

Chapter 8 : Direct Imaging- Results, Analysis and Discussion

In sections 8.1 and 8.2, we summarize the time variability of individual QSOs. For these sections, we have excluded all the FOS Target QSOs which were not chosen as part of the original sample for this project. For clarity, we have binned epochs which were separated by less than 9 days (*i.e.* within the same observing run). In sections 8.3 through 8.5, we present and discuss general statistical results, in which we have not binned across nights and the FOS Target QSOs are included. Some of these results were presented as a poster at the 182nd AAS meeting (Barlow and Junkkarinen 1993).

8.1 : Summary of Variability in Individual QSOs

In table 8-1, we present photometry and variability statistics on 98 QSOs which were observed during this project (not including FOS Target QSOs, except for the BALQSOs 1246-057 and 0946+301). This table includes 73 QSOs with observations during at least two epochs. Sixty of these objects observed at more than one epoch are confirmed BALQSOs. The 13 other QSOs are listed with a “class” acronym in the last column of table 8-1. These other types of QSOs were included in the imaging observations because of their possible intrinsic absorption or because they were candidate BALQSOs or mis-identified as BALQSOs in the literature. An associated absorption line is one whose absorption redshift is approximately equal to the emission redshift ($z_a \sim z_e$) with an implied relative velocity within about 3000 km s^{-1} . We have categorized QSOs with a complex of many associated absorptions as “CAAL”. The number and position of these numbers suggest they are associated (intrinsic) to the QSO environment, but since they are not accelerated like the BALs they may be due to a different phenomenon.

The mean magnitudes in r (R_s ,Lick) and V (V2,Lick) are presented in columns 3 and 10. The magnitude scale is based on the most photometric nights available for each object. Brackets indicate that the best nights are rated 5 (non-photometric) and parentheses indicate a rating of 3 or 4 (possibly photometric). In general, it is safe to