



**Figure 13-6**

*X-ray scattering from a one-dimensional array of atoms.* (a) The array, as defined by the vector translation  $a$ . (b) X-ray scattering intensity as a function of the number of atoms in the array. Shown are the actual observed scattering (*black line*), the scattering expected for a single atom (*dashed line*), and the fringe function produced by the array (*colored line*). The observed scattering is the product of the fringe function and the single-atom scattering. Note the changes in vertical scale as the number of atoms increases. The horizontal scale is in units of  $S \cdot a$  and is the same for all cases.