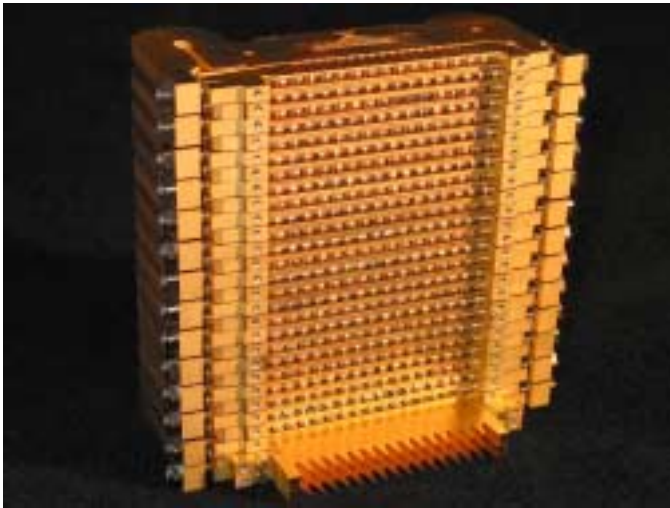


Gallium doped germanium detector arrays in a 16x25 pixel configuration will be used on two future instruments: The spectrometer of the *Photodetector Array Camera and Spectrometer* (PACS) on board the Herschel satellite and the *Field Imaging Far Infrared Line Spectrometer* (FIFI LS) on board the Stratospheric Observatory for Infrared Astronomy (SOFIA). Arrays of slightly stressed Ge:Ga detectors cover a wavelength range from 55 to 105  $\mu\text{m}$  for PACS and from 40 to 120  $\mu\text{m}$  for FIFI LS, whereas arrays of highly stressed Ge:Ga detectors cover a wavelength range from 105 to 210  $\mu\text{m}$  for PACS and 120 to 210  $\mu\text{m}$  for FIFI LS. The entire arrays consist of 25 independent modules of 16 pixels. The detector pixels are located within integrating cavities with area filling light cones. The stress is applied via a single stressing screw. A special design of the plungers between the pixels ensures both a uniform stress along the stack of 16 detector pixels and within each individual pixel. The detector arrays will be operated with cryogenic multiplexed integrating amplifier readout electronics located close to the detector modules.



27 assembled detector modules (25 modules for detector array + 2 spare modules) for the FIFI LS highly stressed Ge:Ga detector array.



Close-up view of one of the detector modules for the PACS 16x25 pixel array of highly stressed Ge:Ga detectors.

## References:

*Stressed Ge:Ga detector arrays for PACS and FIFI LS*

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*16x25 Ge:Ga detector arrays for FIFI LS*

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