

Oculus Pentacam

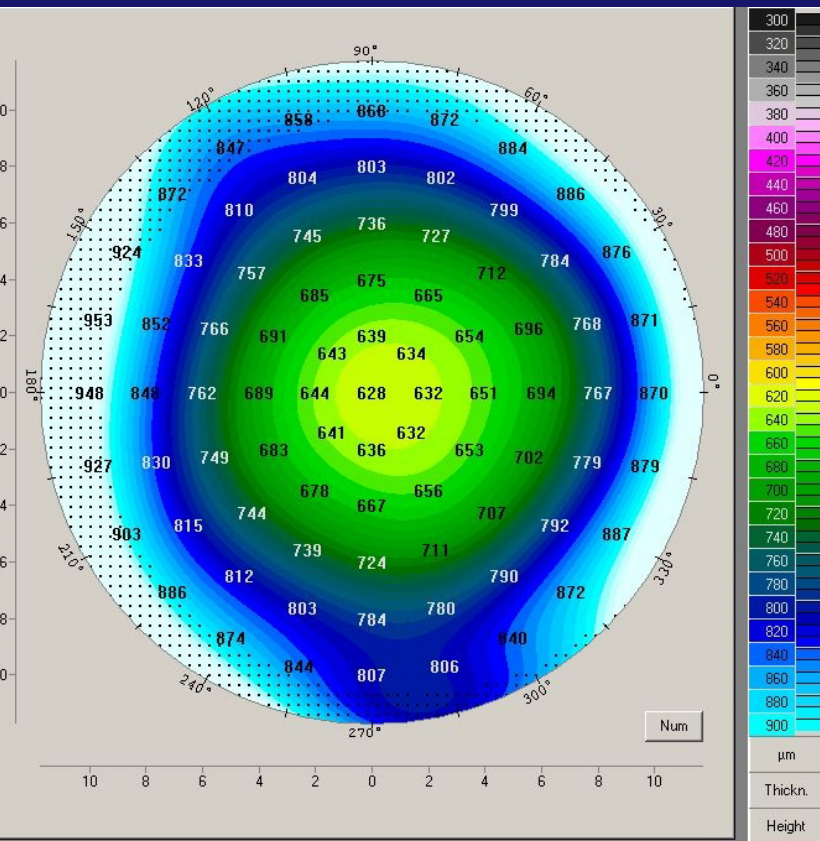


www.augenportal.de

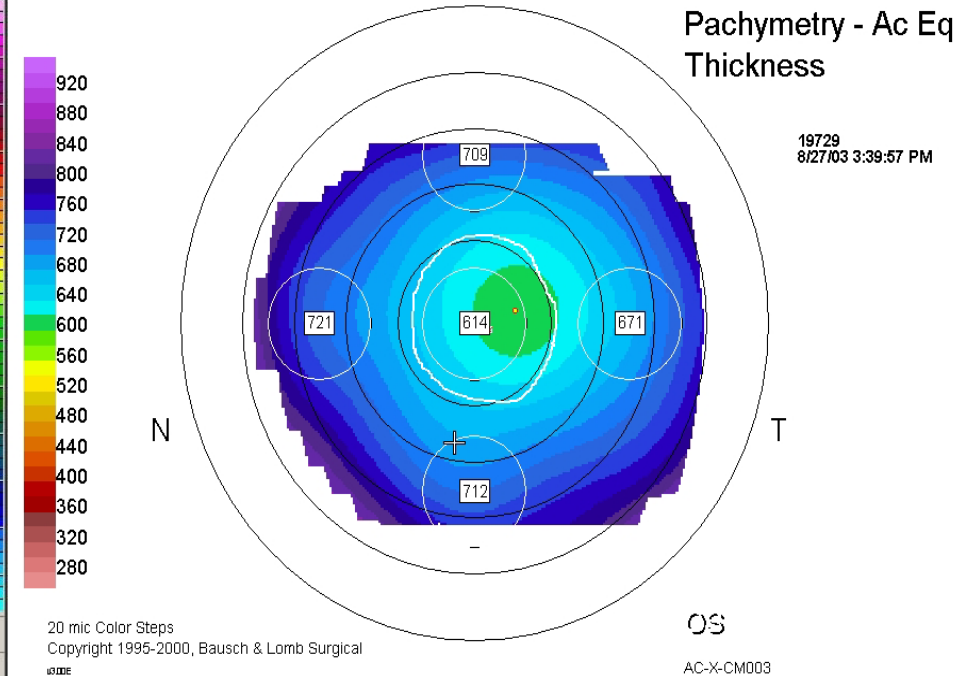
O. Kermani / G. Gerten / K. Schmiedt / F. Sulimma
Augenlaserzentrum Köln

U. Oberheide
Laserforum Köln e.V.

Comparable Pachymetry Map

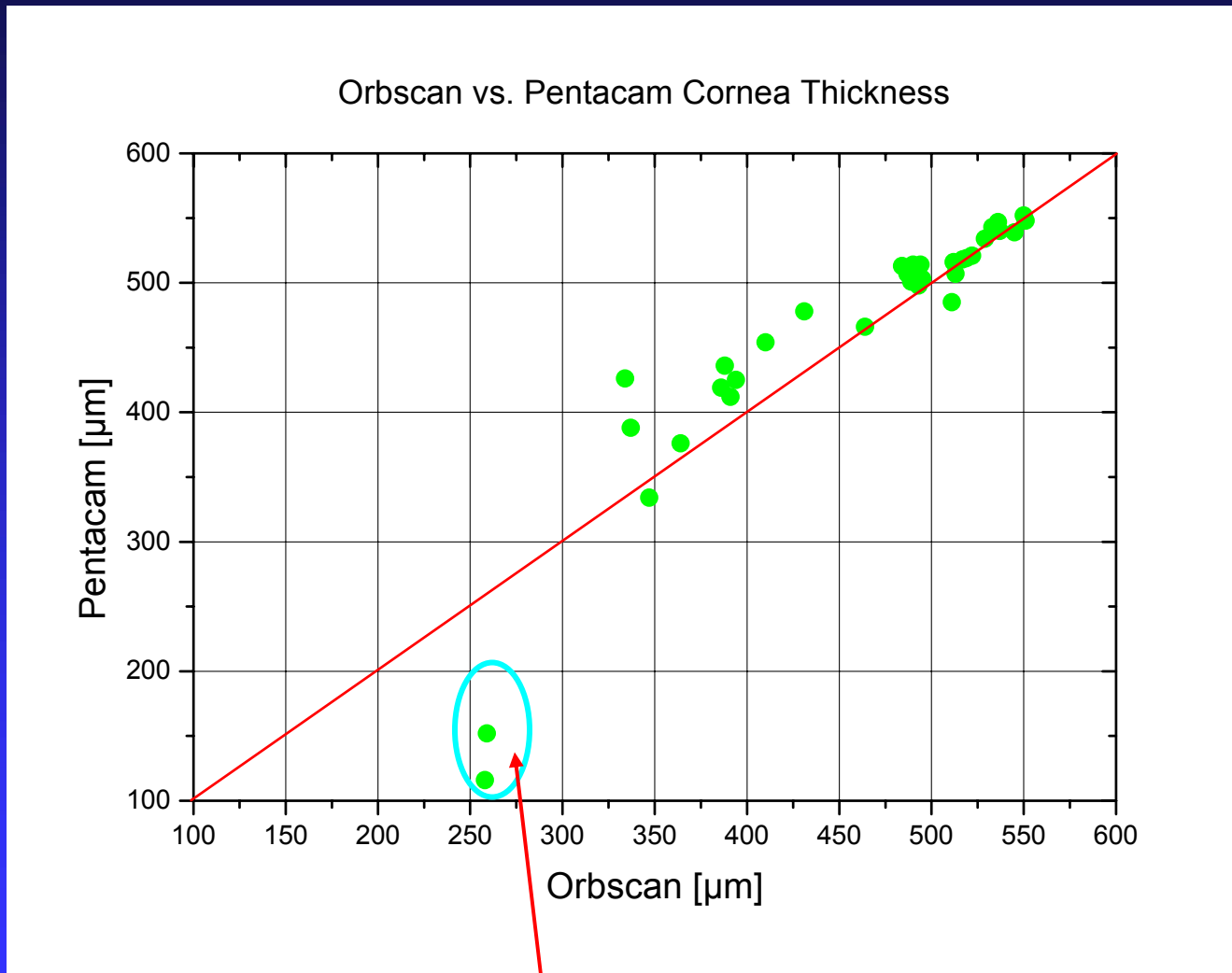


ORBSCAN

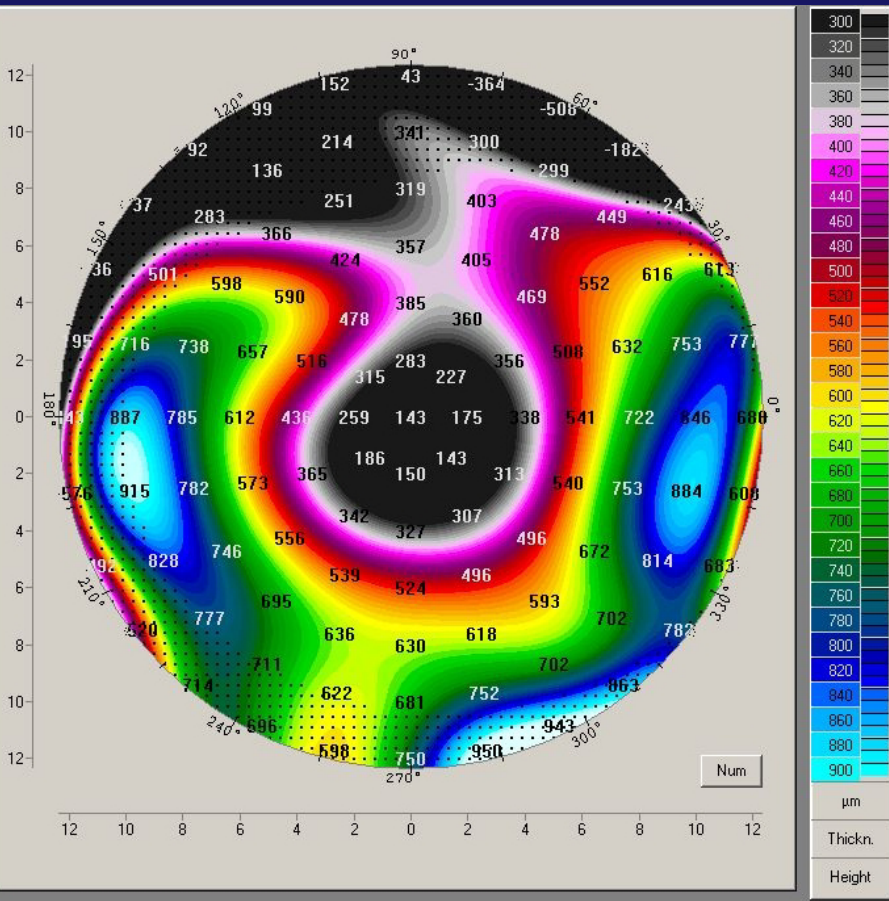


reproducibility of Pentacam: range of 5 μ m (min to max)

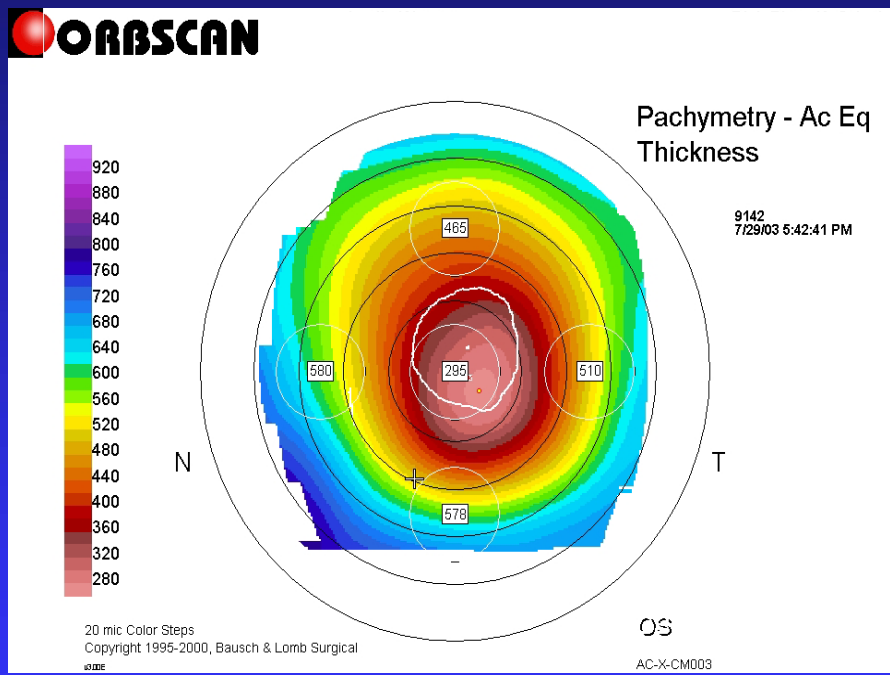
Cornea Thickness I (Orbscan vs. Pentacam)



Thin Cornea - Corneal Pachymetry Map -

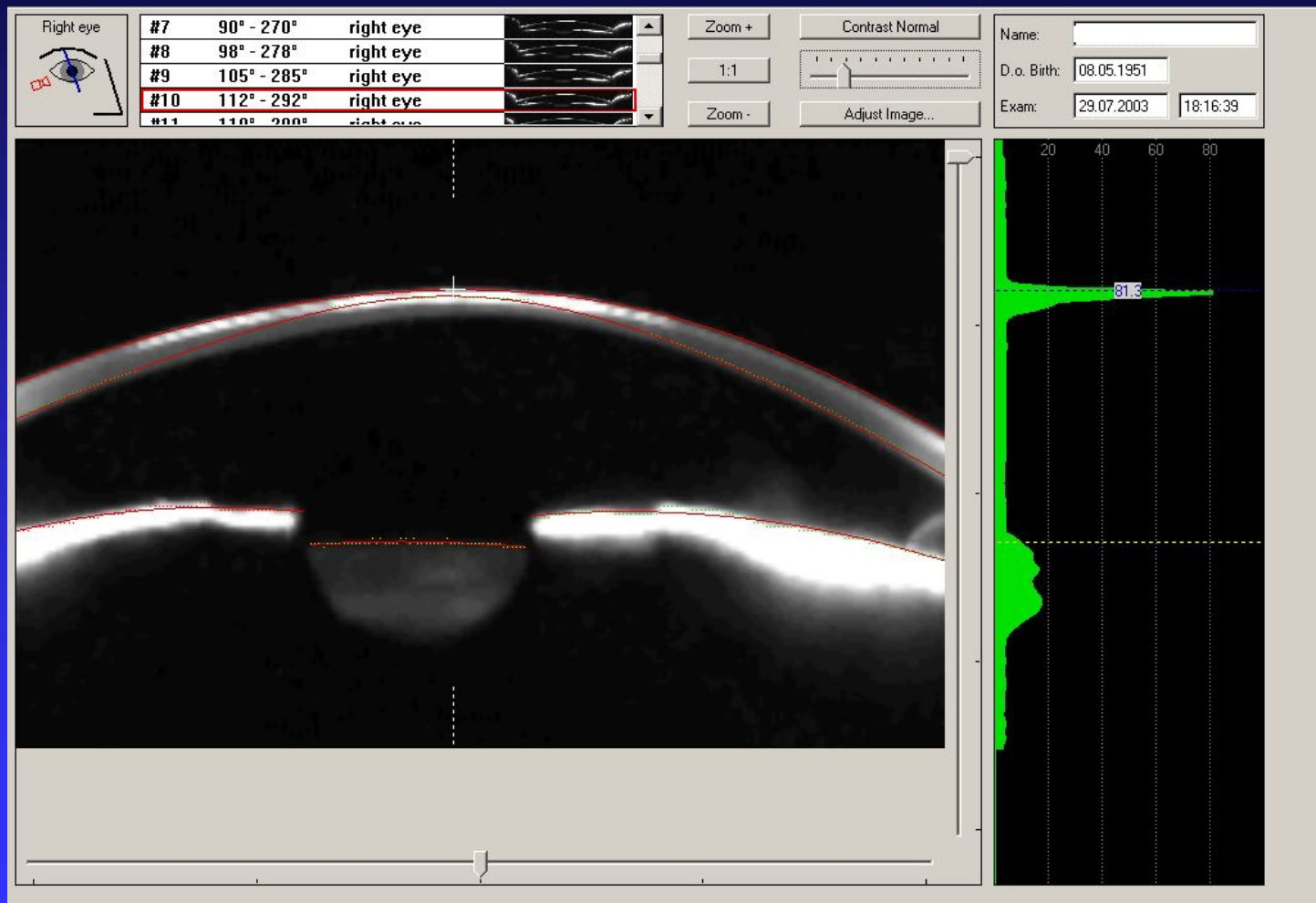


thinnest 143µm



thinnest 262µm

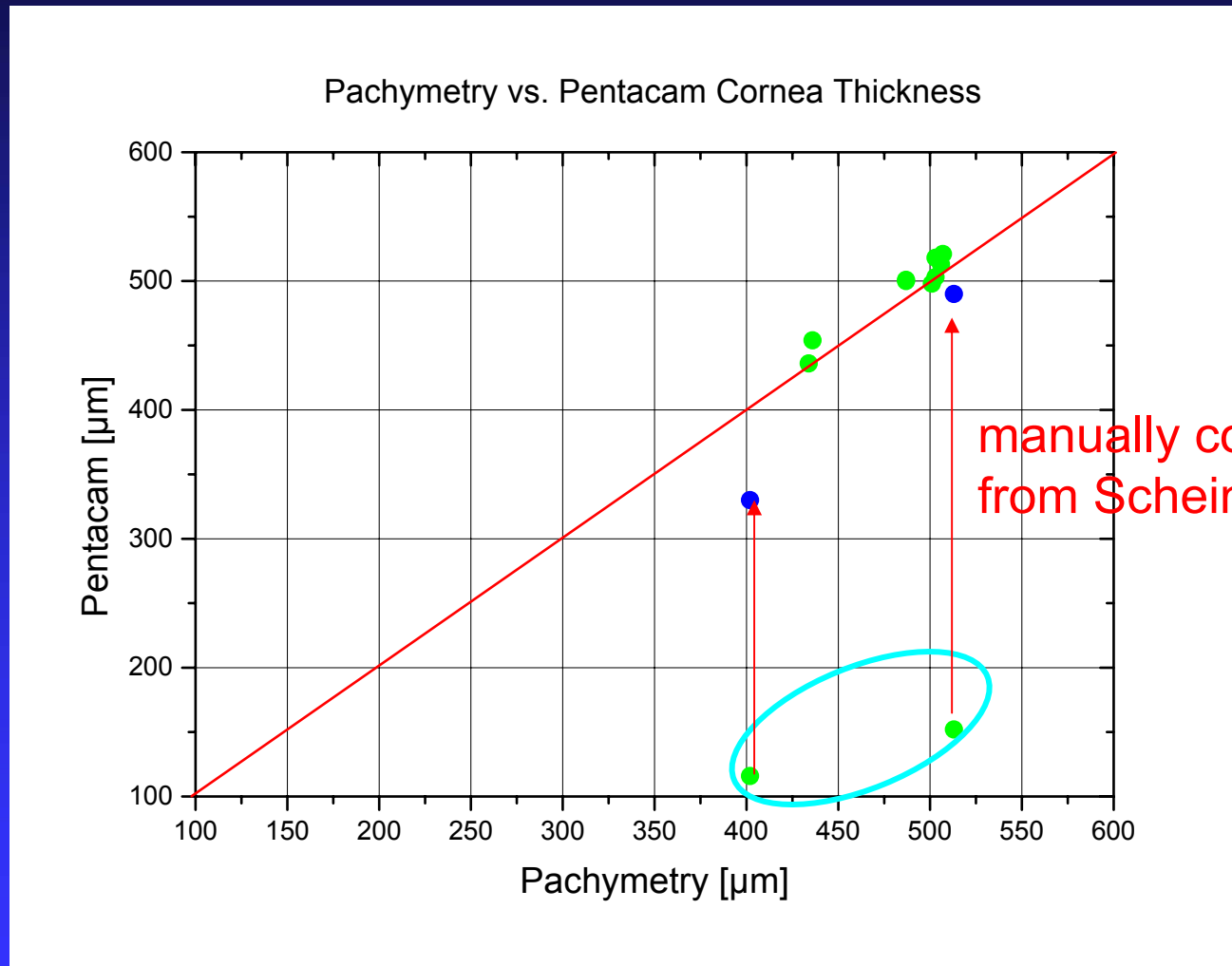
Thin Cornea – Scheimpflug Image



fitted curve does not follow the cornea
manual measurement of cornea thickness possible

Cornea Thickness II

- comparison with ultrasound pachymetry -



Comparable Keratographic Map

ORBSCAN

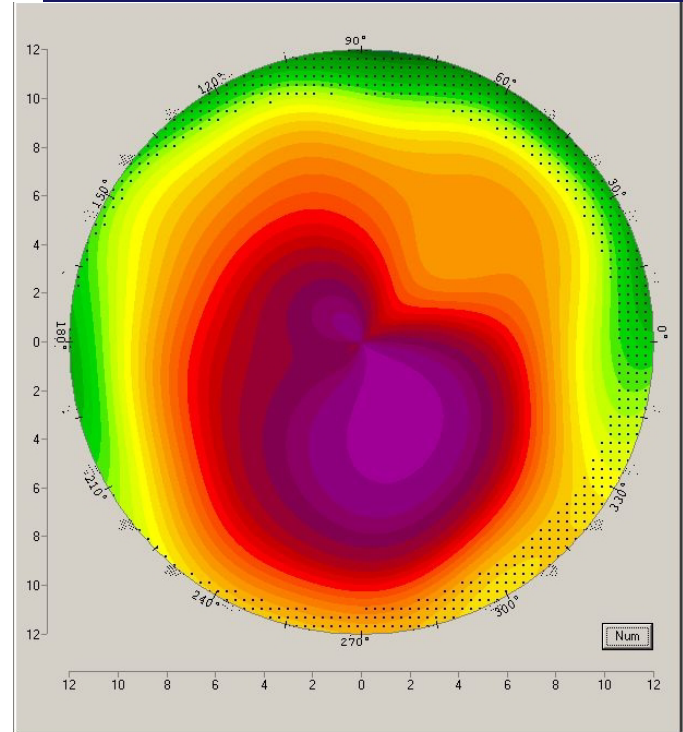
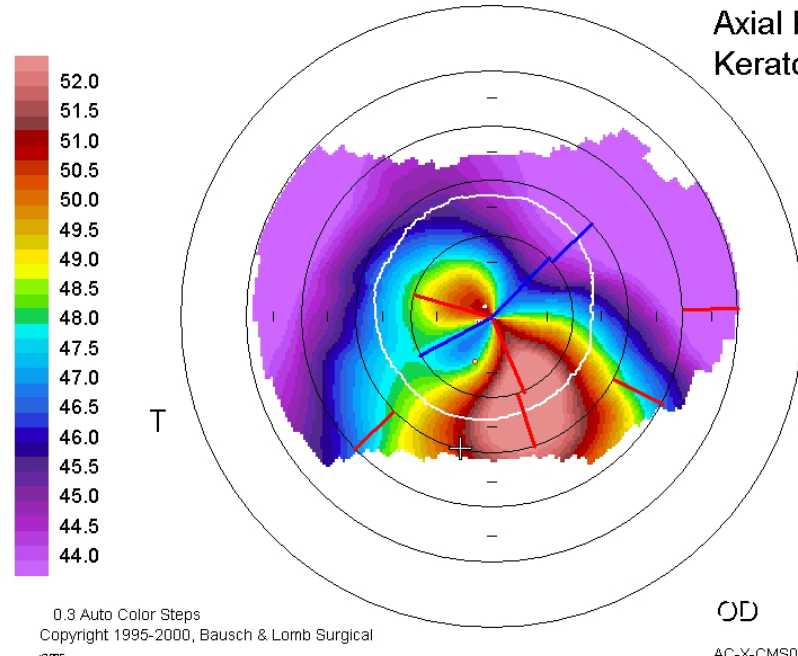
Kroeze, Antje
19684
OD - 8/20/03, 3:46:18 PM

Dipl.-Phys. K. Schmiedt
PAN Klinik Koeln
0221-2776-440

Axial Power Keratometric

19684
8/20/03 3:46:18 PM

Sim K's: Astig: -4.9 D @ 42 deg
Max: 50.8 D @ 132 deg
Min: 45.9 D @ 42 deg
3.0 MM Zone: Irreg: ± 3.7 D
Mean Pwr 47.9 ± 2.9 D
Astig Pwr 3.9 ± 2.3 D
Sleep Axis 129 ± 31 deg
Flat Axis 46 ± 31 deg
5.0 MM Zone: Irreg: ± 4.2 D
Mean Pwr 46.2 ± 3.3 D
Astig Pwr 2.3 ± 2.6 D
Sleep Axis 106 ± 42 deg
Flat Axis 41 ± 42 deg
White-to-White: 11.4 mm
Pupil Diameter: 4.1 mm
Thinnest: 391 um @ (-0.3, -0.8)
ACD (Ehdo.): 3.09 mm
Kappa: 4.35° @ 200.62°
Kappa Intercept: -0.25, -0.09

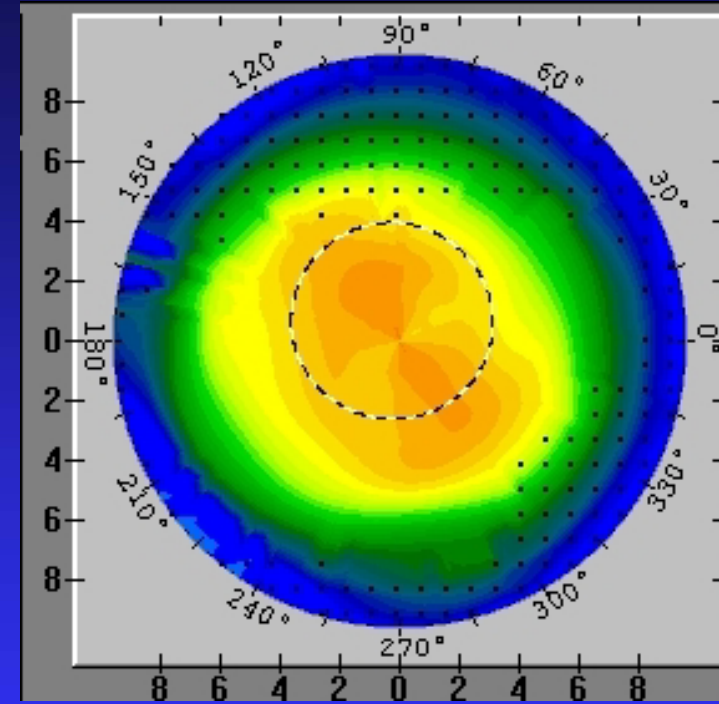
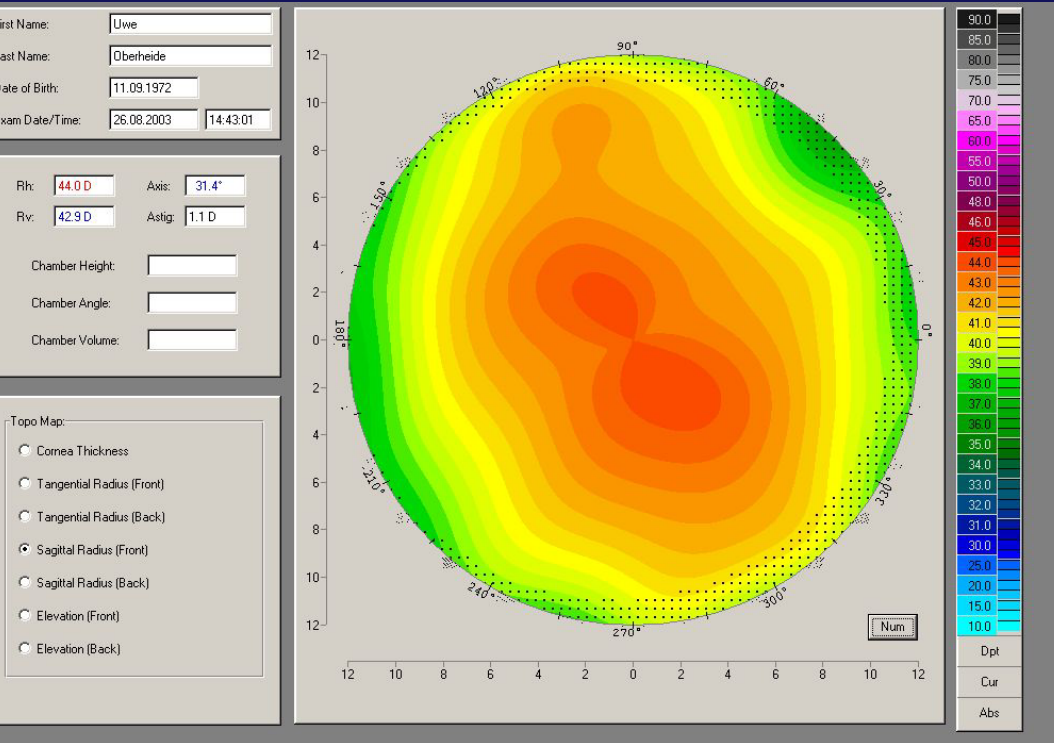


differences mainly due to color encoding

Orbiscan: -4.9 dpt 42 deg

Pentacam: -4.2 dpt 37 deg

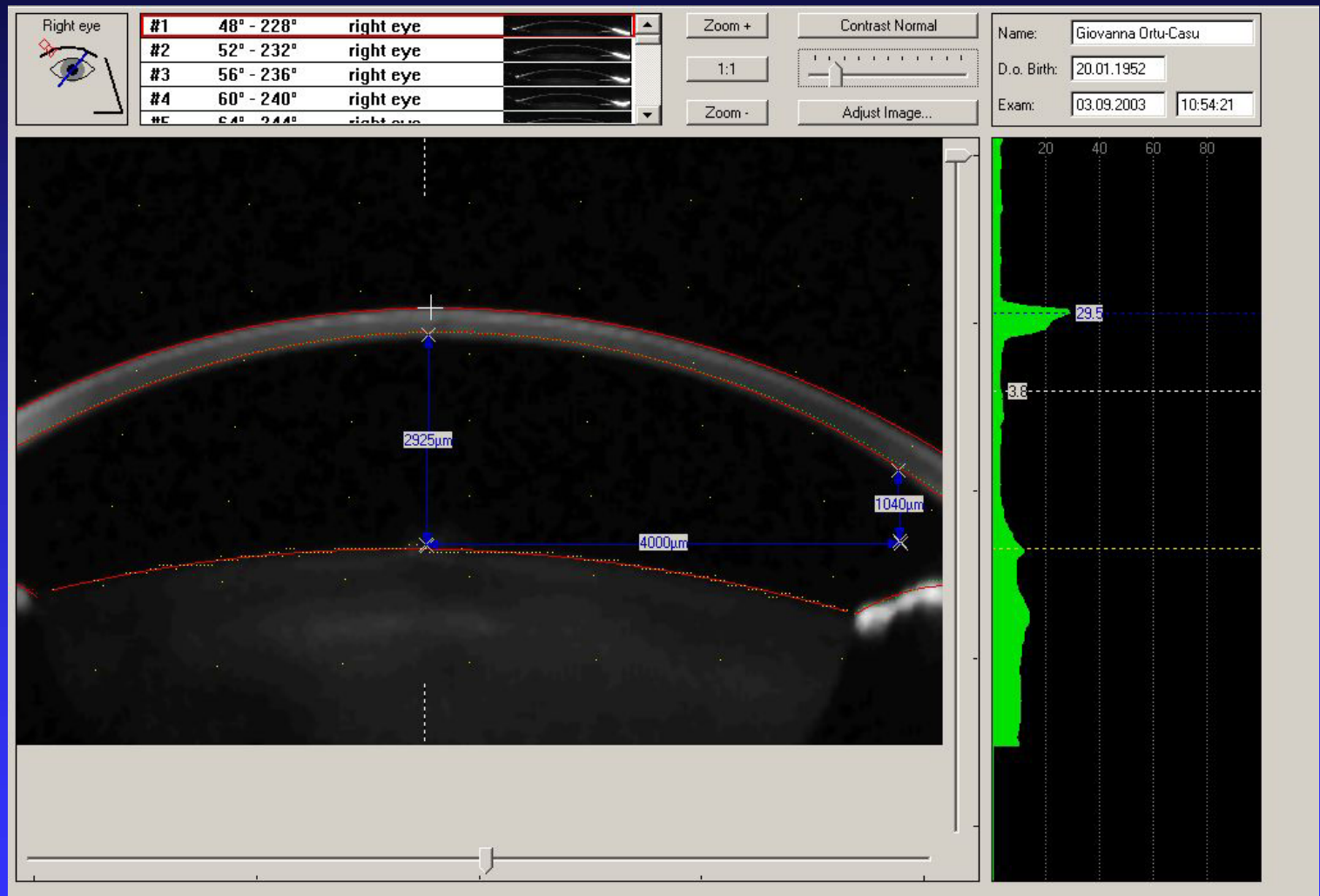
Comparison with Keratograph



Pentacam: -1.1 dpt
Keratograph: -1.2 dpt
(Oculus)

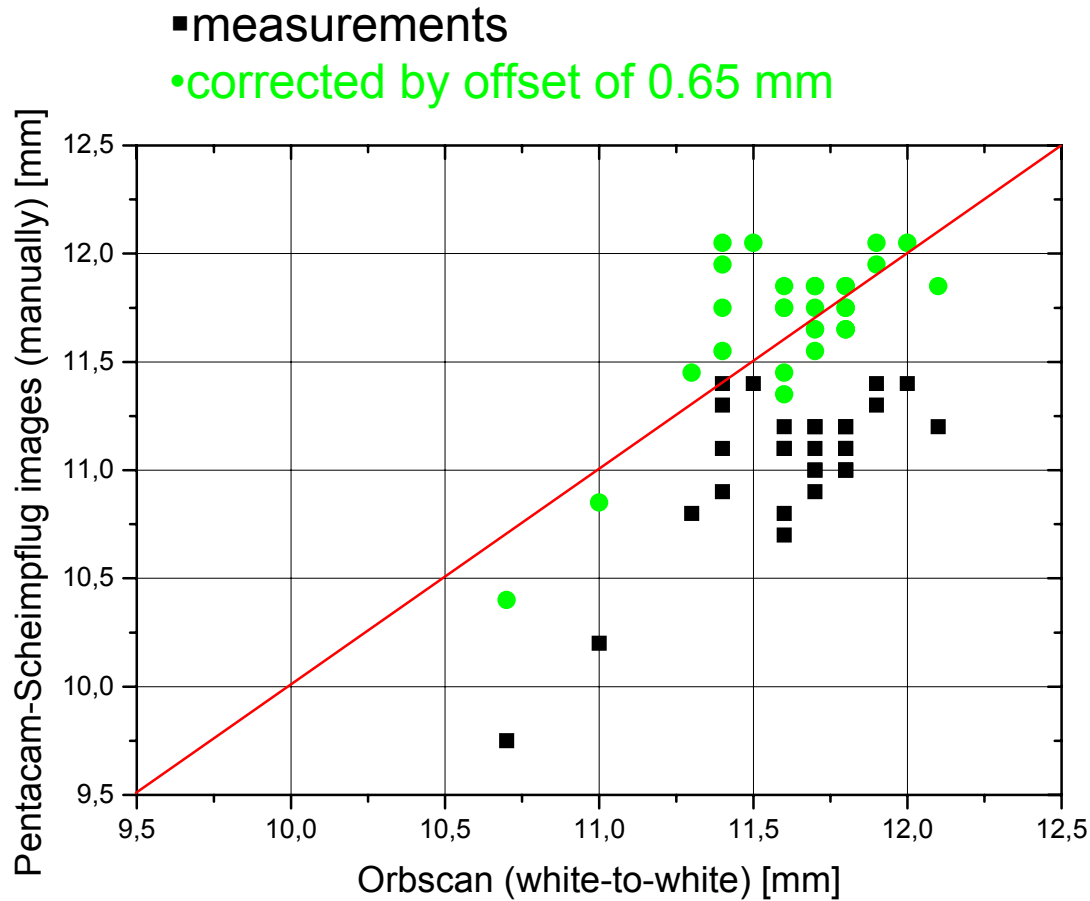
31.4 deg
31.2 deg

ACD for Artisan-Implant



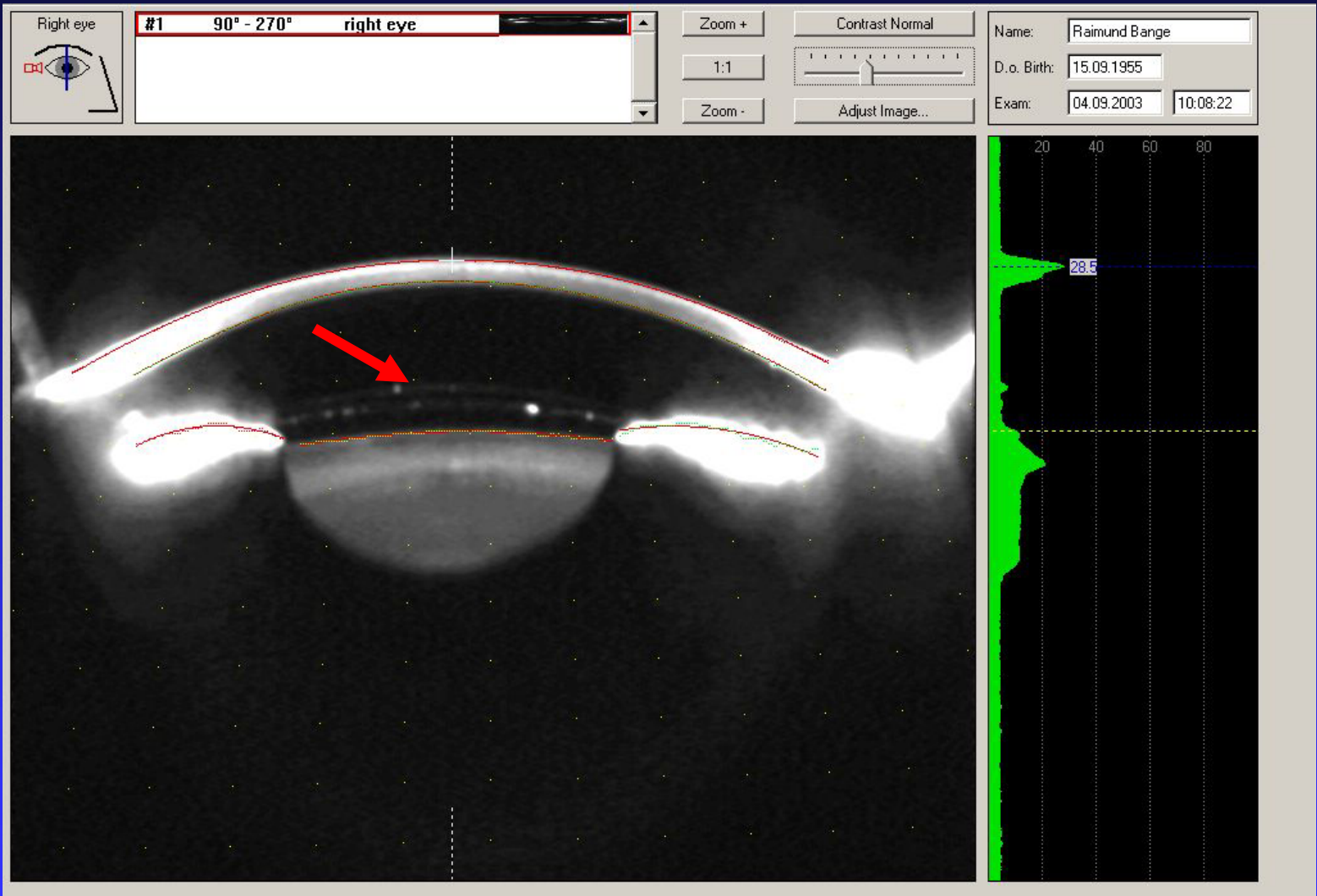
ACD at typical radii of Artisan-lens can be measured (not available with IOL Master or Orbscan)

White-to-White vs. Chamber Angle

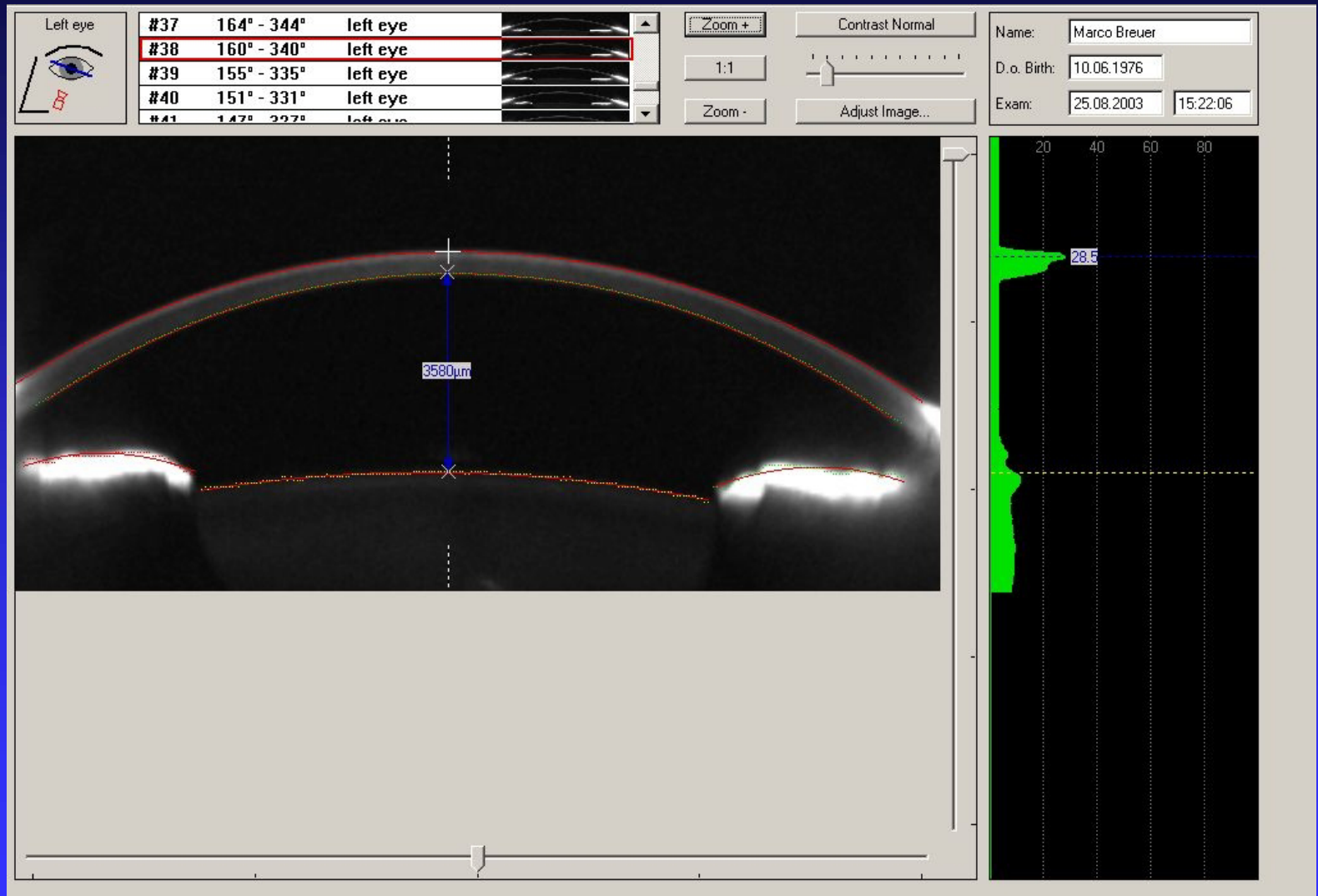


- strong deviation between WtW and measurement
- for Artisan-implant angle distance more important

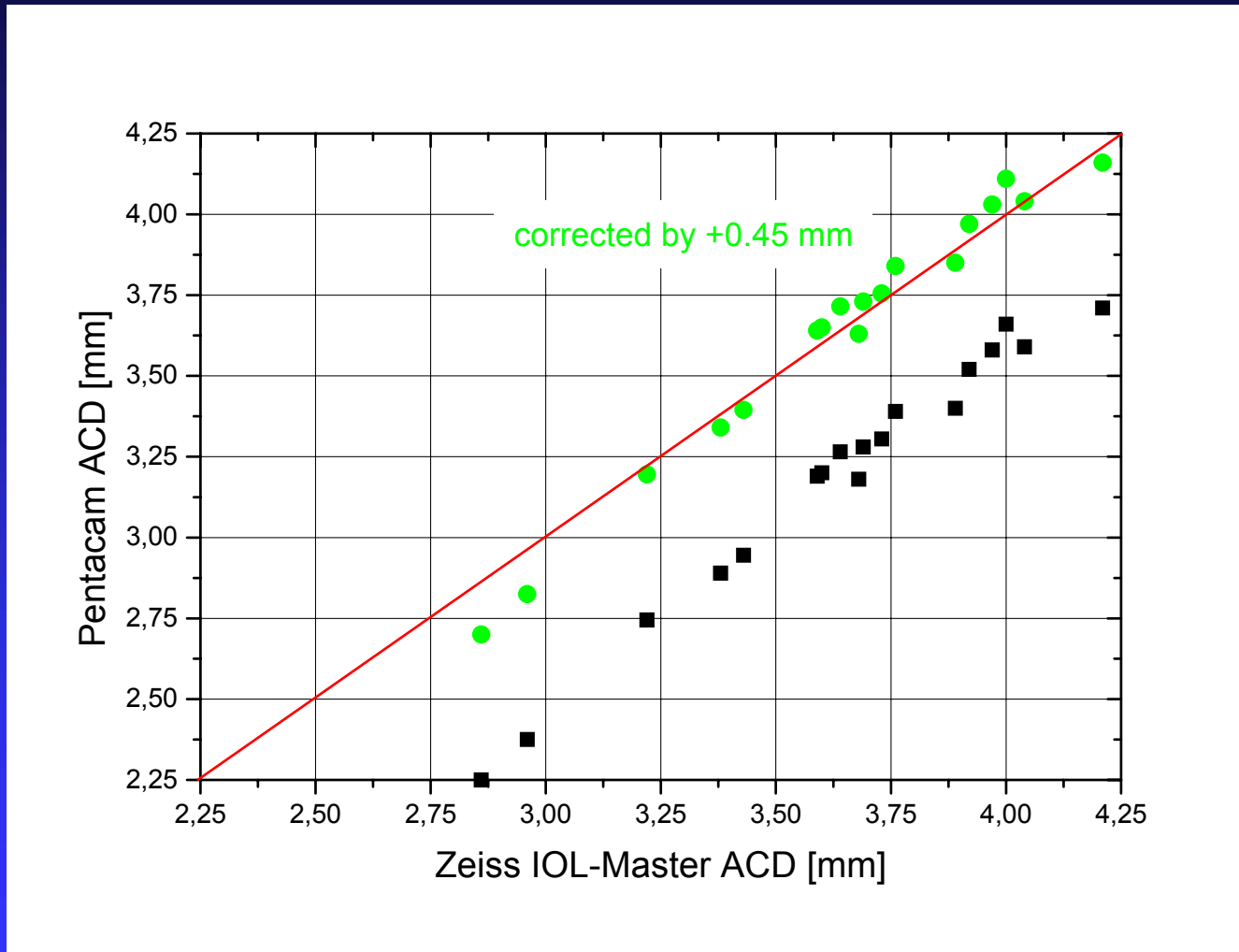
Implanted Artisan-Lens



Measurement ACD for ICL-Implant

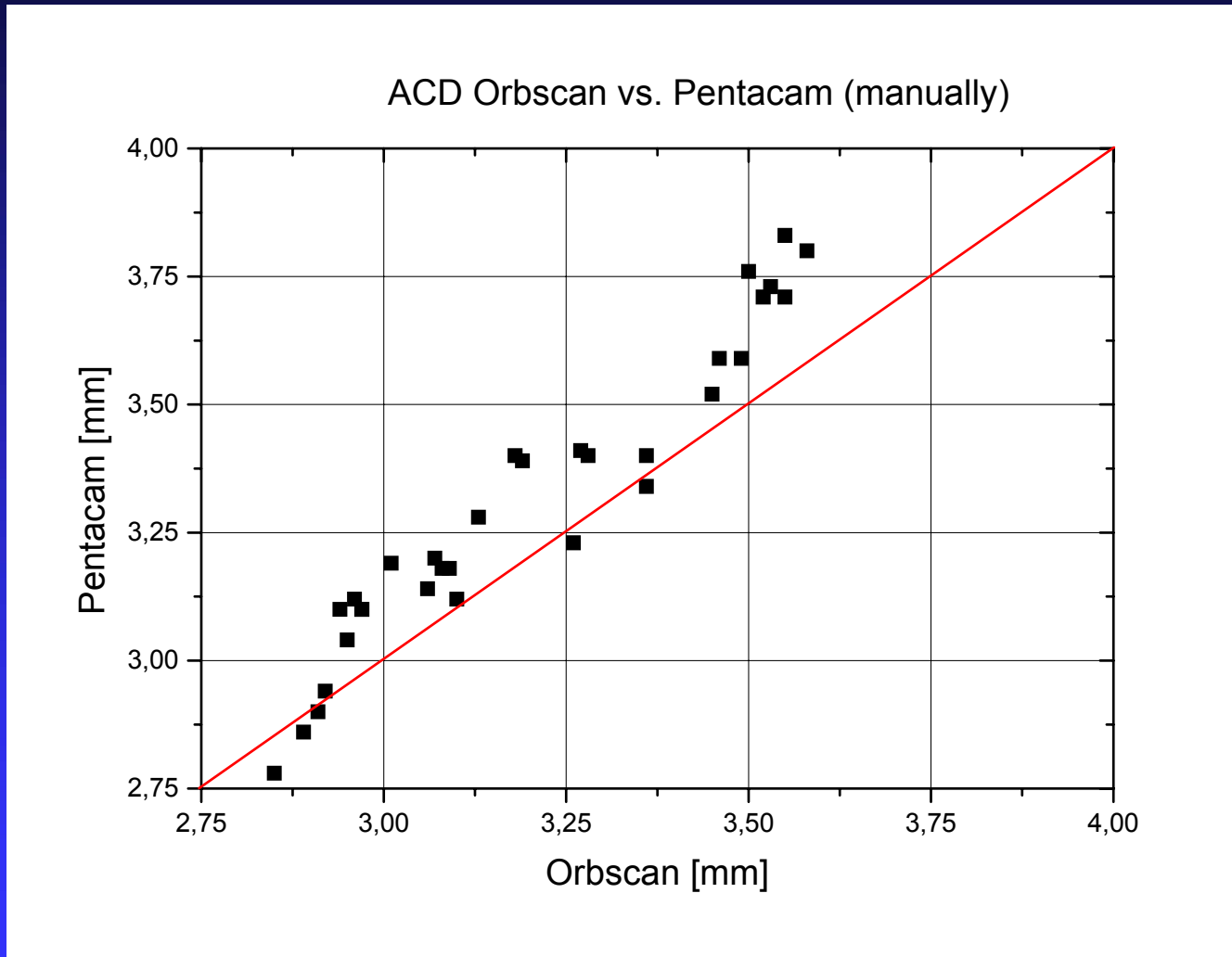


ACD IOL-Master (Zeiss) vs. Pentacam

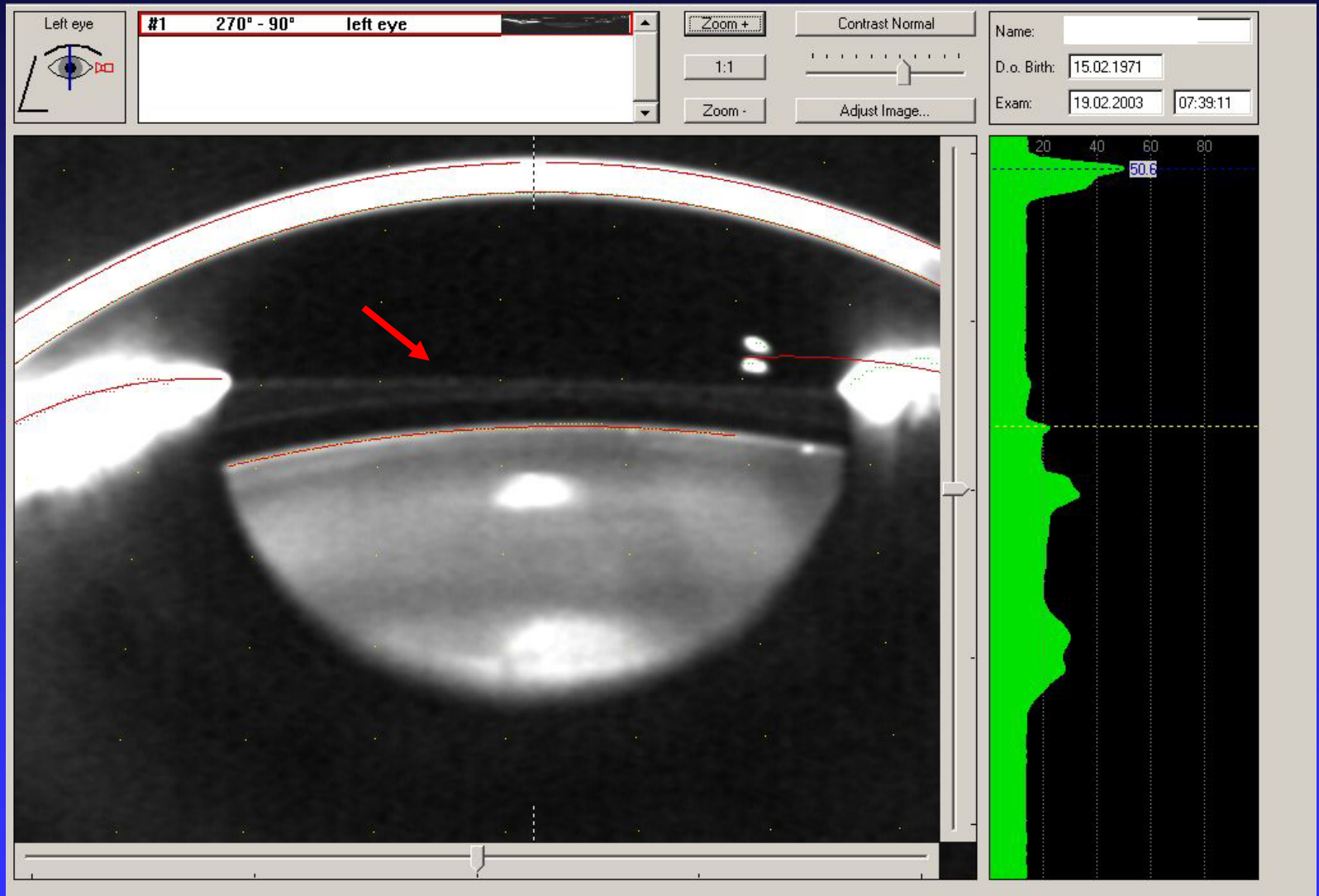


correction due to different measurement principles
IOL-master (epithel) / Pentacam (endothel)

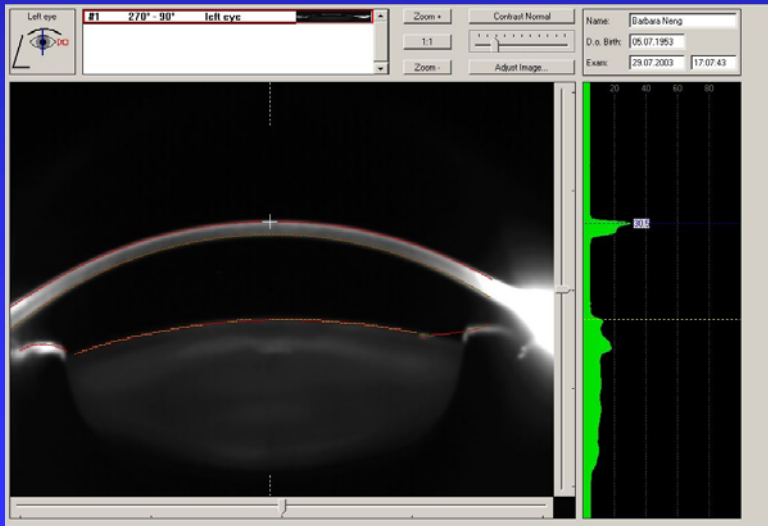
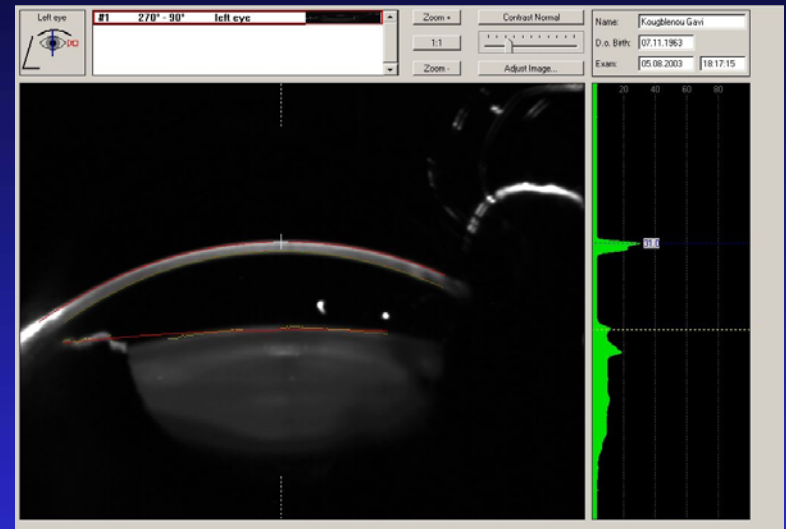
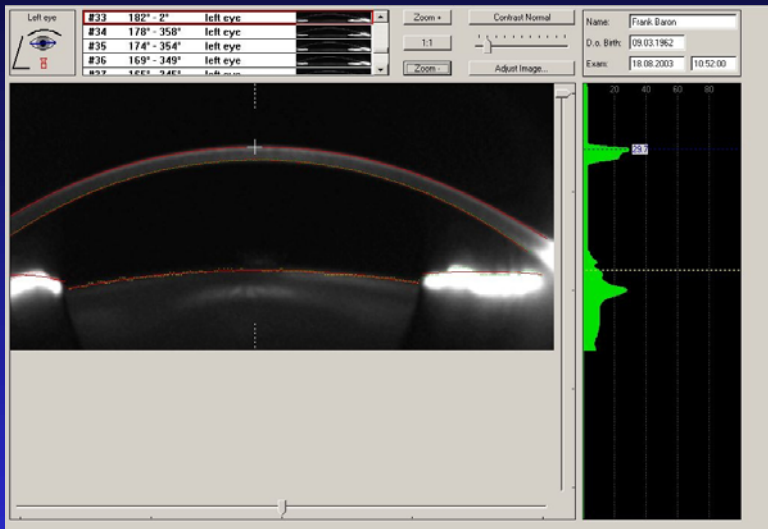
ACD Orbscan vs. Pentacam



ICL-Implant



Incipient Cataract



- densitometry of the lens shows cataract formation
- allows (in principle) classification of cataract

Summary

- high reproducibility of cornea thickness
- very good correlation to ultrasound pachymetry
- for corneas $> 400\mu\text{m}$: direct measurement
 $< 400\mu\text{m}$: correction by Scheimpflug-image
- keratographic measurements
- measurements of ACD at different positions possible
- measurement of lens density (incipient cataract)