# Central Computing Department
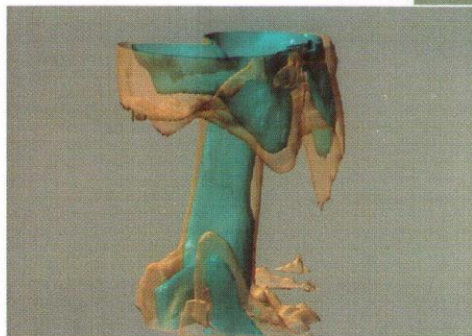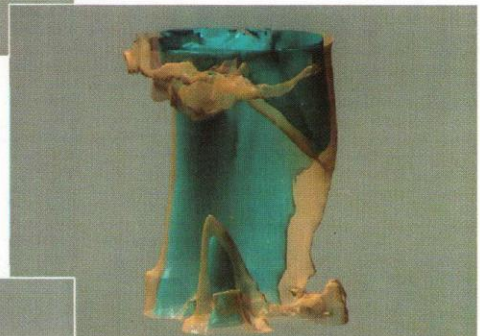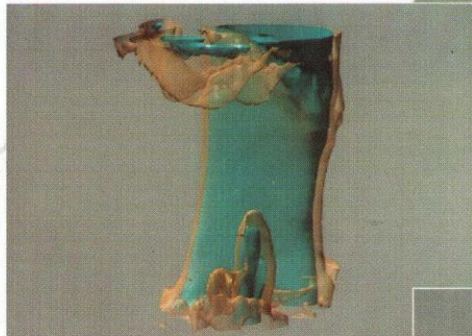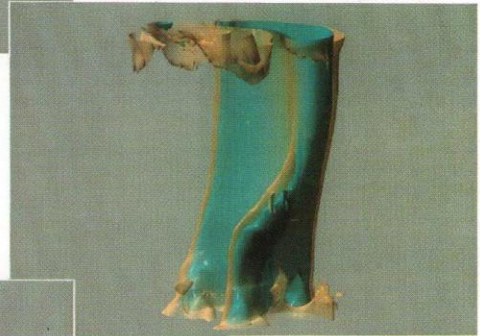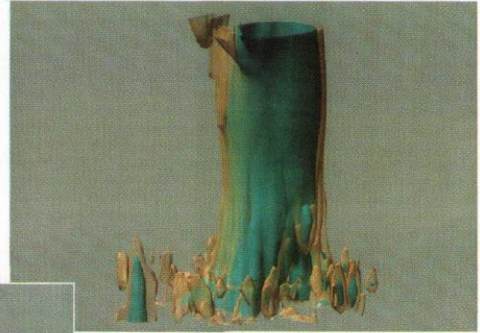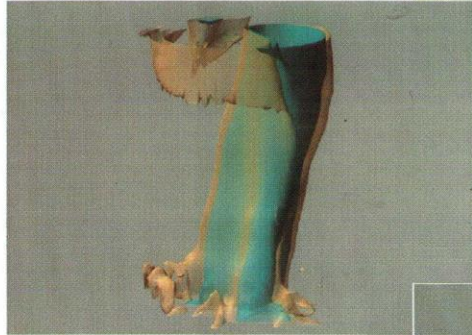
Central Computing Department (CCD) provides large scale high performance and scalar computing services for the Laboratory and for other research activities throughout the UK. Some of the computers and services offered by the Department include the CRAY Y-MP, the DEC Alpha AXP, and the robotic tape stores. The computers are run 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.

## High performance Computing Services

CCD operates a CRAY Y-MP8I/8128 which is jointly owned and used by all the research councils. This is one of the fastest and most powerful vector supercomputers available today. It is used for research in a wide range of subjects including fluid dynamics, drug design, environmental modelling, and simulation of star formation.

## Scalar Services

A DEC Alpha AXP 7000, two processor farms of Hewlett-Packard and DEC Alpha workstations, and an IBM 3090-400E provide considerable computing power for work which does not require vectorisation. The DEC 7000 and the processor farms are used mainly by high energy physicists for analysing data from the particle accelerator at CERN and for simulating particle experiments. The IBM 3090 hosts the Laboratory-wide office system which provides facilities for mail, diaries, document preparation, and administrative databases.

*Visualization of the atmospheric polar vortex – six frames from a video animation. Warwick Norton (UGAMP); Chris Osland (DRAL)*

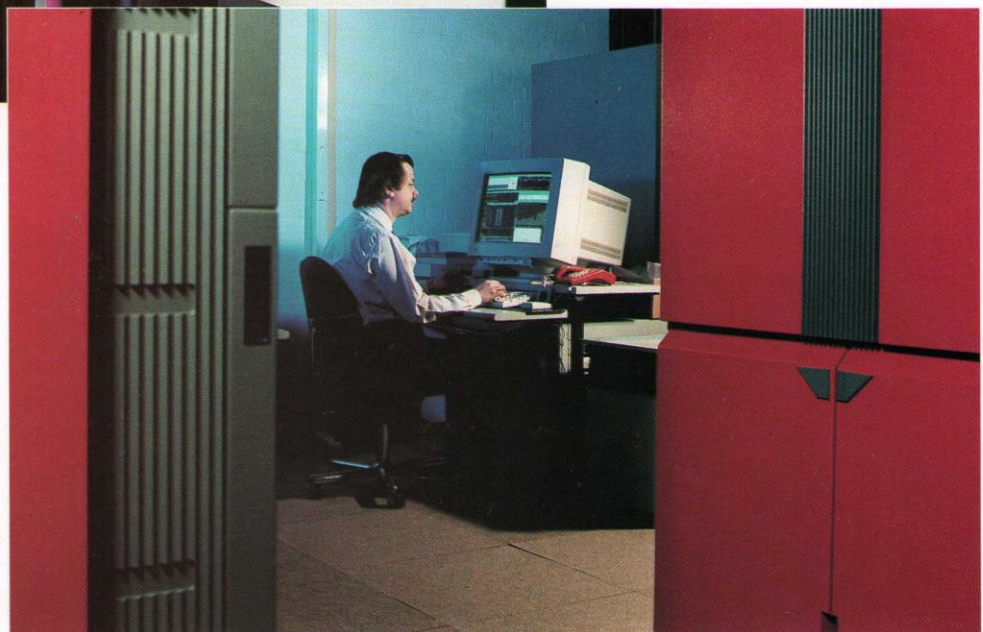# DRAL
Daresbury Laboratory
Rutherford Appleton Laboratory

## Large Data Storage

CCD provides efficient and secure storage for large amounts of data which is accessible to all the central computers on the network. The data is held either in a disk farm controlled by IBM RS/6000 computers, or on tape in the two robotic cartridge tape stores, the IBM 3494 and the StorageTek 4400, which have a capacity of several terabytes.

## Other Services

CCD offers a wide range of applications software, database management systems and graphic packages, and also a facility to bridge the gap between computers and video for animation and visualization. The Department is also responsible for most of the Laboratory's networking and telecommunications and provides support for PC users. All these services are provided by a skilled team of technical and user support specialists.



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