

Synoptic Process and Higher Values of CO₂

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This study is based on CO₂ data from the Ulaan-Uul Station, Mongolia (UUM), comparing atmospheric CO₂ values between subsequent weekly flask samples that differed by greater than 3 ppm and the associated synoptic meteorology. The weekly differences were greater than 3 ppm when air masses were transported south-eastward from industrial regions of Russia and China located north and west of Mongolia.

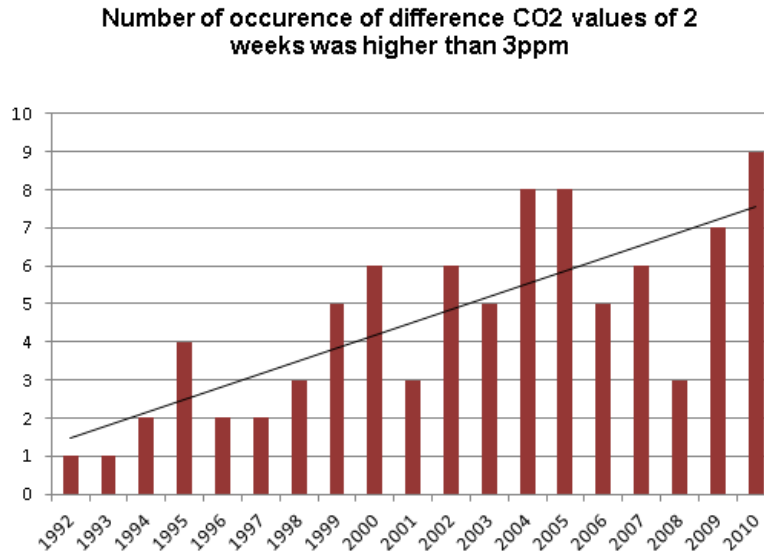


Figure 1. Occurrence of subsequent weeks when CO₂ values were greater than 3 ppm. The trend in the number of subsequent weeks with elevated CO₂ differences has been increasing over the past 18 years.

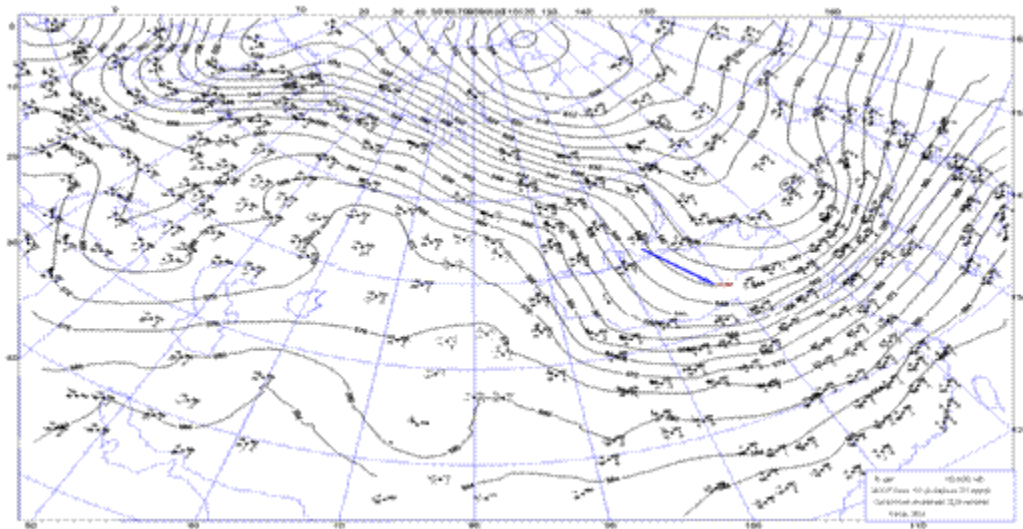


Figure 2. Typical 500 hPa synoptic map for periods with elevated CO₂ at the UUM, Mongolia flask sampling site.