



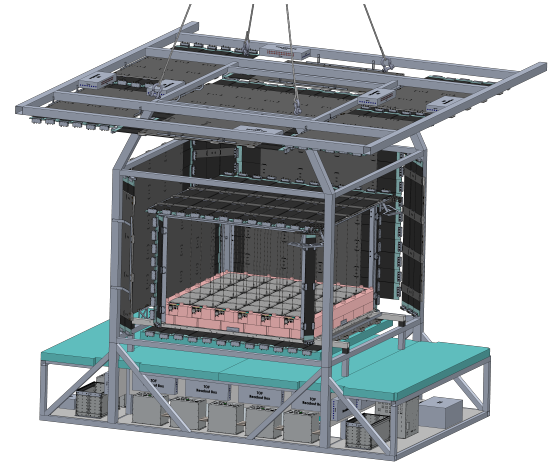
The GAPS Instrument: A Large Area Time of Flight and High Resolution Exotic Atom Spectrometer for Cosmic Antinuclei

S. Quinn¹ on behalf of the [GAPS Collaboration](#)^a

¹Department of Physics & Astronomy, University of California, Los Angeles, CA, USA

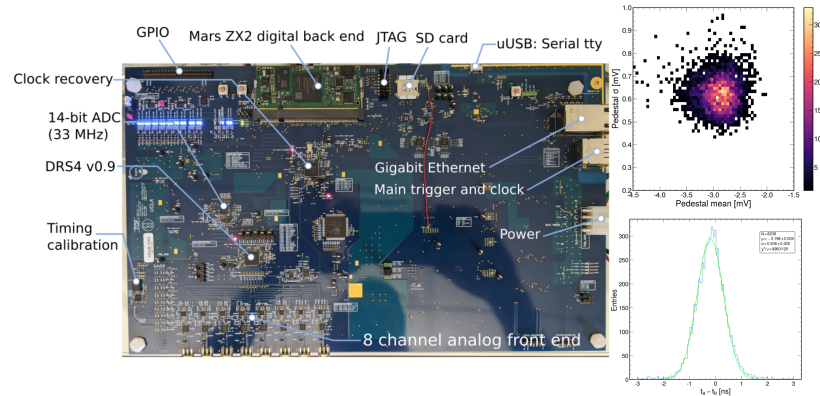
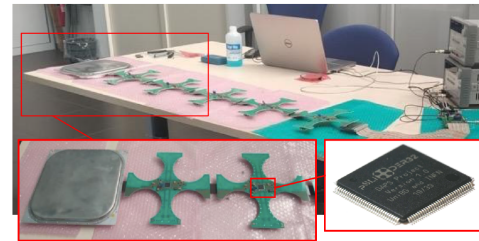
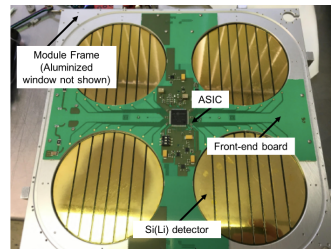
Overview

- GAPS=General Antiparticle Spectrometer
- Balloon experiment sensitive to 100-300 MeV/n \bar{p}, \bar{d}
- Time of flight + Si(Li) silicon tracker
- \bar{d} : clean channel for indirect DM
- He sensitivity for supplemental cross-check with other experiments



Construction progress

- Hundreds of Si(Li) detectors produced, tested, calibrated
- 48 time of flight counters assembled, tested
- Tracker ASIC prototypes tested, die fab in progress
- TOF DRS4 readout board prototypes tested, validated
- Thermal system completed test flight demonstrating keyfunctionality



Conclusion and outlook

- GAPS to deliver unprecedented \bar{d} sensitivity
- Extending \bar{p} to new kinematic range
- Small scale prototype integration: Bates Lab, Nov. 2021

