

# TELESCOPES AND INSTRUMENTATION

## The ING Telescopes in a Changing Landscape

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Landscape in geological terms tend to change slowly, unless there is a land slide. With the UK joining ESO the focus of UK ground-based astronomy will change in a dramatic way as well, strengthening its European focus. On December 5th 2001 PPARC Council took a number of important decisions related to the UK joining ESO. These decisions will have a profound impact on various existing facilities, including those of the ING. PPARC's way forward reflects the reality of the rapidly changing environment of ground-based astronomy, with the deployment of several 8-m class telescopes and the adhesion of the United Kingdom to the European Southern Observatory. Further reference to the Council's decision can be found in this PPARC press release <http://www.pparc.ac.uk/NW/ESOSTARS.asp>.

### Impact of Budget Reductions

It has been apparent for some time that the annual operating budget for ING would come under pressure, in particular as the UK has to free up funds to contribute towards the annual cost of joining ESO. Over the past year, plans have been developed on how ING could be operated within a reduced budget. Central in these plans is the improved collaboration with the Instituto de Astrofísica de Canarias. The ING Board has played a very active role in securing an agreement of principles of how in the future PPARC, NWO and the IAC could collaborate in the operation of the ING. The decision from PPARC Council is in line with these plans.

The key elements of the changes that these plans entail are presented here.

Probably the most important change is presented by the fact that the Instituto de Astrofísica de Canarias will become a full partner in ING as of 2002. An agreement was reached, with strong support from the ING Board and the UK and NL funding agencies, on the terms under which the IAC would join in the operating costs of ING. This agreement significantly alleviates the impact of the budget reductions announced by PPARC and allows ING to remain a strong and vibrant organisation that can deliver quality service to its user community. The tight collaboration with the IAC is of strategic importance as this institute fulfills a pivotal role in the development of the observatory site, in particular with the construction of the 10-m GRANTECAN and its plans to create a European collaboration for observing facilities in the Northern hemisphere. Moreover, the IAC is developing a new observatory centre at sea level on La Palma, in which the ING will participate. But nevertheless, the future budget available to ING for the operation of the telescopes will reduce by more than 30%, in spite of the additional contribution of the IAC. The IAC's contribution will commence in 2002, and the Netherlands will leave its annual contribution largely unchanged. This large decrease in the operational budget and the change of balance between the international partners implies a number of

important changes, that can be summarised as follows:

#### 1. Balance of Observing Time

The balance of observing time will gradually change over the following years. The agreed percentage breakdown of observing time will be as follows (see Table 1).

#### 2. Service Observations

The existing scheme of service observations that are carried out by observatory personnel will be discontinued on the JKT from the end of semester 02A and on the INT from the end of semester 03A. On the WHT service observation will remain available.

#### 3. Use of the JKT and INT

The JKT will be taken out of normal service as of September 2003. Possibly this telescope will continue as a special-purpose telescope with external funding. But if no additional resources can be found the JKT will close. It is the intention to review the longer term future of the INT before the end of 2004. By that time various other telescopes will be carrying out imaging surveys and the Liverpool telescope will be well established, making it timely to review the scientific use of the INT. Until that time, operation of the INT will have to be carried out at a lower cost. Cost saving measures envisaged are to operate the INT with

	2001	2002	2003	2004	2005–9
UK	60.0	54.0	50.0	48.9	47.6
NL	15.0	15.0	15.9	17.0	18.3
CAT Spanish additional time	0.0	6.0	9.1	9.1	9.1
CAT Spanish time	20.0	20.0	20.0	20.0	20.0
CCI international time	5.0	5.0	5.0	5.0	5.0

Table 1. Percentage breakdown of observing time.

only the Wide Field Camera from some time in 2003 onwards, and at the same time fully withdraw telescope operator support from that telescope.

#### 4. Use of the WHT

The focus of support and development will shift fully towards the WHT in order to keep that telescope as attractive as possible to the community. Although scheduling flexibility and instrument changes may have to be more strictly limited, the service delivered will be enhanced through the introduction of queue observing mode for up to 30% of the time on the WHT. Primarily queue observing will focus on adaptive optics observations.

#### 5. A Common-User IR Imager and Spectrograph

As part of the agreement with the IAC, the LIRIS IR imager and spectrograph that is currently being developed at the IAC will be made available to the general user community for at least 3 years after commissioning and acceptance. Commissioning of LIRIS is anticipated to take place at the beginning of 2003. Given the popularity of ING's IR imager, we expect that this new instrument will attract much interest from the user community.

The changes mentioned above focus on the impact that the budget reductions will have on the use of the telescopes. Not mentioned here are the complex internal changes that will be implemented and cost saving measures in the way ING operates. It is our intention to minimise the disruption to normal day-to-day operation of the telescopes as much as possible, and ING remain dedicated to deliver the best possible service to our user community.

## Collaboration Between Observatories

In the European astronomical arena international collaborations are emerging between national facilities. These collaborations have been promoted and supported by the OPTICON European network, which

combines astronomers from many European countries and is funded through the EU (see <http://www.astro-opticon.org>). An important driver for setting up collaborations between observatories is the wish to make the best instruments available to the wider community of astronomers for the advancements of our science, and to make the existing facilities work more efficiently in the process. Duplication of instrumentation with the consequential costs could be avoided, thus providing a better service to the community at a lower overall cost.

A few specific collaborations between the ING telescopes and other telescopes are being considered. One particular collaboration is to share observing time between the WHT and the Italian Galileo telescope, TNG, on La Palma. This collaboration centres on the use of the high-resolution spectrograph on that telescope, as the UES echelle spectrograph on the WHT will not be offered for some time.

Other collaborations currently under consideration are with the 3.5-m Calar-Alto telescope, with the Canada-France-Hawaii Telescope, and with the Nordic Optical Telescope. Discussions with these facilities are still at an early stage. In any case, for such collaborations to come into effect there must be a clear advantage for our community of telescope users. The above mentioned arrangement with the TNG is a good example, where

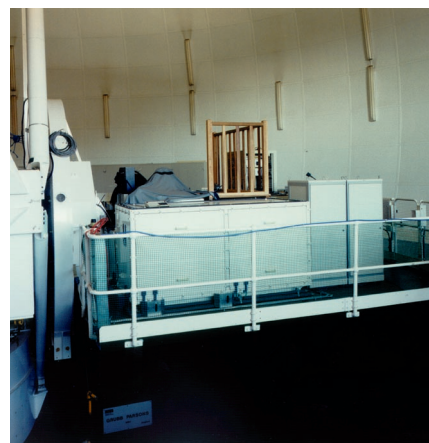
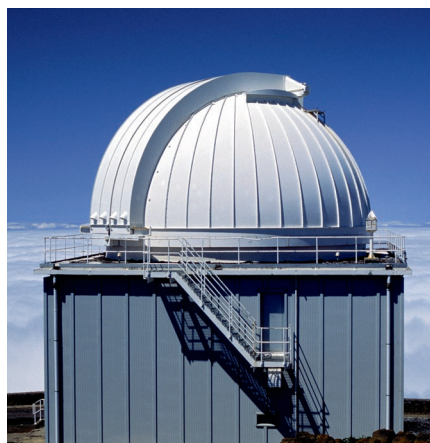
without this arrangement the opportunity for high-resolution spectroscopy would have been lost.

## The Utrecht Echelle Spectrograph

The longer-term availability of a high-resolution spectroscopic facility is under study. The Nasmyth focal station currently occupied by the Utrecht Echelle Spectrograph will become a dedicated focus for adaptive optics instrumentations. For that reason the UES will be taken away from the telescope, but not necessarily be simply decommissioned. Apart from decommissioning there are currently two options. One option would be to enhance the instrument with an image slicer and fibre optics feed improving its spectral stability. The instrument would then be placed in a stable and controlled environment. The second option under study is the possibility to deploy UES on the 10-m GRANTECAN telescope, also fed by fibres.

Both options carry attractive possibilities, but first technical aspects will have to be explored. Apart from the technical and astronomical prospects, under the much tighter future operational budgetary regime aspects of operational efficiency and stream lining will become ever more important aspects for ING. □

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*As part of the restructuring plan, both the Jacobus Kapteyn Telescope (September 2003) and the Utrecht Echelle Spectrograph (July 2002) will be taken out of normal service.*