

Auxiliary Material

- Figure S1.** Diagram of the 1-by-3 tandem differential mobility analyzer (1×3 -TDMA). Legend: RH_0 , adjustment of aerosol relative humidity to a central value; $RH_{+\delta}$, adjustment of aerosol relative humidity to $RH_0 + \delta$; $RH_{-\delta}$, adjustment of aerosol relative humidity to $RH_0 - \delta$; DMA, differential mobility analyzer (all tuned to same particle mobility); CPC, condensation particle counter.
- Figure S2.** Example #2 of a deliquescence event. See example #1 and further description for Figure 1. Ambient RH = 33, Inlet RH = 29.
- Figure S3.** Example #3 of a deliquescence event. See example #1 and further description for Figure 1. Ambient RH = 30, Inlet RH = 30.
- Figure S4.** Example #2 of an efflorescence event. See example #1 and further description for Figure 2. Ambient RH = 95, Inlet RH = 67.
- Figure S5.** Example #3 of an efflorescence event. See example #1 and further description for Figure 2. Ambient RH = 86, Inlet RH = 71.
- Figure S6.** Example #1 of the absence of a phase transition. (A) Scan of RH_0 and $RH_{+\delta}$ from 21:37 to 23:06 on 11 Jun 2007 using $RH_{+\delta} = RH_0 + 8\%$. (B) Measurements of CPC_0 and $CPC_{+\delta}$. (C) The transmission ratio $CPC_{+\delta}:CPC_0$ for increasing relative humidity $RH_{+\delta}$. Conditions: The 1×3 -TDMA was set to a mobility diameter of 150 nm. The ambient relative humidity was 88%, and the inlet relative humidity was 83%.
- Figure S7.** Example #2 of the absence of a phase transition. See example #1 and further description for Figure S6. Ambient RH = 81, Inlet RH = 70.
- Figure S8.** Example #3 of the absence of a phase transition. See example #1 and further description for Figure S6. Ambient RH = 69, Inlet RH = 83.

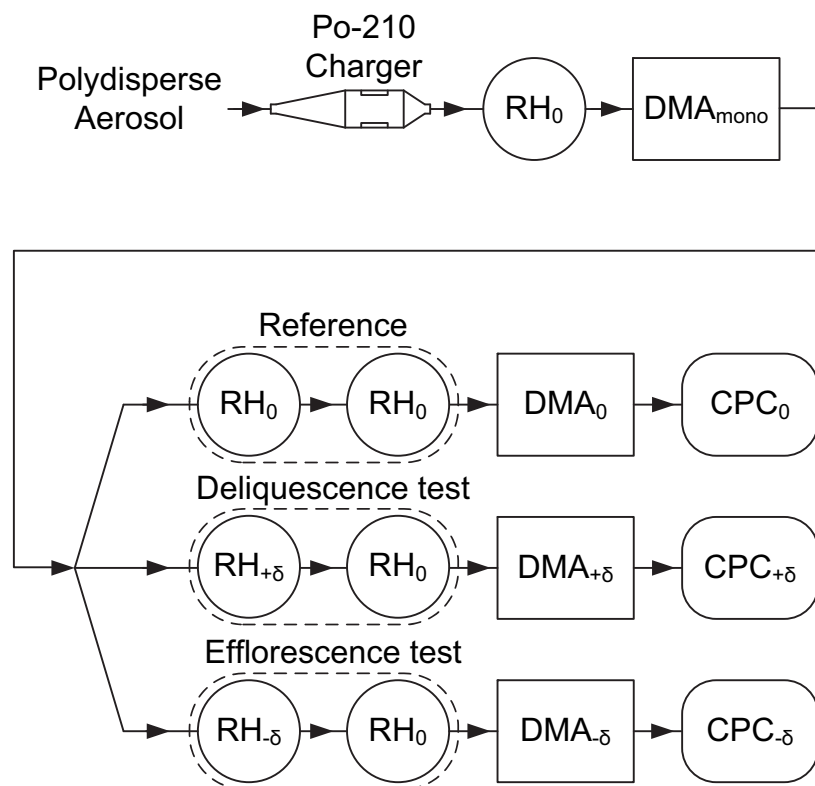


Figure S1

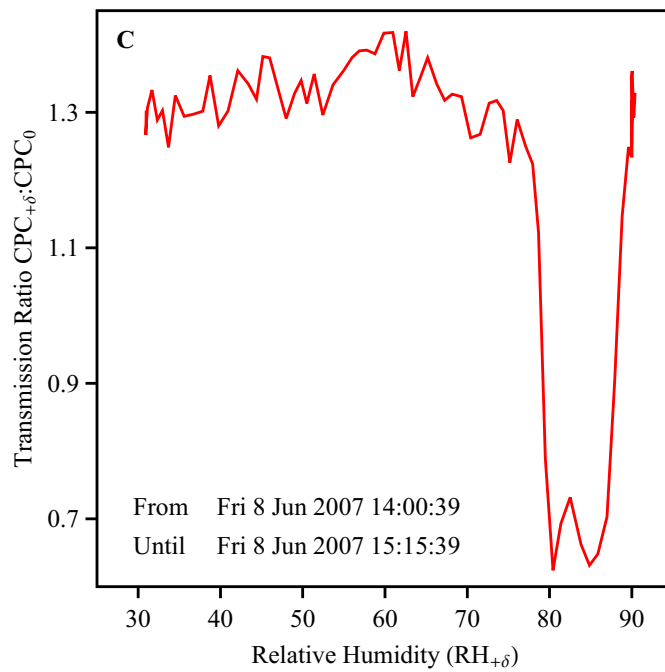
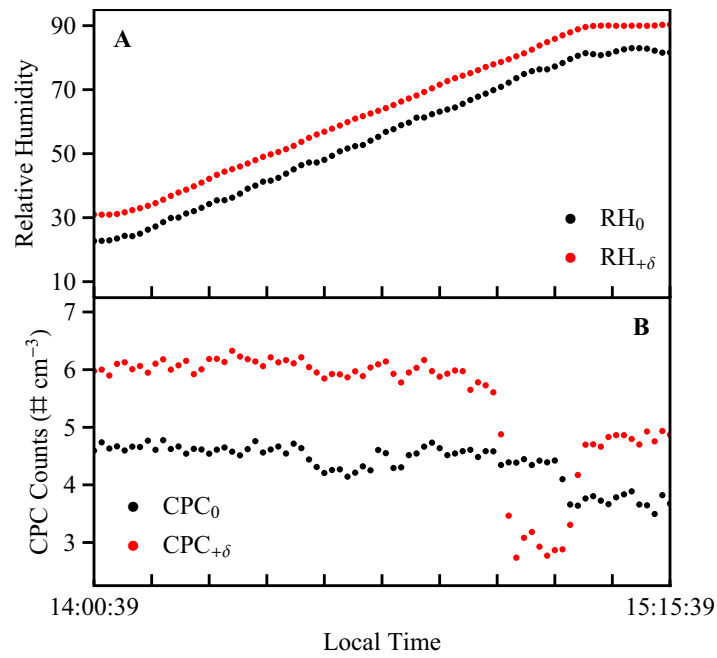


Figure S2

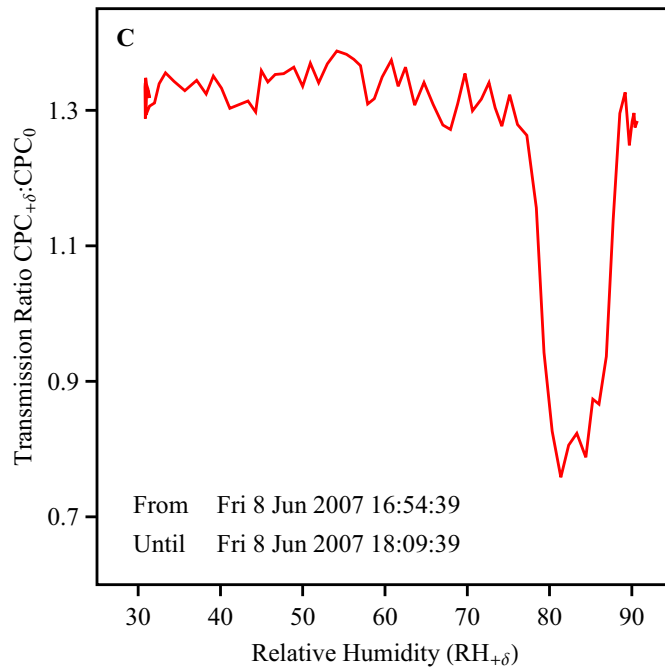
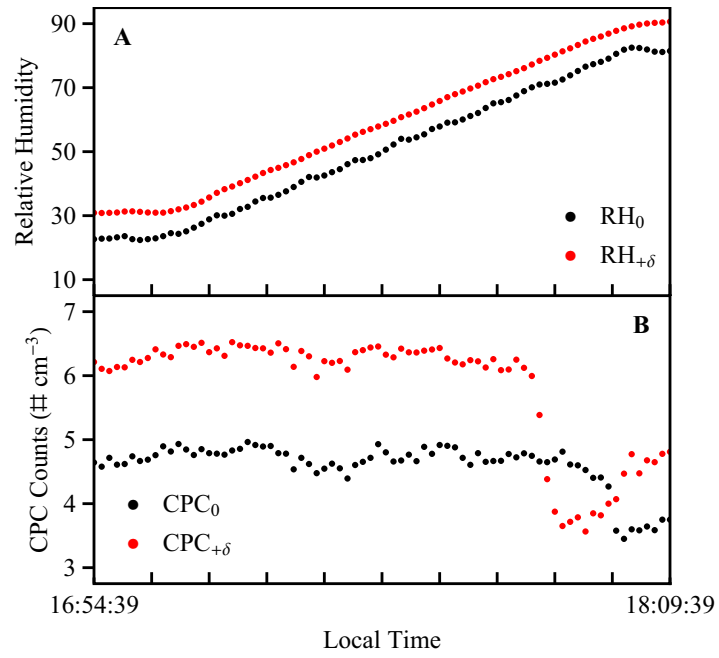


Figure S3

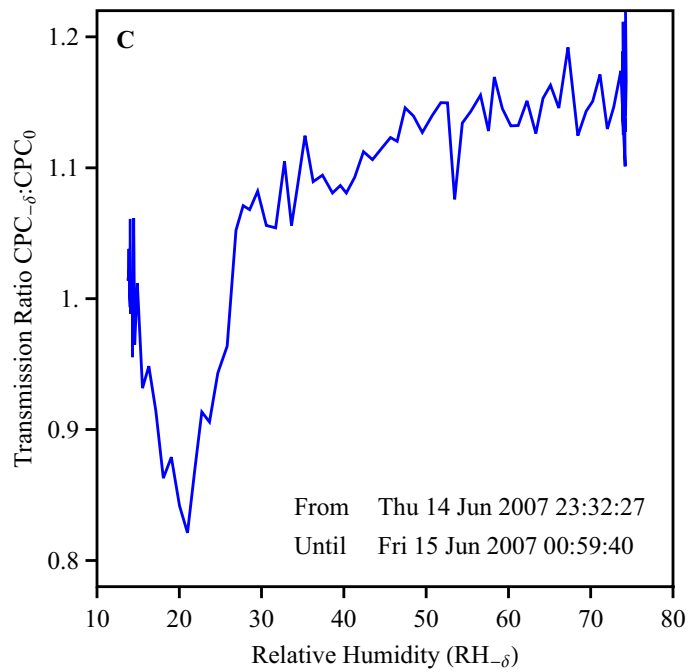
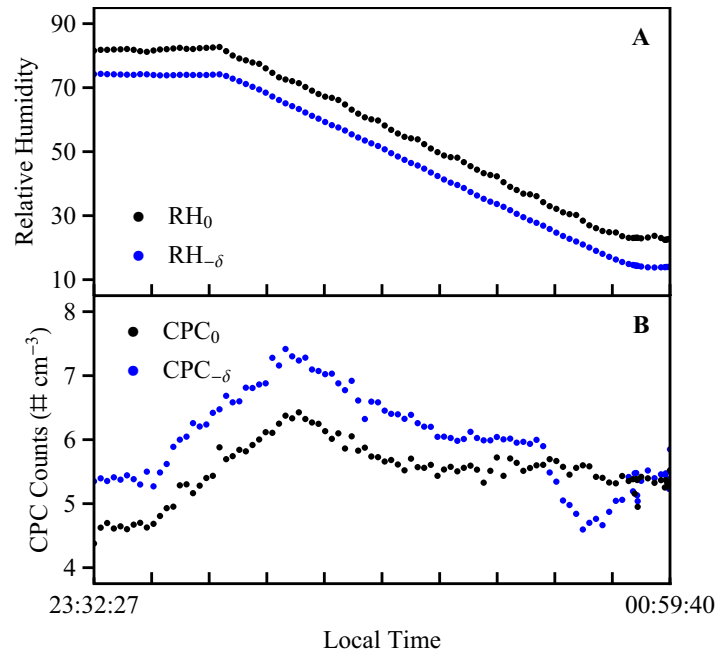


Figure S4

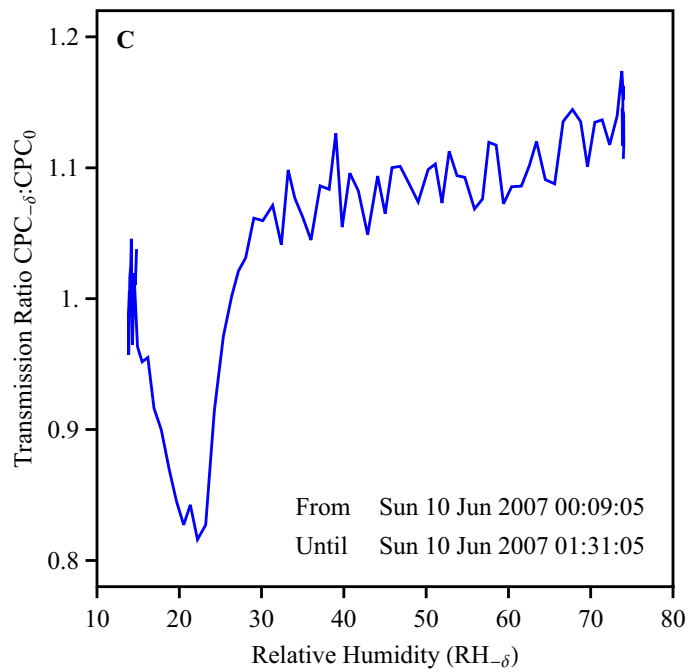
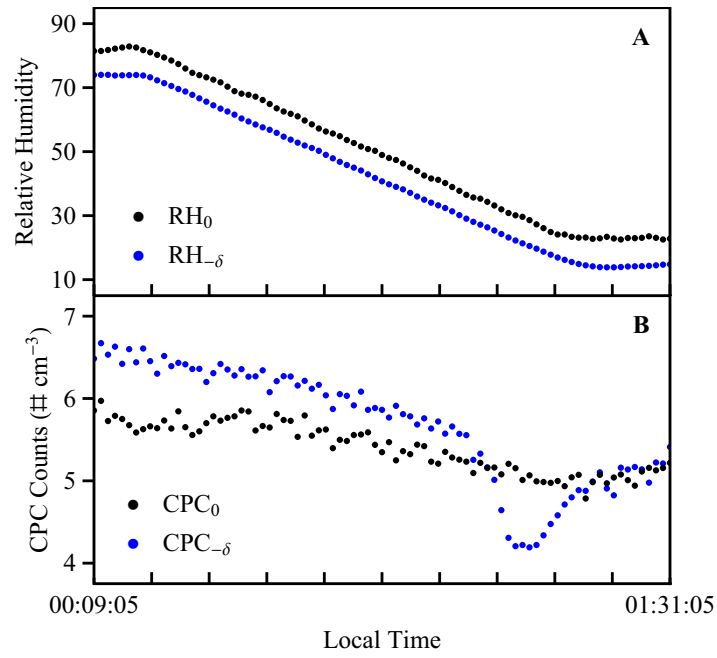


Figure S5

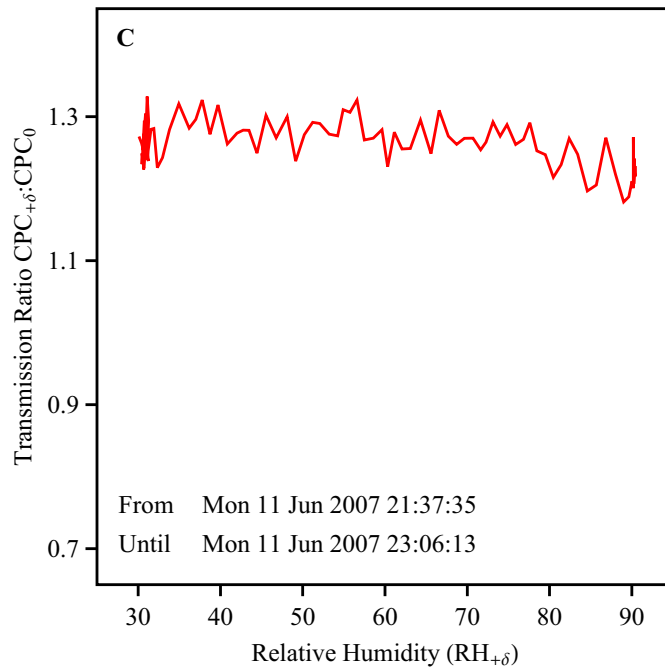
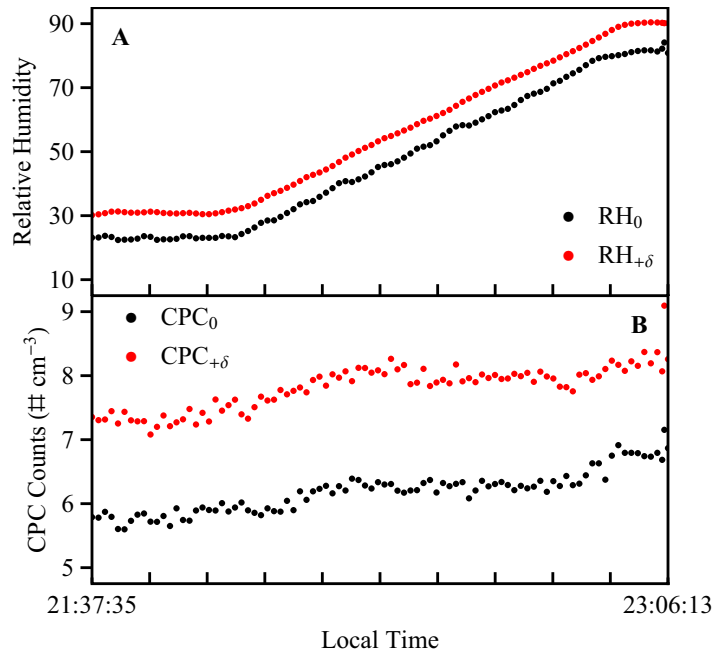


Figure S6

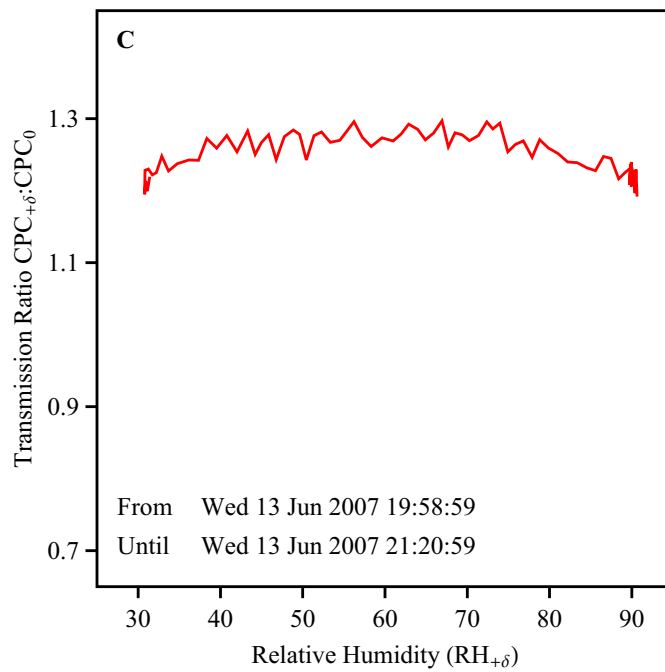
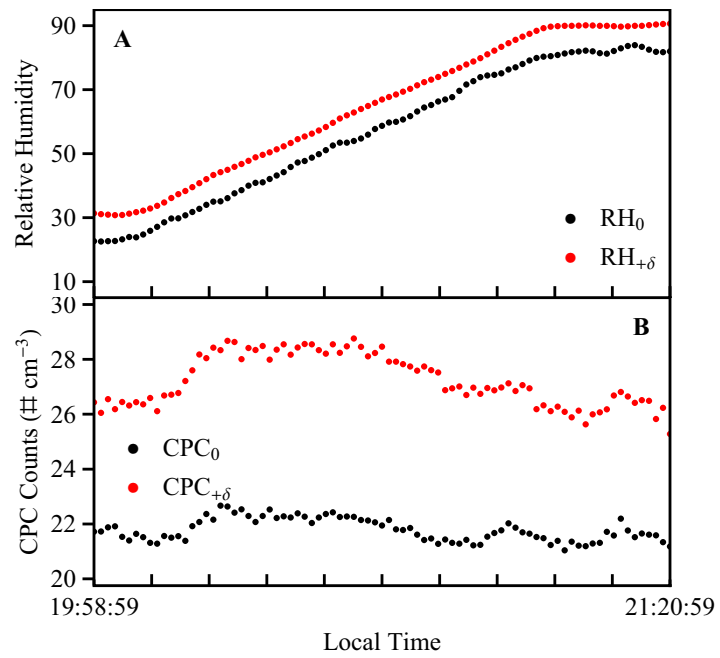


Figure S7

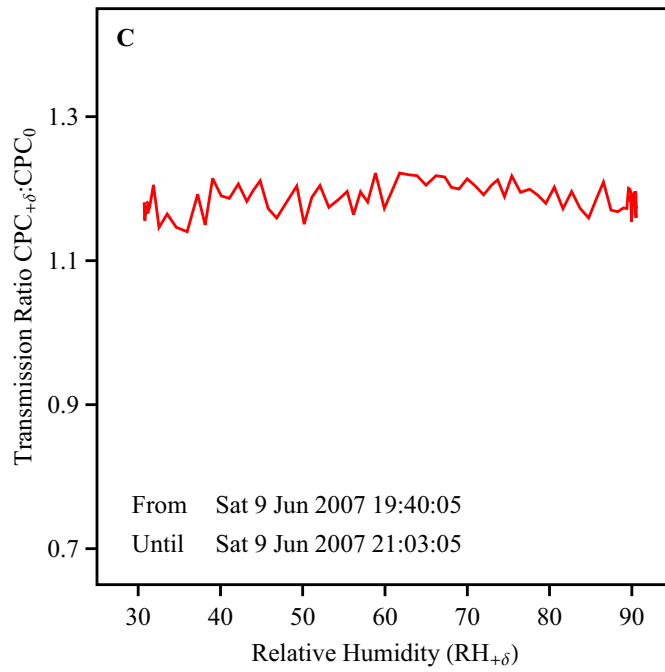
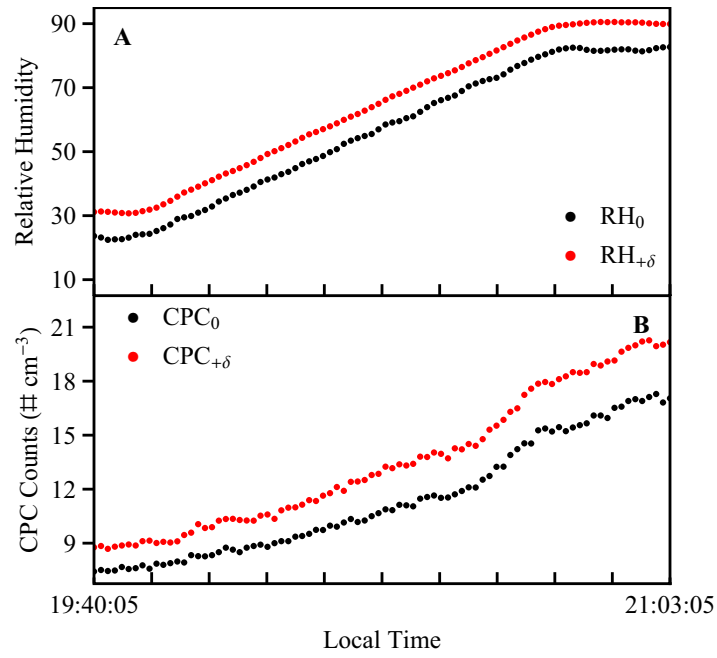


Figure S8