

News from the 3.6-m Telescope

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After completion of the 3.6-m upgrade project (about which was reported in the September 1999 issue of *The Messenger*), we are now in a phase of consolidation, system finetuning, and optimisation. The general operation of telescope and instrumentation has now become very smooth and reliable, and the users are in general very pleased and satisfied with the quality, stability and comfort that is offered to them.

One week of planned technical downtime was required to perform various maintenance actions last March. Over the past four years, M1 has been successfully re-aluminised in a joint effort of our optics and mechanics team in La Silla. We received a "new" mirror, increased in reflectivity from below 83% to about 90.4%, with microroughness variations from 45 Å to 70 Å. On the same occasion, our lateral pad system (which keeps M1 in its mirror cell without movement or optical aberrations) has been thoroughly revised and adjusted. One radial pneumatic valve has

been found damaged by water contamination and has been replaced. During the removal of the M1 cell, the new painting of the telescope was finished, it now shines in fresh, blue colours. Useless air-conditioning ducts were also removed from the dome area.

The second instrument at the 3.6-m that is now running under fully VLT-compliant control is the CES. This instrument has seen a large number of improvements during the past months. The coudé room has been refurbished, permitting an improved temperature stability and light tightness. The pre-disperser has received a long-awaited new control mechanism which permits very precise and reproducible positioning. Also, the grating and slit drive mechanisms were changed in order to make them VLT compliant. All this has led to a nightly spectral stability as well as a night-to-night reproducibility of 0.055 px rms, corresponding to 26 ms⁻¹ at a wavelength of 5400Å. The new

EEV CCD in use with the CES provides excellent cosmetics and an increased wavelength coverage with 4096 pixels in the dispersion direction (e.g. 35.5Å at 5400Å). A new exposure meter has also been integrated into the instrument.

The La Silla detector group is currently testing another EEV CCD which has a better quantum efficiency, especially in the blue (below 4000 Å), and seems to be comparable to the present one in terms of its other properties (cosmetics, read-out noise). The coming weeks will also see the test of a new object fibre which also has an improved blue efficiency. Provided that both tests yield satisfactory results, the future CES blue efficiency might be enhanced by a factor of about 4 altogether.

In the course of writing these lines, the infrared f/35 focus and adapter are being commissioned under VLT-SW control. Although TIMMI2, the new, second-generation mid-infrared multi-mode instrument is not a generic VLT-compliant instrument, it will nevertheless make elegant use of the features of the new control system. All cryogenic tests of TIMMI2 have been successfully passed, and detector, optomechanics and instrument control software are completed. Instrument integration will take place at La Silla in the premises of our telescope, and it is now expected that the instrument will be offered to the community next September or October.

A new operational astronomer at the 3.6m telescope is Nancy Ageorges. She will concentrate primarily on our IR instrumentation, especially the operational support for TIMMI2. She replaces Pierre Leisy, who has now become integrated into the NTT team. For us, Pierre will continue developing and implementing an EFOSC DFS pipeline. Nancy's experience with ADONIS will also allow her to partially cover the hole that the ADONIS instrument scientist, Olivier Marco, will open when he starts work on Paranal in September this year.



The 3.6-m telescope after installation of the re-aluminised M1.

Photographer: H.-H. Heyer