**Supplemental Data Sets**

Tab 1 – Fe in paleosols [Figure 4]

Tab 2 – Paleosol CIA (chemical index of alteration) [Figure 3]

Tab 3 – Fe and CIA References

Tab 4 – Cr isotopes in paleosols [Figure 4]

Tab 5 – Cr isotopes in marine sediments [Figure 4]

Tab 6 – Sr isotopes in marine carbonates [Figure 5]

Tab 7 – C isotopes in marine carbonates [Figure 5]

Tab 8 – O isotopes in Phanerozoic marine carbonates [Figure 5]

Tab 9 – O isotopes in Precambrian marine carbonates [Figure 5]

**Supplemental References**

**Figure 3**

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**Figure 5 (letters refer to figure panel)**

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