(25-240329-A) **Results from a Year of Continuous CO_2 Records at Mauna Loa and Maunakea**

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On November 28, 2022 the eruption of Mauna Loa volcano interrupted access and electric power to the Mauna Loa Observatory (MLO, altitude 3397m), shutting down scientific operations, including the widely followed records of CO_2 and other Greenhouse Gases (GHGs). However, within a few weeks, due to valiant efforts by our NOAA colleagues and with the generous support from the staff of the University of Hawaii Observatory, both GML and Scripps were able to install new instruments and continue monitoring GHGs on the summit of Maunakea (MKO, altitude 4205m). On March 8, 2023, with the assistance and support of MLO staff, the Scripps GHG analyzer system at MLO was reactivated, and has recorded (mostly) continuous measurements to this day. Thus, for the first time, we have over a year of continues records of GHGs at both the MLO and MKO sites. After selectively filtering the data to eliminate localized volcanic, biotic, or fossil fuel influences, these two records reveal variability due to seasonal, and location (altitude) differences, as well as synoptic influences, and thus present a unique opportunity to study CO_2 dynamics in this central Pacific environment.

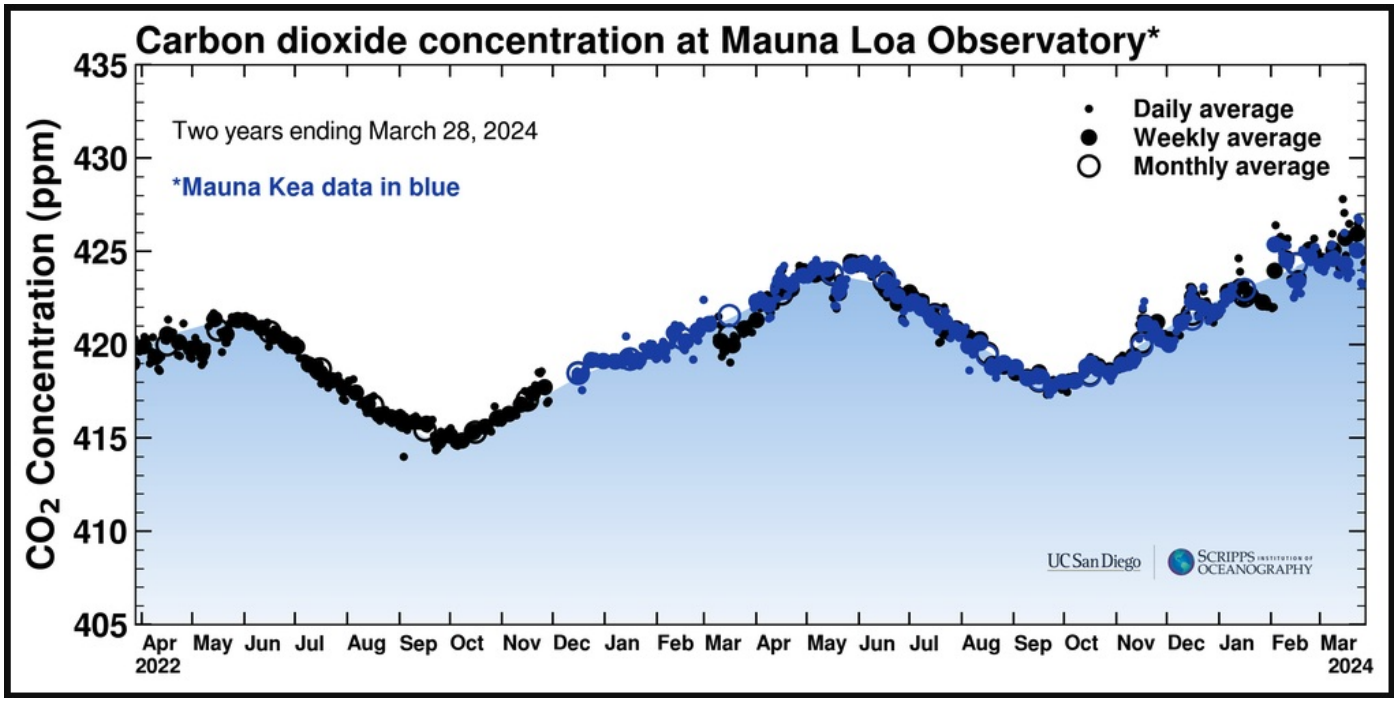

Figure 1. Carbon Dioxide measured at Mauna Loa and Maunakea, filtered to remove local influences and averaged by day, week, and month. Data from Maunakea begining in Dec. 2022 plotted in blue.