

TABLE 2. EXAMPLES OF WARMING AMPLIFIERS
AND COOLING FEEDBACKS TO WARMING

	Estimated time scale (yr)
<u>Warming Amplifiers</u>	
Methane release from tundra, peat, seabed	10^2-10^4
Polar cloud heat retention plus polar precipitation	10^2
Increased mid-latitude insolation as desert belts expand	10^2
Warm-brine sinking	10^2
Polar upwelling of desert-belt generated brine	10^2
High absolute humidity and poleward atmospheric latent heat transport across cloud-free mid-latitudes	10^2
Lower polar albedo with loss of sea ice plus development of polar forests (sea ice was already gone preceding most ancient HEATT episodes)	10^2-10^4
Seafloor geothermal heating-driven polar upwelling via haline mode overturn	10^4
“Tropical” cyclone effects (upwelling, stratospheric water injection, increased poleward heat transport)	10^2-10^4
<u>Cooling Feedbacks to Warming</u>	
Increased silicate weathering and carbonate burial (carbonate burial hampered in acidic oceans)	10^6-10^7
Burial of organic matter in black shales	10^5-10^6