

GISS Model Predicts Future Changes To Wind Cycles in the Stratosphere

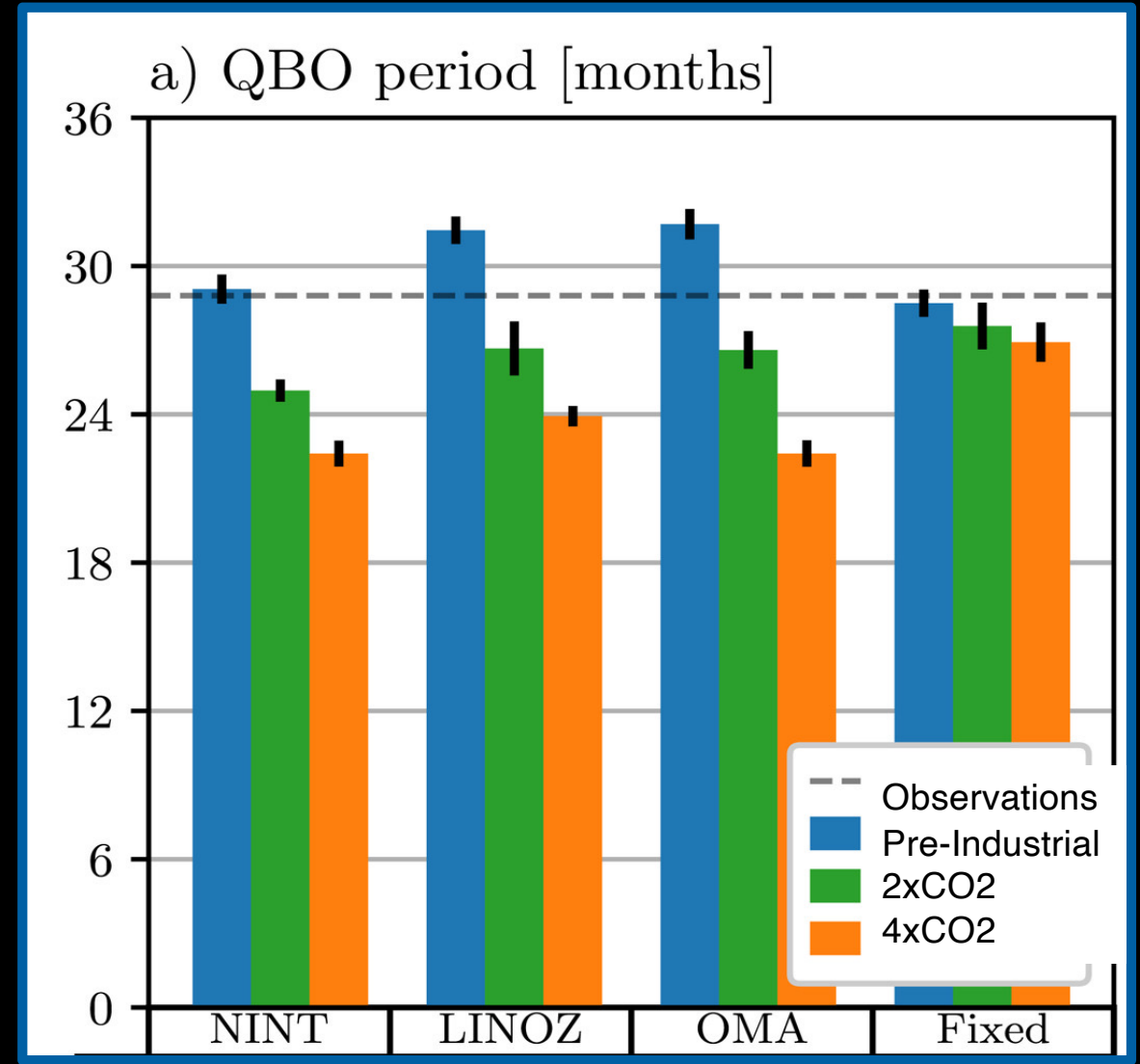
Tropical **stratospheric winds switch** from easterly to westerly about every 14 months, known as the Quasi-Biennial Oscillation (QBO). The **QBO influences global surface conditions**, such as temperature and precipitation.

Out of 100+ global models, GISS Model E2.2 is one of only a **handful (<10)** that spontaneously generate this atmospheric variation, which gives us higher confidence in the accuracy of this model.

Running this model forward into the future, with global warming, the future projected QBO gets weaker, and its period will decrease. This may be related to increases in convective activity with warming, which increases gravity wave driving.

Goddard atmospheric modeling continues to be one of the world leaders in accurately modeling the true behavior of our atmosphere and predicting its future behavior.

[DallaSanta, K., C. Orbe, D. Rind, L. Nazarenko, and J. Jonas, 2021: Dynamical and trace gas responses of the Quasi-Biennial Oscillation to increased CO₂. *J. Geophys. Res. Atmos.*, doi:10.1029/2020JD034151](https://doi.org/10.1029/2020JD034151)



Different GISS Model E versions