



- Founded in 2000; about 45 employees
 - Meteorology, Engineering, Data Science
 - Professional Weather Observation Mesonet
 - Strong Numerical Modeling & Atmos Science
- Highlights:
 - Customers range from individuals to US Gov't
 - Hurricane Network launched in 2008
 - Helped Develop National Mesonet Program
 - Consumer Device History:
 - ✓ 2015: Handheld Weather Meter
 - ✓ 2018: Smart Weather Station
 - ✓ 2020: Tempest Weather System





Tempest°

- All-in-one home weather system
 - Simple installation, instantly online
 - No moving parts, near-zero maintenance
 - Back-end system improves data & forecast
- “Haptic” rain sensor
 - instant onset, relative intensity, duration, precip type
 - good accumulation estimate when well-sited
 - greater sensitivity & resolution than tipping bucket
- Rain measurement issues with all-in-one hardware
 - Siting compromises (often sited for optimal wind)
 - Small collector area

Tempest° Rain Gauge

- Tipping bucket sensor
- 300% more collector area
- Easier than all-in-one to meet siting guidelines
- Automated & Integrates with Tempest System
- Complement to haptic sensor
- Complement to CoCoRaHS observations?
- Looking for Field Testers soon!





Tempest & CoCoRaHS?



- CoCoRaHS = Gold Standard for precipitation
- Many Field Testers are also CoCoRaHS observers
- Stratus gauge obs very helpful in testing & calibration
- Manual observations extremely important
- Automated observations complementary
- Can we help grow CoCoRaHS network?
 - Promote manual observing to our users!!
 - Share Tempest rain data?
 - Weather educational curriculum?
 - Produce lower-cost, improved rain gauge?





Stratus Rain Gauge

A good design:

- Simple
- Standard
- Respected
- Trusted by CoCoRaHS community

Room for improvement:

- Assembly and mounting frustrations
- Limited mount options
- Metric scale
- Relatively high cost

Nimbus

Improving on a Good Design
(driven by input from CoCoRaHS team)

- Easier re-assembly of funnel & cylinder
- Simpler, more flexible mounting options
- Correct Stratus 3% low bias
- Can be co-located with Tempest Rain
- Lower cost: target MSRP of \$35



Nimbus

- Single, tapered mounting tab
- Sloped floor w/ recess
- External alignment fins on funnel
- Standard option (1.00 in; 0.01 in)
- Metric option (25 mm; 0.5 mm)



Nimbus

- Simple, single mounting slot
- Flexible mounting options





Next Steps for Nimbus

- Finalize initial design (June 1)
- Product Prototypes (July 1)
- Run Field Test (July & August): We need volunteers!
- Adjust design & Start Production (September)

Beyond Nimbus

- Promote CoCoRaHS to Tempest users!!
- Would Tempest data be helpful to CoCoRaHS?
- Incorporate CoCoRaHS into educational curriculum?

Tempest[°]