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Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

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***Electron Irradiation
Facilities***

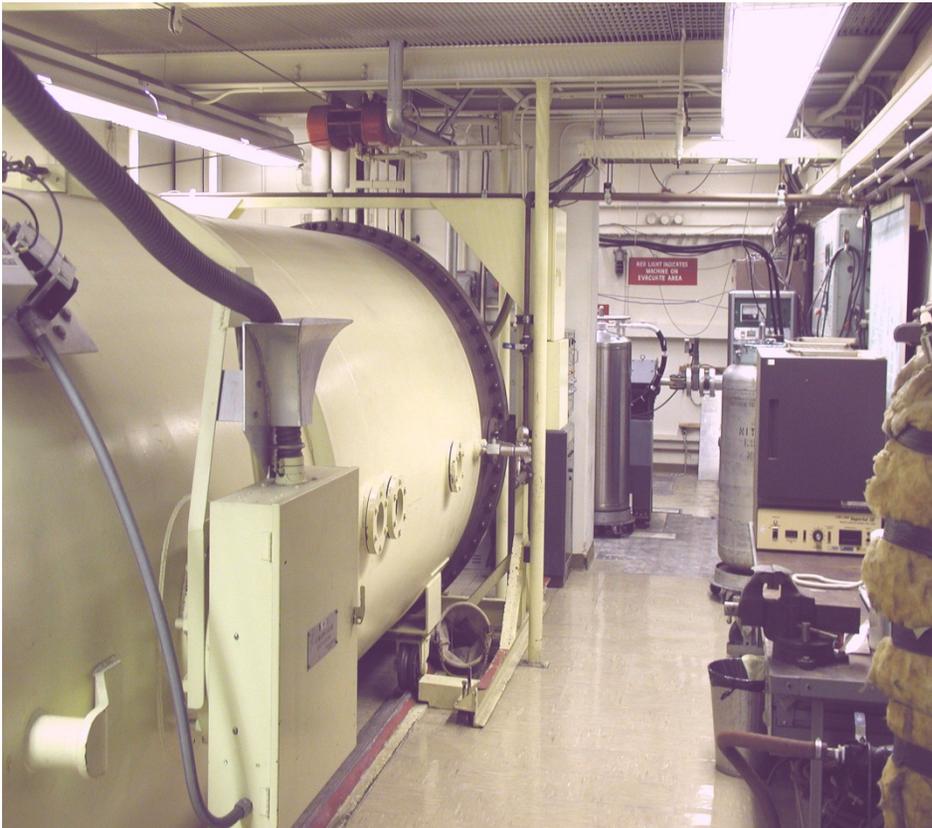


ELECTRON BEAM IRRADIATION FACILITIES

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JPL DYNAMITRON ACCELERATOR

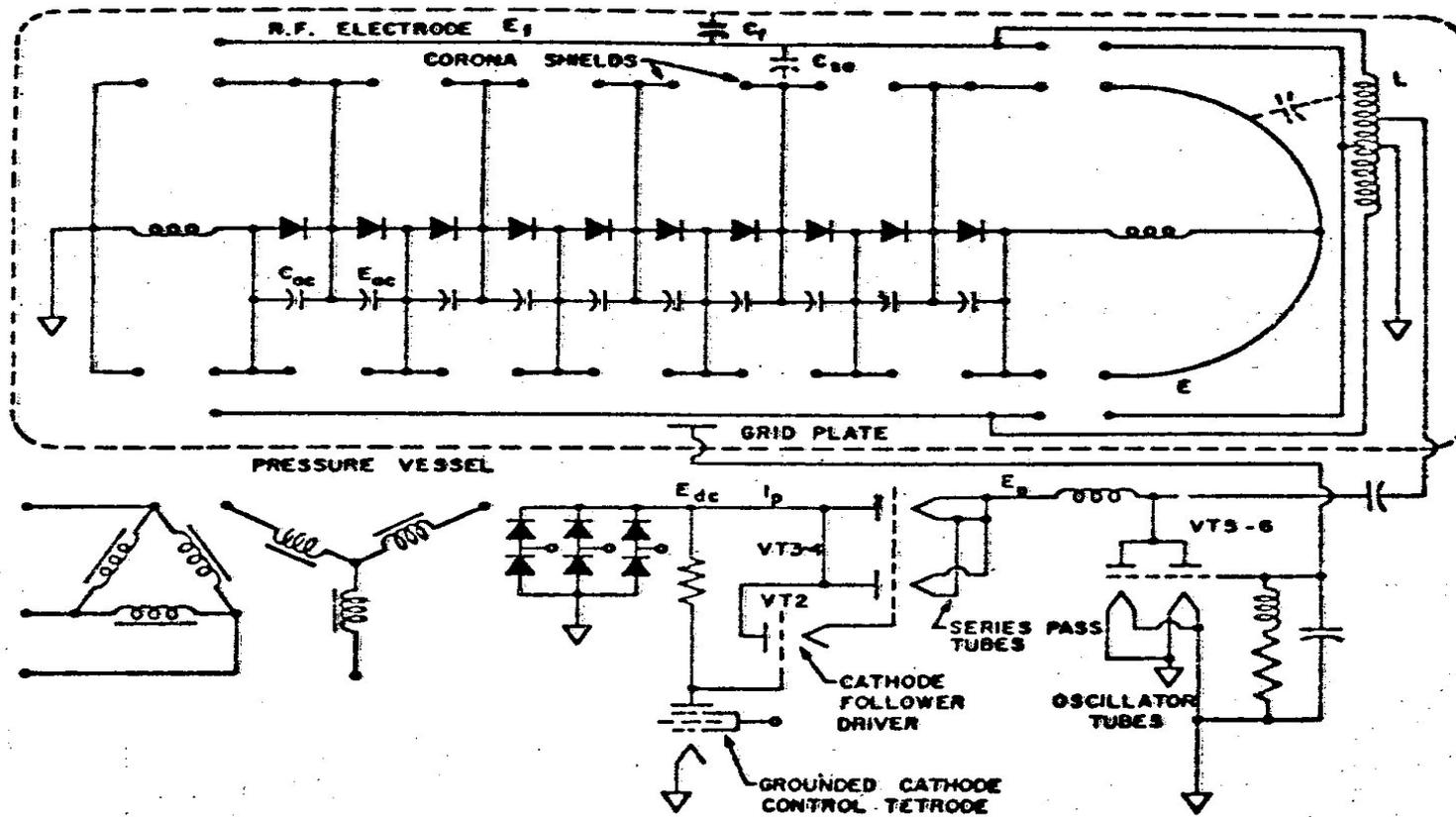
MAIN BEAM TUBE



CONTROL CONSOLE



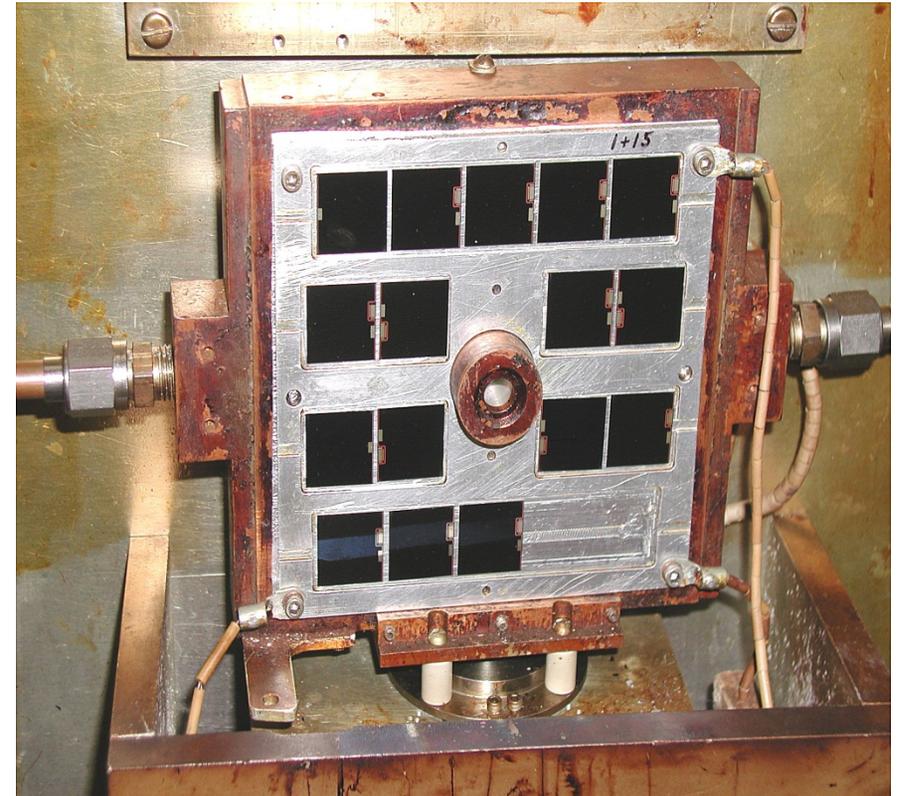
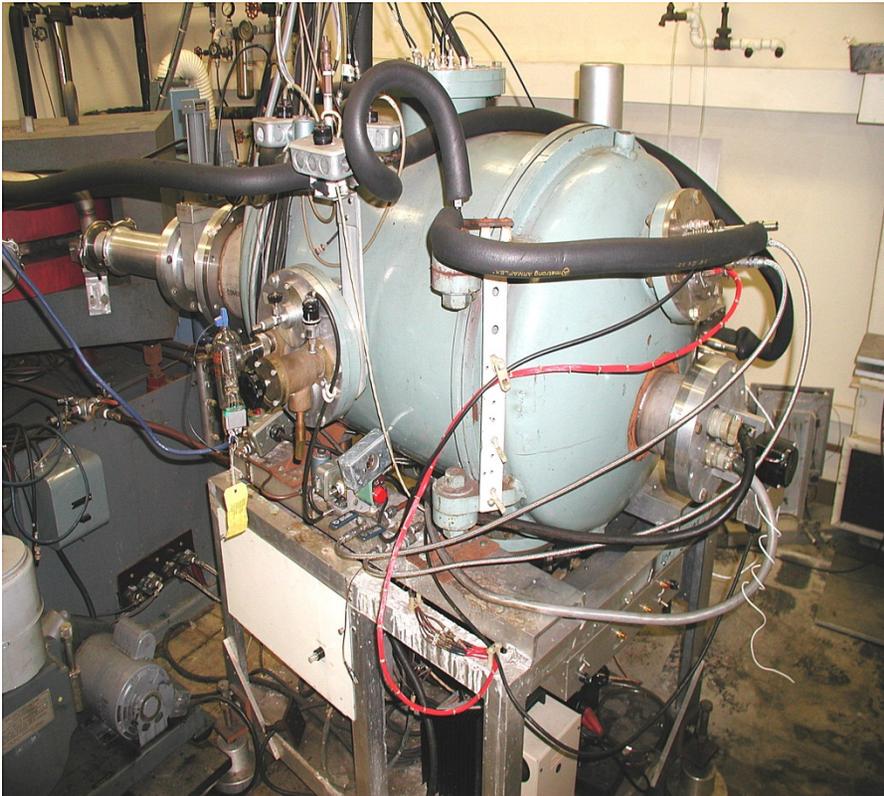
SCHEMATIC OF ELECTRON ACCELERATOR



RADIATION EXPOSURE LEVELS

- **ELECTRONS:** AT ENERGIES OF 0.3 TO 2.0 MeV
- **TYPICAL FLUX;** 1 E+10 TO 1 E+12 ELECTRONS/CM² – SEC
- **DOSE FACTOR:** 2.4 E-8 RADS/ELECTRON-CM² (@ 1MeV)
- **TYPICAL DOSE:** 1.2 E+4 RADS (Si EQUIVALENT) PER SECOND
- ONE **GIGARAD** DELIVERED IN APPX. 12 HOURS
- **ENERGIES:** OF LESS THAN 0.4 MeV AVAILABLE WITH SCATTERING FOILS (BUT LARGE BEAM LOSS)
- **FLUENCE:** DETERMINED FROM FARADAY CUP AND ELECTRON CURRENT INTEGRATION
- **VACUUM PRESSURE:** 1 E-5 TORR
- **TARGET SIZE:** 12.7 x 12.7 CM (5" x 5")
- **TARGET TEMPERATURES:** LN2 (77°K) TO APPX. 150°C (423K)

TARGET CHAMBER & TARGET BOARD





APPROXIMATE COSTS AND CONTACTS

- NOT INCLUDING SAMPLE PREPARATION, CONDITIONING OR TESTING, APPX. \$250 PER HOUR, MACHINE TIME
- MULTIPLE ENERGY EXPOSURES POSSIBLE (IN SEQUENCE)
- EXPOSURES IN BOTH VACUUM AND AIR POSSIBLE
- SPECIALIZED SAMPLE PREPARATION AND TESTING AVAILABLE
 - MECHANICAL TESTING, CHEMICAL ANALYSIS, THERMO-OPTICAL PROPERTIES, SPECTROSCOPY, DIELECTRIC CONSTANT, SURFACE RESISTIVITY, SEM MICROSCOPY, ETC.
- CONTACT PERSONNEL:
 - DENNIS THORBOURN (818) 354-1830 TEST LEAD
 - ROY SCRIVNER (818) 354-1058 SCHEDULING & TESTING
 - BOB MUELLER (818) 354-0694 LILT, X-25 & PV CELLS
 - PAUL B. WILLIS (818) 354-6998 MATERIALS EFFECTS



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