

5000 pixels LEKID Array for Antarctic Terahertz Telescope at 850-GHz

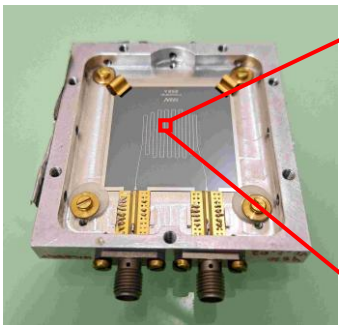
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Project : Build a 12m diameter telescope on Dome Fuji (3810m)

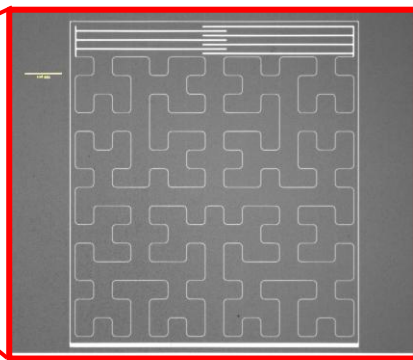
Goal : Dusty Galaxies emission surveys, temperature and redshift measure ($z = 8-7$)

➔ High resolution, high sensitivity THz imaging sensor made of Lumped Element Kinetic Inductance Detector (LEKID).

First design fabricated and tested in 2024.



V0 prototype (2024)
of 224 pixels.



1mm pitch LEKID pixel
design. Hilbert pattern
meander to absorb both
light polarization.

Sensitivity requirement validated
➔ Sensor able to measure the
expected Dome Fuji background.

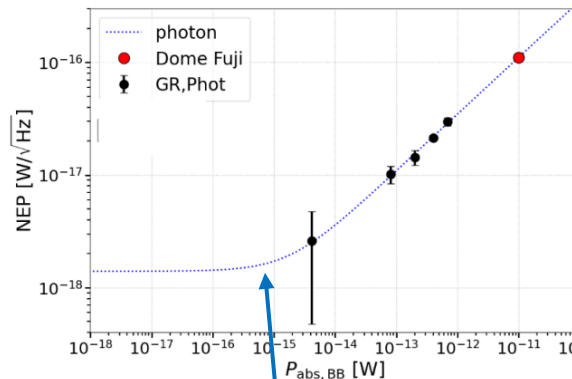
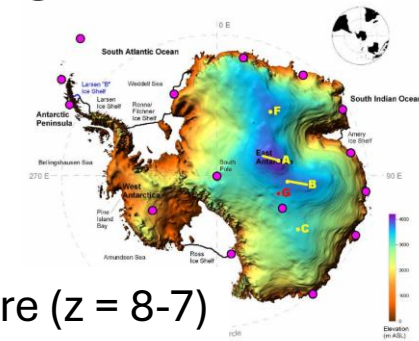
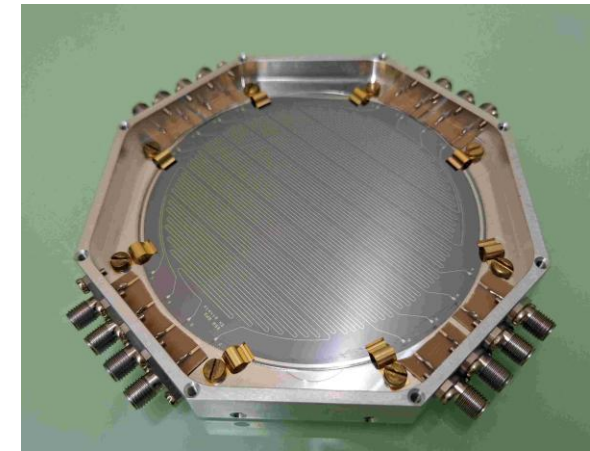


Photo-noise limited



From now on : scale up the sensor
resolution to thousands of pixels for
maximal angular resolution on sky.



New 5028 pixels array on a 4" wafer,
distributed on 8 feedlines.