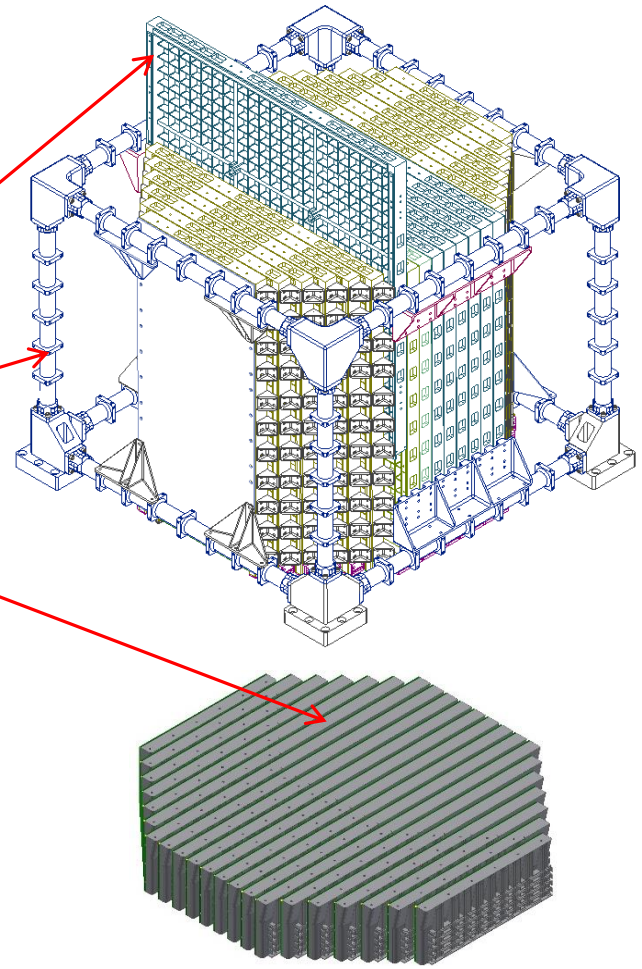
CALO

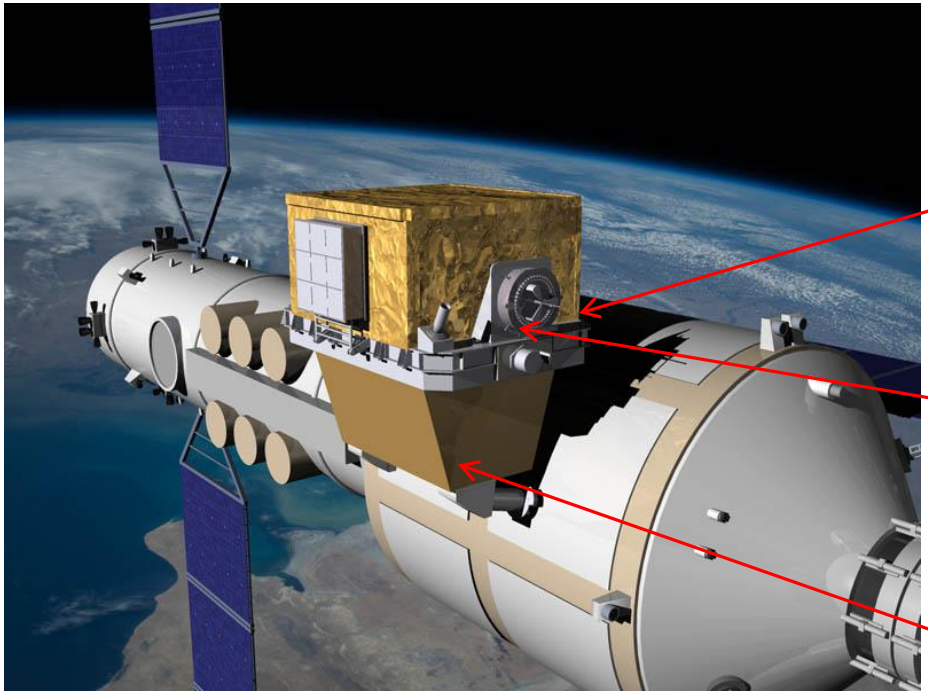
- Expected 1850 kg

CALO	Mass(kg)
7497 LYSO Crystals	1467.5
WLSF&PD&Glue	42.0
Crystal panel	170.0
Support Frame	40.0
Fiber&FEE panel	100.0
IsCMOS Camera	50.0
Trigger	20.0
PD EBOX	20.0
SUM	1909.5



General structure(1)

- The HERD general structure includes
  - Supporting structures, adapters, launching & transportation & installation interfaces, thermal control, general electronics, etc.



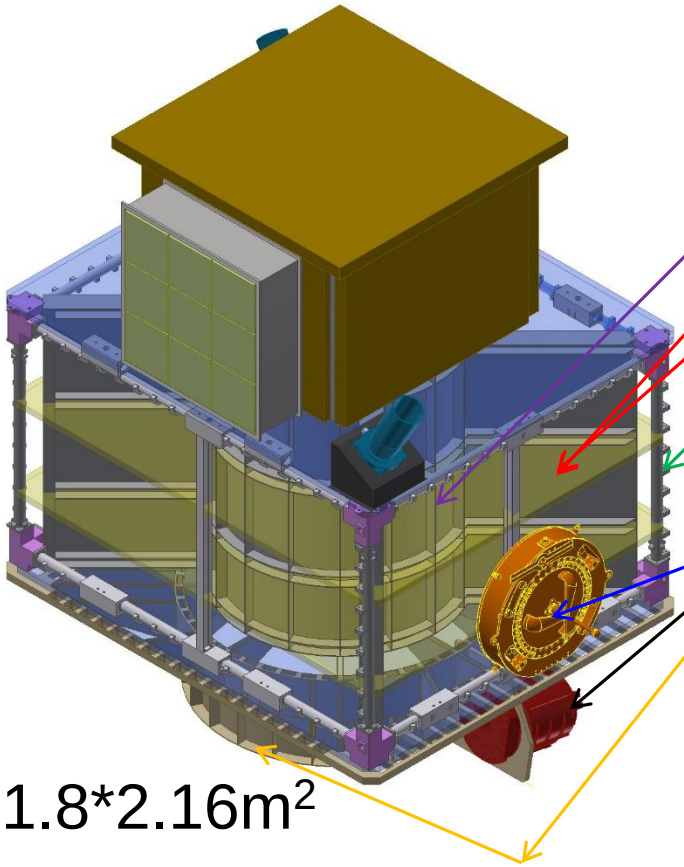
•CALO bottom on top of EM I

•Adapter to Robotic arm may be removed

•Resistance to docking shocks

General structure(2)

- Expected 600 kg



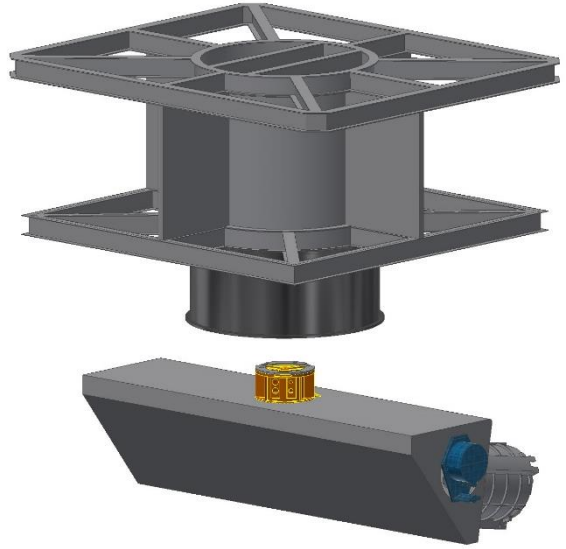
1.8*2.16m^2

HERD GENERAL	Mass(kg)
Main bearing cylinder	85.0
Carbon Sheet of panel	81.3
Honeycomb of panel	35.9
Supporting Frame	66.0
Metal parts	30.0
Docking ring	100.0
Adapter to platform	100.0
Adapter to Robotic arm	10.0
Fasteners	50.0
Thermal Control	100.0
General Electronics	30.0
Star Tracker	10.0
Cable	20.0
HERD GENERAL SUM	718.1

- For a satellite: $\frac{Mass\ of\ thermal\ system}{Total\ mass}$ = 3-5%
- For HERD, heat dissipation is done by heat exchange between thermal pipes of detectors & CSS.

General structure(3)

- Alternative design of the general structure
- Two separated parts including a bridge & a common structure)
  - The installation of the bridge on the two adjacent PORTS is more feasible
  - Change of weight is still unknown.
  - Working together with CSU on the proposal now…



TRD

- Expected 150 kg
- 3*3 detection units
- Effective area ~2700 cm^2