



Preparing an ESO proposal

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Abstract

Preparing observing proposals is a classical exercise in an observational astronomer's life. In this paper, we summarize the general requirements to write a good proposal for the ESO telescopes, and eventually obtain telescope time. We detail in particular the different proposal types, how they are evaluated by ESO, what they should contain and what to avoid. The advice given in the present paper are applicable to observing proposals for the AMBER and MIDI instruments of the VLTI, but also to other ESO instruments, and to some extent to other observatories.

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¹ The summer school lecture at Goutelas was given by P.G.

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1. Introduction

The first and most important advice of this paper is to **read carefully the ESO Call for Proposals (hereafter CfP) and the User's Manual for Phase 1 proposals**, that are available at <http://www.eso.org/observing/proposals>. Though this may seem obvious, the availability of a large number of instruments and telescopes results in a complicated set of rules and limitations that are not necessarily mentioned in the present paper. The information are up to date as of period 79 of ESO. Be aware that the rules for proposal writing and evaluation evolve rather quickly, especially as new instruments come on line. So keep this in mind and check the ESO web site carefully. There are two proposal submission deadlines per year at ESO, around 1st April and 1st October (except for Director's Discretionary Time). They correspond to observations scheduled six to twelve months later. In this paper, we will describe the different types of proposals (Section 2), how they are evaluated by ESO (Section 3), and how to fill the ESO form (Section 4). A summary of the most important points to remember is finally given in Section 5.

2. Different kinds of proposals

All ESO proposals have in common that they request telescope time in order to fulfill a scientific goal. However, they come in different types depending on the amount of time requested, the type of target, or the urgency of the observation. The CfP defines each programme type in details, and as this definition may change with time, you are invited to check the corresponding part of this document.

2.1. Normal and large programmes

Normal programmes (NPs) can be defined by default as all the programmes that do not belong to the other categories described below. The time request covers no more than a single semester (also called "period"). NPs represent a dominant fraction of all proposals, as there is little constraints on them. The majority of the available telescope time is dedicated to the execution of NPs.

When a programme requires more than 100 h of telescope time per semester for a maximum of four semesters

(it can be requested in a single semester), then it qualifies as a large programme (LP). This type of proposal is typically used for large surveys that ask for the observations of hundreds or thousands of targets, but it also includes repeated observations of a small number of objects, or even of a single object. The LPs can be scheduled up to 30% of the available telescope time. While LPs are less often approved by ESO than the NPs, they are interesting as they benefit from a high scheduling priority at the telescope, and they can be continued over several periods without the need to ask again for time. As the LPs requested time is significantly larger than for NPs, the scientific justification has to be written particularly carefully. As a remark, the applicant to a LP may specify in the ESO form that his proposal should be evaluated as a NP if it is rejected by the panel as a LP. In this case, only the part of the proposal corresponding to the current period is evaluated.

2.2. Director's Discretionary Time (DDT) and Target of Opportunity (ToO) proposals

When a sudden and unexpected astronomical event requires an immediate observation, the Director's Discretionary Time proposals are the best choice. They can also be obtained when the scientific topic is the subject of a strong competition, for follow-up observations of another campaign, or to test the feasibility of a programme. Up to 5% of all ESO time is available for DDT proposals. Two important particularities of DDT proposals is that they are evaluated by a distinct OPC panel (DDTC) from the NPs, and they can be submitted at any time (there are no DDT deadlines). Another interesting aspect is that approved DDT proposals have a high priority for execution at the telescope. Moreover, the acceptance rate of the DDT proposals is higher than the NPs, with about 50%. From these advantages, it appears that *if* a scientific programme fits in the relatively restricted framework of DDT proposals, then it *should* in general be proposed as DDT. As a remark, a DDT proposal already rejected by the OPC panels will, as a general rule, be rejected by the DDTC.

There is a subtle distinction between the target of opportunity proposals and the Director's discretionary time (DDT) proposals. ToOs are applicable to sudden astronomical phenomena that require an immediate observa-

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