Tracking of Moving Targets

Special efforts were undertaken to better support the tracking of moving targets. In autoguiding mode, the guideprobe was stepwise offset as to compensate for the differential motion of the target. But because there is no servo in the control loop, the errors tended to accumulate with time. On the other hand, the improvement of the pointing model automatically enhanced the tracking accuracy (both functions use one and the same software), and it was concluded that within certain limits the freely tracking telescope would in this case give a better performance. A special pointing model was built, therefore, to enable observations of the impact of comet SL-9 on Jupiter down to elevations of just 10 degrees (with an rms of 1.7 arcsec).

Image Quality

A careful mapping of the field astigmatism has been performed on side B. The results are very consistent with similar measurements obtained on side A during the commissioning period. This indicates that the results are correct and that the NTT has been stable over a long period of time. The image analysis software for side B has been updated. This is also a further step towards implementing the parallel mode of the image analysis where the image analysis has to be performed off-axis. Successful tests of this mode have also been carried out.

There have been suggestions that the elongation sometimes seen in EMMI/SUSI images is due to astigmatism. A more in-depth analysis kindly provided by R. Wilson shows that for any plausible assumptions field astigmatism

cannot explain this effect, even if not corrected at all. Additional tests will be made in August.

IRSPEC

Following the solution (by B. Gilli) last year of a problem with the recovery from synchronization losses of the various real-time VME nodes controlled by the NTT computer, the operation of IRSPEC has now been very smooth for several months. Especially beam switching has no longer been a nightmare.

Even better news is that the software to transfer IRSPEC data directly to the workstation is now almost ready to use. There, the data can be reduced with the IRSPEC package in MIDAS. A graphical user interface to this package has been developed by C. Levín and is now being offered on an experimental basis.

The manual was updated a few months ago. It is offered via anonymous `ftp` only (node `ftp.hq.eso.org`, subdirectory `pub/NTT`.

EMMI/SUSI

The Optical Detector Group has performed a full test of CCD No. 36 (red arm of EMMI); No. 25 (SUSI) is scheduled for August. Test reports are available via anonymous `ftp` from node `lw5.ls.eso.org`, subdirectory `pub/CCD/new_noise_tests`. It is recommended to always check file `/pub/CCD/README` first because structure and scope of the database are not yet final. CCD No. 31 (blue arm of EMMI) was this year tested only partly. However, the control electronics was carefully fine-tuned by P. Sinclaire, which resulted in a further reduction of the read-noise level from 6.6 to 4.3 e$^-$ in slow mode.

Following a design by T. Abbott, R. Warmels has implemented a set of MIDAS commands which will enable Visiting Astronomers to evaluate CCD test data at the telescope or their home institutes. It is expected that after further testing, this software will be distributed with the 94NOV release of MIDAS as an extension of the present CCD reduction package. In addition, the EMMI/SUSI control software has been modified such that sets of exposure definitions can be saved to and restored from disk. This should also facilitate the taking of test data by Visiting Astronomers according to a fixed standard. For the same purpose a LED assembly was prepared by S. Deiries which should eventually replace the radioactive β lights as stable standard light sources.

A new, intermediate version of the EMMI/SUSI manual can be requested from the Visiting Astronomers Section in Garching (`visas@eso.org`).

More Disk Space and Computing Power for Observers

With the advent of the 2k×2k CCDs at the NTT, many observers have strongly felt the shortage of disk space. The computer group at La Silla has now installed a new 4 Gbyte SCSI-2 disk which triples the previous capacity. A further increase to 6 Gbytes is envisaged. For the same reason, the computer group at La Silla replaced the Sun Sparc 10 workstation with an HP 735 workstation with 96 Mbytes of RAM. This gives significantly improved throughput, especially for operations involving several large frames.

Because especially in the afternoon observers and technical staff were competing for the keyboard and screen of the workstation, an additional X-terminal has been installed for the technical staff.

Additional News from ESO-Chile

J. MELNICK, ESO-La Silla

The weekend of August 19 was extremely hectic on La Silla. The movers arrived to transport the material of the Astronomy Support Department to our new base in the Vitacura office. The computer network had previously been divided into two subnets, both of which were kept running for about 10 days before the move. Then the Santiago subnet was disconnected and packed for Santiago. Thus, computer service was maintained with minimal interruption throughout the process. Service was started in Santiago

about one week after the material was unpacked, a mere 10 days after packing started on the mountain, and in fact much of the delay was due to the upgrade of the Sun Servers from Sparc10 to Sparc20. I would like to congratulate our two systems managers, Cristián Levin and José Méndez for this remarkable achievement!

The library was also moved in a record time. Packing started on August 18, and the library was ready in Vitacura on August 25. The initiation of activities on

Vitacura was celebrated that day with a cocktail offered by the Director General and attended by ESO staff and Chilean scientists and educational authorities. Congratulations to our librarian, Maria Eugenia Gómez, for this success.

The Santiago-Based Model

For already more than one year before the move we had been experimenting and fine-tuning the so-called Santiago-based model. This means that science

operations on the mountain are handled by a multi-disciplinary team, the *Telescope Team*, composed of astronomers, operations staff, systems managers, and night assistants, who from Tuesday to Tuesday are on duty. Astronomers are on duty one week every three. The rest of the time is used for compensatory leave and scientific research.

La Silla and Vitacura are linked with a dedicated 64 k digital line which carries computer communications and two voice channels. Thus, any telephone in the Santiago base can be reached by dialling a code and the extension (just like the tie line from La Silla and Garching). The computer network is in fact one network divided into two subnets, and computer communications between the two sites are remarkably fluid. We expect to upgrade the link to 256 k in order to accommodate multi-media communications.

We are pleased to report that, with the exception of changes in the Library, visiting astronomers have hardly noticed the change!

The Library

The Library from La Silla was almost completely moved to Vitacura (with the exception of some engineering books and journals), and the Library in the old ESO office in La Serena was moved to La Silla. Thus, while the Library on La Silla now contains most journal collections, most colloquia and symposia series, all catalogues, and about 1000 books, it is still not as complete as the old Library.

The reduced Library contains most of what we consider to be necessary to support observers on the mountain. We are aware, however, that for some requirements this may not be enough and, starting in October, together with the end-of-mission reports, observers will be kindly asked to fill a questionnaire concerning the Library which we will use, to decide on the purchase of books, journals and collections deemed necessary on the mountain by a significant number of observers.

Seminars

The traditional seminars will from now on take place in Santiago. We hope that our colleagues coming to observe at La Silla will continue to be so generous with their time, and agree to give talks in Santiago, and all visiting astronomers are strongly encouraged to come to the office on the way to or from La Silla to talk about science, attend the seminars, check their e-mail, discuss the instrumentation, or simply to say hello!

Computers

The computer systems on Vitacura and La Silla are actually very similar. Both are X-terminal nets served by 2 SparcServers each. There is plenty of disk space at both places to allow efficient data reduction by staff and visitors. The number of X-terminals in the La Silla computer room has also been increased to provide off-line computing services for visiting astronomers. The workstations at the telescopes are being upgraded to HP735 and equipped with about 4 Gby of disk to be used for on-line data reduction. At the beginning of next year the off-line nets will be upgraded by increasing substantially the computing and disk-storage capacity. Visiting astronomers who have a gap between observing runs may think of spending some of that time at Vitacura reducing their data.

3.6-m Seeing Improvement Programme

We are still struggling with the Air Conditioning system (AirCo). The tests we have done so far show that under most conditions it should be possible to eliminate most of the dome seeing if we operate the AirCo properly. So far, these tests have been done thanks to the co-operation of visiting astronomers on "stolen" time. A number of nights have been scheduled for the next period which should allow us to reach firm conclusions and develop an operational scheme for the system.