

General rules for the allocation of observing time and user contributions

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1 Introduction

A general overview is given of the procedures and rules for the allocation of observing time and the related user contributions that apply as agreed with the NOT Council.

In defining these rules, the starting point has been that NOT is a facility intended for astronomical research, where the main objective is to provide access to researchers at Nordic institutes. The NOT is owned in collaboration by the University of Turku and Aarhus University, and is operated jointly by Aarhus University, the University of Turku and the University of Oslo, representing Denmark, Finland and Norway, the University of Iceland and Stockholm University. The operational budget of the NOT is primarily funded by the partner universities. In general, the cost of using the telescope to observe can be differentiated as a function of the specific services provided. Basic access to the telescope and its instrument is provided to Nordic and Spanish users. For any services requested beyond basic access, a contribute to the operational cost will be required. Non-partner users should contribute the full operational cost for any observing time that is allocated, and the corresponding services that are provided.

In the following, I discuss the various types of users, the way that observing time is allocated, and what are the cost of the services provided. The overview includes many things which are already in place, and have been followed in practise.

2 What is a night?

In general, observing time is allocated in nights, but the length of the night varies during the year, being longer in the Winter. However, also the amount of bad weather is higher in Winter, and it turns out that the amount of clear time per night is on average to within a few percent the same in the Summer and Winter semester at around 7.5 hrs per night. Therefore, the below numbers per night are applicable in general, where the cost effectively correspond to an amount of clear time which on average is the same throughout the year.

Of course, basically for all types of observing there is the possibility to request only a fraction of a night. Given the above, the cost for a fraction of a night is simply the fraction of the cost for a whole night. In case a specific number of hours is requested, this should be converted to a fraction of nights, where in the Summer semester the average length of a night is 9 hrs, and in the Winter semester 11 hrs. The average length of a night over the whole year is 10 hrs.

3 Nordic Users

In principle this refers to applications from PIs that are affiliated with a Nordic research institute.

3.1 Regular proposals

This refers to the observing proposals submitted through the regular submission process after a Call for Proposals issued every 6 months. Calls are made for the Summer semester (1 April to 1 October), with a deadline for proposals around the 15th of November of the preceding year, and for the Winter semester (1 October to 1 April of the subsequent year), with a deadline for proposals around the 15th of May. The observing proposals are:

- Technically assessed by the NOT staff
- Scientifically ranked by the Observing Programmes Committee

3.1.1 Time allocation

The share of observing time for researchers from each Nordic country is proportional to the contributions from the partners to the budget. The following applies:

- Nationality is defined by the home institute of the PI
- Scientific ranking remains, but allocations will take national shares into account
- Time allocated to NOT astronomers, Nordic service time, guaranteed time, and any time allocated as part of a time exchange program will be subtracted from the common share when calculating the national shares over the remaining amount. In case there is an exchange program with another telescope, any time allocated as part of such a program will also be subtracted from the common share when calculating the national shares over the remaining amount, but these shares will be adjusted by including the amounts equivalent to time allocated through the time exchange program on the other telescope
- Observing programs that lose observing time to Target-of-Opportunity(ToO)/Queue and/or Monitoring observations will be offered compensation in service mode

3.1.2 User contributions

Basic access to the telescope is offered to all Nordic users as provided by the contribution from the partners. For any additional services, a contribution from the user is required. The following applies:

- Visitor mode observing is the basic mode provided
- There are various observing modes that require staff effort beyond the basic mode provided:
 - Service mode observations refer to regular observing programs that are executed by the staff. A contribution to the operational cost corresponding to the estimated cost of the corresponding additional services is required

- Monitoring programs are scheduled at pre-determined times through a semester and are generally executed by the staff, but in rare cases they can also be scheduled during regular observing runs and be executed by visiting observers. In the latter case, if an observing program lose observing time to such observations, the program will be compensated through observations made by the staff in service mode. I.e., effectively the observing time used for monitoring programs is all in service mode and the same contribution to the operational cost is required
- ToO and/or queue mode programs, i.e., any program where the observations are not scheduled in advance, and which (depending on the precise requirements and allocation) can request observations at any time, are executed in queue-service mode. In case observations are requested during regular observing runs¹ and executed by visiting observers, the observing program will be compensated through observations made by the staff in service mode.

A specific feature of these observations is that they are executed in queue mode. I.e., if the weather is bad at the time of the request the observations will be done as soon as the weather gets better, or not at all. Effectively, these requests largely do not suffer from bad weather, and to compensate for that the time spend to execute these observations is estimated to be effectively 1.25 times the time used, but the allocated observing time will only be counted when any observations are executed. Throughout the year, a night is taken to be equivalent to 10 hrs.

For each program requesting such queue-mode observations, a minimum contribution to the operational cost in a semester is required corresponding to 50% of the total time requested in queue-mode by the program for that semester. This both to limit the total amounts of time requested to a reasonable amount, but also for the NOT to have some clarity on what it will receive in contributions

In summary:

Type of observation	Cost per night (Euro)
Visitor mode observing	0
Service, Monitoring & ToO/Queue observations*	500

* Observing time in queue-mode is counted at a rate of 1.25, but is only charged when executed (see text)

- The same rules concerning user contributions will be applied to observing time allocated to Nordic applicant as part of a time exchange program, with as basis the equivalent amount of observing time with the NOT.
- Full contributions will have to be provided for any additional hardware cost (e.g., MOS plates), or staff effort needed to support the observing run (e.g., with an own instrument)
- The home institute of the PI takes responsibility to provide the required contributions. By applying for observations that require additional services, the PI indicates that adequate funds will be available to cover these costs

¹In certain special cases, e.g., time-critical observations, the OPC can decide to protect certain observations from interruptions by any other observation.

3.2 Educational use

This refers to the use of the NOT for astronomy courses on university level to astronomy students. Proposals can be made at any time, but for scheduling reasons they need to be submitted well before the observing schedule is prepared (in general 1 month after the proposal deadline for each semester). The following applies to such proposals:

- Proposals should be submitted to the Director
- The PI of the proposal should be affiliated with a Nordic institute
- The Director decides if such a proposal is to be considered in more detail or not
- If a proposal is to be considered, it will be assessed by the OPC
- If the OPC agrees that the application is eligible to use the NOT for this purpose, the course will in principle be allocated time (but the Council has the final say in this)

3.2.1 Time allocation

- Any allocated time is counted towards the national share of the country, or countries involved

3.2.2 User contributions

We offer the possibility for both remote and on-site observing courses. These have slightly different requirements as for additional support (either more centered on the remote observing system, or on the support at the telescope), but the overall effort is approximately the same. The corresponding contribution required from the user is based on an estimate of the overall operational cost of the corresponding additional services provided, and is 1150 Euro per night.

4 Other Nordic use

This is in principle any use of the NOT that is not a regular observing proposal that is ranked by the OPC, or educational use that is not an astronomy courses on university level to astronomy students, but that requests to be considered as general Nordic use.

4.1 Proposals

The following applies to any such proposal:

- Proposals should be submitted to the Director
- The proposal should be science driven, and proposers should include a researcher affiliated with a Nordic institute to act as a PI
- The Director decides if such a proposal is to be considered in more detail or not
- If a proposal is to be considered, the same procedure is followed as for ‘Educational use’ given above
- If not to be considered in some form as a Nordic proposal, any such proposal is treated like a proposal from an external user (see section 7)

4.1.1 Time allocation

- Any allocated time is counted towards the national share of the country, or countries involved

4.1.2 User contributions

If such a proposal is considered as a valid use of the Nordic time, no contribution is needed for the basic use of the telescope, but for any additional services the full contribution will have to be provided as for external users (see section 7).

5 Fast-track proposals

The Fast-Track Service Observing Program offers the opportunity to propose short programmes on a running basis and with a short lead time from proposal to execution.

5.1 Proposals

- Any proposal should be submitted through the dedicated proposal system
- Excluding exceptional cases, only proposals with a PI affiliated with a Nordic astronomical institute are accepted
- The fast-track program also incorporates the system to compensate regular observing programs for time lost due to interruptions by observations for ToO/Queue and/or Monitoring programs
- Technical assessment is provided by the NOT staff
- Scientific assessment is arranged by the head of the OPC
- The usage of the fast-track program, and the eligibility of the proposals are defined here: www.not.iac.es/observing/service/

5.1.1 Time allocations

- Nationality is defined by the home institute of the PI
- A number of nights are reserved for this service throughout each semester, and are charged to the common share
- Approved programmes are only executed on the assigned nights
- Observations are strictly done in queue service mode
- There is a limited validity of observing programmes (maximum 3 full semesters after acceptance)

5.1.2 User contributions

- This is a general service provided to the Nordic community, and for observations executed within the fast-track program no additional contributions are required
- In the exceptional case of a non-Nordic fast-track program, a contribution to the operational cost at an hourly rate based on the cost of the corresponding services of 1670 Euro per night, assuming an average of 10 hr per full night. In these cases, the PI of the proposal assumes responsibility to provide the required contributions when accepting any allocation of time, but contributions are only to be made if the observations are executed successfully

6 Spanish time

I include here all the time that is allocated as part of the agreement between the University of Turku and the IAC to operate the telescope at the ORM. This includes the 20% Spanish time, and the 5% International Time Program.

6.1 Proposals

- Technical assessment is provided by the NOT staff
- Spanish time proposals are evaluated by the Spanish time allocation committee (CAT)
- ITP proposals are evaluated by a time allocation committee appointed by the CCI

6.1.1 Time allocation

- The time is scheduled together with all the other programs
- This is guaranteed time to be charged to the common share

6.1.2 User contributions

As providing this observing time is a contractual obligation to be able to operate the telescope at the observatory, basic access to the telescope is offered to all Spanish users. Spanish time can be used for Educational programs, and Spanish users can request service observing (including Monitoring programs), in which case a contribution is required as is the case for Nordic users. At this moment, there are no provisions for ToO/Queue programs. The following applies:

- Visitor mode observing is the basic mode provided
- Service mode observations and Monitoring programs can be requested, where the same rules apply as for Nordic Users (see Section 3.1.2)
- Spanish time can be used for Education programs, where the same rules apply as for Nordic Users (see Section 3.2)

In summary:

Type of observation	Cost per night (Euro)
Visitor mode observing	0
Service observing	500
Educational use	1150

- Full contributions will have to be provided for any additional hardware cost (e.g., MOS plates), or staff effort needed to support the observing run (e.g., with an own instrument)
- The home institute of the PI takes responsibility the required contributions. By applying for observations that require additional services, the PI indicates that adequate funds will be available to cover these cost

7 External projects

This is in principle any use of the NOT that is not part of regular Nordic or Spanish time, and in principle a full contribution to the operation cost should be made.

It is noted that these proposals might also include a national Nordic part, for which in principle the corresponding rules given above apply. This can also be viewed as an external project that incorporates a Nordic partner from one of the partners having the possibility of getting a reduced rate as compared to a fully external project.

7.1 Proposals

A proposal should describe the objective of the program, and should include the duration of the project and (approximate) amount of time required, any additional services required, and how the observations should be scheduled. The following applies to any such proposal:

- Proposals should be submitted to the Director
- The proposal should be science driven
- The Director decides if such a proposal is to be considered in more detail or not
- If a proposal is to be considered, it will be sent to the OPC for assessment
- If the OPC considers the proposal eligible, it will be sent to the Council for approval

7.1.1 Time allocation

- This is guaranteed time to be taken from the common share
- General scheduling requirements are agreed in advance, and specific scheduling requirements should be provided for each semester at the regular deadline for Nordic proposals

7.1.2 User contributions

A full contribution to the operational cost for any of the services provided should be made. The following applies:

- Visitor mode observing is the basic mode provided. A full contribution corresponding to the estimated cost of the corresponding basic services will be charged
- There are various observing modes that require staff effort beyond the basic mode provided:
 - Service mode observations refer to observing programs that are executed by the staff. A contribution to the operational cost corresponding to the estimated cost of the corresponding additional services is required

- Monitoring programs are scheduled at pre-determined times through the semester and are generally executed by the staff, but in rare cases they can also be scheduled during regular observing runs and be executed by visiting observers. In the latter case, if an observing program lose observing time to such observations, the program will be compensated through observations made by the staff in service mode. I.e., effectively the observing time used for monitoring programs is all in service mode and the same contribution to the operational cost is required
- ToO and/or queue mode programs, i.e., any program where the observations are not scheduled in advance, and which (depending on the precise requirements and allocation) can request observations at any time, are executed in queue-service mode. In case observations are requested during regular observing runs² and executed by visiting observers, the observing program will be compensated through observations made by the staff in service mode.

A specific feature of these observations is that they are executed in queue mode. I.e., if the weather is bad at the time of the request the observations will be done as soon as the weather gets better, or not at all. Effectively, these requests largely do not suffer from bad weather, and to compensate for that the time spend to execute these observations is estimated to be effectively 1.25 times the time used, but the allocated observing time will only be counted when any observations are executed. Throughout the year, a night is taken to be equivalent to 10 hrs.

For each program requesting such queue-mode observations, a minimum contribution to the operational cost in a semester is required corresponding to 50% of the total time requested in queue-mode by the program for that semester. This both to limit the total amounts of time requested to a reasonable amount, but also for the NOT to have some clarity on what it will receive in contributions

- We offer the possibility for both remote and on-site observing courses. These have slightly different requirements as for additional support (either more centered on the remote observing system, or on the support at the telescope), but the overall effort is approximately the same. The corresponding contribution required from the user is based on an estimate of the overall operational cost of the corresponding additional services provided.

In summary:

Type of observation	Cost per night (Euro)
Visitor mode observing	5620
Service, Monitoring & ToO/Queue observations*	+500
Educational use	+1150

* Observing time in queue-mode is counted at a rate of 1.25, but is only charged when executed

- Full contributions will have to be provided for any additional hardware cost (e.g., MOS plates), or staff effort needed to support the observing run (e.g., with an own instrument)
- The way any contribution is made is agreed in advance

²In certain special cases, e.g., time-critical observations, the OPC can decide to protect certain observations from interruptions by any other observation.