Supplement for Variability and Source Characterization of Regional PM of Two Urban Areas Dominated by Biomass Burning and Anthropogenic Emission

Christian Mark G. Salvador[1,*], Jhon Robin dR. Yee[2], Iara Chantrelle V. Coronel[2], Angel T. Bautista VII[2], Raymond J. Sugcang[2], Mark Anthony M. Lavapiez[3], Rey Y. Capangpangan[4], Preciosa Corazon B. Pabroa[2,*]

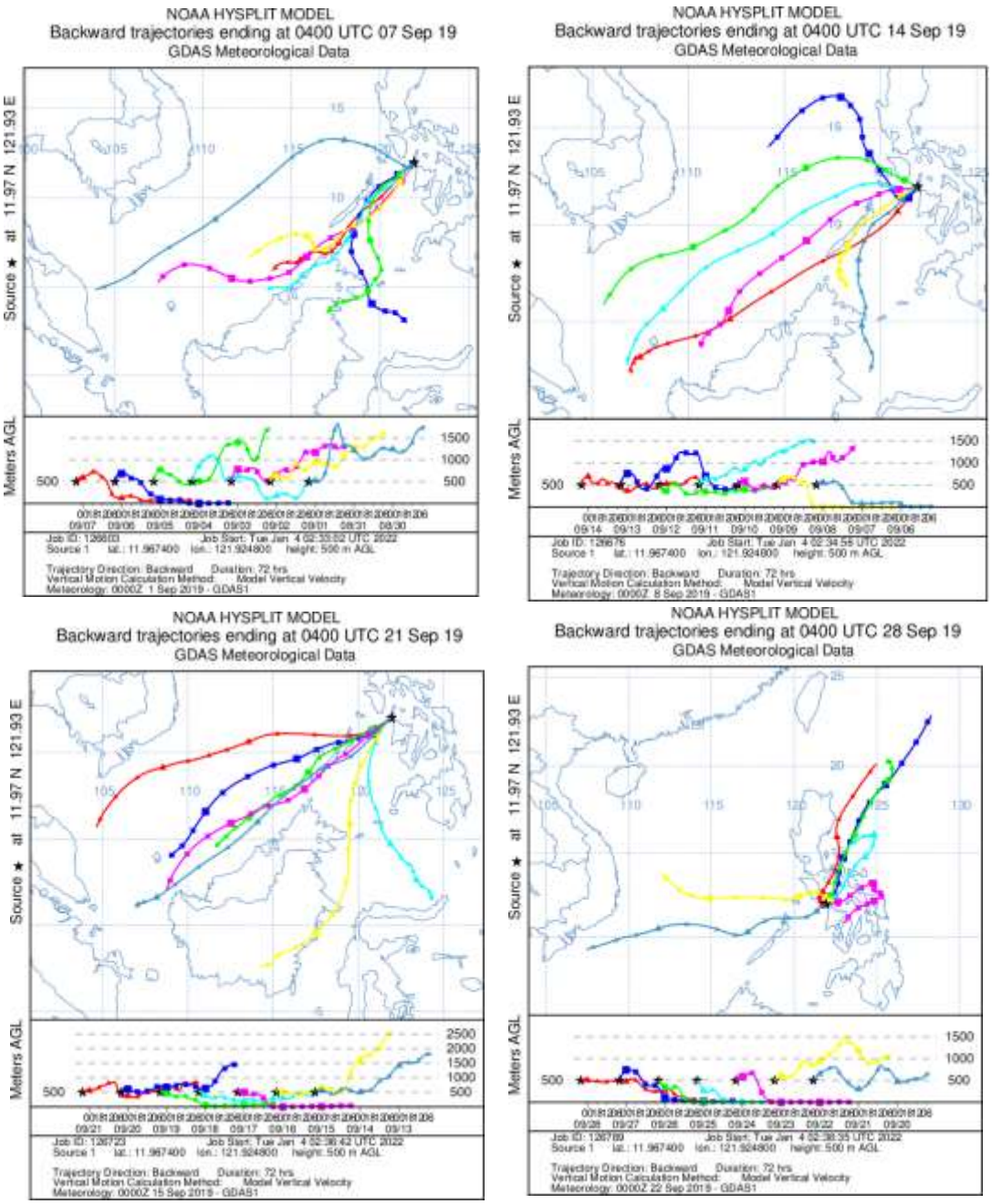

Figure S1. Backward trajectories (24-hour) of plumes arriving in Boracay in September 2019. Most of the plumes originated from the southwest, coherent with general wind circulation (Habagat) during this period.

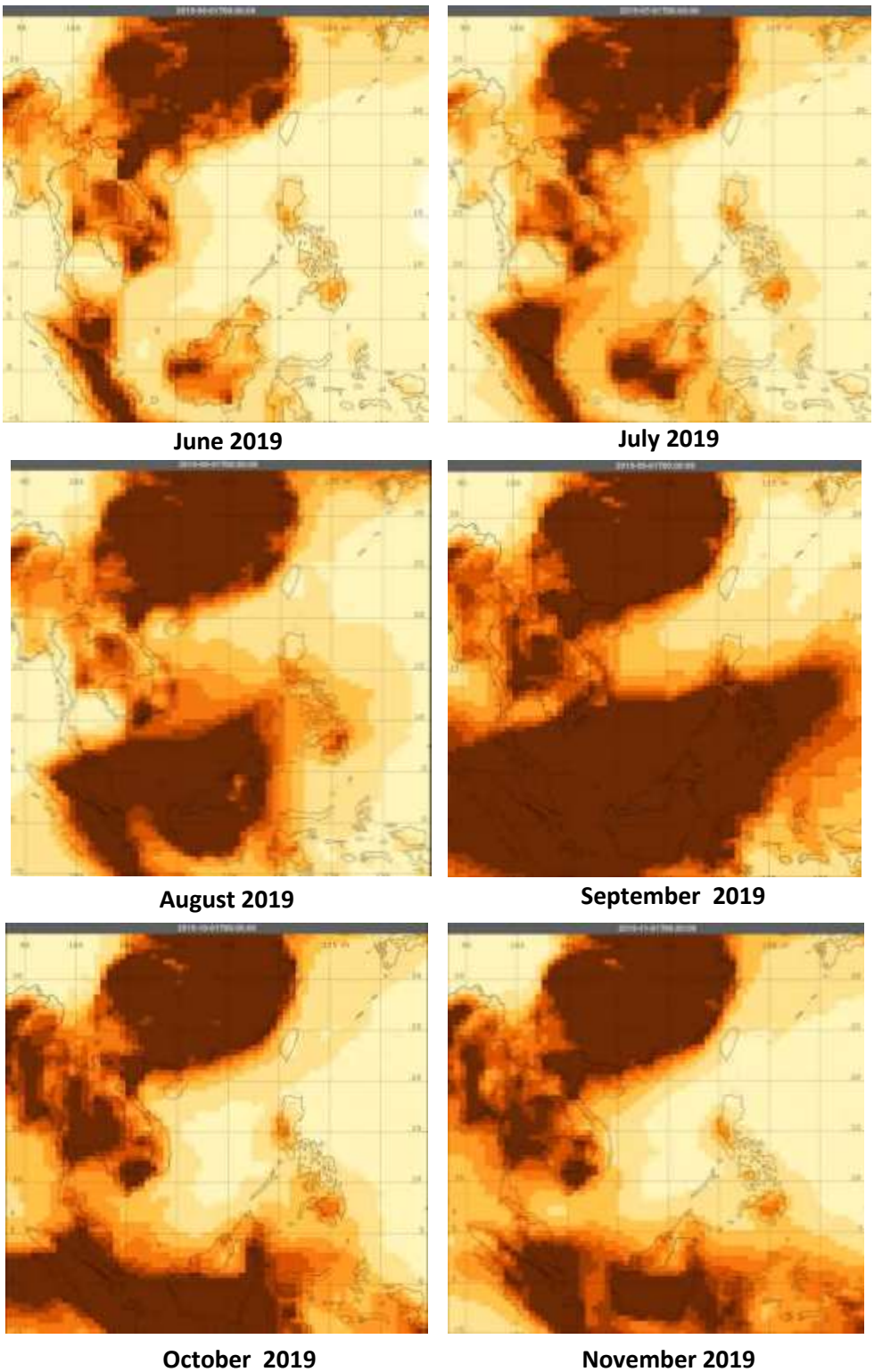

Figure S2. Monthly spatial profile of organic carbon (OC) in South East Asia. There was an evident transport of OC in September 2019, coming from SEA countries and south of the Philippines.

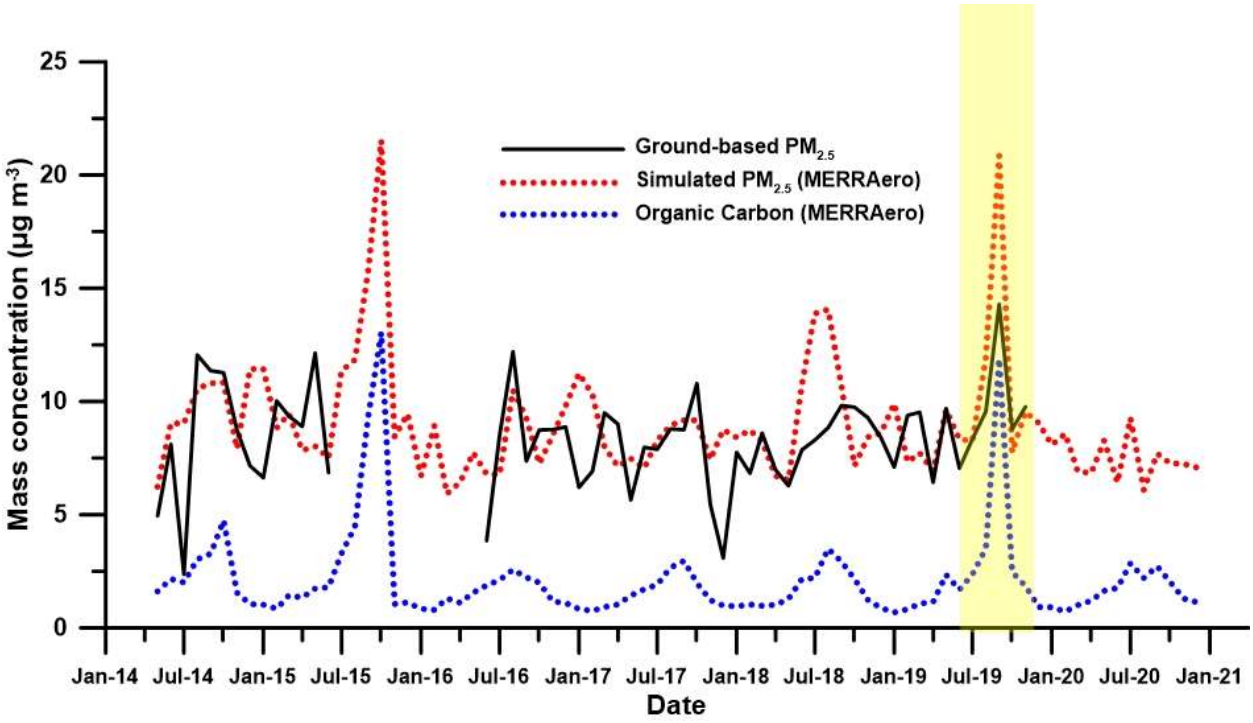

Figure S3. Time series profile of $PM_{2.5}$ in Southern Philippines from ground-based measurement and simulated surface concentration from satellite data (MERRAero). Included in the figure is the profile of OC, which had a prominent enhancement in September 2019. The shaded region is the period when elevated $PM_{2.5}$ mass concentration, attributed to the transport of combustion plume from SEA countries and south of Philippines. More information regarding this site can be found in a prior study (Salvador et al., 2022)

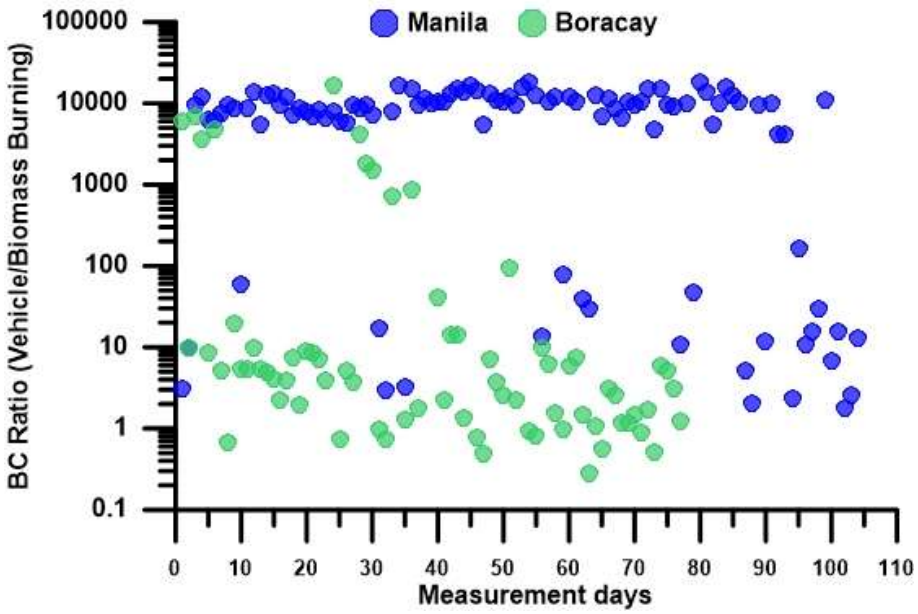

Figure S4. Ratio of BC attributed to vehicle and biomass burning. Each symbol represents a daily measurement collected separately on Manila and Boracay on different days.

References

Salvador, C.M., Alindajao, A.D., Burdeos, K.B., Lavapiez, M.A., Yee, J.R., Vii, A.T.B., Pabroa, P.C.B., Capangpangan, R.Y., 2022. Assessment of Impact of Meteorology and Precursor in Long-term Trends of PM and Ozone in a Tropical City. Aerosol and Air Quality Research 22, 210269.