PROTEROZOIC GLACIATIONS IN SOUTH AMERICA:INFERENCES FROM C,SR AND PB DATA

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The oldest Proterozoic glaciation in South America could have occurred at ca. 2.42 Ga, based on Pb/Pb data and d13C determined on limestones from Minas Supergroup, Quadrilátero Ferrífero (Brazil). Going to Neoproterozoic, only La Tinta Group (Argentine) shows strong evidence for a Sturtian glaciation. Dolomites of Villa Monica Formation with negative values for d13C is followed by limestones of Loma Negra Formation with ca. +4.0‰ and, Sr composition of ca. 0.7060 suggesting a Sturtian age. The diamictites underlying Balcarce Formation from same Group is assigned as Vendian. The basal diamictites of Bambuí and Una groups (Brazil) could be assigned to Sturtian glacial episode. Both groups present cap dolostones with d13C negative values, whilst the overlying limestones on both groups exhibit high positive values, up to 15‰. The Araras Formation and the underlying diamictites (Puga Formation) in the Paraguay Belt reveal Sr isotope composition of 0.7074 and negative d13C values as perfectly identified with Lower Vendian sedimentary sequences. The Corumbá Group (Paraguay Belt) and Arroyo del Soldado Group (Uruguay) are more compatible with Upper Vendian where Sr compositions are 0.7085 and 0.7078, respectively, both constrained by Ediacaran-grade fossils. Possible glacial events would be post-Varanger.