

NanoGam

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NanoGale

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Space Autonomous Mission for
Swarming and Geo-locating
Nanosatellites



NanoGam in short

Goal:

- All-sky Gamma-Ray Burst monitoring
- Economical platform for testing scintillators and light sensors
- Off the Shelf GRB Module
 - low-cost, -volume, -weight, -power consumption GRB triggering module
 - Can be easily adopted by any small or big space mission for high-energy astrophysics

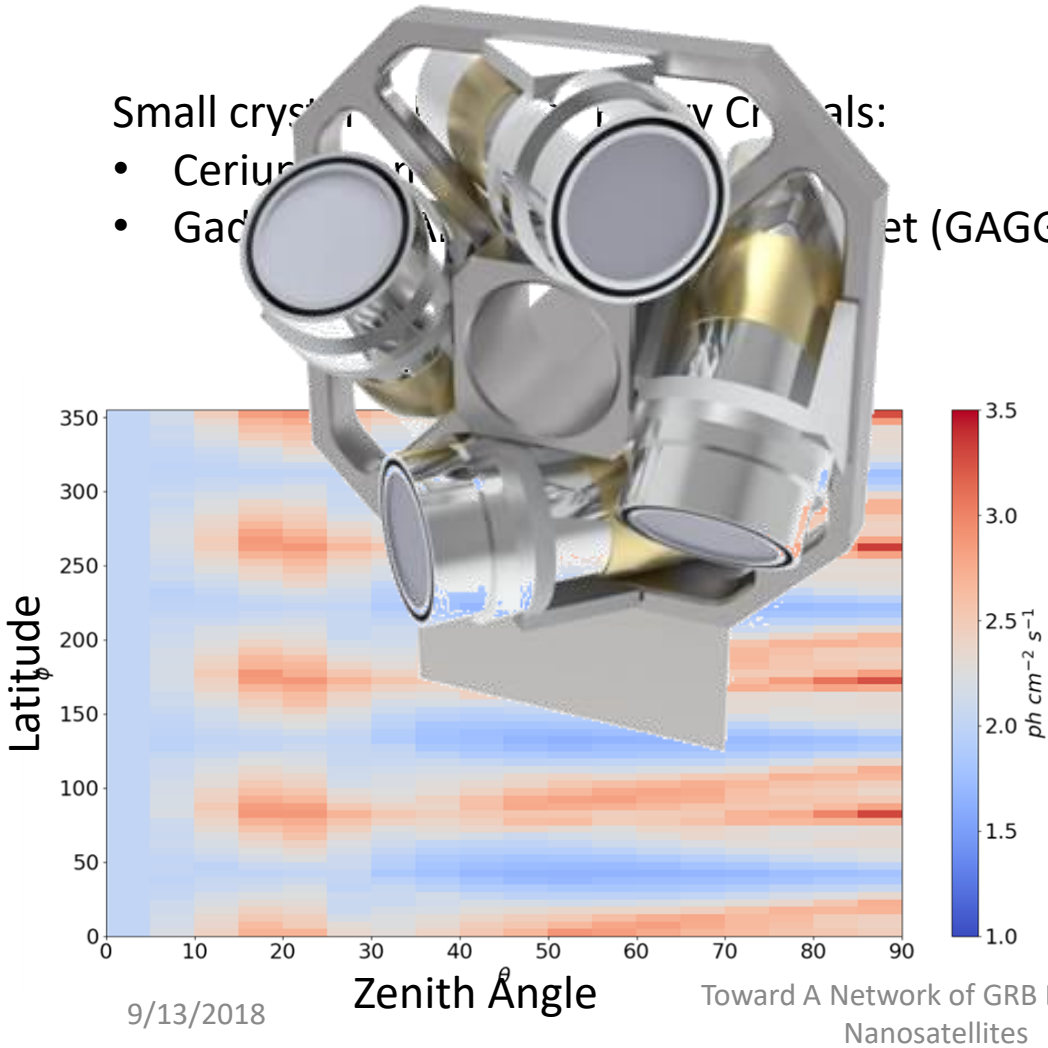
Practically: Two or three 3U CubeSats

- 2U “spacecraft” platform – power system, GPS, attitude control, communications
- 1U detection unit, not necessarily identical (scintillator, configuration, concept)

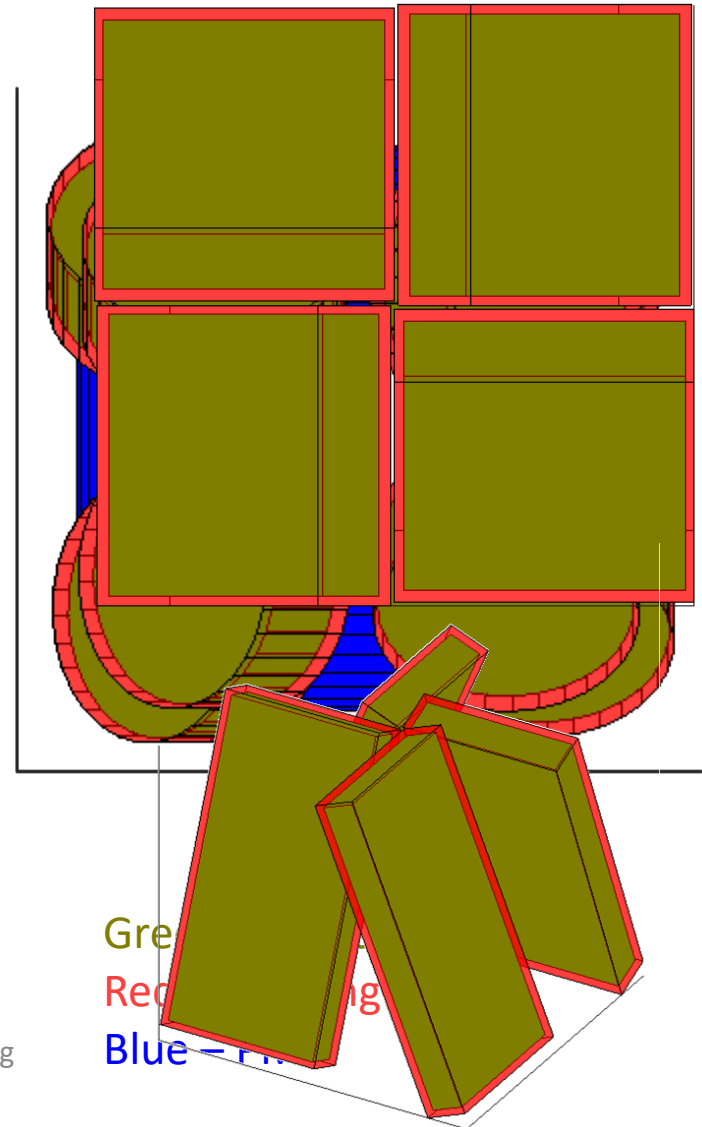
Concept 1: Shrunk GTM

Small crystals in a single layer Crystals:

- Cerium
- Gadolinium Oxide (GAGG)



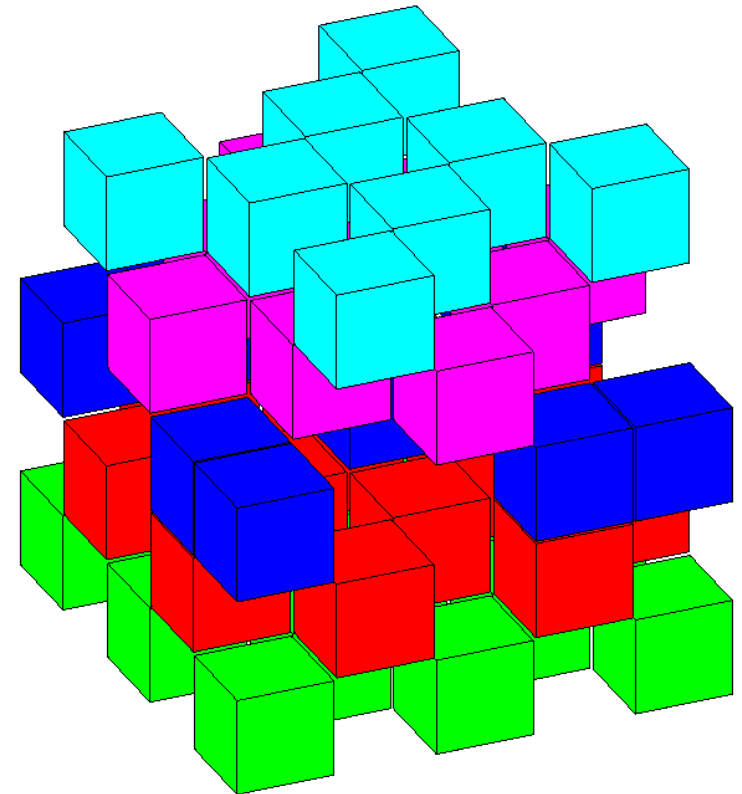
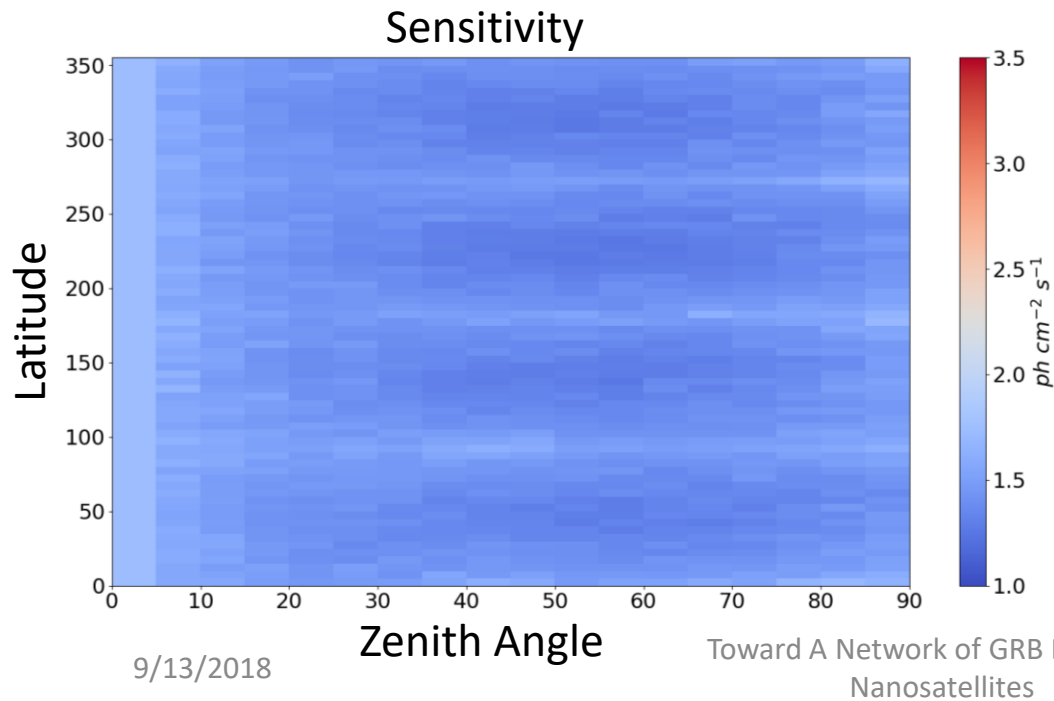
Toward A Network of GRB Detecting Nanosatellites



Concept 2: Coded Array

Borrowed from a sundial

Inspired by coded-mask aperture

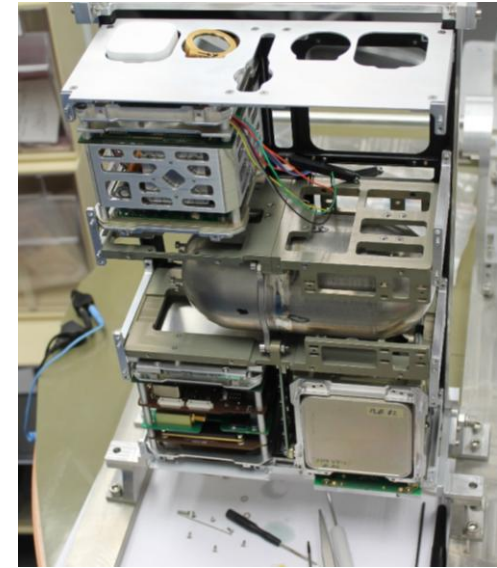


Colors only for display
2X2X2 cm³ crystals array



GTM for ISS-TAO

Thank you



SAMSON Components View



Unit 1

- Sun Sensor-1
- GPS Antenna-1
- GPS-1, Clock-1
- Reaction Wheels
- E-Board
- X-Magnetorquer
- Y-Magnetorquer

Unit 2

- Sun Sensor-2
- GPS Antenna-2
- BUS

Unit 5

- UHF/VHF Antenna-1
- GPS-2, Clock-2, Control
- NanoMind CPU
- S-Band Transmitter
- 3x Comm UHF/VHF

Unit 6

- Payload
- Battery Stack

