The Nitrogen Budget of Earth: Read me and Supplemental References

Included in the supplemental information are three files containing our data compilation. Each file is in csv format, and is comma-separated only. The first part of each file contains explanation of the abbreviations and column headings used in each file.

All data from minerals and rocks in the Earth are in the "Terrestrial N Data.csv" file. This file includes references, notes, sample names as used in original study, rock type, geologic setting, and year of study. Data include N and C isotopes and concentrations, as well as concentrations of elements observed to behave similarly to N: K, Rb, Lu, Yb, and Ar.

Data on N and C content of meteorites is in the "Meteorites.csv" file. It contains references, notes, individual meteorite names where known, as well as classification of each sample given as a class and clan. See Weisberg et al. (2006) for more detailed classification scheme; important classes for our study are "C" stands for carbonaceous chondrite, "E" for enstatite chondrite, and "I" for iron meteorites. We include N and C isotope and concentration data here.

The third file, "Experimental compilation.csv", contains our compilation of results from experimental petrologic studies concerning N. Listed are the parameters of the experimental run, including time of run, temperature, pressure, and oxygen fugacity. We calculate oxygen fugacity for experiments where it is not given as well as to determine Δ NNO (difference between sample oxygen fugacity and the fugacity at the NNO buffer at the same conditions) using the equation (Frost, 1991):

$$\log f_{O_2} = A/T + B + C(P - 1)/(T) \tag{1}$$

where T is temperature in K, P is pressure in bars, and constants A, B, and C are given in the file.

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