varying the height and width with the command

```
\includegraphics[width = 400pt, height = 200pt]{demo}
```

———————————————————————

[3] `bl` = bottom left, `c` = center, `t` = top, `r` = right, `B` = baseline, or any meaningful combination thereof.
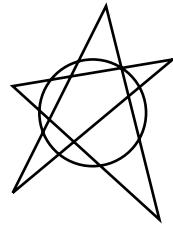
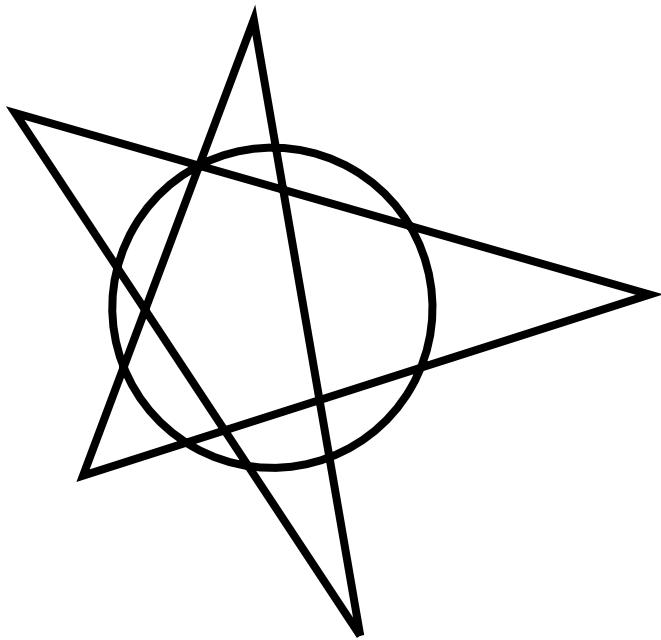Figure 1.   Here is a `demo.eps` to play with.

Figure 2.   Here is `demo.eps` again rescaled to three times its original size and rotated counterclockwise through 60 degrees.

In Figure 4 we plot the file `demo2.eps`, which has a larger bounding box but using the default keys (`\includegraphics{demo2}`). We see that the relevant part of the figure has been forced down to the lower left of the figure in spite of our efforts to center it. There are three ways of rectifying this situation.

1. Force a new bounding box manually with the `bb` key (keying in the original coordinates).
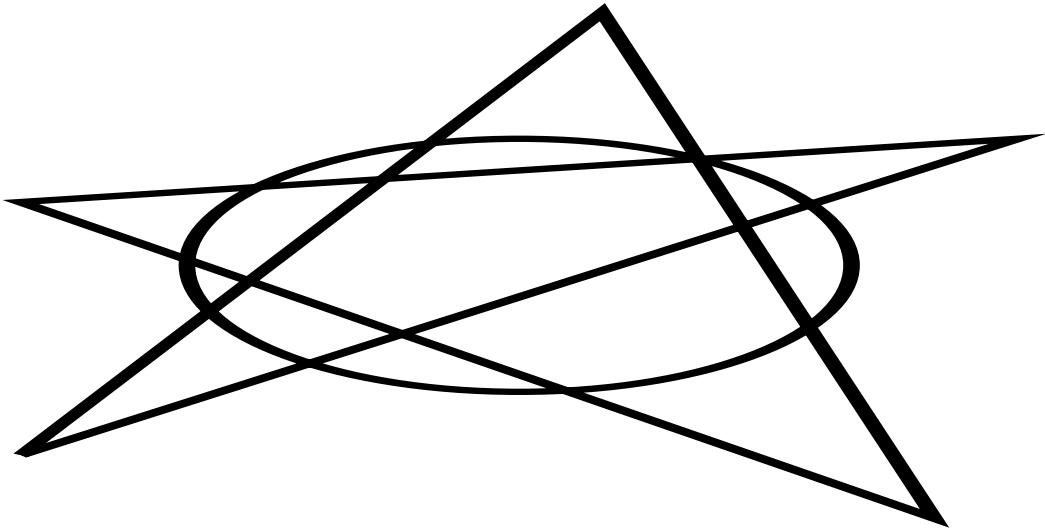
2. Use the `viewport` key.

Figure 3.   Here is `demo.eps` with a different aspect ratio.

3. Use the `trim` key.

    We can force a new bounding box by using:

    `\includegraphics[bb = 169 158 233 242]{demo2}`

    We have used the bounding box values for `demo.eps` for `demo.eps2`. The result is shown in Figure 5. We chose these values for the new bounding box because we already knew them from `demo.eps`; in practice we would need to experiment with various values in order to find something that works.
    We get identical results if we use the command

    `\includegraphics[viewport = 0 0 64 84]{demo2.eps}`

(see Figure 6) or

    `\includegraphics[trim = 0 0 300 300]{demo2.eps}`
(see Figure 7). (Note that the key takes the bottom left corner of the existing bounding box as its origin.)

References

Kopka, H., & Daly, P. W. 1999, A Guide to L^AT_EX (Harlow: Addison–Wesley), 3rd ed.

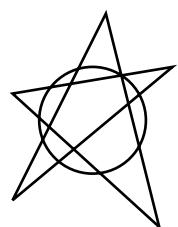Figure 4.   Here is `demo2.eps`, which is `demo.eps` with a different bounding box;
this creates wide margins at the top and to the right of the original figure, causing the
relevant part of the figure to be pushed into the bottom left corner.
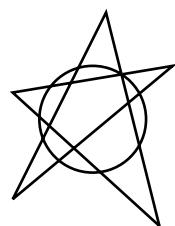

Figure 5.   We set a new bounding box manually with the key `bb` to eliminate the
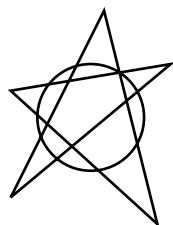unwanted margins and restore the figure to its central position.

Figure 6.   Elimination of unwanted margins using the `viewport` key (note that the origin, (0,0), is now the bottom left corner of the original bounding box.
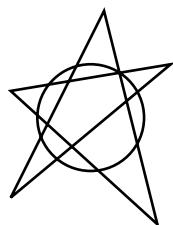

Figure 7.   Elimination of unwanted margins using `trim` key.

Author's Final Checklist

☐ Article is within page limitations set by editor.

☐ Paper compiles properly without errors or warnings.

☐ No fundamental modifications to the basic template are present, including special definitions, special macros, packages, \vspace commands, font adjustments, etc.

☐ Commented-out text has been removed.

☐ Author and shortened title running heads are proper for the paper and shortened so page number is within the margin.

☐ Paper checked for general questions of format and style, including, but not limited to, the following:

    ☐ capitalization, layout, and length of running heads, titles and sections/subsections;

    ☐ page numbers within margin;

    ☐ author names spelled correctly and full postal addresses given;

    ☐ abstracts;

    ☐ all margins—left, right, top and bottom;

    ☐ standard font size and no Type 3 fonts;

    ☐ spacing;

    ☐ section headings.

☐ All tables are correctly positioned within margins, are properly formatted, and are referred to in the text.

☐ All figures are correctly positioned within margins, are minimum 300 dpi resolution, not too dark or too light, do not contain embedded fonts, and are referred to in the text. All labeling or text will be legible with 10% reduction. Questionable images printed, checked and replaced if necessary. Figures do not cover text or running heads, and proper permissions have been granted and acknowledged.

☐ All acknowledgments and discussions are in proper format.

☐ If there are acknowledgments at the end of the article, ensure that the author has used the \acknowledgments command and not the commands \begin{Acknowledgments}, \end{Acknowledgments}. Acknowledgments should only be used for thanking institutions, groups, and individuals who have directly contributed to the work.

☐ All references quoted in the text are listed in the bibliography; all items in the bibliography have been referred to in the text.

☐ All bibliography entries are in the proper format, using one of the referencing styles given. Each of the references is bibliographically complete, including full names of authors, editors, publishers, place of publication, page numbers, years, etc.

☐ A complete BibTeX file is ready to submit to the editor.

☐ References to preprints replaced with publication information when possible.

Part II

For Editors

The ASP Process: Publishing with the ASP Conference Series

J. Barnes[1] and J. Jenson[2]

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Abstract. The general process of publishing with the ASP Conferences Series is outlined and described. This basic process includes the contract, the editorial work, pre-submission, submission, the aesthetic review, final submission, and finally proof review, approval and printing. Understanding these steps and how they work within the framework of the ASP Conference Series can make the process of publishing proceedings, from conference to finished volume, much easier.

1. Overview

Thank you for choosing to publish with the ASP Conference Series (hereafter referred to as the ASPCS). There are several steps in creating conference proceedings and becoming familiar with those steps as you begin your relationship with us will make the entire effort easier. This overview begins with the step of signing a contract with the ASPCS, either before or after the conference is held, and then moving through the following phases:

1. Signing the Contract

2. Editorial Work

3. Pre-submission

4. Submission

5. Aesthetic Review

6. Final Submission

7. Proof Review, Approval, and Printing

Understanding these major steps and how they fit into the process will enhance and simplify the experience of publishing your conference proceedings.

2. Signing the Contract

In publishing with the ASPCS, editors and their institutions take on obligations to divide the work of publishing their Conference Proceedings volume with the ASPCS staff.

The purpose of the contract between the ASP and the editor's institution is primarily to establish those expectations. While a contract may seem overly legalistic, the ASPCS contract form is not particularly ominous.

The first purpose of the contract is to establish a price for the volume. The more information we have up front, the better the price estimate will be. Realize that until the ASP staff know how many pages it will be, how many color figures it will have, how many copies will be ordered, and where they will be shipped, the price will be an estimate only. If a fixed price quote is desired, the ASPCS can provide one, but it will be provided only after receiving the details listed above from the editor. You may want to contact your institution's legal department to find out if there are any special requirements that need to be included in the contract to avoid delays.

The contract is also meant to establish expectations regarding schedule. It is in the interest of the ASPCS and also the editor to publish the volume quickly. We aim to publish within six months of the conference, if at all possible. Proceedings that are received more than a year after a meeting are of limited value. To help authors and editors stick to a schedule, the contract form contains a target set of deadlines that rewards the editors for meeting deadlines with up to 20% discounts on the final price. The contract also requires that a deposit be paid up front, which is forfeited if the editors fail to complete the volume. This is meant to motivate editors and their institutions to stay on schedule. These amounts and policies are negotiable. Volumes that are not received for publication within a year of the conference or meeting may be cancelled by the ASPCS.

Finally, the contract lays out the responsibilities of both the editors and the AS-PCS staff. These lists of duties are meant to help editors understand the work they are committed to perform, and schedule their time appropriately. The ASPCS has a limited staff, and most of the duties related to preparing the manuscript remain with the authors and editors.

3.   Editorial Work

The editor has the duty of gathering all of the formatted submissions from the authors and including those submissions within the downloadable LaTeXtemplate to create the finished volume. The editor needs to see to it that the authors understand the requested timeline and that the entire volume is proofed and ready to print. During this time, the editor may require technical assistance with the LaTeXsystems. These instructions as a whole should answer most of the questions that may be encountered.

Since these instructions contain helpful hints for the authors submitting papers, the editor may choose to send an electronic copy of these instructions to each author along with the appropriate style file and template. The authors should be warned that added LaTeXcommands and the inclusion of any additional LaTeXpackages require permission from the ASPCS and are, in general, discouraged.

If technical questions regarding the LaTeXsystem and the ASPCS style file persist, then you can contact the publication manager with questions. The ASPCS does offer hourly LaTeXpaid assistance at rates that can be provided upon contacting the ASPCS office.

4. Pre-submission

Once the editing process has been completed and the work from all of the authors has been received, the editor should upload the working LaTeXfiles to the server using the credentials and instructions received from ASPCS. The editor has the responsibility to see to it that the book compiles without errors or warnings. During this time, the editor will receive a pre-submission form requesting details about the volume which will be used in the remaining steps. As part of the pre-submission form, the editor will provide the cover image, a back-cover synopsis, the conference attendee mailing list, and copyright forms. Work by the editor continues until the book compiles without errors or warnings, and until the book is considered by the editor ready to print.

It is acceptable to use the ASPCS server to host author files as you receive them, or to build the book incrementally using the ASPCS server as a backup and version control system.

5. Submission

When the book compiles without errors and without warnings on the ASPCS server using the ASPCS supplied style file, and is, from the editor's point of view, ready to print, the editor can notify the ASPCS that the book is ready for submission. ASPCS personnel will verify that the book compiles and will accept the submission, and the status of the book will change to *submitted*. The submitted book will receive an official volume number, copyright year, and ISBN number at this time, which will be added to the volume by ASPCS personel.

6. Aesthetic Review

ASPCS personnel will undertake a detailed review of the aesthetic aspects of the submission. Upon completion of the review, the editor will receive a list of issues, suspected issues, and recommendations for implementation into the book. Issues must be remedied, suspected issues must be considered, and recommendations can be optionally implemented into the source files of the book. Once the editor makes the changes, updates the version control system of those changes, and considers the book again ready to print, the editor notifies the ASPCS that the book is prepared for *Final Submission*.

7. Final Submission

With the final submission received by the ASPCS personnel, the book is compiled a final time, and, if final changes were required by the ASPCS, an electronic file (PDF) is generated for editor review. With permission from the editor, the electronic file is submitted to the printer. From this file, the online access files are generated and posted.

8. Proof Review, Approval, and Printing

Each editor will shortly receive a proof copy of the finished book, which the editor can review. Corrections at this stage will incur costs since the books are already printed. If

corrections are required, the appropriate forms must be submitted, and the proof process restart. If the proof is accepted, then the volumes will be mailed to the conference attendees as provided. Two complimentary copies will be sent to each editor.

Before You Start Editing

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Abstract.   In order to save time and avoid needless repetition of tasks, you need to address a number of important logistical issues before you start to edit. If you are an experienced conference proceedings editor you will probably be aware of these already, in which case you should proceed directly to the business of editing the papers and arranging them within the volume (next chapter, p. 51). If, however, you are a newcomer to editing conference proceedings, please go quickly through this chapter in order to avoid a number of common pitfalls.

1.   Preparing to Edit

The aim of this manual is to help you edit and compile your volume with the minimum of effort. That said, editing a book is a strenuous task and will demand a considerable portion of your time for at least a few months if the job is to be done properly.

You should plan the proceedings and choose the editors in the early stages of organizing the conference. Please see the ASPCS's recommendations for preliminary planning under "Step 1, Getting Started" in the editor's information available online.[1] Division of duties among editors is an especially important decision to make early.[2] If you are now at the stage when you are ready to start editing your volume, all of these requirements should have been fulfilled. The step-by-step instructions under the Publishing pull-down menu on the ASPCS website will guide you through the remainder of the publishing process; please review those pages before proceeding.
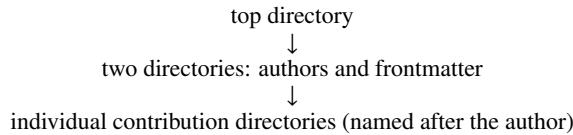
This manual will assist you with the technical aspects of preparing your volume in LaTeX 2_ε. For the remainder of this guide, it is assumed that you now have all the articles in from the authors, together with written transcripts of discussion sessions (if any), and that you are now ready to start copyediting the articles and assembling the volume.

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[1]`http://www.aspbooks.org/step1_getting_started/`

[2]Although many proceedings are edited by a single person, it saves a lot of effort if two or three editors share the various tasks, for example, by giving one editor the job of copyediting and another the scientific refereeing if refereeing is desired. Although many responsibilities can be shared by more than one person, it is wise not to have more than one copy-editor; otherwise it is very difficult to ensure uniformity of style and format throughout the volume.

1.1. Directory Structure

Your workload will be greatly lightened if you adopt the simplest possible directory structure. Once the volume is complete, you will need to upload the source files to the ASP and others may need to work with the files, so they must be structured in a simple, logical way that is easy for anyone to understand. The recommended structure is:

<div align="center">

top directory
↓
two directories: authors and frontmatter
↓
individual contribution directories (named after the author)

</div>

The book macros and style file (`asp2010.sty`) would be in the top directory. Below this, the *frontmatter* directory would contain all the front matter files and the *authors* directory would contain a subdirectory for each contribution in the volume. Finally, the individual contribution directories would contain the author `.tex` and figure files. Some editors prefer to organize directories by parts or sections in the book. A number preceding the section name will keep the directory structure parallel to the organization of the book. For example, the top directory might contain *1_Overview*, *2_Stars*, *3_Transits_Microlensing*, etc. The *1_Overview* directory would include directories for all authors' papers contained in that part: *1A_Wolszcan*, *1B_Udry*, *1C_Wright*, etc.

Please ensure that the pathname for articles and their figures are accessible to the ASP (i.e., no pathnames to home directories). So an acceptable pathname to a LaTeX file called `allsky.tex` for a talk by Dan Murgatroyd might be `authors/murgatroyd_talk/allsky`; an unacceptable pathname would be one that referred the LaTeX compiler to the editor's home directory since ASPCS would not have access to such a directory. A further point to watch out for in author LaTeX files is pathnames in the `figure` environment that route to some directory accessible only by the author. On *Microsoft Windows* systems pathnames within LaTeX constructed with the forward slash "/" just as in Linux or other systems.

1.2. Copyediting Guides and Reference Works

This manual is not the place to seek detailed instruction on the art of copyediting; however, there are a number of useful copyediting guides and other reference works that you should invest in. Which of these you choose will depend on whether you are copyediting according to British practice (valid for the U.K., the European Union, and all Commonwealth countries) or U.S. standards. Regardless of choice, ensure that usage is consistent throughout the volume.

. *American English.*   Three essential works will probably meet all your editorial needs. All editors working according to U.S. practices should have:

- *The Chicago Manual of Style* (University of Chicago Press 2003)

- *Merriam–Webster's Collegiate Dictionary* (Merriam-Webster 2003)

- *The Elements of Style* (Strunk Jr. & White 2000)

The Chicago Manual of Style is far more than a guide to good style; it is nothing less than an exhaustive compendium of U.S. publishing practice. *Merriam–Webster's Collegiate Dictionary* is widely used by American publishers to define their house styles and is an invaluable guide to word division (this last feature is useful even if you are editing in British English). Strunk & White is a compact, no-nonsense guide to clear writing.

. *British English.* If you are following British publishing norms, then you should have all of the following works at your side:

- *The Concise Oxford English Dictionary* (Oxford University Press 2008)

- *The Oxford Dictionary for Writers & Editors* (Ritter 2000)

- *Hart's Rules for Compositors and Readers at the University Press Oxford* (Oxford University Press 1983)

- *Butcher's Copy-editing: The Cambridge Handbook for Editors, Copy-editors and Proofreaders* (Butcher 2006)

The Concise Oxford English Dictionary is a sound choice for editors working in British English since it is widely used by academic publishers in the U.K. *Hart's Rules* and *The Oxford Dictionary for Writers & Editors* are two extremely useful books to have at hand at all times. For British editorial practice, *Butcher's Copy-Editing* is unequalled in its thoroughness and level-headedness; it is also probably the most widely recommended work on copyediting.

2. Preliminary Checks of Manuscripts

2.1. Checking Technical Requirements and Integrity

Authors are entirely responsible for ensuring that their articles are complete and that they compile without fatal LaTeX errors. The author's instructions (p. 3) are thorough and are designed to help both experienced authors and those who do not know LaTeX, so authors have no excuse for sending in files that are incomplete or that won't compile properly. First check each file to ensure it compiles individually as submitted. Then check to ensure that all components are present and formatted properly. Check in particular for these common problems:

- Missing references, figures, or tables

- Additional packages not included in the regular author template

- Author-defined macros which should be removed (may cause problems in subsequent papers)

- Author names and affiliations which are missing, incomplete, or do not follow the standard format

- Abstract formatted incorrectly (beginning on a new line)

- Running heads which are incorrect or too long, pushing page number outside the margin

- Any text, figures, photos, or tables which run over the margins

Editors may wish to check author individual image files or PDF files for potential printing problems on the printer's website[3] to avoid surprises upon submission. While editors might choose to make some minor corrections, article files which don't pass preflight requirements, don't compile, or don't meet the above criteria should be returned to the author, who should then make the necessary revisions.

2.2.   Checking Tables and Figures

Please refer to Sections 4 and 5 of the author instructions, "Preparing Your Article for the ASP Conference Series," for a detailed guide on how to prepare tables and figures. Your job as editor will be to ensure the following:

- *Tables:*

  - All tables referred to in the text are included.

  - The tables are useful or might be better transformed into a graph.

  - The tables are all correctly referenced in the text.

  - There are no vertical rules (unless these are absolutely essential—they rarely are).

  - The table formats recommended in Section 4 of the author instructions have been followed.

  - Tables are not over margin.

- *Figures:*

  - All figures referred to in the text are included and all figures shown are referenced in the text.

  - The figures contribute to the discussion in the text.

  - The figures are correctly called in the text.

  - All figures are referenced in the text.

  - Axes are labeled correctly and are not upside down (in the case of graphs).

  - All lettering and necessary detail are clearly discernible (remember that the manuscript will be reduced by 10% by the printer).

  - Lines are sufficiently thick and contour lines will not run together with a 10% reduction.

  - Photographs, graphs, and other images have good resolution and contrast (minimum 266 dpi).

  - Figures are described in black and white and are adapted for black and white printing unless paying for color images in the printed version.

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[3]Printing preflight tool available at `http://dx.sheridan.com/onl/`. More information on this resource is available at `http://dx.sheridan.com/about/main.html`.

- Graphs are computer-generated, not just scanned, in Encapsulated PostScript ("EPS") format rather than bitmaps.

- Figures, including axis labels, are completely within the margins.

- The figures do not cover any text, including captions and running heads (must be checked in the .pdf file).

- The figure does not include any unwanted background (gray haze, lines, dots, writing) in or around the figure.

- The figure is centered and aesthetically pleasing.

- Permission has been requested and received to use all proprietary images and figures in the book and proper credit has been given in the caption or acknowledgments.

Information about color images is provided in the "Preparing Your Article for the ASP Conference Series," page 26. Unless other arrangements have been made, all images will be printed in black and white, although images provided in color will appear in color on the website.[4] Color images may be printed in color at the costs specified in your contract. Editors may collect money for color reproductions and pay all at once, or they may provide the ASP with a list of authors to be billed for individual color images. If an author fails to pay, the editor will be responsible for payment.

The question of figures is dealt with exhaustively in "Preparing Your Article for the ASP Conference Series" §5 and you should have this document at hand when dealing with figures.

2.3. Checking Referencing and Bibliography

While it is the author's responsibility to see that the references are cited accurately, it is the editor's job to check that:

- citations are properly inserted in the text,

- the works cited in the text are listed in the bibliography,

- all entries in the bibliography are cited in the text,

- the citations and bibliography entries are correctly formatted, and

- sufficient bibliographic information is provided to enable the reader to locate the reference.

Where books are cited, it is necessary to provide an edition number (if citing an edition other than the first), the publisher, and the place of publication. In the case of conference proceedings, the edition number will be irrelevant since proceedings rarely (at least in astronomy) run into a second edition, but full publishing details are still required, as well as the surnames and initials of the editors.

----

[4]`http://www.aspbooks.org`

3.   Conclusion of Preliminaries

Once you have ensured that all the articles are complete and compile properly, you will be in a solid position to proceed with the construction of the volume, as explained in the next chapter.

References

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Preparing Your Volume for the ASP Conference Series: Fast-track Editing

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Abstract.   A number of editors have asked us to provide a recipe-type set of instructions on how to compile a volume for those editors who are knowledgeable in LaTeX and have previous editorial experience. In compliance with these requests we describe here how to stitch together the various elements of the volume using LaTeX's powerful internal cross-referencing system. These instructions follow the actual process of editing, beginning with the main text, followed by the back matter, and finally the front matter. However, we would urge all editors to glance at the previous chapter on preliminary considerations as they prepare for the task of editing. We also remind editors that hundreds of compilation errors tend to occur in the process of editing a volume. How to deal with these is explained in the next chapter.

1. Overview

Editing a volume involves the following stages:

- Copy-editing and/or refereeing the articles, not only for scientific content, but also for consistency of grammar and style (for guides, see p. 46)

- Arranging articles in the correct order within the volume

- Inserting any discussion after each article

- Inserting and checking the slug and running heads for each article

- Checking cross-references within each article (figures, tables, references, section and page numbers, etc.)

- Checking cross-references to other articles in the volume

- Resetting footnote, figure, table, equation and section counters to zero for each article

- Compiling a single bibliography data (`.bib`) file for all the citations in the volume

- Compiling the table of contents

- Indexing key items (authors, subjects, objects, etc.) in the main text and compiling the indexes at the back of the volume

- Inserting conference snapshots into the blank spaces at the end of the articles (if desired)

- Compiling the frontmatter, including the title and copyright pages (i-iv), optional dedication or foreword, table of contents, preface, participants list, and recommended conference photograph

- Compiling and checking a final manuscript of the entire volume

- Providing an image for the front cover

- Writing a brief synopsis for the back cover

- Uploading files to ASPCS and compiling on the ASPCS server

- Correcting issues found in the ASPCS aesthetic review

2. The Main Text

2.1. Editing Individual Articles

2.1.1. Using LaTeX 2_ε's Internal Referencing System

Within a single document, LaTeX 2_ε uses three kinds of internal cross-referencing:

- Cross-referencing to other parts of the same text

- Bibliographic citations

- Indexing of words or expressions

Sections, equations, tables and figures should always be tagged with the `\label{`*key-string*`}` command, where the argument *key-string* is a key in the form of a unique string of text that you choose to identify the element concerned. Once an element has been labeled it can be invoked anywhere in the text using the `\ref{`*key-string*`}` command.

If you need to refer to a specific page in the text, use the `\pageref{`*key-string*`}`, where *key-string* is a string of text identified as the argument of a `\label{`*key-string*`}` placed as close as possible to the portion of text on the page being referred to.

Using LaTeX 2_ε's bibliographic and indexing cross-referencing facilities will be dealt with in Sections 2.1.2 and 3 respectively.

When using the cross-referencing facilities of LaTeX 2_ε, remember that:

1. The *key-string* references must refer unambiguously to one element only. If the same label is given to more than one element, LaTeX 2_ε will complain.

2. Key strings need to be set up within the `.aux` file, which is accomplished by compiling LaTeXmore than once, so always remember to compile three times.

2.1.2. Combining Authors' Bibliographic Citations

We encourage authors and editors to use the `natbib` and BibTeX packages in combination in order to save a great amount of time and to ensure the effective minimization of error and confusion. There are two broad aspects to bibliographic citations:

1. Compiling a complete list of bibliographic entries

2. Citing bibliographic sources in the text

3. Listing the sources cited at the end of each article

Each of these aspects are dealt with fully in Section 3.4 of the Author's guide (see p. 9). You will need to combine all the separate author-provided `.bib` files into a single master `.bib` file for the book. This is undoubtedly a major task since it will mean ensuring that the reference keys to individual bibliographic sources are unique and unambiguous. The advantage of BibTeX, however, is that, once the reference keys and other bibliographic details in the master `.bib` file have been properly edited, you will get standardized and uniform reference lists at the end of each article with no need to intervene further editorially. In terms of time-saving, bear in mind that a volume can typically contain over a hundred articles, each with its bibliographic list, with no variations in style from author to author.

2.1.3. Adding The Slug to Each Article

By using the `asp2010.sty` correctly, a "slug" will appear in the top left-hand corner of the first page of each article in the volume giving the following information:

- The title of the volume

- The name of the conference series and volume number

- The name(s) of the editor(s)

- The copyright year and holder

The volume number and copyright year will be placed in the source files by ASPCS personnel upon submission of the volume. If you open the main file for this volume `manual2010.tex`, you will see how the slugs for the PDF file of these instructions were generated.

2.1.4. Checking Running Heads

Running heads are the headings along the top of each page of the book. They act as signposts telling readers where they are (*Chicago*). Rigorous consistency of style in running heads will improve the presentation of the volume. The `\markboth{}{}` command in the preamble places author names at the top of the left page and the article title at the top of the right page. The author surnames only should appear (no first names or initials). The ASPCS house style is as follows:

- Use mixed case type for both running heads

- Capitalize significant words in the titles (nouns, pronouns, adjectives, verbs and adverbs, but not articles, prepositions, or conjunctions)

- One author: surname only

- Two authors: surnames separated by "and" (no ampersand)

- Three authors: surnames separated by serial commas, with "and" before the last surname

- More than three authors: first author's surname followed by "et al." (note the stop in "al.")

- Running heads should be included on all papers, indexes and front matter that are longer than one page (e.g., Participants List and Author Index)

Some of the most common errors needing editor correction are long running heads, which cause the page number to appear outside the margin. The page number must line up with the text along the left or right margins, not extending further than the first full line of text. Make sure that running heads are not too long, pushing the page number over the outer margin. If this should occur, then shorten the offending running head so that the page number fits inside the margin.

Running heads should be suppressed on blank pages or pages with full-page illustrations, tables, or photographs. For information on properly placing full page illustrations see §2.2.5 (p. 58). Use the following command to create a blank page without a running head:

```
\bookblankpage
```

This command can fill two roles. First this command will simply add a blank page into the book without any running head or page number. Second, occasionally LaTeX will deem that text on page has ran over onto the next, even when the text appears to have stopped at the bottom of a page. This will cause the system to add an extra page with a running head and page number. The `\bookblankpage` command placed at this location in the scripting will cause the running head and the page number to be suppressed. This is particularly useful before a new part or after figures.

2.1.5.   Conforming Titles, Authors, Affiliations, Abstracts, Sections

Certain aspects of each article must conform to the ASPCS house style. Check titles to ensure they are all capitalized with initial caps (capitalize nouns, pronouns, adjectives, verbs and adverbs, but not articles, prepositions, or conjunctions). In author lists, each name should be separated by commas with an "and" (not an ampersand) before the last author. Superscripts for the affiliations should follow, not precede, the comma. Check affiliations to ensure that only the method described in the author instructions (§3.1.4, p. 5) has been used. Make sure the authors have used the `\begin{abstract}` and `\end{abstract}` commands provided in `aspauthor.tex`, with the text of the abstract running on the same line as `\begin{abstract}`. Also check to ensure sectioning in the paper is logical and uses the proper `\section{}`, `\subsection{}`, `\subsubsection{}`, or `\altsubsubsection{}` commands, using mixed case capitalization.

2.1.6. Including Acknowledgments

Make sure that the author has used the `\acknowledgments` command for this component of the article to ensure the correct format. Any references to telescopes, instrumentation, and public-domain software should be transferred to the relevant part of the main text. Acknowledgments should be used for thanking institutions, groups, and individuals that have directly contributed to the work (e.g., privileged access to privately written code).

2.1.7. Adding the Discussion to an Article

The `asp2010.sty` style file creates a discussion session (to be placed right at the end of the article, *after* the bibliography) the first time you use the `\question{}` command. Answers are supplied using the `\answer{}` command. Here is an example of a discussion session:

Discussion

Barth: Nearly all of the points at the upper end of the $M_{\rm BH}$–σ correlation come from gas dynamics. Are you concerned that there might be systematic offsets between gas-dynamic and stellar-dynamic measurements?

Merritt: This is possible. Actually, two of the galaxies with the highest black-hole masses—NGC 4342 and NGC 3115—have $M_{\rm BH}$ derived from stellar kinematics. As I have emphasized in my talk, the danger of large systematic errors in $M_{\rm BH}$ is probably greatest with stellar kinematical data.

Hüttemeister: If BHs do not quickly merge, but galaxies form by multiple mergers, one might expect many/most BHs to be ejected. Would this be consistent with preserving the $M_{\rm BH}$–σ through hierarchical galaxy formation? Or can this binary scenario be ruled out/constrained by the $M_{\rm BH}$–σ relation?

Merritt: I don't think we know enough about the $M_{\rm BH}$–σ relation to answer this question. If a significant fraction of supermassive black holes are ejected from galaxy nuclei, this will change the mean ratio, $M_{\rm BH}/M_{\rm galaxy}$, implying a discrepancy with the black-hole mass density inferred from integrated quasar light. The current uncertainty in both quantities is consistent with ~1/2 of all black holes having been ejected from nuclei.

This session is generated by the following code:

```
\question{Barth} Nearly all of the points at the upper end of
the $M_{\rm BH}$--$\sigma$ correlation come from gas
dynamics. Are you concerned that there might be systematic offsets
between gas-dynamic and stellar-dynamic measurements?

\answer{Merritt} This is possible. Actually, two of the galaxies
with the highest black-hole masses---NGC 4342 and NGC 3115---have
$M_{\rm BH}$ derived from stellar kinematics. As I have emphasized
in my talk, the danger of large systematic errors in $M_\textrm{BH}$
is probably greatest with stellar kinematical data.

\question{H\"uttemeister} If BHs do not quickly merge, but galaxies
form by multiple mergers, one might expect many/most BHs to be
ejected. Would this be consistent with preserving the
$M_\textrm{BH}$--$\sigma$ through hierarchical galaxy formation?
Or can this binary scenario be ruled out/constrained by the
$M_\textrm{BH}$--$\sigma$ relation?

\answer{Merritt} I don't think we know enough about the
```

```
$M_\textrm{BH}$--$\sigma$ relation to answer this question. If a
significant fraction of supermassive black holes are ejected
from galaxy nuclei, this will change the mean ratio,
$M_\textrm{BH}/M_\textrm{galaxy}$, implying a discrepancy with
black-hole mass density inferred from integrated quasar light.
The current uncertainty in both quantities is consistent with $\sim$1/2
of all black holes having been ejected from nuclei.
```

It is important to leave a space between the last brace of the `\question{}` and `\answer{}` commands and the following text to ensure correct spacing after the colon separating the name from the text.

For proper formatting of the discussions, the `\last` command is appropriately placed in the macros for including files as part of the table of contents entries. If you use an `\include` command you must append the `\last` command manually.

2.2. Assembling the Main Text

2.2.1. Dividing the Main Text into Sessions or Parts

If your volume is to be divided up into separate sessions (and this is recommended as an aid to comprehensibility), then you will need to use the `\part{}` command in `aspvolume.tex`. Just insert the name of the session between the braces. Book parts generated with `\part` are automatically added to the table of contents.

If you would prefer to rename "Part" to, say, "Session", then change the input in the following command located in the preamble of `aspvolume.tex` to read:

```
\asppartname{Session}
```

2.2.2. Inserting the Articles into the Book Template

To include an article in the volume, along with it's associated table of contents entry, use the following command in the `aspvolume.tex` file:

`\tocinsertentry`[*r (optional)*]{*table of contents entry name*} {*table of contents author listing*}{*path and file name*}

The optional *r* in this command will force the entry to appear on a right hand side page. To include a file without raising a table of contents entry, use the following command:

`\tocinclude`[*r (optional)*]{*path and file name*}

To avoid compilation errors at this stage it is necessary to open the author file and remove the following commands before trying to compile the volume:

- `\documentclass[11pt,twoside]{article}`
- All the `\usepackage{}` commands
- `\begin{document}`
- `\end{document}`

Keep an eye out for extraneous author-written definitions in the preamble, which must all have been removed in the copy-editing stage (see p. 47). Now compile `aspvolume.tex`, which in the absence of author-generated LaTeX errors should compile perfectly. In the case of compilation errors open the `aspvolume.log`, which should give some indication of where the problem lies so it can be fixed. See the Troubleshooting chapter (p. 73) for more help on compilation errors.

2.2.3. Resetting the Counters

Sections, footnotes, figures, tables, and equations must all have their counters reset for each article in the volume. The following command, which should appear near the beginning of the author file, resets all of these counters simultaneously, and sets up the article for proper formatting.

```
\resetcounters
```

If this command is absent, then you will need to add it.

2.2.4. Generating the Author Bibliographies with BibTeX

A basic description of how BibTeX works is given in Section 3.4.1 of the author instructions on page 9. Please read this before continuing.

If the authors have done their job properly, you should find that each author file:

- Is accompanied by its own `.bib` file.

- Contains a `\bibliographystyle{asp2010}` and a `\bibliography{`*author*`}` command to generate the bibliographic list.

The author files should then correctly generate the bibliographic list when BibTeXed separately. However, you, the editor, must do a little more work in order to get BibTeX to run correctly for the entire book. Use the following procedure:

Step 1: Create a master `.bib` file for your volume. This will entail standardizing the reference keys to frequently cited articles so that each such article is uniquely identified throughout the volume. This is a time-consuming task and must be carried through to perfection to avoid compilation errors.

Step 2: Verify that each author file really does contain the `\bibliographystyle{asp2010}` and `\bibliography{`*author*`}` commands, and insert them if they are missing. The first command should appear in the preamble and the second at the end of the article.

Step 3: Replace the argument used by the author in the `\bibliography` command with the name (without the `.bib` extension) of the master `.bib` file for the entire volume (*VERY IMPORTANT!*).

Step 4: Open the `aspvolume.tex` file and look in the preamble for the command `\usepackage{chapterbib}`. If it's not there, then type it in. This package is essential to get BibTeX to work on a multi-author document.

Step 5: LaTeX the `aspvolume.tex` file once. This ensures that the `natbib` reference key for each bibliographic entry is included in the `.aux` file.

Step 6: Now from the root directory of the book (the same directory as the `aspvolume.tex` file) run BibTEX on *each* article individually—*NOT* on the `aspvolume.tex` file! This step applies the `asp2010.bst` to the `.aux` and `.bib` files, and writes the bibliography into a separate `.bbl` file for each article, the operation being logged in a separate `.blg` file for each article. The `.bbl` and `.blg` files should both appear in their respective author subdirectories.

Step 7: Run LATEX a second time. The `.bbl` file is now used by LATEX to generate the `\bibitem` commands and bibliographic cross-references are now written into the `.aux` file.

Step 8: Run LATEX a third and final time. LATEX will now store references to the bibliographic citations in the `.aux` file.

Step 5 is clearly the longest to execute and the necessity of having to repeat this step manually should be avoided by creating a macro to carry out this and the other compilation steps automatically.

Worked Example

This document (called `manual2010.tex`) has a bibliographic data master file named `manual2010.bib` and calls the following chapter files (each in a separate subdirectory of a similar name:

```
aspauthor2009.tex
usinggraphicx.tex
asp_process.tex
before_you_start_editing.tex
fast_track_editing.tex
troubleshooting.tex
appendixa.tex
appendixb.tex
```

Each of the above files had a `\bibliography{asp2009}` command (invoking the same master bibliographic data file `asp2009.bib`).

For the sequence of commands required to compile these instructions, including the citations as well as the index, see Appendix E in these instructions.

2.2.5.   Inserting Conference Snapshots

Conference snapshots may be inserted wherever they can comfortably fit at the ends of articles. If the photos are accompanied by text, this should simply be added inside the `figure` environment after the image to ensure that the text always accompanies the float. Don't use the `\caption` command as this will automatically generate the label *Figure n*.

Three commands exist to simplify the addition of conference images. For full page images where there should be no page number or running head, you can use the command:

> `\bookfullphoto[`*options*`]{`*image file path and image file name*`}{`*image caption*`}`

For a landscape view of the photograph, with an optional height adjustment parameter:

> `\booklandscapephoto[`*options*`]{`*image file path and image file name*`}{`*image caption*`}`

For images placed to fill empty space at the end of an article you can use the command:

\bookpartphoto[*options*]{*image file path and image file name*}{*image caption*}

The options in these commands are identical and are the same as those for the \includegraphics command (see section 5.12 on page 30). The most common use of these commands will require no options at all.

For cases where these simple commands do not work, \plotone or \plottwo works well. If more precise placement is required, try \plotfiddle (see p. 27 for help with placement). If you devote a whole page to a photograph (or set of photos) without using the \bookfullphoto command, be sure to suppress the page number and running head. Use \clearpage and \thispagestyle{empty} to begin a new page without a running head and page number.

Photographs must fit within the text margins. When converting to .eps format, ensure that the resolution is maintained (266–600 dpi when scaled is recommended) and that the photo is lightened, if necessary. Photos tend to print darker than they appear on screen.

2.2.6. Checking Margins

All text, figures, tables, and photographs must be within the margins before printing. You may compile a version with margin guides by removing the % sign before this line in aspvolume.tex:

```
%\marginguide
```

3. The Back Matter

3.1. Preparing Indexes Automatically

The value of your volume will be much enhanced with the inclusion of suitable indexes. According to *Chicago*, an index should contain a reference to "every pertinent statement made within the body of the text." That is perhaps a somewhat quixotic goal as far as a proceedings volume is concerned. Nevertheless, an index, if it is to serve any useful purpose, must list more information than is contained in mere keywords. A useful entry density would be about three index entries per page of text. The basic criterion to employ when deciding whether or not to include a subject or other type of index is whether it will provide more information than is contained in the table of contents. This section explains how you can generate all the indexes you will need automatically.

In astronomy, separate indexes are often required for author names, general subject matter, objects, and even molecular/atomic/ionic species lists. Which of these you will need will obviously depend on the subject area covered by your volume. Multiple indexes are easily compiled in LaTeX using the index environment.[1] How to use index for multiple indexing is described in the following subsection.

3.2. Preparing Multiple Indexes

The necessary LaTeX code for indexing is given in the ASP Conference Series book template (textttaspvolume.tex) in the lines:

---

[1]Produced by David Jones. For a full description see Goossens et al. (1994).

```
    \prepareindexes
    .
    .
    \backmatter
%\printnotationlist   % Print the List of Notations
%\printauthorindex    % Print the Author Index
%\printsubjectindex   % Print the Subject Index
%\printobjectindex    % Print the Object Index
%\printspectralindex  % Print the Spectral Index
```

If you are not a LATEXnician, there's nothing to worry about. All you need do is, first of all, decide what kind of indexes you want in the volume; you have the following choices:

- A list of notation

- An author index

- A subject or general index

- An object index

- A molecular/atomic/ionic species index

If these choices do not meet your requirements, then read Section 3.3. The ASP book template (`aspvolume.tex`) contains the instructions for telling LATEX to print out the various indexes in the back matter (see the last fifteen lines of the template). Simply remove the comment mark ("%") at the beginning of each line that corresponds to those indexes you wish to include. For example, to include a general subject index, you would uncomment:

```
%\printobjectindex   % Print the Object Index
```

3.3.   Changing the Name of an Index

Changing the name of, say, the "Subject Index" to "General Index" requires modifying the `asp2010.sty` file. Please consult with the ASPCS office if this is something that is required for your submission.

3.4.   Specifying Items to Index

You will also need to tell LATEX which items are to be indexed. All indexing commands must be placed inside the .tex files for the individual papers. The indexing command to include an author's name in the author index might be placed below the author affiliations in each paper, while the command to include an item in the subject or object index would be placed within the text where the word occurs. The `aspvolume.tex` macro offers five commands to do this, one for each type of index:

- \nindex{*item name*} places an item in the List of Notation
- \aindex{*author name*} places an item in the author index
- \sindex{*subject name*} places an item in the subject index
- \oindex{*object name*} places an item in the object index
- \mindex{*item name*} places an item in the spectral feature index

All you have to do is to insert—at the point in the main text where the word or phrase actually occurs—the relevant command, with the word or phrase that you want indexed between the braces. Unlike the standard indexing commands in LaTeX, enclosing a piece of text within these commands puts the words/phrases in the index without removing them from the body of the text.

The preceding commands assume that the text that you index remains unaltered in the index, but it is not always possible to find a term expressed in exactly the way way in which you'd like it indexed. Since this tends to happen very often, there are two further commands (one for the subject index and the other for the object index) that you will find helpful:

- `\ssindex{}` places an item in the subject index
- `\ooindex{}` places an item in the object index

These commands require that you insert into the braces the terms to be indexed in the way that you would like them to be indexed so that the text of the article remains unchanged.

Another useful feature is the `\proofmodetrue` command, which writes the indexed words in the margins of the page where they occur. This is a very useful feature to invoke when editing, although, of course, the command will need to be commented out again when producing the final copy.

The arguments of the `\nindex{}`, `\aindex{}`, `\sindex{}`, `\oindex{}`, and `\mindex{}` commands have a degree of syntactical flexibility that enables you to format the index entries. Just for the sake of simplicity, we shall look at the ways in which the argument of `\sindex{}` (whatever applies to `\sindex{}` applies equally to the other four indexing commands) can be used to created different index entry formats.

3.4.1. Levels of Indexing

The `index` environment allows three levels of indexing. The syntactical operator ! is used to separate entries, subentries, and subsubentries. Here is an example of the ! operator in action:

A typical set of entries might be:

```
\sindex{dark mass}            (page 100)
\sindex{disks}                (page 94)
\sindex{disks!stellar}        (page 89)
\sindex{disks!stellar!inner}  (page 110)
```

which would produce:

```
dark mass, 100
disks, 94
   stellar, 89
      inner, 110
```

3.4.2. Cross-referencing, Special Characters, and Other Syntactical Features

There is a useful cross-referencing marker, *see*, which is invoked as shown in the following example:

```
\sindex{spiral nebulae|see{galaxies, spiral}}
```

will produce

spiral nebulae, *see* galaxies, spiral

Special symbols and characters should be alphabetized as illustrated rather than by manually editing the index files. Index entries or page numbers may also be italicized, as shown.

```
\sindex{Darwin@\textit{Darwin}}              (page 175)
\sindex{delta T@$\Delta T$}                  (page 20)
\sindex{Dwingeloo Radio Observatory|textit}  (page 113)
\sindex{Delta Cephei@$\delta$ Cephei}        (page 153)
\sindex{Dicke, Robert Henry|nn}              (page 114)
\sindex{Delta Aquarid meteors}               (page 5)
```

will produce:

Darwin, 175
Delta Aquarid meteors, 5
δ Cephei, 153
Dicke, Robert Henry, 114n
ΔT, 20
Dwingeloo Radio Observatory, *113*

The entry for *Dicke, Robert Henry* has an *n* after the number, indicating that the reference is to a footnote on page 114. This footnote marker for the index is defined in the `aspvolume.tex` macro. Italic page numbers might refer, for example, to illustrations.

3.5.   Creating the Indexes

Now that you have added index entries to the files, you will be ready to create the index(es) when the volume is compiled. During compilation, it will be necessary to compile the index before the index will appear at the back of the volume. Whenever the page numbers in the volume change as the editing of the volume progresses, it will be necessary to recompile the indexes to update them.

Once the commands for indexing are in place, run LaTeX twice and you should find (if your book file is called `aspvolume.tex`) that you have generated the following files:

```
aspvolume.adx
aspvolume.idx
aspvolume.mdx
aspvolume.ndx
aspvolume.odx
aspvolume.sdx
```

When you display the compiled file on-screen, you will see that no indexes have been generated yet. If you open the `.adx`, `.idx`, `.mdx`, `.ndx`, `.odx`, or `.sdx` files, you will see that index entries have been listed, even though there is no index yet.

Now type the command

```
makeindex aspvolume
```

This will create two further files: `aspvolume.ilg` and `aspvolume.ind`. So far, there are still no indexes. To get these you will need to generate separate index input files for each index before finally running LaTeX a third time (when the indexes *will*

appear at last). Let's assume we want separate author, object and subject indexes. We then need to tell LATEX to do this by running the following commands:

```
makeindex -o aspvolume.and aspvolume.adx (for the author index)
makeindex -o aspvolume.ond aspvolume.odx (for the object index)
makeindex -o aspvolume.snd aspvolume.sdx (for the subject index)
```

When you do this, you should find that the index related files `aspvolume.and`, `aspvolume.ond`, and `aspvolume.snd` have been created.

Now re-run LATEX and visualize the result on-screen. You should now find that the indexes appear at the end of the volume.

4. The Front Matter

The pages of a book preceding the main text is called the front matter. Front matter pages are numbered with roman numerals. The main text is given arabic page numbers (starting from 1).[2]

The front matter of a volume may consist of all or part of the following elements:

- Half-title page (obligatory)—page i

- Verso of the half-title page (obligatory)—page ii

- Title page (obligatory)—page iii

- Copyright page (obligatory)—page iv

- Dedication (optional)—page v, if present

- Table contents (obligatory)—page v, or page vii if dedication is included

- Foreword (optional)

- Preface (obligatory)

- Acknowledgment (optional, may be included in preface)

- List of organizing committee members (optional, may be appended to the preface)

- Conference logo and/or agenda (optional)

- List of participants (highly recommended)

- Conference photograph (highly recommended)

---

[2]Re-initiating the page numbering of the main text originates mainly from the difficulties publishers and editors faced when pages were deleted or inserted in the front matter; when this occurred the page numbering of the main text had to be re-typeset, which was an expensive business. Computer typesetting, with its automatic page numbering and cross-referencing facilities, has eliminated such difficulties, but it is still felt that continuing the page numbering sequence of the front matter into the main text is aesthetically unappealing.

- Conference photograph caption or key (optional, but recommended)

These will be generated when you compile the `aspvolume.tex` file twice, provided that all templates in the ASPCS macro package are present in your directories and the applicable files have been specified in the `\tocinclude` commands of the `aspvolume.tex` file. Compiling LaTeX once creates the `aspvolume.aux` file and the second time generates a complete `aspvolume.dvi` file for viewing on-screen.

Pages i–iv never vary in their numbering. As editor, you will need to insert several items of information for each of these pages, but this is best done right at the end of the copy-editing process, so how to input the required information is explained in Section 4.7 of this manual.

4.1.   Dedication/In Memoriam Page

This element is optional. In fact, there is very rarely a need for a dedication page in a proceedings. Exceptions would be an emphIn memoriam (as, for example, on page v of volume 390 of the ASP Conference Series) or a dedication to an outstanding researcher in the field covered by the volume. Editors determine whether to include a dedication, to whom the book is dedicated and the phrasing of the dedication. See *Chicago* for more information. The dedication page should appear before the table of contents, on page v.

4.2.   The Table of Contents

The macros allow for automatic compilation of the table of contents. It is necessary to compile `aspvolume.tex` twice before the table of contents will be fully inserted. Thereafter, if there are changes in page numbering or additions, it will also be necessary to run LaTeX twice on the book file to update the table of contents.

In the `aspvolume.tex` file, a `\tableofcontents` command is placed in the front matter which will dynamically create the table of contents. Book parts (those generated with `\part`) are automatically added to the table of contents. However, the editor must add the entries for the individual articles using the `\tocinsertentry` command. The syntax for this command is as follows:

> `\tocinsertentry[`*r (optional)*`]{`*table of contents entry name*`}`
> `{`*table of contents author listing*`}{`*path and file name*`}`

This command is added in the main LaTeX document (`aspvolume.tex`) preceding the inclusion of the article. The optional argument in brackets `[r]` forces the entry to appear on the next available right hand side page or on an odd page number. Typical articles are not required to begin on a page with an odd number, however, there are exceptions. An example of the use of this command follows where one entry is included with the entry appearing on the right hand of the page, and a second entry appearing wherever it falls within the volume:

> ⋮
> `\tocinsertentry[r]{Participants}{}{participants}`
> ⋮

```
\part{Astrometry from Space}
.
.
.
\tocinsertentry{Overview of the Gaia Mission}{M.~A.~C.~Perryman}
{perryman/perryman2}
.
.
.
```

The following important style guidelines must be followed for table of contents entries:

1. The article title *must* match the paper's actual title exactly.

2. All authors *must* be listed in the table of contents. Initials may be used with surnames to save space, if desired.

3. Use ˜ (tilde) between author initials and surnames to keep entire name together in the Table of Contents.

4. Invited speakers may be designated parenthetically after the author's name, as follows:
   `{M.~A.~C.~Perryman (Invited Speaker)}`

4.2.1. Spacing, Page Breaks, and Unnumbered Headings in Table of Contents

Additional unnumbered content may be added to the table of contents using the command:

   `\tocinsertlabel{[`*vspace–optional*`]}{`*Content*`}`

The `vspace` can be any appropriate units known to LaTeX and will add the given amount of spacing into the table of contents prior to printing the given label.

To just add vertical space to the table of contents the following command can be used:

   `\tocinsertvspace{`*vspace*`}`

To add a page break to the table of contents, insert the following command:

   `\tocinsertnewpage`

4.2.2. Checking Table of Contents for Errors

It is important to check the table of contents thoroughly for any errors including the following:

- Extra long roman numerals for front matter which exceed the right margin (uncomment the `%\tocnumwidth{1.70em}` line in the `aspvolume.tex` file, and adjust numerical value as necessary so roman numerals fit within the margins)

- Titles running beyond the line of dots (use `\\` in the text of the title in the `\tocinsertentry` command to enforce line breaks where necessary)

- Hyphenation of words in the titles, which should be avoided (use `\\` to enforce line breaks where necessary)

- Authors' first names or initials separated from their surnames (join the names using the ~ link and use the \\ command to enforce line breaks where necessary)

- Part or session titles appearing alone at the bottom of the page (use \tocinsertnewpage to force a page break before the heading)

- Titles or lists of author names which are incomplete or do not exactly match the paper, although initials may be used throughout the table of contents to save space

- Lack of conformity between table of contents entries (e.g., all invited speakers should be designated in same manner; all author names should use the same format, either initials with surname or full name)

4.3. The Foreword

A foreword comprises a brief introduction by an eminent authority in the field covered by the volume. The author's name may appear on the title page: "With a Foreword by ..." Most conference proceedings don't include a foreword, so `aspvolume.tex` ignores the foreword page by default. To raise a foreword, follow these steps:

1. Open the `aspvolume.tex` file and remove the `%` on the command `\tocinsertentry[r]{Foreword}{}{frontmatter/foreword}`.

2. Save the modified `aspvolume.tex` file.

3. Open the file `foreword.tex` in the `frontmatter` directory.

4. Insert the text of the forward, as instructed in the file.

5. Insert the name of the author of the foreword.

6. Save and close the modified `foreword.tex` file.

7. Add the author name to the middle {} of the `\tocinsertentry{}{}{}` command.

4.4. The Preface

A preface may be regarded as an obligatory feature of any conference proceedings, since it is here alone that the editors will get a chance to make a few remarks concerning why the topic of the conference was considered to be timely when the meeting was held, etc. The preface could include the primary aims of the conference, how the goals were achieved, and an acknowledgment of specific institutions or individuals. It does not need to be signed, as it is typically assumed that it was written by the editors, or it may be signed simply, "The Editors."

To create a preface:

1. Open the file `preface.tex` located in the `frontmatter` directory.

2. Insert the text of the preface, as instructed in the file.

3. Save and close the `preface.tex` file.

4.5. The List of Participants

The file `participants.att` is used as input for the participants list and is called by the file `participants.tex`. To create a list of participants you need to:

1. Open the file `participants.att` located in the `frontmatter` directory.

2. Fill in the four arguments of the command `\attendee{{\sc }}{}{}{}` for each attendee in the following order:

   (a) Attendee's initials and surname (in that order) or, if preferred, full name with surname last (be consistent throughout)

   (b) Attendee's email address

   (c) Attendee's affiliation

   (d) Attendee's working address

3. Delete any remaining blank entries.

4. Save and close the `participants.att` file.

4.6. The Conference Photograph

The group photograph is widely regarded as an essential feature of any conference proceedings—it is also historically useful as a visual record of who attended the meeting. We recommend cropping the photograph to focus mainly on the people, then scaling the image to best fit the page, while remaining within the margins. A single-page group photograph is generally placed on a right-hand, odd-numbered page. If the group of participants is particularly large, we suggest a) splitting the group photograph into two and placing both parts on facing pages, b) taking separate left- and right-hand photographs, or c) using multiple small group photos. Under these circumstances, the images may occupy an even-numbered page and the following odd-numbered page (so that both images are seen when the book is opened).

Some editors include a list of names identifying each participant, either listed in a caption below the photograph using a figure environment or in a separate key, which gives identification through an outline or numbering system on the subsequent odd-numbered page. With a two-page spread, the orientation of both pages should be the same.

If opting for a double-page spread for the group photograph and/or key, the final page of the list of participants must end on an odd-numbered page or, if it ends on an even-numbered page, a totally blank page (i.e., with no running head or page number) must be inserted between it and the conference photograph, as described in step 8 below.

Getting the group photograph into the volume is fairly straightforward. Proceed as follows:

1. Compile the file `aspvolume.tex` twice (to get all the cross-referencing and page numbering right).

2. Display the `aspvolume.dvi` file on the screen and go to the end of the list of participants.

3. Make a note of whether the list ends on an odd- or an even-numbered page.

4. Open the file `conf_photo.tex` located in the `frontmatter` directory.

5. Replace the filename `group1.eps` with your group photo filename in the `\booklandscapephoto` command.

6. For proper placement on the page, you will probably need to adjust the numerical parameters of the `plotfiddle{}{}{}{}{}{}{}` command (consult the author instructions, §5.10 on p. 27, for guidance).

7. Determine if a blank page is needed between the list of participants and the conference photograph. A single-page photo should appear on the right side, on an odd-numbered page. A double-page spread should be on facing pages with the same orientation (bottom of the photo on the right side for landscape items).

8. To insert a blank page, open `participants.tex` and remove the "`%`" symbols before the `%\bookblankpage` command.

4.7. Pages i–iv and Front Cover Illustrations

It now remains for you to complete pages i–iv of the front matter and the front cover. So far, you still have insufficient information to do this, and if you compile the volume at this stage, pages i–iv will be incomplete.

4.7.1. Volume, LCCN, and ISBN Numbers—How to Get Them

To complete the job of copy-editing, during pre-submission as you are uploading your files to the ASPCS server, you will receive the Pre-submission Form. Fill in the form and email it to the publication manager. From this information you will be informed of:

- The volume number

- The year of publication (copyright year)

- The International Standard Book Number (ISBN) and e-book ISBN for your volume

All of these items, including a Library of Congress Control Number (LCCN) will be inserted by ASPCS personnel.

The volume number is needed for the slug, the verso of the half title page (page ii), and the title page (page iii). The year of publication, ISBN, e-ISBN, and LCCN will all appear on the copyright page (page iv).

The following sections describe what should appear on pages i–iv and how to insert that information. First, please see Section 2.1.3 on p. 53 for information on entering the data for the slug.

4.7.2. The Half Title Page (p. i)

The half title page (always page i) contains the main title and a description, with due acknowledgment, of the cover illustration, which is normally a picture or diagram chosen from one of the articles considered to be particularly emblematic of the theme of the meeting. See Section 4.7.6 for more information on front cover illustrations.

To enter the details for your proceedings, open the `aspvolume.tex` file and find the following lines:

```
% HALFTITLE PAGE
\asphalftitle{**INSERT MAIN TITLE**} % IN ALL CAPS
\aspcoverinfo{**Description of Illustration**\\\mbox{}\\}
% In Mixed Case (Initial Caps)

% Editors:  Please be sure to obtain permission from
%   the author and from the publisher if previously published.
% Suggested acknowledgement wording might include the following,
%   depending upon the circumstance:
%
%   Image/drawing/photo courtesy of individual or organization
%     who created the image.
%   Referenced in this volume, author name, p. xxx.
%   By the kind permission of publisher, volume number, author and page number.
%   Copyright held by name and place.
```

Enter the main title in all caps where indicated; include the subtitle only if it is an integral part of the title. Insert the cover illustration description and the source acknowledgment by replacing the portions surrounded by **, including the asterisks. See the note to editors for suggested acknowledgment wording.

4.7.3. The Half Title Verso (p. ii)

The verso of the half title page (always page ii) contains details concerning the ASP Conference Series (editorial staff, the Publication Committee members, etc.).

4.7.4. The Title Page (p. iii)

The title page (always page iii), as the name suggests, contains the title of the conference. Also included are:

- The volume number

- The venue and dates of the meeting

- The names and affiliations of each editor

The volume number is generated automatically once it is inserted into the slug, but you have to key in the title, the details of the meeting, and the names and affiliations of all the editors. You do that in the `aspvolume.tex` file, inserting all the necessary information in the following section of that file (uncommenting lines for meeting information as needed):

```
% TITLE PAGE
\aspmaintitle{**FULL TITLE**} % IN ALL CAPS

% Conference, Meeting, Workshop, Symposium, Colloquium, etc.
%\aspmtgtype{Proceedings of a **Type of meeting** held in}
```

```
%   Meeting type could be conference, symposium, etc.
%\aspmtgvenue{**Where meeting was held**}
%   Spell out fully (Institute, City, State, Country)
%\aspmtgwhen{**When meeting as held**}
%   In 7--11 May 2001 format with no commas

% EDITOR INFORMATION
% Please include Department, Institute, City, State, Country in the affiliation
\aspfirsteditor{**First~Editor's~Name**}
\aspfirstaffil{**First Editor's Affiliation**}

\aspsecondeditor{}
\aspsecondaffil{}

\aspthirdeditor{}
\aspthirdaffil{}

\aspfourtheditor{}
\aspfourthaffil{}

\aspfiftheditor{}
\aspfifthaffil{}
```

4.7.5.   The Copyright Page (p. iv)

This page (always p. iv) contains:

- The publisher's address and contact details

- The year of publication

- A statement concerning the rights of publishing and limitations on reproduction

- The ISBN (International Standard Book Number) for the printed version of the volume

- The ISBN for the electronic version of the volume

- The LCCN (Library of Congress Control Number)

- The printing history of the work

   To enter the ISBN and e-Book ISBN, typically inserted by ASPCS personnel, open the file `aspvolume.tex` and find the following lines:

```
% COPYRIGHT INFORMATION -- Obtained from the ASPCS
\aspLCCN{**LCCN number**}
\aspISBN{**ISBN**}
\aspeISBN{**e-book ISBN**}
```

Now replace the strings "**ISBN**" and "**e-book ISBN**" with their correct values, and then save and close the file. The LCCN number will be inserted once it has been received.

4.7.6. Front Cover Illustrations

The front cover illustration is normally a picture or diagram chosen from one of the articles considered to be particularly emblematic of the theme of the meeting. Select a good-quality illustration for the front cover and save the file separately as an .eps or .tiff file, making it clear that it is for the cover (e.g., `cover.eps`). Single color illustrations are included at rates detailed in the contract. The volume will still retain its standard ASP blue cover design for text and ASP logo, but the illustration will be in color. Single color illustrations may be submitted as a shaded or grayscale image. The printer will do a 10% screen of color, giving the impression of shading, but it is still considered only a single color.

As described in Section 4.7.2, insert a description for the front cover illustration to appear at the bottom of page i. Remember to acknowledge the source of the illustration, and include a page number if the cover image is taken from one of the contributions in the volume. If it has been published previously, obtain permission from the publishing company and the author and include an acknowledgment or recognition after the description of the illustration. Items which might be mentioned include the following:

- Description of image

- "Image courtesy of . . .

- "By the kind permission of . . .

- Volume number, author and page number

- Copyright held by whom and where

For example, the following might be included after the image description: "By the kind permission of Kluwer." If it appears in the current volume but has never been published before, you may simply state: "Referenced in the current volume: Rutten et al., Fig. 1, page 250."

5. The Final Product

If you have followed all the steps in this guide, you are now finally ready to compile the entire volume. Start by deleting all *.aux files. After now compiling the file `aspvolume.tex` three times, recompiling the index (see p. 62), and compiling LaTeX one more time, you should have a complete volume (barring the inevitable LaTeX warnings: see p. 73).

If you have the `\proofmodetrue` command active inside your volume file, then the index entries will be printed in the margin of the pages where the index items occur. This is a very useful feature to take advantage of while you are editing, but when you come to prepare the final version of the volume, remember to comment out the command (i.e., ensure that you have `%\proofmodetrue`) so that the margin entries disappear.

You should now prepare the volume files and upload them to ASP. See the ASPCS online instructions[3] for an overview of the submission process. Complete instructions on uploading your files, accessing the ASPCS Linux server, and compiling your volume on the server are also available online.[4]

After you have compiled the volume on the ASP server, the ASPCS staff will review the volume for aesthetic problems. *Please send the PDF file to the other co-editors for a thorough final review at the same time. Past experience has proven that additional readers help catch editorial errors.* If necessary, take a two-week break from the book before doing a final copy-edit in order to look at it with fresh eyes. Corrections are much more expensive to make once the volume has been sent to the printer.

ASPCS will provide a list of corrections for you to correct in the files on the ASP server. If you wish to check out the files to work on them on your own computer and send changes, you will need to use Subversion software. Find more information on this version control software online. [5] *When all the co-editors are finished with final copy editing and any necessary corrections have been made,* notify the ASP publication manager that the volume is ready to be sent to the printer.

Well done! You have now almost completed your job as an editor; it now only remains for you to check the final proofs. After the volume has been sent to the printer, all corrections must be made by the ASP. Technical corrections will be made free of charge, but editorial corrections will be billed to the editor. You will be asked to check the proofs and supply a list of necessary corrections. At that moment, once the volume has been sent to the printer, the production process (creating proofs and making proof revisions, the printing itself, and the dispatch of volumes to subscribers) takes about three months—less if the volume has been carefully prepared.

The next chapter deals with troubleshooting LaTeX errors and warnings. Please glance through it and use it as a reference.

References

Goossens, M., Mittelbach, F., & Samarin, A. 1994, The LaTeX Companion (Reading, MA: Addison–Wesley)

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[3]`http://www.aspbooks.org/step3_submitting/`

[4]`http://linux.aspbooks.org`

[5]`http://linux.aspbooks.org`

Troubleshooting

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Abstract. A LaTeX document with the complexity of an entire book is rarely compiled without a great many complaints from the compiler. Many of these compiler messages tend to be quite cryptic to those unfamiliar with the inner workings of LaTeX. For this reason we explain here what most of these messages actually mean and how they can be used to guide you in tracking down the offending error. Please consult this chapter whenever such problems arise.

1. Coping with LaTeX Compilation Errors

The chances of compiling a LaTeX document of any length without the compiler spewing out error messages are negligible, so it is useful to have some sort of understanding as to what the error messages and warnings mean, particularly since they may help us to arrive at a quick solution to the error messages and warnings given. Here, we can give only a brief summary of some of the most common error messages and warnings. For a fuller treatment, consult Lamport (1994) and Kopka & Daly (1999).

1.1. Error Messages and Warnings

As already mentioned above, LaTeX is built on a TeX base. Error messages and warnings are consequently either LaTeX or TeX based. Those related to LaTeX are labeled as such so that errors and messages will begin with either

```
! LaTeX Error:
```

or

```
LaTeX [ ] Warning:
```

where the `[ ]` stands for a type of warning (e.g., `Font` for a font warning; the brackets don't appear).

TeX-related errors are not labeled as such and are announced by `!` followed by a description of the error.

TeX-related warnings are recognizable by not being introduced as either LaTeX errors or warnings, and are not preceded by `!`.

Both LaTeX and TeX error announcements end in a ? prompt.

1.2.   Dealing with Errors and Warnings

We shall deal with LaTeX error messages, TeX error messages, LaTeX warnings, and TeX warnings in that order.

LaTeX Error Messages

`Bad math environment delimiter.`
A starting command in math mode (e.g., `\[`) not properly closed (`\]` in this case).

`\begin{ } on input line . . . ended by \end{ }`
The environment declared by `\begin{ }` has been closed by an `\end{ }` command for a different environment. It often occurs that an opening command for an environment such as `enumerate` has not been properly closed, and the compiler will draw your attention to the said environment being closed by, say, and `\end{document}` command. One way to prevent this type of error is always to type the `\end{ }` command a few lines below the corresponding `\begin{ }` command.

`Can be used only in preamble.`
LaTeX has detected a preamble command after `\begin{document}`. Any such offending commands (e.g., `\usepackage{ }`) should be relocated in the preamble before `\begin{document}`. Another cause of this error message is a second `\begin{document}`, which should be deleted.

`Command . . . invalid in math mode.`
Any such offending command must be relocated outside math mode (see §3.8 on p. 16 of the author instructions).

`Environment . . . not found.`
A `\begin{ }` command has called a non-existent (probably misspelled) environment. Check the spelling of the environment and correct it.

`File . . . not found.`
Either the filename has been misspelled or the pathname is inaccessible. Check the spelling and the pathname.

`Illegal character in array arg.`
An illegal character appears in the argument of an `array` or `tabular` environment.

`\include cannot be nested.`
You have tried to use the `\include` command on a file that already has an `\include` command in it. LaTeX does not allow the nesting of the `\include` command.

`Lonely \item--perhaps a missing list environment.`
There is an `\item` command that is not included in any list environment.

`Missing \begin{document}.`
Either the `\begin{document}` command is missing or there is some other problem

with the preamble.

`Something's wrong--perhaps a missing \item.`
Among the possible causes of this message are a missing `\item` command or a missing argument in the `thebibliography` environment.

`This file needs format . . . but this is . . .`
You are using a package or class of document that is incompatible with the LaTeX version that you are running.

`Too deeply nested.`
There are too many nested listing environments. You should be allowed four levels of nesting on any system that accepts LaTeX. It is unwise to try and nest more levels than this.

`Too many unprocessed floats.`
LaTeX saves figures and tables and inserts them while it cuts off pages. It can happen that LaTeX is being asked to save too many floats in the setting up of a given page. Alternatively, a table or figure that cannot be printed might be causing a logjam (LaTeX doesn't print figures or tables out of sequence). You should check the offending figure or table for possible faults. Otherwise, you might also try forcing a different placement of the figure or table using different combinations of `!`, `h` (here), `t` (top), and `b` (bottom) in square brackets with the `\begin{figure}` or `\begin{table}` command (see §5.10 on p. 27 of the author instructions).

`Unknown option . . . for . . .`
There is an illegal option called by either the `\documentclass` or the `\usepackage` command. The option is either misspelled or cannot be used in the version of LaTeX that you are running.

TeX Error Messages

`! Extra alignment tab has been changed to \cr.`
There are too many `&`s in a `tabular` environment.

`! Extra }, or forgotten $.`
Check that you have closed math mode correctly (i.e., that there is no `}`, `\]`, `\)`, or `$` missing).

`! I can't find file '. . .'`
Either you ran LaTeX on a non-existent file or you forgot to enclose the argument of the command `\input` with braces.

`! Illegal unit of measure (pt inserted).`
`! Missing number, treated as zero.`
Either of these messages denotes the same kind of problem. This problem often arises from neglecting to include a unit of measurement after a number in an argument, or by omitting a command argument.

```
! Misplaced alignment tab character &.
```
You have probably keyed in just & instead of \& in the body of the text.

```
! Missing { inserted.
! Missing } inserted.
```
You should probably look earlier in the text than the line indicated in the message.

```
! Missing $ inserted.
```
There are a number of ways this error can message can arise. One way is to forget to close a math mode expression; another occurs if TeX finds a blank line in math mode.

```
! Paragraph ended before . . . was complete.
```
This message appears if a command argument contains a blank line that shouldn't be there. Look for an argument that doesn't have a closing brace.

```
! \TeX\ capacity  , sorry [. . .]
```
TeX has used up all its processing capacity and has aborted the operation.

- The `buffer size` can be exceeded by an over long argument of a sectioning or `\caption` command.

- If you have used the `\hyphenation` command with too long an argument you will exceed the `exception dictionary`. A way round this difficulty is to use insert `\-` between the syllables of words to be broken at the end of lines.

- The `main memory size` can be exceeded in three ways: 1) by defining too many long and complicated commands, 2) by having too many `\index` commands on a single page, and 3) making a page so complicated that TeX's capacity to process it is exceeded. One way to check whether you have genuinely exceeded TeX's capacity is to insert a `\clearpage` command. If TeX now doesn't run out of space, then you really did exceed TeX's capacity and must readjust the complexity of the text. If not, then there is some other error in the file and it is a question of tracking it down. If you did exceed TeX's capacity, you can try inserting a `\newpage` command at a suitable point in the paragraph. This should enable TeX to complete the current page, leaving the rest of the paragraph until the following page.

- If you use too many long cross-referencing labels or new command names names, you might exceed the `pool size`. Use smaller labels and command names. the `pool size` can also be exceeded by forgetting to close the argument of a counter command such as `\setcounter`.

- If you nest certain environments too deeply (e.g., `itemize`) you might exceed the `save size`.

LaTeX Warnings

```
Citation '. . .' on page . . . undefined.
```
You have a `\cite` command that isn't defined by a `\bibitem` command in the

`thebibliography` environment.

`Command . . . invalid in math mode.`
This probably means that you have tried to use `\boldmath`, `unboldmath`, or size-changing commands in math mode. You need to take them outside math mode.

`Float too large for page by . . .`
The table or figure is too large (by the number of points specified) for the page size and is printed on an oversize page by itself.

`Font shape '. . .' in size . . . not available.`
Your computer does not have the font size specified and LaTeX will use another font in its place.

`h float specifier changed to ht`
`!h float specifier changed to !ht`
Where `h` or `!h` has been used the figure or table could not fit on the page concerned so it will be placed at the top of the following page.

`Label '. . .' multiply defined.`
The same argument has been given for two `\label` or `\bibitem` commands. Make sure that all such arguments are always unique.

`Labels(s) may have changed. Rerun to get cross-references right.`
You will tend to get this error if you run LaTeX on a file while you continue to work on it. The error message disappears on rerunning the file (if you don't rerun and examine the input you will find ? in place of your cross-reference labels).

`Reference '. . .' on page . . . undefined.`
There is no `\label` command defining a `\ref` or `\pageref` argument.

`Some font shapes were not available, defaults substituted.`
You have called a font that is not available on your computer.

`There were multiply-defined labels.`
You have used the same argument for two different applications of a `\label` command.

`There were undefined references or citations.`
There is no corresponding `\label` or bibliography entry for a `\ref` or `\cite` command in the text.

`You have requested release '. . .' of LaTeX,`
`but only release '. . .' is available`
You are using a document class or package that is unavailable on the version of LaTeX that you are using. You need the latest version of LaTeX.

TEX Warnings

`Overfull \hbox . . .`

Before you try to correct the text for this warning, check that the offending lines are indeed perceptibly longer than they should be; in most cases this message can be ignored. This message will give you the amount in points (1 pt = 1/72 inch) by which the `\hbox` exceeds the established length of the line. You can usually get round this by forcing hyphenation using `\-` between syllables or the `\hyphenation` command (e.g., `\hyphenation{mo-lec-u-lar}`).

`Overfull \vbox . . .`

This warning indicates that the text extends beyond the bottom of the page. It occurs only when the page has a very large vertical box exceeding the value of `\textheight`.

`Underfull \hbox . . .`

TEX has left-justified a line and left wide interword spaces. This can happen when the `sloppypar` environment or the `\sloppy` declaration is used. It can also arise from using the `\\` or `\newline` command.

`Underfull \vbox . . .`

Sometimes TEX will produce a page with too little text on it and with too much vertical space. You can overcome unwanted pagebreaks with the command `\nopagebreak[`*n*`]`, where *n* is a number between 0 and 4. The higher the number, the greater the compulsion on TEX to avoid a pagebreak.

1.3.   Problems with `.aux` Files

The `.aux` file contains all the information generated by LATEX related to the cross-referencing of bibliographical citations, sectioning, floats, etc. The main volume file, `aspvolume.tex`, calls author `.tex` files using the `\include` command, which initiates `.aux` for each of the author files. These author `.aux` files are closed when the file has finished being processed. When an error message or warning is given, the line number referred to is the line of the document currently being processed. The name of the file being processed can be found in the `.log` file.

1.4.   When All Else Fails: Searching the File Manually

A last resort method of tracking down elusive errors is to eliminate everything in the `.tex` file between `\begin{document}` and the last page of output and rerun LATEX. Keep cutting and rerunning in this way until you find the error.

References

Kopka, H., & Daly, P. W. 1999, A Guide to LATEX (Harlow: Addison–Wesley), 3rd ed.
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Editor's Final Checklist

General

☐ All articles received. If the contribution is incomplete (missing files, etc.), or doesn't compile properly, ask the author for whatever is missing or to correct the submission. Review the articles and contact the author concerning any recommended changes.

☐ All articles refereed, if applicable.

☐ All articles edited for grammar, style and scientific content.

☐ All articles included and compiled into a single volume that compiles without errors or warnings.

☐ Each individual paper, all front matter, and the indexes appear in the compiled volume.

☐ Pre-submission form sent to the editorial assistant (aspcs@aspbooks.org) when within two weeks of suspected submission.

Front Matter

☐ Pages i to iv include all necessary information and are correct.

☐ Front cover illustration has been designated, uploaded to the server, and appropriately acknowledged on page i

☐ Dedication checked.

☐ Table of contents checked for the following:

　☐ proper spacing;

　☐ consistent style of author names (full names or initials/surname) not broken up by any line breaks;

　☐ appropriate line breaks—titles/authors do not run into column for page number;

　☐ no hyphenation in titles;

　☐ appropriate page breaks—part titles appear with at least one paper;

　☐ all front matter and back matter listed on correct page;

　☐ each title matches the paper title exactly;

　☐ all authors listed on table of contents and spelling of names match each paper.

☐ All pagination of front matter is correct and matches the table of contents.

☐ Conference Photo is as large as possible, but within margins; photo key is included, if desired. Photo appears on odd-numbered (right) page if single page layout. If key or separate page caption is included, photo appears on even-numbered (left) page with caption/key on the following page.

☐ One or two blank pages appear between front matter and main matter.

Main Matter

☐ Each paper and entire volume checked for general questions of format and style, including, but not limited to, the following:

    ☐ slugs;

    ☐ capitalization and layout of running heads, titles, and sections/subsections;

    ☐ author names and addresses;

    ☐ abstracts;

    ☐ margins—left, right, top and bottom;

    ☐ font;

    ☐ spacing;

    ☐ session or part headings;

☐ Author and shortened title running heads are correct for the paper.

☐ All page numbers are correct, in sequence, and within margins; no page numbers appear on session heading pages and blank pages.

☐ All tables are correctly positioned within margins, are properly formatted, and are referred to in the text.

☐ All figures are correctly positioned within margins, are minimum 300 dpi resolution, not too dark or too light, do not contain embedded fonts, and are referred to in the text. All labeling or text will be legible with 10% reduction. Questionable images printed, checked and replaced if necessary. Figures do not cover text or running heads, and proper permissions have been granted and acknowledged.

☐ All acknowledgments and discussions are in the proper format.

☐ All references quoted in the text are listed in the bibliography; all items in the bibliography have been referred to in the text. The BibTeX file is complete by containing all references referred to in the volume.

Back Matter

☐ All indexes appear at the end of the volume. Page references for items in indexes have been checked and are correct (if changes have been made to volume, indexes may need to be recompiled).

Submission

Submission at the ASPCS is defined by the entire volume compiling without errors or warnings on the ASPCS server, and that the book is considered ready to print. ASPCS personnel must be notified that the book has been submitted.

☐ Zipped files uploaded to the ASPCS server at the URL provided by ASPCS.

☐ Mailing list form (names, up-to-date street addresses, telephone numbers and email addresses for all recipients of printed book) e-mailed to aspcs@byu.edu.

☐ Volume compiled on the ASPCS server; each page checked for any problems or errors. All necessary changes have been made to files on ASPCS server.

☐ ASPCS notified that the book is prepared for submission and ready for aesthetic review.

Appendix A: LATEX Symbols and Math Mode*

Some Useful LATEX Symbols and Diacritical Signs[1]

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

Arrows

Command	Symbol	Command	Symbol
$\leftarrow$	←	$\Leftarrow$	⇐
$\rightarrow$	→	$\Rightarrow$	⇒
$\leftrightarrow$	↔	$\Leftrightarrow$	⇔
$\hookrightarrow$	↪	$\hookleftarrow$	↩
$\leftharpoonup$	↼	$\lefharpoondown$	↽
$\rightharpoonup$	⇀	$\rightharpoondown$	⇁
$\longleftarrow$	⟵	$\Longleftarrow$	⟸
$\longrightarrow$	⟶	$\Longrightarrow$	⟹
$\longleftrightarrow$	⟷	$\Longleftrightarrow$	⟺
$\downarrow$	↓	$\uparrow$	↑
$\Downarrow$	⇓	$\Uparrow$	⇑
$\updownarrow$	↕	$\Updownarrow$	⇕
$\mapsto$	↦	$\longmapsto$	⟼
$\searrow$	↘	$\nearrow$	↗
$\swarrow$	↙	$\nwarrow$	↖
$\rightleftharpoons$	⇌		

---

*T. J. Mahoney, *Instituto de Astrofísica de Canarias, E-38200 La Laguna, Tenerife, Spain.*

[1]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).

Standard LaTeX 2$_\varepsilon$ Mathematics Commands

Dots

Command	Symbol	Command	Symbol
$\cdot$	·	$\cdots$	$\cdots$
$\vdots$	$\vdots$	$\ddots$	$\ddots$

Greek Letters

Command	Symbol	Command	Symbol
α	α	Ξ	Ξ
β	β	o	o
γ	γ	π	π
Γ	Γ	Π	Π
δ	δ	ϖ	ϖ
Δ	Δ	ρ	ρ
ϵ	ϵ	ϱ	ϱ
ε	ε	σ	σ
ζ	ζ	Σ	Σ
η	η	ς	ς
θ	θ	τ	τ
Θ	Θ	υ	Υ
ϑ	ϑ	ϕ	ϕ
ι	ι	Φ	Φ
κ	κ	φ	φ
λ	λ	χ	χ
Λ	Λ	ψ	ψ
μ	μ	Ψ	Ψ
ν	ν	ω	ω
ξ	ξ	Ω	Ω

Calligraphic Letters

Command	Symbol
$\mathcal{F}$	$\mathcal{F}$
	(uppercase letters only)

Mathematical Symbols

Command	*Symbol*	*Command*	*Symbol*
`$\pm$`	$\pm$	`$\mp$`	$\mp$
`$\times$`	$\times$	`$\div$`	$\div$
`$\ast$`	$\ast$	`$\star$`	$\star$
`$\oplus$`	$\oplus$	`$\ominus$`	$\ominus$
`$\otimes$`	$\otimes$	`$\oslash$`	$\oslash$
`$\leq$`	$\leq$	`$\geq$`	$\geq$
`$\ll$`	$\ll$	`$\gg$`	$\gg$
`$\prec$`	$\prec$	`$\succ$`	$\succ$
`$\preceq$`	$\preceq$	`$\succeq$`	$\succeq$
`$\equiv$`	$\equiv$	`$\propto$`	$\propto$
`$\approx$`	$\approx$	`$\cong$`	$\cong$
`$\sim$`	$\sim$	`$\simeq$`	$\simeq$
`$\neq$`	$\neq$	`$\asymp$`	$\asymp$
`$\parallel$`	$\parallel$	`$\perp$`	$\perp$
`$\doteq$`	$\doteq$	`$\models$`	$\models$
`$\mid$`	$\mid$	`$\bowtie$`	$\bowtie$
`$\partial$`	∂	`$\nabla$`	∇
`$\prod$`	$\prod$	`$\coprod$`	$\coprod$
`$\int$`	$\int$	`$\oint$`	$\oint$
`$\imath$`	$\imath$	`$\jmath$`	$\jmath$
`$\ell$`	ℓ	`$\hbar$`	$\hbar$
`$\wr$`	$\wr$	`$\diamond$`	$\diamond$
`$\amalg$`	$\amalg$	`$\aleph$`	$\aleph$
`$\wp$`	$\wp$	`$\Re$`	$\Re$
`$\Im$`	$\Im$	`$\prime$`	$\prime$
`$\backslash$`	$\backslash$	`$\triangle$`	$\triangle$
`$\sum$`	$\sum$	`$\deg$`	$\deg$
`$\surd$`	$\surd$	`$\|$`	$\|$
`$\angle$`	$\angle$	`$\forall$`	$\forall$
`$\neg$`	$\neg$	`$\infty$`	∞
`$\uplus$`	$\uplus$	`$\natural$`	$\natural$
`$\flat$`	$\flat$	`$\sharp$`	$\sharp$
`$\vee$`	$\vee$	`$\wedge$`	$\wedge$
`$\bigvee$`	$\bigvee$	`$\bigwedge$`	$\bigwedge$
`$\bigtriangleup$`	$\bigtriangleup$	`$\bigtriangledown$`	$\bigtriangledown$
`$\triangleleft$`	$\triangleleft$	`$\triangleright$`	$\triangleright$
`$\top$`	$\top$	`$\bot$`	$\bot$
`$\bigotimes$`	$\bigotimes$	`$\bigoplus$`	$\bigoplus$
`$\odot$`	$\odot$	`$\bigcirc$`	$\bigcirc$
`$\bigodot$`	$\bigodot$	`$\biguplus$`	$\biguplus$
`$\circ$`	$\circ$	`$\bullet$`	$\bullet$
`$\dagger$`	$\dagger$	`$\ddagger$`	$\ddagger$
`$\smile$`	$\smile$	`$\frown$`	$\frown$
`$\clubsuit$`	$\clubsuit$	`$\diamondsuit$`	$\diamondsuit$
`$\heartsuit$`	$\heartsuit$	`$\spadesuit$`	$\spadesuit$

Sets

Command	Symbol	Command	Symbol
$\cap$	∩	$\cup$	∪
$\subset$	⊂	$\supset$	⊃
$\subseteq$	⊆	$\supseteq$	⊇
$\sqsubseteq$	⊑	$\sqsupseteq$	⊑
$\in$	∈	$\ni$	∋
$\vdash$	⊢	$\dashv$	⊣
$\bigcap$	⋂	$\bigcup$	⋃
$\sqcap$	⊓	$\bigsqcup$	⊔
$\setminus$	\	$\notin$	∉
$\emptyset$	∅	$\exists$	∃

Brackets

Command	Symbol	Command	Symbol
$($	(	$)$	)
$[$	[	$]$	]
$\{$	{	$\}$	}
$\lfloor$	⌊	$\rfloor$	⌋
$\lciel$	⌈	$\rceil$	⌉
$\langle$	⟨	$\rangle$	⟩
$/$	/	$\backslash$	\
$|$			$\|$	‖

Functions

Command	Symbol	Command	Symbol
$\sin$	sin	$\arcsin$	arcsin
$\cos$	cos	$\arccos$	arccos
$\tan$	tan	$\arctan$	arctan
$\sec$	sec	$\csc$	csc
$\cot$	cot	$\coth$	coth
$\sinh$	sinh	$\cosh$	cosh
$\tanh$	tanh	$\lim$	lim
$\liminf$	lim inf	$\limsup$	lim sup
$\ln$	ln	$\log$	log
$\min$	min	$\max$	max
$\Pr$	Pr	$\sup$	sup
$\det$	det	$\dim$	dim
$\exp$	exp	$\gcd$	gcd
$\hom$	hom	$\inf$	inf
$\ker$	ker	$\lg$	lg

Examples of Math Commands Taking Arguments

Fractions.

$$\verb|\frac{}{}|:$$

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

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

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.

$$\verb|\underbrace{}| \; and \; \verb|\overbrace{}|:$$

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

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

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

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

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

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

Overline.

$$\overline{}:$$

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

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

Roots.

$$\sqrt[]{}$$

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

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

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

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

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

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

Some Useful Mathmode Macros

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

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

References

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Appendix B: Standard Bibliographic Abbreviations

`AJ`	Astronomical Journal
`ARA&A`	Annual Review of Astronomy and Astrophysics
`ApJ`	Astrophysical Journal
`ApJS`	——, Supplement
`AO`	Applied Optics
`Ap&SS`	Astrophysics and Space Science
`A&A`	Astronomy and Astrophysics
`A&AS`	——, Supplement Series
`ASP Conf. Ser.`	ASP Conference Series
`AZh`	Astronomicheskii Zhurnal
`BAAS`	Bulletin of the AAS
`JRASC`	Journal of the RAS of Canada
`MmRAS`	Memoirs of the RAS
`MNRAS`	Monthly Notices of the RAS
`Nature`	Nature
`Phys.Rev.A`	Physical Review A: General Physics
`Phys.Rev.B`	Physical Review B: Solid State
`Phys.Rev.C`	Physical Review C
`Phys.Rev.D`	Physical Review D
`Phys.Rev.Lett.`	Physical Review Letters
`PASP`	Publications of the ASP
`PASJ`	Publications of the ASJ
`QJRAS`	Quarterly Journal of the RAS
`Science`	Science
`S&T`	Sky and Telescope
`Soviet Ast.`	Soviet Astronomy
`Space Sci.Rev.`	Space Science Reviews
`ZAp`	Zeitschrift für Astrophysik

Appendix C: Hello World

Hello World Author[1]

[1]*Institute of Writers of Hello World Documents, USA*

Abstract.   This is basic LATEX 2$_\varepsilon$ document, written with the instructions of the Astronomical Society of the Pacific Conference Series, showing how to say Hello World.

1.   Hello World

Hello World.

The complete code for this document, minus the listing of the code is:

```
\documentclass[11pt,twoside]{article}
\usepackage{asp2010}

\resetcounters
\bibliographystyle{asp2010}
\markboth{Author}{Hello World}

\begin{document}

\title{Hello World}
\author{Hello World Author$^1$
\affil{$^1$Institute of Writers of Hello World Documents, USA}}

\begin{abstract}
This is basic \LaTeXe\ document, written with the instructions
of the Astronomical Society of the Pacific Conference Series,
showing how to say Hello World.
\end{abstract}

\section{Hello World}
Hello World.

\bibliography{manual2010}
\end{document}
```

Appendix D: Test for Your BibTeX File

Abstract. This is a LaTeX 2$_\varepsilon$ file designed to test the BibTeX files.

Testing BibTeX

Compile this file to test the BibTeXfiles created for this book. You must run LaTeX 2$_\varepsilon$ on this file at least once, then run BibTeX from the base directory of the main `.bib` file, then run LaTeX 2$_\varepsilon$ at least once more.

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Appendix E: Packages Invoked in the ASP Style File

A list of LaTeXpackages that are invoked from the `asp2010.sty` file include:

array: This package extends the array and tabular environments present in the LaTeXsystem.

txfonts: This package invokes the preferred font of the ASP Conference Series volumes.

ifthen: This package allows for some conditional macros within the `asp2010.sty` file.

lscape: This package allows the landscape environment within LaTeXfor figures or tables.

index: This package allows for index creation.

graphicx: This package is required for figure manipulation within volumes.

amssymb: This package allows for several additional symbols.

wrapfig: This package allows for wrapping text around figures.

chapterbib: This package is required for proper use of the BibTeXenvironment.

url: This package formats email addresses and urls within the text.

ncccropmark: This package is one of two that allows for showing margin guides.

watermark: This package is the second of two that allows for showing margin guides.

The inclusion of the **epsf** and the **epsfig** have been discontinued due to the inclusion of the more robust **graphicx** package.

To enable PDF hyperlinks and other PDF options The **hyperref** package may be included within in the main volume LaTeX file if required. For example:

```
\usepackage[ps2pdf,colorlinks=true,bookmarks,backref,...
pdfauthor={J. Barnes},pdftitle={ASPCS}]{hyperref}
```

Appendix F: Compiling these Instructions

The following sequence of commands issued from a command line in the root directory of the document (same directory as `manual2010.tex`) fully compiled these instrustions:

```
latex manual2010
bibtex 1A_preparing_your_article/aspauthor2010
bibtex 1B_using_graphicx/usinggraphicx
bibtex 2B_before_you_start_editing/before_you_start_editing
bibtex 2C_fast_track_editing/fast_track_editing
bibtex 2D_troubleshooting/troubleshooting
bibtex appendix/appendixa
bibtex appendix/appendixb
bibtex appendix/bibtextest
latex manual2010
latex manual2010
makeindex manual2010
makeindex -o manual2010.and manual2010.adx
makeindex -o manual2010.snd manual2010.sdx
latex manual2010
latex manual2010
```

Note that BibTeXwas not required for some of the files because they do not have references in them, in fact, running BibTeXon files with no references will create an error upon final compilation.

Author Index

Subject Index

ASTRONOMICAL SOCIETY OF THE PACIFIC

THE ASTRONOMICAL SOCIETY OF THE PACIFIC is an international, nonprofit, scientific, and educational organization. Some 120 years ago, on a chilly February evening in San Francisco, astronomers from Lick Observatory and members of the Pacific Coast Amateur Photographic Association—fresh from viewing the New Year's Day total solar eclipse of 1889 a little to the north of the city—met to share pictures and experiences. Edward Holden, Lick's first director, complimented the amateurs on their service to science and proposed to continue the good fellowship through the founding of a Society "to advance the Science of Astronomy, and to diffuse information concerning it." The Astronomical Society of the Pacific (ASP) was born.

The ASP's purpose is to increase the understanding and appreciation of astronomy by engaging scientists, educators, enthusiasts, and the public to advance science and science literacy. The ASP has become the largest general astronomy society in the world, with members from over 70 nations.

The ASP's professional astronomer members are a key component of the Society. Their desire to share with the public the rich rewards of their work permits the ASP to act as a bridge, explaining the mysteries of the universe. For these members, the ASP publishes the Publications of the Astronomical Society of the Pacific (PASP), a well-respected monthly scientific journal. In 1988, Dr. Harold McNamara, the PASP editor at the time, founded the ASP Conference Series at Brigham Young University. The ASP Conference Series shares recent developments in astronomy and astrophysics with the professional astronomy community.

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