VENUS GLOBAL IONOSPHERE-THERMOSPHERE MODEL. B. M. Ponder[1] and S. W. Bougher[1] and A. J. Ridley[1] and D. J. Pawlowski[2], [1]University of Michigan, Climate and Space Sciences and Engineering, [2]Eastern Michigan University, Physics and Astronomy.

Introduction: A new Venus Global Ionosphere-Thermosphere Model (V-GITM) is presented that combines the terrestrial GITM framework with Venus fundamental physical parameters, ion-neutral chemistry, and key radiative processes in order to capture the basic observed features of the thermal, compositional, and dynamical structure of the Venus atmosphere from 70 km to 170 km. Atmosphere processes are included based in part upon formulations used in previous lower and upper atmosphere Venus GCMs. Unlike previous Venus GCMs, V-GITM is non-hydrostatic model and explicitly solves for neutral winds allowing us to explore its dynamical effect on the day-night structure. V-GITM validation studies focus on simulations for a range of solar cycle conditions. Key upper atmosphere measurements from the Pioneer Venus and Venus Express missions are selected for comparison to corresponding V-GITM neutral temperatures and neutral-ion densities.