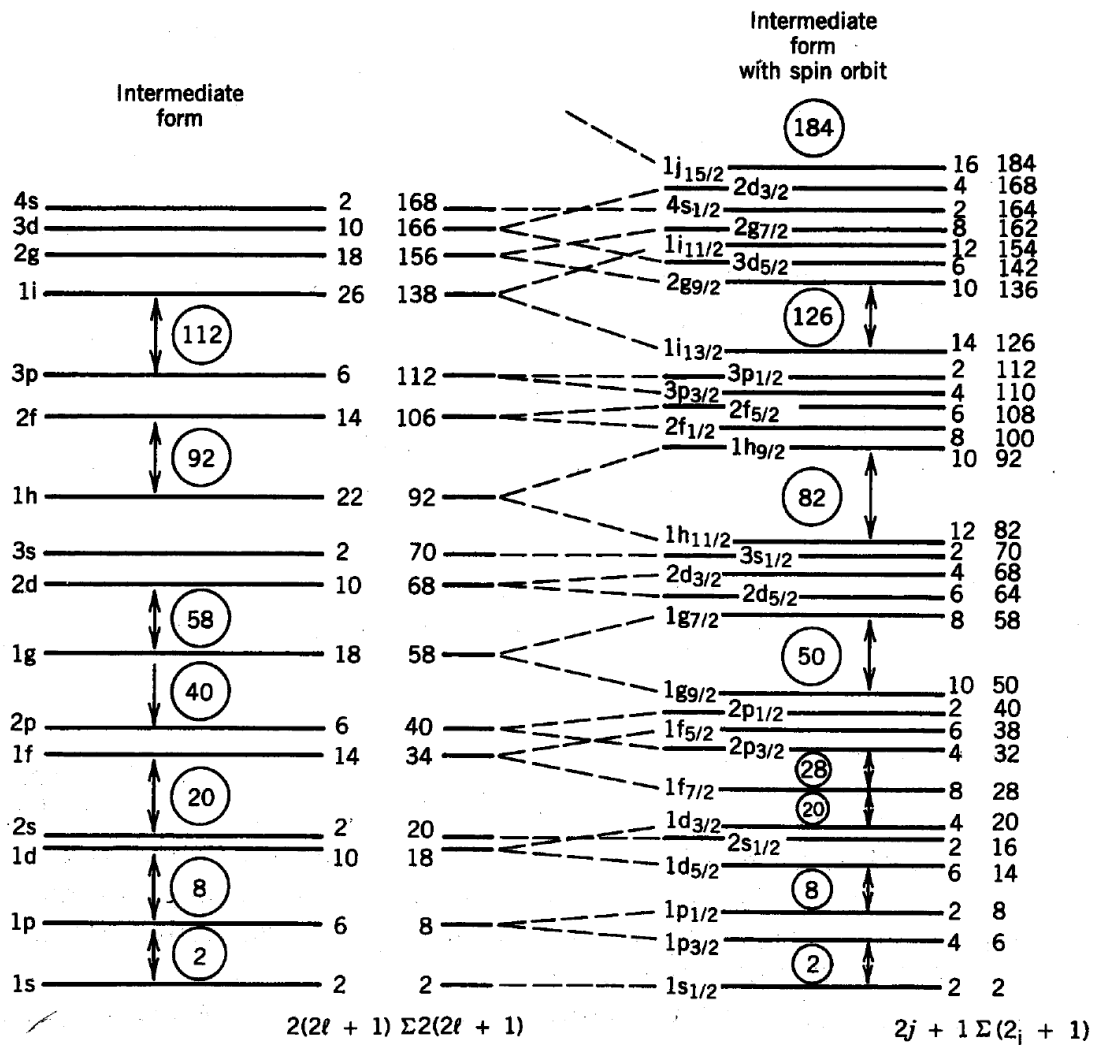


**Figure 5.7** The filling of shells in  $^{15}\text{O}$  and  $^{17}\text{O}$ . The filled proton shells do not contribute to the structure; the properties of the ground state are determined primarily by the odd neutron.



**Figure 5.6** At the left are the energy levels calculated with the potential of Figure 5.5. To the right of each level are shown its capacity and the cumulative number of nucleons up to that level. The right side of the figure shows the effect of the spin-orbit interaction, which splits the levels with  $\ell > 0$  into two new levels. The shell effect is quite apparent, and the magic numbers are exactly reproduced.