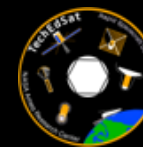


# TechEdSat/Nano-Orbital Workshop (TES/NOW)

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## TECHNICAL / SCIENTIFIC CHALLENGE ADDRESSED

The TechEdSat (TES) Nano Orbital Workshop provides an inexpensive rapid-development test platform for experiments, sensors, and subsystems with 2-3 flights per year.

## SUMMARY

Current Status: TES-11, -22 in orbit; -16, -18 -19 in process.

Notable Achievements: 1<sup>st</sup> Cubesat off ISS; 1<sup>st</sup> to pioneer Iridium SBD for rapid commd/control; 1<sup>st</sup> GPU and neuromorphic processors in orbit; 1<sup>st</sup> use of NOAA GEO GOES satellites from LEO

Technology: Exo-brake, TDRV, cognitive communication, Mars climate instruments, Brainstack

BEST IN CLASS: Command/control, power (300W-hr), Leads State of ART

***MOST SUCCESSFUL NASA NANOSAT SERIES***

## KEY ATTRIBUTES / COMPETENCY

- Collaborative effort with:
  - Young professionals
  - Universities (U of Idaho, SJSU; UMN, UCSC)
  - Government agencies (NOAA, AFRL, AFOSR)
- Testing next-generation space technologies with frequent, relatively inexpensive flights
- Simplified interfaces permit inclusion of partner Experiments, Sub-systems, Sensors (ESS!)
- Unique operating system (TES-OS) and internal wifi connectivity

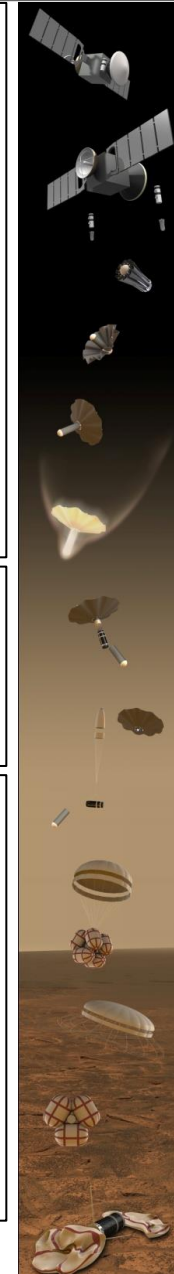
## HERITAGE

- Sounding Rocket Flights: SOAREX 1-9
- Nano Satellite: 13 TES-N missions

***HIGH SUCCESS RATE***

## APPLICATIONS BEYOND

- BrainStack (AI/ML testbed)
- DWTS (Atm. Sounding Earth/planetary)
- RadStack (Radiation Detection)
- Exo-Brake (Deorbiting for accuracy or disposal)
- Mars Probe (AEOLUS)
- Cognitive Communication (Smart radio control)
- HPSC flight test



**Rapid flight experimentation is a key to rapid innovation.**