This year the special topic will be analysis of two dimensional direct images including stellar/surface photometry, search for objects and classification. There will be the possibility of presenting short papers during the workshop and we encourage you to contact us if you wish to give a contribution or just participate. We expect that proceedings of the scientific sessions will be published. Our aim is to create a forum for discussions of different methods and algorithms used in image processing.

3. Portable MIDAS

The first official release of the portable MIDAS, 88NOV, was made with some delay due to verifications of the VMS installation procedure. This first version does not yet include all applications and especially only supported Gould-DeAnza IP 8500 and X-window version 10.4 display systems. It is expected that these deficiencies will be resolved in the 89MAY release which will contain the basic display software for X-window version 11 being adopted as the standard for MIDAS. From the 89MAY release the portable MIDAS will be the *only* official version of MIDAS for both UNIX and DEC/VMS systems.

4. Access to Astronomical Catalogues and Databases

A new version (2.2) of STARCAT is now available; it is accessible from the ESO computer or remotely through networks. Here are some new features of this version:

- astronomical catalogues can be queried by a target radius and position. The position may be specified in many coordinate systems (equatorial at any equinox, galactic, supergalactic, ecliptic);
- J2000 coordinates are computed and listed for every catalogue;
- the result of any query can be stored as a MIDAS table, or as a plain ASCII file;
- remote connections now include IUE-Vilspa, SIMBAD, and EXOSAT (ESTEC) but are only available for local ESO users.

About 30 astronomical catalogues are available on-line, with complete on-line documentation. Among the most recently incorporated ones are for example the new version (1988) of Abell's catalogue of clusters of galaxies, and the most recent version of the catalogue of White Dwarfs (McCook and Sion, 1987).

The same STARCAT interface will be used for the future catalogue of the ESO Archive.

5. Measuring Machine Facility

The central computer of the Measuring Machine Facility is being replaced by a Stellar GS-1000 system. The decision was made after extensive MIDAS benchmarks giving it the best price/performance. The system will be able to analyse the scans of full Schmidt plates which the upgraded OPTRONICS machine is expected to perform later this year. The Stellar GS-1000 system runs a UNIX-like operating system and has an X-window system version 11 for display. It will run MIDAS for reductions of measuring machine data and be connected to the central computers through Ethernet using TCP/IP protocols.

6. AIPS-MIDAS Agreement

An increasing number of astronomers are using observations in several wavelength regions (e.g., optical, infrared, and radio) in their research. In general, different data reduction software packages are used for the different wavelength regions. Also different software packages have different capabilities, strengths, and weaknesses. It is therefore important to ease the transfer of data between image processing systems. As a first step in this direction, AIPS and MIDAS have agreed to write FITS files on disk with identicial specifications. This will enable users of these systems to exchange data files much faster via disk instead of passing through a magnetic tape. AIPS already conforms to the agreement while MIDAS will implement it as of the 89MAY release.

The agreement specifies that FITS disk files have a record size of 2880 bytes, which is the standard FITS logical record length. There shall be no "extra" bytes in a record, such as those used to specify variable lengths on some systems. In this way, FITS disk files may be passed between different operating systems through networks with no ambiguity. The use of a 2880-byte record implies that reading programmes are not required to reblock the data into logical records, although packages such as AIPS and MIDAS can be expected to have that capability in future.

7. MIDAS Hot-Line Service

The following MIDAS support services can be used to obtain help quickly when problems arise:

- EARN: MIDAS@DGAESO51
- SPAN: ESOMC1::MIDAS
- Tlx.: 52828222 eso d, attn.: MIDAS HOT-LINE
- Fax.: +49-89-3202362, attn.: MIDAS HOT-LINE
- Tel.: +49-89-32006-456

Users are also invited to send us any suggestions or comments. Although we do provide a telephone service we ask users to use it only in urgent cases. To make it easier for us to process the requests properly we ask you, when possible, to submit requests in written form through either electronic networks or telex.

Institutes which would like to use the MIDAS system should submit a MIDAS Request Form to the Image Processing Group. This form can be obtained through the HOT-LINE service.

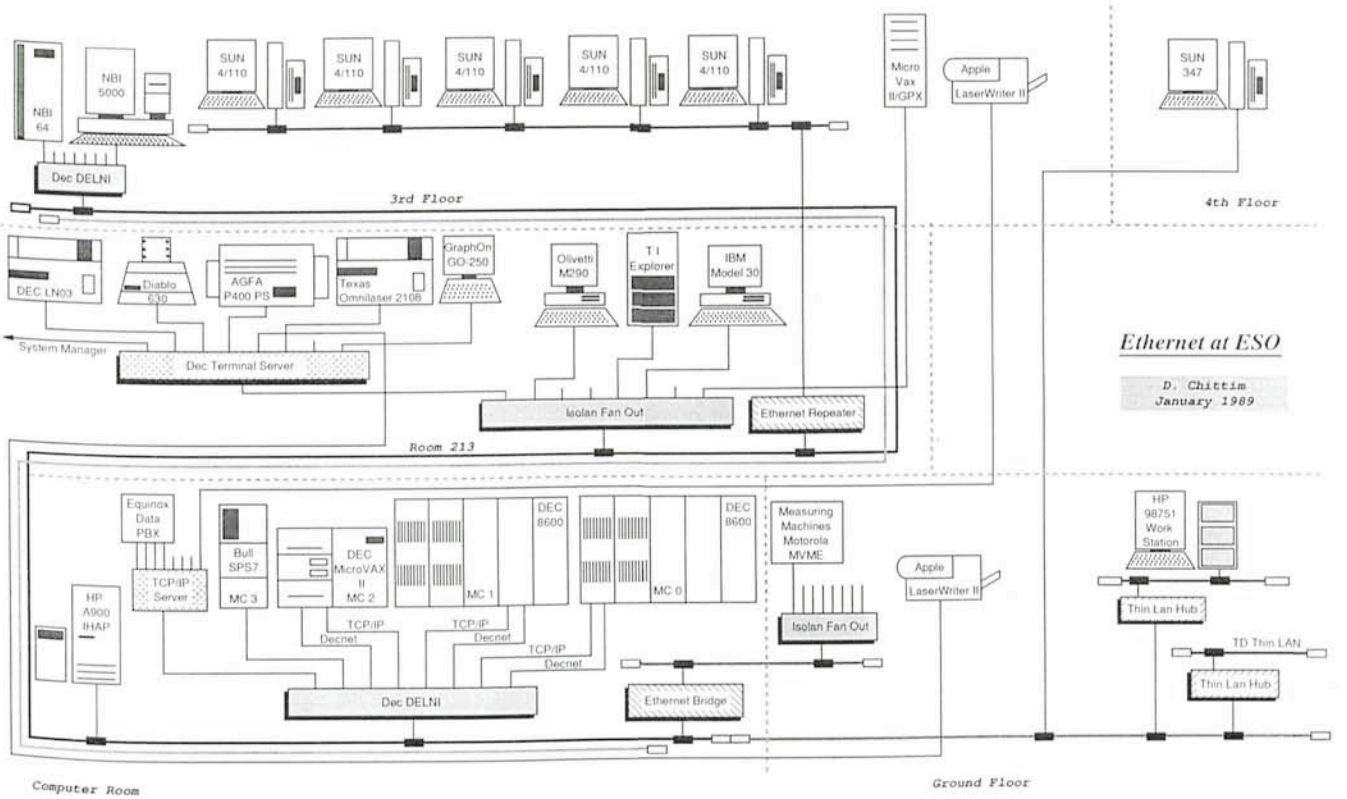
Ethernet at ESO Headquarters

D. CHITTIM, Benney Electronics, ESO

Ethernet is a cable used with associated software packages for connecting computer equipment throughout a building. It has the advantage that equipment can be connected along its length at almost any point. Due to the high data transmission speeds involved, ethernet is most suitable for computer-to-computer communications although terminals can be connected onto it if necessary.

Since the initial installation of ethernet at the ESO Headquarters two years ago, the system has grown steadily. There are now only a few areas of the building which are not close to the network. The system consists of both "Thick Ethernet", which uses an expensive co-ax cable which is almost immune to electrical interference and a thinner cable which is more susceptible to interference but cheaper (hence it's nickname "Cheapernet").

– The main ethernet cable can be five



hundred metres long but may be extended by using a "repeater".

– Each device may be no more than fifty metres from the cable.

– Each device or "node" on the network has a unique address. When data is transmitted it is preceded by the address to which is has to be sent. Each device checks the address and will take action only if the data is for that particular device.

– The small black rectangles shown along the length of the cables are Medium Attachment Units (MAU). These pierce the outher shield of the cable and make contact with the inner conductor. (In the case of "cheapernet" this is done with plugs and sockets).

– Equipment can be connected directly to a MAU or through a "fan out" unit. The latter can either be a DEC DELNI box or an "Isolan" equivalent; both, however, perform the function of splitting the connection eight ways.

– The terminal servers provide eight serial (RS 232) interfaces directly onto ethernet. One supports the TCP/IP protocol, the other supports DECNET.

– The "ethernet repeater" serves mainly as a connection between two ethernet cable segments whose ends are inaccessible Networks connected by a repeater and can be considered to be a single unit. It can also provide an interface between a thick ethernet and a "cheapernet".

– The "ethernet bridge" is similar to a repeater, but it can translate one protocol into another. It is also used to separate a network carrying relatively little traffic from a heavily used one.

– A thin lan hub gives the possibility of connecting a thick ethernet cable to up to four thin ethernet cables.

– Both ends of every cable must be terminated with 50 ohms.

– Two cables to the Vaxes are required at the moment, one is used for the interface supporting the TCP/IP protocol, the other is used for Decnet communications. An increasing number of devices on the market now support TCP/IP and only these will be purchased in future.

– The Technical Division (TD) "cheapernet" has many devices connected to it including HP computers, test devices and VME chassis.

Changes to the configuration are made quite frequently, and it is possible that this diagram will be slightly incorrect by the time it is published, but if sufficient interest is shown I will produce updated diagrams from time to time.

My thanks go to Preben Grosbøl and Charlie Ounnas for their constructive comments.

EARTH AT NIGHT

In the caption to the reproduction **Earth at Night** (see *The Messenger* No. 54, p. 15) there was unfortunately no mention that the reproduction was made from a wall chart of Hansen Planetarium.

Earth at Night (23″ × 35″) is available from Hansen Publications, 1098 South 200 West, Salt Lake City, Utah 84101 (FAX-801-538-2249). Price $ 6.00 + $ 1.50 shipping. Wholesale pricing available on request.

NEW ESO PROCEEDINGS AVAILABLE

The Proceedings of the ESO Conference on

Very Large Telescopes and their Instrumentation

held from 21 to 24 March 1988 in Garching, were published in late 1988. The Proceedings, which contain a total of 1334 pages, are divided into two volumes and are sold at a price of DM 95.–. This price includes packing and postage (surface mail) and has to be prepaid.

Payments have to be made to the ESO bank account 2102002 with Commerzbank München or by cheque, addressed to the attention of

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Please do not forget to indicate your full address and the title of the Proceedings.