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The Pliocene: Major Features of a Globally Warm Period

The Pliocene had atmospheric CO₂ levels only modestly higher than pre-industrial times, and yet Pliocene climate was markedly different than today: global temperatures were 2-3 degrees warmer, permanent El Niño-like conditions prevailed, the equator-to-pole temperature gradient was reduced, the interior ocean was better ventilated, and sea levels were substantially higher due to warm high latitude conditions and ice sheets that were smaller than present. The fidelity of these observations, and their implications for understanding the Earth's long-term climate sensitivity to greenhouse gas forcing, will be discussed.