






# Example Article for Turkish Journal of Astronomy and Astrophysics

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## Abstract

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**Key words:** keyword1 – keyword2 – keyword3

## 1 First Section Title

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### 1.1 First Section - First sub-Section Title

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#### 1.1.1 First Section - First sub-sub-Section Title

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**First Section - First sub-sub-Section - Paragraph** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

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## 2 Fine tuning the manuscript

A new command is introduced to collect all astronomical objects into a database: `\Aobj{Cyg X-1}`. The following code “Andromeda galaxy (`\Aobj{M31}`) ...” will produce “Andromeda galaxy (M31) ...” and the object (M31) will be added to the object database.

Links to web pages can be given within the text using `\url` command: The command `\url{https://tad.org.tr}` will produce <https://tad.org.tr>. For longer URLs you can merge the URL into text using the web format. The command `\href{https://dergipark.org.tr/tjaa}{TJAA}` will produce a link to [TJAA](https://dergipark.org.tr/tjaa).

Some of the common commands, properties and habits:

|                    |   |
|--------------------|---|
| <code>\,</code>    | a thin space, e.g. between numbers or between units and numbers; a line division will not be made following this space  |
| <code>--</code>    | en dash; two strokes, without a space at either end; put in between numbers to increase readability   |
| <code>┌--┐</code>  | en dash; two strokes, with a space at either end  |
| <code>-</code>     | hyphen; one stroke, no space at either end  |
| <code>\$-\$</code> | minus, in the text <i>only</i>  |
| <i>Input</i>       | <code>21\,\$^{\circ}\\$C</code> etc.,<br><code>Dr h.\,c.\,Rockefeller-Smith \dots</code><br><code>1950--1985 \dots</code><br><code>this -- printed on a computer</code> |
| <i>Output</i>      | <code>21 °C</code> etc., <code>Dr h.c.Rockefeller-Smith ...</code><br><code>1950–1985 ...</code><br><code>this – printed on a computer</code>                           |

## 3 Special text typefaces

Normal type (roman text) need not be coded. Three different command emphasizes the text:

|                               |   |
|-------------------------------|---|
| <code>{\itshape Text}</code>  | <i>Italicized Text</i>  |
| <code>{\em Text}</code>       | <i>Emphasized Text – if you would like to emphasize a definition within an italicized text (e.g. of a theorem) you should code the expression to be emphasized by \em.</i>  |
| <code>{\bfseries Text}</code> | <b>Important Text</b>   |
| <code>\vec{Symbol}</code>     | Vectors may only appear in math mode. The default L <sup>A</sup> T <sub>E</sub> X vector symbol has been adapted <sup>1</sup> to LLNCS conventions.<br><code>\$\$\vec{A} \times \vec{B} \cdot \vec{C}</code><br>... yields $A \times \vec{B} \cdot C$ |

## 4 Astronomical Macros

List of short cuts for astronomy. Note that all of the macros listed below are math mode safe i.e. `$12\degr$` and `12\degr` will produce the same text.

|                          |                         |  |
|--------------------------|-------------------------|--|
| 12 <code>\fd</code>      | 34 <code>\fh</code>     | 56 <code>12<sup>d</sup>34<sup>h</sup>56</code> |
| 12 <code>\fm</code>      | 34 <code>\fs</code>     | 56 <code>12<sup>m</sup>34<sup>s</sup>56</code> |
| 12 <code>\fdg</code>     | 34 <code>\fas</code>    | 56 <code>12°34'56</code>                       |
| 12 <code>\fp</code>      | 3456                    | 12 <sup>p</sup> 3456                           |
| 12 <code>\farcmin</code> | 34 <code>\farcs</code>  | 56 <code>12'34''56</code>                      |
| 12 <code>\arcmin</code>  | 34 <code>\arcsec</code> | 56 <code>12'34''56</code>                      |

|                                     |   |
|-------------------------------------|---|
| <code>1\degr</code>                 | $1^\circ$                                 |
| <code>1\Fd 2\Fh 3\Fm 4\Fs</code>    | $1^d2^h3^m4^s$                            |
| <code>1\Fdg 2\Fam 3\Fas</code>      | $1^\circ2'3''$                            |
| <code>1 {M,R,L,T}\solarxxx</code>   | $1 M_\odot 1 R_\odot 1 L_\odot 1 T_\odot$ |
| <code>1 {unit}\perxxx</code>        | $g^{-1}m^{-2}s^{-3}$                      |
| <code>\renkBV \renkEBV</code>       | $(B-V) = E(B-V)$                          |
| <code>\renkUB \renkEUB</code>       | $(U-B) = E(U-B)$                          |
| <code>12 \micron \ion{H}{II}</code> | $12\mu m$ H II                            |

## 5 Astronomical Journals

List of journal abbreviations used in TJAA references. Note that to fit into the page only a partial list shown here.

|  |   |
|--|---|
| <code>\aap \aapr \aaps \aat \actaa \afz \aj \ao \apj \apjl \apjs \aplett \apss \araa \arep \aspc \azh \baas \caa \cjaa \iaucirc \icarus \japa \jrasc \mnras \na \nar \nat \pasa \pasj \pasp \planss \procspie \qjras \rmxaa \sci \skytel \solphys \sovast \ssr \tjaa \an \psj \vark</code> | A&A • A&ARv • A&AS • A&AT • Acta Astron. • Afz • AJ • Appl. Opt. • ApJ • ApJ • ApJS • Astrophys. Lett. • Ap&SS • ARA&A • Astron. Rep. • ASP Conf. Ser. • Azh • BAAS • Chinese Astron. Astrophys. • Chinese J. Astron. Astrophys. • IAU Circ. • Icarus • J. Astrophys. Astron. • J. R. Astron. Soc. Canada • MNRAS • New Astron. • New Astron. Rev. • Nature • Publ. Astron. Soc. Australia • PASJ • PASP • Planet. Space Sci. • Proc. SPIE • QJRAS • Rev. Mex. Astron. Astrofis. • Science • Sky & Telesc. • Sol. Phys. • Soviet Ast. • Space Sci. Rev. • Astron. Nachr • The Planetary Sci.J. • Turkish J.A&A<br>ve diğ. |
|--|---|

## 6 Footnotes

### Sample Input

Text with a footnote`\footnote{The footnotes are numbered automatically.}` and text continues ...

### Sample Output

Text with a footnote<sup>1</sup> and text continues ...

## 7 Lists

### Sample Input

```
\begin{enumerate}
  \item First item
  \begin{enumerate}
    \item First nested item
  \end{enumerate}
  \item Second item
\end{enumerate}
```

### Sample Output

- a. First item
  - i. First nested item
- b. Second item

<sup>1</sup> The footnotes are numbered automatically.

**Figure 1.** This is the caption of the figure displaying nothing leaving a vertical space of 2.5 cm. If you need to use cited references in caption use the following command: `\protect\citep{author2021}`.

## 8 Floating environments: Figures & Tables

They should be inserted after (not in) the paragraph in which the figure is first mentioned. They will be numbered automatically. Note that figures (and tables) become floating environments if they are not attached to main text. Therefore if you want to place the figure (or table) correctly **do not add empty lines** before `\begin{figure}` or `\begin{table}`.

If you have many floating blocks (figures or tables) you have two choices:

- Push all floats to the end **with no space between the blocks** in the same order as they are referenced;
- Start arranging the location of floats from the very first float putting and fixing its location couple of paragraphs before it is referenced first. This way the floats will be  $\pm 1$  one page away from its expecting location.

The image file formats are limited to only PNG or PDF types.

### 8.1 Figures

To leave the desired amount of space for the height of your figures, please use the coding described below. Please note that “x” in the following coding stands for the actual height of the figure:

```
\begin{figure}
\vspace{x cm}
%           (Use [ ] for short caption)
\caption[ ]{...text of caption...}
\end{figure}
```

#### Sample Input

```
\begin{figure}
\vspace{2.5cm}
\caption{This is the caption of the figure
displaying nothing leaving a vertical space
of 2.5 cm.
```

If you need to use cited references in caption use `\protect` command:

```
\protect\citep{author2021}.}
\end{figure}
```

**Sample Output.** Figure is placed at the top of the column

**Table 1.** Critical  $N$  values

| $M_{\odot}$ | $\beta_0$ | $T_{c6}$ | $\gamma$ | $N_{\text{crit}}^L$ | L   | C   | R   |
|-------------|-----------|----------|----------|---------------------|-----|-----|-----|
| 30          | 0.82      | 38.4     | 35.7     | 154                 | 1   | 1   | 1   |
| 60          | 0.67      | 42.1     | 34.7     | 138                 | 12  | 12  | 12  |
| 120         | 0.52      | 45.1     | 34.0     | 124                 | 123 | 123 | 123 |

## 8.2 Tables

Table captions should be treated in the same way as figure legends, except that the table captions appear *above* the tables.

### Sample Input

```
\begin{table}
\caption{Critical  $N$  values}
\begin{tabular}{rlllllC{7mm}@{}R{7mm}}
\hline % No need to use \noalign{\smallskip}
 $\mathrm{M}_{\odot}$  &  $\beta_0$  &  $T_{\mathrm{c6}}$  &  $\gamma$  &  $N_{\mathrm{crit}}^L$  & L & C & R \\
\hline
30 & 0.82 & 38.4 & 35.7 & 154 & 1 & 1 & 1 \\
60 & 0.67 & 42.1 & 34.7 & 138 & 12 & 12 & 12 \\
120 & 0.52 & 45.1 & 34.0 & 124 & 123 & 123 & 123 \\
\hline
\end{tabular}
\end{table}
```

**Sample Output:** Table is placed at the top of this column. To place flowing text correctly, start a new paragraph by pressing enter twice after the table.

Two important notes: (1) 4 new columntypes introduced (P, L, C, R) – last three shown here. For example `C{1cm}` centers the content of the column to 1 cm width. (2) If you use `dcolumn` option for `tjaa` style, 3 new column types (namely, `d . .`), can be used to align the numbers in the column content.

For further information you will find a complete description of the tabular environment on p. 62 ff. and p. 204 of the *L<sup>A</sup>T<sub>E</sub>X User's Guide & Reference Manual* by Leslie Lamport.

## 9 Symbols and Characters

### Special Symbols

You may need to use special signs. The available ones are listed in the *L<sup>A</sup>T<sub>E</sub>X User's Guide & Reference Manual* by Leslie Lamport, pp. 41 ff. We have created further symbols for math mode (enclosed in \$):

```
\grole yields  $\gtrsim$  \getsto yields  $\Leftrightarrow$ 
\lid yields  $\lesssim$  \gid yields  $\geq$ 
```

## 10 Acknowledging other parties

Scientific works usually have to acknowledge many different institutions, works, individuals, software etc. In a proper acknowledgment, these should be listed according to the importance and contribution, starting from highest to lowest, and group them: projects, software, institutions, people.

Note also that acknowledgment section is not numbered and should be the last section before references:

### Sample Input

```
\section*{Acknowledgment}
```

## 11 Required Disclosures

Authors are now required to disclose two extra information: (1) Conflict of Interest, and (2) Contribution Percentage among the authors. Authors should typeset the following section after the acknowledgement. Note that, the following Turkish equivalents should be used for Turkish text, in order of appearance: Açıklamalar, Çatışma Beyanı, Katkı Oranı.

```
\section*{Disclosures}
\paragraph{Conflict of Interest:} All authors
declare that they have no conflicts of interest.
\paragraph{Contribution:} All authors contributed
equally in writing the manuscript.
```

If authors have conflict of interests then they could use the following conflict of interest templates as examples:

- X has received a research grant from FIRM.
- X is an employee of FIRM.
- X received part time salary for this work.
- X is on board of JOURNAL.
- X has a patent pending for PATENT.
- X declares no conflicts of interest.

## 12 References

There are two ways to enter citations in  $\LaTeX$ : (1) Citing with plain text inline in the manuscript using *pre-formatted list of references*; (2) Referring to a permanent database of references and calling with BibTeX tools. We recommend the later one to our colleagues, especially if you are a beginner in writing scientific papers. In this manuscript both of them will be explained.

There are three different citation presentation exists. However, in this manuscript, only "Author-Year" style which is widely used in astronomy, will be explained and therefore implemented in TJAA. The other two are: number only and letter-number.

Entering citations and typesetting references are explained in "*LaTeX User's Guide & Reference Manual*, Leslie Lamport, s. 71." In this manuscript only a simplified will be used.

## 12.1 Author-Year System

Referenced cited within the text in parenthesis which contains author and year. Some of the examples of this usage are as follows: (Smith 1970, 1980), (Ekeland et al. 1985, Theorem 2), (Jones and Jaffe 1986; Farrow 1988, Chap. 2). If the author is part of the text only the year could be put into the parenthesis: eg. Ekeland et.al. (1985, Section.2.1) Reference list should include all the cited word and it has to be order with the surname. If there are more than one work for the same author then they should be listed with the following rules:

- a. Single Author: List is sorted by date.
- b. Author and the same other authors: List is sorted by date.
- c. Author and different other authors: List has to be sorted alphabetically by the other authors.

If there are more than one cited work for the same author(s) then each work has to be suffixed with sequential letter, "a", "b" etc. eg. (Smith 1982a), (Smith 1982b), (Ekeland et al. 1982c).

## 12.2 Author-Year commands

For the following `\bibitem[]{}{}` command created by BibTeX the following list of citation usage is available through out the manuscript:

```
\bibitem[Auth1 et al. (2021)Auth1, Auth2,
and Auth3]{key21}...
```

```
\citet{key21} Auth1 et al. (2021)
\citep{key21} (Auth1 et al., 2021)
\citet*{key21} Auth1, Auth2, and Auth3 (2021)
\citep*{key21} (Auth1, Auth2, and Auth3, 2021)
```

```
\citet[txt1]{key21} Auth1 et al. (2021, txt1)
\citep[txt1]{key21} (Auth1 et al., 2021, txt1)
\citep[txt1] []{key21} (txt1 Auth1 et al., 2021)
\citep[txt1][txt2]{key21} (txt1 Auth1 et al., 2021, txt2)
```

```
\citealt{key21} Auth1 et al. 2021
\citealp{key21} Auth1 et al., 2021
\citealt*{key21} Auth1, Auth2, and Auth3 2021
\citealp*{key21} Auth1, Auth2, and Auth3, 2021
```

```
\citetext{priv.\ comm.} (priv. comm.)
```

**This system has been integrated into TJAA style and you don't need to change anything in your manuscript; just continue using your habit of citing.**

### IMPORTANT NOTE:

Below you will find two different methods. Choose one type of citing and referencing and delete the other section completely.

### 12.3 Author-Year: Inline with text

You have to assign an alias (embraced with curly brackets) to each reference you put in 'References' section with `\bibitem` command. You then use `\cite{alias}` command to refer to the reference inline within the text.

Note that in this 'inline' method, author has full control of the format of `\bibitem`. However, since entries are written and maintained by hand, copy-pasting from other source files might create inconsistencies which would not easy to resolve for large number of entries.

#### Example-1 – Citing a reference: Input

The results in this section are a refined version of `\citet{clar:eke1}`; the minimality result of Proposition-14 was the first of its kind.

**Example-1 – Citing a reference: Output** "... refined version of **Clarke ve Ekeland (1982)**; the minimality...".

#### Example-1 – Building References: Input

```
%      (don't forget {} string at the end)
\begin{thebibliography}{}
.
.
\bibitem[Clarke ve Ekeland, 1982]{clar:eke1}
Clarke, F., Ekeland, I.:
Nonlinear oscillations and boundary-value
problems for Hamiltonian systems.
Arch. Rat. Mech. Anal. {\bfseries 78} (1982)
315--333
.
.
\end{thebibliography}
```

#### Example-1 – Building References: Output

##### References

Clarke, F., Ekeland, I.: Nonlinear oscillations and boundary-value problems for Hamiltonian systems. Arch. Rat. Mech. Anal. **78** (1982) 315–333

### 12.4 Author-Year: with BIBTEX

The only difference of this method from the *inline* method is that `\bibitem` lines are generated automatically using an external command (`bibtex`). Therefore, format of `\bibitem` lines will also be standard too. The standard for TJAA is adapted from Springer's BIBTEX style and it is available through `tjaa.bst` file and the command `\bibliographystyle{tjaa}` will handle the rest of the configuration.

Citation in this example will be exactly the same as in the previous one.

#### Example-2 – Citing a reference: Input

The results in this section are a refined version of `\citet{clar:eke2}`; the minimality result of Proposition-14 was the first of its kind.

**Example-2 – Citing a reference: Output** "... refined version of **Clarke & Ekeland (1982)**; the minimality...".

#### Example-2 – Building References: Input

```
\bibliographystyle{tjaa}
\bibliography{Example}
```

#### Example-2 – Building References: Input Example.bib file.

```
@ARTICLE{clar:eke2,
author = {{Clarke}, F. and {Ekeland}, I.},
title = "{Nonlinear ... systems.}",
journal = {Arch. Rat. Mech. Anal.},
year = 1982,
volume = 78,
pages = {315-333},
tjaanote= {Prepared for TJAA example.
Note: Even though each keyword=value
ends with comma in previous lines,
this line doesnt.}
}
```

#### Example-2 – Building References: Output

##### References

Clarke F., Ekeland I., 1982, Arch. Rat. Mech. Anal., 78, 315

### 12.5 Future of Bibliography Management

Users might find it to difficult to maintain a bibliographic reference list in a special formatted file with `.bib` extension. However, nowadays all bibliographical databases provide `.bib` outputs. Then, you just have to refer to these files using the following command: `\bibliography{tjaa2021}`.

Even though maintaining "a reference database" means to combine a few different concepts together, once it is done for the first time, later usage would be handled by combining different `.bib` files in a single command. For example, use the following command to combine your previous TJAA submissions: `\bibliography{tjaa-M1,tjaa-2018,tjaa-2021}`.

In today's capabilities, please consider exporting your bibliographical databases stored in `.bib` files into a modern style software; one of which is **Zotero** and it is also integrated

## 6 *F. Author et al.*

in [Overleaf](#), a web based tool to collaboratively write in  $\text{\LaTeX}$ , store, share and produce articles. TJAA style is available in [Overleaf](#).