

## European Access

RAL has a 3 year contract with the CEC to make its laser facilities available to European researchers. Calls for proposals for experiments to run at the CLF are made 3 times per year. Applications are reviewed by a panel of specialists, who advise on scientific priorities and scheduling issues. Researchers are also encouraged to participate in the CLF work on advanced laser development. The CLF is a host establishment for holders of European fellowships.

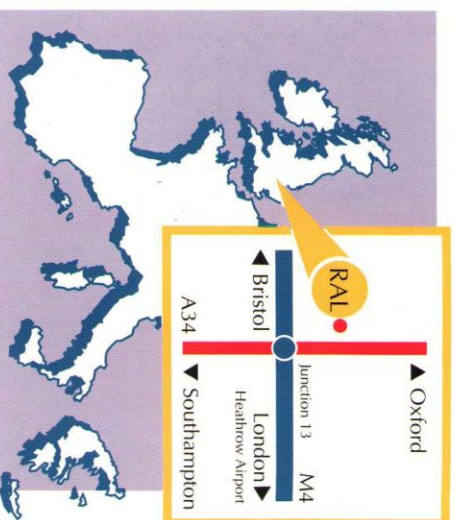
## Accommodation



Comfortable, hotel style accommodation is operated by RAL at The Cosener's House in Abingdon, 8 miles to the north of the laboratory on the banks of the Thames.

## Rutherford Appleton Laboratory (RAL)

RAL is a large, multi-disciplinary laboratory which supports a broad range of scientific and technological activities. Our function is to stimulate and enable research by the operation and development of central facilities in a wide range of scientific fields.



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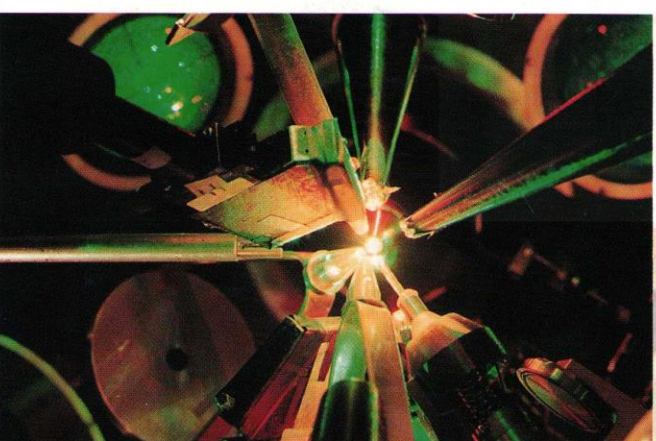
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## High Power Laser Facilities for European Researchers



## The CLF

The Central Laser Facility was established in 1977 at RAL to provide advanced facilities for use by UK university researchers. Today it is one of the world's leading centres for high power laser research. Two large installations, Vulcan and Sprite, and a number of tunable table-top systems serve a diverse community of users. A vigorous development programme ensures that the facilities maintain their international competitiveness.



## User Support

Scheduled experiments are supported by experienced scientific and engineering staff who are available to assist at all stages of the work, from the initial planning stages through to the interpretation of data.

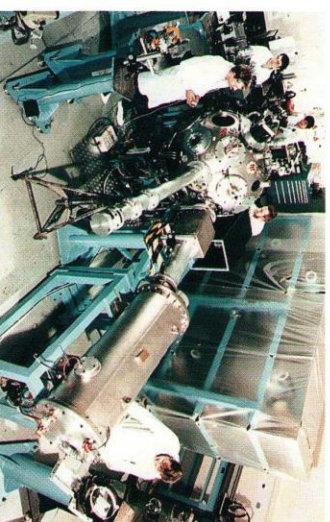
The target fabrication group has wide-ranging capabilities for the fabrication and characterisation of advanced targets.

State of the art instrumentation is available for the diagnosis of experiments.

## Vulcan

Vulcan is a powerful, versatile, multi-beam glass laser:

- 2.5 kJ at 1µm
- 700 fs to 10 ns pulse duration
- 0.5 µm and 1 µm output
- 8 beams
- versatile irradiation geometry including cluster and line focus.

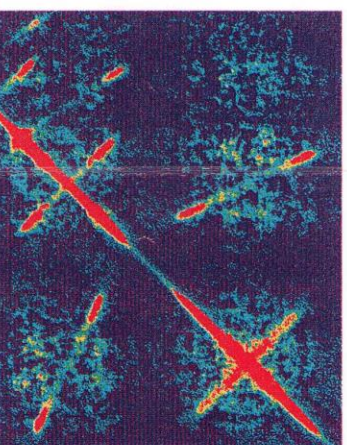


Chirped pulse amplification (CPA) gives users access to the ultra-high intensity regime. Powers in excess of 35 TW on target in a subpicosecond pulse are available, with additional synchronised beams for probing, diagnostics, etc.

## Sprite

Sprite is the world's brightest source of

- ultraviolet laser light
- 300 fs to 60 ps duration
- ultra-high contrast
- target irradiance  $>10^{18}$  Wcm<sup>-2</sup>
- 12 shots per hour.



## Titania

The next generation of krypton fluoride lasers is already under construction at RAL.

Titania, coming on line in 1995, will deliver 400 J at 268 nm, with peak powers in excess of 10 TW, pulse lengths from 100 fs to 10 ns, and target irradiances of  $10^{20}$  Wcm<sup>-2</sup>.



## Source Applications



Dedicated target areas are provided for high brightness UV and soft X-ray radiation for single shot (Vulcan) and high repetition rate (100 Hz).

Current applications include: contact and scanning X-ray microscopy, lithography and radio-biology. Specialised tunable laser systems are available for studies in chemistry, biology and photo-physics.