as is to be expected: if data from one year is noisy and data from another year is not then certainly the largest difference could be that noise. As for the MAD transformation (see Section 3.1.1) this observation inspires an iterative use of the procedure: first identify noise, restore data or exclude areas with noise from further analysis, and carry out the analysis once more.

The minimum similarity variables are measures of change in all bands simultaneously. To find areas of minimum similarity with high autocorrelation we use the absolute value of minimum/maximum autocorrelation factors (Switzer & Green (1984) and Section 2.2) of the highest order canonical variates. Figures 3.17, 3.18, 3.19 and 3.20 show R-mode canonical variates 6, their absolute values, their MAFs and absolute values of their MAFs. Figures 3.21, 3.22, 3.23 and 3.24 show Q-mode canonical variates 6, their absolute values, their MAFs and absolute values of their MAFs. In the Q-mode case MAF analysis concentrates the information in two components. Q-mode analysis also reveals that striping and drop-outs occur basically in bands 1, 2 and 3. Another good impression of overall change that includes lower order CVs also, is achieved by inspecting (absolute values of) MAFs of Q-mode canonical variates (CVs) 5 and 6 (not shown).

Correlations between R-mode CVs 6 and the original data given in Figure 3.26 show that changes over years are associated with TM bands 1 especially from 1984 to 1987. This is probably because of differences in atmospheric conditions. Therefore analysis of atmospherically corrected data would be interesting. Correlations between Q-mode CVs 6 and the original variables given in Figure 3.28, for TM bands 1, 2, 3, 5 and 7 reveal a pattern of positive correlation with 1984, negative correlation with 1985, and again positive correlation with 1986 (but not as high as with 1984) combined with (nearly) no correlation with 1987, 1988 and 1989. Q-mode CV6 for TM4 is positively correlated with TM4 in 1984, 1985 and 1986, uncorrelated with TM4 in 1987, and negatively correlated with TM4 in 1988 and 1989. This could indicate that vegetation related changes occurred from 1986 to 1988. Correlations between Q-mode CVs 1 and TM4 given in Figure 3.27 are (except for TM4 CV1) lower than correlations between Q-mode CVs 1 and the other bands. Again, this indicates changes that are

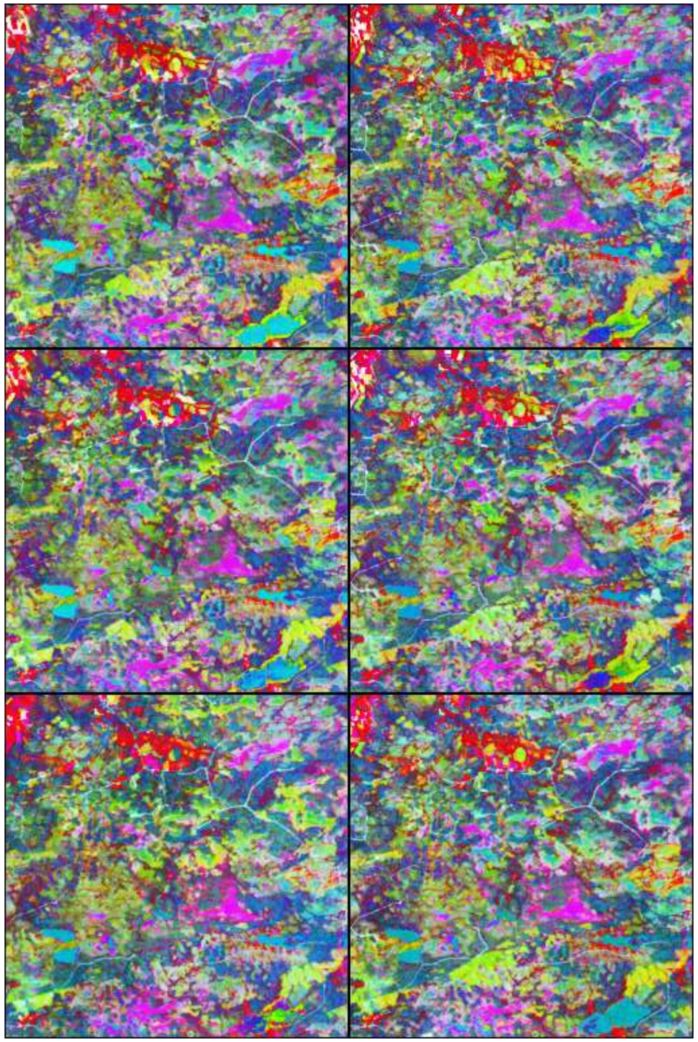

Figure 3.15: R-mode canonical variates 1, 2 and 3 as red, green and blue