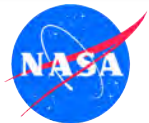




ORACLES Forecast Briefing

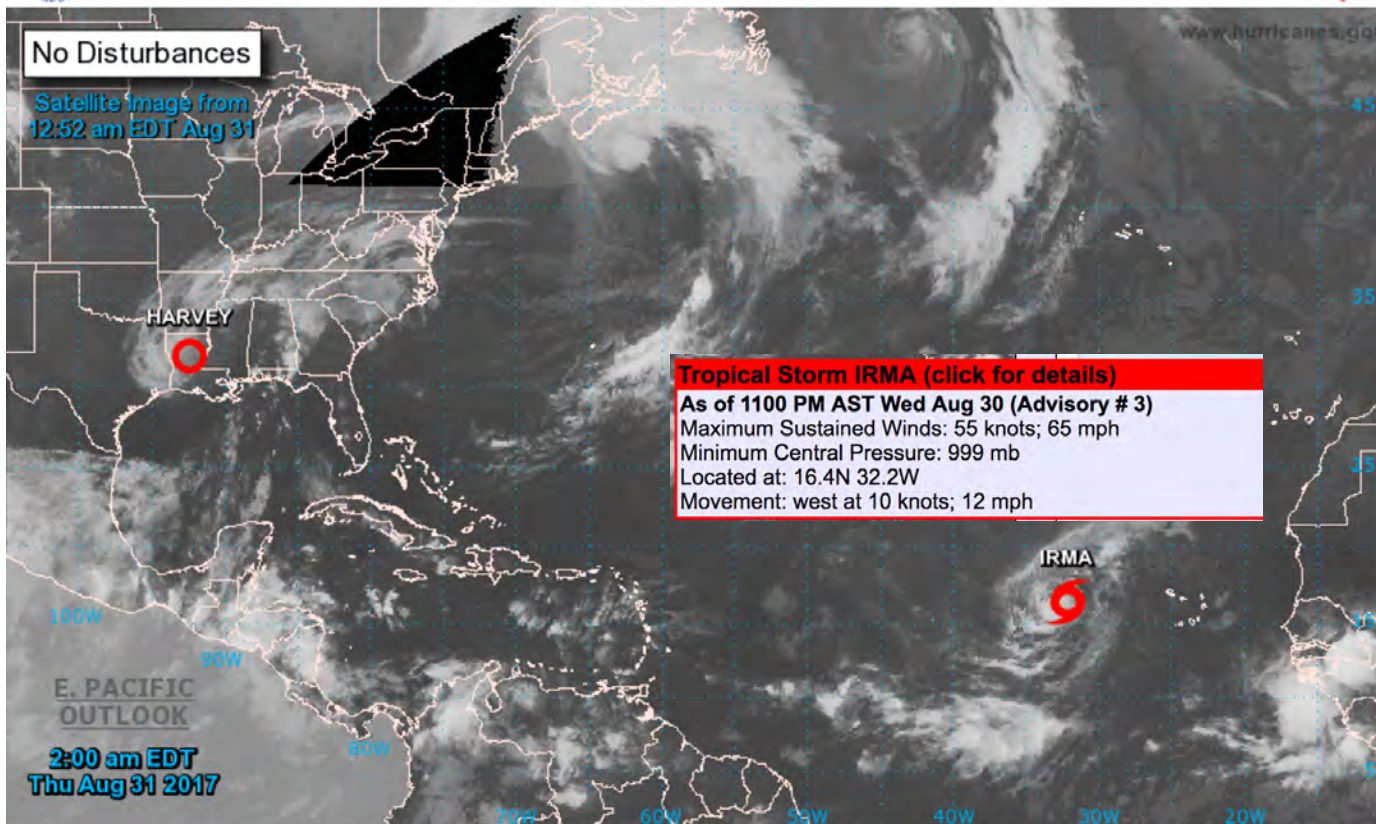
Aerosols

Thursday, 31 August 2017



Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

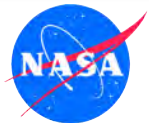


Tropical Storm IRMA (click for details)
As of 1100 PM AST Wed Aug 30 (Advisory # 3)
 Maximum Sustained Winds: 55 knots; 65 mph
 Minimum Central Pressure: 999 mb
 Located at: 16.4N 32.2W
 Movement: west at 10 knots; 12 mph

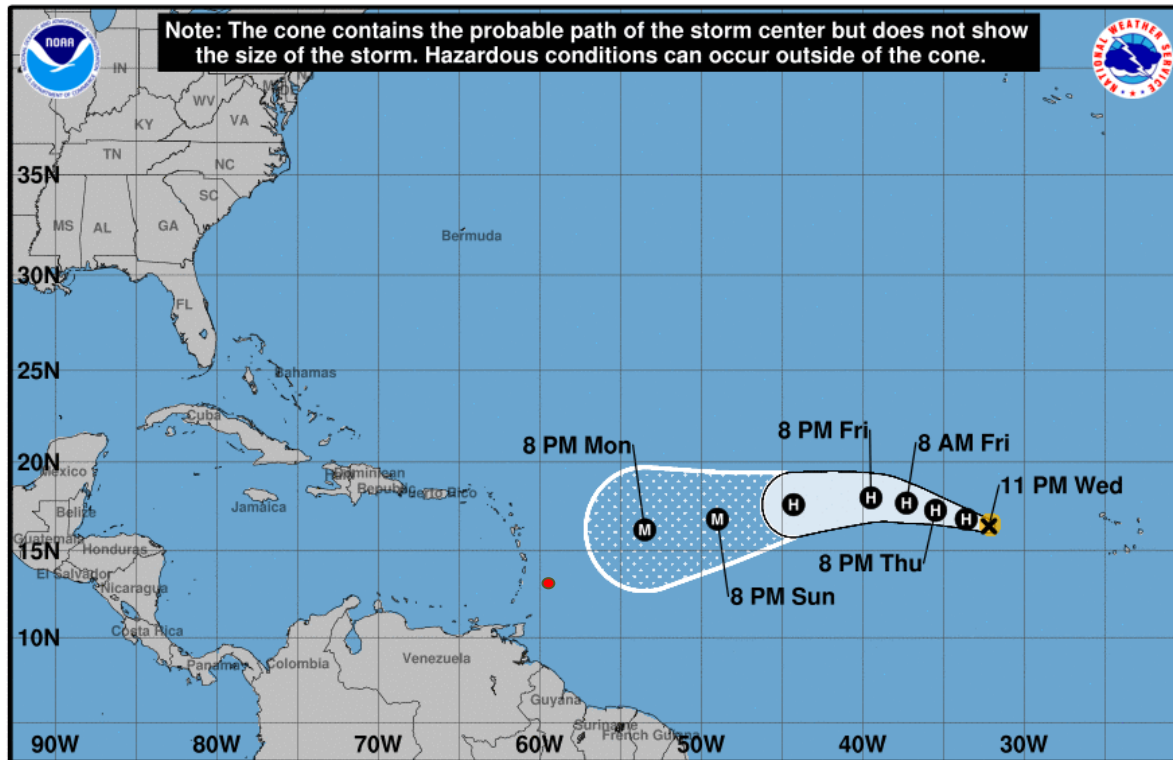
Current Disturbances and Two-Day Cyclone Formation Chance: ✘ < 40% ✘ 40-60% ✘ > 60%

Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane

⊙ Post-Tropical Cyclone ✘ Remnants



Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



Tropical Storm Irma
 Wednesday August 30, 2017
 11 PM AST Advisory 3
 NWS National Hurricane Center

Current information: x
 Center location 16.4 N 32.2 W
 Maximum sustained wind 65 mph
 Movement W at 12 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area:
 Day 1-3 (solid line) Day 4-5 (dotted line)

Watches:
 Hurricane (pink) Trop Stm (yellow)

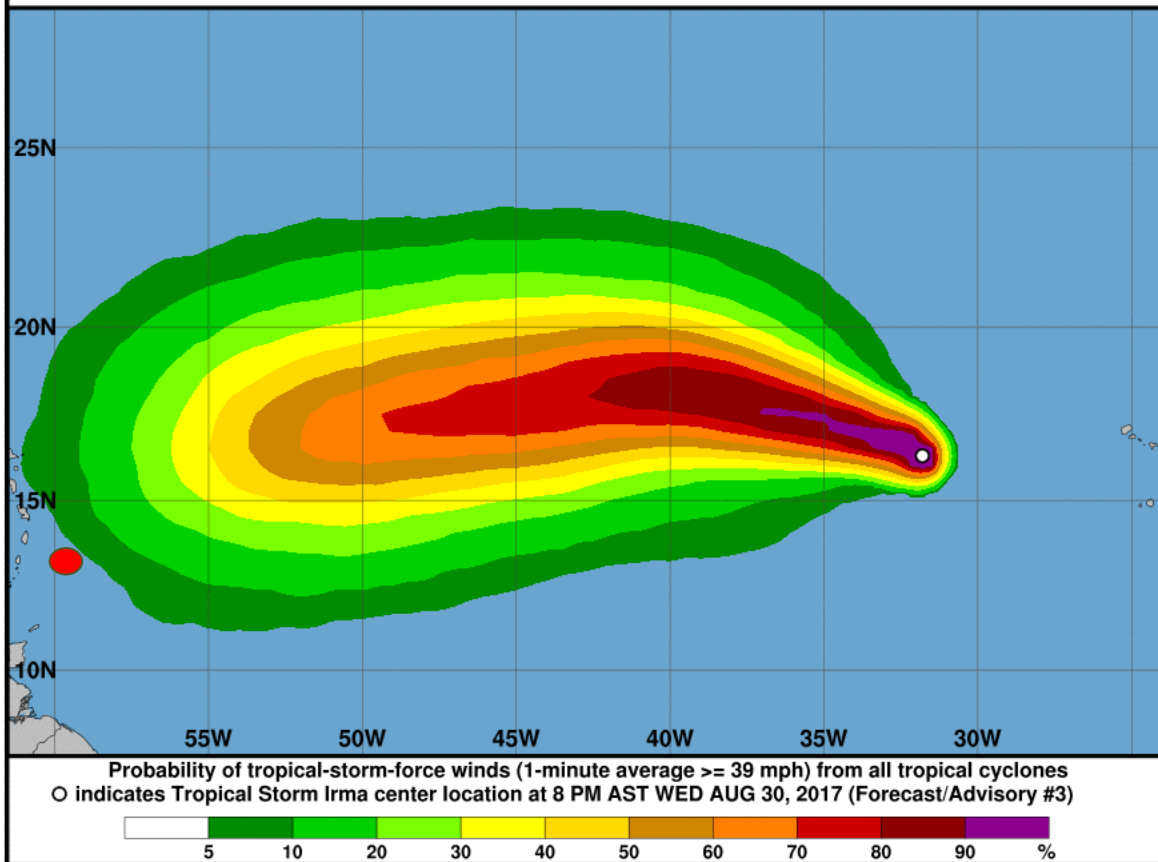
Warnings:
 Hurricane (red) Trop Stm (blue)

Current wind extent:
 Hurricane (brown) Trop Stm (orange)



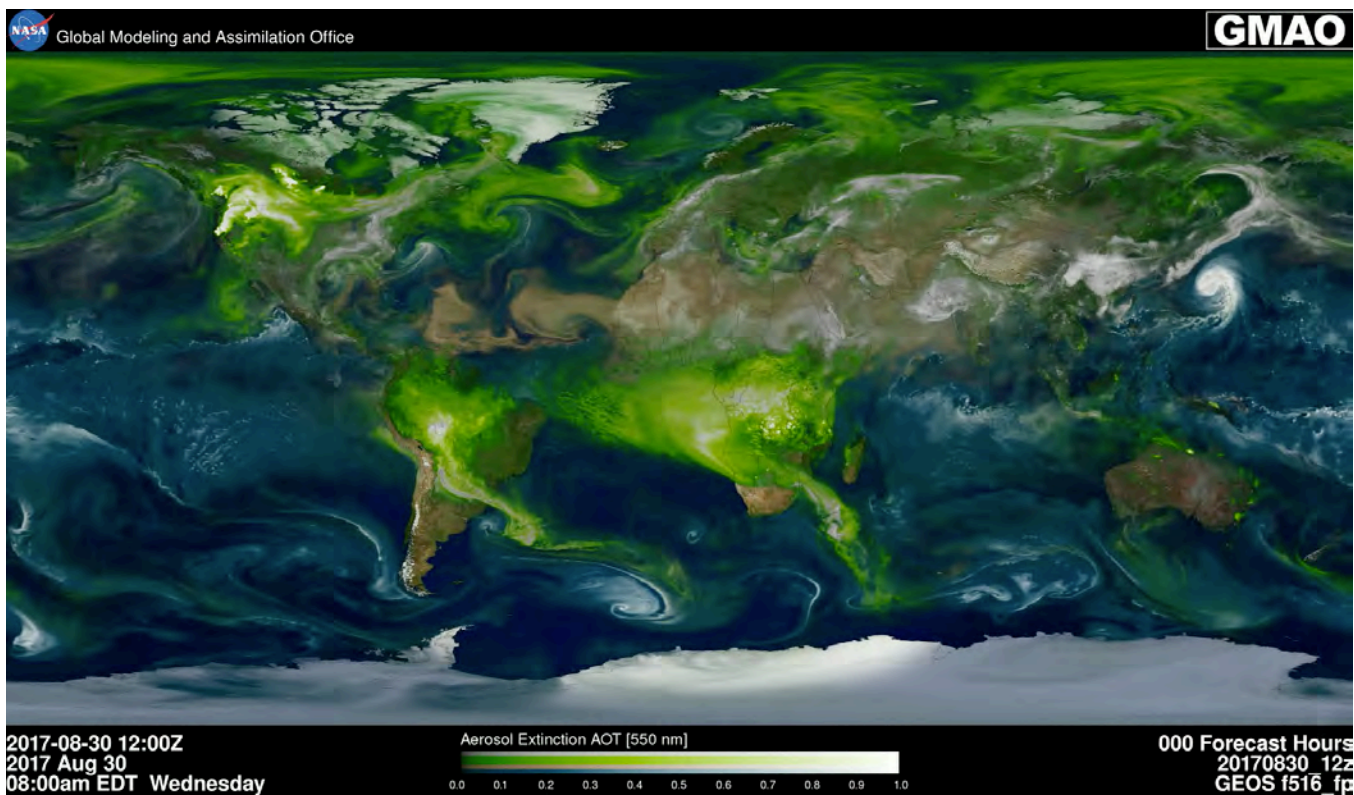
Tropical-Storm-Force Wind Speed Probabilities

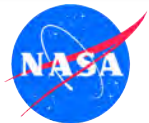
For the 120 hours (5.00 days) from 8 PM AST WED AUG 30 to 8 PM AST MON SEP 04



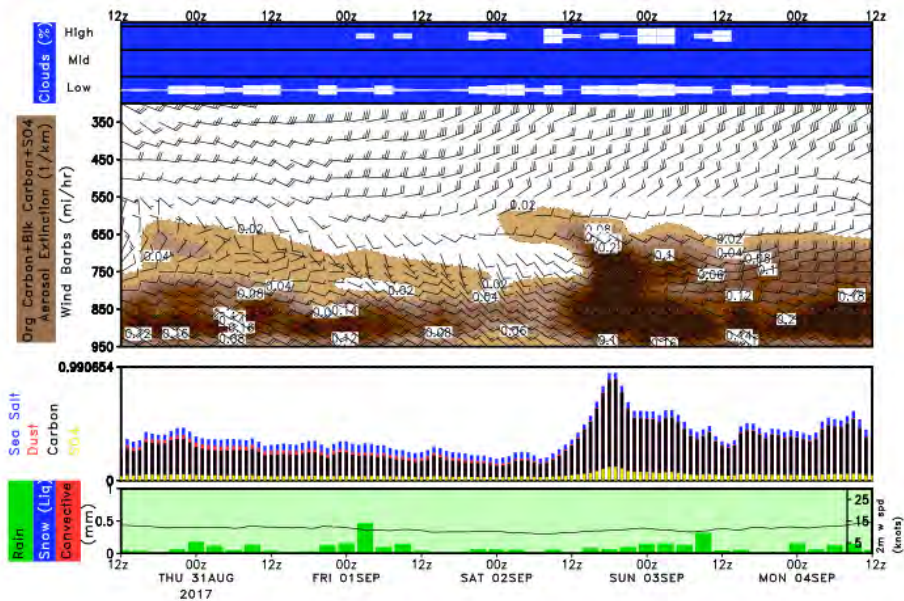


The Aerosol Week

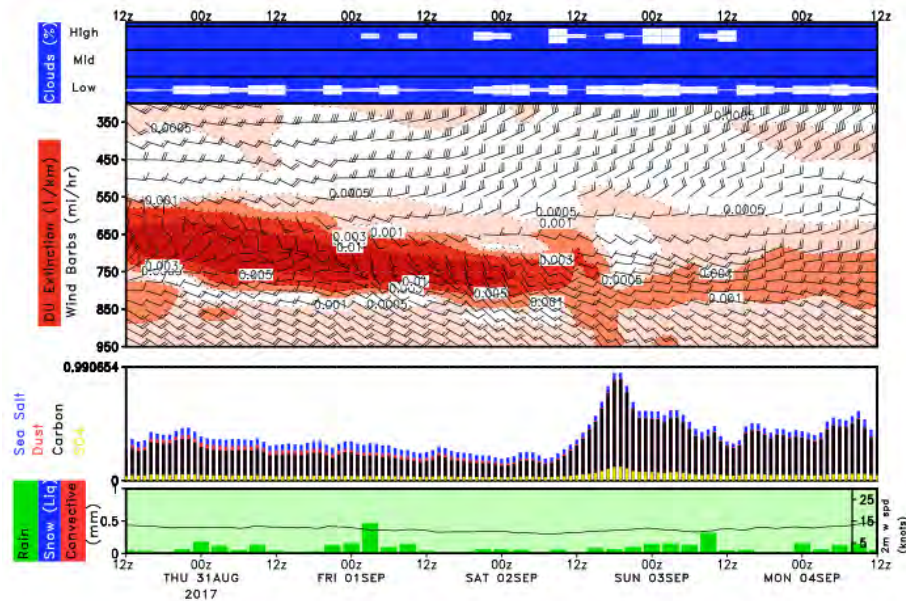




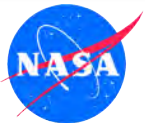
Ascension (OC+BC+SO4 & Dust)



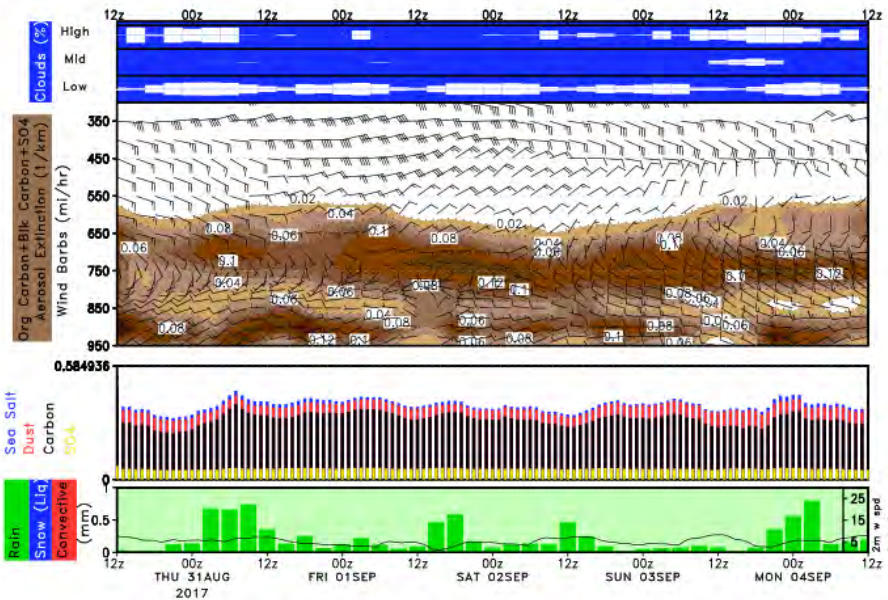
LAT = -8.0 , LON = -14.4, Location = ORACLES_Ascension_Island, Fcst_init = 20170830



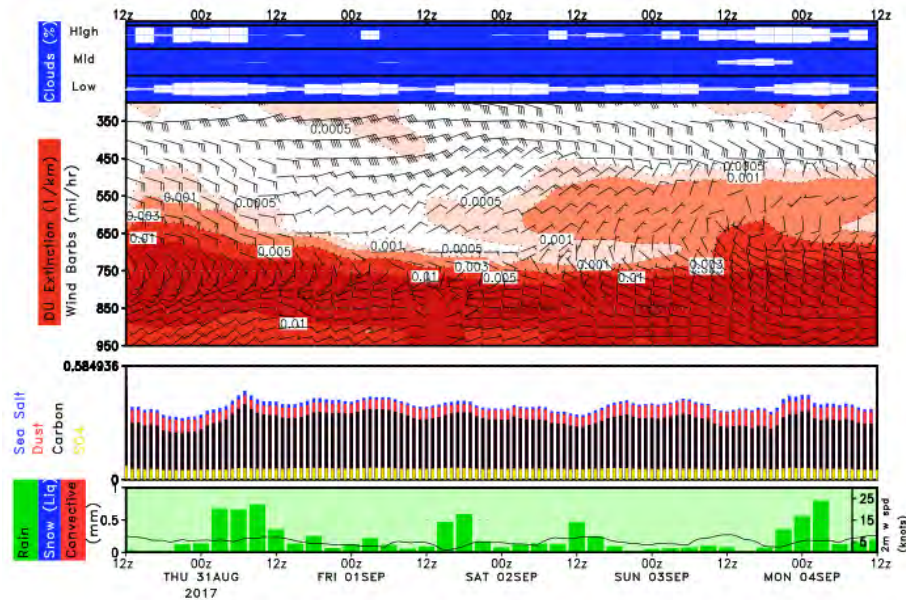
LAT = -8.0 , LON = -14.4, Location = ORACLES_Ascension_Island, Fcst_init = 20170830



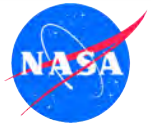
São Tomé (OC+BC+SO4 & Dust)



LAT = 0.3 , LON = 6.6, Location = ORACLES_Sao_Tome_e_Principe, Fcst_init = 20170830

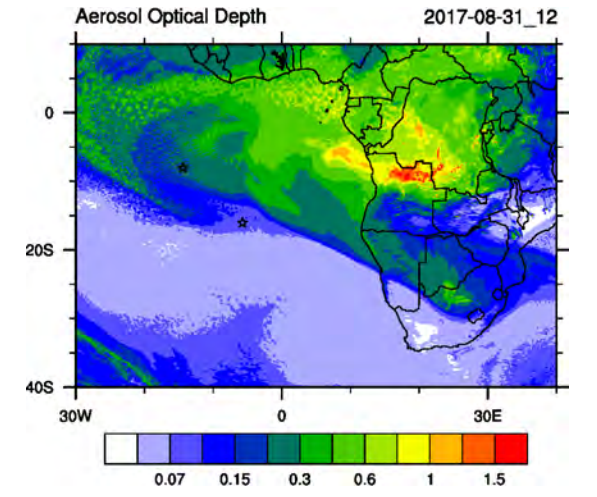
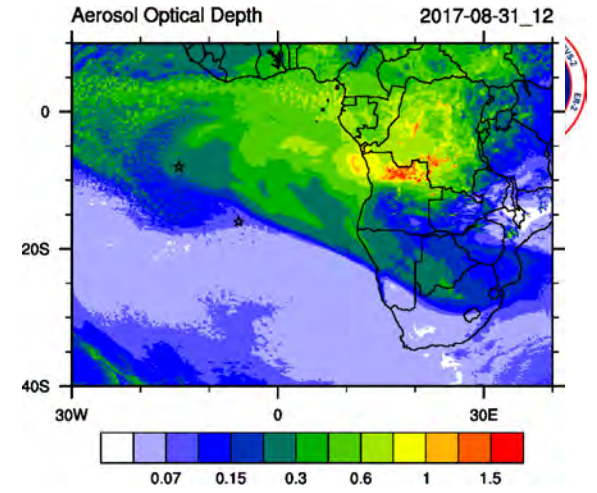
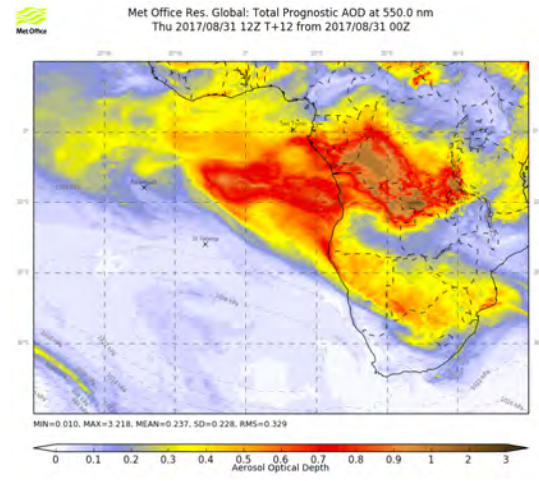
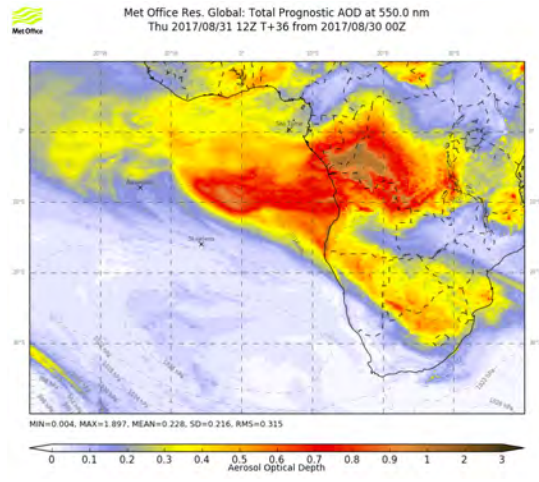
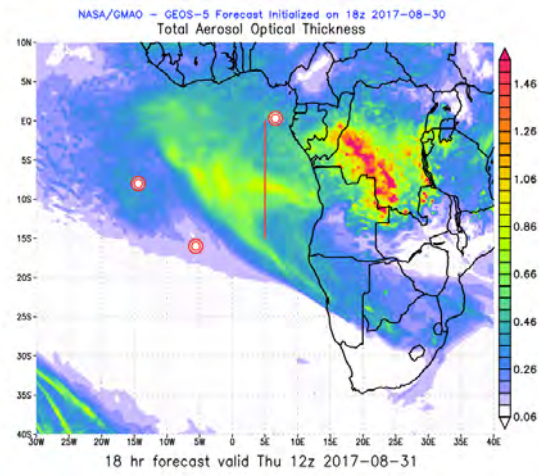
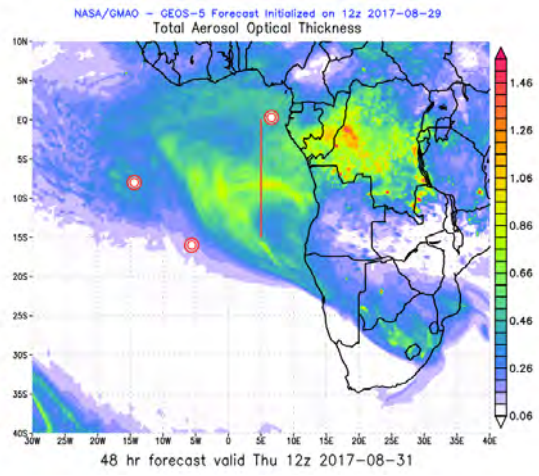


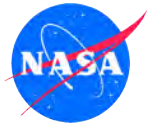
LAT = 0.3 , LON = 6.6, Location = ORACLES_Sao_Tome_e_Principe, Fcst_init = 20170830



Last Fly Day (Lagrangian)

THURSDAY, 31 AUGUST 2017

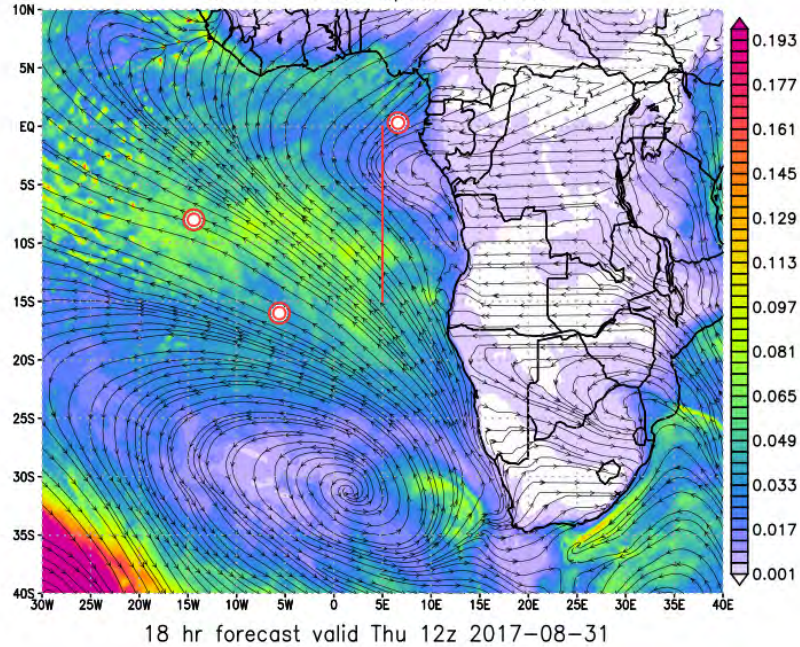




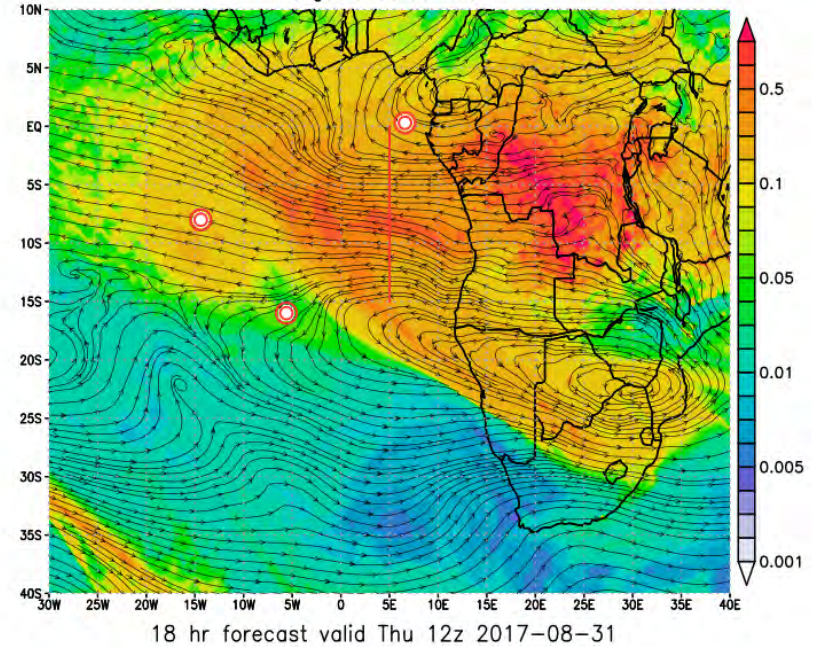
Thu 31 August 2017 12Z

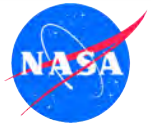


NASA/GMAO – GEOS-5 Forecast Initialized on 18z 2017-08-30
Sea Salt Aerosol Optical Thickness



NASA/GMAO – GEOS-5 Forecast Initialized on 18z 2017-08-30
Organic Carbon AOT

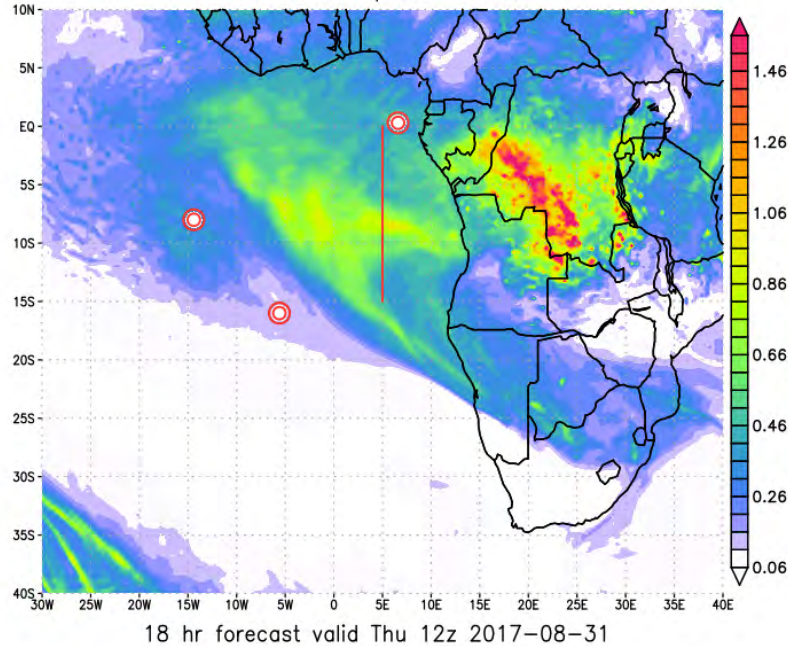




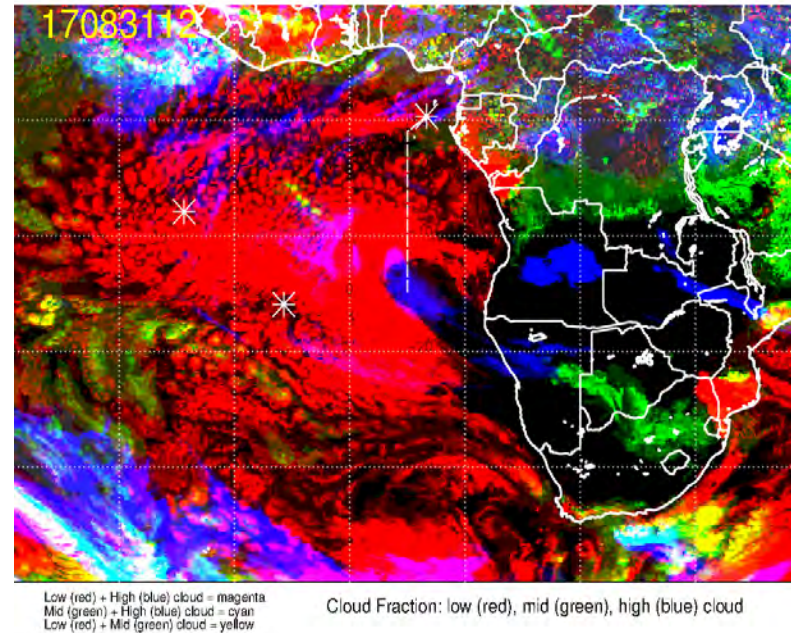
Thu 31 August 2017 12Z

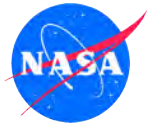


NASA/GMAO – GEOS-5 Forecast Initialized on 18z 2017-08-30
Total Aerosol Optical Thickness

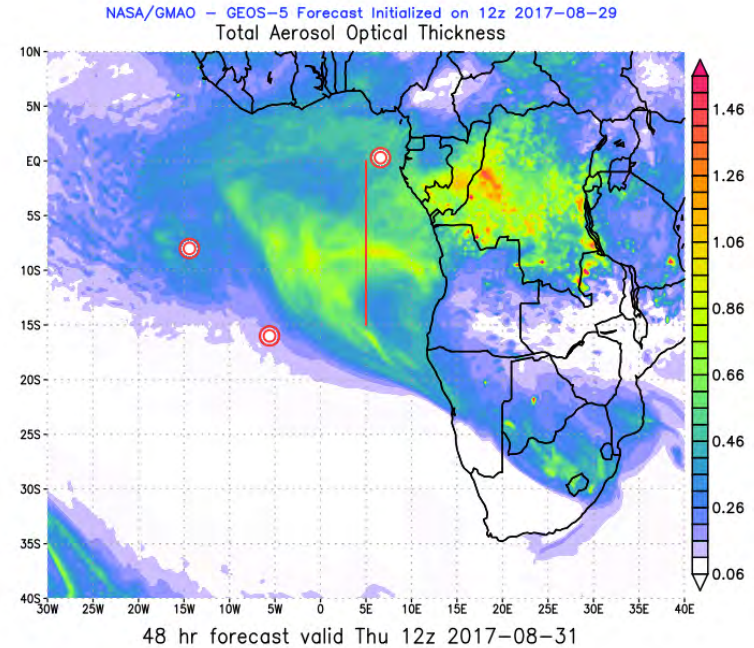
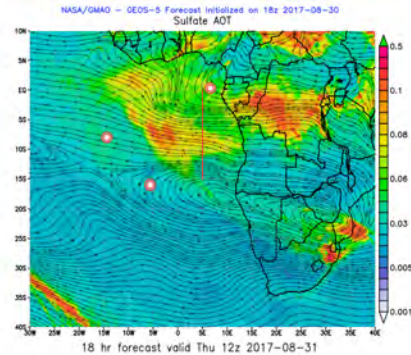
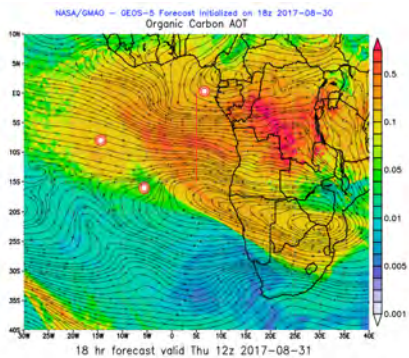
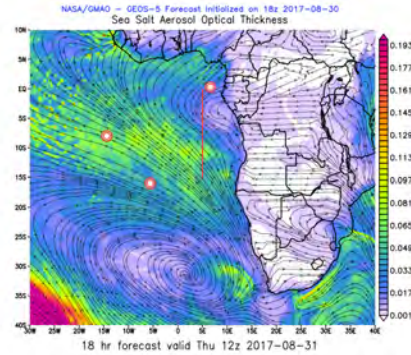
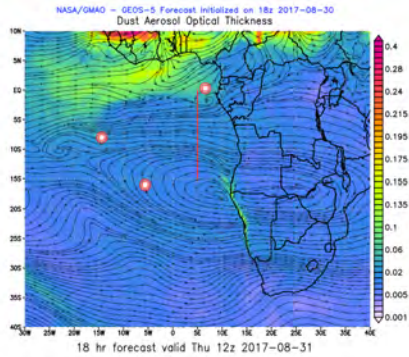


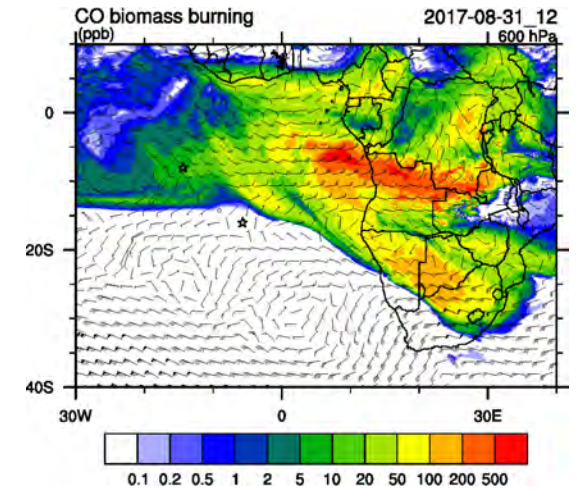
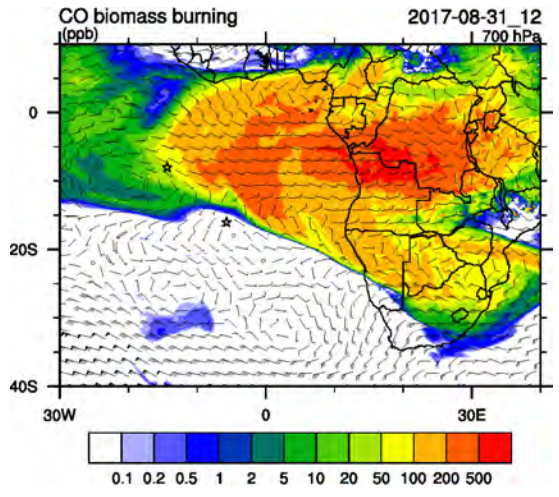
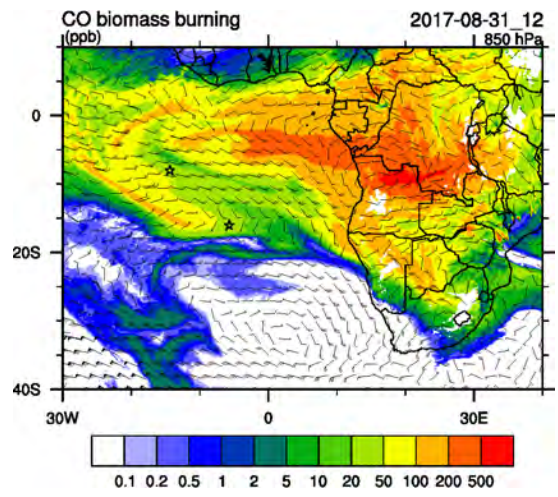
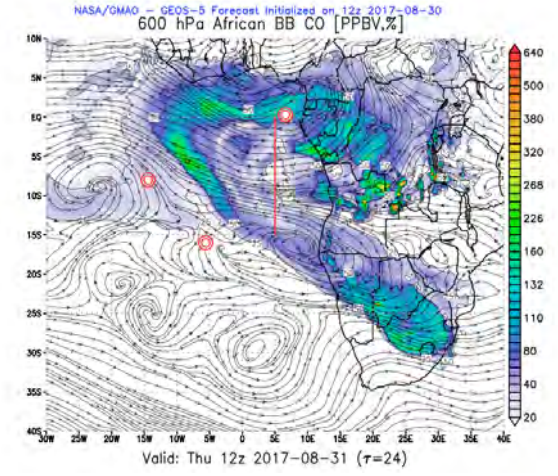
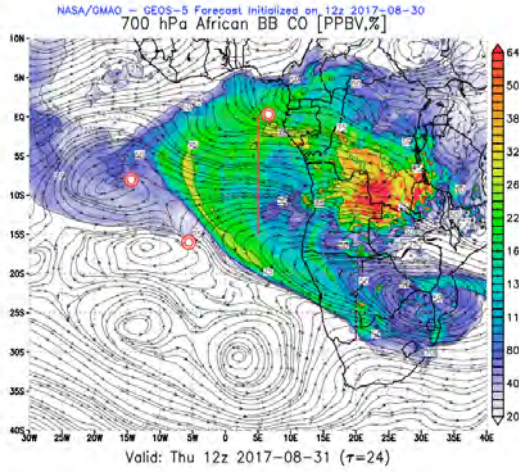
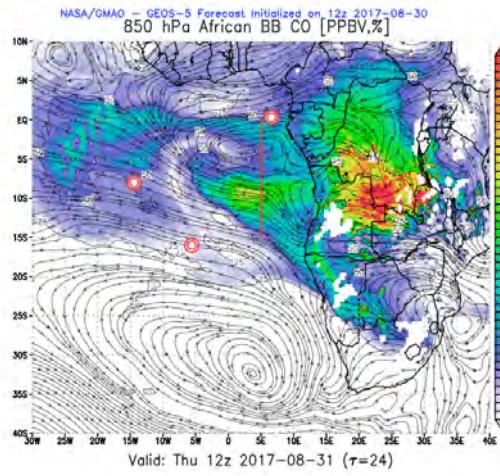
17083112, 024 hour forecast for Cloud Fraction (low, mid, and high cloud) -- ECMWF

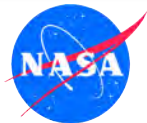




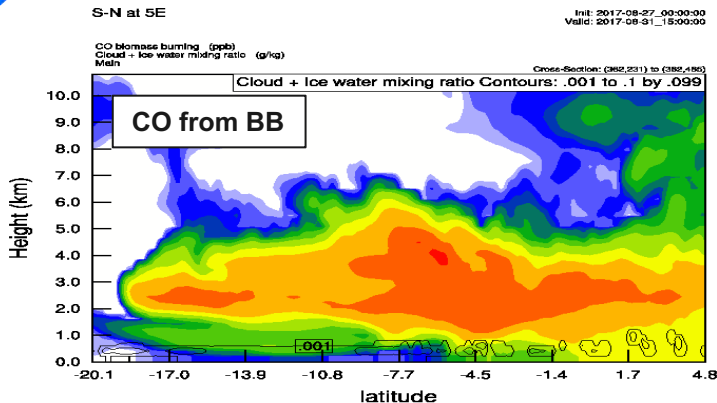
Thu 31 August 2017 12Z



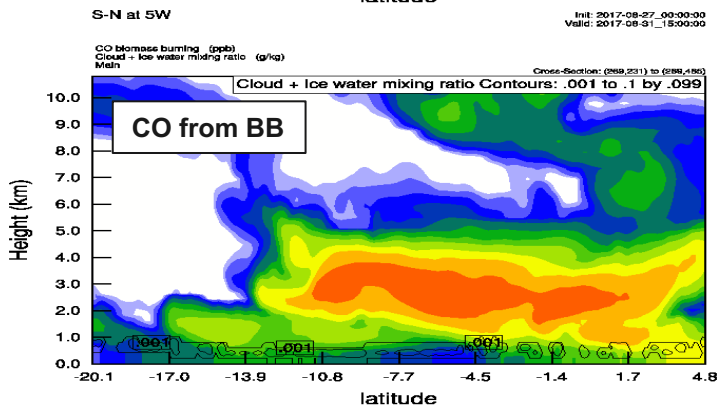
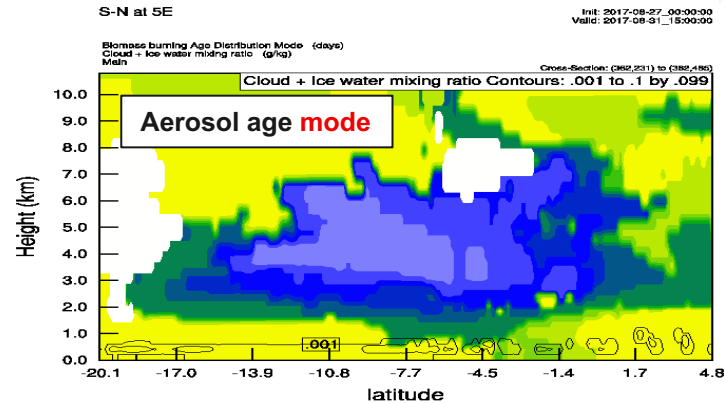




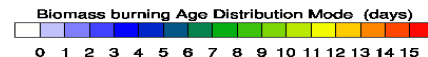
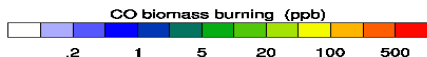
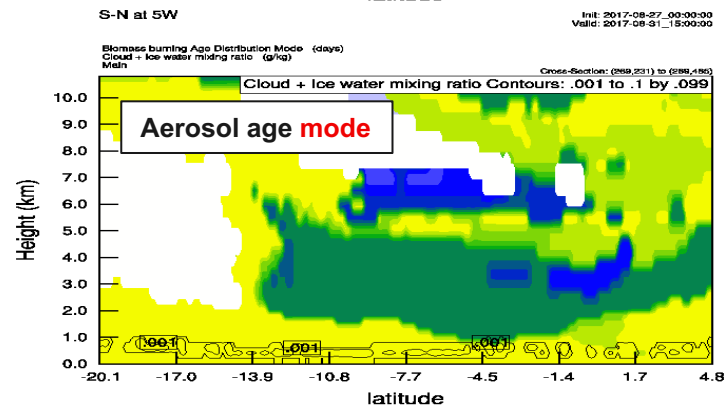
Cross sections at 5 E and 5 W — Thu 31 Aug 15 Z



5 E



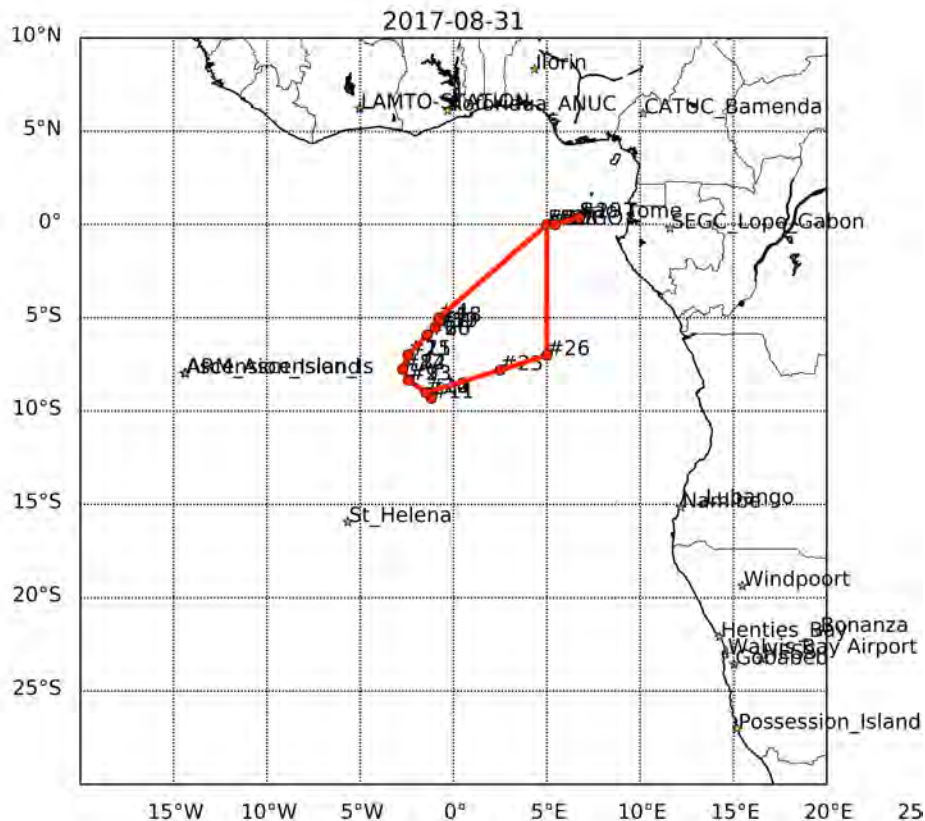
5 W

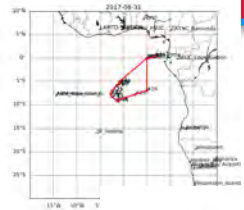




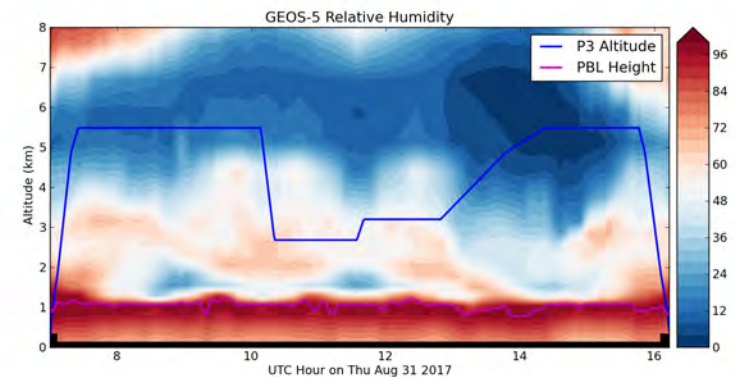
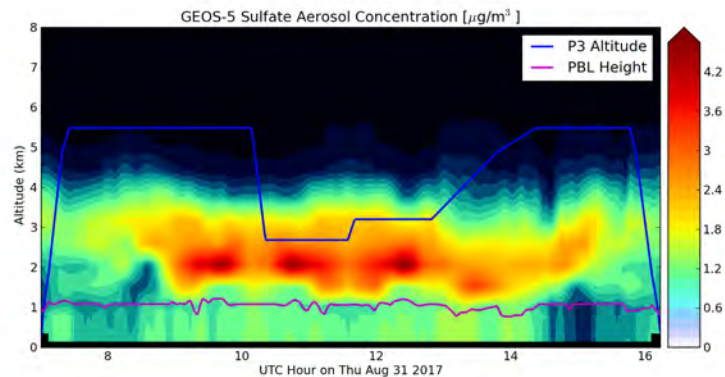
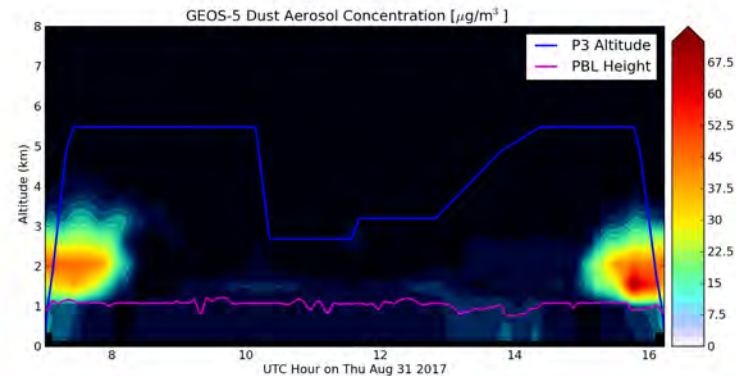
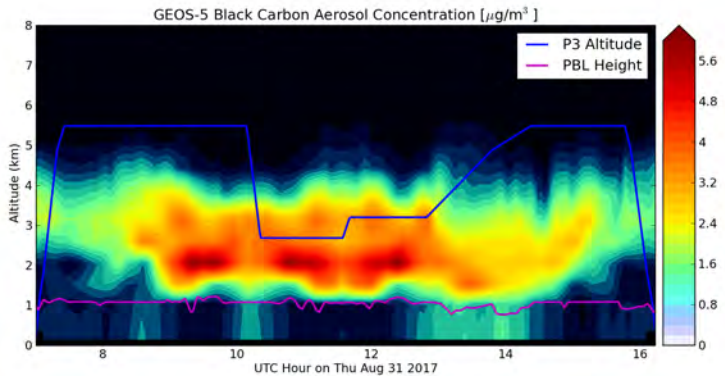
Thursday 31 August 2017

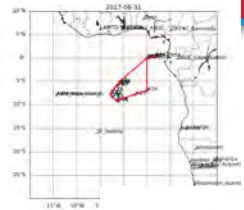
Lagrangian Flight



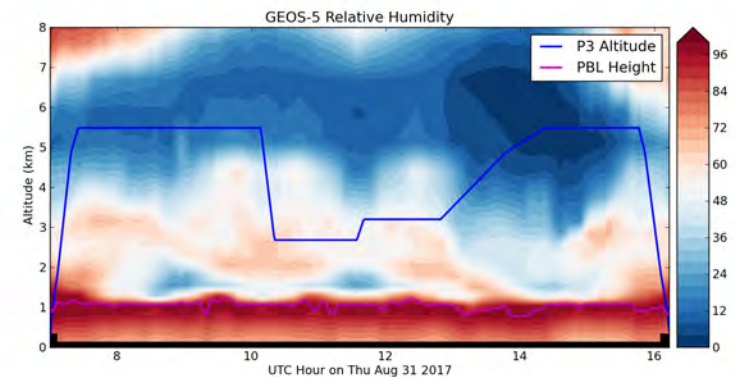
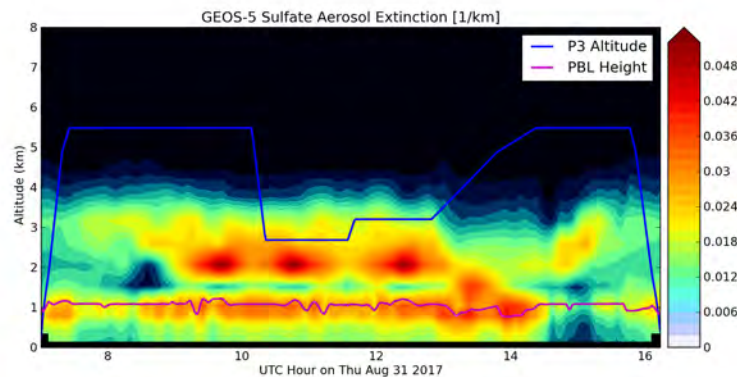
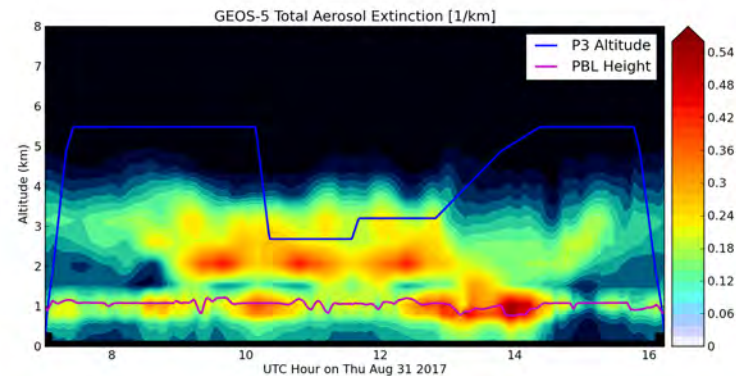
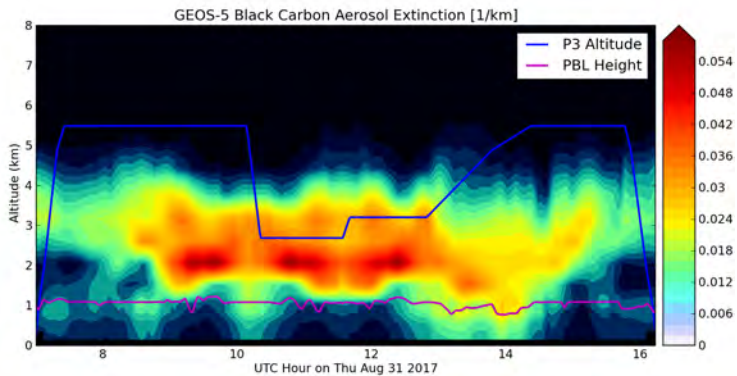


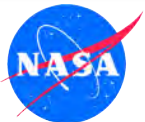
Thu 31 August 2017





Thu 31 August 2017

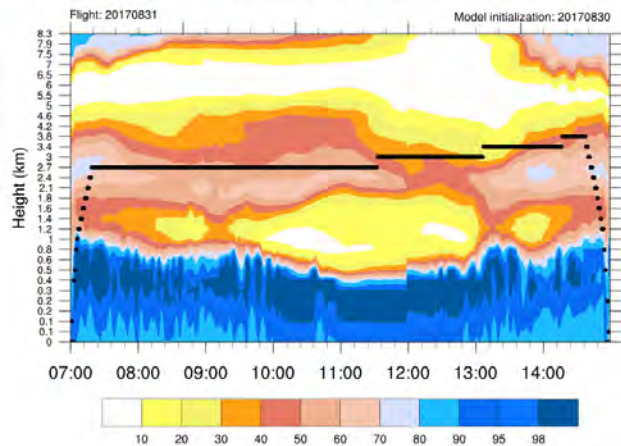




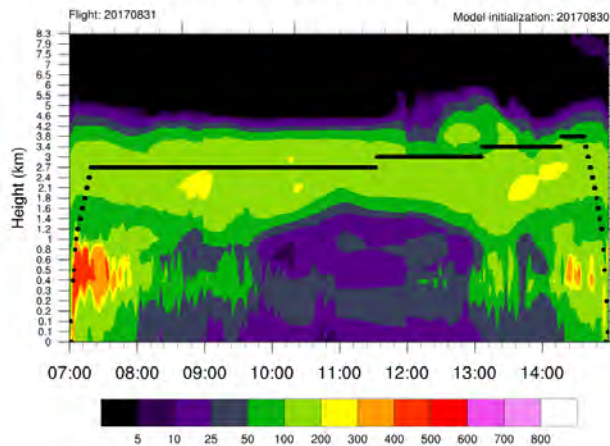
Thursday 31 August 2017



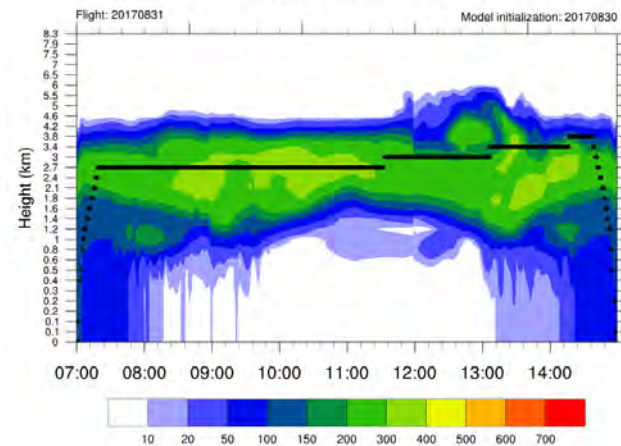
Relative Humidity (%)

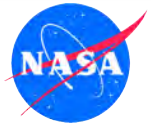


550nm Aerosol Extinction (1/Mm)



CO from Biomass Burning (ppb)





Packing Day

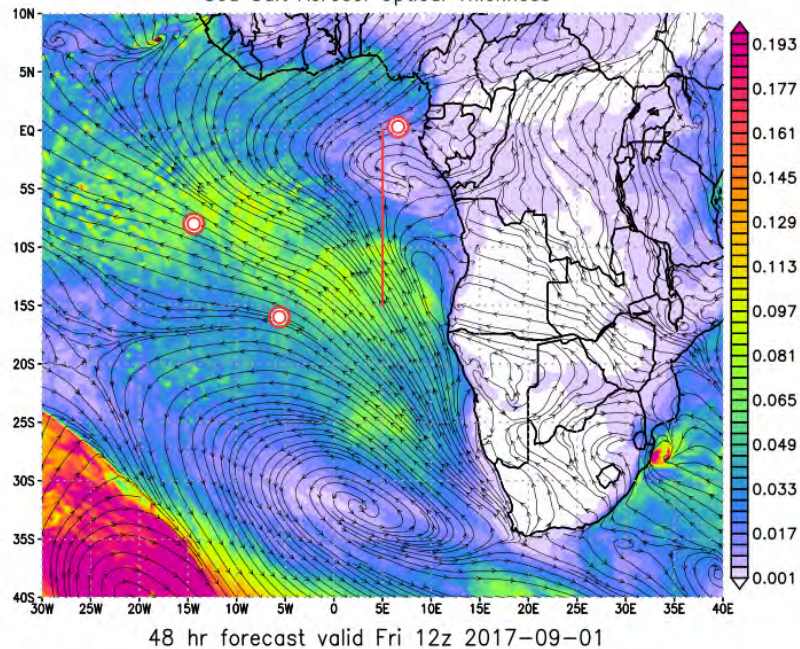
FRIDAY, 1 SEPTEMBER 2017



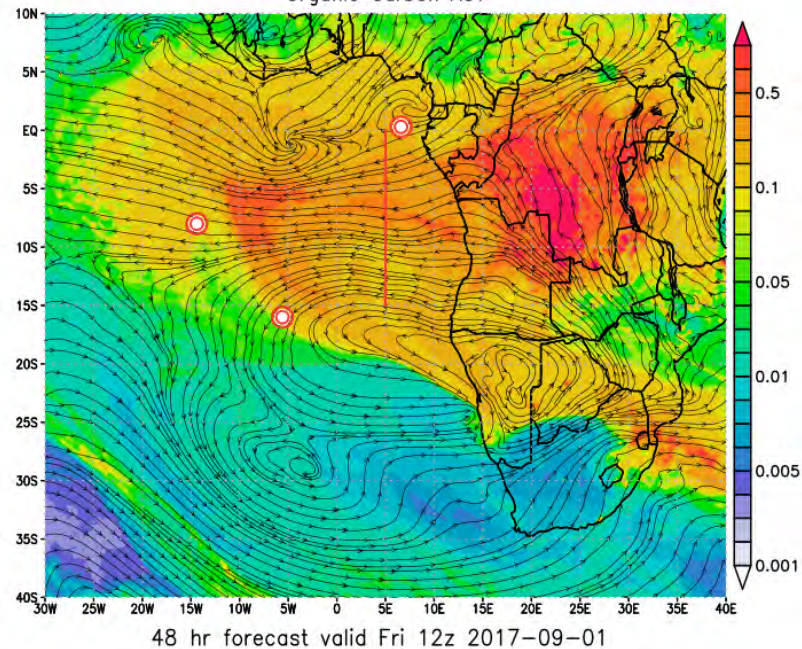
Friday, 1 September 2017 12Z



NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30
Sea Salt Aerosol Optical Thickness



NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30
Organic Carbon AOT

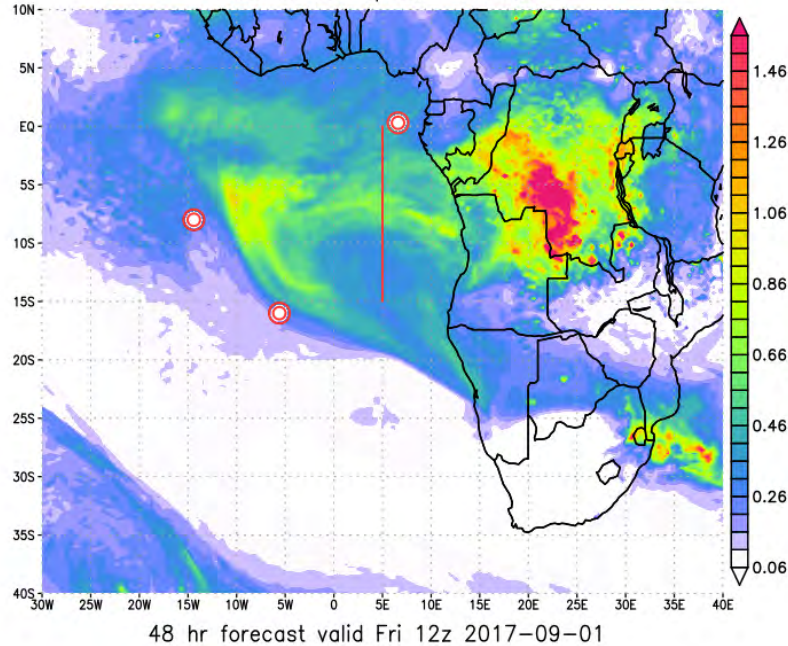




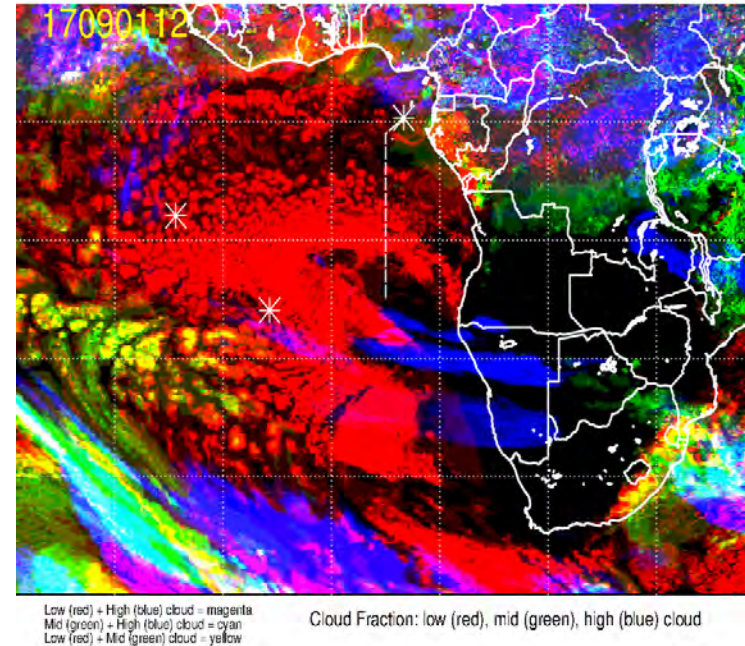
Friday, 1 September 2017 12Z



NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30
Total Aerosol Optical Thickness

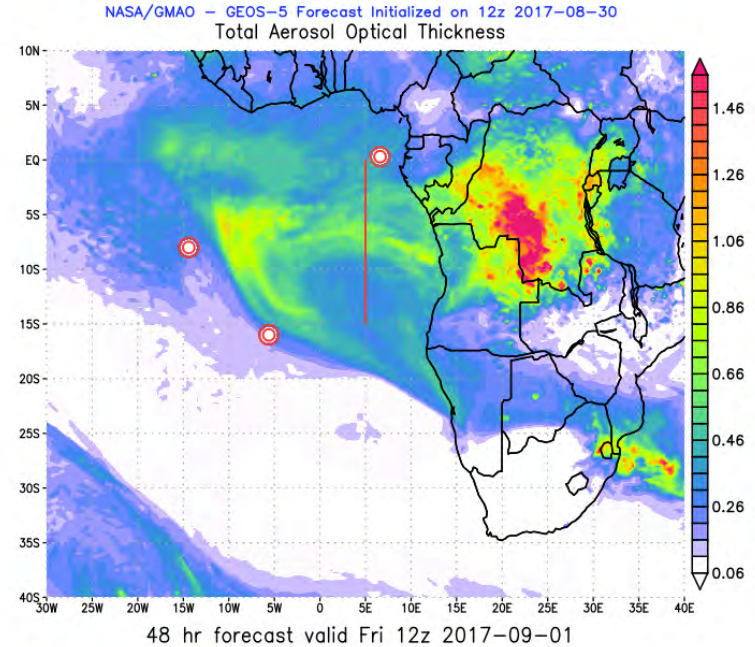
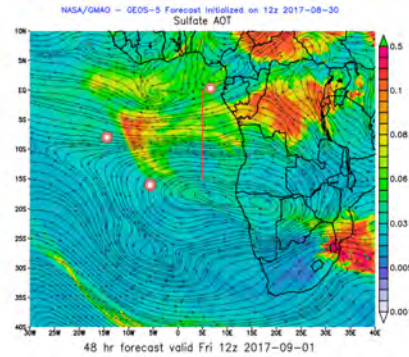
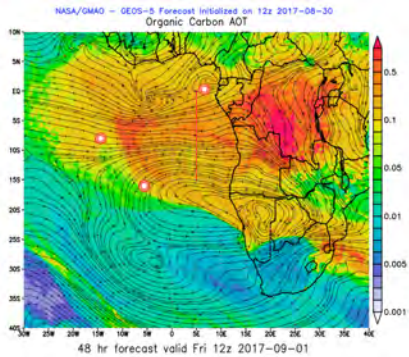
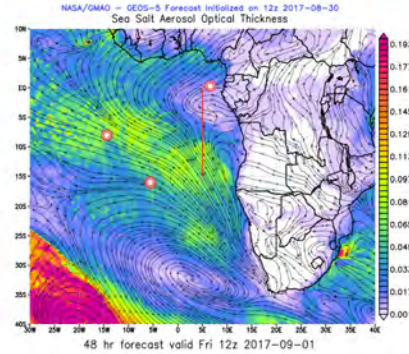
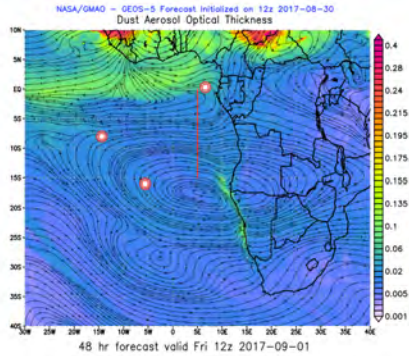


17090112, 048 hour forecast for Cloud Fraction (low, mid, and high cloud) -- ECMWF



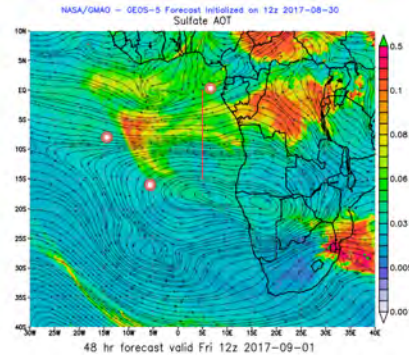
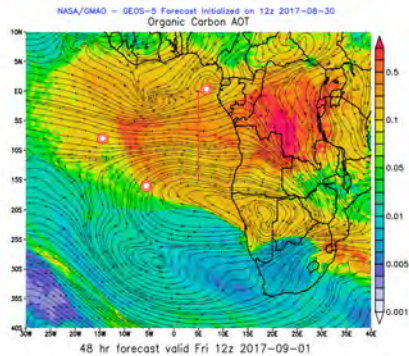
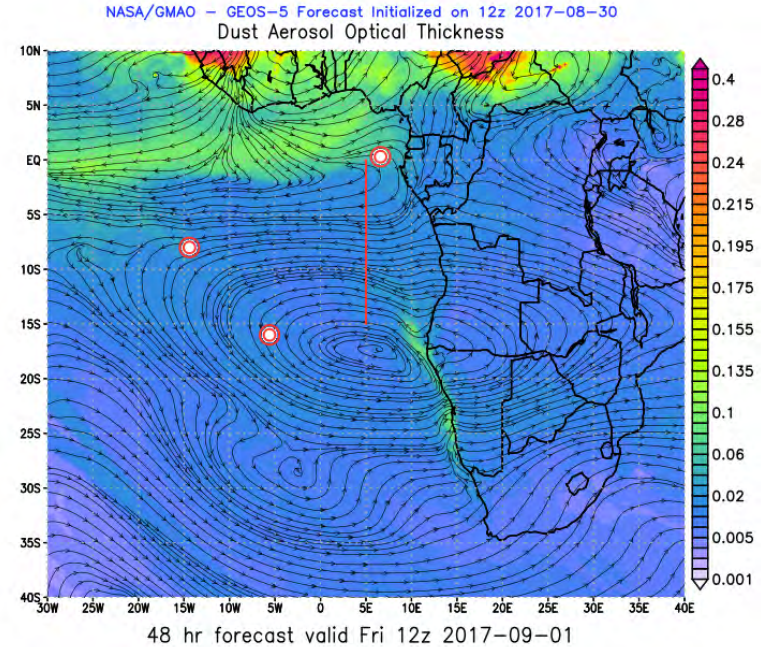
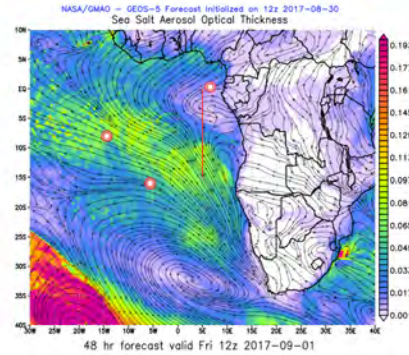
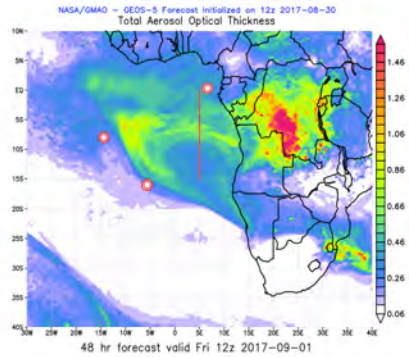


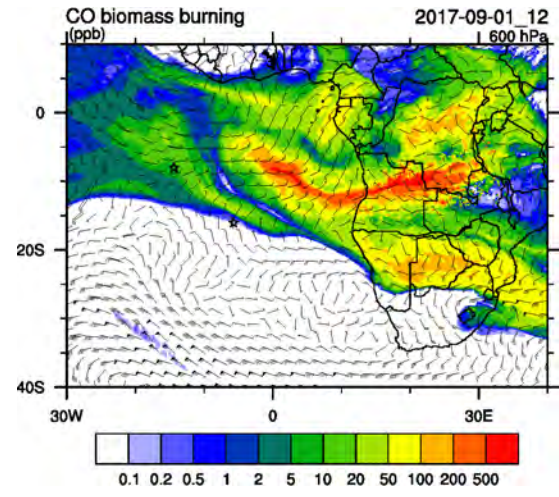
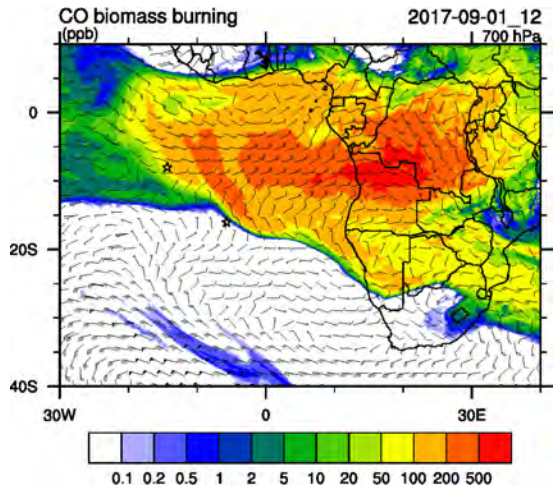
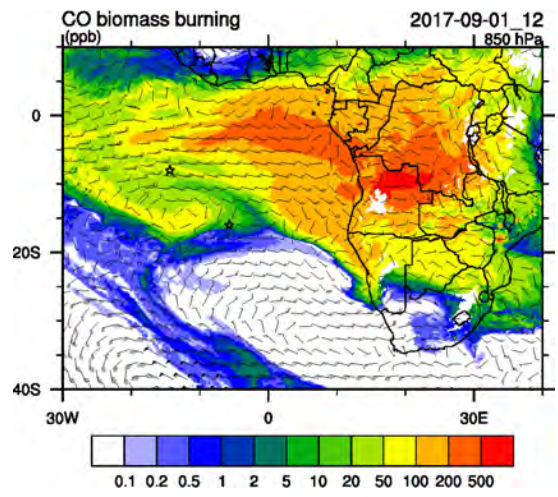
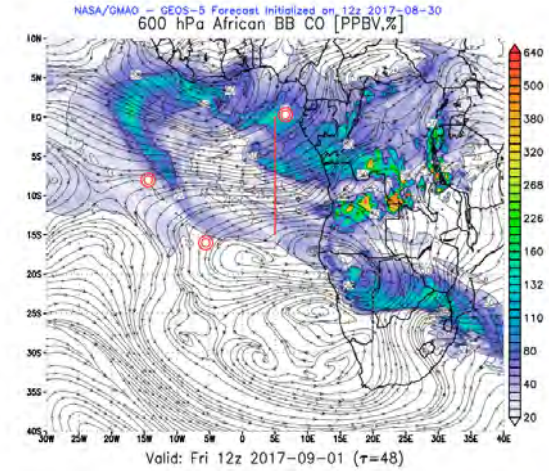
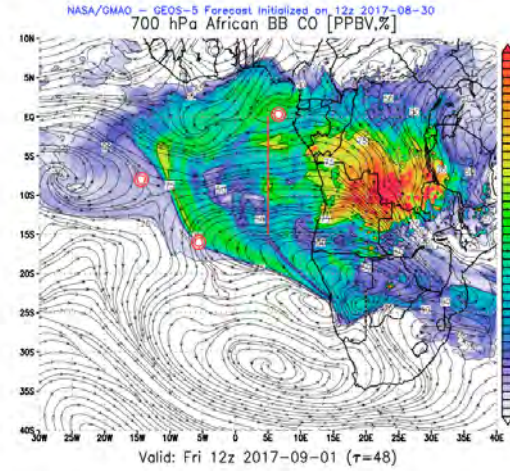
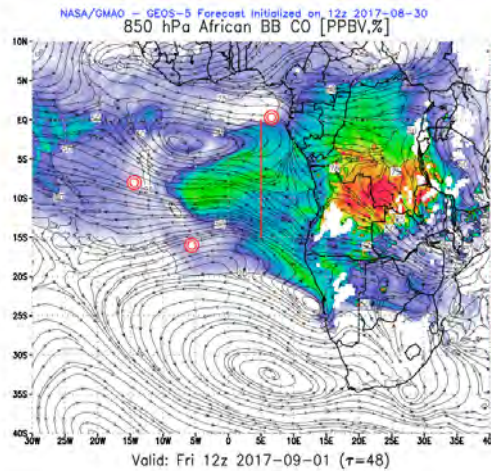
Friday, 1 September 2017 12Z

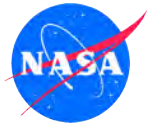




Friday, 1 September 2017 12Z

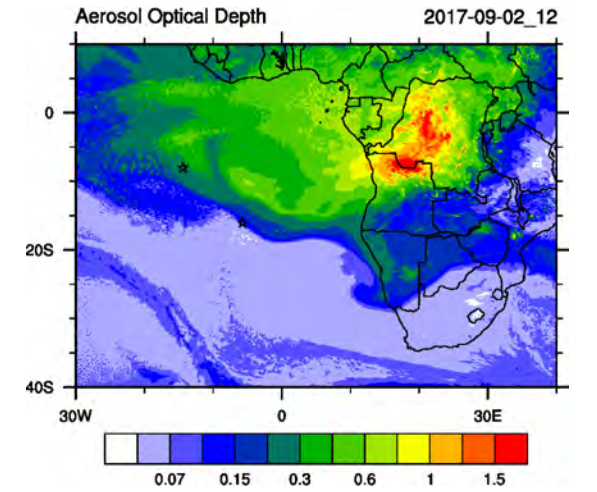
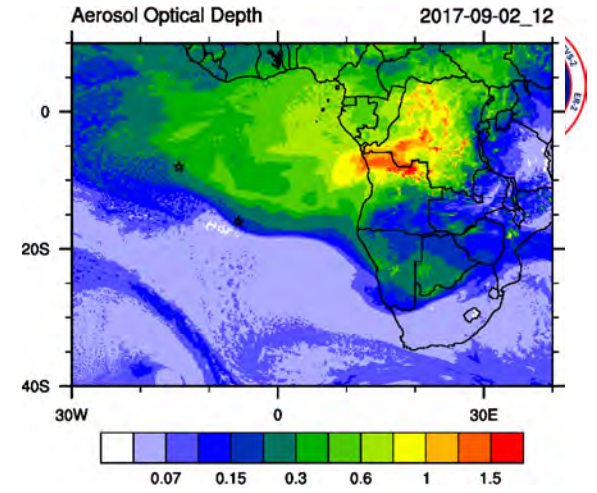
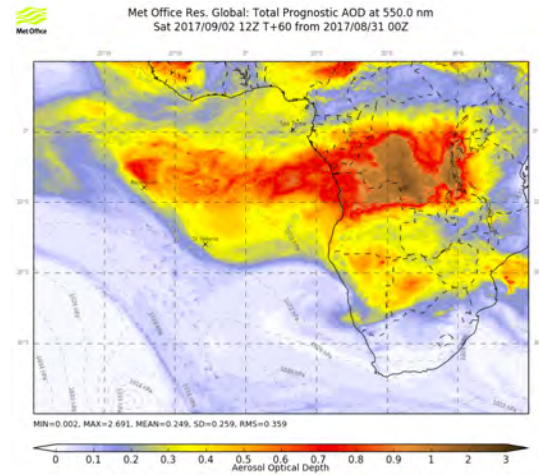
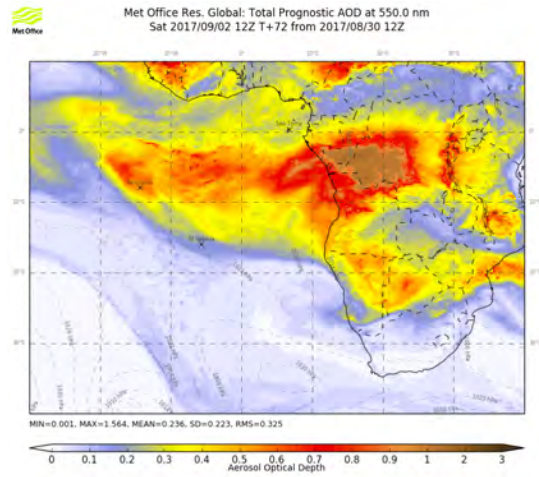
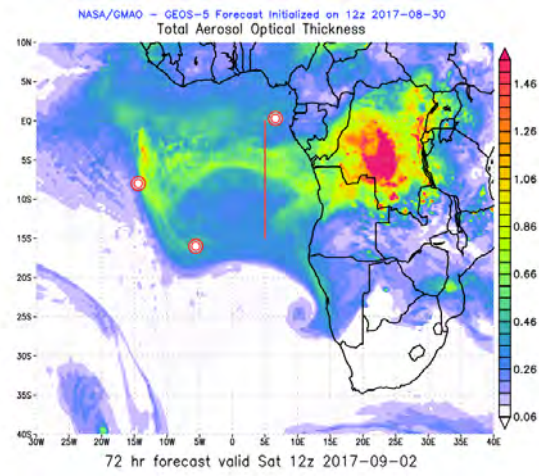
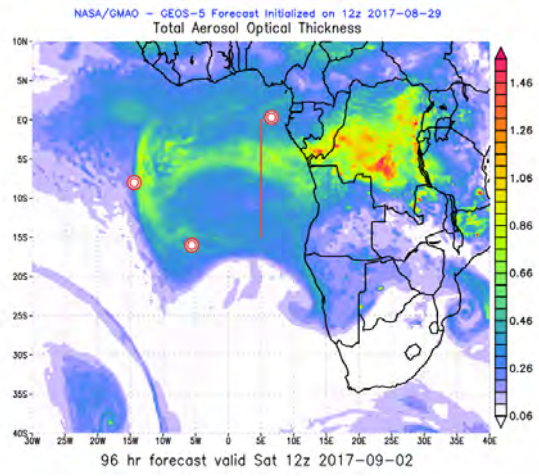






Fly Day (Transit to Ascension)

SATURDAY, 2 SEPTEMBER 2017

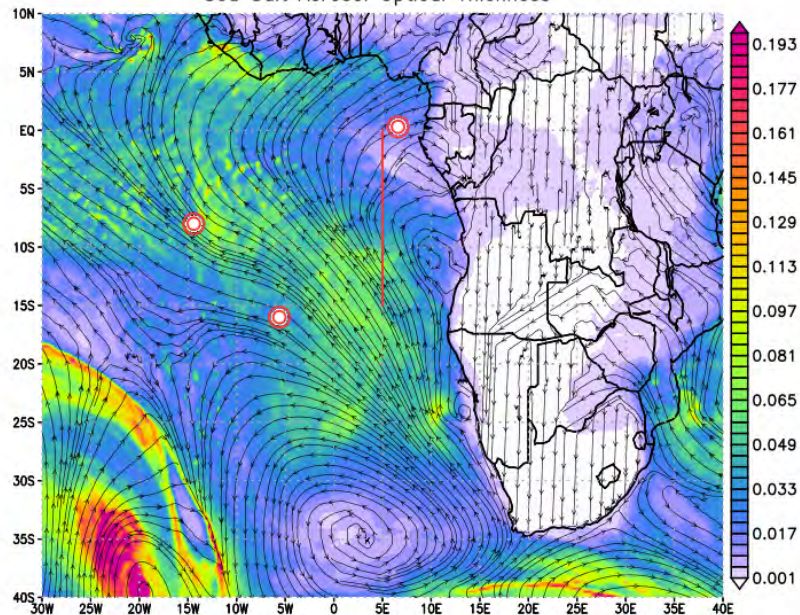




Saturday, 2 September 2017 12Z

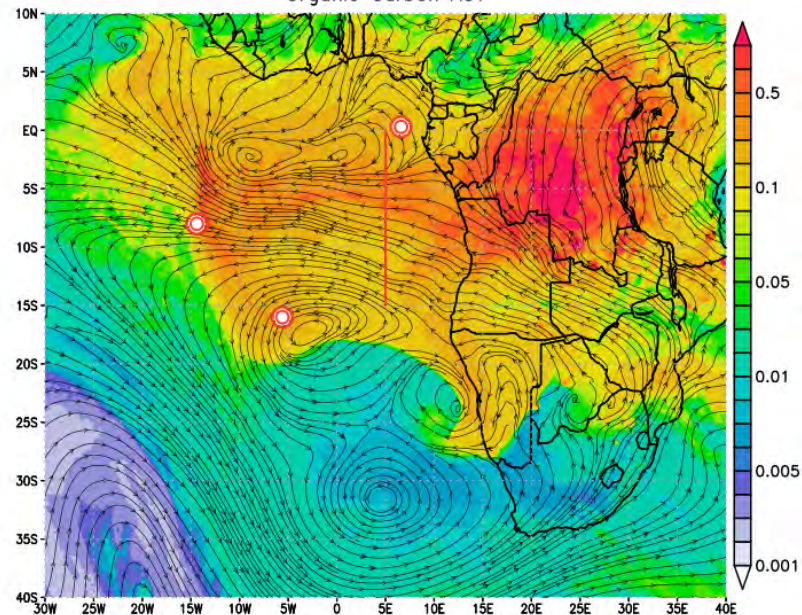


NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30
Sea Salt Aerosol Optical Thickness



72 hr forecast valid Sat 12z 2017-09-02

NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30
Organic Carbon AOT



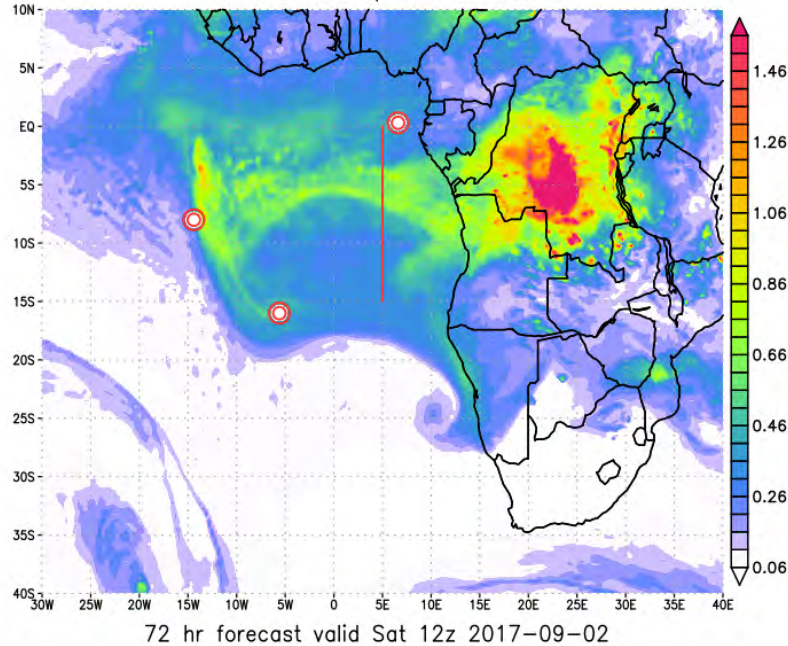
72 hr forecast valid Sat 12z 2017-09-02



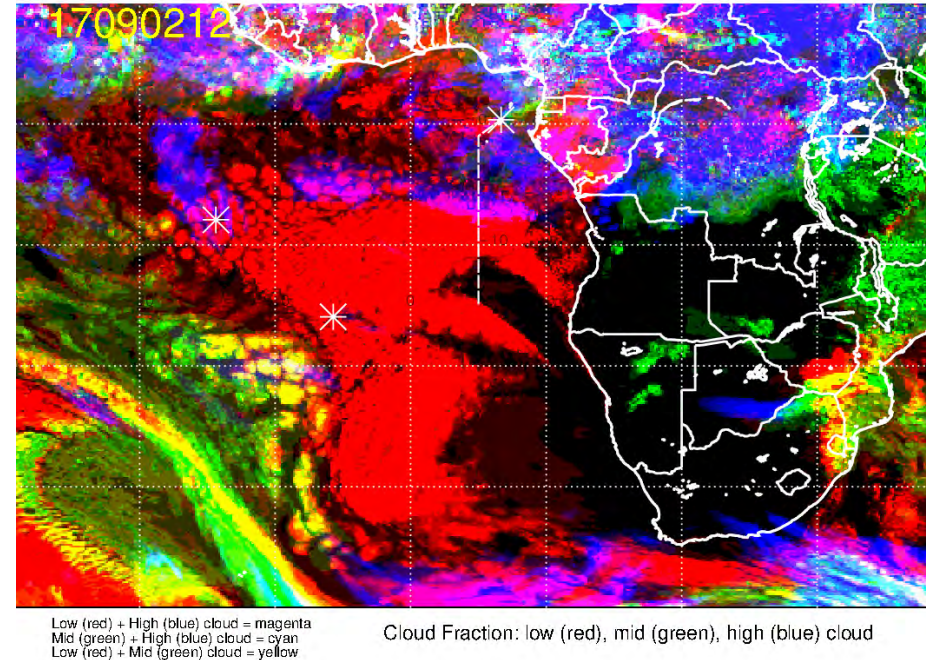
Saturday, 2 September 2017 12Z



NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30
Total Aerosol Optical Thickness

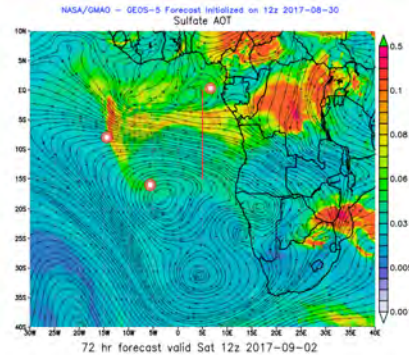
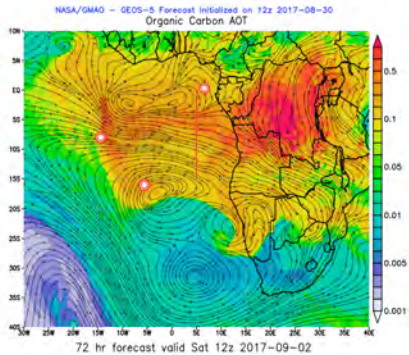
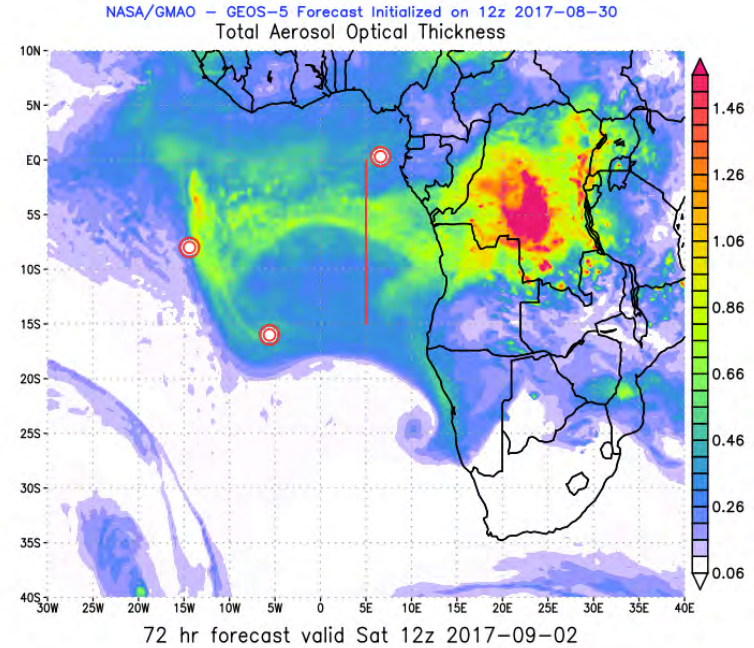
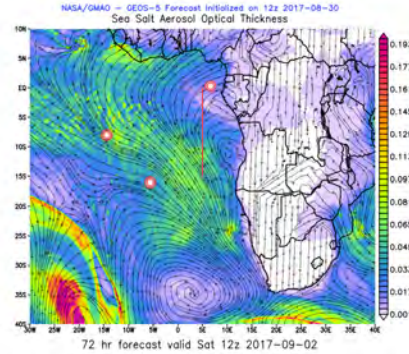
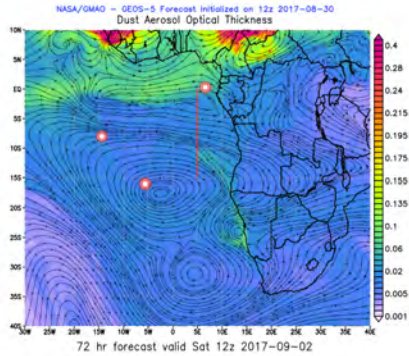


17090212, 072 hour forecast for Cloud Fraction (low, mid, and high cloud) -- ECMWF



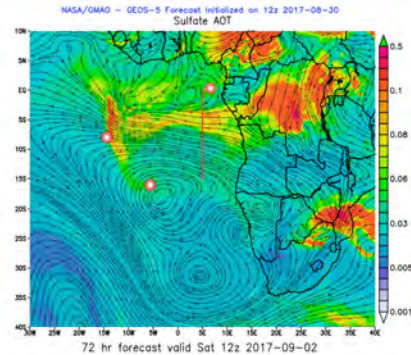
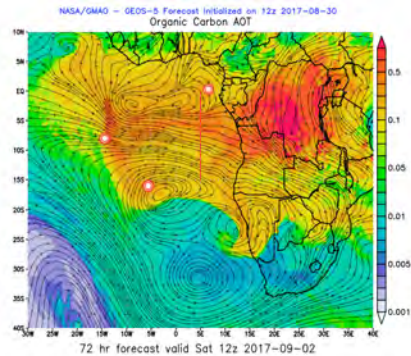
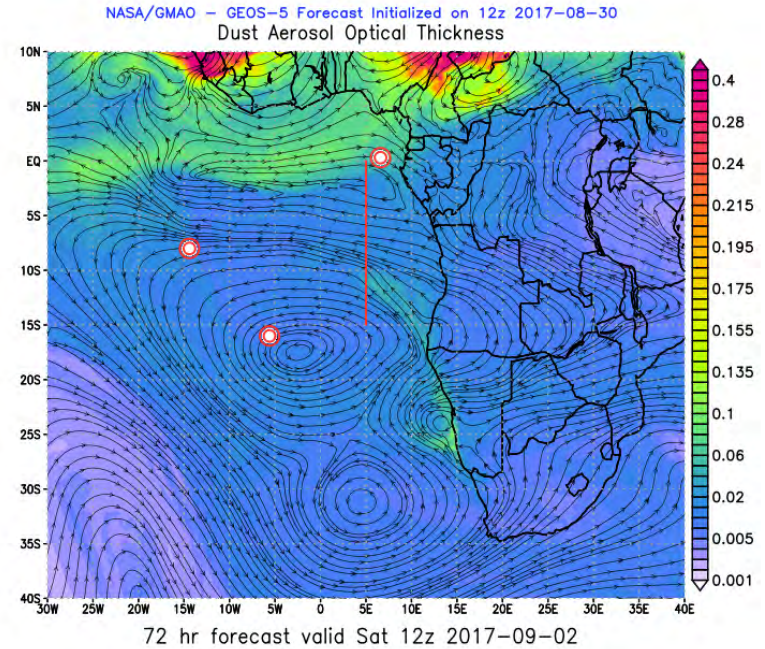
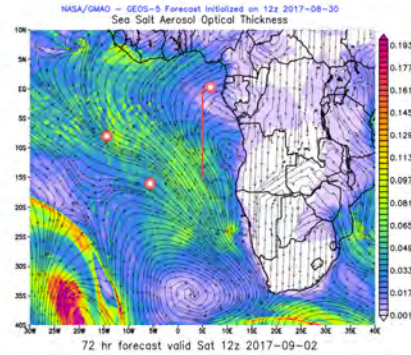
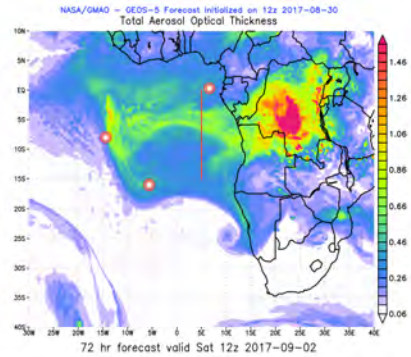


Saturday, 2 September 2017 12Z



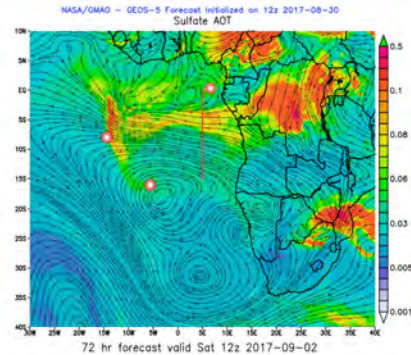
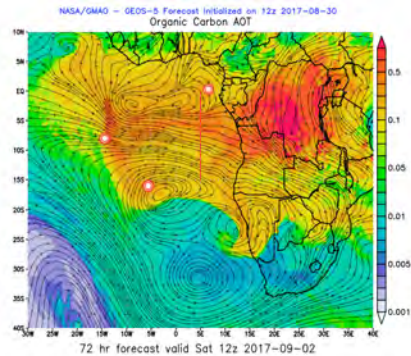
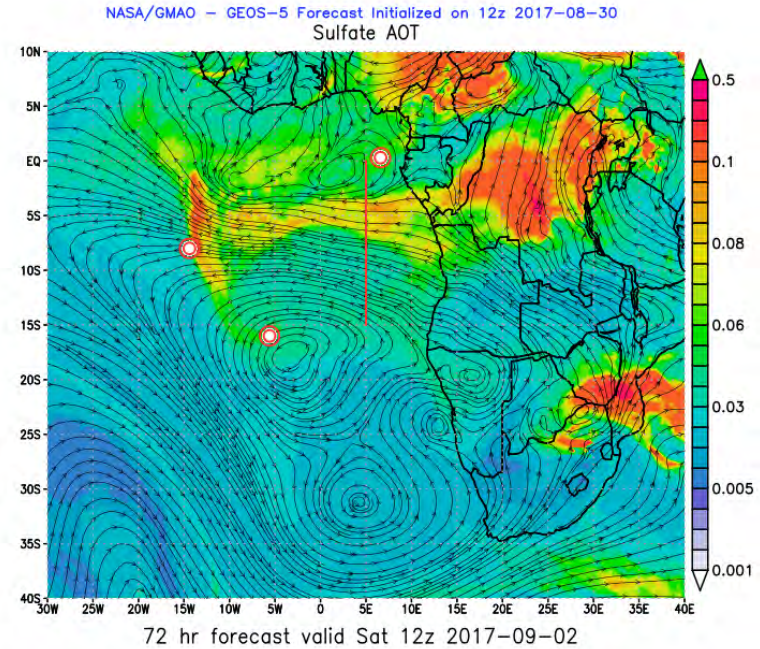
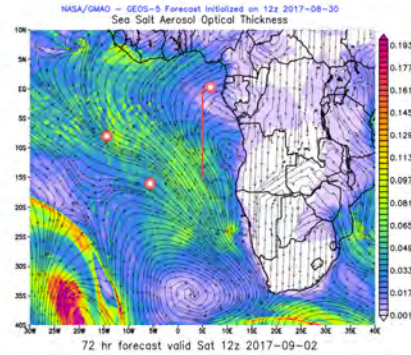
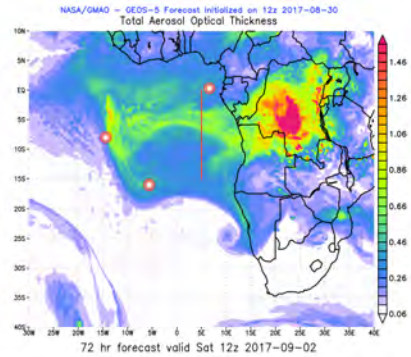


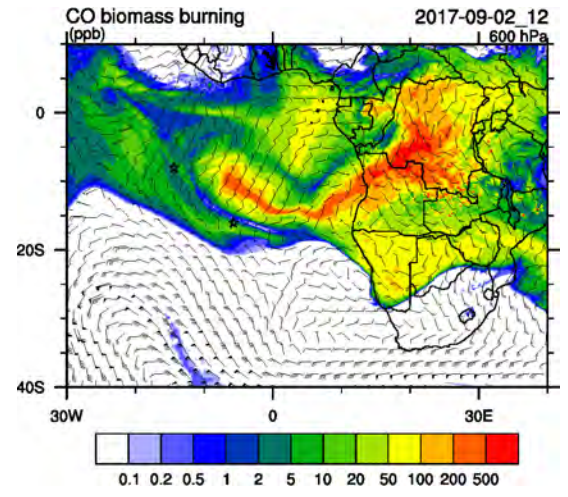
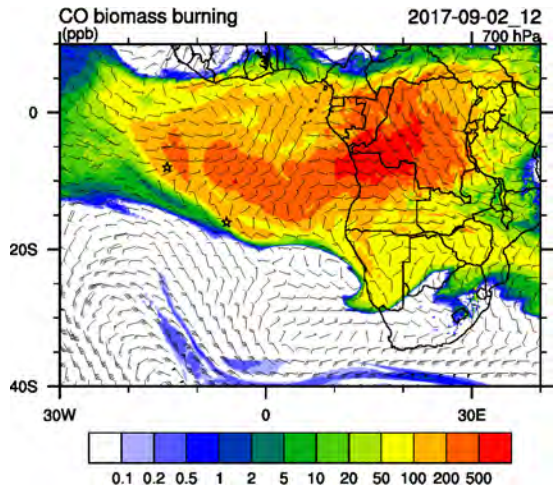
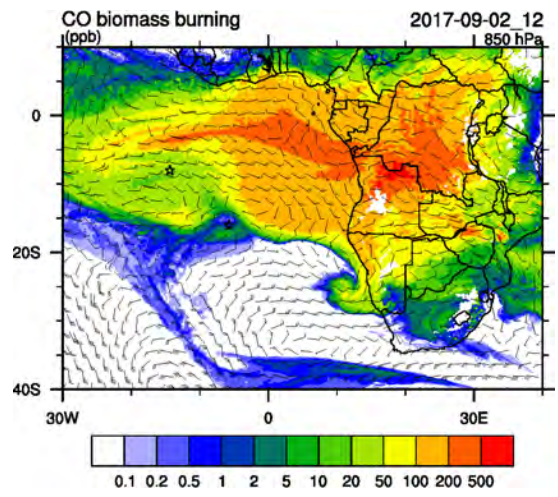
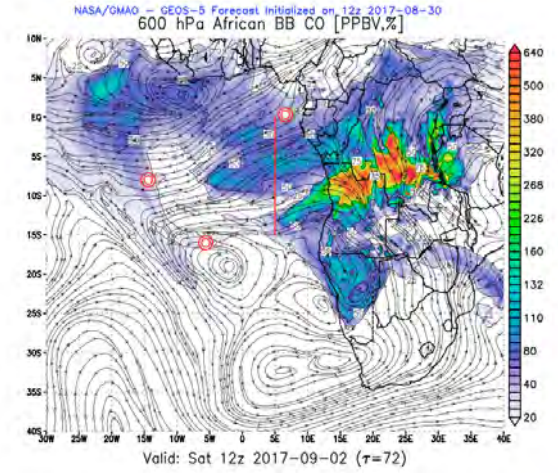
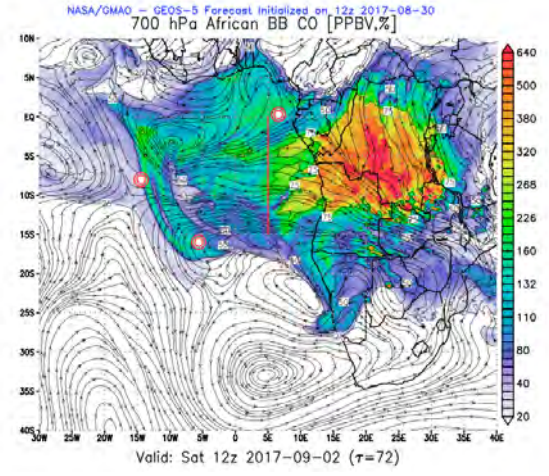
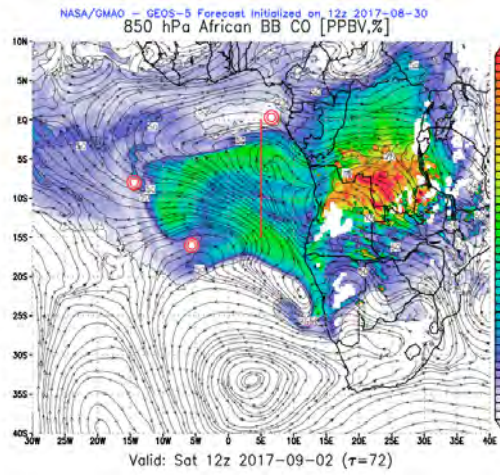
Saturday, 2 September 2017 12Z





Saturday, 2 September 2017 12Z





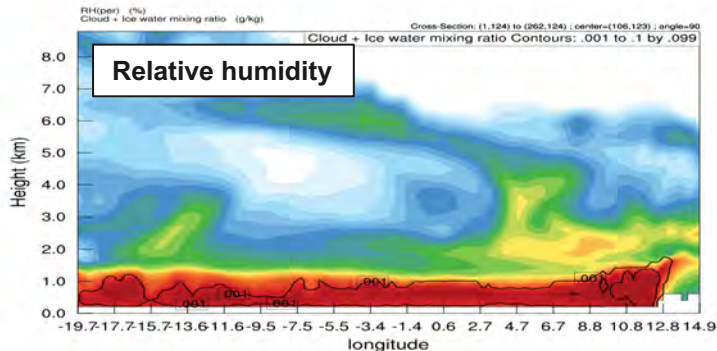


Cross sections at 5 S and 8 S – Sat 02 Sep 12 Z



2017-09-02_12

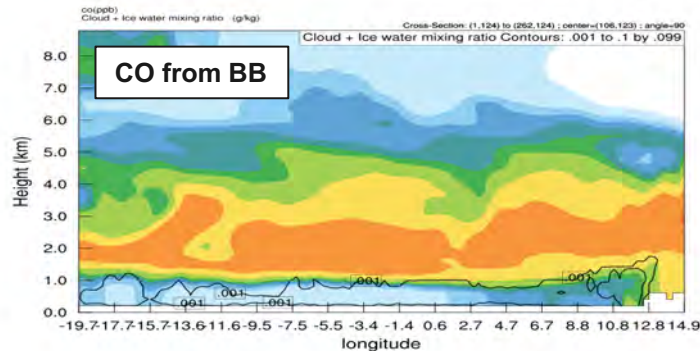
Init: 2017-08-31_12:00:00



5 S

2017-09-02_12

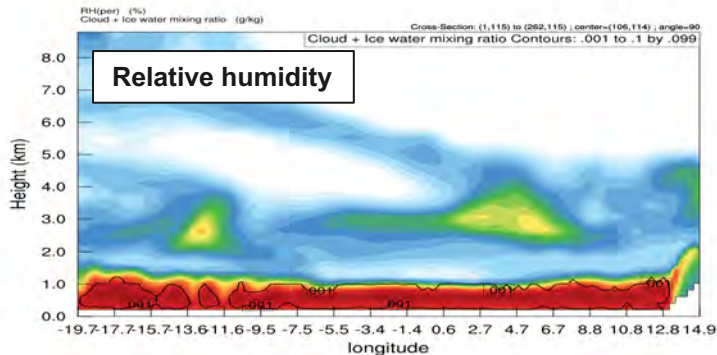
Init: 2017-08-31_12:00:00



8 S

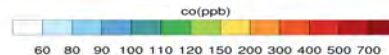
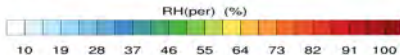
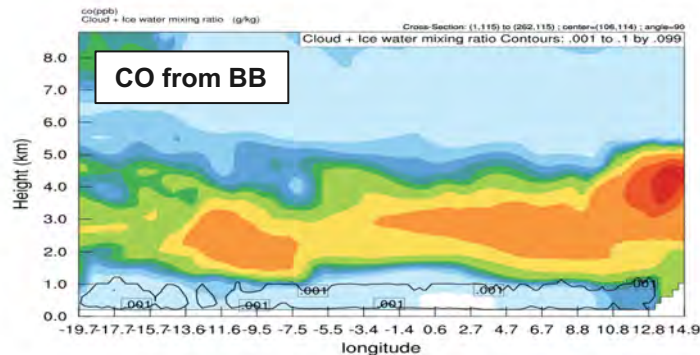
2017-09-02_12

Init: 2017-08-31_12:00:00



2017-09-02_12

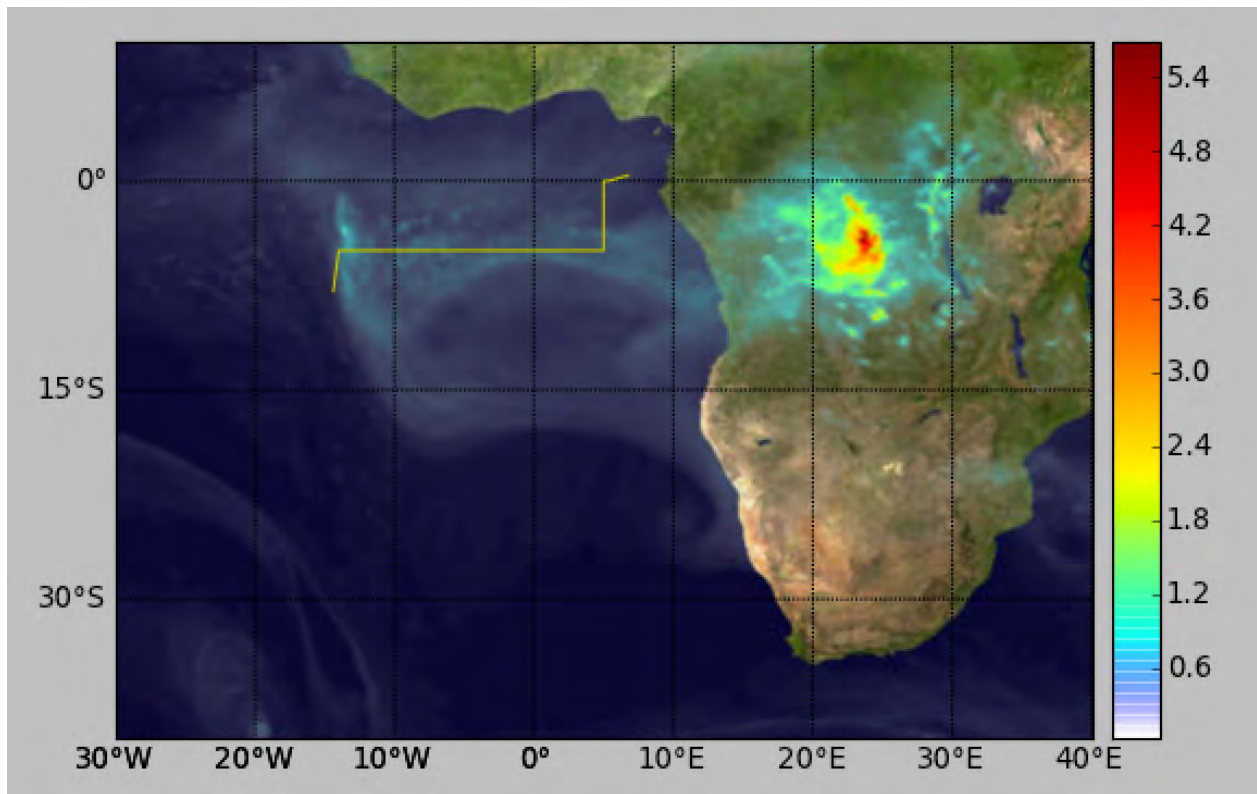
Init: 2017-08-31_12:00:00



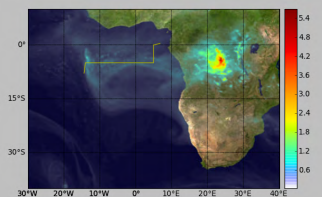


Saturday, 2 September 2017

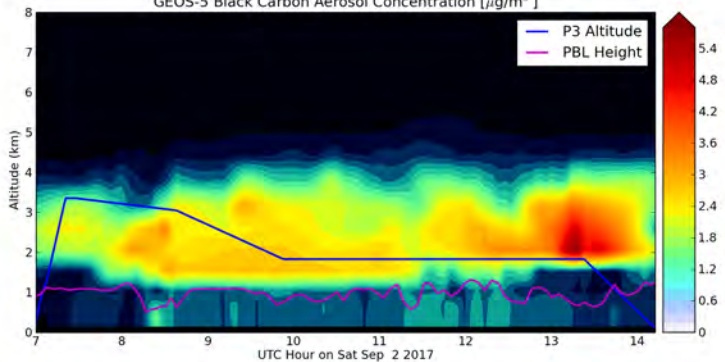
Transit to Ascension



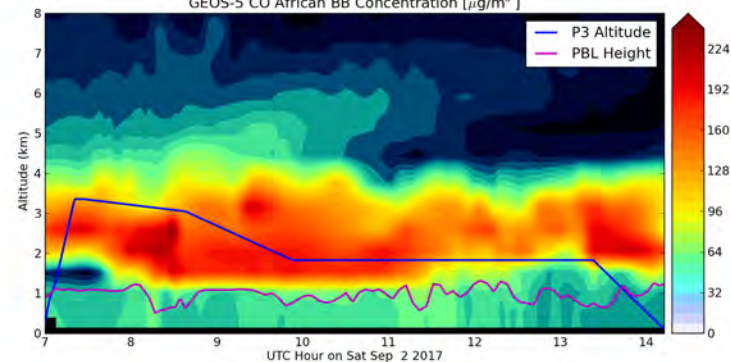
Saturday, 2 September 2017



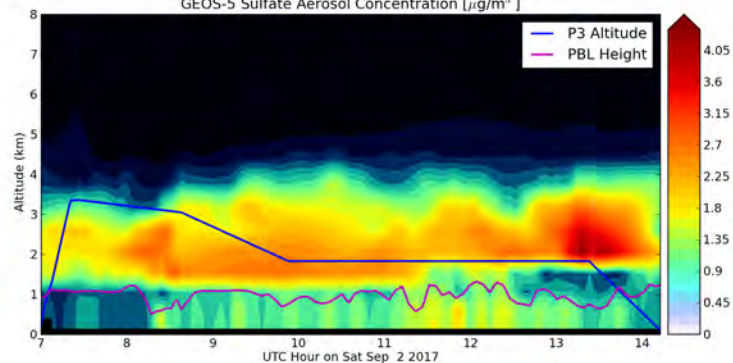
GEOS-5 Black Carbon Aerosol Concentration [$\mu\text{g}/\text{m}^3$]



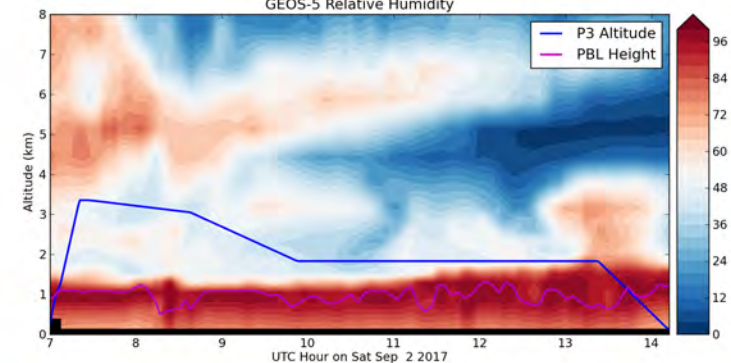
GEOS-5 CO African BB Concentration [$\mu\text{g}/\text{m}^3$]



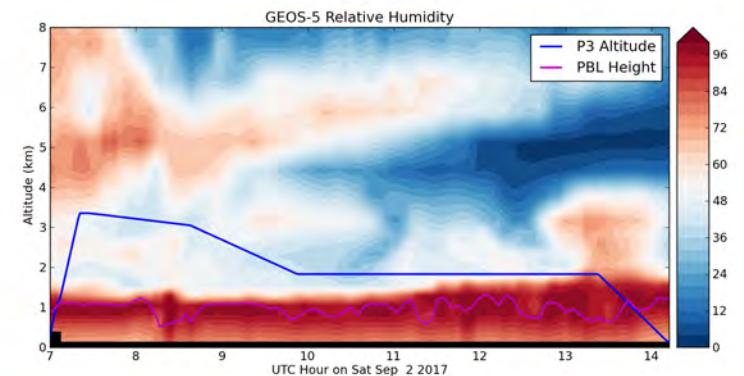
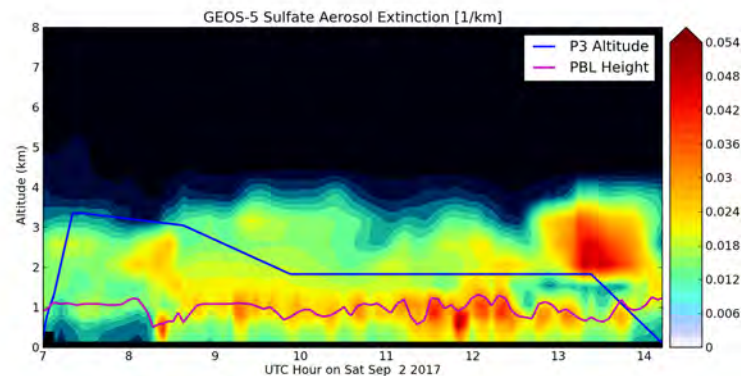
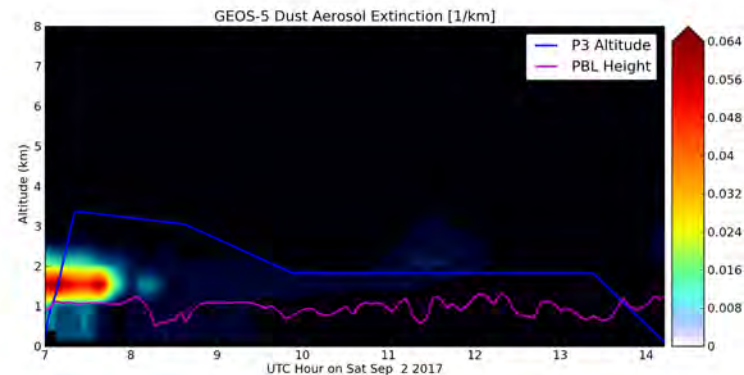
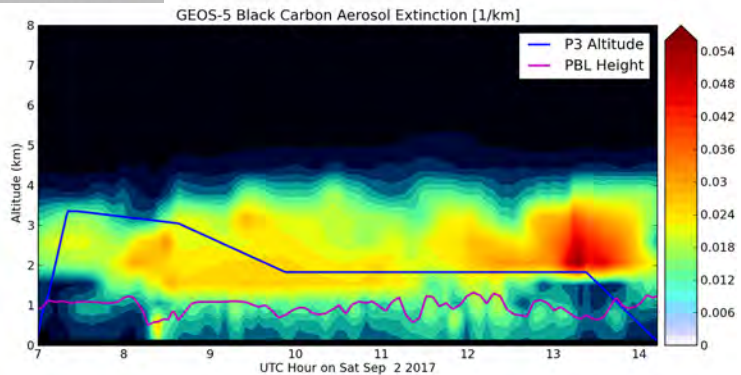
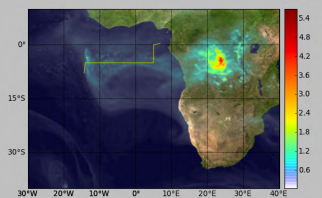
GEOS-5 Sulfate Aerosol Concentration [$\mu\text{g}/\text{m}^3$]

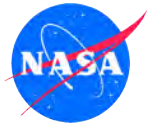


GEOS-5 Relative Humidity



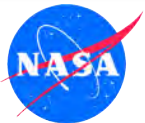
Saturday, 2 September 2017





Fly Day (Transit to Barbados)

SUNDAY, 2 SEPTEMBER 2017

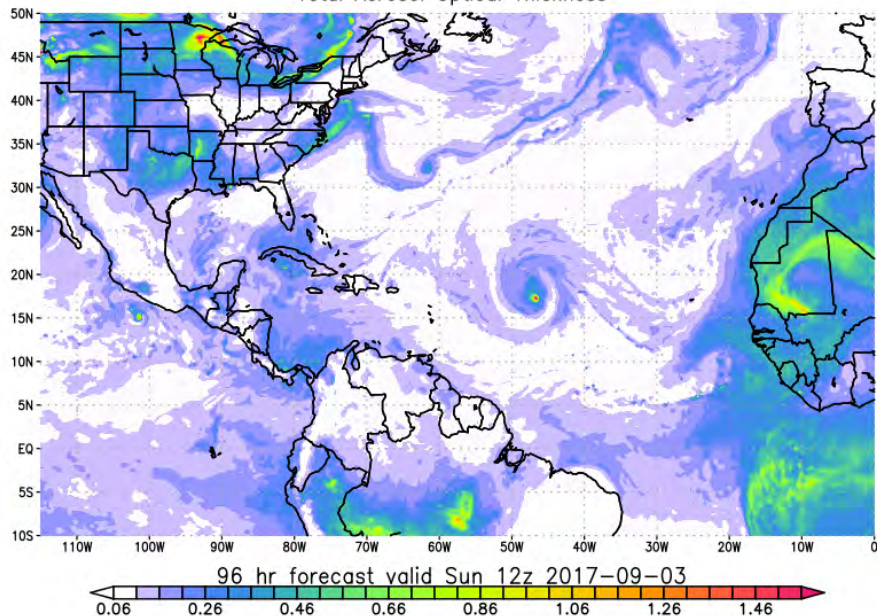


Saturday, 2 September 2017 12Z



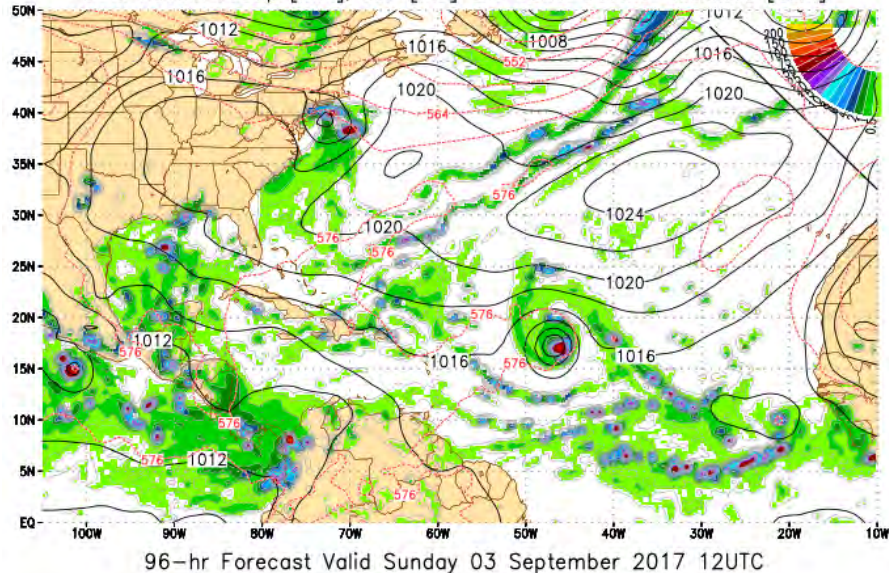
NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30

Total Aerosol Optical Thickness

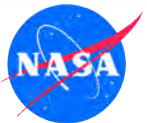


NASA/GMAO – GEOS-5 Forecast Initialized Wednesday 30 August 2017 12UTC

3-hr Accum Precip [mm], SLP [mb] and 1000-500mb Thickness [dam]



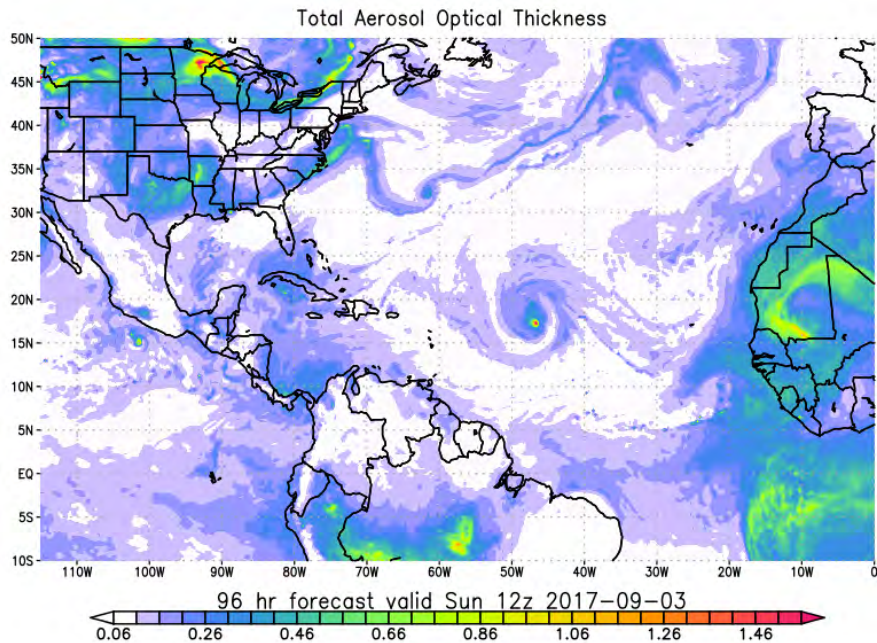
96-hr Forecast Valid Sunday 03 September 2017 12UTC



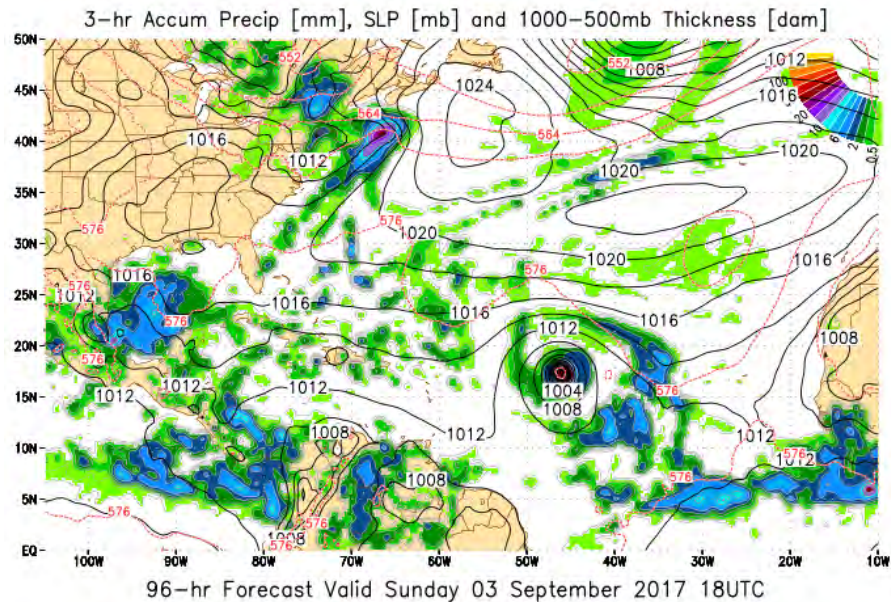
Saturday, 2 September 2017 12Z



NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30



NOAA/NCEP – GFS Forecast Initialized Wednesday 30 August 2017 18UTC

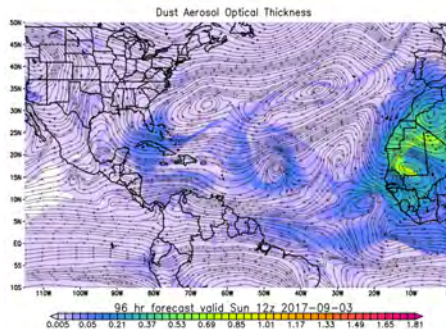




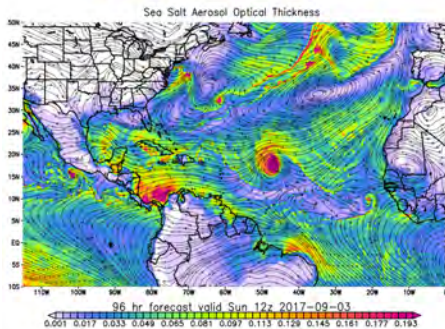
Sunday, 2 September 2017 12Z



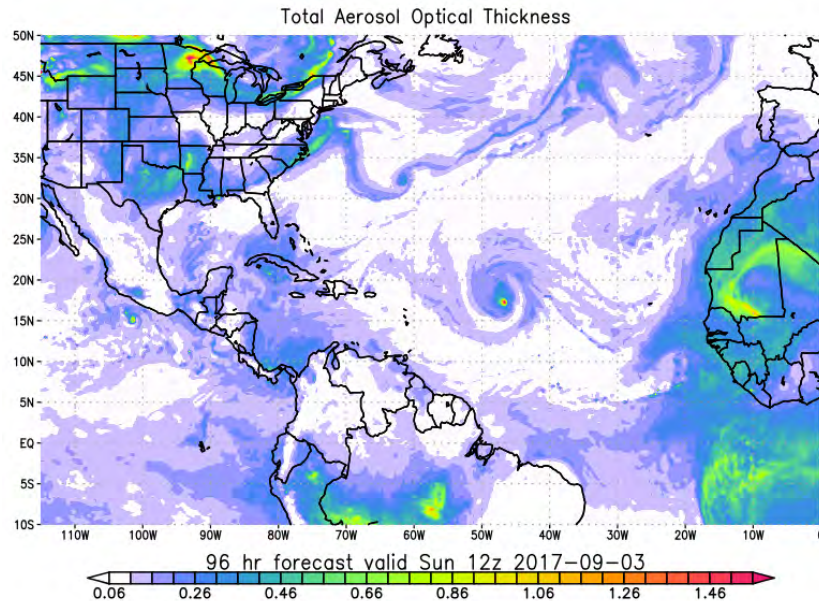
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30



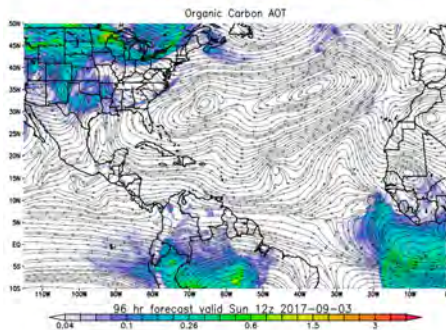
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30



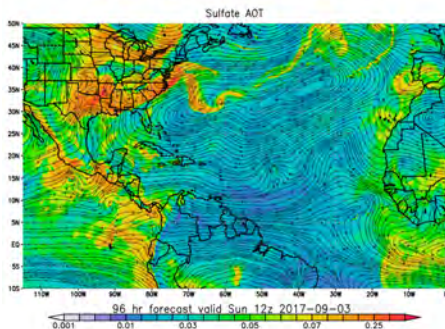
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

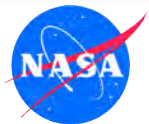


NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30



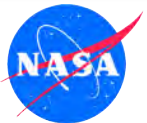
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30





Fly Day (Transit to Wallops)

MONDAY, 3 SEPTEMBER 2017

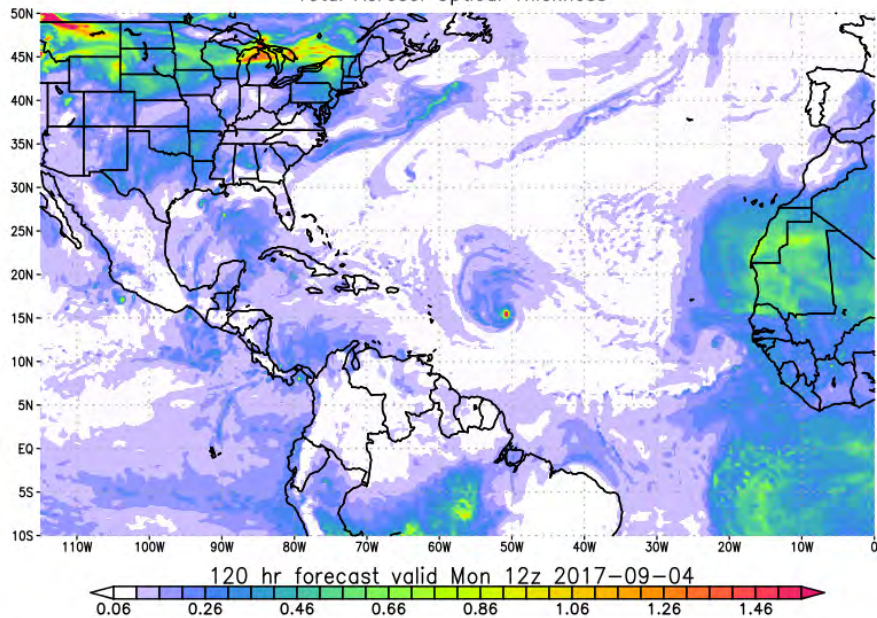


Monday, 3 September 2017 12Z



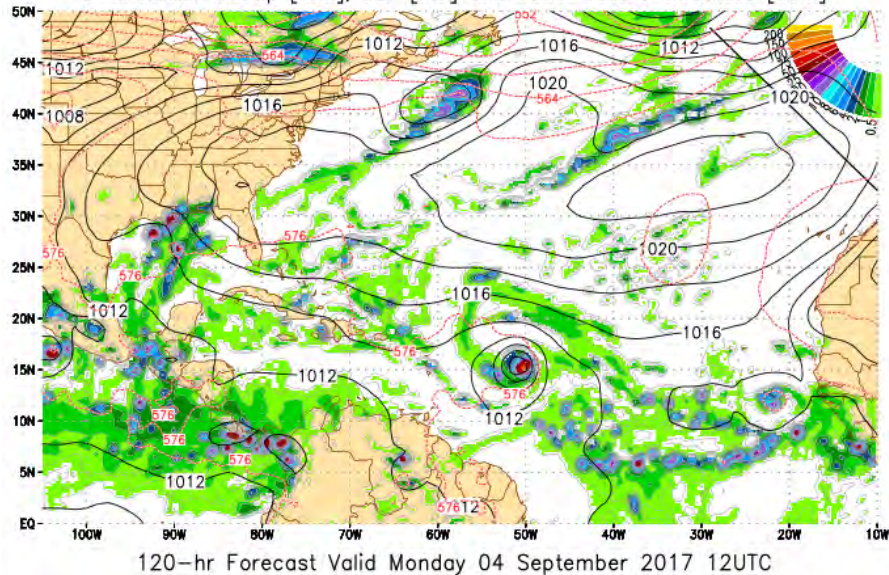
NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30

Total Aerosol Optical Thickness

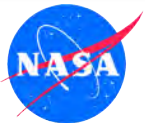


NASA/GMAO – GEOS-5 Forecast Initialized Wednesday 30 August 2017 12UTC

3-hr Accum Precip [mm], SLP [mb] and 1000-500mb Thickness [dam]



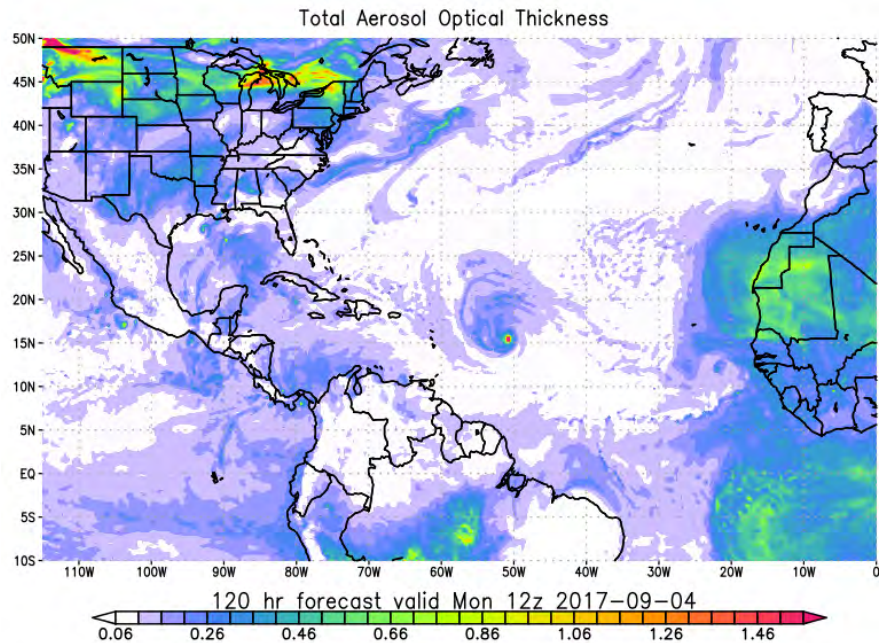
120-hr Forecast Valid Monday 04 September 2017 12UTC



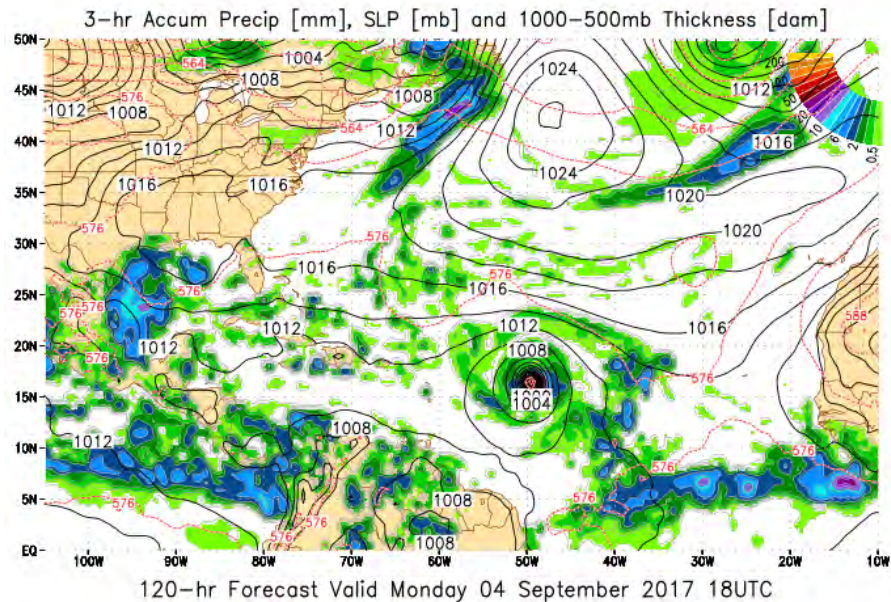
Saturday, 3 September 2017 12Z

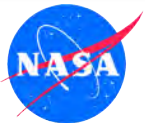


NASA/GMAO – GEOS-5 Forecast Initialized on 12z 2017-08-30



NOAA/NCEP – GFS Forecast Initialized Wednesday 30 August 2017 18UTC



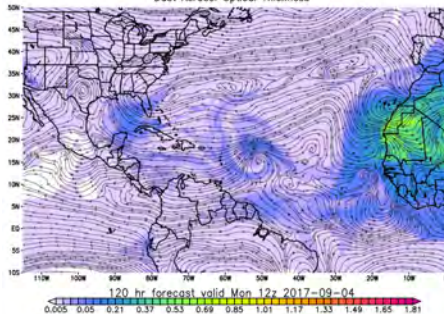


Monday, 3 September 2017 12Z



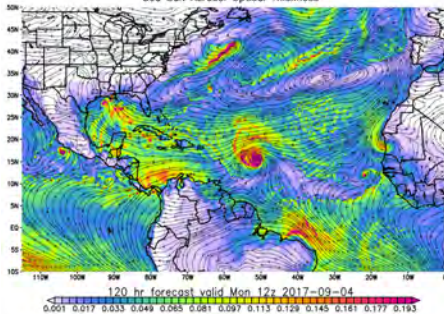
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

Dust Aerosol Optical Thickness



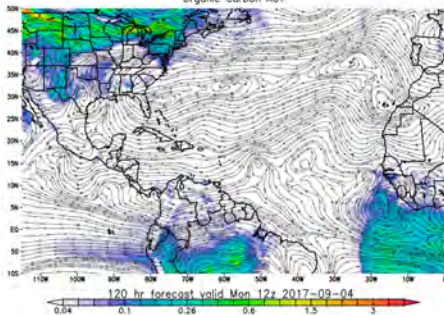
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

Sea Salt Aerosol Optical Thickness



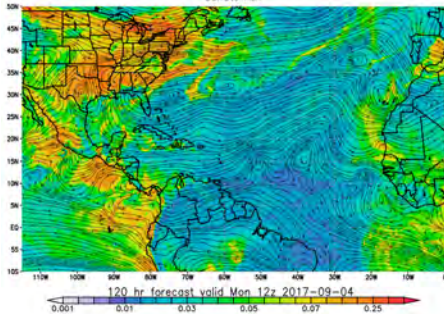
NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

Organic Carbon AOT



NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

Sulfate AOT



NASA/GMAO - GEOS-5 Forecast Initialized on 12z 2017-08-30

Total Aerosol Optical Thickness

