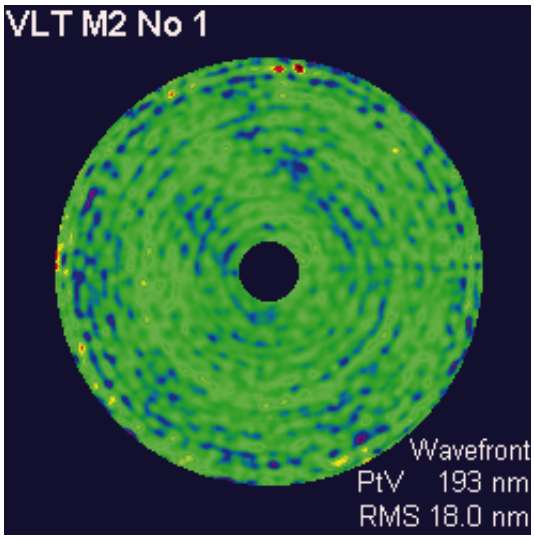

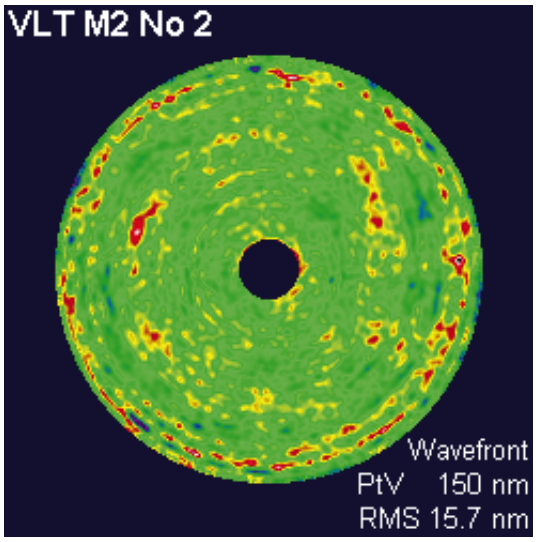

spections were also performed. The surface quality of both mirrors is excellent and within specification.

Table 2 provides the major optical performance of the first two secondary mirrors. The two mirrors are extremely similar, with only a fraction of the budget of error allocated for the radius of curvature and the conic constant being used. REOSC was also able to improve the optical quality with the polishing of the second mirror.

It is possible to conclude that while the feasibility of the Beryllium technology used had been demonstrated with the delivery of the first secondary mirror and the excellent images already obtained by the first VLT telescope, a further advance in the manufacturing process was achieved by REOSC with the recently delivered second mirror, leading to an improvement of the optical performance and to a shorter production time. The total production of the first mirror demanded more than two years, while the second mirror was produced in around 20 months.

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The La Silla News Page

The editors of the La Silla News Page would like to welcome readers of the twelfth edition of a page devoted to reporting on technical updates and observational achievements at La Silla. We would like this page to inform the astronomical community of changes made to telescopes, instruments, operations, and of instrumental performances that cannot be reported conveniently elsewhere. Contributions and inquiries to this page from the community are most welcome. *(J. Brewer, O. Hainaut, M. Kürster)*

News from the NTT

O. R. HAINAUT

During the last three months, the operation of the NTT has been particularly smooth; we did not experience any major problem, and the weather has been fairly cooperative. The technical downtime was of the order of 2%.

On August 12 and 13, the NTT and its team passed a very detailed "Acceptance Review", during which all the technical and operational aspects of the telescope were presented. This review constituted the formal return of the NTT from the VLT Division to the La Silla Observatory after the Big-Bang. The review board found the technical and operational status of the telescope to be more than satisfactory; the staff, system, operation, and procedures all received excellent reviews.

The dewar of SUSI2 was suffering from vacuum losses since the installation of the instrument (cf. last issue of *The Messenger*). It has been exchanged by a new, improved dewar, which immediately worked perfectly. Also, we identified the source of a mysterious light contamination which occasionally affected the images: the lamps of the rotator and altitude encoders were not perfectly shielded. In some positions of the rotator, a part of the instrument which was not correctly blackened was reflecting the encoder light to the detector. Additional light baffles have been mounted, and the blackening of the instrument completed, resulting in the complete removal of the contamination. SUSI2 is now performing at its expected level.

Over the past couple of months, the Observation Block (OB) database in La

Silla, the OB repository in Garching, and the communication between these two have caused many problems, sometimes resulting in a degradation of the operation. While these problems were efficiently tackled by the Data Management Division, they nevertheless revealed some weaknesses in the system, which have already been partially solved by improving the structure of the OB database. A more robust version of the P2PP software (used at the telescope for the preparation of the OBs) will soon be delivered.

Since the "Big-Bang", the operation of the NTT is performed according to detailed and optimised procedures and check-lists; these have helped ensure the high reliability of the system. While these procedures are in constant evolution, the vast majority of the NTT operation is now documented as an extensive collection of WWW-based procedures. The next step is to tackle the maintenance plan of the system; while most of the maintenance tasks are regularly performed, their execution and the corresponding procedures are currently mostly left to the experience of the team's technicians (fortunately, their experience is extensive). The maintenance plan and its corresponding procedures are now being documented in the same way as was done for the operation procedures. In addition, a vast collection of "templates" (scripts that can be automatically executed by the whole system) has been developed to measure the various parameters needed for the maintenance, such as the current consumed by the various motors of the rotators, the instrumental flexures and focus variations, etc. A first calibration plan will soon be implemented, and will continue to be developed and expanded in 1999. This will allow us to detect problems at an early stage, and take corrective actions before they lead to a loss of observing time.

Finally, let me announce that new versions of the EMMI and SOFI user's manuals have been released and are available on the NTT web page. They are very detailed, and include recent throughput measurements of all observing modes, as well as notes for the preparation of the observations with the "neoclassic" system (Observation Blocks, etc.).

2.2-m Telescope Upgrade: a Status Report

T. AUGUSTEIJN

The hardware modifications and the installation of the VME-based telescope control system (TCS) were finished according to schedule on the 1st of October 1998. In addition, the telescope cabling has been cleaned, the control room refurbished, and the TCS and the instrument control system (DAISY+) workstations have been installed and integrated into the local network.

At the time of writing, a direct camera is mounted at the Cassegrain focus for test purposes. We are currently in the process of testing the TCS user interface and verifying the telescope performance in preparation for the arrival of the Wide Field Imager (see previous issue of *The Messenger*). Although the current set-up is not optimal, we regularly obtain sub-arcsecond seeing and on various occasions have obtained seeing below 0.5 arcseconds, demonstrating the excellent optical quality of the telescope. In combination with the well-sampled half-degree field of the WFI, the 2.2-m Telescope will be a major asset to the observing facilities at ESO. Updated information on the 2.2-m Telescope and the WFI is available on the 2p2 Team Web Page (see URL: *http://www.ls.eso.org/lasilla/Telescopes/2p2T/2p2T.html*).

Performance of CES 3.6-m Fibre Link and Image Slicers

M. KÜRSTER

Three new image slicers for the fibre link from the Coudé Echelle Spectrometer (CES) to the Cassegrain focus of the 3.6-m telescope have arrived. Their properties are summarised in the following table which compares the measured and planned resolving powers, and lists the number of slices produced by each slicer as well as the extent on the CCD of the total spectrum (all slices) in the direction perpendicular to the dispersion.

Even though the goal for the maximum resolving power has been missed by 12%, the high-resolution image slicer does make the CES by far the highest-resolution facility among all ESO instruments. Using the spectrograph entrance slit instead of an image slicer even higher resolving powers up to R = 284,000 can be achieved, albeit at the expense of a large loss in throughput.

During the commissioning period (3–7 November 1998) strong and variable cirrus clouds hampered the determination of reliable measurements of the efficiency of the whole optical train (telescope, fibre link, image slicers, spectrograph and detector). Nevertheless, it was possible to obtain some encouraging lower limits for a few wavelengths that were not much lower than the expected values. As an example, the efficiency near 6100Å is listed in the table for CCD #38 and less efficient CCD #34 (values in brackets). Within a few percent, all slicers yield the same throughput. Results from final efficiency measurements will be communicated when they are available.

Slicer	Resolving power		#	Extent	Efficiency at 6100 Å	
	Achieved	Planned	Slices	(pixels)	Lower limit	Expected
High res.	194,000	220,000	12	400	7.2% (3.6%)	8% (4%)
Medium res.	138,000	110,000	8	265	"	"
Low res.	88,000	80,000	6	168	"	"

The CES instrument is currently undergoing a refurbishment which we expect to be finalised by the end of July 1999. The major modifications foreseen for the CES include:

- An upgrade of the instrument control system to VLT standards (second VLT compliant 3.6-m instrument after EFOSC2).
- Stabilisation of the predisperser via a new drive system.
- Improving the turntable drive.
- Stabilisation of the thermal environment of the instrument by modifying the coudé room.

We will continue to report all important changes on these pages.