

Sustainable carbon emissions: The geologic perspective — CORRIGENDUM

Donald J. DePaolo

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The article contains an error in the figure caption for Figure 8 on page 8. The caption should read:

The author regrets this error.

REFERENCE:

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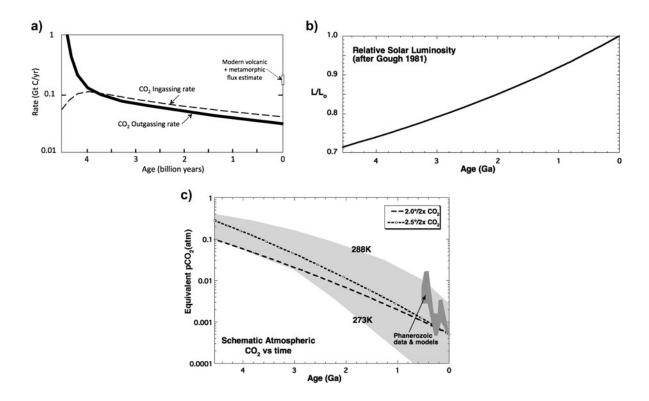


Figure 8: (a) Plausible rate of outgassing of deep mantle carbon to the atmosphere over the course of Earth history (from Ref. 89). The inferred modern rate is 0.03 GtC/yr and the rate at 3.0 billion years ago is about 0.06 GtC/yr. Other estimates are as much as twice these numbers (e.g., Ref. 19). At the rates shown, approximately all of the original carbon in the mantle would have been released to the atmosphere over the past 4+ billion years. In this case, and even more so if the rates were higher, the fact that the Earth's mantle still contains a lot of carbon would suggest that there is an efficient mechanism to return carbon from the atmosphere back to the mantle. (b) Estimated change of solar luminosity over the last 4.4 billion years (adapted from Ref. 30). (c) Results of a simple calculation showing the partial pressure of CO2 needed in the atmosphere to maintain the Earth's surface temperature between 0°C and 15°C to compensate for the changing luminosity of the Sun.