

**REPORT OF THE 3<sup>rd</sup> GTC USERS COMMITTEE MEETING**  
**HELD AT THE IAC HEADQUARTERS**  
**LA LAGUNA, 28 JANUARY 2011**

## **1. Recent progress related to past reports**

The GUC was informed of the developments carried out to the telescope since the last meeting. The GUC noted a positive general advancement in several of the basic issues identified in the previous report, as detailed below. Despite some remaining issues, the priorities reported by GRANTECAN seem to be well placed.

The OSIRIS cryostat is still the main identified problem. It involves a high risk and a high operational effort. External support has been sought and a schedule for fixing it (before summer 2011) has been reported by GRANTECAN.

These problems do not affect the quality of the OSIRIS data, which is generally quite good.

The efficiency of the observations is still low. Improvements on this issue are steady but slow, perhaps because a single cause (or a limited number of causes) with a high impact cannot be identified. One issue that has affected the 10B winter semester is the unavailability of suitable programmes for mediocre weather conditions (high seeing...).

The reported flat field problem in OSIRIS imaging turned out to be due to a shift of the central wavelength of filters with off-axis angle, which is calibrated for the TF and probably does not affect seriously broad-band imaging, but affects seriously imaging with the order-sorting filters

The highest resolution gratings of OSIRIS are now available. And plans to implement the fast readout modes (August 2011) and the blue TF (October 2011) are in place. Implementing MOS needs further resources not available at the moment and is estimated for October 2012.

A schedule for solving the problem of the partial opening of the dome shutter, which greatly limits operational flexibility and efficiency, was presented by GRANTECAN, with a final solution not earlier than summer 2012.

Visitor mode has been offered in semester 2011A and preparations are under way to host the visiting observers by March 2011. This will hopefully help in improving observing procedures and the communication with the users, and also in increasing awareness of the current capabilities (and limitations) of GTC among the community.

An extension of 1 year in the deadline for providing data to the ESO-GTC programmes has been requested to ESO. This might somehow alleviate the pressure on the Spanish time, but it is insufficient to dispel the GUC worries about this issue.

The GUC was pleased about the many good news, despite the disappointment with CanariCam. The actions identified in the last GUC report were all addressed, and progress has happened in all of them, except again for CanariCam and for the lack of consultation to the community about the third generation instruments.

## **2. Other issues not in previous reports**

The commissioning of CanariCam in the Fall of 2010 was very unsatisfactory. The instrument and the telescope did not communicate properly and many problems with the telescope software were revealed. Further software developments and tests and commissioning runs are needed, but there is no schedule for those yet. All this has resulted in better and more robust telescope software, but is delaying commissioning of other instruments/modes. The responsibility of the instrument is now with Grantecan. CanariCam will not be available in semester 11A.

There are now 10 published papers using GTC data (and three more in the press), ranging in subject from asteroids and exoplanets to galaxy interactions. The productivity since the first published paper of GTC is average compared to other 10m-class telescopes. A note of concern to GRANTECAN is the lack of new papers submitted since September 2010, despite having completed more than 62 proposals since semester 09A.

The GTC science archive is progressing. GRANTECAN has signed a formal agreement with INTA, and exchanges of data and protocols with LAEFF are happening. There are pending issues with the FITS headers and on data access rights once the PI proprietary period is over.

Preparations towards the “IV Science with the GTC” meeting in La Palma (November 16-18, 2011) are under way. All users are encouraged to attend and to present their latest results.

## **3. New instruments**

The GUC is very worried about the delays of 1<sup>st</sup> and 2<sup>nd</sup> generation instruments and feels that detailed information on the current problems and realistic schedules for, in particular, CIRCE, EMIR and FRIDA were missing.

- CIRCE: currently under construction at UF. There is a draft of the agreement between UF and Grantecan. It is expected to be ready for commissioning during 2011B, but waiting until 2012A is being considered so that it can be mounted on a folded Cassegrain focus and switching between CanariCam and CIRCE in the Nasmyth B focus can be avoided

- EMIR: currently under construction at IAC, UCM, LAM, LAOMP. There is a new reinforced and reorganized team at IAC and a new schedule, with first light expected for October 2013
- FRIDA: currently under detailed design at IA-UNAM. A preliminary arrival date to GRANTECAN could be 2014. The development of FRIDA is related to the development of the Adaptive Optics at GTC, which is also late
- MEGARA: was selected as the third generation higher resolution optical spectrometer for GTC on September 2010, with an expected delivery time of 2016
- MIRADAS: was selected as the third generation higher resolution IR spectrometer for GTC on September 2010, with an expected delivery time of 2016

#### 4. Feedback from the user communities

Formal communications between the users and both GRANTECAN and the GUC are still very scarce. The web tool to report back on the observations is used very infrequently.

The GTC web pages are improving, but in some aspects seriously out of date.

#### 5. Summary of the main pending problems identified

1. The **OSIRIS cryostat**. As noted above, this is surely the most serious problem ahead. The GUC is pleased that external support has been found and that detailed plans for fixing this problem are in place.
2. **CanariCam** cannot be used at the telescope yet, mainly because with problems at the GTC end. This is causing great frustration in the user community, and it is stopping fulfilling obligations with ESO-GTC programmes.
3. The overall **scientific efficiency** is still low, despite recent improvements. The GUC endorses the continuous drive by GRANTECAN to improve this.
4. A related topic is the **drastic reduction of the GTC time available to the Spanish community** which will inevitably result after GRANTECAN fulfills its obligations to the UF and Mexican communities, the instrument teams (GT) and ESO (technical time and ESO-GTC programmes)
5. **Data Quality**: it is generally quite good, but some areas still need to be improved. The existing Quality Control mechanism seems to be adequate, but labour-intensive.
6. **Modes of OSIRIS** still pending: the GUC was pleased to see detailed plans to set-up the fast readout modes and the blue TF for Fall 2011, and some estimate of the MOS mode for October 2012

7. **Dome shutter** in partial operation only
8. All the first and **second generation instruments** are late. Particularly serious is the situation of **EMIR**, for which current plans envisage first light not earlier than October 2013. Very little information is publicly available about schedules for all GTC instruments.
9. CanariCam is the second instrument accepted by GRANTECAN **without a comprehensive commissioning at the telescope**. The GUC realizes the many issues involved, but this inevitably results in transferring additional burdens from the instrument teams to GRANTECAN personnel
10. Insufficient **communication with and feedback from users**
11. **Lack of recent scientific publications using GTC data**

## 6. Summary of the GUC recommendations

1. We urge GRANTECAN to continue assigning the highest priority to:
  - a. Carrying out in time current plans to fix the OSIRIS cryostat
  - b. Getting CanariCam ready as soon as possible, with a clear schedule for telescope commissioning time, and not later than for the 12A call for proposals.
  - c. Improving the scientific efficiency. For example by:
    - i. Continuing the development of user-oriented high-level software tools for setting and checking the instrumental configuration and for quick-look at the data
    - ii. Setting up a mechanism (together with the various TACs) by which targets from proposals of sufficient quality are available for the widest possible variety of weather conditions
  - d. Mitigate the impact on the Spanish time by developing a new timing scenario to fulfill other GRANTECAN obligations
2. Regarding the 11B call for proposals, the GUC endorses the following proposals by GRANTECAN:
  - a. Not offering CanariCam in semester 11B, even on a shared-risk basis. If the instrument is ready, GT and ESO-GTC observations can be carried out during this semester, which could help to make the instrument ready for full user operation for 12A
  - b. Increasing the default overhead for the OSIRIS spectroscopic mode setup from 10 to 15 minutes to bring it in line with current realistic estimates, while at the same time urging GRANTECAN to continue current efforts to reduce it as much as possible
  - c. Asking the users to include OBs for the flux calibration of the TF observations (if it is requested), which will be “charged” to their awarded time, instead of the current baseline of a set of standard calibration observations on “GTC time”. This should allow a better

calibration of the TF observations, avoiding at the same time unnecessary or unwanted calibrations

3. To carry out in time current plans to implement full operation of the dome shutter. In the meantime, to push the operational envelope to the highest possible elevations
4. We urge GRANTECAN to ready the remaining OSIRIS modes as soon as possible
5. Devising and implementing automated data quality control checks, that both objectivize and speed up the process, freeing the Support Astronomers for other tasks
6. Improving the communications with users by:
  - a. Updating regularly the web pages (with news on instrument commissioning and selection, for example)
  - b. Engaging more actively the help of the observers on evaluating and improving the quality of the data. For example, offering quick re-observations of the OBs if any putative faults are reported swiftly back to GRANTECAN in a short interval (two weeks, for example)
  - c. Sharing more fully current information held by GRANTECAN and the instrument teams on the current instrument performance. In particular, an User Manual for the current modes of OSIRIS would be very valuable for observers and proposers.
  - d. Providing information on the schedules and expected performances of the remaining, first, second and third generation instruments. In particular, the current baseline schedules for the reception and commissioning of the rest of the first and second generation instruments for GTC should be made public to the community. We also propose that more detailed presentations by the PIs of those instruments should be prepared for the next GUC meeting.
7. In the mid-term, when the data archive is operational, the GUC considers that a reasonable proprietary period for the data would be 1y after the last OB of a given proposal is delivered to the observer. After that, access to the raw and (eventually) pipeline-reduced data should be granted to any astronomer, including those outside the GTC communities

## ***GUC Members***

|                      |   |
|----------------------|---|
| Ricardo Amorín       | (IAA-CSIC), last meeting                      |
| Francisco J. Carrera | (Instituto de Física de Cantabria), new chair |
| Jorge Casares        | (IAC)   |
| Miguel Chavez        | (INAOE), video conference                     |
| Begoña García        | (IAC)   |
| Fred Hamann          | (University of Florida), video conference     |

Ignacio Negueruela (Universidad de Alicante)  
Pablo G. Pérez (Universidad Complutense de Madrid)  
José M. Vilchez (IAA-CSIC), chair, last meeting