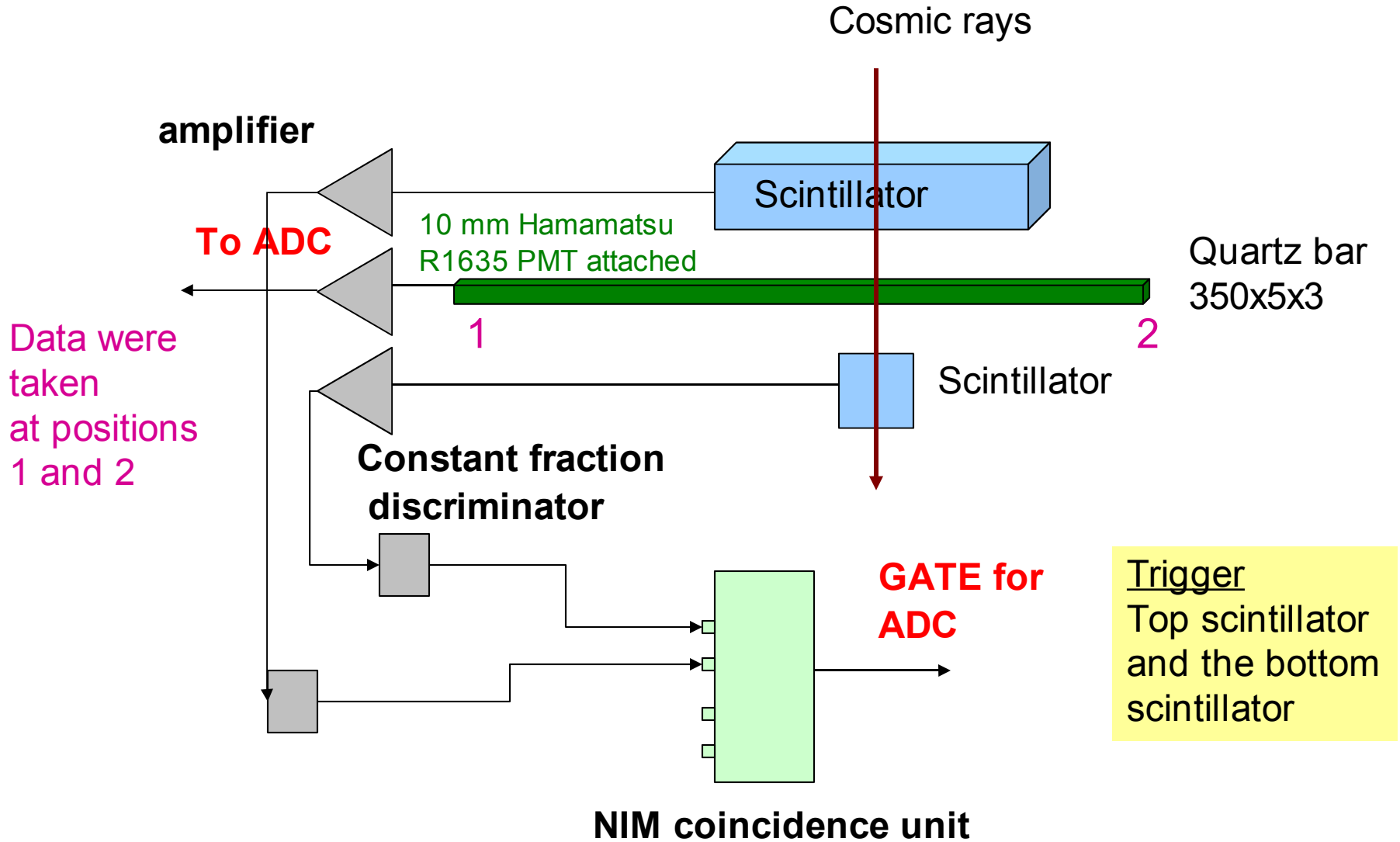


REPORT ON FRONT TRACKING HODOSCOPE

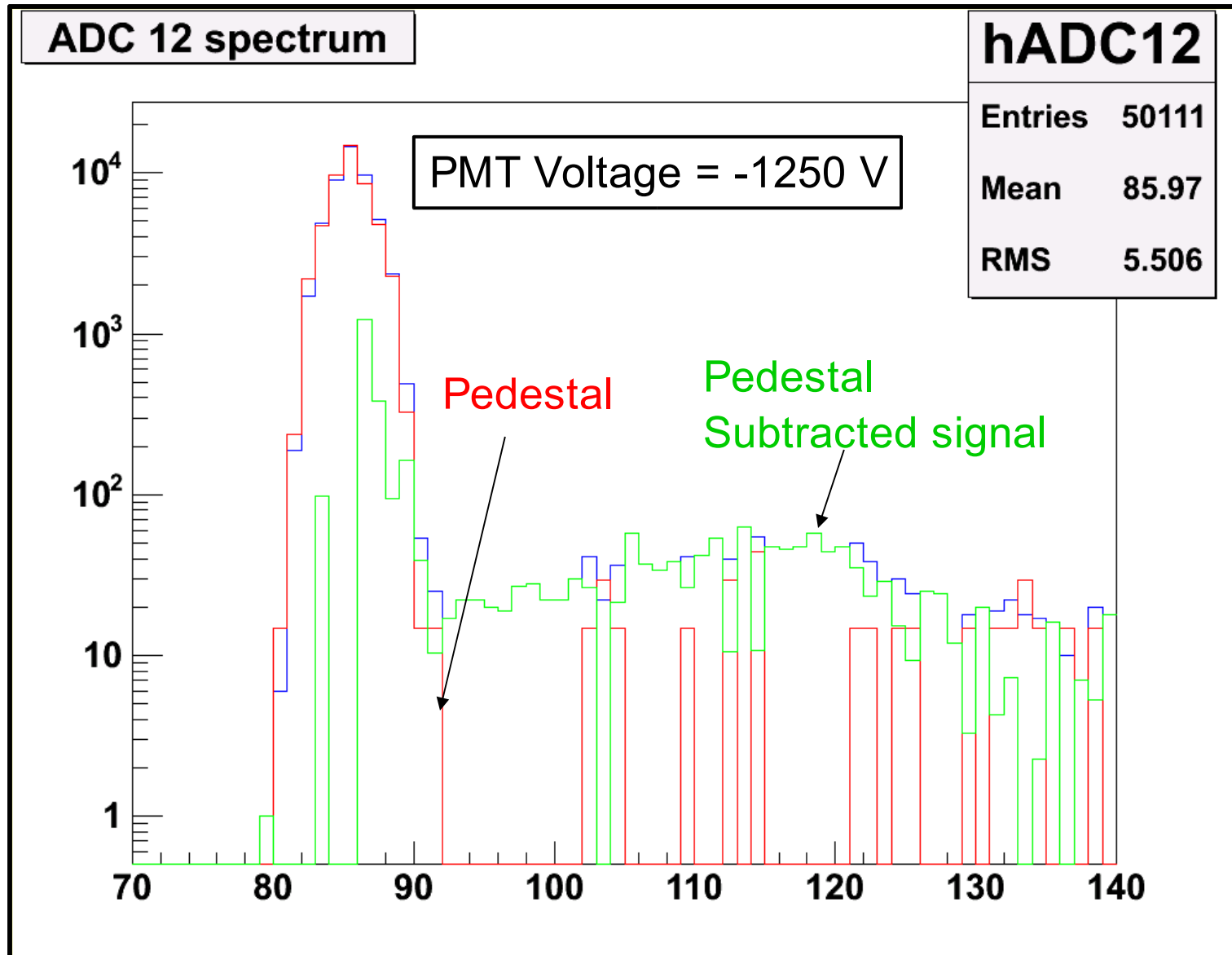
Peter Bosted
Vipuli Dharmawardane
Mahbub Khandaker
Hamlet Mkrtchyan

TEST SETUP



TEST RESULTS

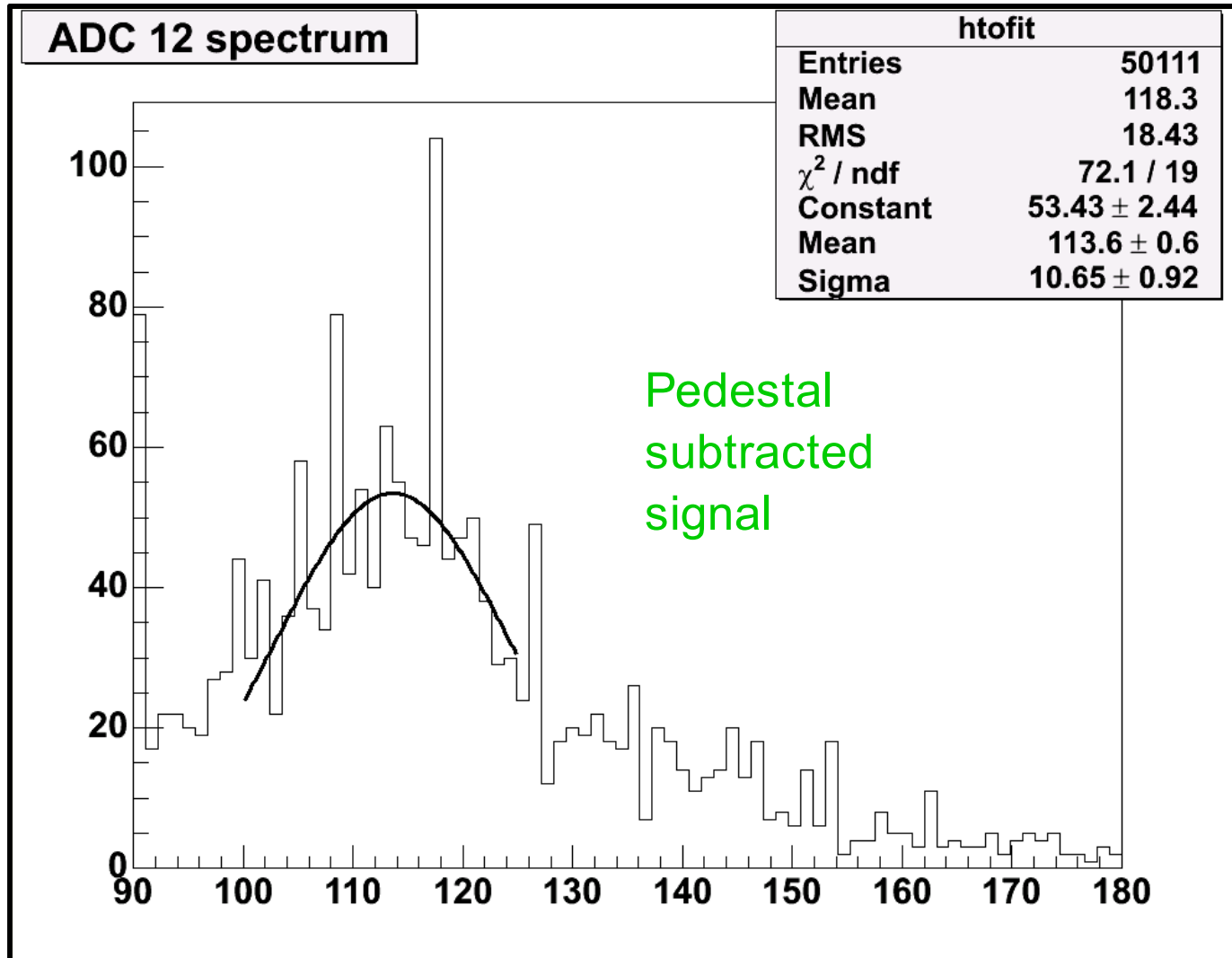
Trigger scintillator
at Position 1



TEST RESULTS

Approximately 3-4 photoelectrons

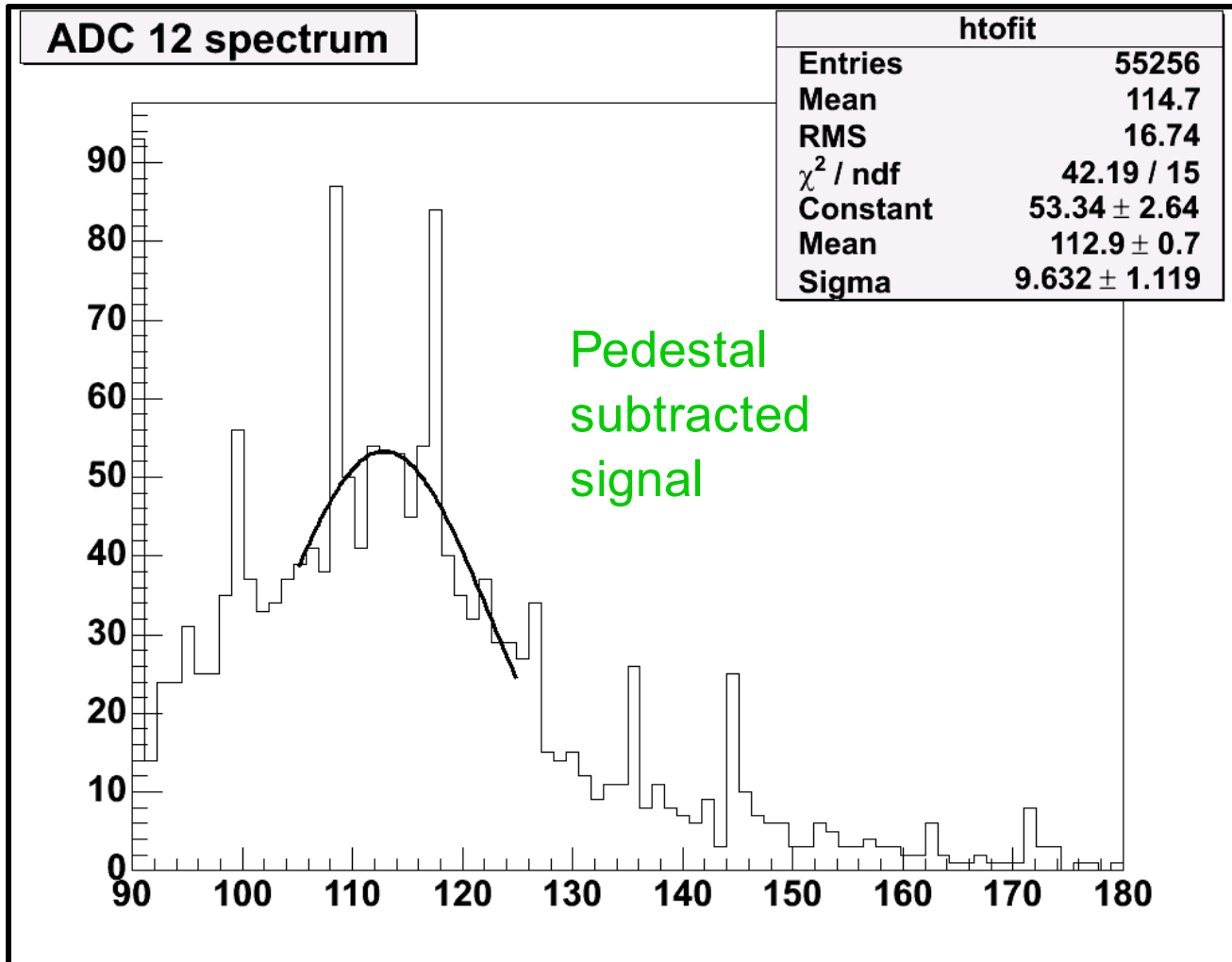
Trigger scintillator
at position 1



TEST RESULTS

- Same number of photoelectrons
- No attenuation

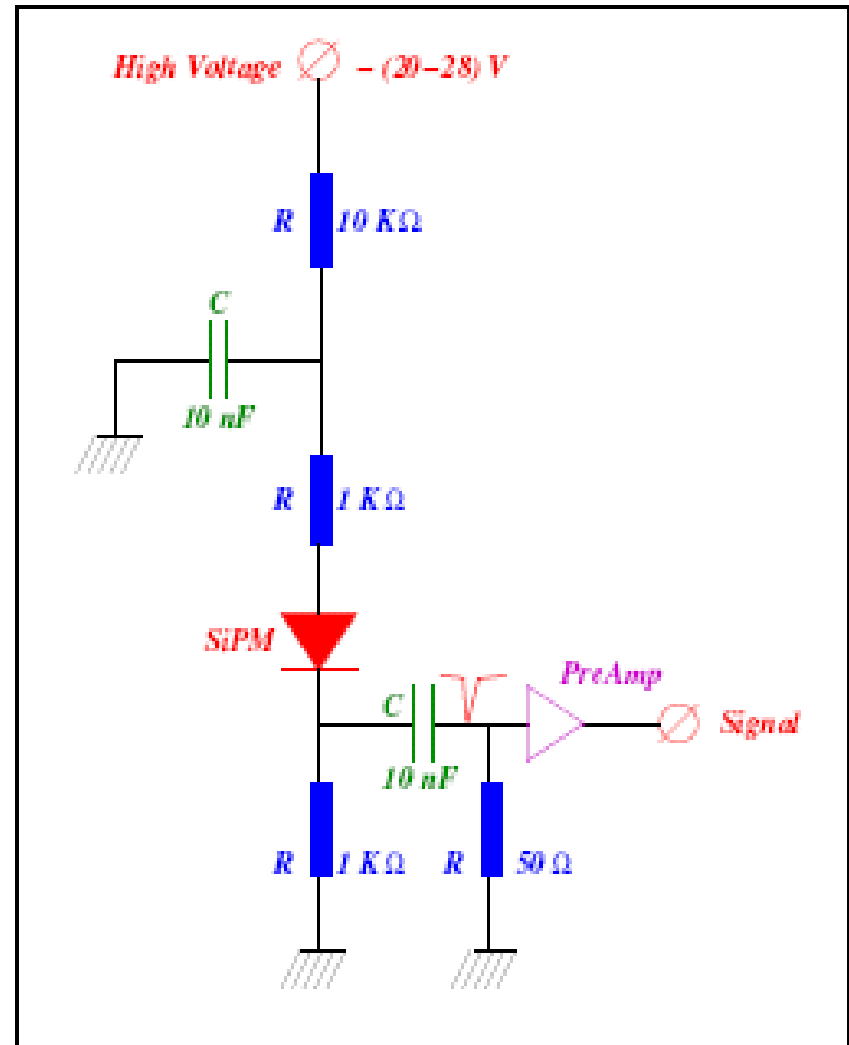
Trigger scintillator
at position 2



Si PHOTO MULTIPLIER

Already bought couple of 3x3 mm²
SiPMs from MEPhI

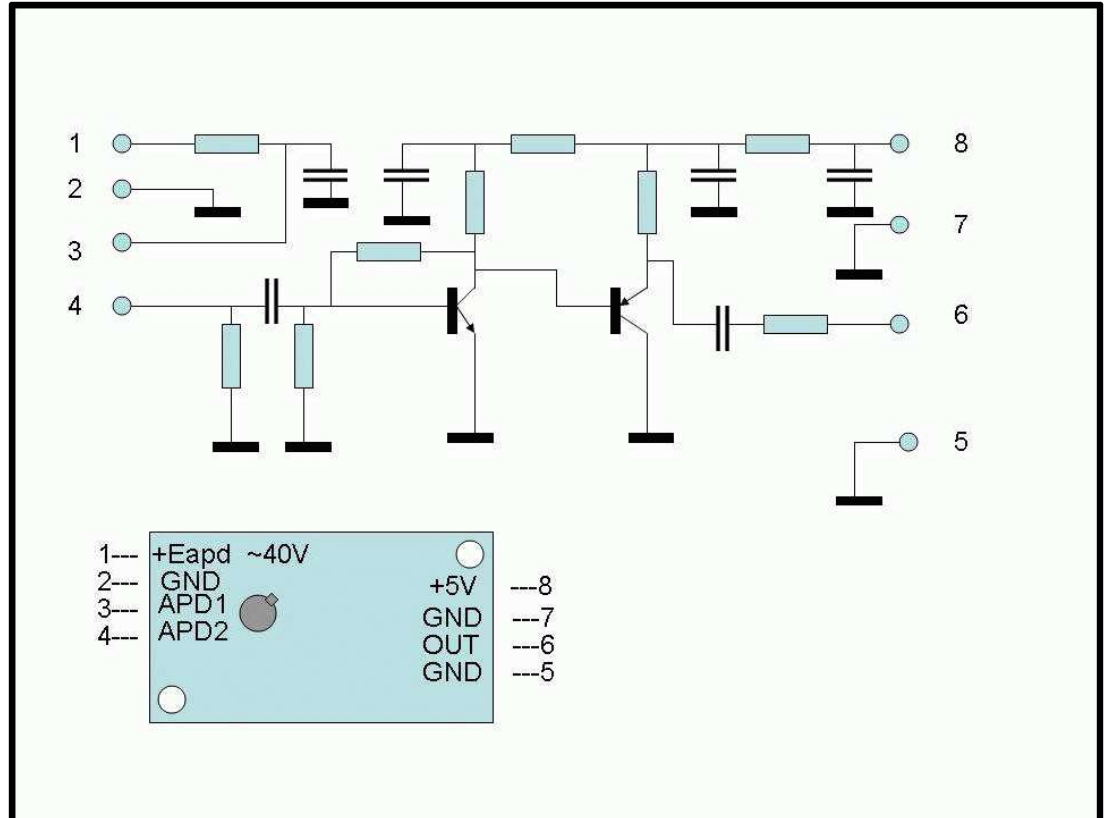
- ✓ Working voltage is about 20-28 V
- ✓ Gain 1-2x10⁶
- ✓ About \$100 per unit



NEXT ?

- ▶ A low noise amplifier from SiLite Co. (University of Tennessee group)
- ▶ Mahbub bought one amplifier unit
- ▶ Next : plans to test the SiPM with a 2x2 mm² scintillating fiber (Howard Fenker has agreed to help on this)

We can cut the cost down significantly if scintillating fiber is used



SCINTILLATION FIBER

- ▶ scintillation light much better match to SiPM than Cherenkov light from quartz
- ▶ gain of SiPM not high enough to work with 4 p.e., but scintillator should give much bigger signals
- ▶ Due to small area of each counter, single hit rates should be tolerable with 60 nA beam current.