ORACLES Forecast Briefing

Aerosols
Thursday, 31 August 2017
Two-Day Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida

No Disturbances

Satellite Image from 12:52 am EDT Aug 31

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:
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
- Day 4-5

Watches:
- Hurricane
- Trop Stm

Warnings:
- Hurricane
- Trop Stm

Current wind extent:
- Hurricane
- Trop Stm
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

Probability of tropical-storm-force winds (1-minute average >= 39 mph) from all tropical cyclones
○ indicates Tropical Storm Irma center location at 8 PM AST WED AUG 30, 2017 (Forecast/Advisory #3)
The Aerosol Week
Ascension (OC+BC+SO4 & Dust)
São Tomé (OC+BC+SO4 & Dust)
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

18 hr forecast valid Thu 12z 2017-08-31

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

Organic Carbon AOT

18 hr forecast valid Thu 12z 2017-08-31
Thu 31 August 2017 12Z
Cross sections at 5 E and 5 W – Thu 31 Aug 15 Z

CO from BB

Aerosol age mode

Aerosol age mode

ORACLES Forecast Briefing
Thursday 31 August 2017
Lagrangian Flight
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
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

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 2017-09-01
Total Aerosol Optical Thickness

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

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

Cloud Fraction: low (red), mid (green), high (blue) cloud

Low (red) = High (blue) cloud – magenta
Mid (green) = High (blue) cloud – cyan
Low (red) = Mid (green) cloud – yellow
Saturday, 2 September 2017 12Z

DATA SOURCE

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

Dust Aerosol Optical Thickness

72 hr forecast valid Sat 12z 2017-09-02
Cross sections at 5°S and 8°S – Sat 02 Sep 12 Z

Relative humidity

5°S

Relative humidity

8°S

CO from BB
Saturday, 2 September 2017
Transit to Ascension
Saturday, 2 September 2017
Saturday, 2 September 2017
Fly Day (Transit to Barbados)

SUNDAY, 2 SEPTEMBER 2017
Saturday, 2 September 2017 12Z
Saturday, 2 September 2017 12Z
Sunday, 2 September 2017 12Z
Fly Day (Transit to Wallops)

MONDAY, 3 SEPTEMBER 2017
Monday, 3 September 2017 12Z
Saturday, 3 September 2017 12Z

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

Total Aerosol Optical Thickness

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

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

120-hr Forecast Valid Monday 04 September 2017 18UTC