A complete understanding of the solidification process is one of the long standing problems in condensed matter physics. The use of colloidal model systems provides an ideal controlled experimental system to reduce this lack of knowledge. We investigated the solidification scenario in suspensions of gravity matched colloidal hard spheres (HS) using time resolved static light scattering as well as dynamic light scattering techniques. In contrast to previous investigations under full gravity we observe homogeneous nucleation within the HS colloidal glass and demonstrate that the glass is a metastable state on the way to the equilibrium crystal. A detailed analysis of crystal nucleation pathways shows that crystallization is originated by transient precursors (compressed, structurally heterogeneous clusters) during the induction stage. Later these convert into highly ordered crystals in a fast, activated process. Following the same processes over a range of volume fractions from near freezing, to above the glass transition allows to systematically link the mechanisms involved in HS crystallization to those of the HS glass transition.