GRAN TELESCOPIO CANARIAS
GTC

TITLE

Visiting instruments on the GTC

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List of acronyms and abbreviations

GCS GTC control system

GOC GTC Oversight Committee

GUC GTC Users Committee

PI Principal Investigator

SAC Science advisory committee

TAC Time allocation committee

VI Visitor Instrument

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1. SUMMARY

In order to maximise the scientific return from the GTC it is recognised that it must be prepared to accept visitor instruments. Visitor instruments can bring additional capabilities to the GTC not available with the suite of facility instruments. In general, visitor instruments are mounted on the telescope for brief periods of time, at most one or two weeks per year. However there can be other types of visitor instruments, some of which could be built on purpose for the GTC, that could be installed for longer period of time depending upon demand. The aim of this document is to discuss the needs of such instruments and the procedure for bringing one such instrument to the GTC.

The first part of the document explains the rationale for visiting instruments, the procedures for proposing visitor instruments to the GTC, and the various scenarios that can be contemplated. The discussion on the distribution of guaranteed time to visitor instruments is left for a companion document on Guaranteed time to Instrument's PIs.

2. SCIENTIFIC JUSTIFICATION FOR VISITOR INSTRUMENTS

The facility instruments provided by the GTC will be designed to allow a wide range of observations and will therefore not be, in general, optimised for a particular scientific project. Additionally, during the first years of telescope operation the suite of facility instruments will be necessarily limited, thus leaving some type of observing modes or wavelength ranges uncovered. There will, therefore, be scope for visitor instruments which are highly optimised for a particular purpose or offer capabilities which are not available with the planned or current facility instruments. Examples of such instruments include 3D, from the Genzel group, which has been mounted on various telescopes, SMIRFS which has been used on UKIRT, COSHI and CIRPASS which have been used on GEMINI, or CIRCE, a near IR camera offered by the University of Florida as a visitor instrument for the GTC.

It must be made clear however that visitor instruments may represent a disruption of the Telescope operation plan, and hence only under certain circumstances visitor instruments should be contemplated. These circumstances will be mainly dictated by the new scientific capabilities that the visitor instrument might offer to the telescope user community, or by the needs to have science instruments if the facility instruments are not ready.

As well as full instruments there may well be groups interested in testing parts of an instrument, in particular new detector systems on facility instruments. In this case this would be done as a collaboration with the GTC staff and so this is somewhat distinct from the visitor instruments discussed here.

Alternatively, instrument teams having developed successful facility instrumentation for another telescope may be willing to build a replica or even an improved version of a former instrument, and may offer to bring it to the GTC in return for observing time.

Generally speaking, the variety of possibilities mentioned above, and several other that may come out in the future will be treated under the generic name of "Visitor Instrument" (VI). Note that this term may refer to many different scenarios and as such they will have to be dealt with on a case by case basis.

3. VISITOR INSTRUMENTS SCENARIOS

Various scenarios can be contemplated depending on whether the visitor instrument is offered or not to the wider GTC user community.

1) The PI who owns the instrument can apply directly for time on the telescope as a normal user for a given project taking advantage of his/her instrument. In this case the instrument PI will receive time allocated by the TAC if this committee finds the science case compelling. In what follows, this case will not be considered as a visitor instrument proper, and as such it is not part of the scope of this document. It is worth mentioning though that in the case of an observer wanting to bring his/her own instrument to the GTC, the PI should contact the GTC Director well in advance of applying for time so that the GTC Director can inform the PI of the different requirements for bringing the said instrument to the GTC. If a time application is submitted to the relevant TAC, the application should include enough details about the instrument so that the GTC staff can estimate the required work to set it up on the GTC. As part of the evaluation process, the GTC Director will inform the TAC of the feasibility of bringing the instrument to the GTC. If time is eventually granted by the TAC the instrument PI is expected to follow the rules regarding the technical interfaces with the GTC. It is therefore expected that a very close collaboration is established between the instrument PI and the GTC staff.

2) The case of interest for this document is, however, that in which an instrument PI offers his/her instrument for use of the wider GTC community in return for some observing time apart from his/her own observing time. This additional time will be called guaranteed time and will be granted to the visitor instrument PI following the rules set in the document "Guaranteed Time for Instrument PIs." In this case, it is also expected that a close contact with the GTC Director is established well in advance.

4. PROCEDURES FOR BRINGING VISITOR INSTRUMENTS TO THE GTC

1) Any group wishing to bring a visitor instrument to the GTC should send a formal proposal to the GTC Director, stating the scientific opportunities opened for discovery, and/or the scientific niche that the instrument would fill in, in case the said instrument is brought to the GTC. The application should also include a statement of the technical and logistical demands, as well as any observing time demands, of the instrument group in order to bring the visitor instrument to one of the GTC foci. Finally, the instrument team should state the type of assistance that they would be prepared to offer to the community for data handling and reduction, specially if the format of the data is non standard

2) The GTC Director will bring the visiting instrument (VI) proposal to the next GOC meeting for discussion. The GOC will make a decision on whether or not to study further the proposal based on the committee's appraisal of the interest and timeliness of the proposal, and on whether devoting time and effort to this instrument proposal, on top of the many tasks in which the GTC staff is involved, is perceived as beneficial to the GTC community. If the GOC decides to accept the proposal then the President of the GOC will forward the proposal to the GTC Director for further study.

3) The GTC director will distribute the proposal to either the Scientific Advisory Committee (SAC) or the GCT User Committee (GUC). The Scientific Advisory

Committee (SAC) or in the future the GCT User Committee (GUC), will asses the opportunity of the offered instrument in regards to the scientific capabilities opened by the new instrument, and will examine whether these capabilities are not covered with the current set of facility instruments. The SAC, or GUC, will make a recommendation to the GTC Director to pursue or not the actions required to bringing the instrument to the GTC. The relevant committee should also provide an indication of the conditions under which the visitor instrument could be allowed on the GTC. These conditions could include an indication of the amount of guaranteed time that the GTC could be prepared to give in return for offering the instrument to the community, or some restrictions on the effort that the GTC staff could be prepared to devote to bringing the visitor instrument to the GTC, or some requirements on the VI group so that the community has easy and friendly access to packages for handling and reducing the data produced by the visitor instrument.

The GTC Director will also send the proposal to the GTC staff for an assessment of the effort required for adapting and installing the visitor instrument on the GTC. This assessment should include all aspects of the interface with the GTC, including mechanical, electrical, and software aspects. The GTC staff's report should also include a summary on the expected demands on the telescope staff in order to mount the instrument. Besides, any restrictions on the part of the GTC, such as restrictions on heat sources near the telescope should be stated in the report.

The GTC Director will then write a report based on the recommendations of the scientific committee and the assessment of the GTC staff. This report should include a recommendation to the GTC Oversight Committee on whether to allow the visitor instrument at the GTC once both the scientific assessment and the technical appraisal have been considered.

4) The GOC should now be ready to make a final decision on whether to allow the visitor instrument to the GTC. In the event that the GOC agrees that a particular visitor instrument can be mounted on the telescope then the terms and conditions under which the instrument is to be brought to the GTC needs to be clearly laid out well in advance of the instrument arriving. This includes the services to be provided by the GTC staff both at the telescope and for preparation of the arrival of the instrument to the telescope as well as, the amount of support that the visitor instrument group should provide to both the GTC staff and other users so that the visitor instrument is adequately used.

5. VISITOR INSTRUMENT REQUIREMENTS ON THE TELESCOPE

In order to successfully install a visitor instrument on the GTC a number of services will be provided at the telescope. These include clear specifications on the interfaces, mechanical, electrical and software ones, the focal station where the VI will be installed, etc. Particular attention will have to be paid to communications with the GTC control system, as well as to the strategy for guiding and interacting with the active optics system. Information on these topics will be available upon request.