

## **SUMMARY OF THE REPORT OF THE 2nd GTC USERS COMMITTEE MEETING HELD AT THE IAC HEADQUARTERS, LA LAGUNA, 20 JULY 2010**

This is a summary of the report submitted to the GTC Director.

### **1. Status of the telescope and recent progress**

The GUC notes progress by the GTC in several basic areas of concern identified in the previous report, as detailed below.

The GTC has moved towards solving the problem of the partial opening of the dome shutter, which greatly limits operational flexibility and efficiency, although some limitations remain.

Excellent progress has been made in the M1 phasing. Phasing is now at the level of about 250 nm RMS, and remains stable for about two weeks, at which time the primary must be re-phased. Re-phasing takes a few hours. On the other hand, the planned increase in the reflectivity of the mirror segments has been accomplished, although further progress must be made.

Regarding previous GUC concerns about the availability of the Folded Cass port, GTC noted that CanariCam and CIRCE will probably, at least initially, share the Nasmyth-A port. Regarding the lack of availability of some OSIRIS modes noted in the previous GUC report, GTC confirms it remains a problem though some progress with IAC has been reached on this respect.

The GUC is concerned about the slow progress of EMIR noted in the previous report, although GTC has been confirmed that IAC is now fully committed to completing OSIRIS and with the development of EMIR. In this line, the GUC strongly recommends GTC to increase the hiring of experienced/senior scientists and engineers in order to reinforce and speed up the (much needed) progress. The five immediate actions identified in the last GUC report were addressed, and the GTC is moving to address the other concerns raised in that report.

### **2. Status of science operations: progress and pending problems**

The committee was pleased to hear of clear improvements in the data quality.

A slow, but steady, improvement in the overall scientific efficiency was reported by the GTC. However, the efficiency is still considered to be far from the optimum. To this end, several user-level tools have been developed, examples being the CanariCam phase-2 procedure, precipitable-water-vapor monitoring, and the OSIRIS configuration status GUI.

Image quality remains very good, with normal seeing reaching 0.5-0.6 arcsec, which is perhaps identifiable with a minimum dome seeing component.

Among the pending problems, the OSIRIS cryostat still remains one of the main threats. Several actions have been already undertaken to attain a definite solution; the GUC strongly supports the GTC's continued high-priority efforts to solve this, and related, OSIRIS problems.

In relation with this latter point, the GUC expresses deep concern about the final amount of observing time to be available for Spanish open time access; key threats to the Spanish open time are the low GTC operational efficiency and the time that must be allocated to GT and ESO-GTC projects. This enormous pressure on Spanish open time is only made worse by the over-subscription rate by GTC proposals attained via the CAT.

### 3. Summary of the main identified problems

1. The OSIRIS cryostat: as noted above, this is considered to be the most serious problem ahead. The GTC science operations are fully committed to reaching a solution to this problem as soon as possible;
2. Overall scientific efficiency: still low, despite recent improvements;
3. Data Quality improvement: there is a much concern for the variability in the flat-fields obtained so far. We emphasize that this problem must be rapidly investigated and solved by the GTC quantitatively, since it seriously compromises the data;
4. Pending OSIRIS modes: implement OSIRIS TF blue, MOS, plus all gratings of highest resolution as well as fast spectrophotometry;
5. Partial operation of dome shutter: see previous section;
6. Improvement of communication channels with Pis.

### 4. Summary of urgent GUC recommendations

#### a) Visiting and/or queue observing modes

The GUC has reached a positive consensus on the proposal for mixed visiting classical and queue observing starting in semester 2011A. The document presented by GTC addressing this mixed mode was highly appreciated and it was endorsed by the GUC. The committee suggests flexibility when implementing this mixed option and strongly recommends all visiting programs have corresponding backup programs approved by the time allocation committees.

#### b) CanariCam in 2011A

After having considered all the options, taking into account the possible extra work loads and technical limitations, the GUC understands that **\*\*CanariCam can be offered for the next semester 2011A on a shared risk basis\*\***. It is suggested that GTC should request that the time allocation committees provide backup (OSIRIS) programs for all the ones allocated for CanariCam.

#### c) GT and ESO-GTC time

GTC is required to use part of the observing time for GT and ESO-GTC programs. There is a very stringent time limit to carry out the latter. If these time limits were to be fulfilled, the time available for the Spanish CAT would have to be severely reduced for several years. The GUC is concerned by this very serious problem, which surely will have a strong impact on the Spanish astronomical community and on the operation of GTC. The committee understands that the Spanish community will not be satisfied with the strong reduction of CAT telescope time that has been carried out the last semester. The GUC **\*\*strongly recommends that the CAT time not be reduced\*\*** given the current very high over-subscription factor. Alternatives to be explored in order to minimize this problem have been anticipated by GTC science operations; the first step is to increase of GTC operational efficiency by an important factor. However, it would be highly desirable that a new timing scenario be developed that would fulfill other GTC obligations (GT and ESO-GTC requirements).

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