electron, Lithium-like ($1s^2 2s$) configurations (an *isoelectronic* sequence), and Mg II, Al III, and Si IV represent ions with equivalent 11 electron, Sodium-like ($1s^2 2s^2 2p^6 3s^1$) configurations. These resonance (permitted, ground-state) transitions of a lone S-orbital electron to a P-orbital with the same principal quantum number all appear as doublets ($^2S_{1/2}$ to $^2P_{1/2,3/2}$), due to the L-S coupling (spin-orbit interaction). The doublet separation is systematically larger for higher isoelectronic sequences and for higher element numbers within each isoelectronic sequence. Other ions in these two isoelectronic sequences either come from much less abundant elements (*e.g.* B III and F VII), or their resonance line is shifted too far into the UV for ground-based observations (*e.g.* Ne VIII, Ar VIII, and Mg X), or their ionization level is too low (*e.g.* Na I and Mg II) for the high-ionization BALR gas, and thus are not readily observed.

Exceptions to the last case include the so-called "Mg II" low-ionization BALQSOs, in which case significant Mg II λ2800 BALs and other low-ionization BALs are seen as well as the high-ionization lines. These may be a separate class of BALQSOs (*cf.* Boroson and Meyers 1992 and Voit *et al.* 1993) and/or may have high column densities. Broad absorption lines from Fe II have been reported in at least one BALQSO (0059-2735, see Hazard *et al.* 1987). Na I $\lambda\lambda$5891,5897 absorption has been seen in one low redshift BALQSO (0759+6508, z_e=0.148) and in a BAL-Seyfert galaxy (Mrk 231, 1254+5708, z_e=0.042). However, Na I is either very weak or not present in other low-ionization "Mg II" BALQSOs with redshifts low enough to observe this line in the optical, *e.g.* PG 1700+5153 (z_e=0.30) and 1402+4341 (z_e=0.32), Boroson and Meyers (1992).

The Ca^{+1} ion lines, Ca II $\lambda\lambda$3934,3969 ("H and K"), come from equivalent resonance transitions ($4s^2 S_{1/2}$ to $4p^2 P_{1/2,3/2}$) in a 19 electron isoelectronic sequence. Due to its low ionization level, it is not expected to be easily seen as a BAL, although the possibility cannot be ruled out in the low-ionization "Mg II" BALQSOs. Objects with Na I BALs would presumably be good candidates for Ca II BALs. PG 1700+5153 does not appear to have an obvious Ca II BAL, see chapter 12 of this thesis, and Ca II has (apparently) not yet been searched for in other low-ionization BALQSOs.