T-475 Status

VLCW

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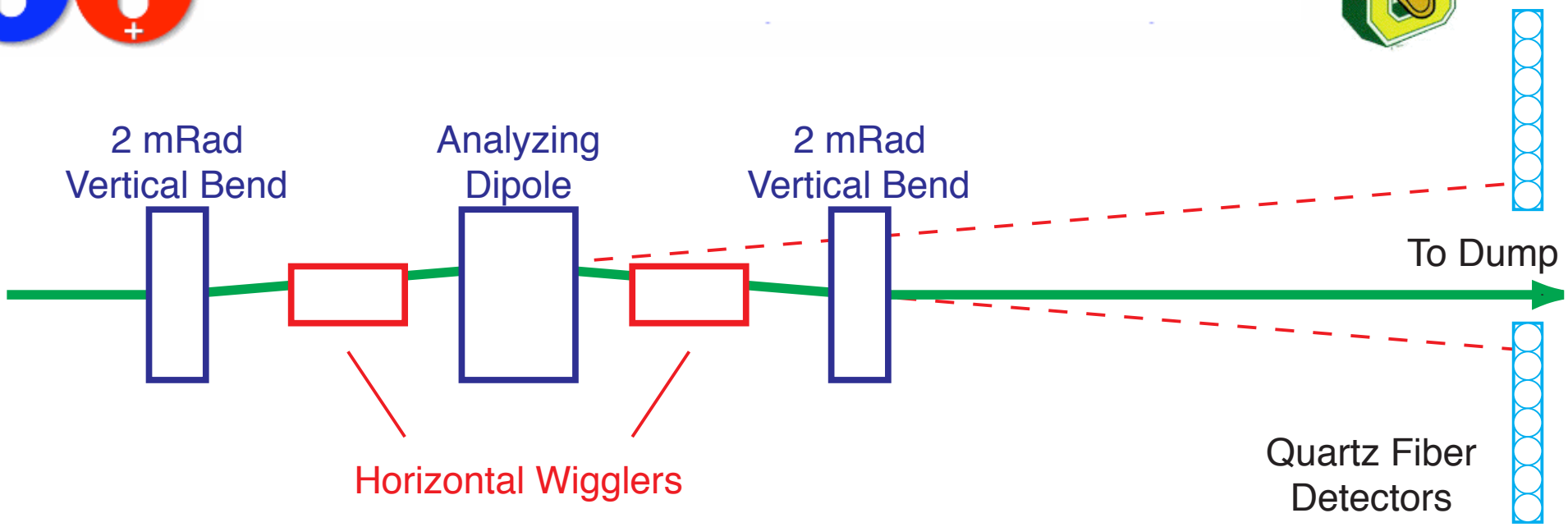
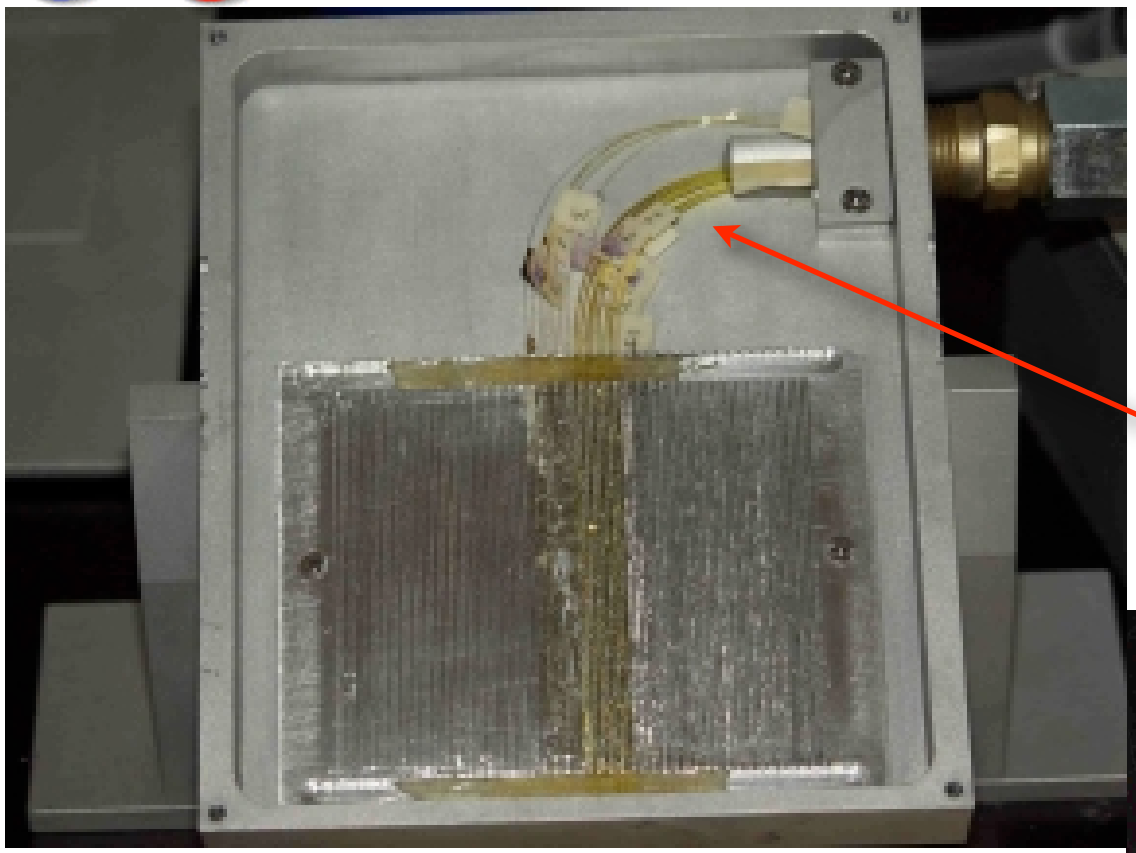
Extraction Line Spectrometer



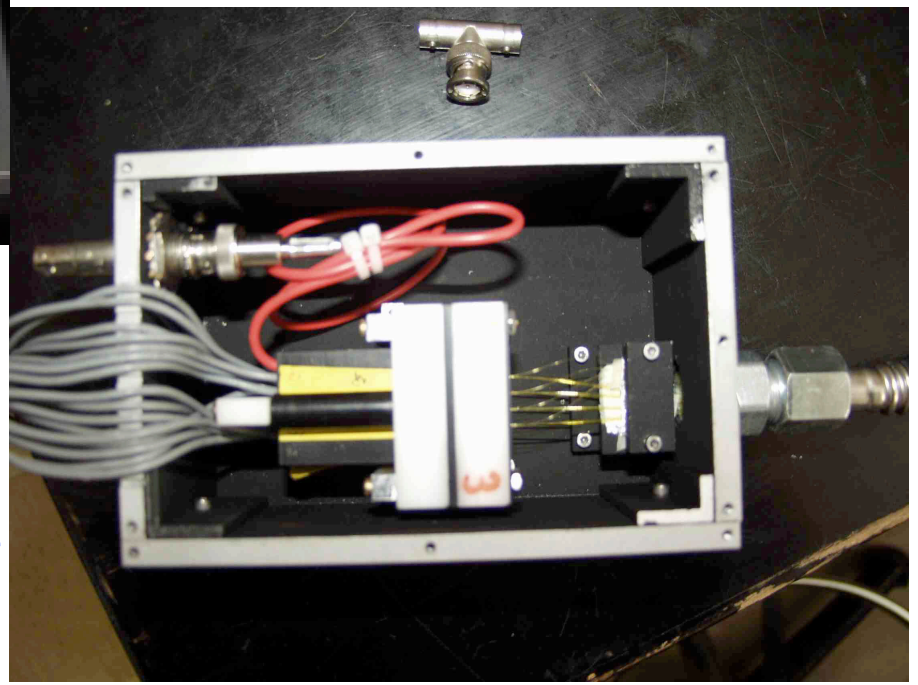
- Measure energy and disrupted spectrum
- 4 mRad over 75 meters, need 30 microns for 100 ppm
- Instrument with 100 micron quartz fibers
- Read out with Multi-anode PMT (Hamamatsu)

Rad hard and robust, fast and simple readout,
easy gain adjust, no RF pickup, modest cross-talk

T-475 Detector

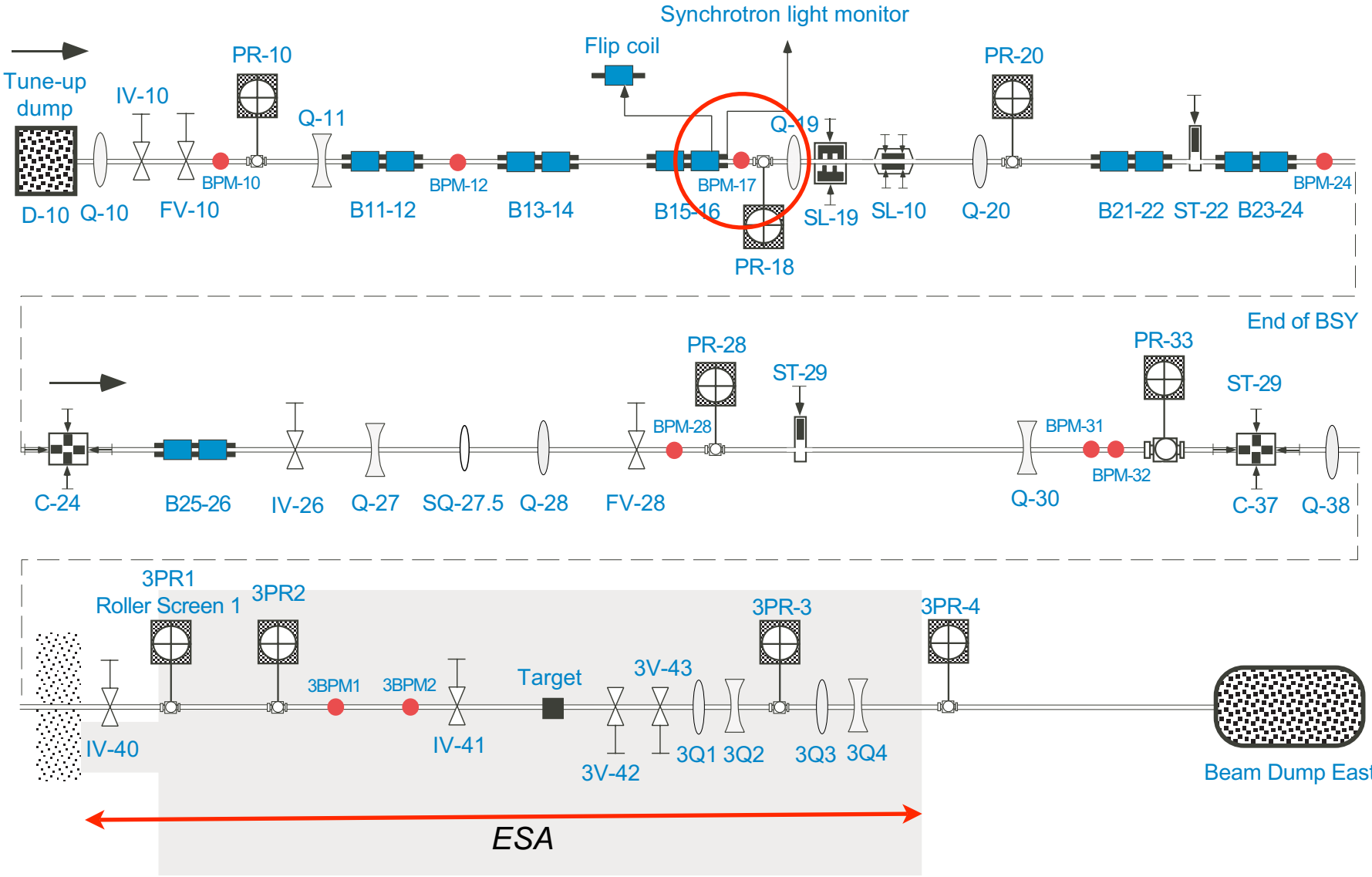


8 100 micron fibers
8 600 micron fibers
(one cut at entry)
1 mm pitch

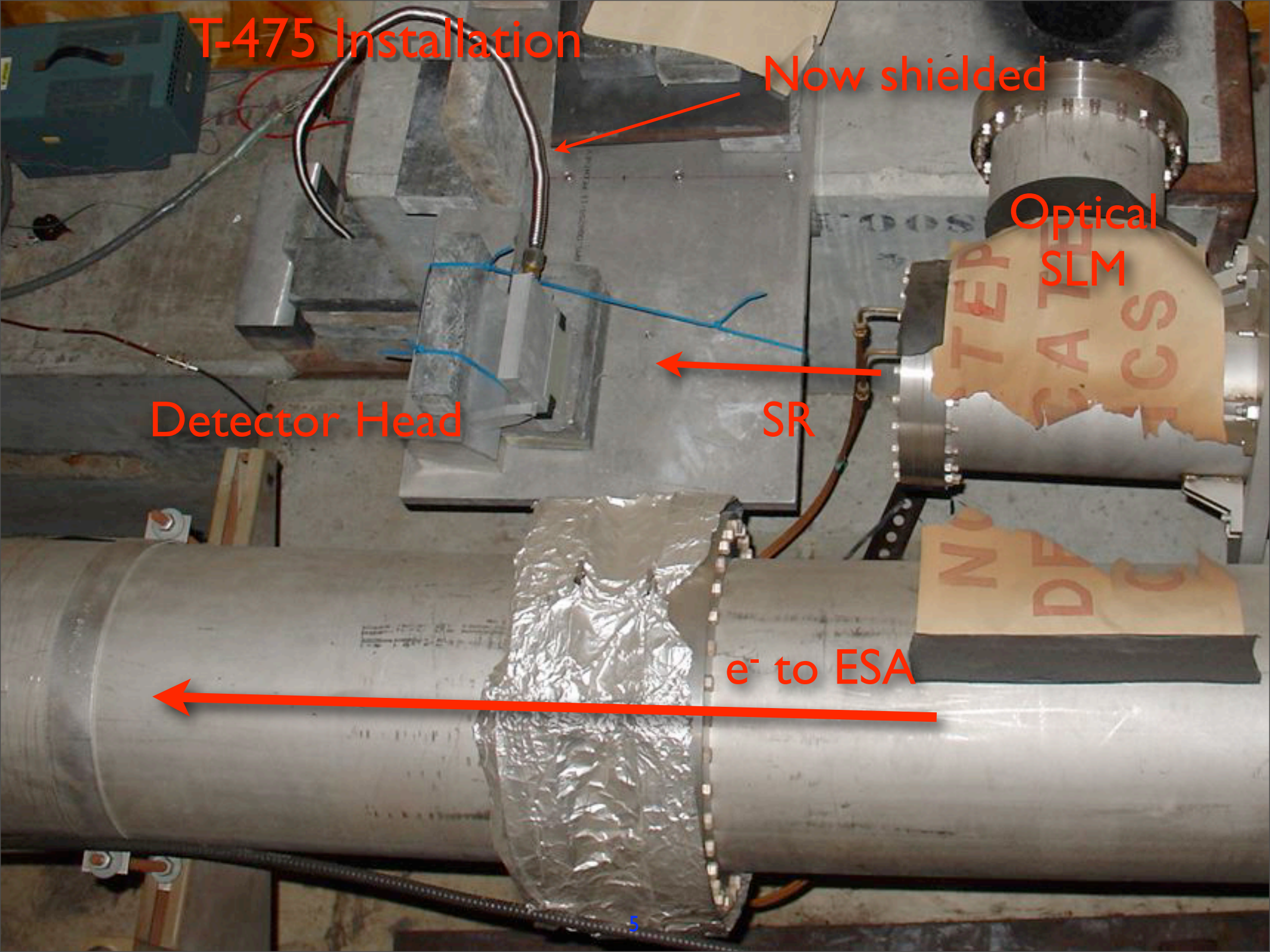


16 channel R6568 MAPMT
Line driver for long analog cable

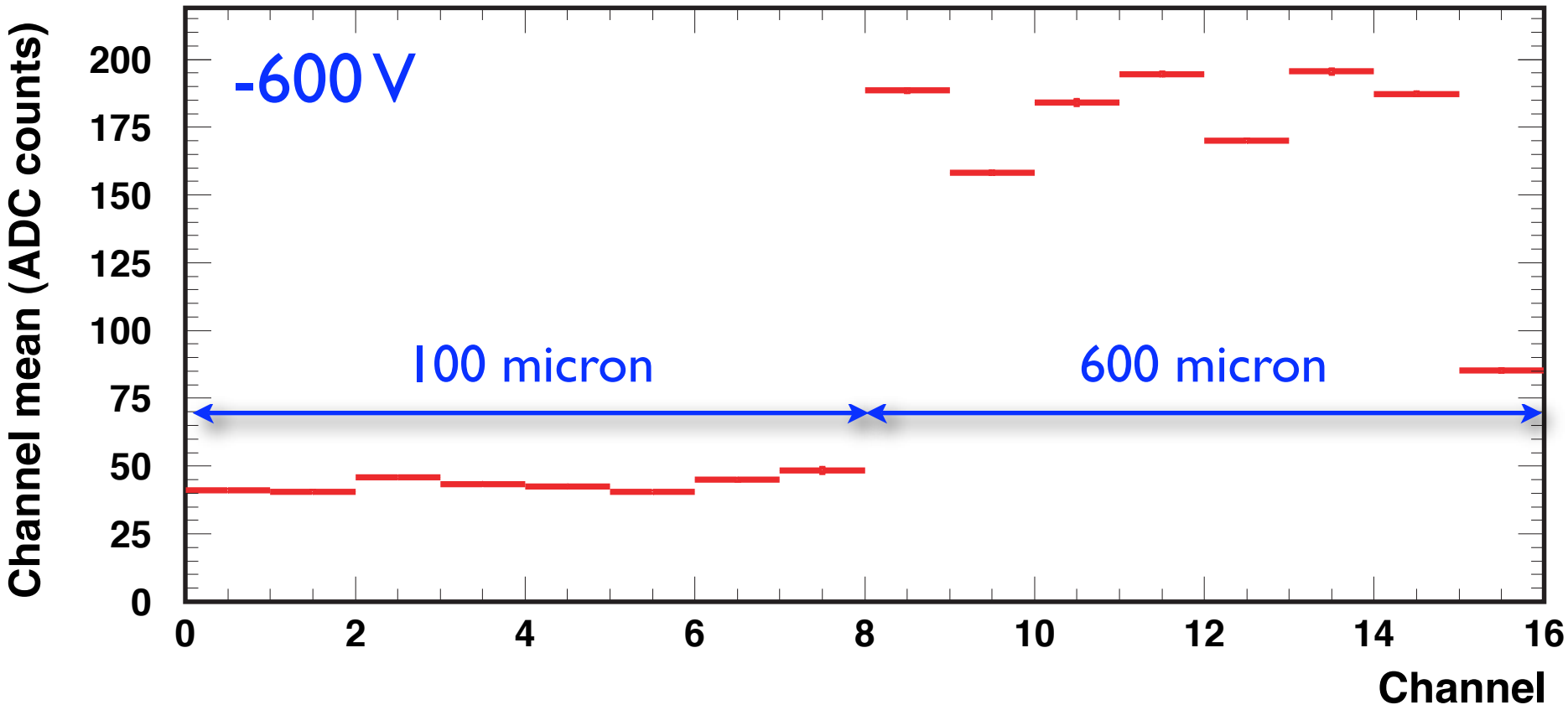
Current T-475 Location



Part of switchyard, access very limited


T-475 Installation
Now shielded
Optical
SLM
Detector Head
SR
e- to ESA

Real Data



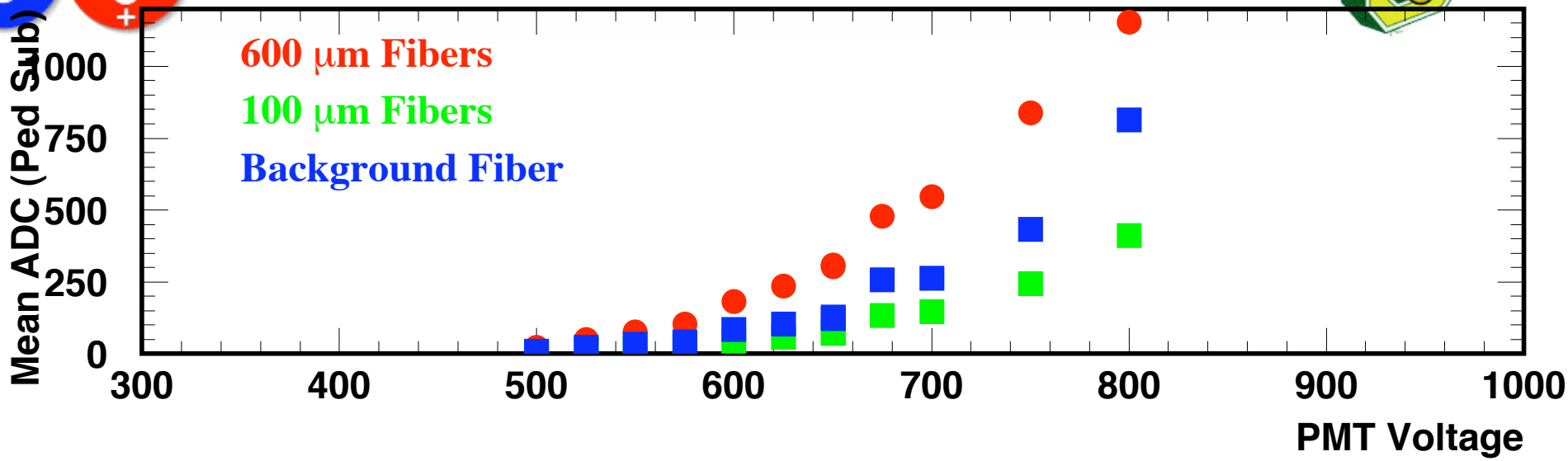
Ch 15 is cut (background monitor)

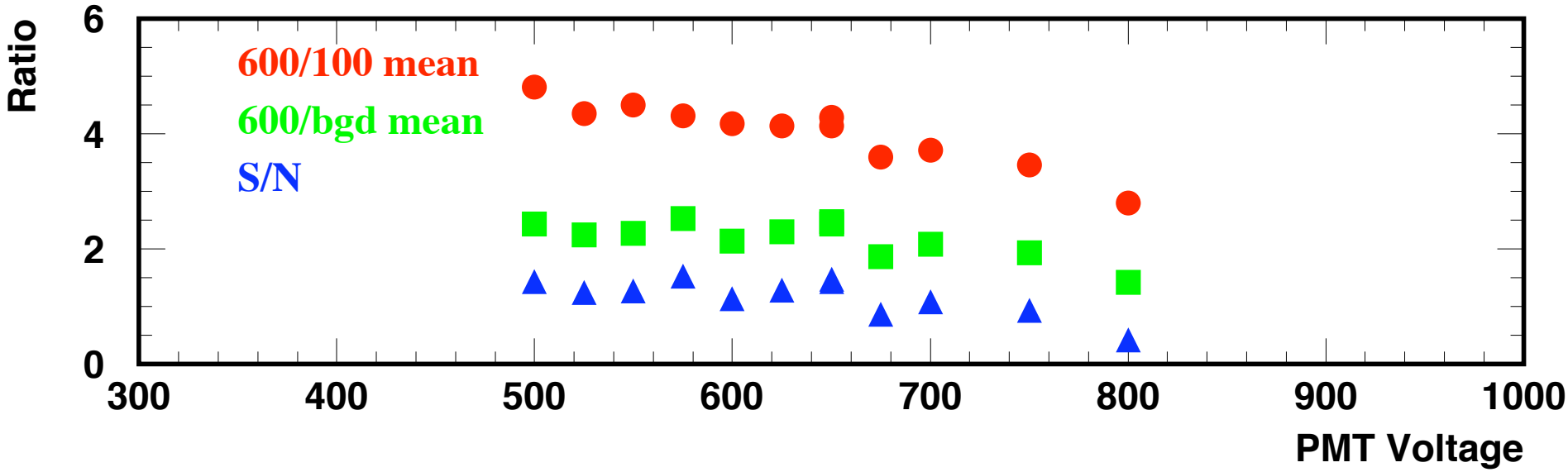
Signal/Noise ~ 1

Large/Small is not 6^2

RMS implies ~50 PE/600 fiber/pulse (dubious)

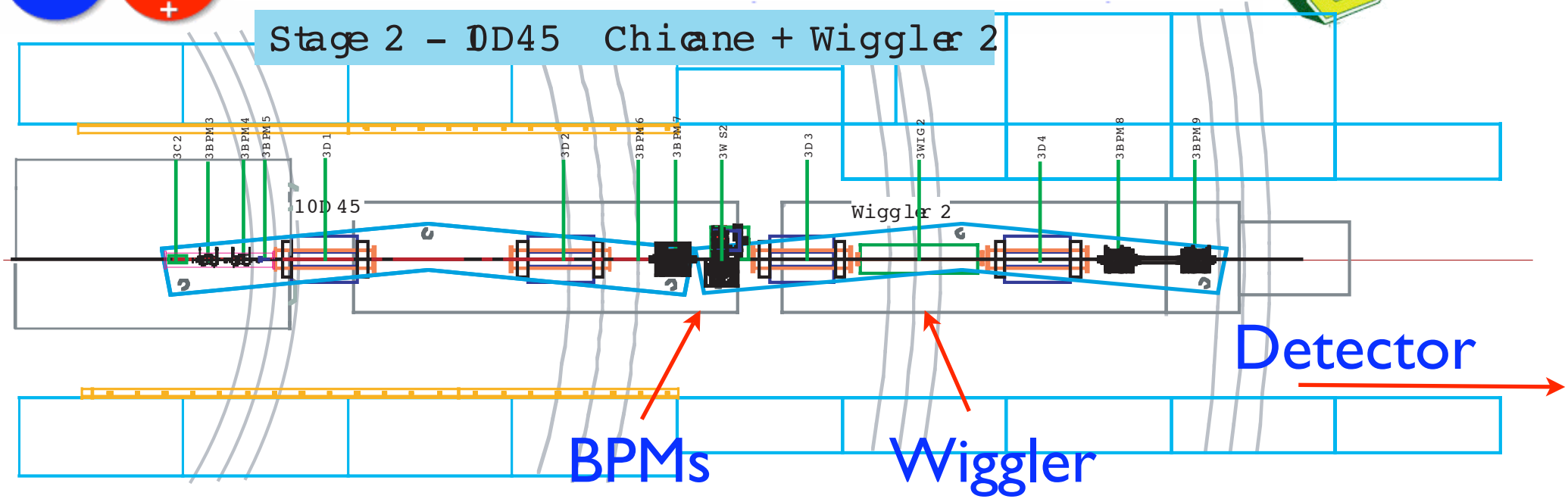
Voltage Scan





Looks PMT-like

Next Steps



- Would like many more parameters to vary

  Preradiator, detector angle, shielding, orientation (H/V)

- Need chicane (or dogleg) in ESA proper

  Magnets available (including wiggler)
  May be installed by end of year

Conclusions

- Detector has seen first beam
- Signal is there, but not exactly as expected

  (Could be fiber differences, under investigation)
- Eagerly awaiting next step in ESA program to give better access to detector during operations
- Prototype w/ 64 ch and front-end ADC being developed