Piece by Piece FD Calibration Future Plans?

Auger Collaboration Meeting

Malargue, Argentina

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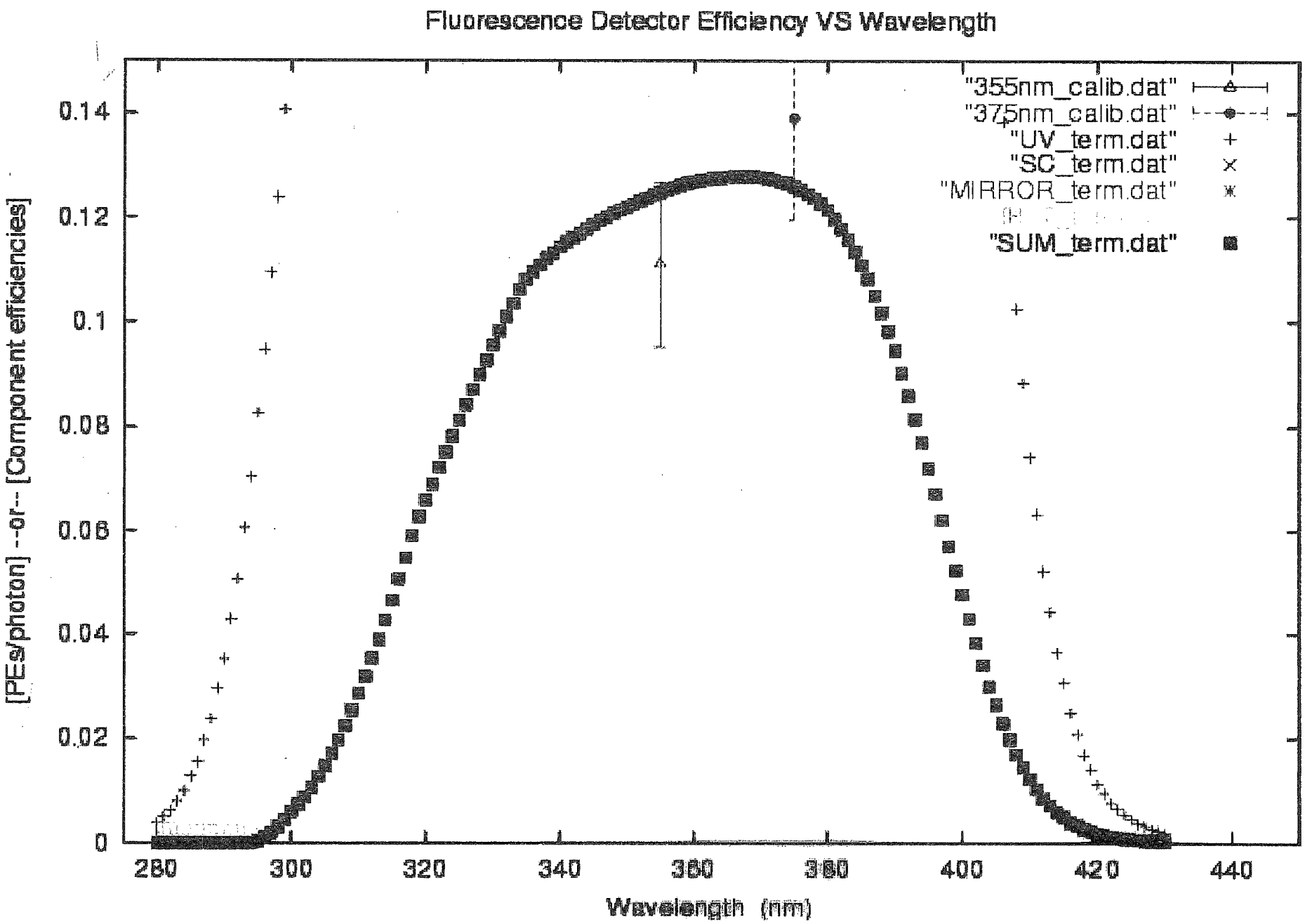
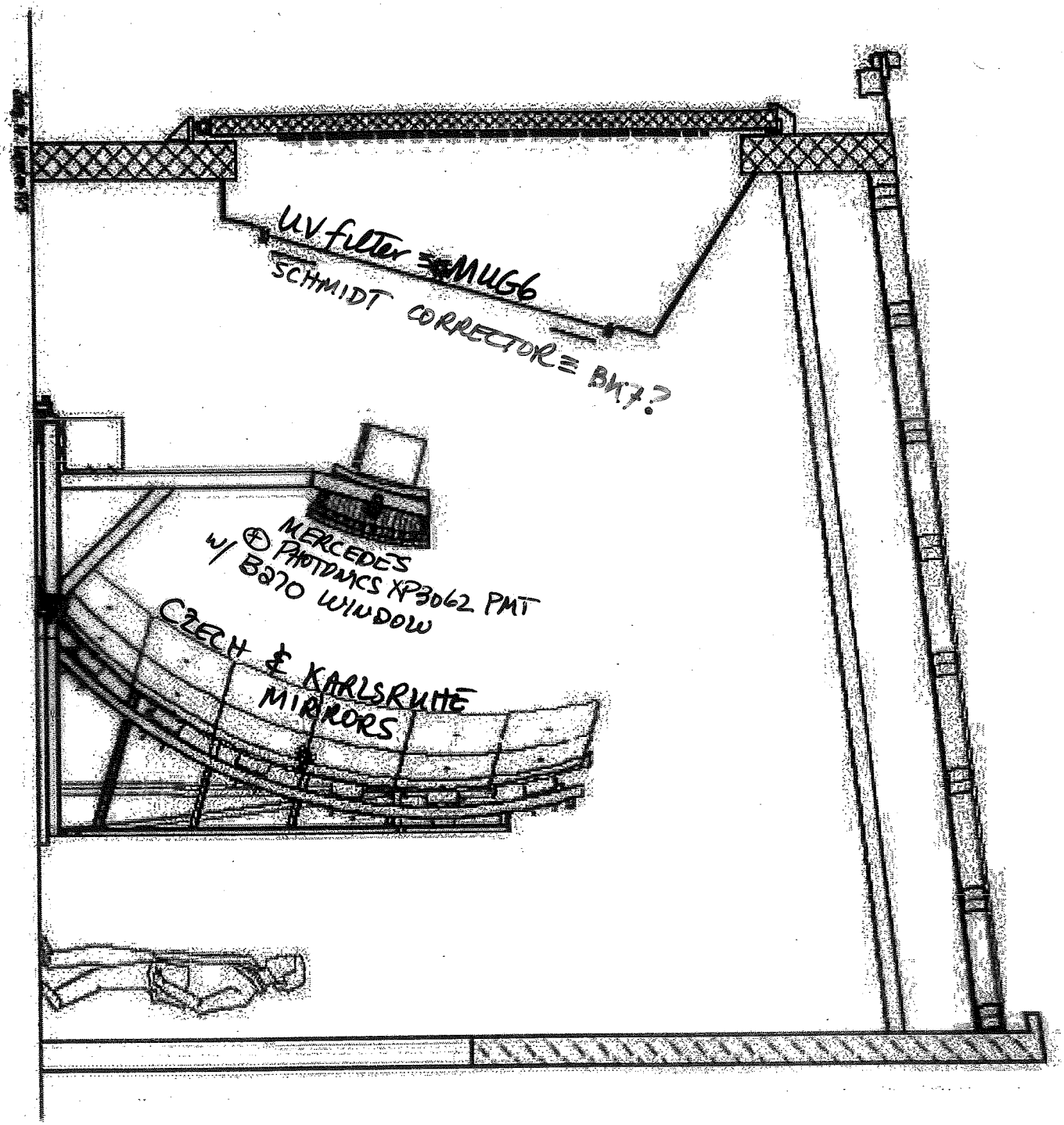
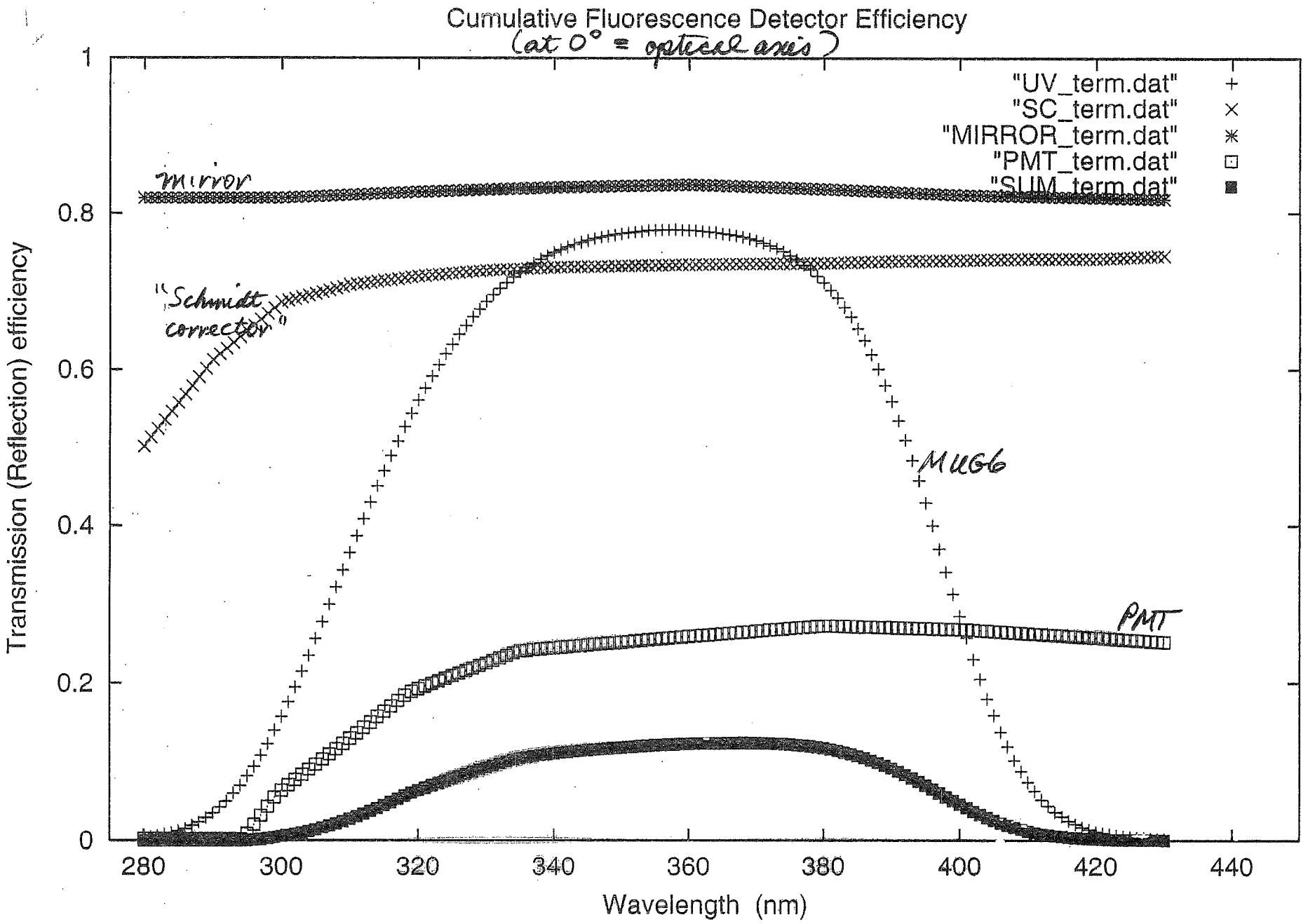
1. Why did we do it?
   - Cross check of *end-to-end* calibration
   - Provided wavelength dependence
   - Helped to identify potential problems

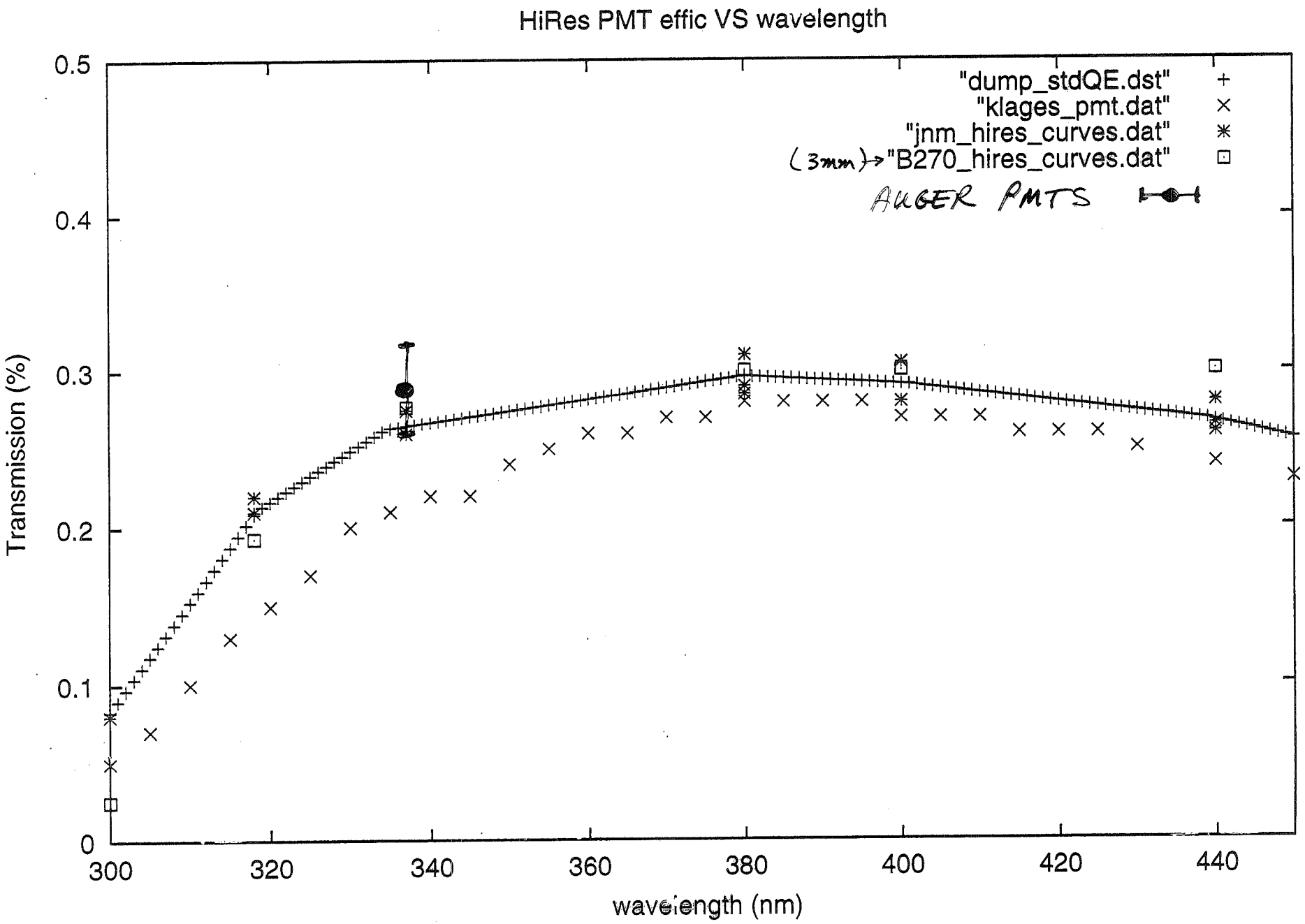
2. Need to continue for all 12 telescopes!

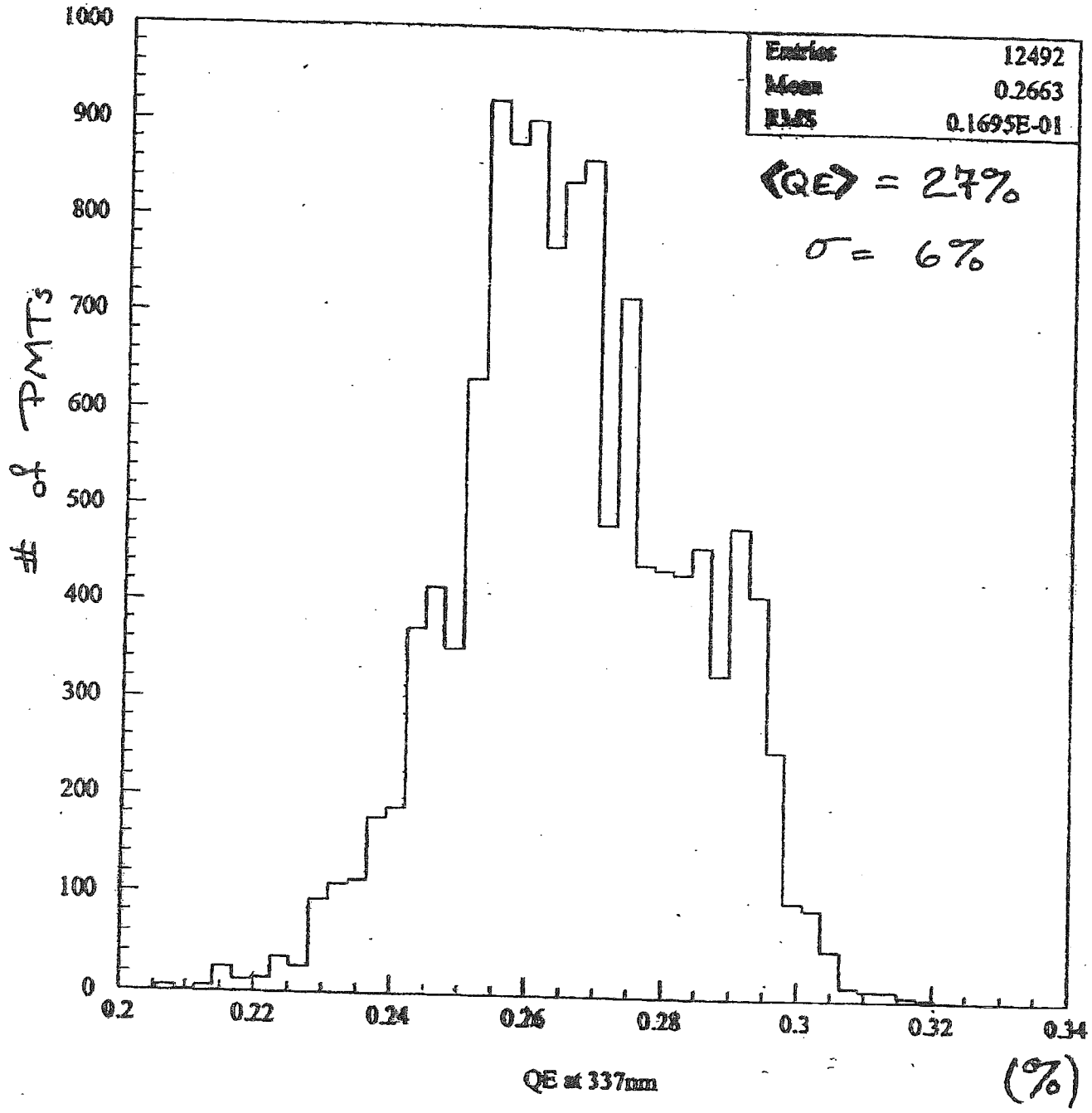
3. **But we need *your* optical components characterized!**


Fluorescence Detector Efficiency VS Wavelength
"355nm_calib.dat"
"375nm_calib.dat"
"UV_term.dat"
"SC_term.dat"
"MIRROR_term.dat"
"SUM_term.dat"
[PEs/photon] --or-- [Component efficiencies]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
280
300
320
340
360
380
400
420
440
Wavelength (nm)


UV filter ≡ MUG6
SCHMIDT CORRECTOR ≡ BK7?
MERCEDES
PHOTONICS XP3062 PMT
W/ B270 WINDOW
CZECH & KARLSRUHE
MIRRORS


Cumulative Fluorescence Detector Efficiency
(at 0° = optical axis)
"UV_term.dat"
"SC_term.dat"
"MIRROR_term.dat"
"PMT_term.dat"
"SUM_term.dat"
mirror
"Schmidt correction"
MUG6
PMT
Transmission (Reflection) efficiency
Wavelength (nm)
0
0.2
0.4
0.6
0.8
1
280
300
320
340
360
380
400
420
440


HiRes PMT effic VS wavelength
"dump_stdQE.dst"
"klages_pmt.dat"
"jnm_hires_curves.dat"
(3mm)→"B270_hires_curves.dat"
AUGER PMTS
Transmission (%)
wavelength (nm)
0
0.1
0.2
0.3
0.4
0.5
300
320
340
360
380
400
420
440



Quantum Efficiency at $\lambda = 337$nm

- Need QE at several wavelengths
- QE should include efficiency for e^- capture on 1st dynode

Photonis

P. Facal San Luis
& P. Privitera, GAP-2000-010

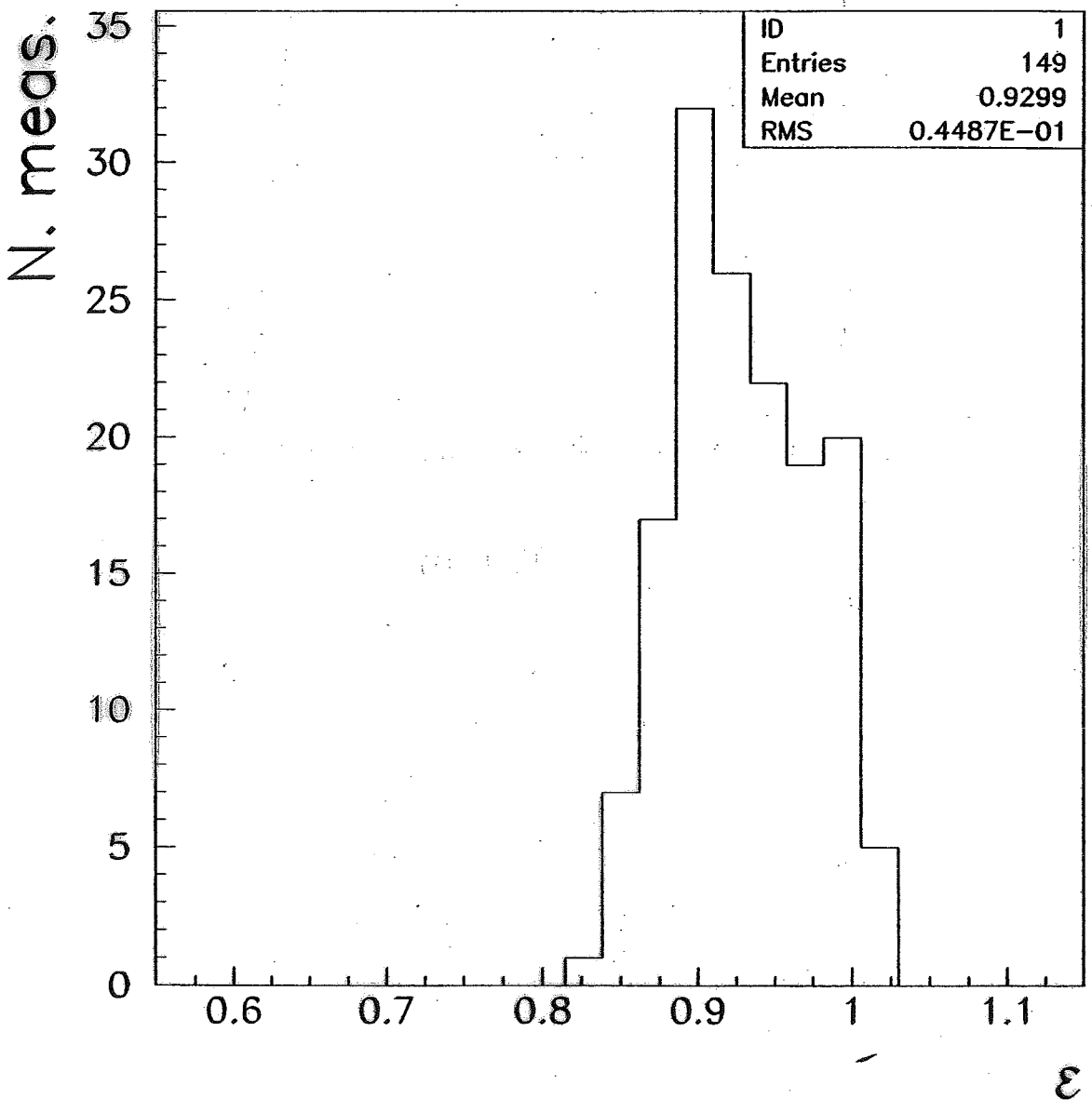


Figure 13: Distribution of the light collection efficiency ϵ in the central pixel.

Need to update this measurement for larger angle rays with the Schmidt corrector ...