Student Citizen Science

Dixon M. Butler

Youth Learning as Citizen Environmental Scientists

Collaboration

- The GLOBE Program works with many partners to engage students in citizen science measurements that contribute to NASA missions SMAP, GPM, and the rest of the A-train.
- SciStarter and Eco-Schools, with grant support from YLACES, collaborate to support student participation in GLOBE's ENSO Campaign.

scistarter
Science we can do together.

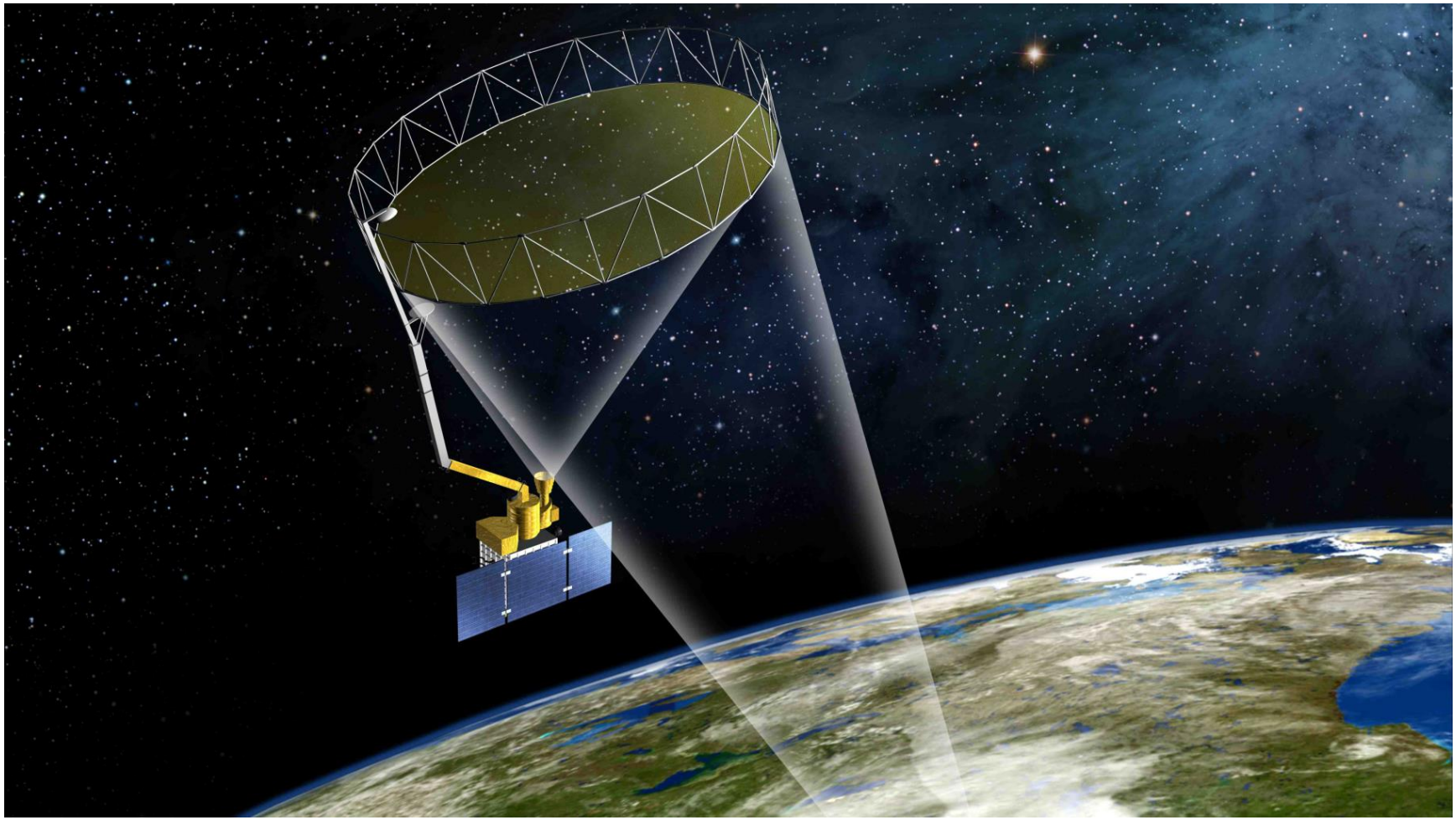
Eco-Schools USA
NATIONAL WILDLIFE FEDERATION®

The GLOBE Program

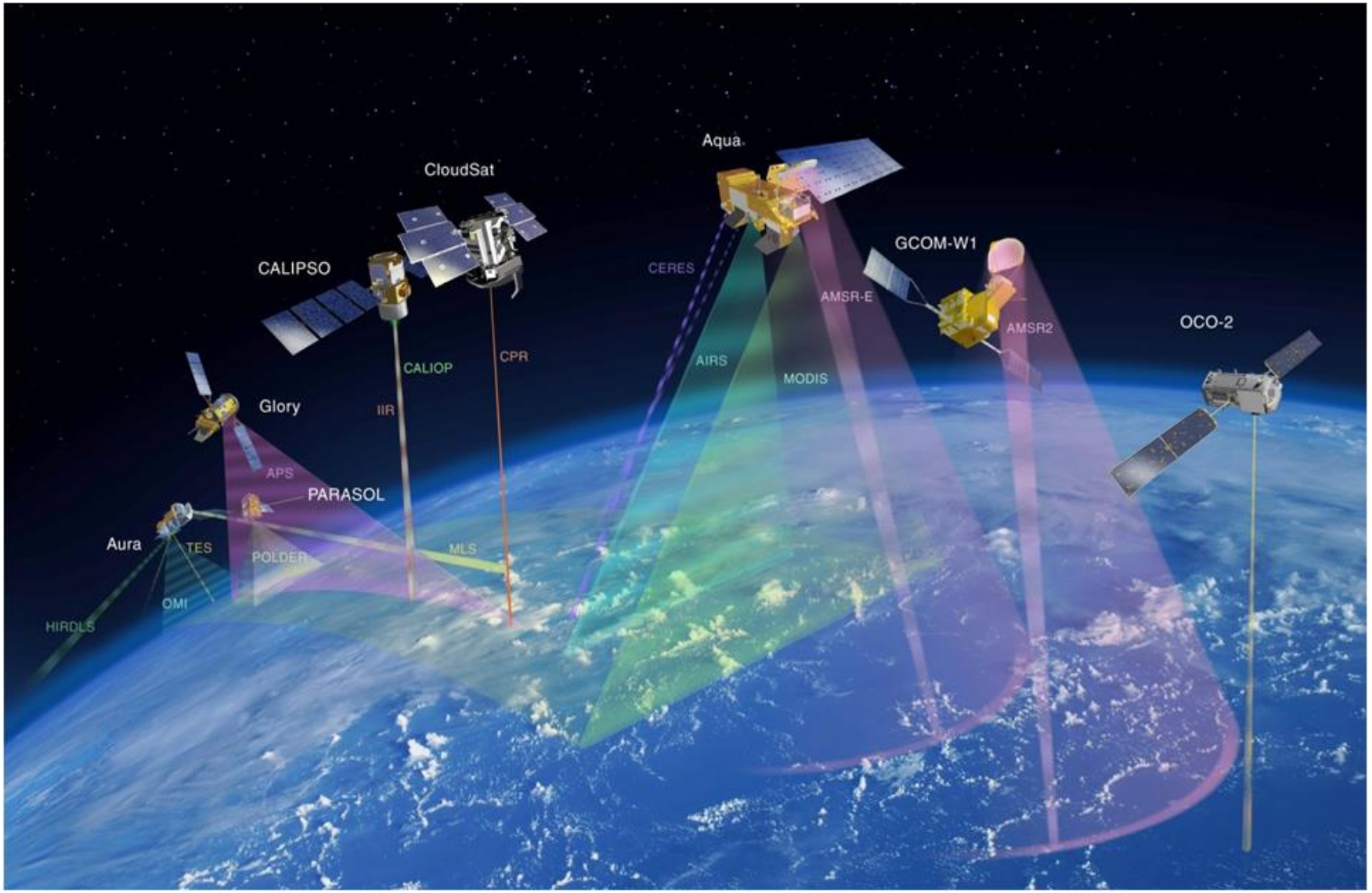
Youth Learning As Citizen Environmental Scientists

- Teachers and youth group leaders are recruited, trained, and equipped to measure at least two variables out of four: soil moisture, surface temperature, precipitation, and clouds
- SMAP needs ground-based measurements for calibration and extended coverage
- GPM needs ground-based measurements for comparison with satellite sampling and sub-pixel data

Soil Moisture Active Passive (SMAP)

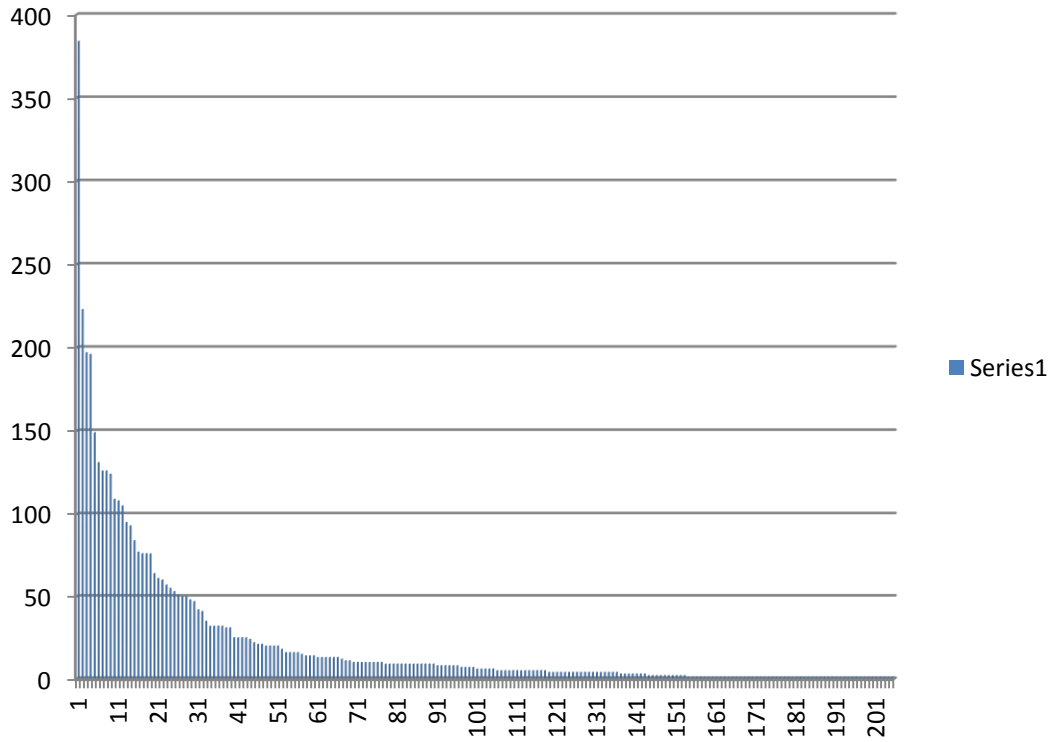


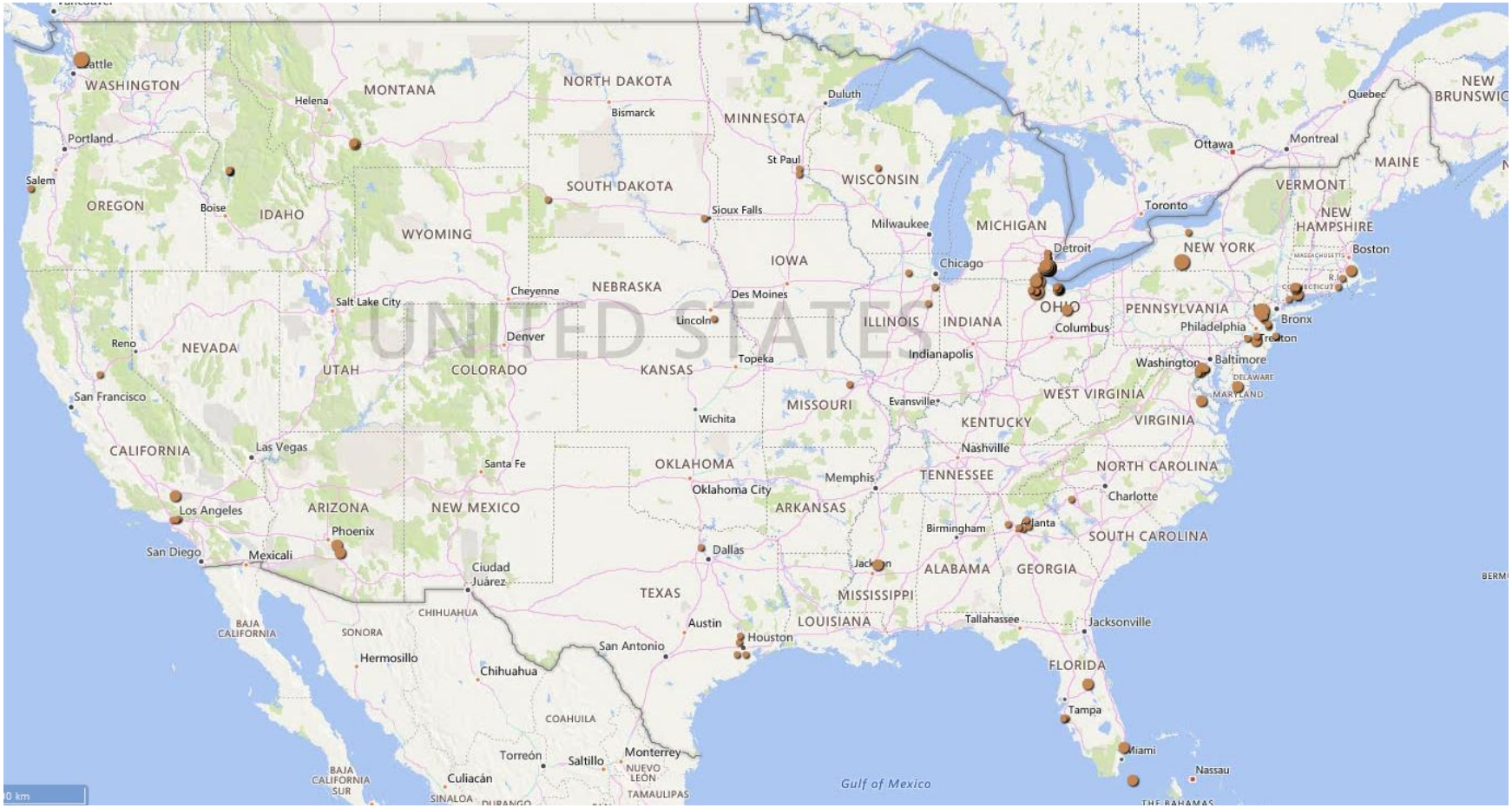
The NASA A-Train Including GPM



Surface Soil Moisture Measurements

- 205 Sites
- 4511 measurements

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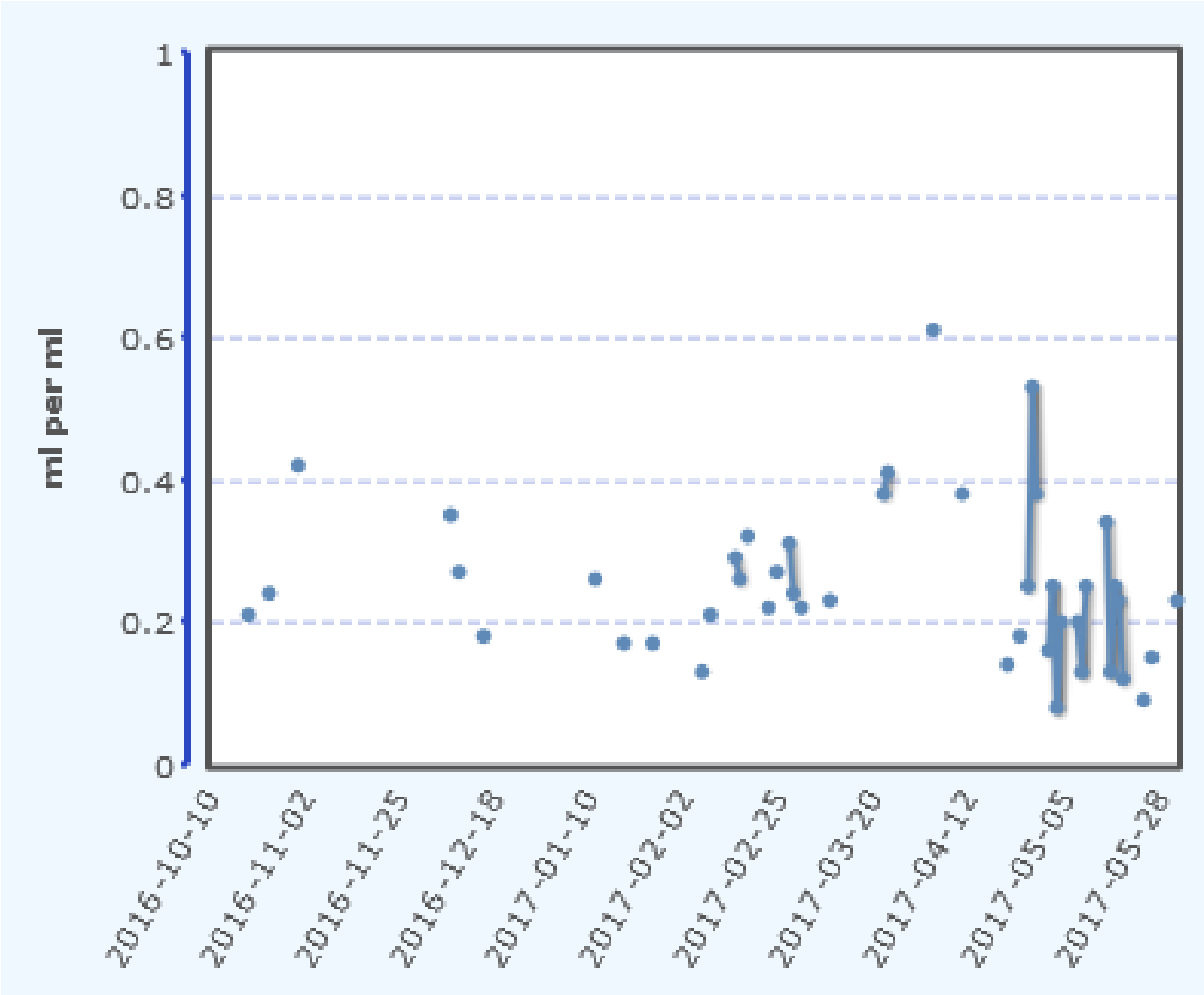
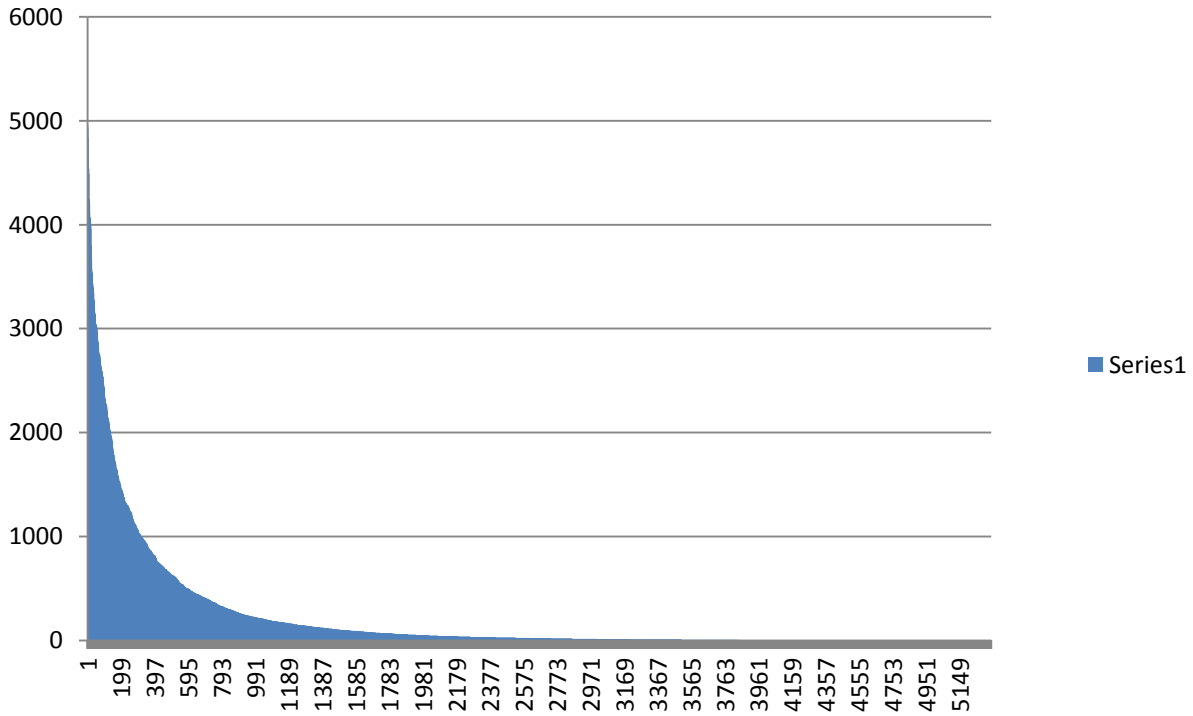
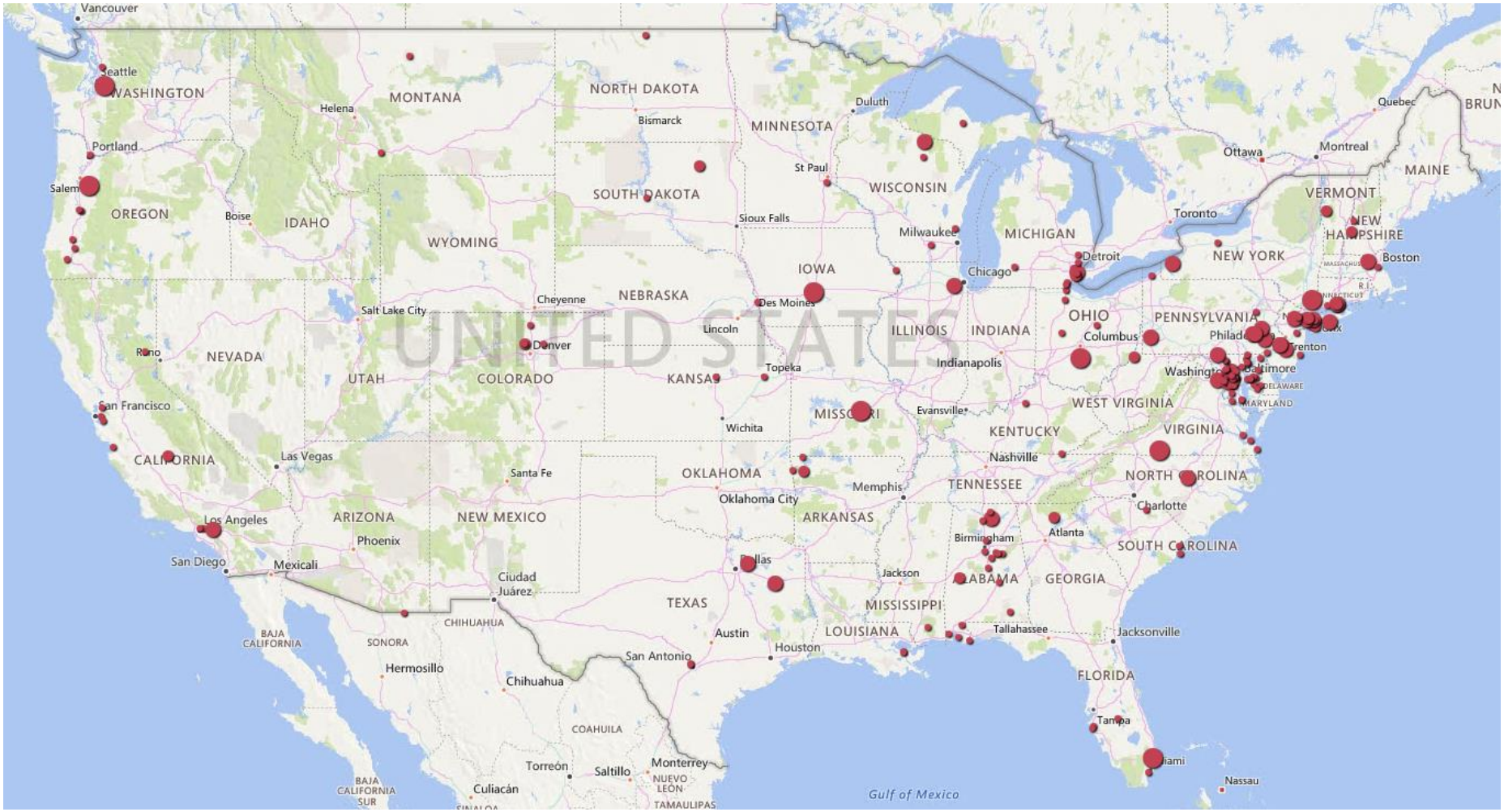
Surface Soil Moisture from Mountain View School



Precipitation Measurements
Schools That Reported 2014 - Present

- 5,354 sites
- 1,139,938 measurements

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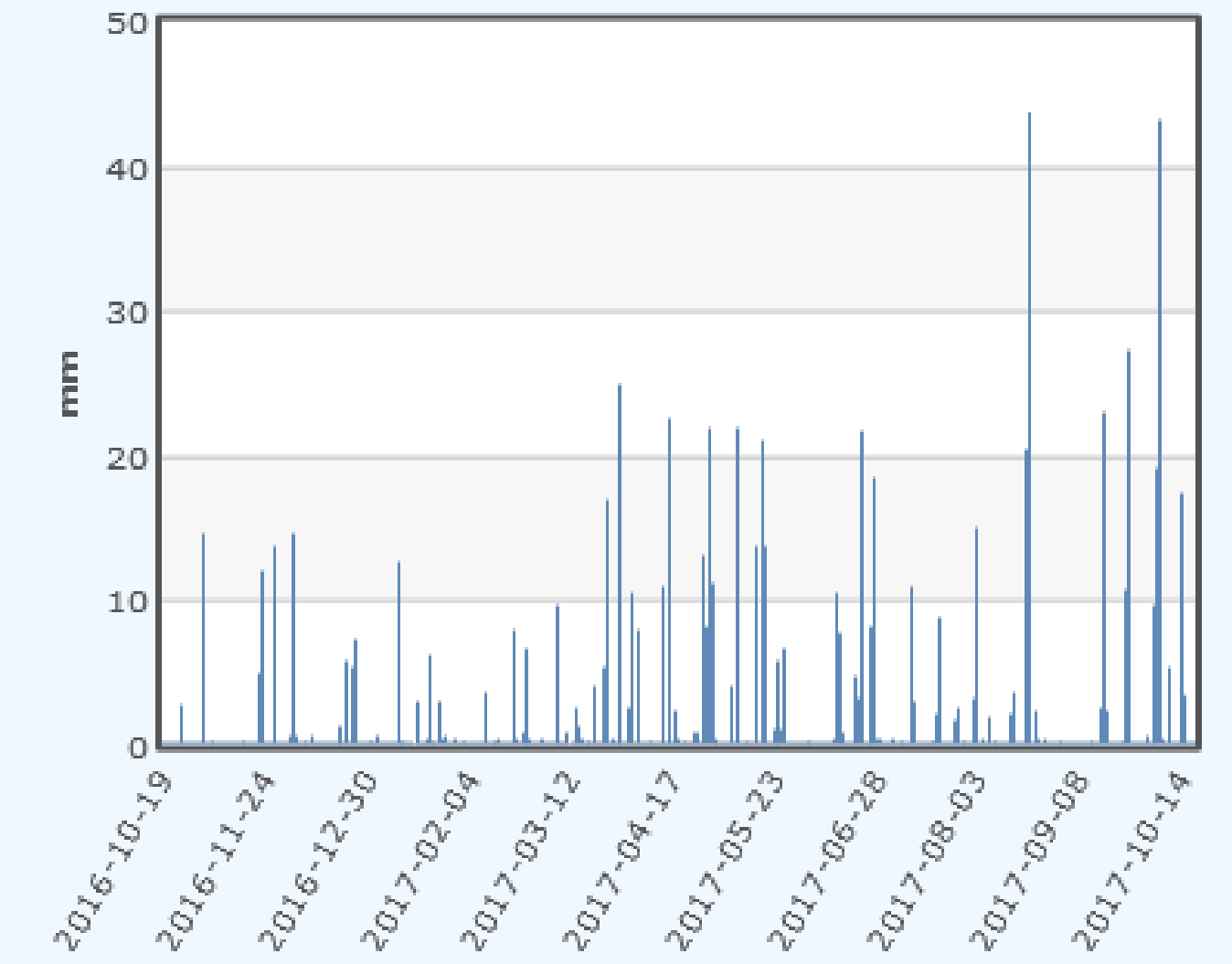
1 Year's Rain Data From an Iowa School



Conclusions

- Student Citizen Science can deliver many data
- Geographic distribution of participation scattered
- There is a hard core of major contributors
- Rainfall measurement requires installation of a guage
- Soil moisture determination requires weighing and drying samples
- Every measurement represents considerable effort