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Secular evolution of W isotope anomalies in the Pilbara Craton, NW Australia and late accretion models

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The record of ¹⁸²W isotope anomalies in terrestrial rocks can provide important insight into the timescales of late accretion, early silicate differentiation and early planetary processes in general. Unfortunately, most terrestrial ¹⁸²W isotope studies only provide “snapshots” of the early rock record and rarely considered W redistribution by secondary processes that would also bias ¹⁸²W isotope systematics. This might complicate any reconstruction of the secular ¹⁸²W isotope evolution and direct comparisons to HSE systematics. Here, we present a comprehensive dataset for mantle-derived and crustal rocks from the Pilbara Craton, NW Australia. Mantle-derived rocks provide snapshots of the ambient mantle composition, whereas the crustal rocks provide a long-term average of crust-mantle evolution. By combining ¹⁸²W isotope analyses with high-precision isotope dilution measurements

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