THE RevMexAA LaTeX MACROS: A GUIDE FOR AUTHORS[1]

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RESUMEN

Este documento describe el uso del "LaTeX document class" `rmaa.cls`, lo cuál está diseñado para preparar artículos para publicación en la *Revista Mexicana de Astronomía y Astrofísica*.

ABSTRACT

This document describes the use of the LaTeX document class `rmaa.cls`, designed for the preparation of papers to be published in the main journal *Revista Mexicana de Astronomía y Astrofísica*.

Contents

1. INTRODUCTION

The version of the `rmaa` document class described in this User Guide is 3.24 (2007/09/14). Its use requires a relatively recent version of LaTeX (post-1994). Some familiarity with the use of LaTeX is assumed in this guide. For the author requiring a general introduction to LaTeX, there are several books (e.g. Lamport 1985; Mittelbach et al. 2004) available, as well as many online tutorials (see list at `http://www.tex.ac.uk/cgi-bin/texfaq2html?label=tutorials*`). This guide aims to cover basic usage of the macros from an author's point of view; more advanced topics are discussed in the "Guide for Editors" (Henney 2000).

Note that the PDF version of this document contains clickable links, both for internal cross-references (e.g., in the Table of Contents) and for external URLs.

2. DOWNLOAD AND INSTALLATION

The latest version of the macros can always be obtained from `http://www.astrosmo.unam.mx/rmaa`. There are three different packages, each designed for a different audience: authors of main journal papers (e.g., `rmaa3.24.tar.gz`), authors of contributions to conference proceedings (e.g., `rmsc3.24.tar.gz`), and editors of the main journal or conference proceedings (e.g., `rmaa_editor3.24.tar.gz`). Please make sure you have the right package. All packages are also provided in `.zip` format, chiefly for the convenience of MS Windows users.

Once you have downloaded the relevant package archive file, move it to the directory (folder) where you wish to work and unpack the archive. The procedure to do this may vary between systems. From the command line on Unix, Linux, or Mac OS X, you can use something like `tar -zxf rmaa3.24.tar.gz`.

In order to test that everything is working, you should compile the example document

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[1] The latest version of the macros should be available from `http://www.astrosmo.unam.mx/rmaa`
[2] `mailto:will@astrosmo.unam.mx`

`rm-journal-example.tex`. You will need to invoke LATEX twice to get the cross references right. The procedure to view and print the document will vary between systems. On Unix, Linux, or Mac OS X, you can use `latex` and `dvips` to generate a postscript file (which can be converted to PDF via `ps2pdf`), or alternatively you can use `pdflatex` to generate a PDF file directly. Note that in the first case, any included graphics must be in EPS format, while in the second case, they must be in PDF, PNG, or JPG format. It is recommended that you omit the file extension from the filenames in the `\includegraphics` command, so that both `latex` and `pdflatex` can automatically find the correct figure file.

Assuming that the example document compiled and printed correctly, you can now start writing your own paper, using the example document as a template.

3. THE PREAMBLE

The first line to appear in your document should be

`\documentclass{rmaa}`

or

`\documentclass[`⟨OPTIONLIST⟩`]{rmaa}`

which sets up the document to use the `rmaa` class, using the default `manuscript` option, which is designed for use by authors submitting papers to the RevMexAA main journal. The following commands can be used after the `\documentclass` command, but before the `\begin{document}`.

3.1. *The title page*

`\title{` ⟨TITLE TEXT⟩ `}`

The `\title` command defines the title of the article. The title text should be entered in mixed case. It will be automatically converted to upper case when typesetting the title page, but remains in mixed case for the index.

`\author{` ⟨NAME#1⟩ `and` ⟨NAME#2⟩
           `\affil{` ⟨ADDRESS⟩ `} }`

The `\author` command defines the authors of the article. Within this command, one can use the `\affil` command to define the authors' affiliation. This will be typeset below the authors' names. The individual authors should be entered in the style `A.~B.~Lastname` to avoid line breaks within the name. Line breaks may be inserted by hand using `\\`. If the authors have various different affiliations, then one should use the alternative form:

`\altaffiltext{1}{`⟨ADDRESS#1⟩`}`
`\altaffiltext{2}{`⟨ADDRESS#2⟩`}`
···
`\author{` ⟨NAME#1⟩ `\altaffilmark{` ⟨LIST#1⟩ `} }`
           ⟨NAME#2⟩ `\altaffilmark{` ⟨LIST#2⟩ `} } }`

Each separate affiliation is specified with the `\altaffiltext` command and will be typeset in a footnote.[3] The first argument to `\altaffiltext` is the number of the footnote and the second argument is the text of the affiliation. The `\altaffilmark` command is then used within the `\author` command to specify a list of footnoted affiliations for each author, e.g. `\altaffilmark{1,3,4}`. Care should be taken that the `\altaffiltext` commands are entered in the correct order, starting with number 1. It is also possible to combine the `\affil` and `\altaffilmark` commands. See the sample document for a more complicated example.

The affiliations entered via the `\affil` and `\altaffiltext` commands should be as brief as possible. Full postal and email addresses are typeset at the end of the article by means of the `\fulladdresses` command (see below).

`\resumen{` ⟨SPANISH TEXT⟩ `}`
`\abstract{` ⟨ENGLISH TEXT⟩ `}`

These two commands define the abstract in Spanish and English. The abstract text may contain several paragraphs, but it should not be overly long, since both abstracts must fit on the first page unless you are using the `manuscript` option. If the author does not use the `\resumen` command, the Spanish text will be set equal to the English text.

`\setkeyword{` ⟨KEYWORD TEXT⟩ `}`

The `\setkeyword` command adds ⟨KEYWORD TEXT⟩ to the list of keywords (or subject headings). The keywords should be entered in alphabetical order in the following style and should be chosen from the list[4] used by ApJ, AJ, A&A, and MNRAS (please do not invent new keywords!). No more than six keywords are allowed.

3.2. *Running headers*

`\shortauthor{` ⟨NAME⟩ `}`
`\shorttitle{` ⟨TITLE⟩ `}`

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[3]Each address should end with a period.
[4]`http://www.journals.uchicago.edu/ApJ/keywords.html`

These define a shortened version of the author and title for use in the running headers. Only the author surnames should be used here (first author et al. if there are more than 3) and "\&" should be used instead of "and".

3.3. *Postal addresses*

The affiliations entered with the \affil and \altaffiltext commands should be quite short — the full postal addresses of the authors should be entered with the \fulladdresses command:

```
\fulladdresses{
    \item ⟨NAMELIST#1⟩: ⟨ADDRESS#1⟩ (⟨EMAIL#1⟩)
    \item ⟨NAMELIST#2⟩: ⟨ADDRESS#2⟩ (⟨EMAIL#2⟩)
    ... }
```

An example of the use of this command can be found in the sample document. These addresses will be typeset at the end of the article. Note that each address should end with a period.

3.4. *Indexing*

The following commands are used in constructing the table of contents and index when the book style option is used to typeset an entire volume:

```
\listofauthors{ ⟨NAMELIST⟩ }
\indexauthor{ ⟨AUTHOR#1⟩ }
...
\indexauthor{ ⟨AUTHOR#N⟩ }
```

where ⟨NAMELIST⟩ is in the format A.~N.~Other, B.~Second, \& C.~Third, while ⟨AUTHOR#1⟩ ...⟨AUTHOR#N⟩ are in the format Other, A. N. There should be one \indexauthor command for each author and it is important that these appear *after* the \listofauthors and \title commands. Although these commands produce no printed output when working on an individual paper, it would save the editors some work if you put them in.

3.5. *Other commands for editors*

The following commands are designed principally for the use of the editors, rather than authors.

```
\SetVolume{ ⟨VOLUME #⟩ }
\SetFirstPage{ ⟨PAGE #⟩ }
\SetYear{ ⟨YEAR⟩ }
\ReceivedDate{ ⟨DATE⟩ }
\AcceptedDate{ ⟨DATE⟩ }
\SetMSnumber{ ⟨MANUSCRIPT #⟩ }
```

These should all be self-explanatory. The first three commands set quantities that are used in constructing the header to the first page. The page range for the article is calculated automatically. This means that LaTeX must be run twice after changing the first page with \SetFirstPage. The \SetMSnumber command is for use with the manuscript option.

4. THE MAIN BODY

The main body of the document should be enclosed within the following pair of commands:

```
\begin{document}
...
⟨ARTICLE TEXT⟩
...
\end{document}
```

The first command after the \begin{document} should be

```
\maketitle
```

This will format title, authors, abstracts and keywords.

Within the main body of the document all standard LaTeX commands can be used. Commands provided by the many optional packages distributed with LaTeX may also be used so long as the package is loaded via the \usepackage command in the preamble. However, authors are requested to avoid using commands that change the document fonts, page layout or other "stylistic" parameters. One should also bear in mind that not all optional packages have been checked for compatibility with the rmaa class.

4.1. *Sectioning commands and cross references*

Authors are encouraged to use the standard LaTeX sectioning commands to subdivide their article:

```
\section{ ⟨TITLE⟩ }
\subsection{ ⟨TITLE⟩ }
\subsubsection{ ⟨TITLE⟩ }
\paragraph{ ⟨TITLE⟩ }
```

These will be automatically typeset in the RevMexAA style. Cross-referencing is made easier by the use of the \label{⟨LABEL⟩} command immediately after each sectioning command, where ⟨LABEL⟩ is any mnemonic string. Elsewhere in the document, the section can then be referred to as \S~\ref{⟨LABEL⟩}. The \label command can also be used with equations and with figures and tables (see below). The style that should be used for cross-references is, for example, Figure 3, Table 1, equation (12), and § 5.1, where the section symbol "§" is produced by the LaTeX command "\S".

4.2. *Tables*

Tables should be entered using the `table` and `tabular` environments in the following way:

```
\begin{table}
\caption{⟨TABLE HEADING⟩ \label{⟨LABEL⟩} }
\begin{tabular}{⟨FORMAT⟩}\toprule
⟨HEADER LINE⟩ \\ \midrule
⟨FIRST DATA LINE⟩ \\
...
⟨LAST DATA LINE⟩ \\ \bottomrule
\end{tabular}
\end{table}
```

In two-column styles, if it is required that the table span both columns, then `\begin{table*}` ... `\end{table*}` should be used instead. Details of more advanced techniques, together with advice on producing high-quality tables is given in Fear (2005).

Footnotes to the table caption, to column headings, or to individual entries can be specified by the `\tabnotemark` and `\tabnotetext` commands. An example of their use is given in the sample document `rm-journal-example.tex`.

Experimental support for multi-page tables is provided via the `longtable` environment. Advice on its use will be provided on request.

4.3. *Figures*

Figures should be included using the standard LATEX figure environment. Authors are encouraged to embed postscript figures directly in their document, for which we strongly recommend the use of the standard LATEX command `\includegraphics`.[5] The extended features of the `\includegraphics` command provided by the `graphicx` package may be used. There is no need to explicitly load this package, it is loaded automatically.

For a single-column figure, the following commands could be used:

```
\begin{figure}\centering
\includegraphics{⟨PSFILENAME⟩}
\caption{⟨FIG CAPTION⟩ \label{⟨LABEL⟩} }
\end{figure}
```

By default, the graphics file will be scaled to the full column width. Alternatively, one of the optional arguments `width`, `height`, or `scale` can be used to set the desired size. Further examples are

given in `rm-journal-example.tex`. For figures that span two columns, one should use `figure*` instead of `figure`. For further information, authors are encouraged to consult Reckdahl (1997), which contains a wealth of detail on the use of imported graphics. More details on the preparation of figures is also given in the "Guide for Editors", q.v.

4.4. *Reference list and citations*

There are three broad methods for dealing with citations.

4.4.1. *Semi-automatic method*

This is currently the recommended method for most authors. The reference list at the end of the article is constructed by hand (preferably using entries generated by ADS), whereas the in-text citations are handled automatically using commands from the `natbib` package.[6]

How to enter the reference list The reference list should appear at the end of the article and should be formatted using the standard LATEX `bibliography` environment as follows:

```
\begin{thebibliography}
\bibitem[⟨AUTHORYEAR⟩]{⟨KEY⟩} ⟨TEXT⟩
...
\end{thebibliography}
```

The required format of the `\bibitem`s is best explained by examples:

```
\bibitem[Garc{\'{\i}}a-D{\'{\i}}az \&
  Henney(2007)] {2007AJ....133..952G}
  Garc{\'{\i}}a-D{\'{\i}}az, M.~T., \&
  Henney, W.~J.\ 2007, \aj, 133, 952

\bibitem[Henney et al.(2007)]
  {2007AJ....133.2192H} Henney, W.~J.,
  O'Dell, C.~R., Zapata, L.~A.,
  Garc{\'{\i}}a-D{\'{\i}}az, M.~T.,
  Rodr{\'{\i}}guez, L.~F., \& Robberto,
  M.\ 2007, \aj, 133, 2192

\bibitem[Henney(2007)]
  {2007dmsf.book..103H} Henney, W.~J.\
  2007, in Diffuse Matter from Star Forming
  Regions to Active Galaxies: A Volume
  Honouring John Dyson, Edited by
  T.~W. Hartquist, J.~M. Pittard, and
  S.~A.~E.~G. Falle. Series:
  Astrophysics and Space Science
```

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[5]Historically, many different macro packages for the inclusion of postscript figures have been in use because older versions of LATEX lacked a standard interface (e.g. `epsf`, `psfig`). There is no longer any reason to use these.

[6]The `natbib` package is loaded and configured automatically by `rmaa.cls`.

```
Proceedings. ISBN-10 1-4020-5424-6
(Dordrecht: Springer), p.103
```

By far the easiest way of obtaining the `\bibitems` is by using ADS. Select the references you need by ticking the boxes in the "Query Results from the ADS Database" list. Then go down to the section that says "Retrieve the above records in other formats or sort order" and choose "AASTeX format" from the first drop-down list. If you have selected many references at once, then you may also want to choose "Sort by first author name". The resultant `\bibitems` can then be cut-and-pasted into your paper. In the case of references to papers in common astronomy journals, the ADS results are nearly always fine. For references to books and conference proceedings, the quality is very variable and the diligent author may need to edit the result to conform to the standard style (see recent issues of RevMexAA or RevMexAA(SC) for examples).

If you have long FTP or HTTP addresses in your reference list (or anywhere else), then you should use the `\url` command, which avoids problems with special characters in the address (such as ~) and allows LATEX to choose sensible linebreaks:

```
\url{http://www.astroscu.unam.mx/~rmaa}
```

How to cite references in the text For a citation used as a noun in a normal sentence, one should use `\citet{⟨KEY⟩, ⟨KEY⟩, ...}`, where each ⟨KEY⟩ matches that of a `\bibitem` in the `thebibliography` environment:

```
\dots following the excellent suggestion
of \citet{2007AJ....134.1679O}.
```

. . . following the excellent suggestion of O'Dell et al. (2007b).

For a parenthetical citation, one should use `\citep{⟨KEY⟩, ⟨KEY⟩, ...}`:

```
The subject of photoionized stellar jets
\citep{2007AJ....133..952G,
2007AJ....133.2192H} is a fascinating
one.
```

The subject of photoionized stellar jets (García-Díaz & Henney 2007; Henney et al. 2007) is a fascinating one.

A useful quick-reference sheet for the `natbib` commands is Daly (2007), which explains more complicated techniques, such as in the following example:

```
However,
\citeauthor{2007AJ....133.2192H}'s
```

```
model fails to consider (pace
\citealp{2007AJ....133.2343O}) the
incontrovertible argument of
\citet[eq.~13]{2007A&A...471..193S},
```

```
which renders futile any such effort
\citep[see also][]{2007AJ....134.1679O}
and which should already have been well
known in \citeyear{2007AJ....133.2192H}.
```

However, Henney et al.'s model fails to consider (pace O'Dell et al. 2007a) the incontrovertible argument of Stasińska et al. (2007, eq. 13), which renders futile any such effort (see also O'Dell et al. 2007b) and which should already have been well known in 2007.

4.4.2. *Fully automatic method*

This method is currently experimental, although it seems to work fine. The in-text citations are specified using `natbib` commands in exactly the same way as in the previous method, but now BIBTEX is used to automatically generate the reference list too. The big advantage of this method is that it guarantees consistency between the in-text citations and the reference list and ensures that the reference list is in the correct order.

You will need one or more `.bib` files that contain all your references in BIBTEX format. Instead of using the `thebibliography` environment, you simply put

```
\bibliography{⟨BIBFILE⟩, ⟨BIBFILE⟩, ...}
```

at the end of your document, where each ⟨BIBFILE⟩ is the name of a `.bib` file (but without the `.bib` extension). There is no problem if the ⟨BIBFILE⟩s contain many more references than you will use—BIBTEX will just select the ones that you cite.

One very easy way to create a useful `.bib` file is as follows. Create a "Private Library" in ADS for your project and populate it with every paper that might conceivably be relevant. This can be done in various stages, starting of with relevant keyword, object, or author searches. Once you have saved a few core papers, you can "grow" the library by retrieving all the references in or citations to the papers already in the library. Once you have a few hundreds (or thousands) of papers in the library, then you can dump it all in BIBTEX format by pressing the "Select all records" button, choosing "BIBTEX reference list" as the return format, and then pressing the "Retrieve selected records" button.

Using this method requires an extra step when compiling your document. After adding new cita-

tions you have to run LATEX, BibTEX, then LATEX again.

4.4.3. *Manual method*

Of course, it is also possible to enter both the reference list and the in-text citations by hand. However, this is tedious and error-prone, so it is not recommended.

4.5. *Special commands*

For the convenience of authors, special commands for astronomical journals and some common astronomical and mathematical symbols are provided. These are the same as those provided by the AAS macros (Biemesderfer & Barnes 1995).

4.6. *Appendices*

If you have appendices to your article, you can use something like the following:

```
\begin{appendices}

  \section{First Appendix}
  \label{sec:ap-A}

  Text of first appendix.

  \section{Second Appendix}
  \label{sec:ap-B}

  Text of second appendix.

\end{appendices}
```

This goes after the acknowledgments but before the bibliography. Equations in appendices will be labeled A1, A2, B1, B2, etc.

REFERENCES

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