

Two serious difficulties in the most basic concepts of nuclear astrophysics

“Indeed there are details to be attended to, but they are overshadowed by serious difficulties in the most basic concepts of nuclear astrophysics. On square one, the solar neutrino puzzle is still with us (chapt. 10), indicating that we do not even understand how our own star really works. On square two we still cannot show in the laboratory and in theoretical calculations why the ratio of oxygen to carbon in the sun and similar stars is close to two-to-one (see chapt. 7). We humans are mostly (90%) oxygen and carbon. We understand in a general way the chemistry and biology involved, but we certainly do not understand the nuclear astrophysics which produced the oxygen and carbon in our bodies.” – William A. Fowler, 1988

From the 3rd paragraph of William A. Fowler’s Forward to: *Cauldrons in the Cosmos: Nuclear Astrophysics* by Claus E. Rolf and William S. Rodney (David N. Schramm, series editor, University of Chicago Press, Chicago, IL, USA, 1988) pp. xi-xii.