Super-D2B at ILL Grenoble
High Resolution Neutron Diffractometer
http://www.ill.fr/dif/epsrc/d2b.html

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- An Array of 128 Linear Wire Detectors
- A Bank of 128 High Resolution Collimators
- New Shielding and Software
- Efficiency Increased by 600%
- Smaller Samples or Higher Resolution
- Peak/Background Ratio Improved

Array of 128 Collimators & Linear-Wire PSD Detectors
Collimator/Detector Details
The complete Super-D2B Detector Box

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Wavelength focussing on D2B
2D Pattern integrated over curved lines

Fullerides & Framework Materials - S.Margadonna (Edinburgh)

(ArD)A₆C₆₀
S.Margadonna

Network of N–D...N(6:6) interactions
Orthorhombic structure, [110] plane
Strong effect on ferro rotationally ordered C₆₀ stripes

Nearest-neighbour C₆₀ interactions

Influence of ND₂-C₆₀ close contacts on magnetic exchange interactions

Manganite Pattern in only 2 x 2.5 minutes ! (C. Ritter)

Aurivillius Phases - E. McCabe (Birmingham)

Structure of Bi₂Sr₁.₄La₀.₆Nb₂MnO₁₂

- Disorder of Bi and A site cations
- Ordering of B site cations
- Local rotation of octahedra
- Spin glass
- Ferromagnetic interactions

Neutrons are electrically neutral & more penetrating than X-rays.
Neutrons interact with nuclei & locate atoms more precisely.
Light atoms scatter neutrons as strongly as heavy atoms.
Neutrons are tiny magnets, & determine magnetic structures.