

significant systematic differences. Their set included 25 BALQSOs, while our data set includes 28 objects, 16 of which were also in the WMFH data set.

From figure 12–1, several features are immediately evident when comparing the BALQSO and non-BALQSO data. The CIV emission line is noticeably asymmetric due to the frequent presence of narrow and broad absorption lines on the blue wing of this BEL. The Si IV/O IV] BEL is somewhat more symmetric due to relative weakness of the Si IV BALs, but may be weakened due to high velocity ($\sim 0.1c$) CIV absorption. The Ly- α BEL has also been diminished substantially by N V absorption.

However, these differences, due to BALs, do not tell us what differences there might be in the underlying BELRs, which would have implications about the BALR covering factor (see chapter 2). The C III] BEL, which is essentially unaffected by absorption, has similar strength and width, indicating that at least some part of the BELRs in the two classes of QSOs is very similar. One noticeable difference between the two composites is the strength of the N V BEL. This effect has been reported by previous workers (*cf.* Turnshek 1988 and WMFH).[†] Morris (1988) showed that the statistical significance of this enhancement may be due to a range of global covering factors. That is, we would have an increased probability of detecting BALQSOs with larger covering factors, and thus would see more N V BALR emission (on average) in identified BALQSOs. In this way, we can have similar (non-BAL gas) BELRs in both BALQSOs and non-BALQSOs.

To quantify the emission differences, we have calculated emission line rest frame equivalent widths (REW)[‡] for N V, CIV, and C III]. In order to avoid the effects of absorption and adjacent emission lines, we selected only a portion of each BEL. For N V the REW is calculated for 1242Å to 1265Å, for CIV, 1555Å to 1572Å, and for C III],

[†] A caution should be stated relating to the difficulty of determining the true continuum adjacent to the N V BEL because of extensive absorption. Specifically, absorption may tend to cause an underestimate of the continuum, resulting in an artificially enhanced N V BEL equivalent width.

[‡] $\text{REW} \equiv |\sum (1 - f_i) \Delta \lambda_i|$, where f_i is the normalized flux at rest wavelength λ_i .