Single Molecular Diffraction

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For solving the atomic structure of organic molecules such as small proteins which are difficult to crystallize, the use of a jet of doped liquid helium droplets traversing a *continuous* high energy electron beam is proposed as a means of obtaining electron diffraction patterns (serial crystallography). Organic molecules (such as small proteins) within the droplet (and within a vitreous ice jacket) may be aligned by use of a polarized laser beam. Iterative methods for solving the phase problem are indicated. Comparisons with a related plan for pulsed x-ray diffraction from single proteins in a molecular beam are provided.