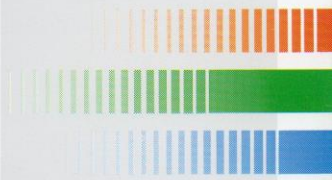# Atlas
CENTRE

Computing Services
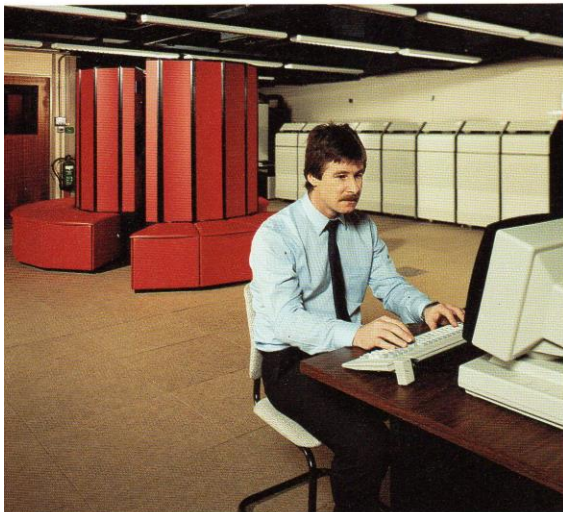
atlas ● centre

SUPERCOMPUTING SERVICES

IBM

The IBM 3090-600E/VF, used primarily by SERC-funded research scientists, is a powerful general purpose computer and supercomputer. The VM/XA/CMS operating system enables interactive and batch processing–not to mention large memory jobs, up to 999 megabytes (million bytes). This machine also comes equipped with:

- 256 megabytes main memory
- 1 gigabyte (a thousand megabytes) of expanded storage
- 6 processors, each capable of performing 15 million instructions per second (MIPs)
- 6 vector facilities, each capable of 100 million floating point operations per second (mflops)
- 100 gigabytes of direct access disk storage
- automated magnetic tape mounts and storage

A joint study programme between SERC and IBM uses the 3090 to identify new scientific applications of supercomputers. New ground has been broken in areas such as structural engineering, computational fluid dynamics, hydrology, material science, space and atmospheric science, crystallography, fundamental particle physics, and quantum chemistry.
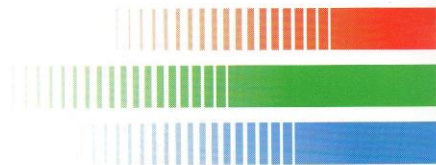
CRAY

The Atlas Centre maintains and operates a Cray X-MP/416, jointly owned and used by all Research Councils. This is one of the fastest and most powerful supercomputers available today. Cray's UNICOS (UNIX) operating system, with the IBM 3090 and a VAX 8250/3600 cluster as front ends, allows interactive access, and local and remote job submission. With 4 processors–each capable of a quarter of a billion operations every second, 128 megabytes of main memory, a filestore of 20 gigabytes, a vectorizing compiler, and multitasking software, the Cray supercomputer has aided research in:

- protein crystallography
- drug design
- oceanographic and atmospheric modelling
- epidemiology
- atomic and particle accelerator physics.

LARGE DATA STORAGE

The Atlas Centre provides efficient storage of large amounts of data with two devices: a Storagetek STK 4400 robotic cartridge tape store, which can store over 1 terabyte (a thousand gigabytes) of data, and a Masstor M860 cartridge storage device, capable of storing 110 gigabytes of data. Both feature automatic loading, and restoration of data to disk in less than two minutes.

OFFICE AUTOMATION

The 3090 hosts IBM's Professional Office System (PROFS). This full-screen, menu driven system allows users to send and receive mail, create and distribute documents, letters and memos, keep track of appointments, and schedule meetings.

DATABASES

Atlas Centre staff develop scientific and administrative applications using the SQL/DS and STATUS database management systems. Some current applications are the World Data Centre and the Geophysical Data Facility, repositories for atmospheric and stellar data, and the Library Catalogue and Grants Decision Support system, an administrative application. Users can also develop their own database applications using SQL/DS.
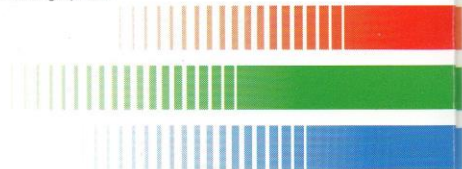

GRAPHICS

Both mainframes support a range of graphics packages and provide access to powerful graphics devices. GKS and UNIRAS provide familiar environments for UK academic research workers. The Atlas Centre has developed a sophisticated facility for direct animation of scientific results on video tape, a powerful tool for visualising complex systems.

Graphics metafiles generated on the Cray or IBM machines (or any JANET computer) may be sent to the video system or the other central output devices which include:

- **42-in Versatec colour plotter.** With 256 colour capabilities (more with some packages) it is good for large engineering or design drawings.

- **Xerox laser printer.** For high quality black and white text or graphics.

- **IBM 4250 electro-erosion printer.** At 600 dots per inch this will produce camera-ready A4 originals with mixed text and graphics.

COMMUNICATIONS

The Centre's Computing facilities are connected to several networks. The **Joint Academic Network (JANET)** links Atlas to most Universities, Polytechnics, and Research Council establishments in the UK. The Atlas Centre runs the JANET gateway to the **European Academic Research Network (EARN)**, which in turn has gateways to the **US BITNET** and other worldwide networks.

Atlas Centre computers can also be accessed via British Telecom's **Packet Switch Stream service (PSS)**. All these methods support terminal access, file and job transfer, and electronic mail.

CONSULTANCY

The Atlas Centre has a staff of nearly 150, whose wealth of expertise covers all the Centre's computing services. This includes VAXes and PCs as well as the IBM and Cray mainframes. Staff members are available as consultants, particularly in information technology, scientific applications and visualisation.

USER SUPPORT

The Atlas Centre operates a Service Line Help Desk for telephone enquiries. All calls are logged and any problems which cannot be dealt with immediately are passed to technical experts.

The Program Advisory Office (PAO) has staff who can answer technical queries about supported software or give general programming advice.

All the services have comprehensive on-line documentation and printed manuals. The Documentation Officer distributes all locally produced documentation and will order manufacturer supplied manuals.

The Centre runs educational courses for its users. These include courses for new users as well as courses on more advanced programming topics.
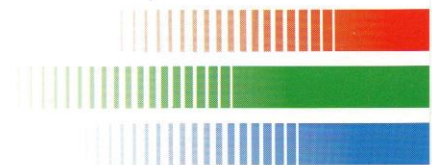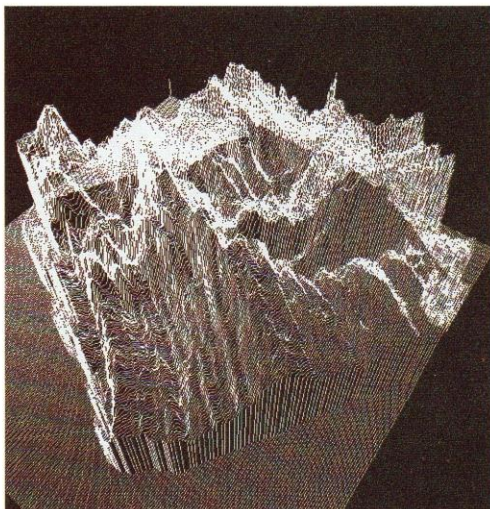
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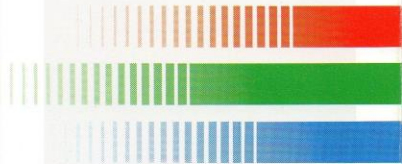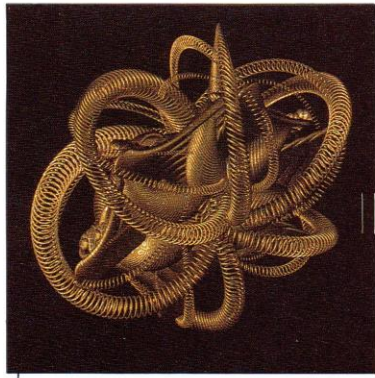### CENTRE

Computing Services

The Atlas Centre, as part of the
Science and Engineering Research Council's (SERC)
Rutherford Appleton Laboratory (RAL),
provides large mainframe and supercomputing
services for the laboratory and for other research
activities throughout the UK.

The IBM 3090 and Cray X-MP are two of many
computers and services offered by the Centre.
The computers are available 24 hours a day 7 days
a week, and are accessible via several networks.
Up to 10% of the computing resources of these
machines is available for privately-funded
industrial research.

The Atlas Centre is located just off the A34, halfway
between Oxford and Newbury. It is easily reached by
train to Didcot Parkway Station and is 1 hour's drive
from Heathrow Airport.

For more information contact:

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THE ATLAS CENTRE

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