**August 1, 2016 - Kessler**

UTC = local time + 5 hrs

Flights conducted by the Flux Tower and the Washington Mesonet Tower

Front

Back

Windsond 733

Windsond 742

Windsond 737

Windsond 740

All Windsonds located under the rotors and shielded by small PVC pipes (not in contact).

Flight 1

Battery Number: 1

Platform: IRIS+

Windsonds: 733 & 737 & 740 & 742

Start Battery: 12.4 V

Start Direction: 90° (E)

Ascent Start: 14:17:59 UTC

Max Height: 2.5 m.

Landed: 14:31:26 UTC

Flight Duration: 13:27

End Battery: 10.88 V

Remarks: The flight plan was to go up to a height of 2.5 meters manually and hover in a static position while facing east. This was done to collect wind and temperature data and to compare wind data with flux station.

Flight 2

Battery Number: 3

Platform: IRIS+

Windsonds: 733 & 737 & 740 & 742

Start Battery: 12.4 V

Start Direction: 90° (E)

Ascent Start: 14:37:40 UTC

Max Height: 2.5 m.

Landed: 14:50:02 UTC

Flight Duration: 12:22

End Battery: 10.74 V

Remarks: The flight plan was to go up to a height of 2.5 meters manually and hover in a static position while facing east. This was done to collect wind and temperature data and to compare wind data with flux station.

Flight 3

Platform: DJI Phantom 3

Start Battery: 95%

Start Direction: 0° (N)

Ascent Start: 15:00:14 UTC

Max Height: 20 m.

Landed: 15:14:41 UTC

Flight Duration: 14:27

End Battery: 25%

Remarks: The flight plan was to first conduct a circular flight around a point of interest with the copter 13 m. above the ground travelling in a circle with a radius of 20 m. at a speed of 2.1 m/s. Then, the copter will hover over the flux tower at 18 m., before travelling in a circular path with a radius of 25 m. and a speed of 3.1 m/s around the flux tower at a height of 18 m. After this, the copter will hover over the Mesonet tower at 20 m., before travelling in a circular path with a radius of 30 m. and a speed of 4.4 m/s around the Mesonet tower at a height of 20 m.

Flight 4

Battery Number: 4

Platform: IRIS+

Windsonds: 733 & 737 & 740 & 742

Start Battery: 12.4 V

Start Direction: 270° (W)

Ascent Start: 15:35:45 UTC

Max Height: 2.5 m.

Landed: 15:47:50 UTC

Flight Duration: 12:05

End Battery: 11.3 V

Remarks: The flight plan was to go up to a height of 2.5 meters manually and hover in a static position while facing east. This was done to collect wind and temperature data and to compare wind data with flux station.

Flight 5

Battery Number: 5

Platform: IRIS+

Windsonds: 733 & 737 & 740 & 742

Start Battery: 12.4 V

Start Direction: 180° (S)

Ascent Start: 15:52:50 UTC

Max Height: 2.5 m.

Landed: 16:02:46 UTC

Flight Duration: 9:56

End Battery: 10.9 V

Remarks: The flight plan was to go up to a height of 2.5 meters manually and hover in a static position while facing east. This was done to collect wind and temperature data and to compare wind data with flux station.

Flight 6

Battery Number: 6

Platform: IRIS+

Windsonds: 733 & 737 & 740 & 742

Start Battery: 12.4 V

Start Direction: 180° (S)

Ascent Start: 16:06:54 UTC

Max Height: 120 m.

Landed: 16:12:44 UTC

Flight Duration: 5:50

End Battery: 11.6 V

Remarks: The flight plan was to ascend at maximum speed to 120 m. multiple times to test for possible vibration errors in the IRIS+. No such errors occurred.

Flight 7

Platform: DJI Phantom 3

Start Battery: 12.4 V

Start Direction: 180° (S)

Ascent Start: 16:18:36 UTC

Max Height: 120 m.

Landed: 16:31:55 UTC

Flight Duration: 13:19

End Battery: 25%

Remarks: The flight plan was to first fly in a circular path with a radius of 30 m. around the flux tower at a height of 30 m. Then, the copter will fly in a circular path with a radius of 30 m. around the Mesonet tower at a height of 30m. After this, the copter will vertically ascend to 120 m. while also stopping every 15 m. to take two pictures with its camera pointing straight down.