INAF-TAC Proposal Preparation Manual

AOT48 period (October 2023 – March 2024)

These pages describe the use of the TACAOT48 LaTeX document style, which has been designed to enable a fully electronic preparation of applications for observing time at the Telescopio Nazionale Galileo and REM telescope.
Our package consists of:

- the `tacAOT48.sty` LaTeX style file;
- a template proposals (`tacAOT48.tex`), which can be edited by the user;
- an example of a filled proposal (`tacAOT48exa.tex`);
- two encapsulated postscript files as an example of embedded figures (loaded when `tacAOT48exa.tex` is processed with LaTeX).
- this help file in pdf format (`instr_AOT48.pdf`).

To have a first idea of how the system works you may process with LaTeX the file `tacAOT48exa.tex` which will produce an example proposal. Next, you may edit the file `tacAOT48.tex`, filling the fields with the text of your proposal. Each field in `tacAOT48.tex` is accompanied by some lines of help (any line starting with a '`%`' is a comment). In the following are detailed instructions on how to fill in your application form.
The first non-commented lines of your file are:

```
\documentclass{article}
\usepackage{tacAOT48}
\usepackage{graphicx}
\begin{document}
```

and must not be modified.
All the text must be typed below these and before the `\end{document}` command.
Please **do not** modify in any way the macros, **do not** edit the `tacAOT48.sty` style file, **do not** modify the layout or formatting of a page (i.e. avoid commands like `\textheight`, `\textwidth`, `\hoffset`, etc.) and be extremely careful in using your own macros and definitions.
Most commands of the macros consist of LaTeX boxes in which you insert the desired pieces of text. A box is defined by a command which has a mnemonic name (case-sensitive) and one or more arguments. Each argument has to be enclosed between curly braces: `{argument1}` `{argument2}`.

In the following there is a description of all the commands contained in the template `tacAOT48.tex`.

Page 1

- **Category**

  The command

  ```
  \category{...category code (A, B, C or D)}
  ```

  defines the category according to the list given in appendix 1. Please note that only one category is allowed.

- **1. Title**

  Write the title of your proposal, which should be as concise as possible, using

  ```
  \title {... text of the title ...}
  ```

- **2. Abstract**

  Concise abstract of the proposal using:

  ```
  \abstract{ ... text of your abstract....
                 .
                 .              }  <-- Do not forget the
                                       closing brace!
  ```

- **3a. Number of requested hours per telescope and instrument**

  You have to specify the instrument(s) you request, and the number of hours you request for each instrument. This is done by using one (or more) of these commands: `\doloreshour{}`, `\moshour{}`, `\nicshour{}`, `\harpshour{}`, `\gianohour{}`, `\sifaphour{}` for TNG. These will request hours with DOLORES, DOLORES+MOS, NICS, HARPS-N, GIANO-B, SiFAP2, respectively. The commands `\rosshour{}` and `\remirhour{}` will request hours with ROSS and REMIR, for REM.

  For example,

  ```
  \nicshour {3}
  ```

  will request three hours with NICS.

  You may request more than one instrument and telescope in the same proposal. For TNG, the total requested time is the sum of the time specified for each instrument, except in the case of the GIARPS configuration, where the time requested will be the highest between GIANO-B and HARPS-N. In the case of REM, the total requested time will be the highest between ROSS and REMIR.

  Applicants should be well aware that time has to be requested only in hours. When requesting time in visitor mode, **please take into account** that (for TAC purposes only) **1 night = 9 hours**. Please write only the number, do not write anything else (like `hrs` or `hours`). Please note that overheads must be included in the time request.

- **3b. Observing mode**

  Here you will have to indicate the observing mode you request for TNG and/or REM. At your disposal you have the commands `\tngmode{}{}{}` for TNG and `\remmode{}{}{}` for REM. Please check with a 'X' according to the following table:

Command	Telescope	Mode
`\tngmode{X}{}{}`	TNG	Visitor
`\tngmode{}{X}{}`	TNG	Service
`\tngmode{}{}{X}`	TNG	ToO
`\remmode{X}{}{}`	REM	Rapid Response
`\remmode{}{X}{}`	REM	Queuing
`\remmode{}{}{X}`	REM	ToO

  Please note that programs requiring MOS must be executed in visitor mode.

- **4. Time constraints**

  You may have some preference about the months in which your observations have to be carried out. In this case the command `\prefmonths{}{}` allows you to specify your first and second choice. You may also indicate a short comment on scheduling constraints using the command `\schedconst{}`, a detailed description and justification should be added in box 14b.

  Example:

```
\prefmonths{March}{April}
\schedconst{Nov-Jan impossible}
```

- **5. Past and future of the project**

  This part must be filled in case the program had already time allocated in previous AOT's and/or is planned to extend into future periods. The number of hours already awarded and those foreseen in future periods are specified by the commands `\AwardedHours{}` and `\ForeseenHours{}`, respectively.

  Programs related to exo-planetary research have to mark also the `\ExoplanetProgram` option. In the case of a program on exoplanets leaded by a "young researcher" (i.e., less than 5 years old from the discussion of his/her PhD thesis), the `\ExoplanetProgramY` option has to be marked.

  Programs which also request the "Large Program status" have to mark the `\VLargeProgram` option. In this case, also the "Large Program" pages have to be filled in (see Page 8 of this document).

  No Long Term Program can be started in AOT48.

- **6. P.I. information**

  Write here the name and address of the Principal Investigator using the commands

```
\piname{} \piinstitute{} \piaddress{} \piphone{} \piemail{}
```

- **7. Co-I's**

  The name and institution of the co-investigators should be written as follows

```
\coinv { I. Newton,  Mauna Kea Observatory\\
                N. Copernicus, ESO \\
                ...
            }
```

This was the last box to fill in Page 1, which will be printed by the command `\makepgone`.

Page 2

- **8. Status of the project**

  Describe here the current status of the project of this time request. First, please indicate all the observations (if any) have been conducted for this project.

  For each previous observing run you are requested to fill a line like this:

  `\ProgStatusItem{telescope}{instrument}{date}{hours}{notes}`

  which will produce an item in a table listing the telescope, the instrument, the date of the observations, the number of hours requested, and any relevant notes. Please repeat the command as many times as needed.

  Example:

```
\ProgStatusItem{SWIFT}{BAT}{2007-10-01}{120}{do-mi-sol}
\ProgStatusItem{ESO-3.6}{HARPS}{2007-11-01}{120}{re-fa-la}
\ProgStatusItem{TNG}{NICS}{2007-12-01}{120}{mi-i-i}
```

  Then, you can write a detailed description of the status of the project, with the command:

```
 \ProgDescr { A description of the program status...

   }
```

  A list of the most important publications will be written here:

```
 \ProgPubl  {.... here a list of publications...

       }
```

- **9a. Proposals related to PhD thesis**

  The command `\Thesis` can be used if the proposal is part of a PhD thesis. In such a case the proposer should provide the name of the student and the thesis title, and briefly describe the relevance of these observations for the thesis goals.

  Example:

```
\Thesis{ G. Galilei, Does the earth move?, started from
observations with a 6cm telescope, the TNG data
are fundamental to get images of better quality. }
```

- **9b. Submission to other TACs**

  The command `\othertacs{}` should be used if your group is submitting or has submitted a similar application to other time allocation committees (e.g. ESO, CAT, ITP). In this case you should give here some information on the other proposals explaining, in particular, if and why the different proposals are complementary.

  Example:

```
\othertacs{We submitted the same proposal, switching PI and
CoI names, to all the time allocation committees in Europe
and in America to increase the probability of getting some
observing time.}
```

The command `\makepgtwo` writes Page 2.

Page 3

Page 3 consists of only one box (#10) containing the scientific rationale and aim of the proposed program.

Note that one and only one page is allowed for the scientific rationale and aim.

- Write the scientific rationale and aim inside braces of the `\sciencerationale` and `\scienceaim` commands as follows

```
\sciencerationale{
scientific background   of  the  project, previous  work  plus
justification for the present proposal.}
\scienceaim{
immediate objective of  the proposal:
state  what is actually going to be learned from the
observations, so that the feasibility becomes clear.
}
```

The command `\makepgthree` writes Page 3.

References, tables and/or figures must be located within the command `\extrapage{}`, as in the following example:

```
\extrapage {
   Figure1: A supernova spectrum\\
   \includegraphics[width=10cm,angle=270]{example1.ps}

    Figure 2: A field taken with DOLORES  \newline
   \includegraphics[width=14cm]{example2.ps}
}
```

Then the command `\makepgthreea` will print (optional) Page 3a. If you need more space, you can repeat this step once again and produce another page (3b) with `\makepgthreeb`.

Page “Large Program”

Please check the Large Program box in Page 1 and fill in this page.
Fill in a table with your Large Program Schedule, a line for semester or instrument, with this syntax:

```
\LongTermItem {period}{instrument}{hours}{# of targets}
```

where ’period’ is an AOT semester, ’instrument’ the chosen instrument, ’hours’ are the requested hours in the semester, and ’# of targets’ the number of expected targets to be observed in the semester.
Repeat this line as many times as needed. No more than three semesters can be specified.
Example:

```
\LongTermItem {AOT48}{HARPS-N}{20}{10}
\LongTermItem {AOT48}{NICS}{5}{3}
\LongTermItem {AOT48}{LRS}{40}{15}
\LongTermItem {AOT49}{LRS}{20}{8}
\LongTermItem {AOT50}{HARPS-N}{30}{5}
```

A detailed description of the plan, will be given within the brackets of the command

```
\LTdescript {   }
```

The command `\makepglongterm` writes Page “Large Program”. In case this page is not enough to describe your plan, you can produce a second and a third page with the command `\extrapage` and `\makepglongterma`, `\makepglongtermb`.

Page 4

Page 4 is structured as follows:

- **11. List of targets**

  Write here a list with the targets you plan to observe by specifying their name, coordinates (with epoch), magnitude, total time on target, and additional information as in the following example.

  ```
  \targetinfo{RPr1}{12 23 07}{+44 30 59}{J2000}{B=12}{12500s}{variable}
  \targetinfo{RPr2}{13 44 00}{-02 18 23}{B1950}{K=14}{2hr}{extended,
              no optical counterpart}
  ```

  If the space is not enough, you may produce an additional page, as described below. Please note that the absence of a proper target list, or poor target visibility, may weaken the proposal.

- **12. Observation strategy**

  Enter here the observational strategy and justification of the requested observing time which should also take into account the correction for the overheads described in the TNG web pages. Please do not include correction for bad weather.

  ```
  \ObsStrategyAndJustTime {
  ... your text ...
  }
  ```

The command `\makepgfour` writes Page 4.
In case you need an additional page for your list of targets, repeat what you did in box 11, but using the command `\targetinfoa{}{}{}{}{}{}{}` instead of `\targetinfo{}{}{}{}{}{}{}`. Then, give the command `\makepgfoura` in order to write the additional page (page 4a).

If you have requested observations in ToO mode, you will have to provide some information on triggers. Please write the maximum number of triggers you foresee in the semester with the command `\ntriggers{}`. Then tell the total time devoted to triggers from the time that can be executed in service mode, with the commands `\tootime{}` and `\queuetime{}`.
Example:

```
\ntriggers{5}
\tootime{10}
\queuetime{11}
```

indicates a maximum of 5 triggers, for a total ToO time of 10 hours. The remaining 11 hours of observation will be performed in service mode.
Please note that if `\tootime` is void or set equals to zero, these commands will produce no printed output in the form.

Page 5

Page 5 is the last page of the form, and contains 5 boxes. Fill in them as follows:

- **13. Requested instrumental setup**

  ```
  \SetupIn{id}{instr}{bin}{filter}{slit}{grism}{time}{info}
  ```

  This command produces a line for each instrumental setup. Every line contains a identification, the name of the instrument, CCD binning, filter(s), slit and grism. Moreover, an estimate of the overall time spent with the chosen configuration and additional information. Proposals for DOLORES+MOS must specify here the total number of requested masks.

- **14a. Moonlight constraints**

  The command `\daysfromnewmoon{}` can be used to set the moon constraints by specifying the maximum number of days from the new moon necessary to achieve the requested results. Writing `\daysfromnewmoon{14}` will mean that you do not have any moon constraint.

  Example:

  ```
  \daysfromnewmoon{4}
  ```

- **14b. Scheduling constraints, special requirements and remarks**

  ```
  \remarks { ...}
  ```

  Use this box to describe and justify scheduling and moon constraints, special requirements and any information useful for optimizing the scheduling of the program.

- **15. Observational background of the applicants**

  Write the name of the observer(s) at TNG, in case of visitor mode, with the command

  ```
  \TNGObsName{  }
  ```

  Then write here the experience of at least one of the observers with the requested instrumentation at TNG. Use the command

  ```
  \TNGInstrExp{  }
  ```

  Finally, write the observer's experience with other telescopes and/or instruments, with the command

  ```
  \ObservExp  {    }
  ```

- **16. Possible referees of other proposals**

  Write here the PI and from 2 to 5 co-investigators who can serve as referee to evaluate other proposals. This section is mandatory.

  Use the command

  ```
  \posref { }{ }
  ```

  For each item.

  Example:

  ```
  \posref {G.M. Arx}{arx@brothers.int}
  \posref {Galileo Galilei}{ggalilei@pisatower.edu}
  \posref {Isaac Newton}{isaac.newton@royalmint.ac.uk}
  ```

Then, `\makepgfive` will write Page 5. The command `\end{document}` is the last command of your text. Anything below this command will not be written in the form.

Once you have edited the form as described above, please compile your LaTeX file using (`'>'` indicates the computer prompt):

```
>latex tacAOT48[...].tex
```

Once this command runs without errors you should check that the proposal looks the way you wish (may use `xdvi` and/or `dvips` for this purpose). At this point you are ready to submit your proposal using our interactive web interface:

`http://www.tng.iac.es/submit.html`

Appendix 1: list of categories

A – Cosmology

1. Surveys of AGNs and high-z galaxies
2. Identification studies of extragalactic surveys
3. Large scale structure and evolution
4. Distance scale
5. Groups and clusters of galaxies
6. Gravitational lensing
7. Intervening absorption line systems
8. High redshift galaxies (star formation and ISM)

B – Galaxies and galactic nuclei

1. Morphology and galactic structure
2. Stellar populations
3. Chemical evolution
4. Galaxy dynamics
5. Peculiar/interacting galaxies
6. Non-thermal processes in galactic nuclei (incl. QSRs, QSOs, blazars, Seyfert galaxies, BALs, radio galaxies, and LINERS)
7. Thermal processes in galactic nuclei and starburst galaxies (incl. ultraluminous IR galaxies, outflows, emission lines, and spectral energy distributions)
8. Central supermassive objects

C – Interstellar medium, star formation and planetary systems

1. Gas and dust, giant molecular clouds, cool and hot gas, diffuse and translucent clouds
2. Chemical processes in the interstellar medium
3. Star forming regions, globules, protostars, HII regions
4. Pre-main-sequence stars (massive PMS stars, Herbig Ae/Be stars and T Tauri stars)
5. Outflows, stellar jets, HH objects
6. Main-sequence stars with circumstellar matter, early evolution

7. Young binaries, brown dwarfs, exosolar planet searches
8. Solar system (planets, comets, small bodies)

D – Stellar evolution

1. Main-sequence stars
2. Post-main-sequence stars, giants, supergiants, AGB stars, post-AGB stars
3. Pulsating stars and stellar activity
4. Mass loss and winds
5. Supernovae, pulsars
6. Planetary nebulae, nova remnants and supernova remnants
7. Pre-white dwarfs and white dwarfs, neutron stars
8. Evolved binaries, black-hole candidates, novae, X-ray binaries, CVs
9. Gamma-ray and X-ray bursters
10. OB associations, open and globular clusters, extragalactic star clusters
11. Individual stars in external galaxies