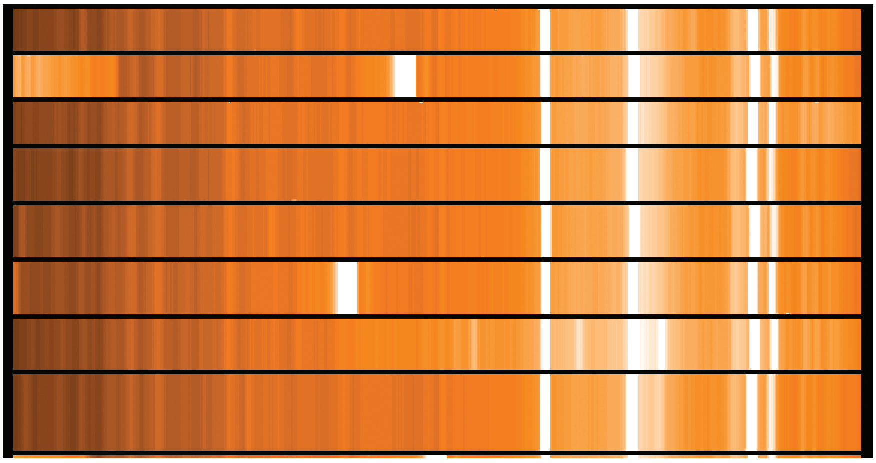

Figure 4: A portion of the sky spectrum for the 8 slits shown in Figure 3. The spectra have been calibrated and aligned in wavelength. The strong sky emission line close to the centre is the 5577.4 Å [O I] line, followed at longer wavelength by the blended doublet of Na I at 5893 Å and the 6300 and 6364 Å lines of [OI]. Some other features of the VIMOS low-resolution spectral data format are also visible. In the slit #2 and #6 from the top the strongest line is the zero order from contiguous multiplexed spectra. In slit #2 from the above, the contamination from the slit in the lower part of the mask is visible on the left. In the slit #7 from above, the –1 order contamination is visible, overlapping the right part of the spectrum.

ing time last year, test runs between November 2002 and March 2003 and the first four months of regular operation in service mode since April 2003. Periods of acceptable reliability following a major tuning of the instrument by the Consortium technical team did not prove to last long. If left unchecked, we fear that the instrument could progressively degrade to a level where its regular operation would become impossible.

With the instrument taken over by ESO from June of this year, we have decided to launch a major repair/upgrade plan, based on two extended interventions by the Instrumentation Division and the Paranal Observatory within the next 12 months.

Although the time when the instrument is off the telescope is concentrated around full moon, the interventions will still result in some loss of useful observing time and they imply some additional cost and manpower to the project. It is however a good investment considering the total value of the project and its scientific capability.

This first, 6 week-long, intervention is taking place in August-September of this year. We are in particular going through extensive verification and refurbishing of the instrument focal plane assembly (including the Mask Exchange Units and the IFU) to improve its reliability and possibly reduce the IFU flexures. The time will also be used to investigate the changes required by the Grism Exchange Units. The instrument is expected to come back into regular operation in the second half of September.

The second intervention is planned for the spring of 2004. The main objective will then be the full refurbishing of the complex GEUs. We now plan also to use this occasion to replace eight high-resolution classical grisms (four blue and four red) with Volume Phase Holographic ones, which are now available in the large size (160 mm) required for VIMOS. The new sets have been just ordered. Besides a substantial reduction in weight, hopefully beneficial to the reliability of the exchange mechanism, they will boost the VIMOS efficiency in these sub-modes by almost a factor 2. The start of P 73, 1st April 2004, should find VIMOS in a much more robust state and able to deliver efficiently the unique science for which this complex machine has been developed.

References

Le Fèvre O. et al., 2002, *ESO Messenger*, 109, 21

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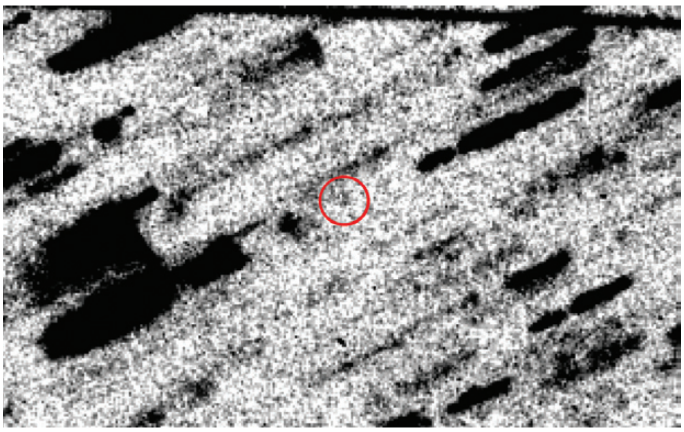
Hanuschik H. & Silva D., 2002, *ESO Messenger*, 108, 4

VLT Observes Comet Halley at Record Distance



Sky field in which Comet Halley was observed with the ESO Very Large Telescope (VLT) at the Paranal Observatory on March 6-8, 2003. 81 individual exposures with a total exposure time of 32284 sec (almost 9 hours) from three of the four 8.2-m telescopes were cleaned and added while shifting their positions according to the motion of the comet. The faint, star-like image of Comet Halley is visible (in circle, at centre); all other objects (stars, galaxies) in the field are "trailed". A satellite trail is visible at the very top. The field measures 60 x 40 arcsec^2; North is up and East is left. ESO Press Photo 27c/03

Seventeen years after the last passage of Comet Halley, the ESO VLT has captured a unique image of this famous object as it cruises through the outer solar system. It is completely inactive in this cold environment. No other comet has ever been observed this far (28.06 AU heliocentric distance) or that faint (V = 28.2). The image of Halley was obtained by combining a series of exposures obtained simultaneously with three of the 8.2-m telescopes during 3 consecutive nights with the main goal to count the number of small icy bodies orbiting the Sun beyond Neptune, known as Transneptunian Objects (TNOs). The combination of the images from three 8.2-m telescopes obtained during three consecutive nights is not straightforward. The individual characteristics of the imaging instruments (FORS1 on ANTU, VIMOS on MELIPAL and FORS2 on YEPUN) must be taken into account and corrected. Moreover, the motion of the very faint moving objects has to be compensated for, even though they are too faint to be seen on individual exposures; they only reveal themselves when many frames are combined during the final steps of the process. It is for this reason that the presence of a known, faint object like Comet Halley in the field-of-view provides a powerful control of the data processing. If Halley is visible at the end, it has been done properly. The extensive data processing is now under way and the intensive search for new Transneptunian objects has started. (*see ESO PR Photo 27/03*)