



Existing fabrication facilities for PC's for imaging MCP detectors

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MCP Image Tube Processing Facilities

- Industrial

- Photonis - up to 50mm / night vision
- Photek - custom to 150mm
- Proxitronics - custom to 40mm
- Hamamatsu - mostly small format
- ITT - night vision
- American Electro-Optics - night vision
- Northrup Grumman - night vision

- Academic

- UC Berkeley - Siegmund (>120mm)
- National Lab capabilities ??
- Other ??



Industrial

- Night vision companies are essentially geared up for one product and currently very busy
- European smaller companies have varying capabilities, Photek has most experience with larger tubes.
- Hamamatsu has small MCP tubes & normally avoids devices that are not commercially viable
- Photonis has processing facilities in Lancaster PA (Planacon) capable of large tubes, mostly smaller (~40mm) devices in Roden & Brive



UC Berkeley / Siegmund

- Facilities for development and fabrication of detector systems, both open face & sealed tube
 - Photocathode development and testing
 - Microchannel plate testing
 - Readout anode design and test
 - Electronics development
 - Sealed tube production
 - Environmental testing



UCB - Facilities and Resources



- TIG welding
- Vacuum and N₂ storage
- Hi-pot, & vacuum baking stations
- Precision component cleaning station
- Plasma cleaning
- Metal electroding evaporation station
- Leak checker
- Class 100 assembly stations

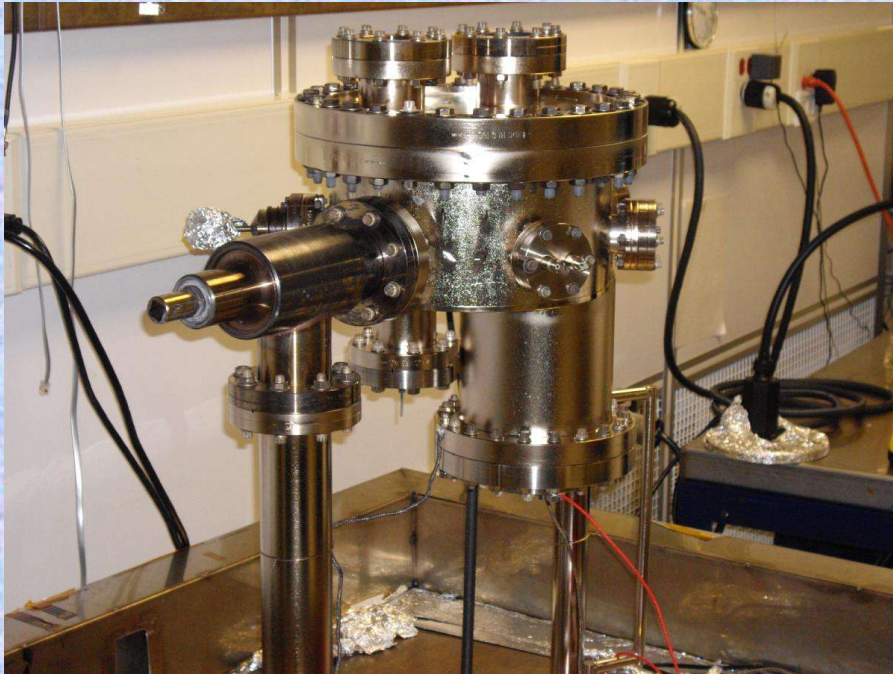
- Many steps are needed to prepare, process and seal MCP image tubes
- Of necessity this demands a series of facilities to prepare the correct materials





UHV Tube Processing Stations

Transfer type facilities with detector test capabilities



For processing and sealing
multialkali cathodes in MCP tubes



For processing and measuring
II-V cathodes with monochromator



Tube Processing Facilities

Leak Checker

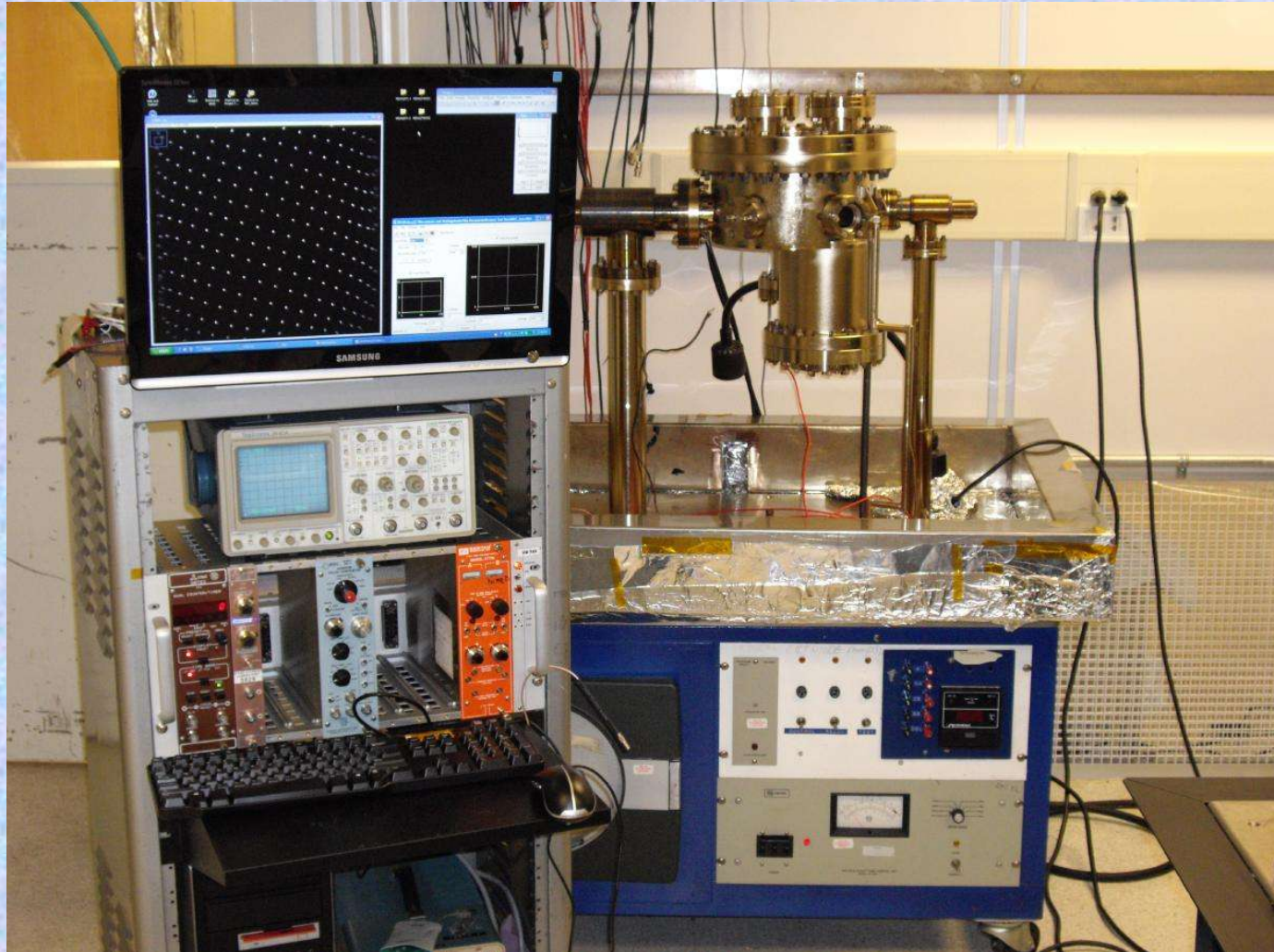


Tube facilities and oven





Detector Imaging Electronics and Diagnostics Test Equipment

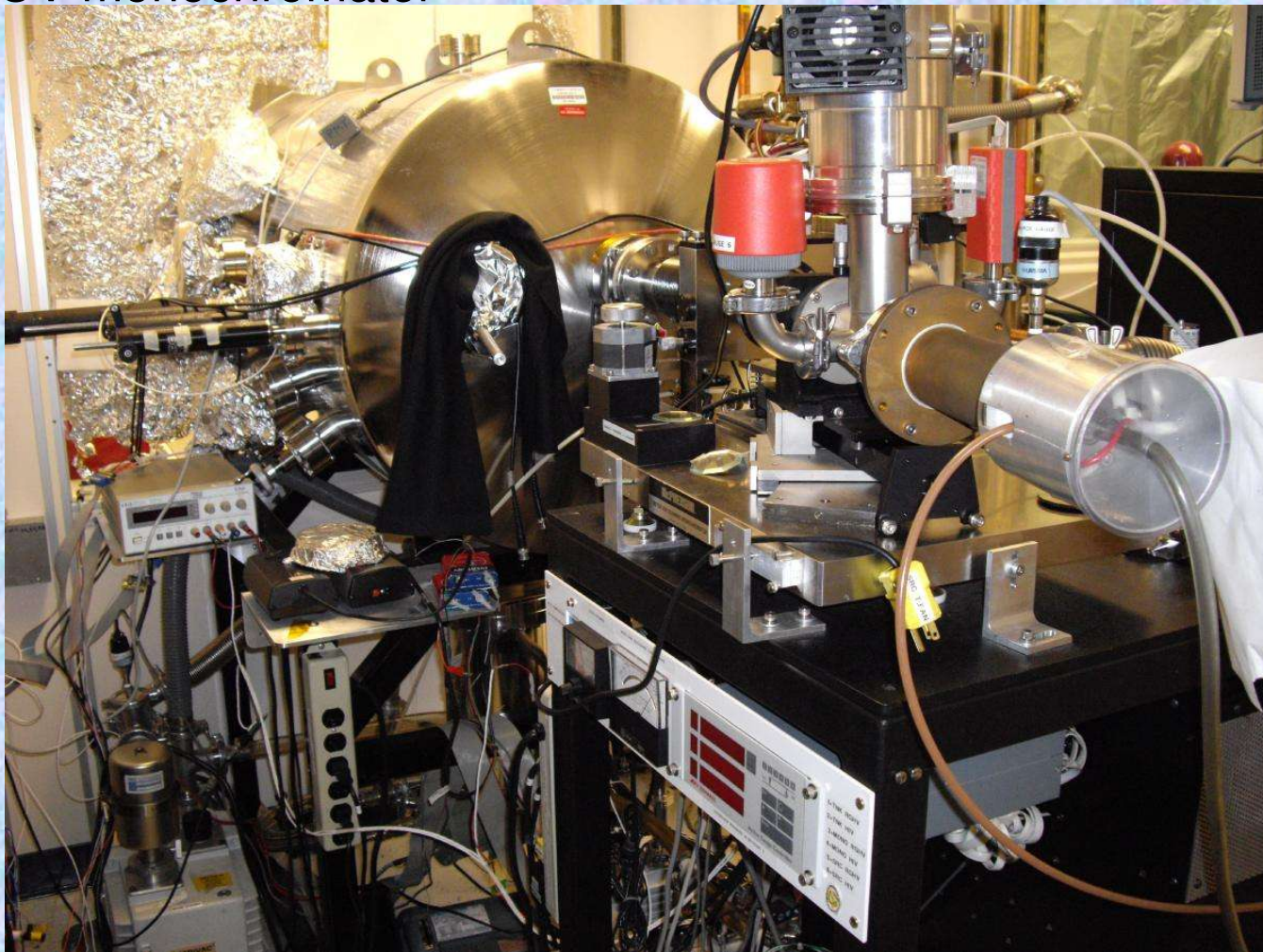




UV/X-Ray-Visible Calibration Tank

UV hollow cathode lamp / X-ray source/ visible lamps

V-UV monochromator





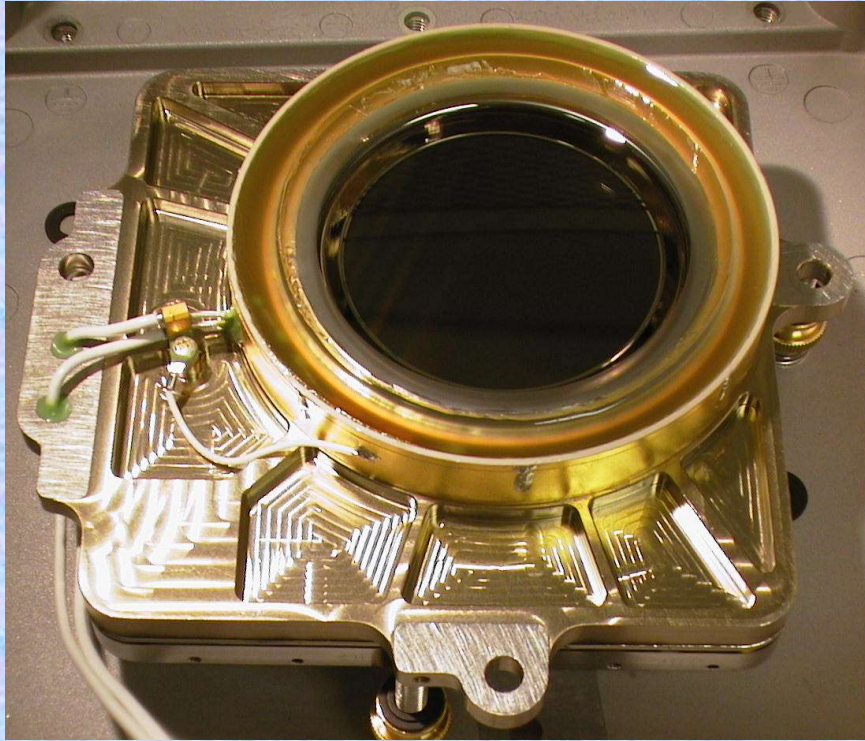
Large Sealed Tube Processing Station



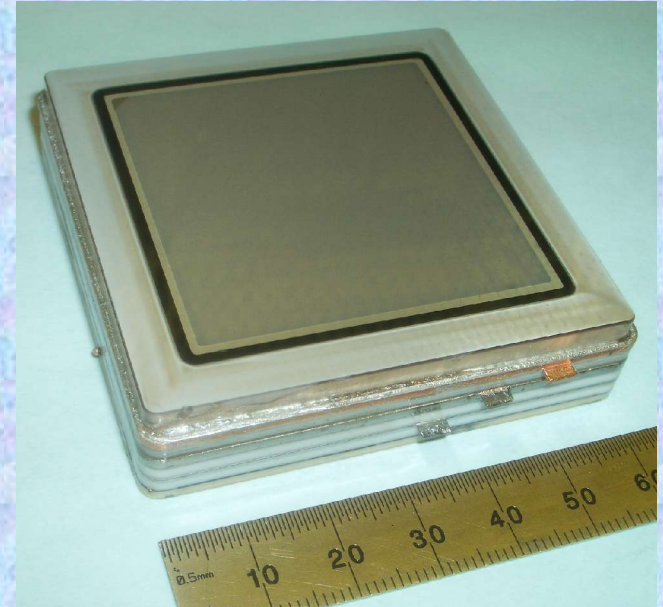
Sealed tubes with up to 5" format have been processed with multialkali photocathodes
MCPs and delay line readout



Large format Detectors



GALEX 65mm sealed tube
with cross delay line readout



"PLANACON" type with strip anode

