



# High Resolution Neutron Strain Scanner with D1A

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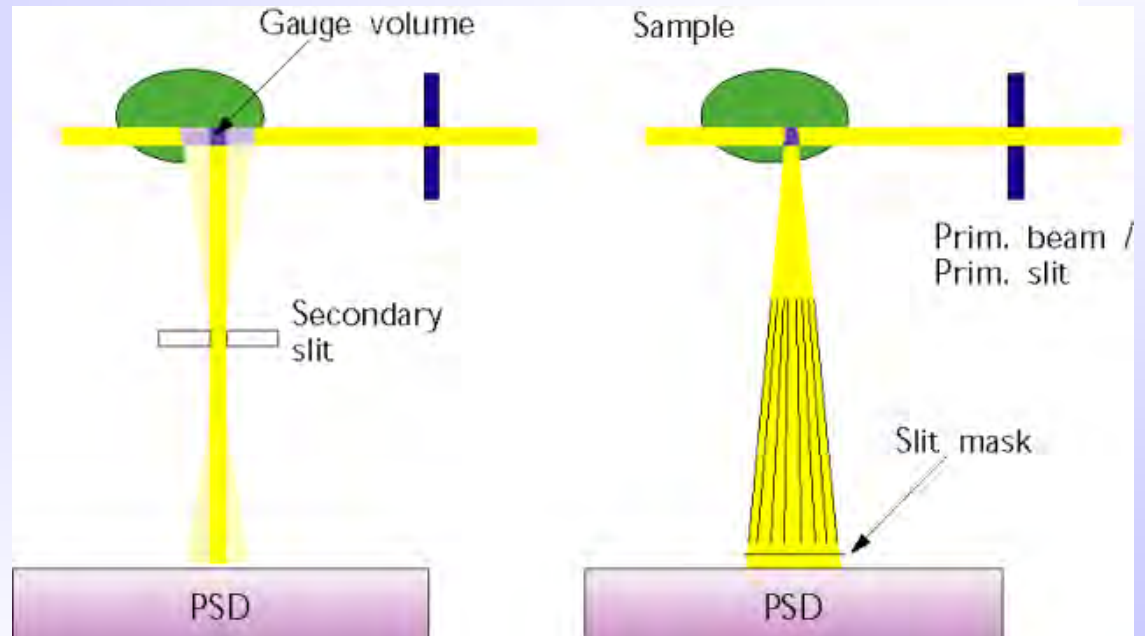
- Working D1A prototype by Thilo Pirling
- Proven demand from users in the UK, Italy, France, Germany...
- Interest for paid industrial beam time
- EPSRC-CRG proposal-Philip Withers et al.





# High Resolution Neutron Strain Scanner with D1A

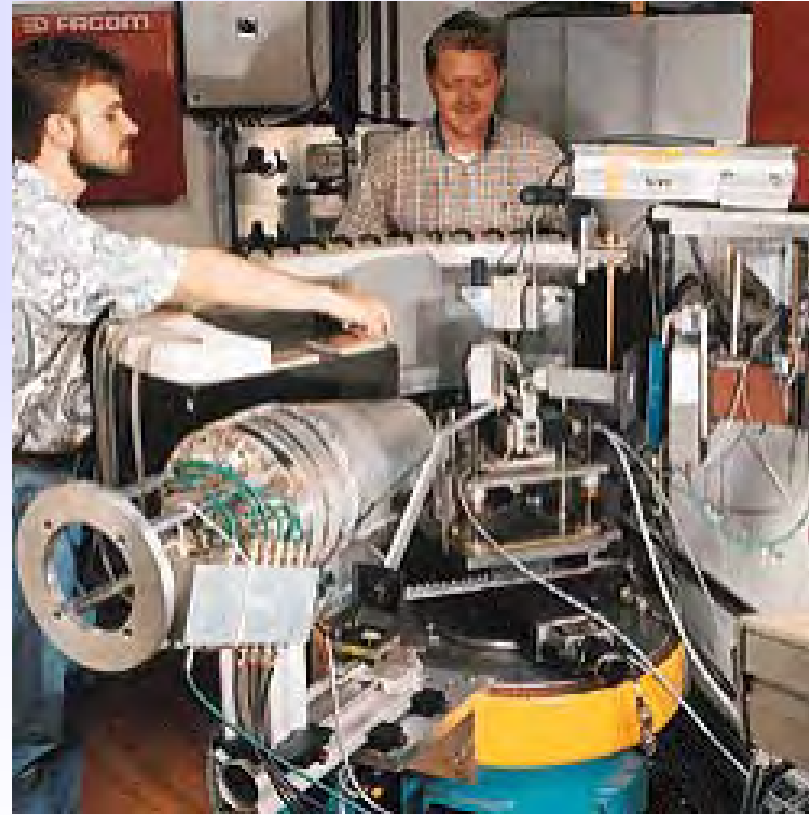
- Through-surface strain scanning
- Precise gauge volume
- Convergent collimator
- 2D microstrip detector





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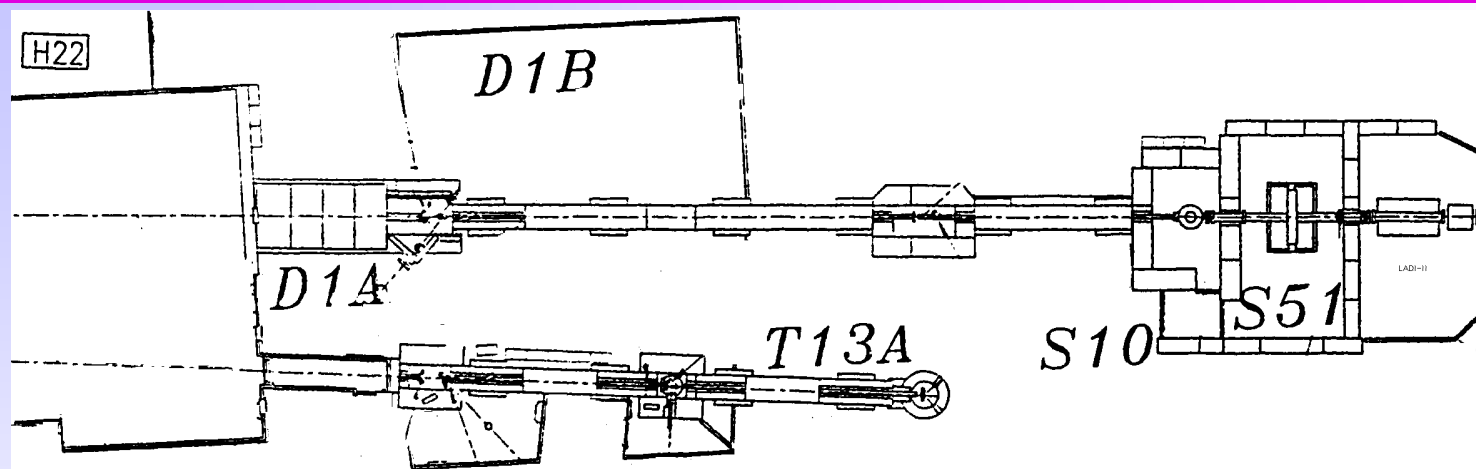
- Small, well defined volume
- High flux (monochromator)
- High efficiency (detector)
- Variable wavelength
- Homogeneous beam
- Samples from a few grams to 100 Kg, and sizes between 1cm and 1 m  $\pm 0.02$ - $0.1$ mm !!
- Eventually rotate the samples
- Angular precision  $\pm 0.001^\circ$



Thilo Pirling & Robert Wimpory on D1A



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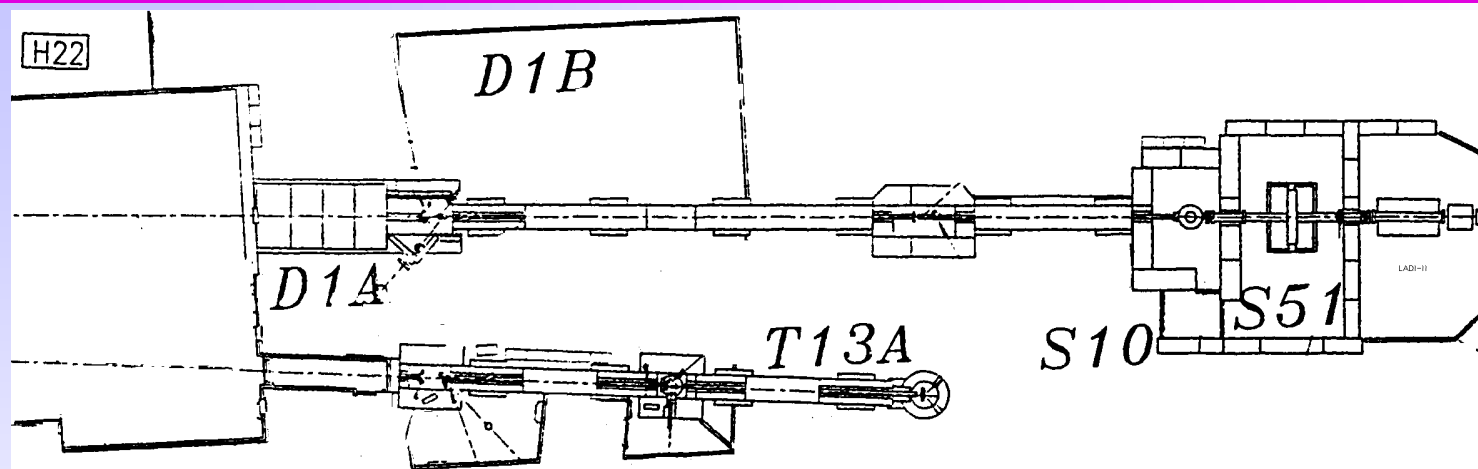


## What more do we need ?

- New diffractometer mechanics using a rail system
- Variable monochromator take-off angle  $\sim 90$  degrees
- New primary collimating optics and gradient monochromator
- Eventually a large kappa geometry cradle



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## What will it cost ?

- New diffractometer mechanics & variable take-off ~ 1 MF
- Eventually 9 m of new guide for position behind D1B ~ 450 kF
- Eventually new gradient monochromator ~ 500 kF
- Eventually a large kappa geometry cradle ~ 650 kF

