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A New (Old?) Paradigm for Core Formation and Composition

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We will present a new model for core formation at 60 GPa and 3300-3500 degrees; the composition of the core satisfies (i) the density requirement from seismology, (ii) the siderophile trace element concentration of the present-day mantle, and (iii) a present-day equilibrium at the CMB with the mantle. The model is based on a global treatment of metal-silicate equilibrium data, on the effect of light elements, and on the effect of the spin transitions on the partitioning of iron in lower-mantle phases.