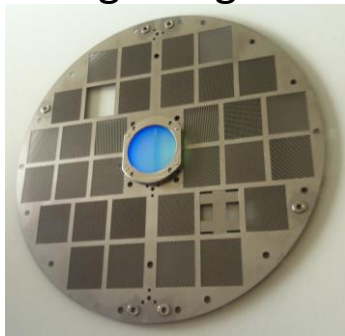


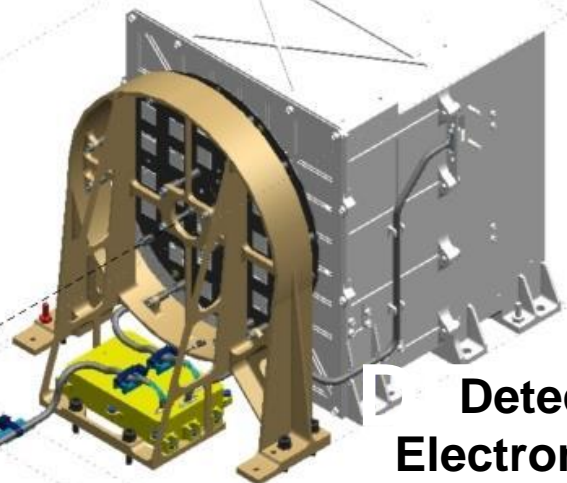
STIX: HXR imaging spectrometer on Solar Orbiter



Tungsten grids



Set of tungsten grids separated by 55 cm

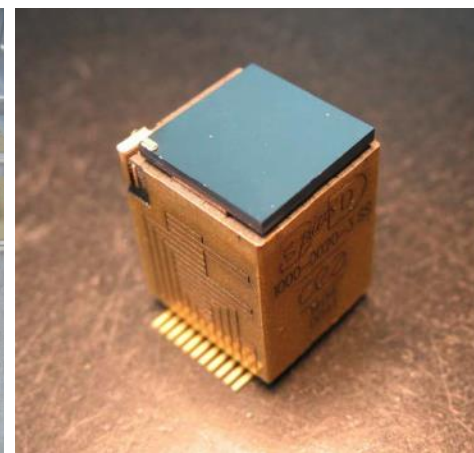
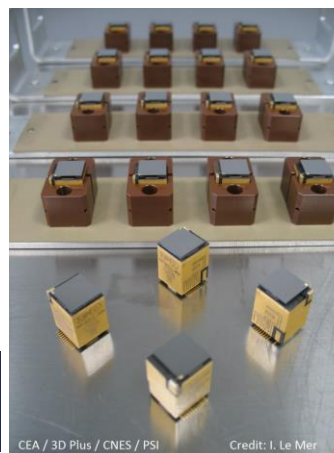


Detector Electronics Module with 32 detectors

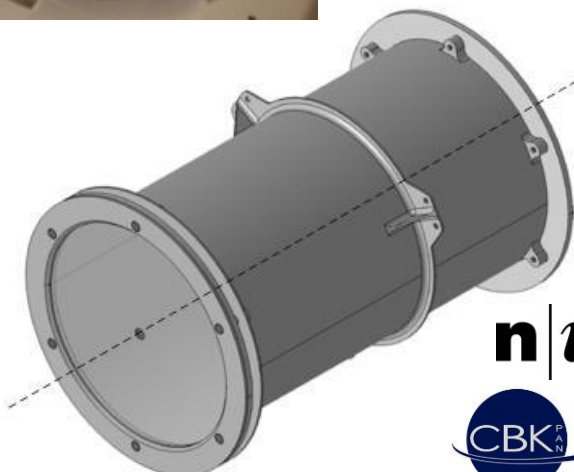
Beryllium window



CdTe detectors (Caliste SO)



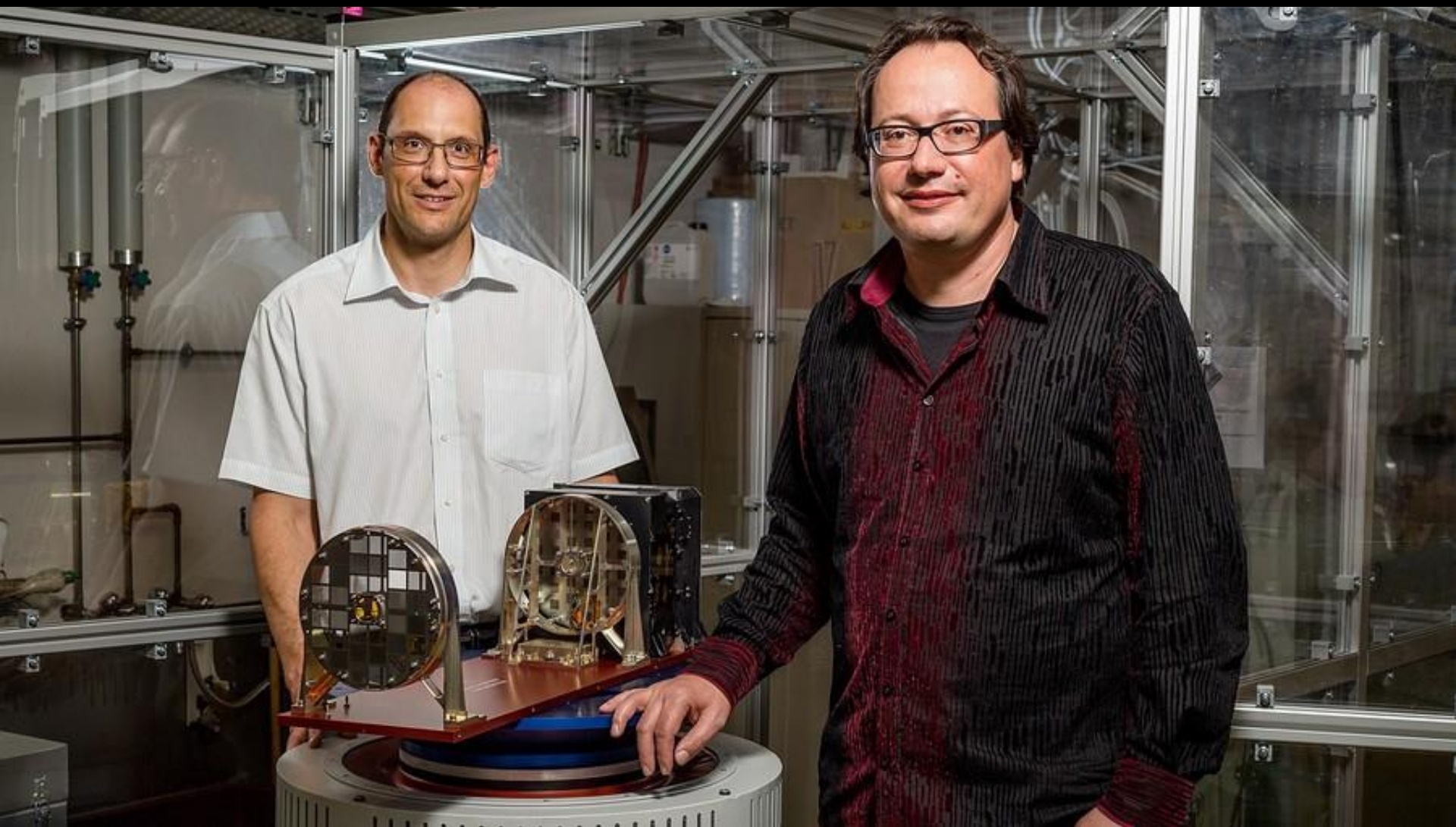
CEA / 3D Plus / CNES / PSI Credit: I. Le Mer



X-ray windows and feed-through in heat shield

n|w University of Applied Sciences Northwestern Switzerland



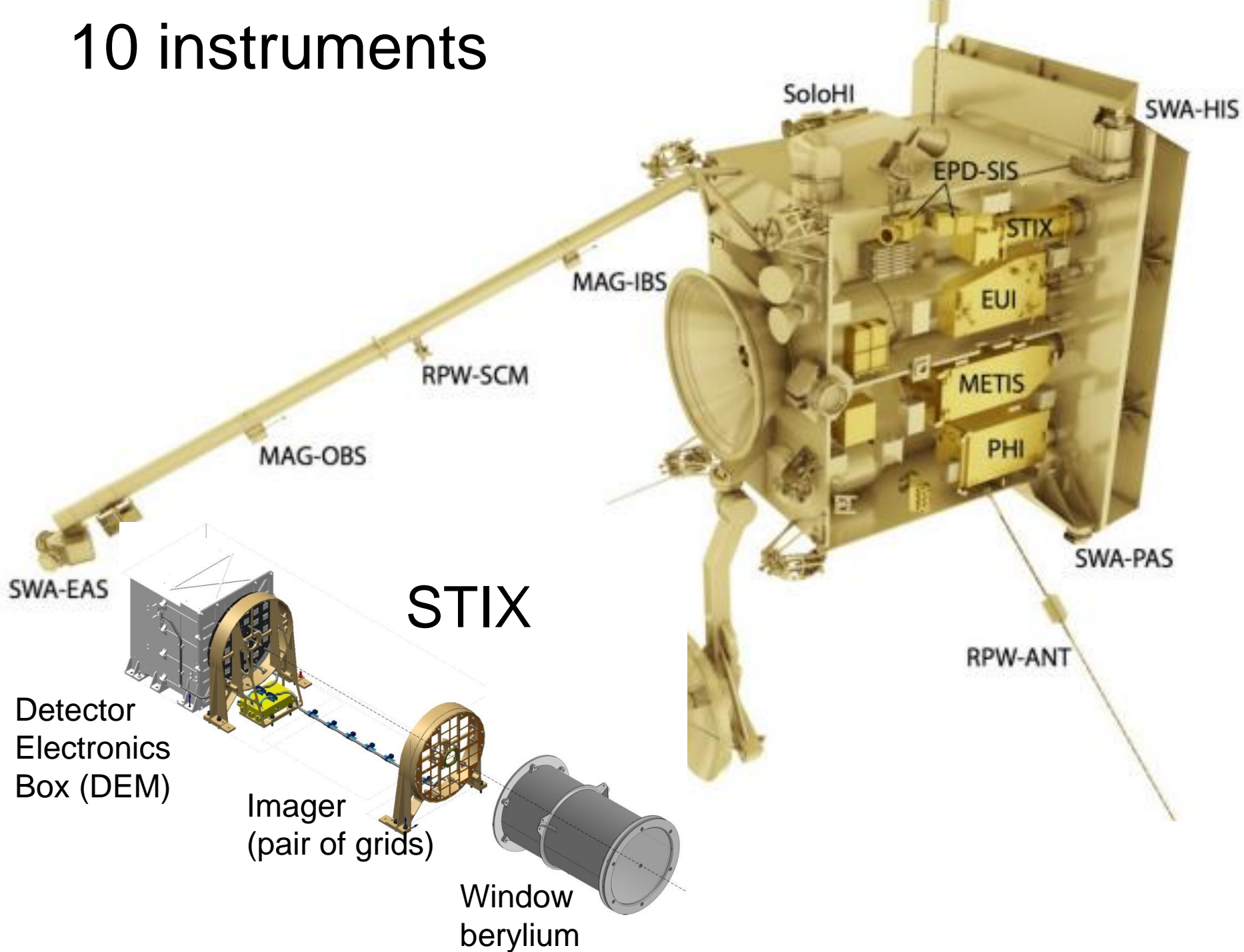


Solar Orbiter

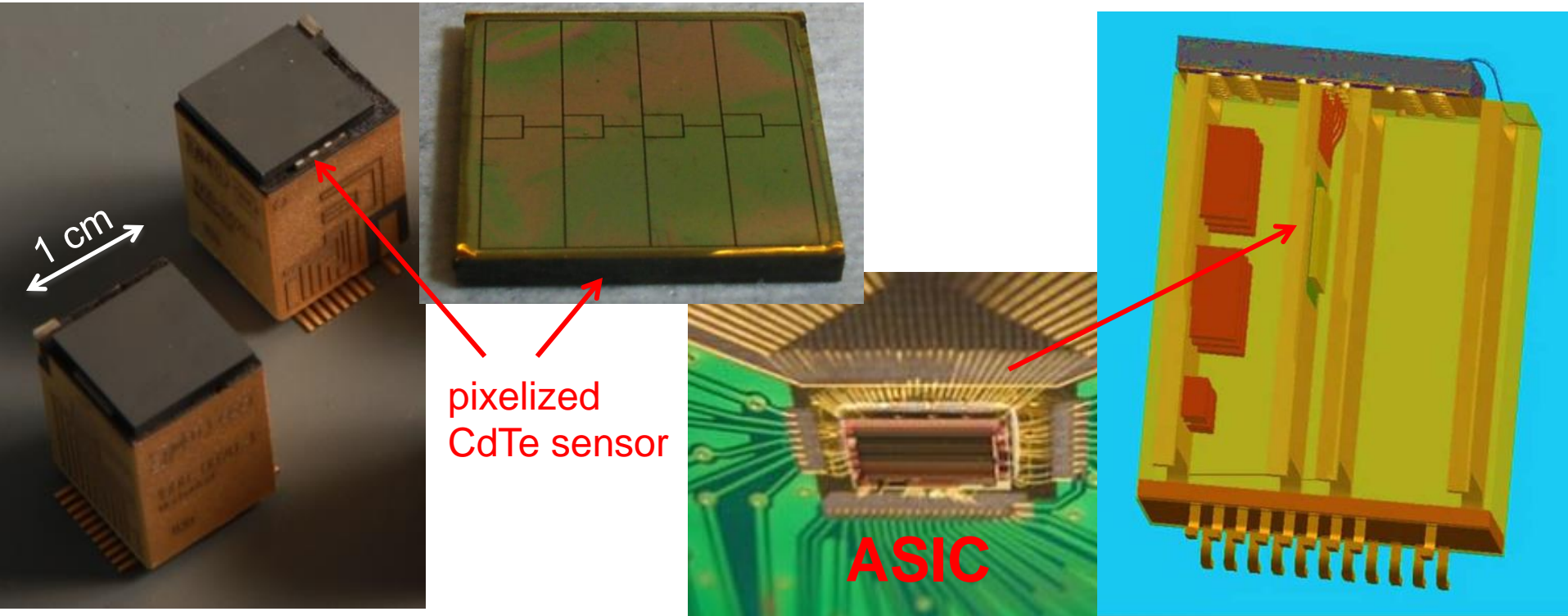
Exploring the Sun-heliosphere connection



10 instruments



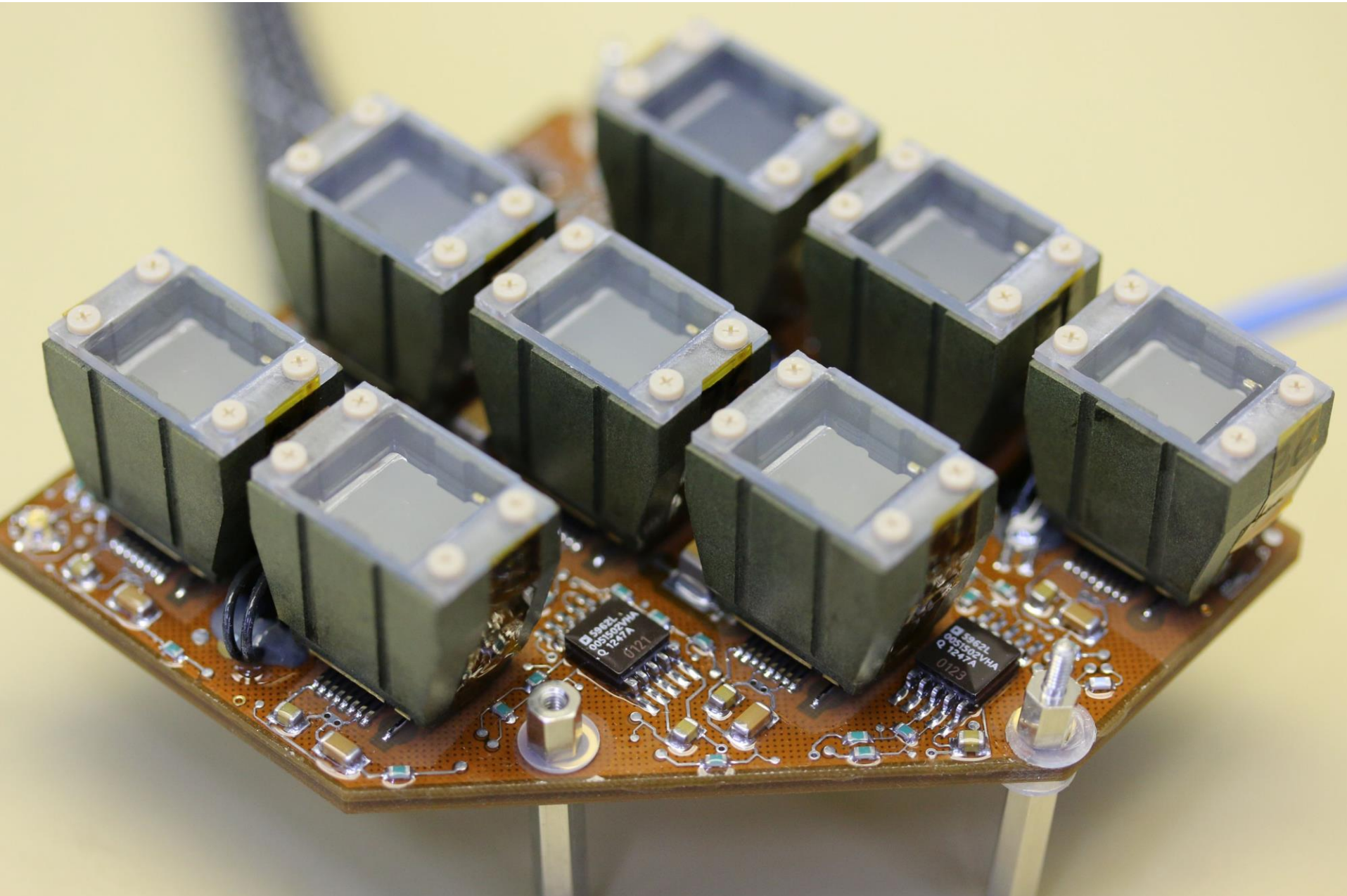
STIX detectors



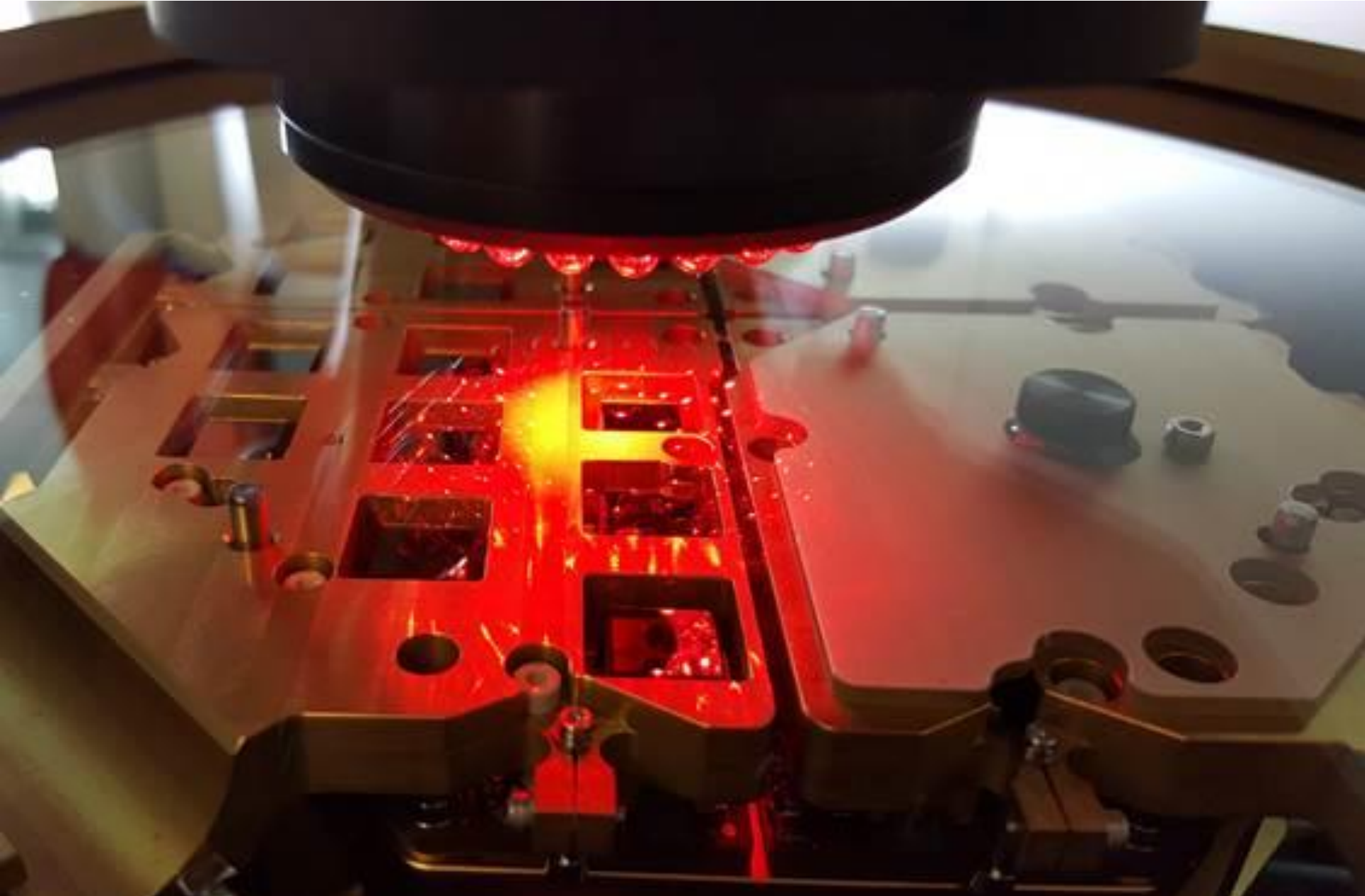
- ASIC from CEA, France (develop for later cancelled Simbol-X mission, O. Limousin)
- CdTe crystals from Arcorad, Japan
- Pixel pattern: PSI/FHNW (M. Bednarzik)
- first light on January 26, 2012
- Production completed at 3Dplus, France



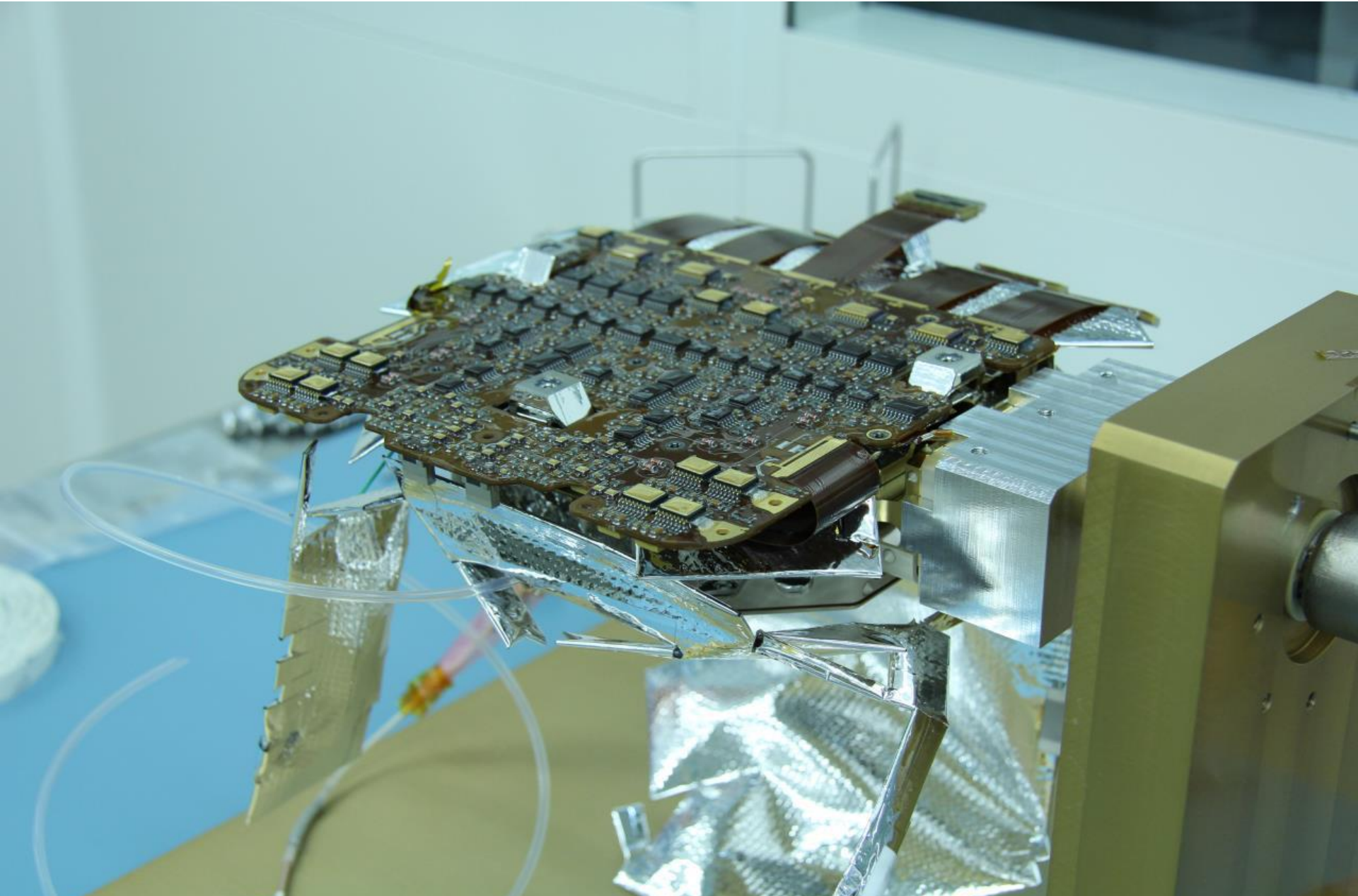
Caliste FM assembly at Syderal



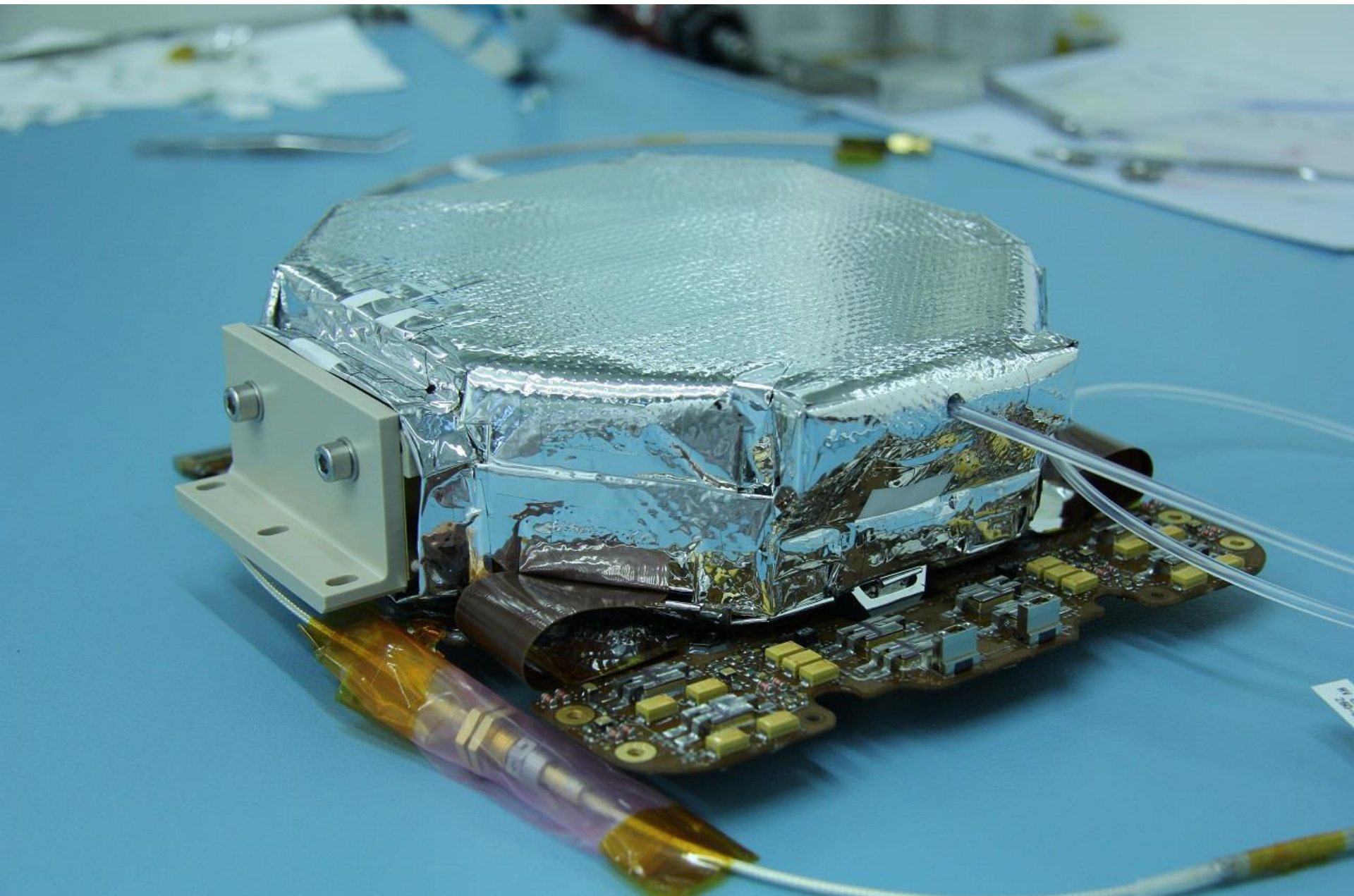
FM caliste alignment

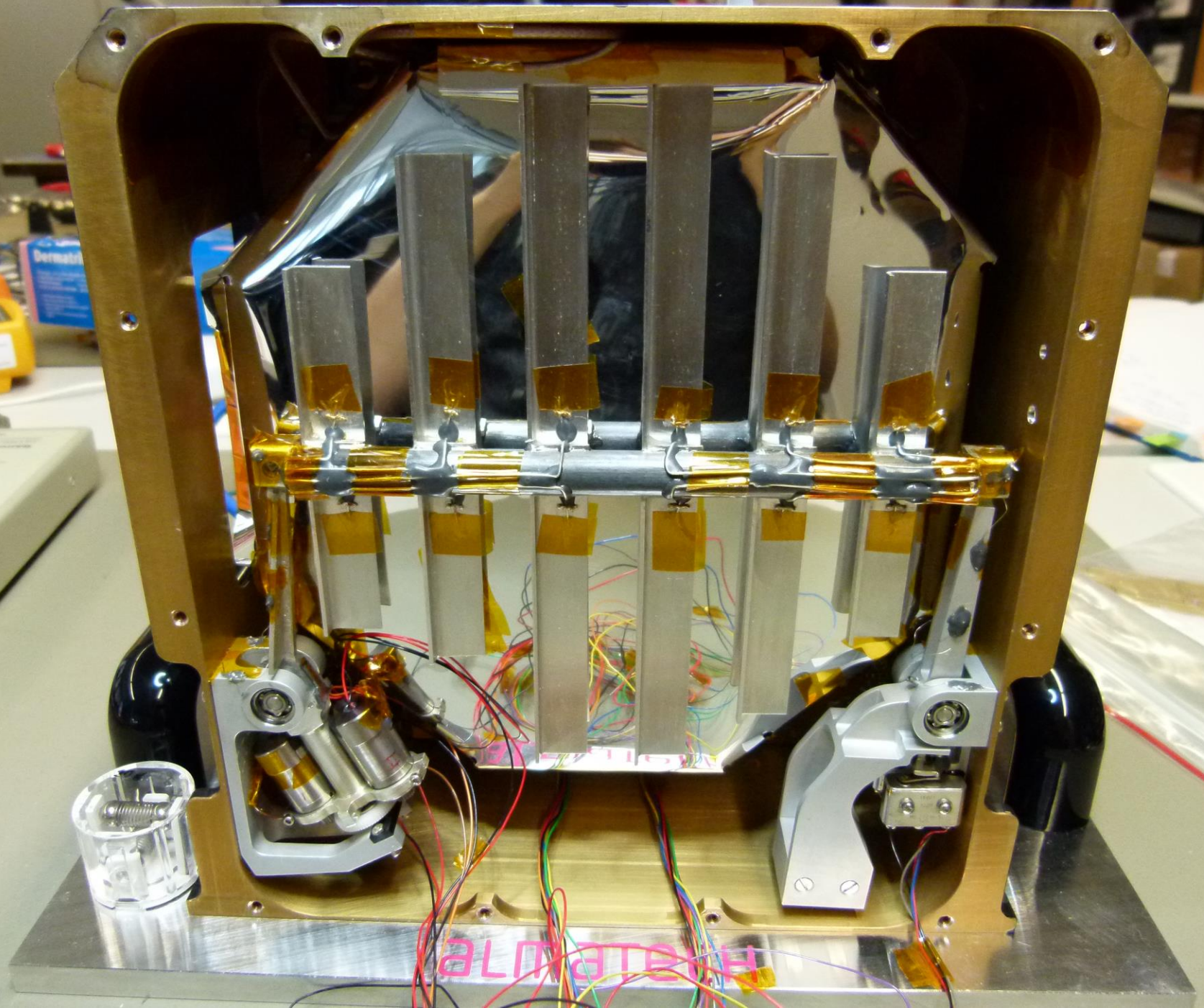


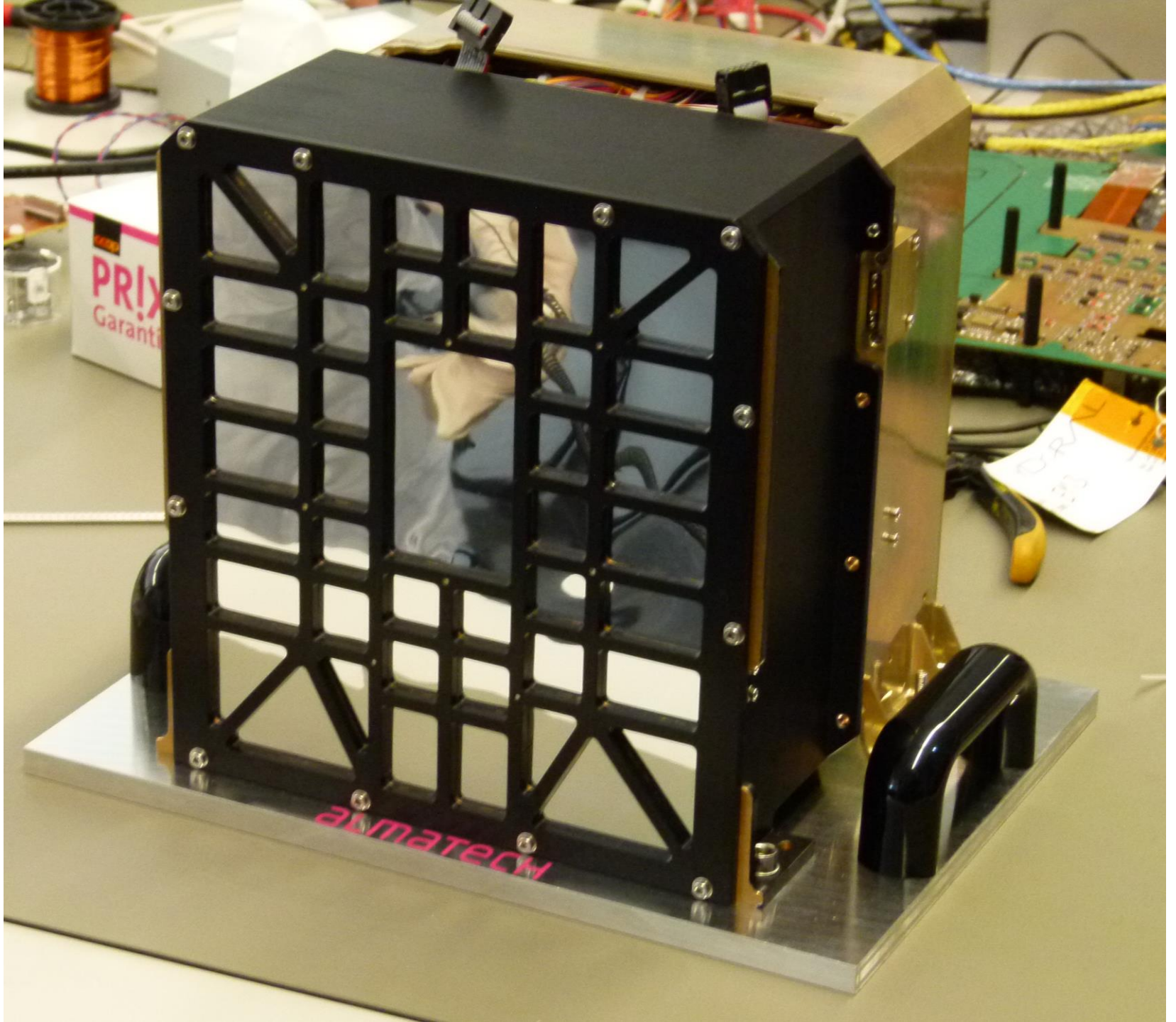
FM front end electronics assembly



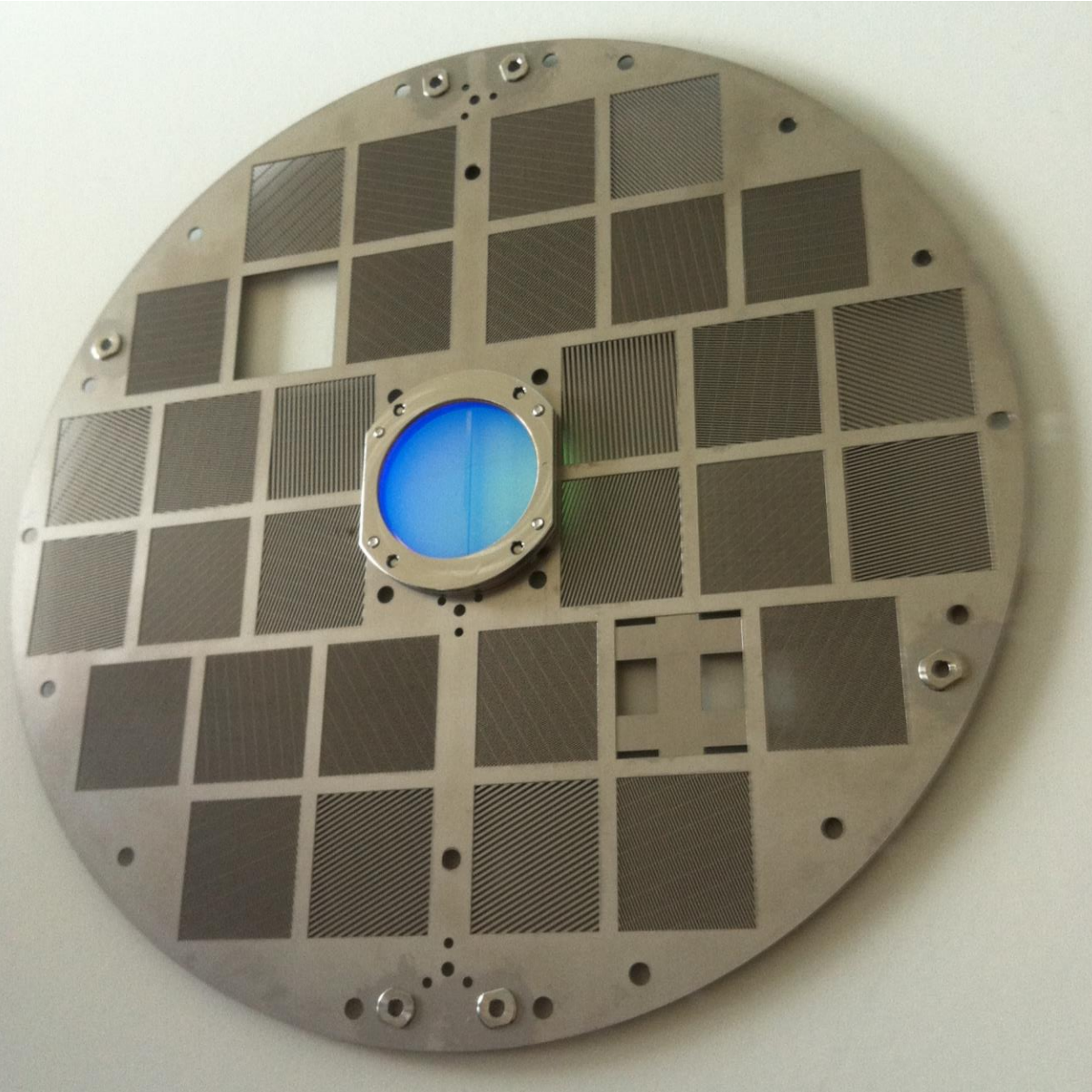
FM thermal enclosure of detectors







STIX grids (front, STM)



- Produced in the US by Mikro
- Stacked tungsten layers (RHESSI heritage), 400 microns thick
- Pitch: 0.038 to 1 mm
- Aspect lens in center

STIX grids (front, STM)

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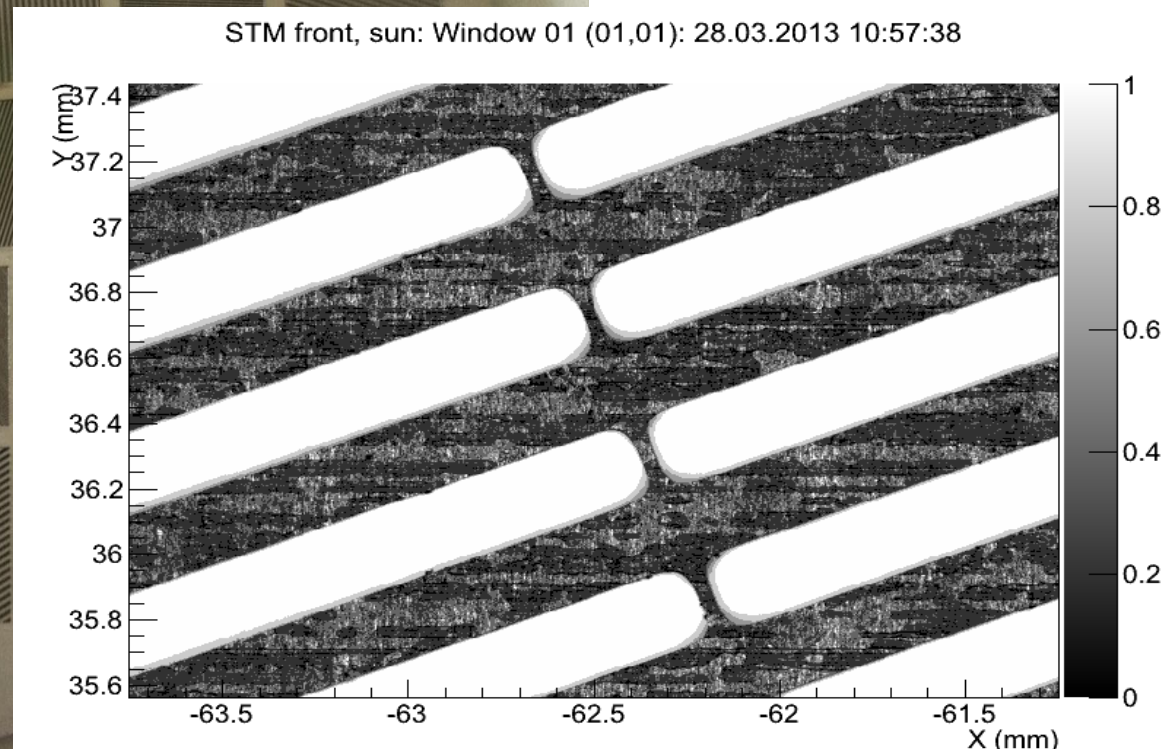
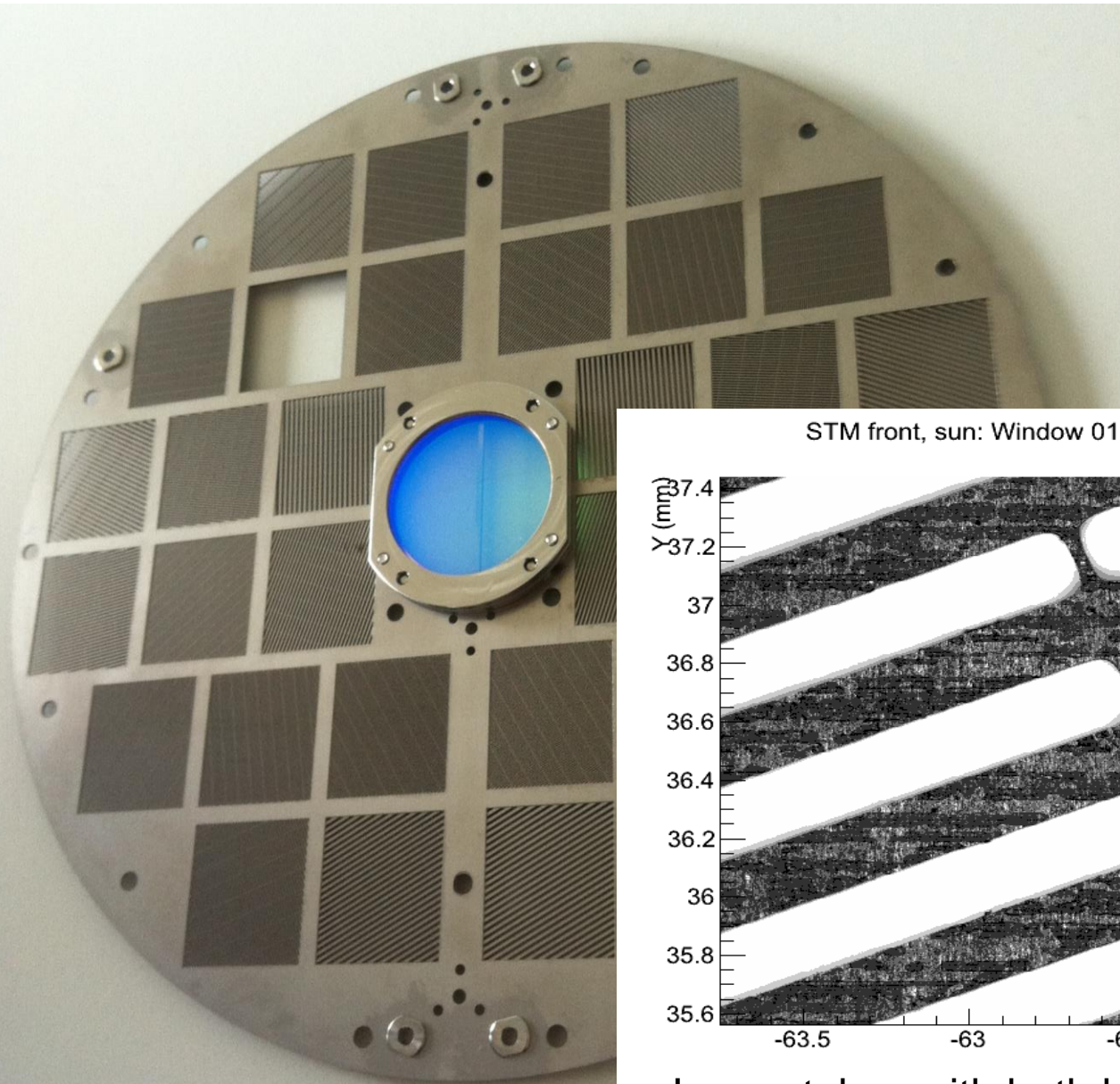
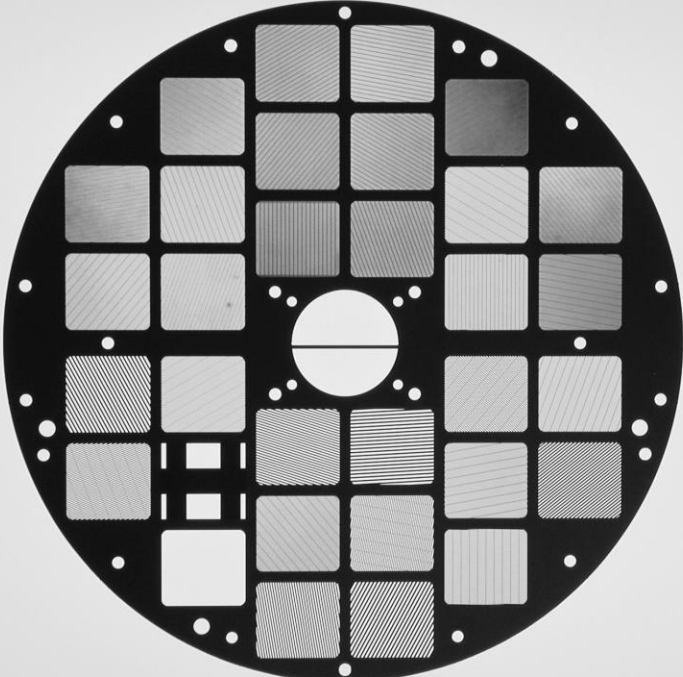
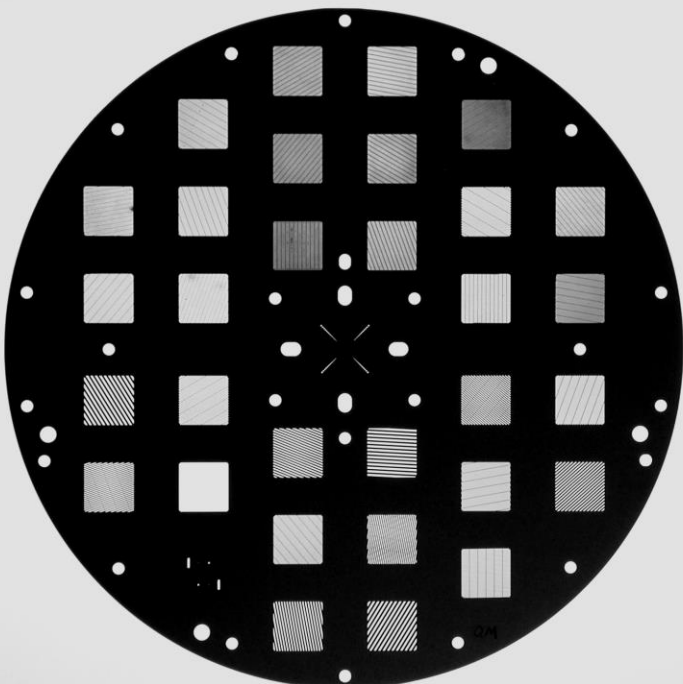
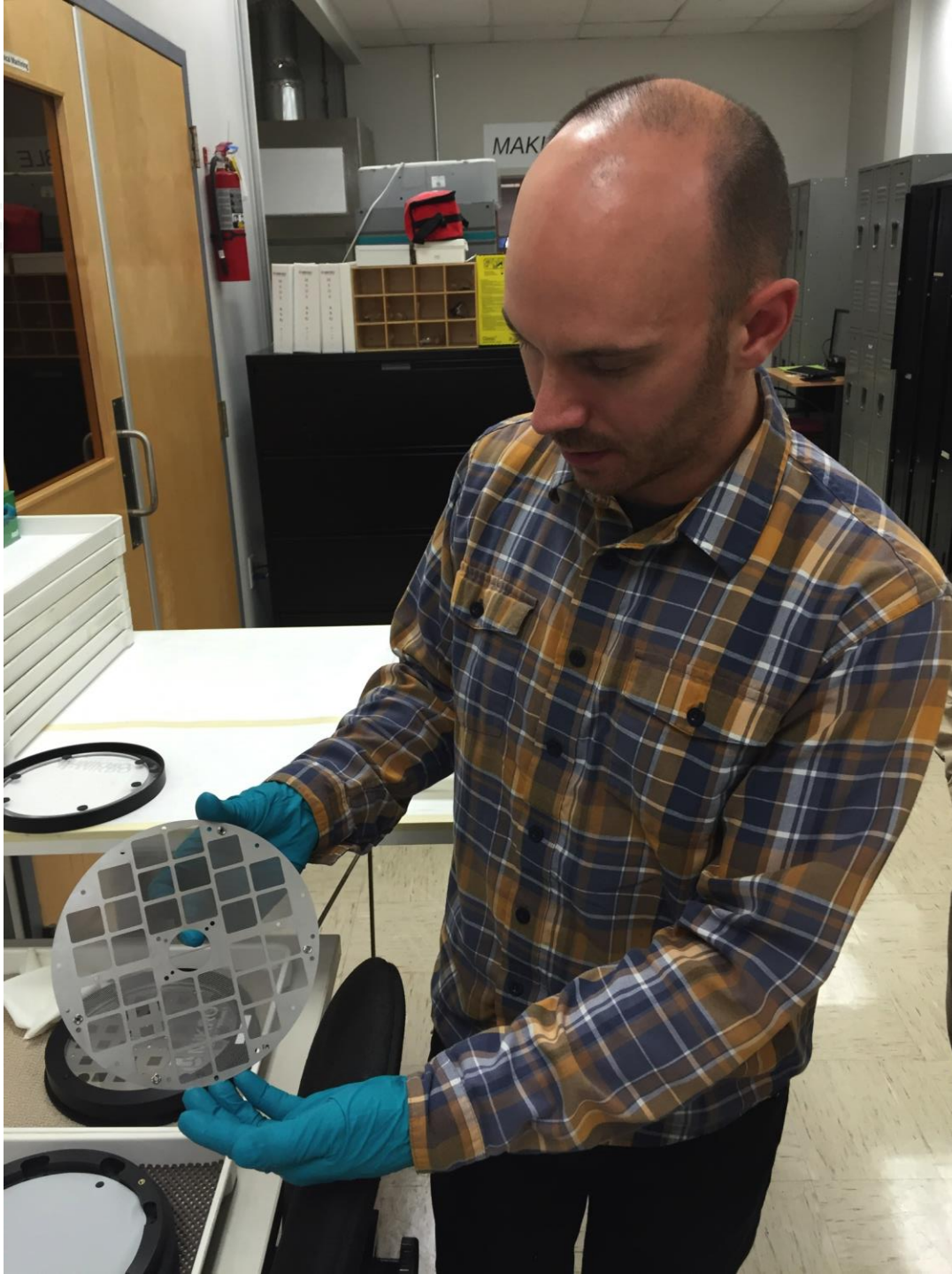
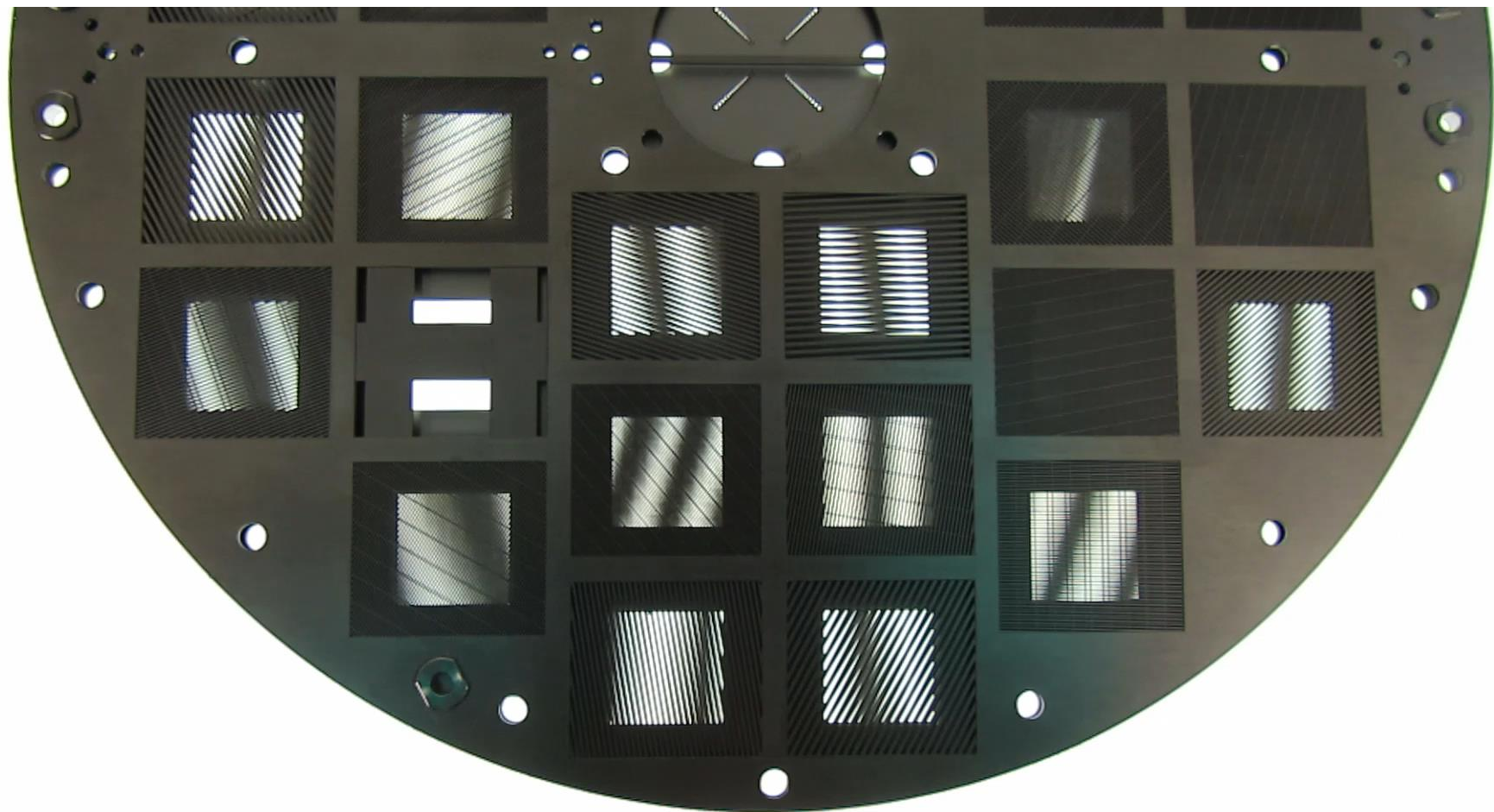


Image taken with both back and front illumination

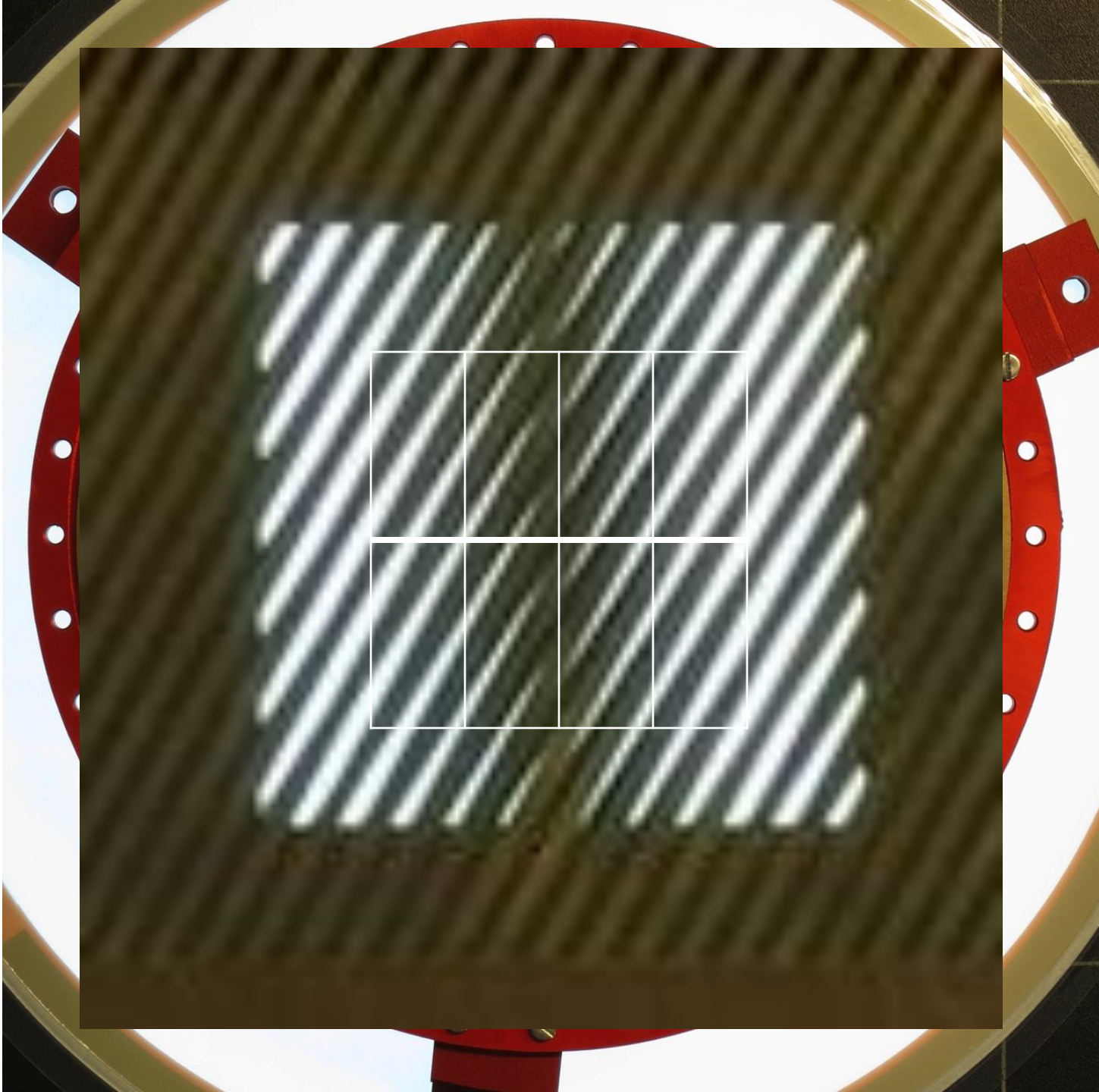


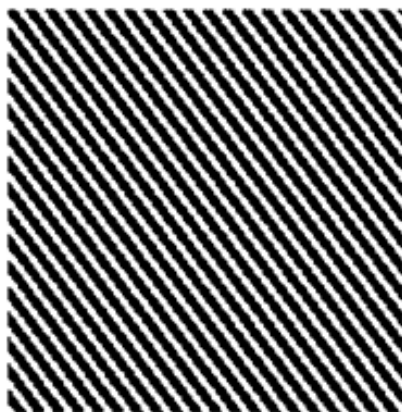
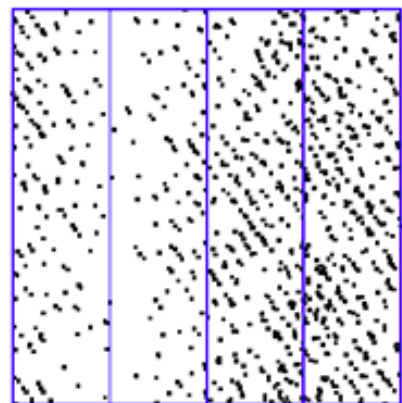
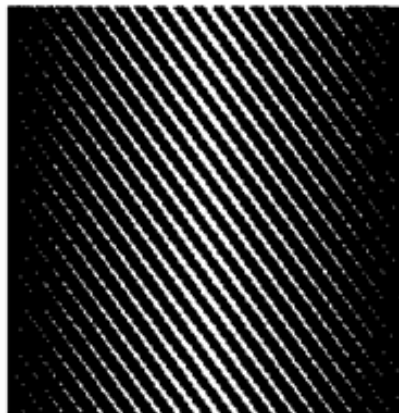
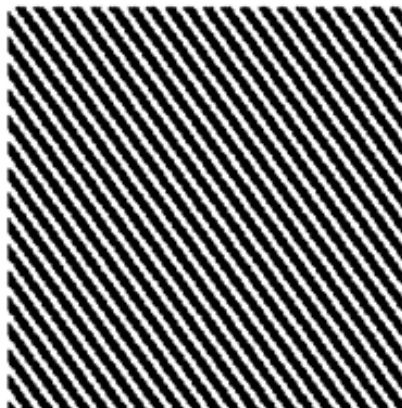
FM
tes





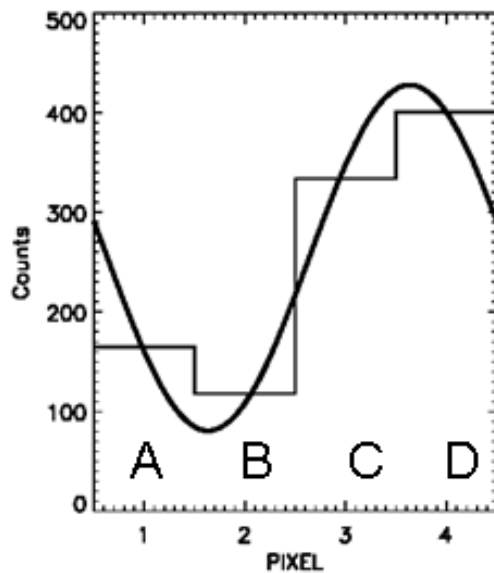






*Real (V) = C - A
 *Imag (V) = D - B
 **Flux = A+B+C+D
 **Check: A + C = B + D

* Independent of background
 **Independent of source morphology

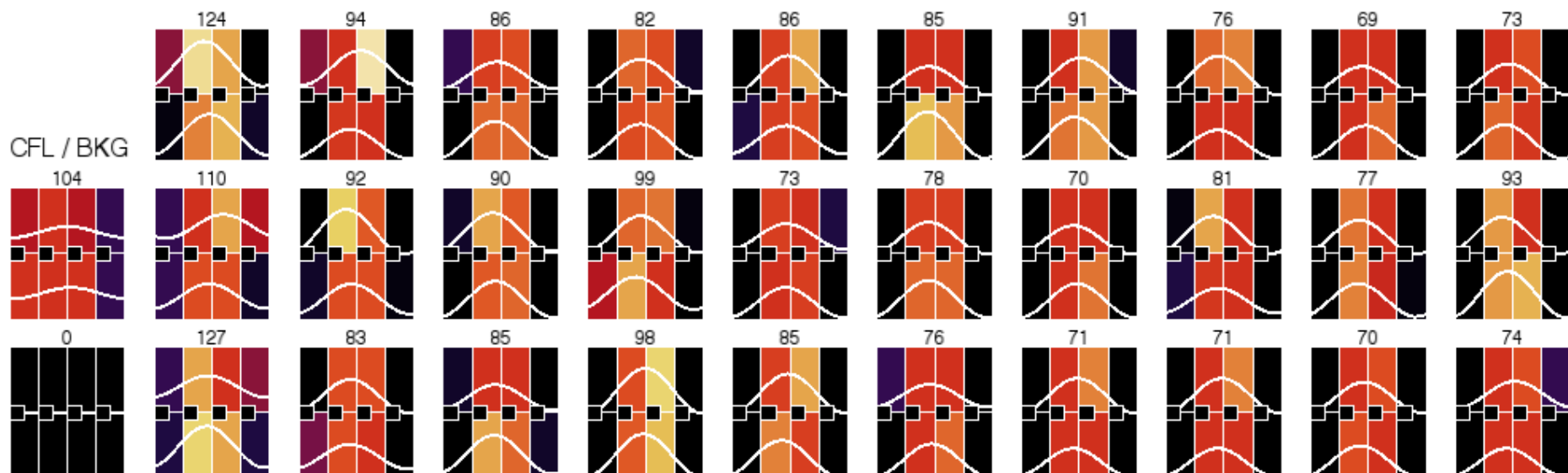
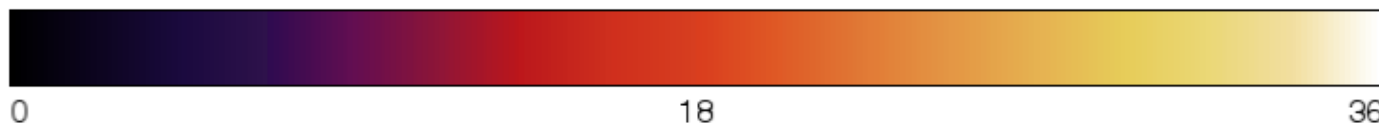


stx_pixel_data

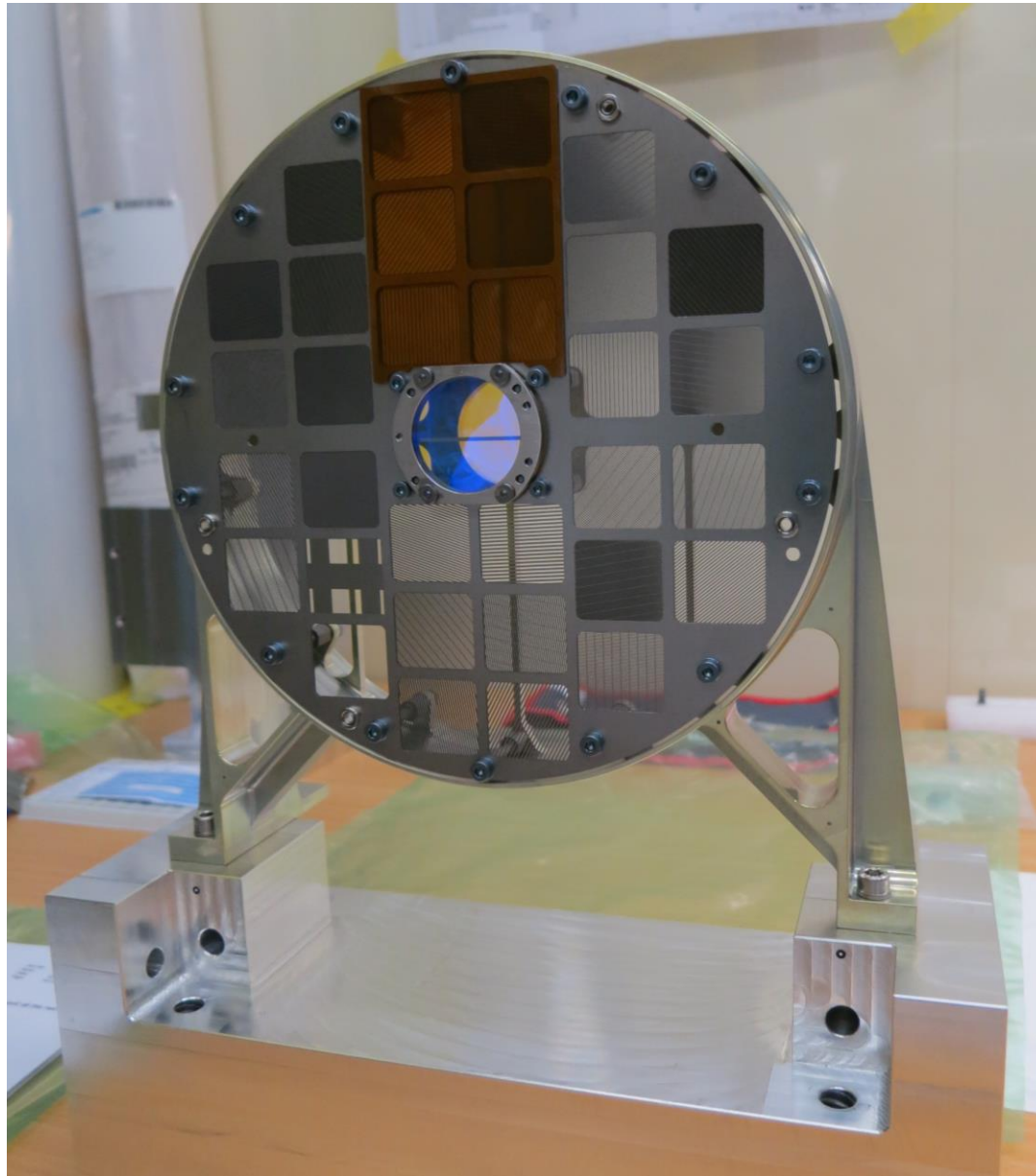
TotCount: 2569

Energy: 52.915-86.0703keV

Time: 2013/11/11 11:10:20.000 Duration: 80sec



Front twin mount design (Flight Model)



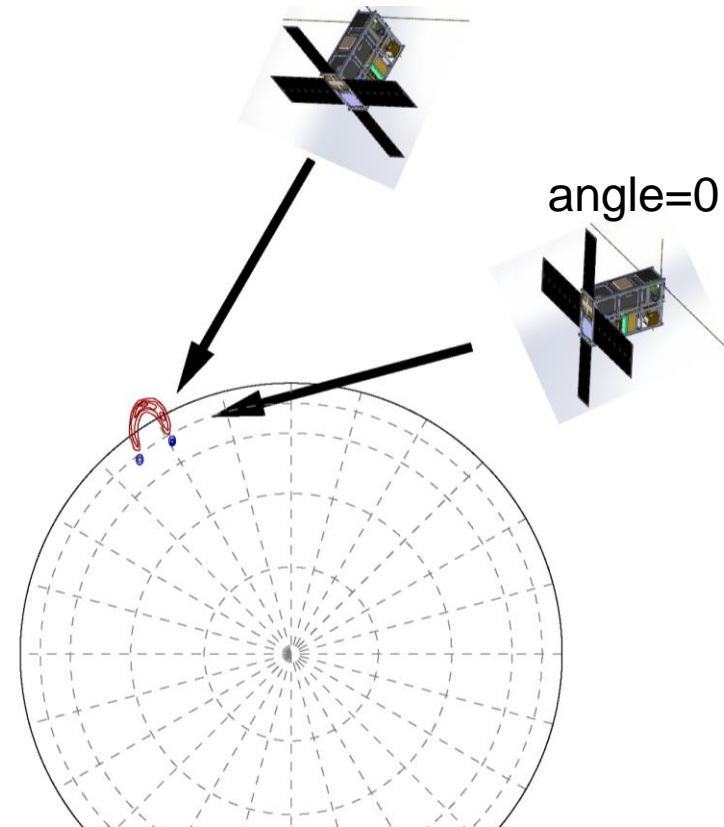
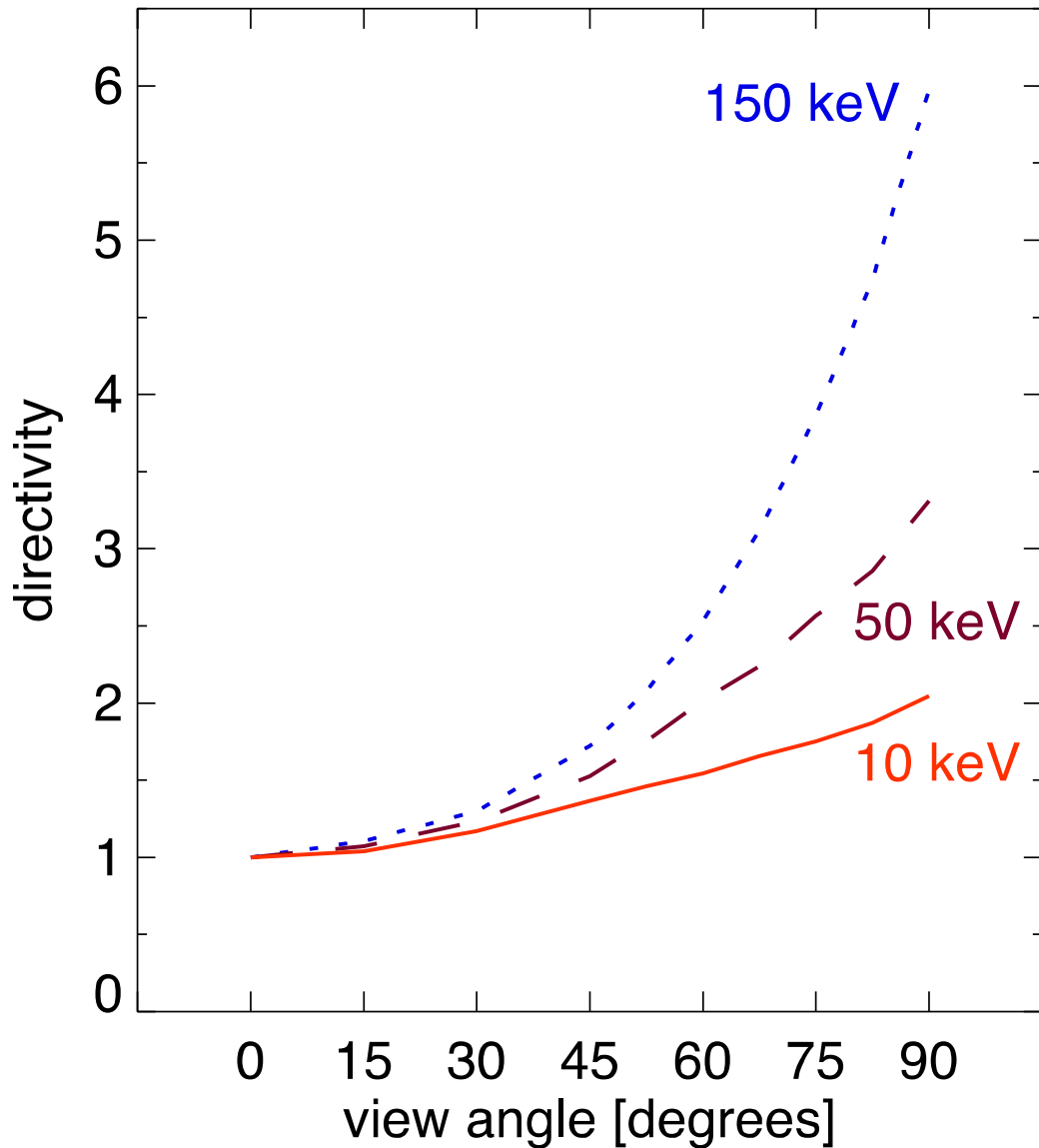
Schedule

- **STIX Preliminary Design Review (PDR): March 2012**
- **STIX Critical Design Review (CDR): June 2014**
- **Flight Model (FM) delivery: December 2016**
- **Solar Orbiter launch: October 2018**
- **~2 year cruise phase with some observations**
- **Nominal mission: 2021-2025**

Systematic stereoscopic observations

- **STIX will provide different viewing angle as seen from Earth**
- **Combined observations with hard X-ray spectrometer or imager from around Earth**
- **MiSolFa Cubsat (Diego Casadei, FHNW): Partially funded**
- **Many other candidates: Interheliozond, FOXSI, other cubsats**

MiSolFa and STIX: different view angle



MiSolFa and STIX: different view angle

on-disk observation

disk-occulted observation

