The new geological epoch of Anthropocene carries profound physical as well as ideational/policy implications for the Southern Polar Region and effectively questions the proclaimed exceptionalism and legal-political-ethical boundaries of the Antarctic regime. Moreover, climate change has registered itself on an increasingly complex and crowded domain/agenda of three-tiered Antarctic governance at a critical juncture of the evolution of Antarctic Treaty System (ATS). Some of the key questions that demand and deserve serious attention, that too sooner than later, are: What is it that is being challenged or threatened by climate change in the Antarctic: ecosystems, power-knowledge equations, national interests, interests of humankind, values, claims or rights to territorial sovereignty? How come the powerful graphic visualization of Antarctica and its ecosystems at the ‘receiving end’ of climate change, with far reaching regional and global impacts/implications of collapsing ice sheets, has so far failed to act as a catalyst for both individual and collective behavioral change? Can the current Antarctic climate discourse be broadened, deepened and reconfigured to give visibility and voice to global peripheries, especially in Global South? The paper argues that it is not a question of whether but when the evolving climate change discourse at the Antarctic Treaty Consultative Meetings (ATCMs) would be questioned by a critical geopolitics of the Anthropocene for its limited and limiting engagement with the ethical as well as geopolitical considerations surrounding the knowledge-power interface, sustainability of core values of the ATS and questions of authority, legitimacy, effectiveness, representation, responsibility and accountability.