

THE GREEN OCEAN AMAZON EXPERIMENT (GOAMAZON2014/5) OBSERVES POLLUTION AFFECTING GASES, AEROSOLS, CLOUDS, AND RAINFALL OVER THE RAIN FOREST

S. T. MARTIN, P. ARTAXO, L. MACHADO, A. O. MANZI, R. A. F. SOUZA, C. SCHUMACHER, J. WANG,
T. BISCARO, J. BRITO, A. CALHEIROS, K. JARDINE, A. MEDEIROS, B. PORTELA, S. S. DE SÁ, K. ADACHI,
A. C. AIKEN, R. ALBRECHT, L. ALEXANDER, M. O. ANDREA, H. M. J. BARBOSA, P. BUSECK, D. CHAND,
J. M. COMSTOCK, D. A. DAY, M. DUBEY, J. FAN, J. FAST, G. FISCH, E. FORTNER, S. GIANGRANDE,
M. GILLES, A. H. GOLDSTEIN, A. GUENTHER, J. HUBBE, M. JENSEN, J. L. JIMENEZ, F. N. KEUTSCH,
S. KIM, C. KUANG, A. LASKIN, K. MCKINNEY, F. MEI, M. MILLER, R. NASCIMENTO, T. PAULIQUEVIS,
M. PEKOUR, J. PERES, T. PETÄJÄ, C. PÖHLKER, U. PÖSCHL, L. RIZZO, B. SCHMID, J. E. SHILLING,
M. A. SILVA DIAS, J. N. SMITH, J. M. TOMLINSON, J. TÔTA, AND M. WENDISCH

This document is a supplement to “The Green Ocean Amazon Experiment (GoAmazon2014/5) Observes Pollution Affecting Gases, Aerosols, Clouds, and Rainfall over the Rain Forest,” S. T. Martin, P. Artaxo, L. Machado, A. O. Manzi, R. A. F. Souza, C. Schumacher, J. Wang, T. Biscaro, J. Brito, A. Calheiros, K. Jardine, A. Medeiros, B. Portela, S. S. de Sá, K. Adachi, A. C. Aiken, R. Albrecht, L. Alexander, M. O. Andreae, H. M. J. Barbosa, P. Buseck, D. Chand, J. M. Comstock, D. A. Day, M. Dubey, J. Fan, J. Fast, G. Fisch, E. Fortner, S. Giangrande, M. Gilles, A. H. Goldstein, A. Guenther, J. Hubbe, M. Jensen, J. L. Jimenez, F. N. Keutsch, S. Kim, C. Kuang, A. Laskin, K. McKinney, F. Mei, M. Miller, R. Nascimento, T. Pauliquevis, M. Pekour, J. Peres, T. Petäjä, C. Pöhlker, U. Pöschl, L. Rizzo, B. Schmid, J. E. Shilling, M. A. Silva Dias, J. N. Smith, J. M. Tomlinson, J. Tóta, and M. Wendisch (*Bull. Amer. Meteor. Soc.*, **98**, 981–997) • ©2017 American Meteorological Society • Corresponding author e-mail: S. T. Martin, scot_martin@harvard.edu • DOI:10.1175/BAMS-D-15-00221.2

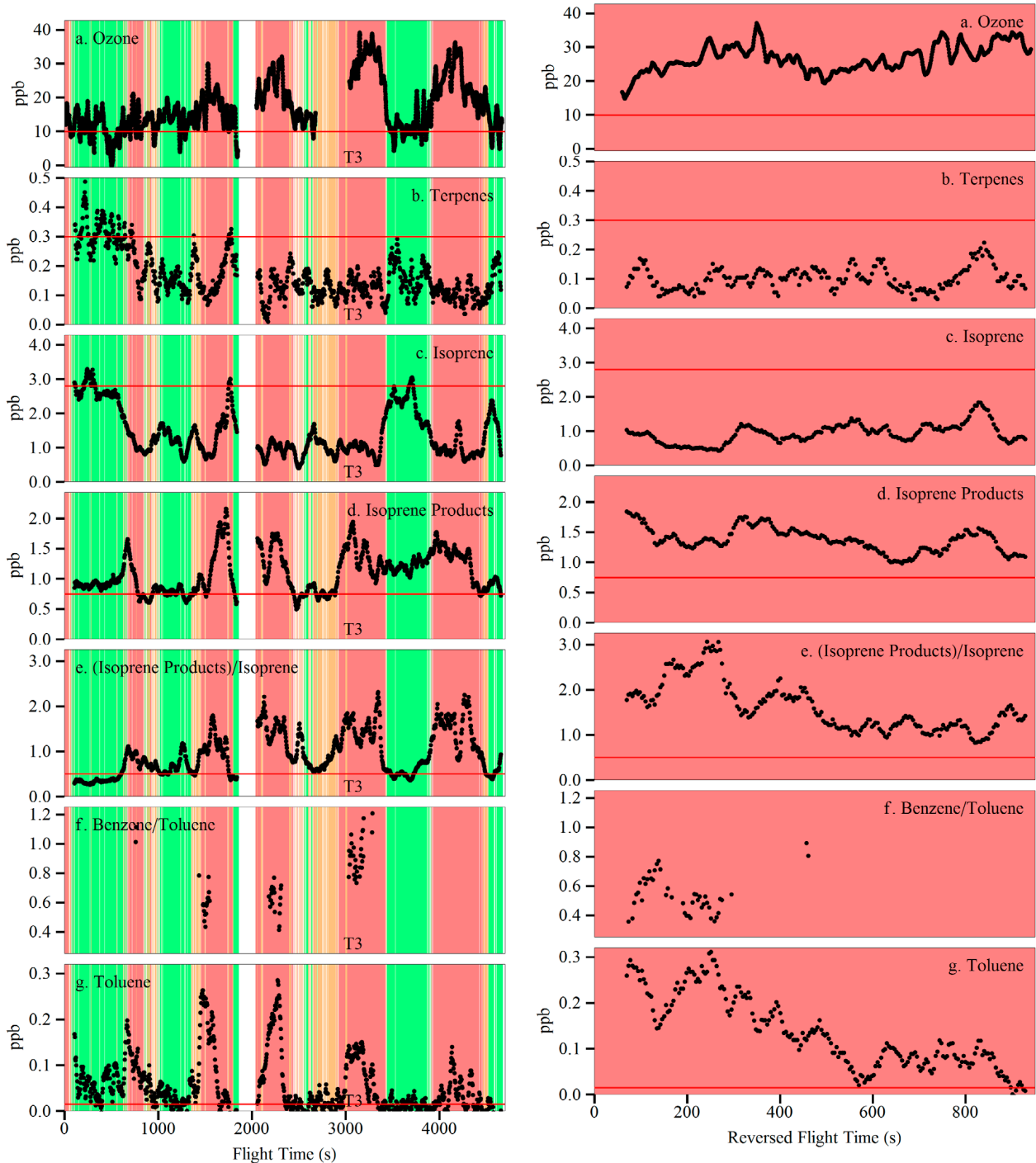


FIG. ESI. Concentrations of atmospheric gases along the (left) transverse and (right) longitudinal flight tracks of Figs. 4a1 and 4b1, respectively: (a) ozone; (b) terpenes; (c) isoprene; (d) sum of methyl vinyl ketone, methacrolein, and hydroperoxides as isoprene photo-oxidation products; (e) ratio of oxidation products and isoprene; (f) ratio of benzene and toluene; and (g) toluene. Organic species were measured by proton transfer reaction mass spectrometry (PTR-MS). The background coloring to designate the pollution state of an air mass, the red line to designate baseline concentrations, and the label T3 are as discussed for Fig. 4a2.

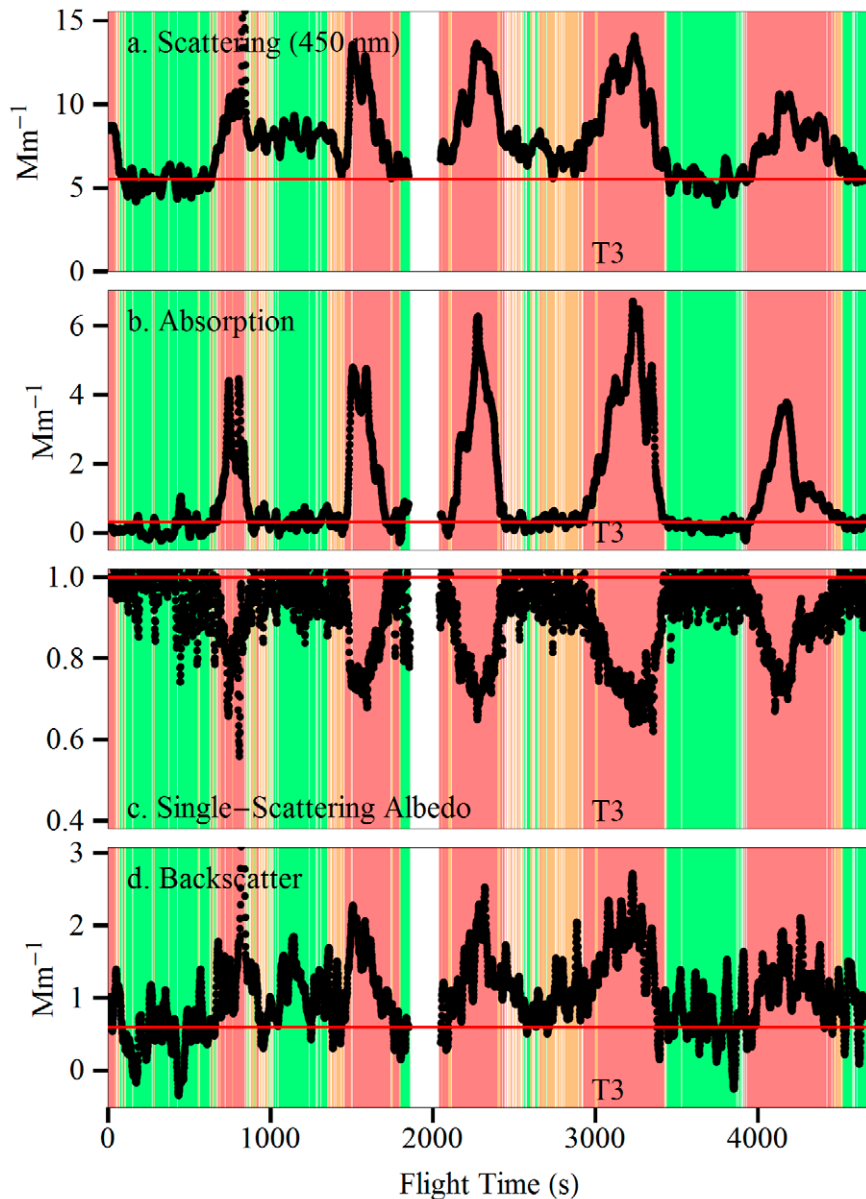


FIG. ES2. Particle optical properties along the transverse flight corresponding to Fig. 4a1: (a) scattering coefficient, (b) absorption coefficient, (c) single-scattering albedo, and (d) backscatter coefficient measured. The sampled air was dried before measurement. The properties in (a) and (d) were measured by nephelometry at 450 nm, that in (b) was measured by a Particle Soot Absorption Photometer (PSAP) at 462 nm, and that in (c) was calculated from (a) and (b). The background coloring to designate the pollution state of an air mass, the red line to designate baseline concentrations, and the label T3 are as discussed in Fig. 4a2.