

☒ → X in a Box → XinaBox


**A Disruptive Innovation in
School, University, IoT, and Space**

Bjarke Gotfredsen, ☒ Co-Founder

Melissa Pore, M.Ed., Science & Engineering, Bishop O'Connell High School



CubeSat Workshop



T+0 xChips

XinaBox originally developed as a tool to encourage STEM learning in High Schools and University freshman years.

T+7 ThinSat

A nano satellite program originally developed by Prof. Bob Twiggs, funded by Virginia Space to give High Schools access to space with a focus on broader STEM learning and engagement.

T+15 Thank You



2015-2016 Adopting MSU program:



SPACEprep

One day JiggyBot building exercises using trucks converted to mobile labs.



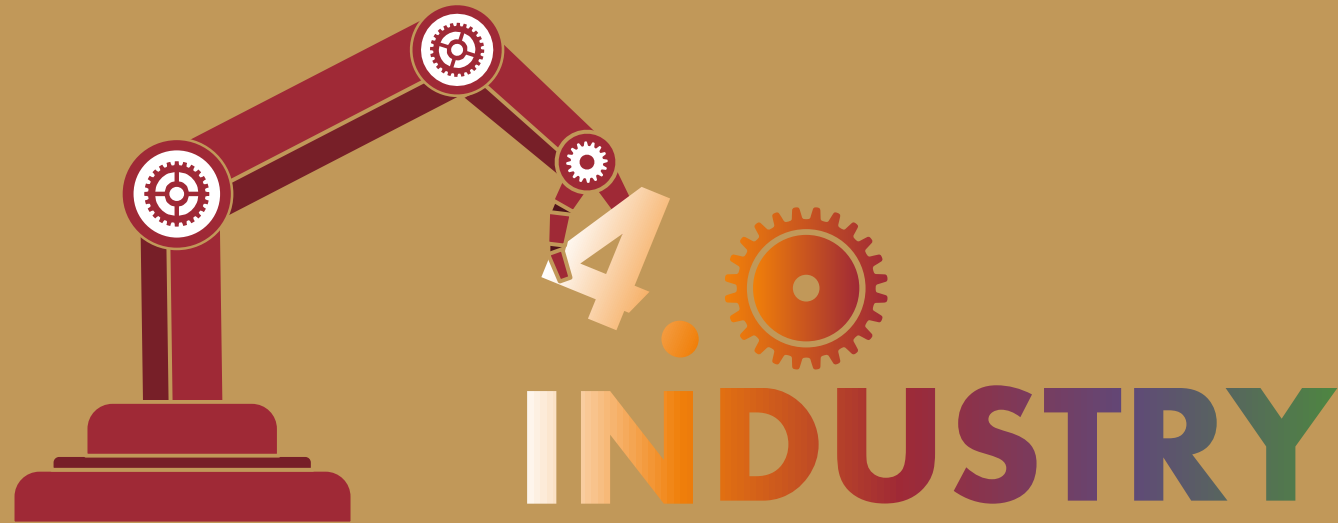
SPACEtrek

One week boot camp building Cricket Sats, assisted by Craft Academy Director Jen Carter and MSU Space Centers Prof. Ben Malphrus



Sat Building Workshops

Designing payloads for a TubeSat mission assisted by local university students.



Next Iteration:

Creating a solution inexpensive and easy enough for high school students,
yet robust and sophisticated enough to build a satellite...

Then...

2016

Launch of XinaBox



Philosophy:

Creating a modular technology, which allows high school students to build satellites without requirement of hardware knowledge, nor lab equipment!



Programmable



Low TCO



Space Based



Modular

2016 Fall



B O B T W I G G S

Prof. Bob Twigg secured a 12U flight with the Antares rocket funded by Virginia Space. Scheduled to fly every 6 months until 2024, originally PocketQube (right hand) filled with xChips (left hand).



Phase 1: Class room



Phase 2: HAB



Phase 3: Orbit

NASA
Goddard



2017
Delivery of 100
Class Kits
7900 xChips

Sensors, Power Modules, USB Interfaxe, Core Modules, Displays...



Phase 1a: 10 x Weather station kits



Phase 1b: 2 x Balloon Projects w/Ground Station

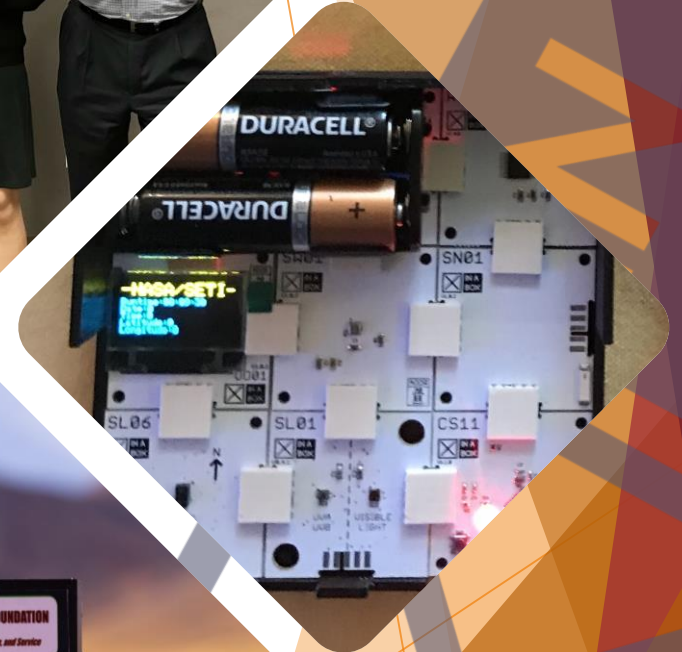
2018 November NASA/SETI Andes

“

A mission to test the UVA/UVB
xChip to search for life in
the Andes Mountains as an
analog to life on Mars
3.5 billion years ago.

Next mission:
xChips on the Moon

”



Phase 3 - Satellites in Orbit

ThinSats launched
April 17, 2019 on a
Antares rocket to
the ISS



63 ThinSats

With a choice of a standard xChips configuration, or a Twiggs SpaceLab analogue prototype board, or your own fully developed payload.

40+ ThinSats with xChips

A inaugural set of sensors and standard CPU, IMU, 5 x frame temperature sensor, IR temperature, UVA/UVB and Ambient light.

Result: 1200+ records collected

Data collected from all ThinSats comes to 1200+ records with datapoint from both payload sensors and standard ThinSat sensors.

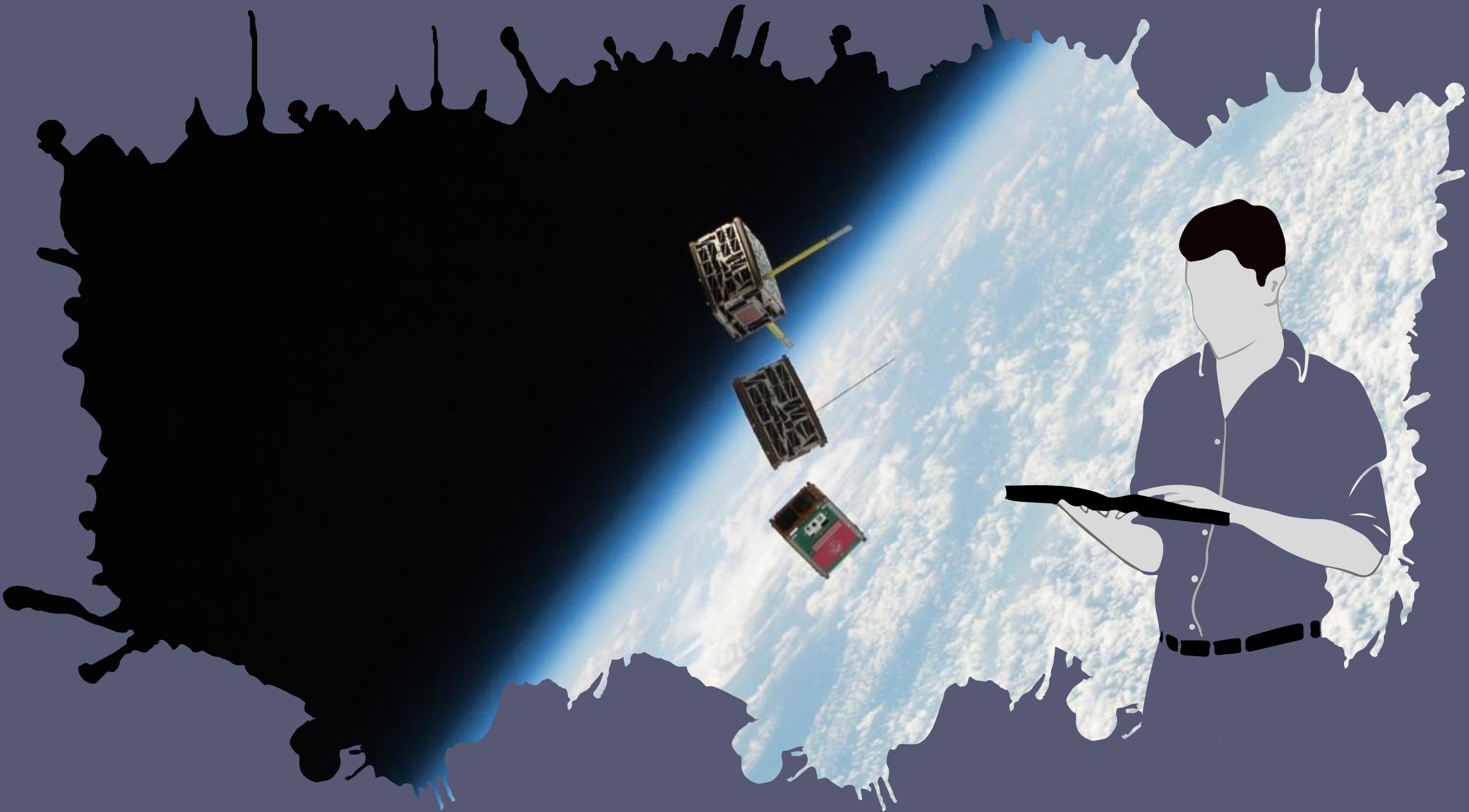
Next mission: NG-13 2020, April

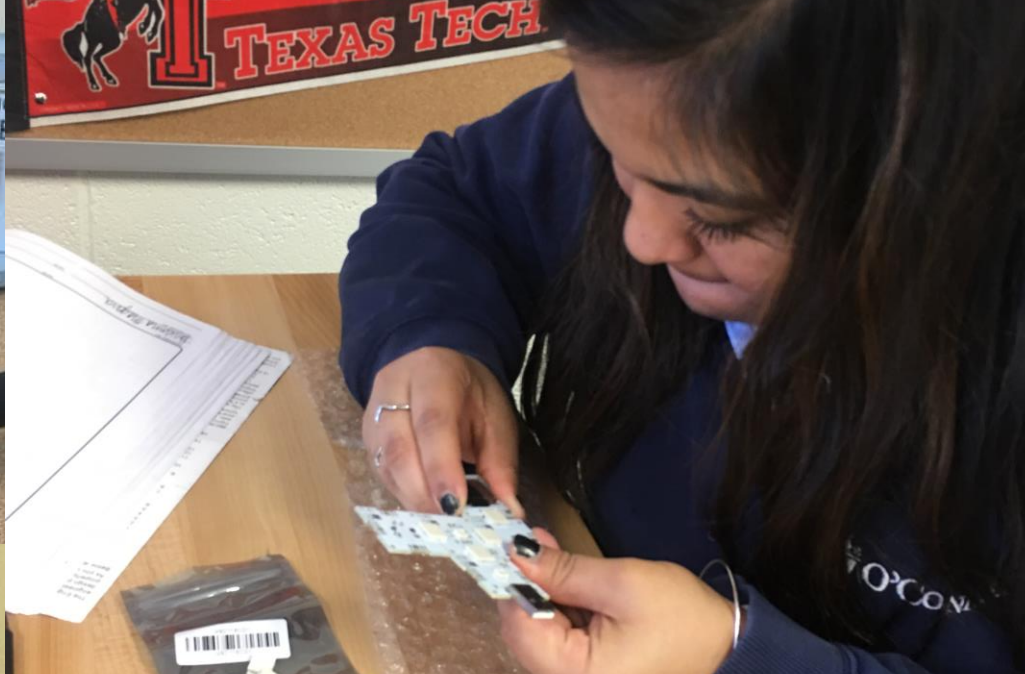
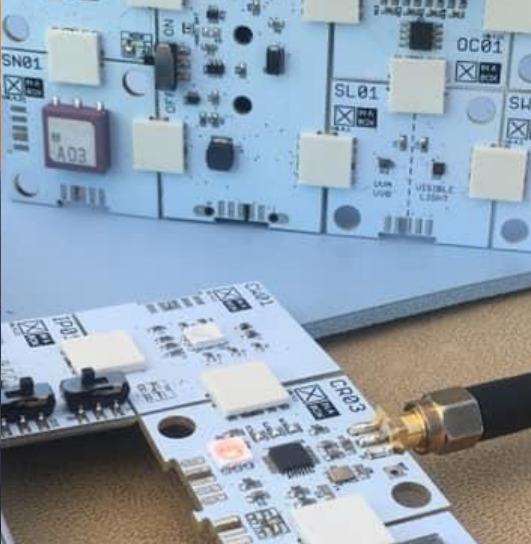
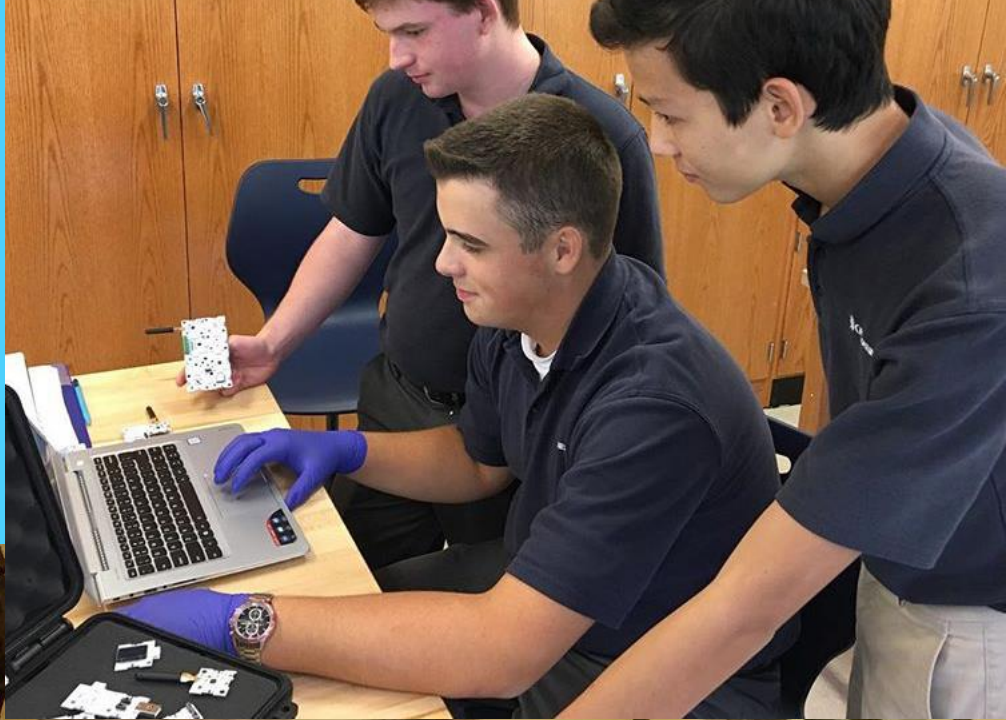
For this first mission, a one year pause is been implemented in order to give ample time to fix issues learned from NG-11. After that, every 6 months.



Melissa Pore, M.Ed.

Teacher, Radio Amateur, Space Nerd, ARISS Education Delegate/OPS, Cyber Security, AMSAT, CASIS Ambassador, CubeSat Launcher, ThinSat Expert ... from Arlington, VA.







NG-11 ThinSat Launch

DJOSpaceToast from Bishop O'Connell High School

Student Mission with Prof. Bob Twiggs on Launch Day April, 17 4:46 EST





Thank You