

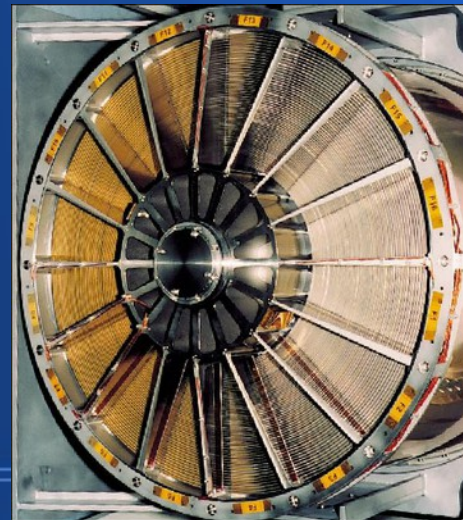
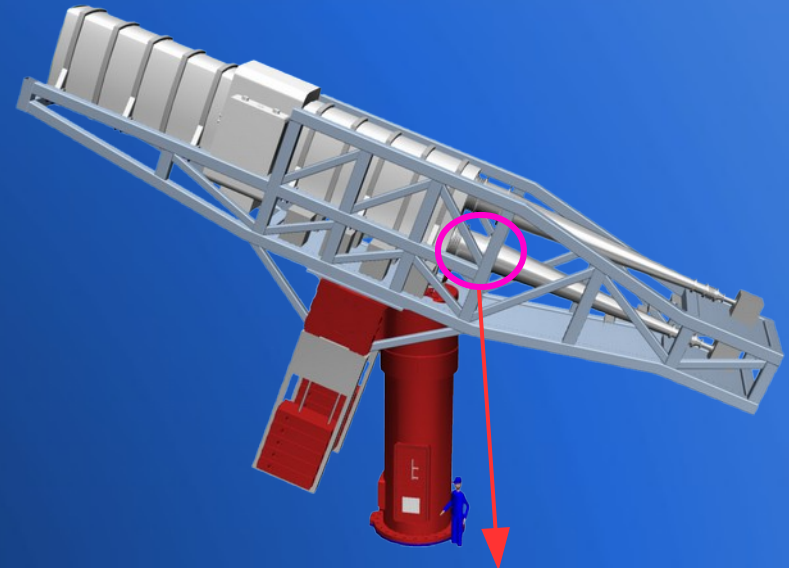
GridPix Detectors from CAST to IAXO

Patras Workshop
Freiburg 2019

Tobias Schiffer
Universität Bonn

BabyIAXO

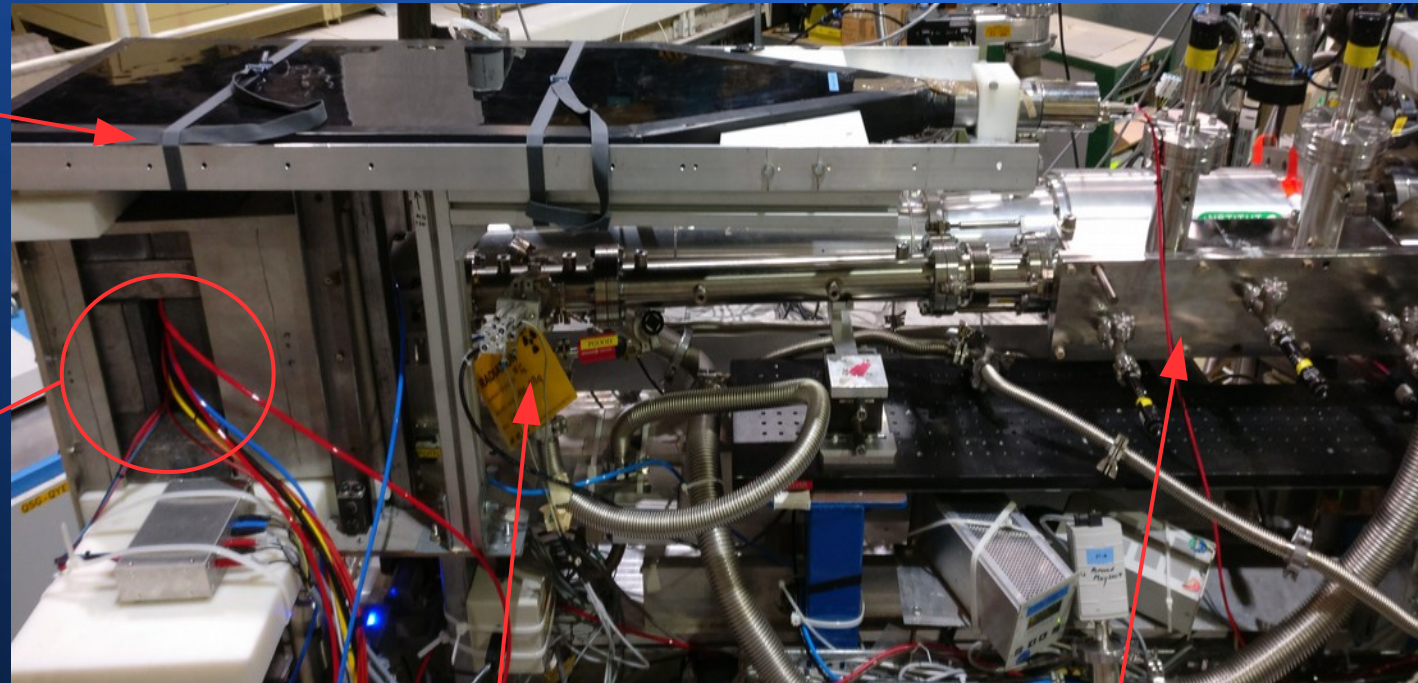
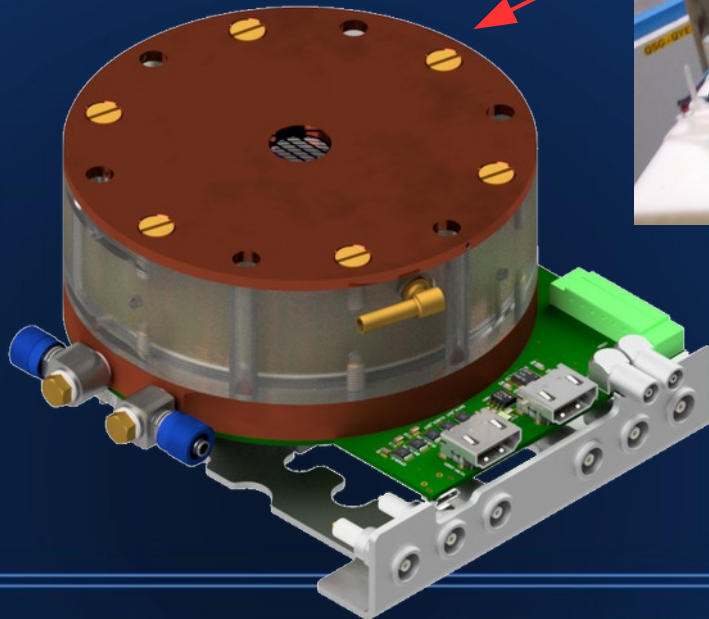
- Pathfinder for IAXO
- Two 10 m long bores
- Ability to find new physics
- Planned location: DESY
- Two X-ray telescopes
 - XMM Newton spare optic
 - IAXO prototype similar to NuSTAR optics



CAST detector

Veto scintillator

GridPix detector
inside lead shielding

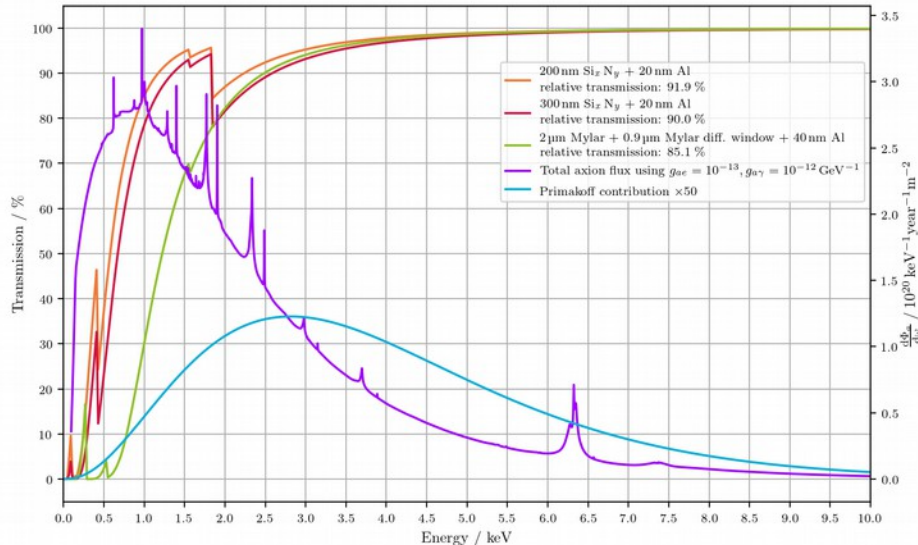


Fe55 source
for calibration

X-ray telescope

Ultra Thin 300 nm Windows

- Surviving 1.5 bar pressure difference
- High transmission
- He leak rate smaller than $8\text{e-}8$ mbar l/s
- Produced by Norcada



Towards IAXO

- Radiopurity: (Pure copper, PTFE, polyimide film, ancient lead)
- Thinner windows
- Using Timepix3 (data driven zero suppressed output, measure charge and time simultaneous)

