July 2nd, 2018, 15:00 UTC

The following graphs represent the launch for the Hart Miller Island supersite (HMI: 39.24219, -76. 36279) on July 2nd, 2018 at approximately 15:00 UTC. Initial winds were blowing from the south at 7 m/s. This launch was not coordinated with another site, but an overnight ozonesonde from HUBV preceded this launch at 06Z.

No humidity or frostpoint data was recovered during this launch, as operator error while assembling the balloon train caused the package to tumble upon launch. This dislodged the hygrometer enough to make data unrecoverable. In addition, the hard exit may have caused the ozonesonde to malfunction during the first 500 m. We believe that the large shifts in ozone concentration from 0-500 m are due mostly to the instrument recovering from the hard jolt. UAV measurements should confirm or deny these suspicions.

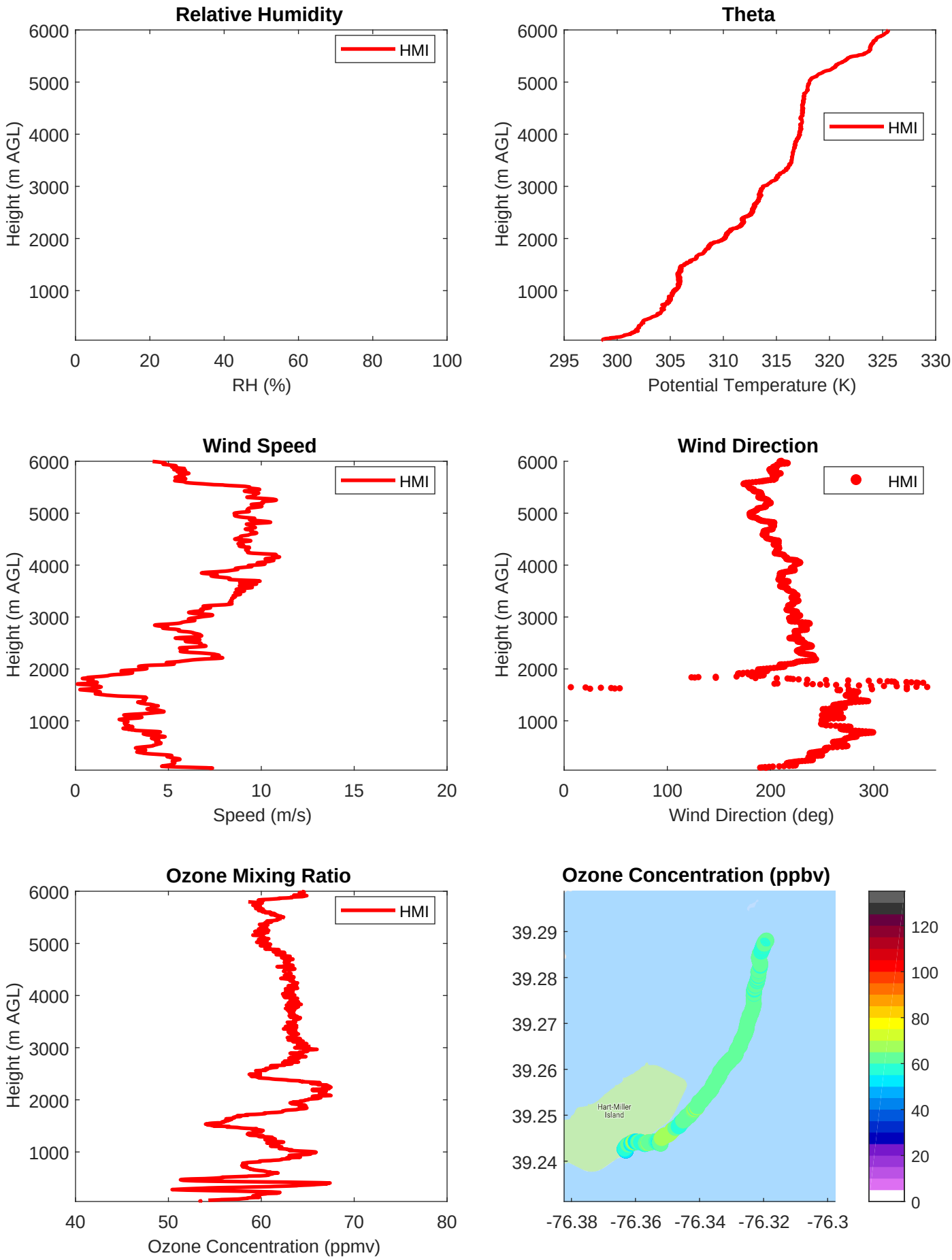
PLEASE NOTE: This data is preliminary and should not be used for official business.

UMBC Sonde POC: John Sullivan (john.t.sullivan@nasa.gov)

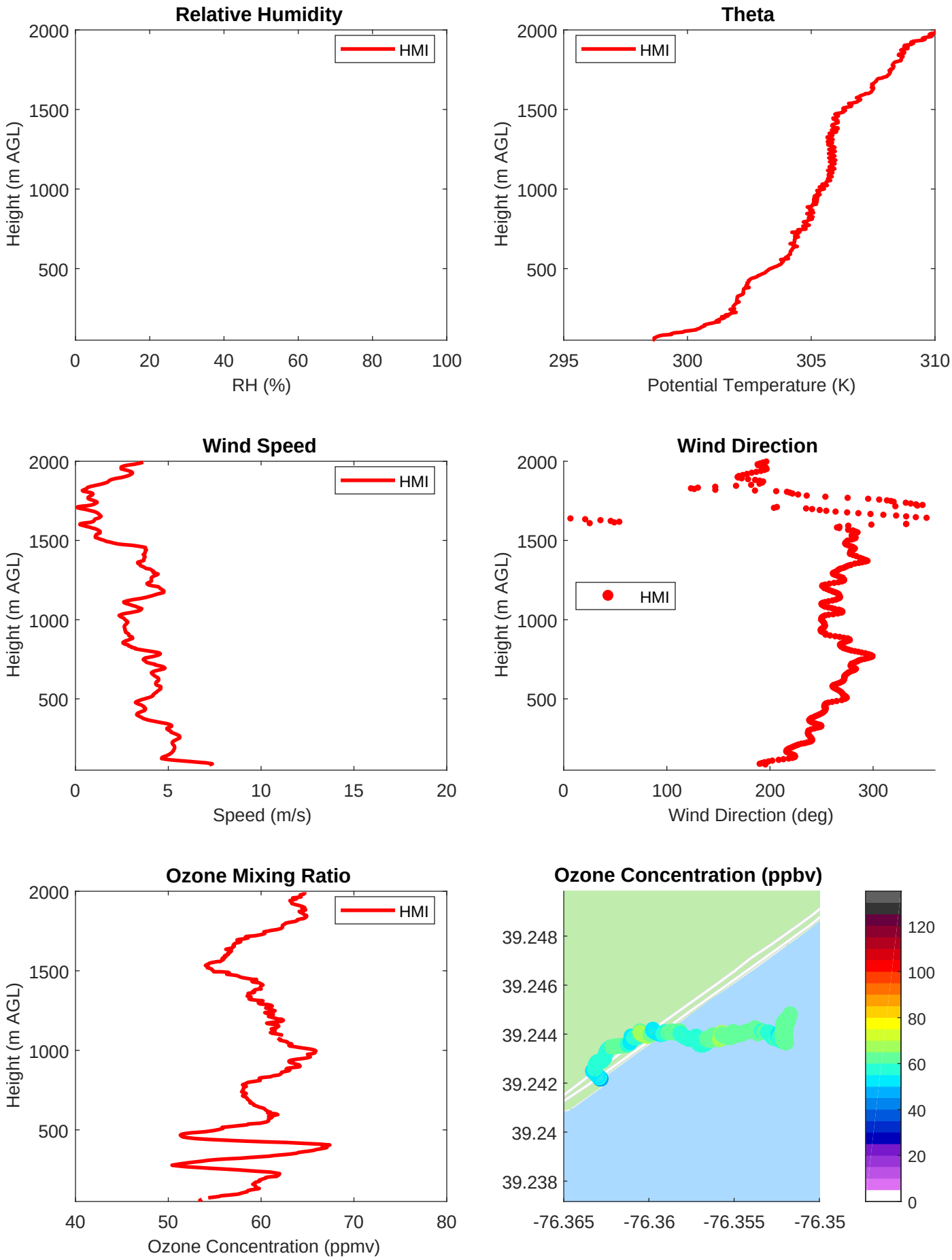
HMI Sonde POC: Lance Niño (lwn4@cornell.edu)

HUBV Sonde POC: Ricardo Sakai (ricardo.k.sakai@howard.edu)

Ozonesonde launched July 2nd, 2018 at 15:03 UTC (HMI) [0-6 km]



Ozonesonde launched July 2nd, 2018 at 15:03 UTC (HMI) [0-2 km]



July 2nd, 2018, 17:50 UTC

The following graphs represent the triple coordinated launch for the University of Maryland – Baltimore County supersite (UMBC: 39.2543, -76.7093), the Hart Miller Island supersite (HMI: 39.24219, -76. 36279), and Howard University: Beltsville (HUBV: 39.056, -76.876) on July 2nd, 2018 at approximately 17:50 UTC. These ozonesondes provide the most dramatic profiles of any this campaign, as the UMBC site captured a 40 ppbv spatial ozone gradient higher than the HUBV or HMI sites in the first 2 km.

Above the 2-km boundary layer, all three sites showed similar atmospheric and pollutant conditions. Note that the boundary layer over UMBC is not as strong as a usual summertime boundary layer over land: a gradual slope of 2 K is observed from 150-2000 m. Whatever the cause for the elevated ozone at UMBC, it's proof that extreme spatial ozone gradients can occur over a land-water transition but also between two points on land.

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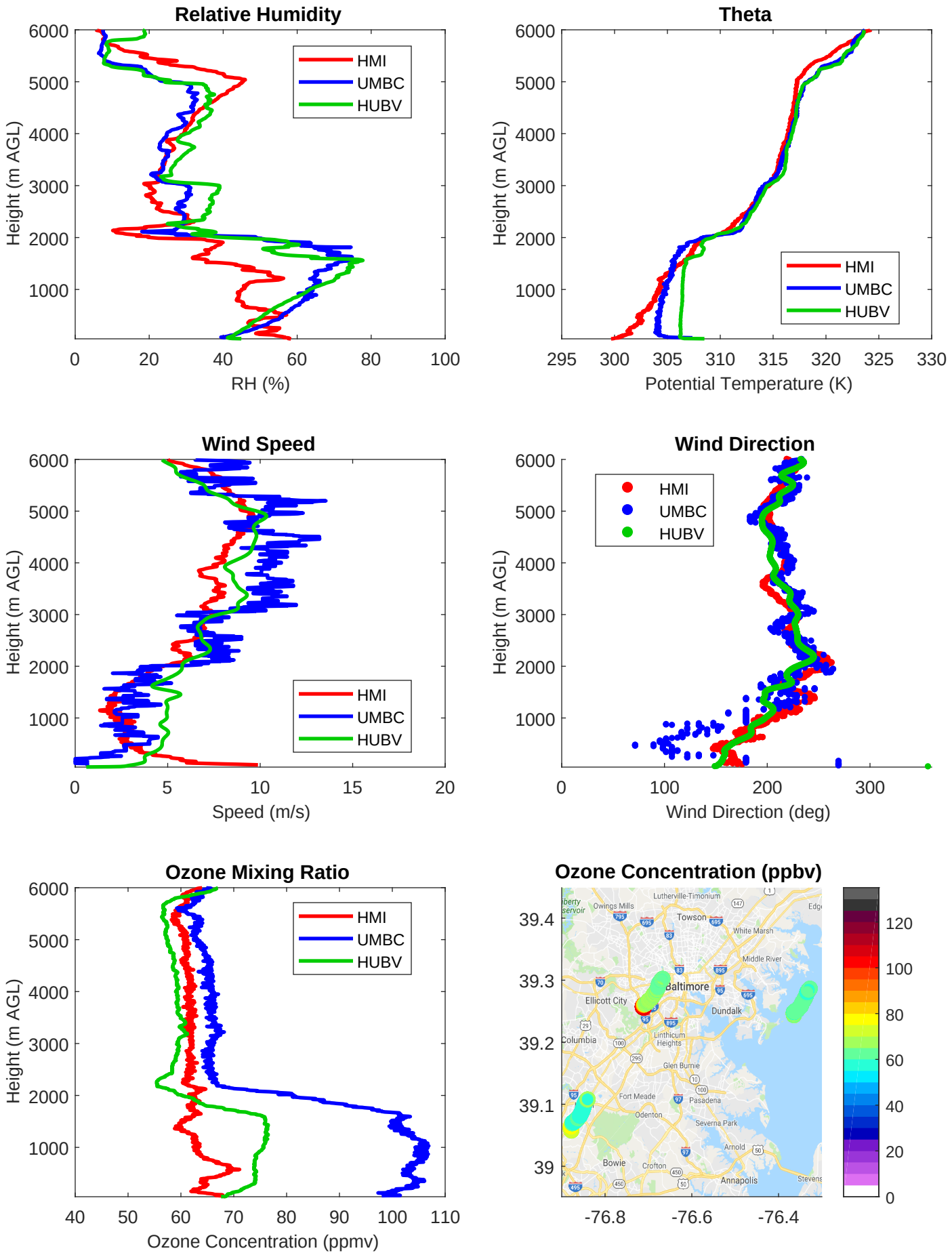
UMBC Sonde POC: John Sullivan (john.t.sullivan@nasa.gov)

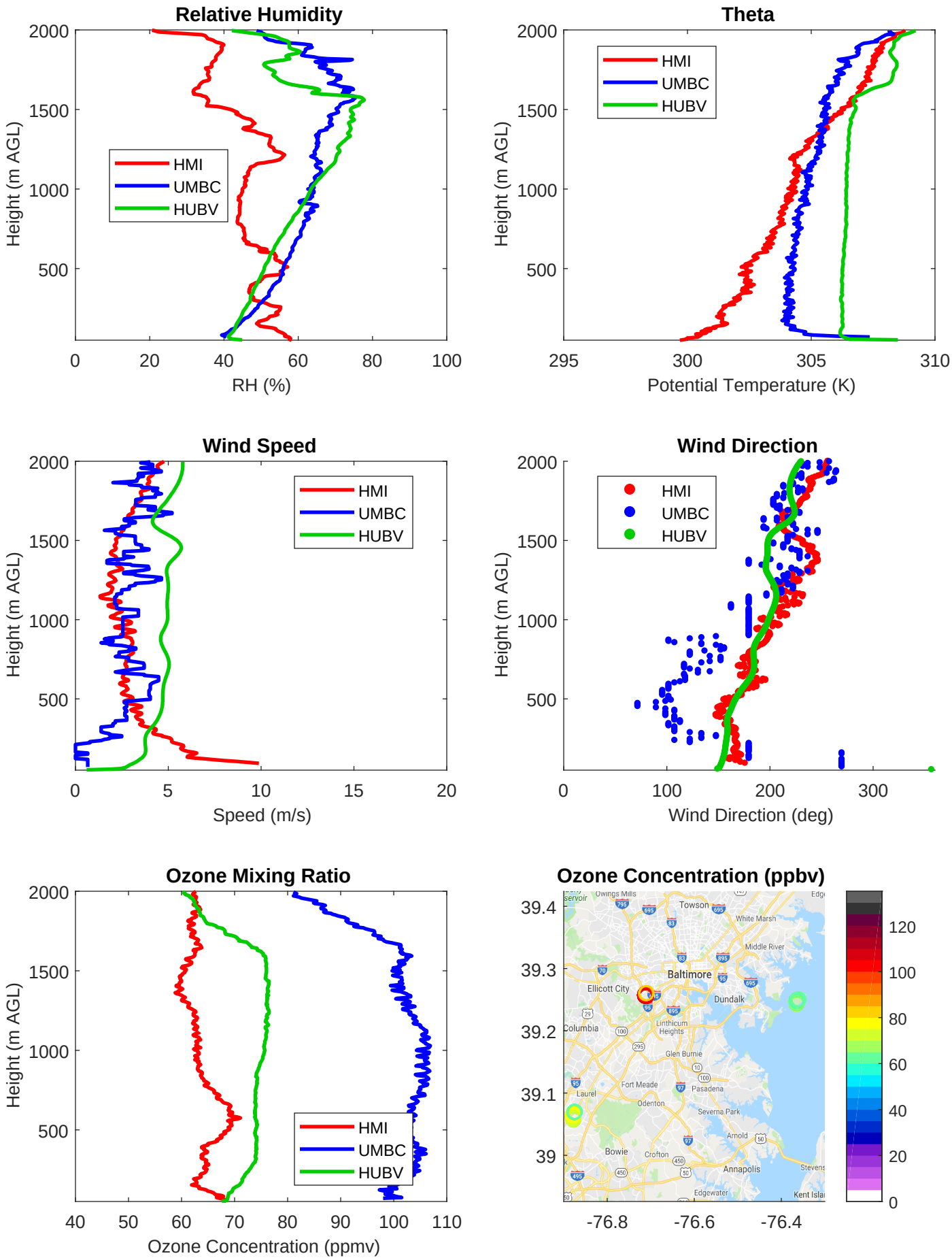
HMI Sonde POC: Lance Niño (lwn4@cornell.edu)

HUBV Sonde POC: Ricardo Sakai (ricardo.k.sakai@howard.edu)

Ozonesonde launched July 2nd, 2018 at 17:52 (HMI), 17:43 (UMBC), and 17:57 UTC (HUBV) [0-6 km]



Ozonesonde launched July 2nd, 2018 at 17:52 (HMI), 17:43 (UMBC), and 17:57 UTC (HUBV) [0-2 km]



July 2nd, 2018, 20:00 UTC

The following graphs represent the coordinated launch for the University of Maryland – Baltimore County supersite (UMBC: 39.2543, -76.7093) and the Hart Miller Island supersite (HMI: 39.24219, -76. 36279) on July 2nd, 2018 at approximately 20:00 UTC. Operator error on HMI while fastening the balloon train caused the HMI ozonesonde to launch upside down, emptying the contents of the ECC ozonesonde and leading to unrecoverable ozone data.

At the UMBC site, the 2-km boundary layer is shown to not be particularly well-mixed. Just a couple of hours earlier, at 18Z, ozone readings of 100+ ppbv were seen throughout the layer. But at 20Z, only a thin layer of 90 ppb air remains at 2 km, while the surface ozone has fallen back to a more reasonable 70 ppb. This is consistent with other surface observations from HMI, but other sites in the region had much higher values. This launch was the last of 24 in a four day period across three sites.

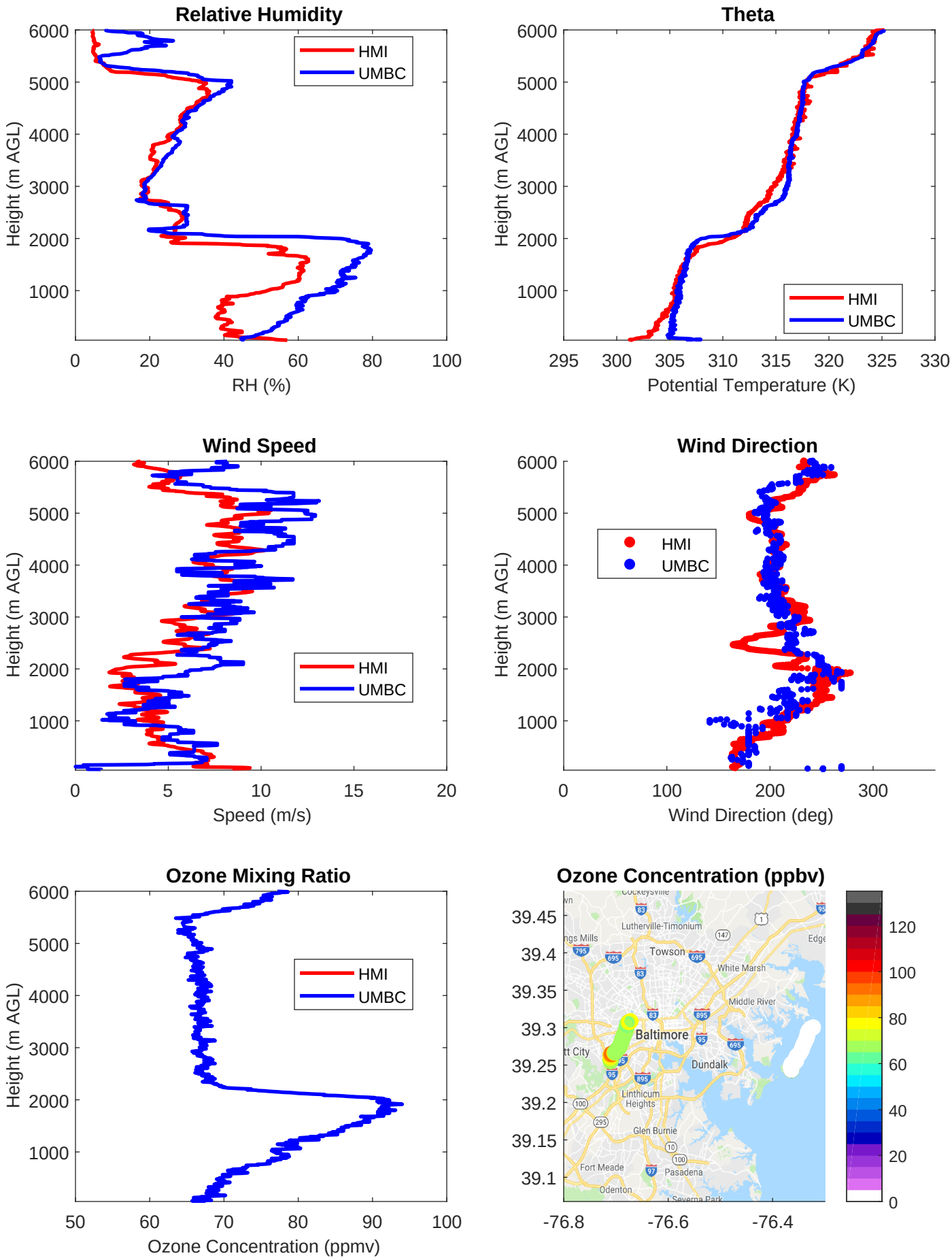
PLEASE NOTE: This data is preliminary and should not be used for official business.

UMBC Sonde POC: John Sullivan (john.t.sullivan@nasa.gov)

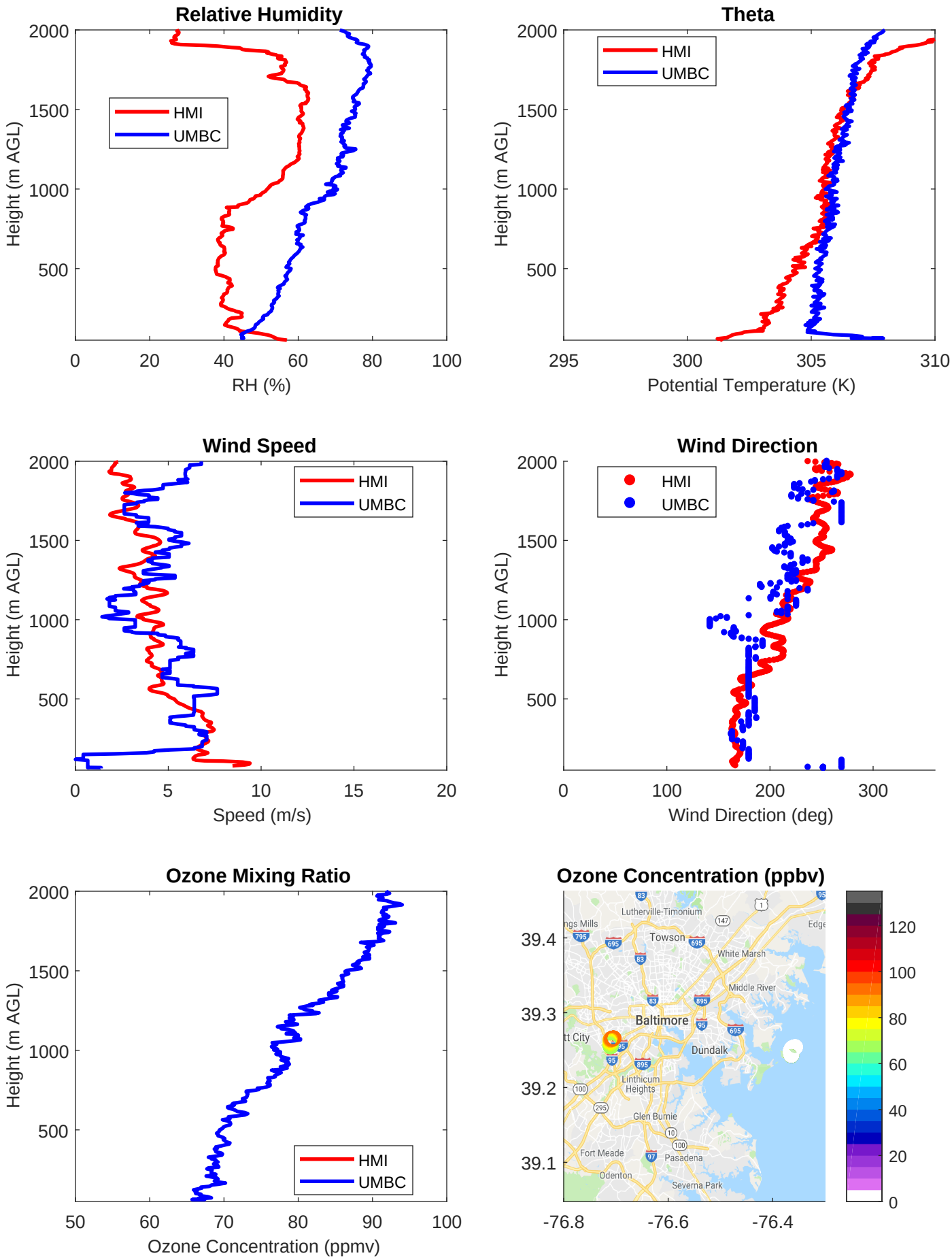
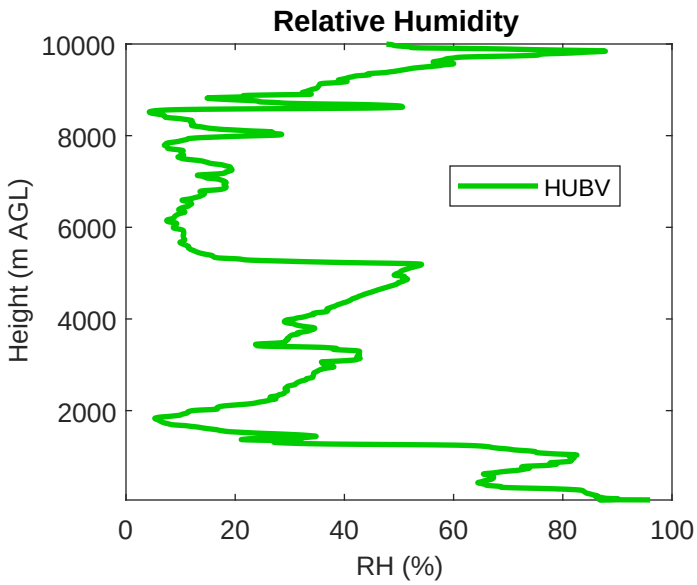
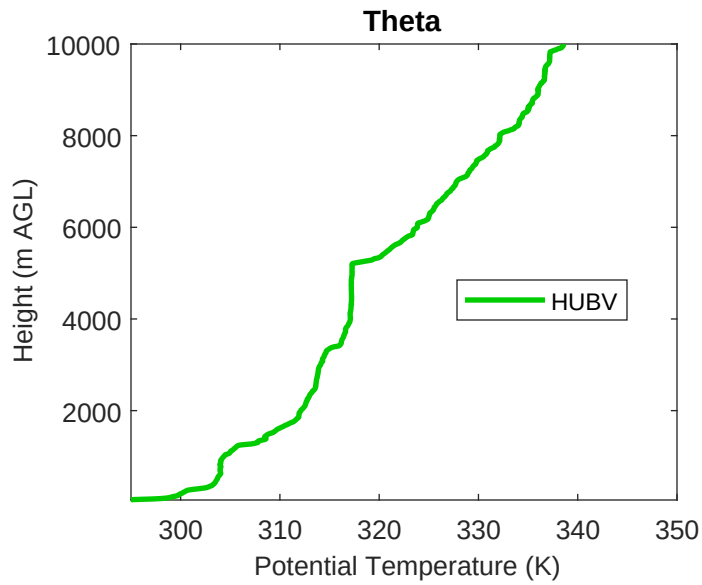
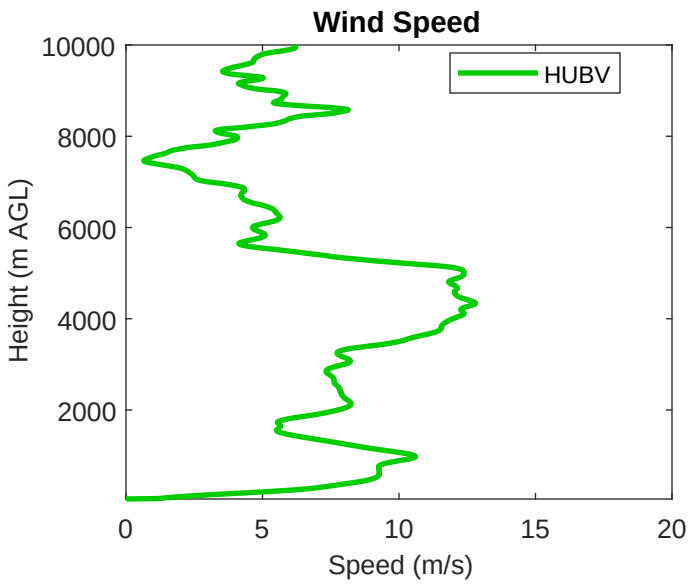
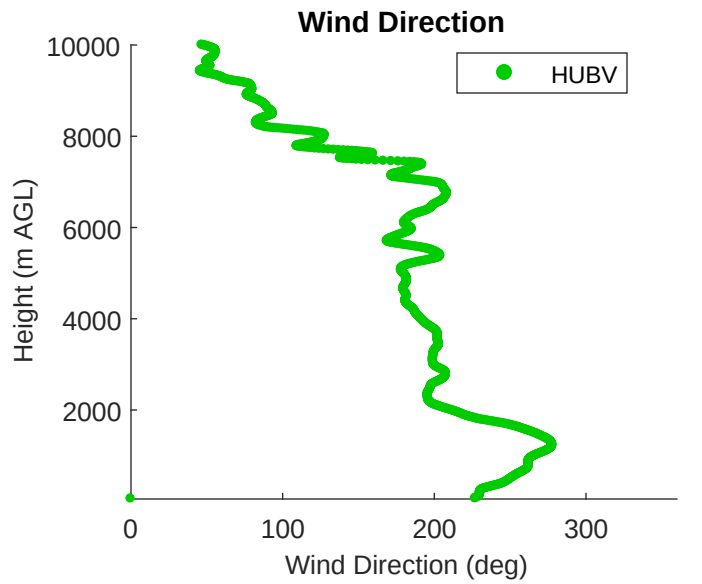
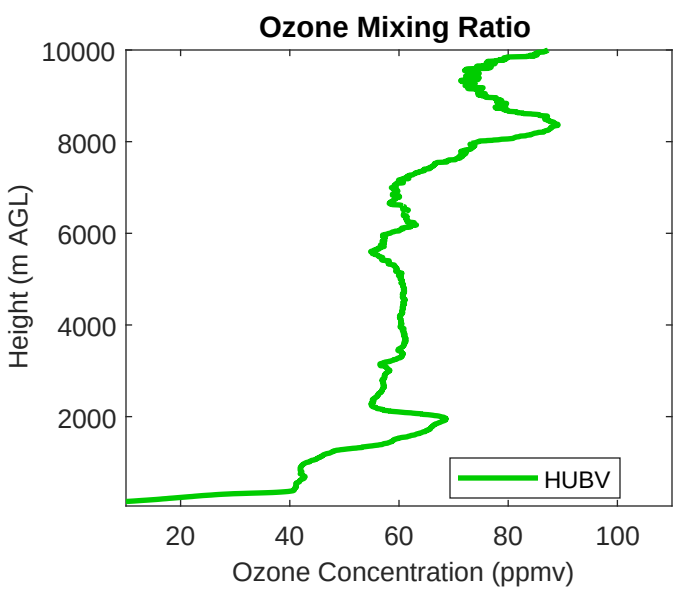
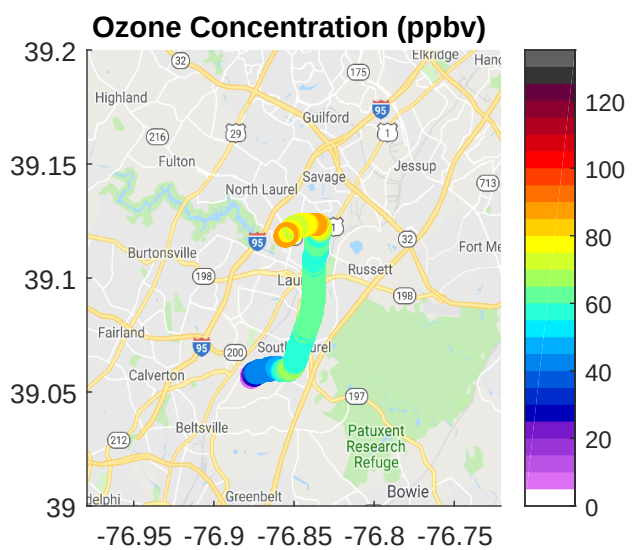
HMI Sonde POC: Lance Niño (lwn4@cornell.edu)

HUBV Sonde POC: Ricardo Sakai (ricardo.k.sakai@howard.edu)

Ozonesonde launched July 2nd, 2018 at 20:18 (HMI) and 19:56 UTC (UMBC) [0-6 km]



Ozonesonde launched July 2nd, 2018 at 20:18 (HMI) and 19:56 UTC (UMBC) [0-2 km]



Ozonesonde launched July 2nd, 2018 at 06:32 UTC (HUBV) [0-10 km]