

# **Laser in Situ Keratomileusis Decentration With and Without Active Eye-Tracking System**

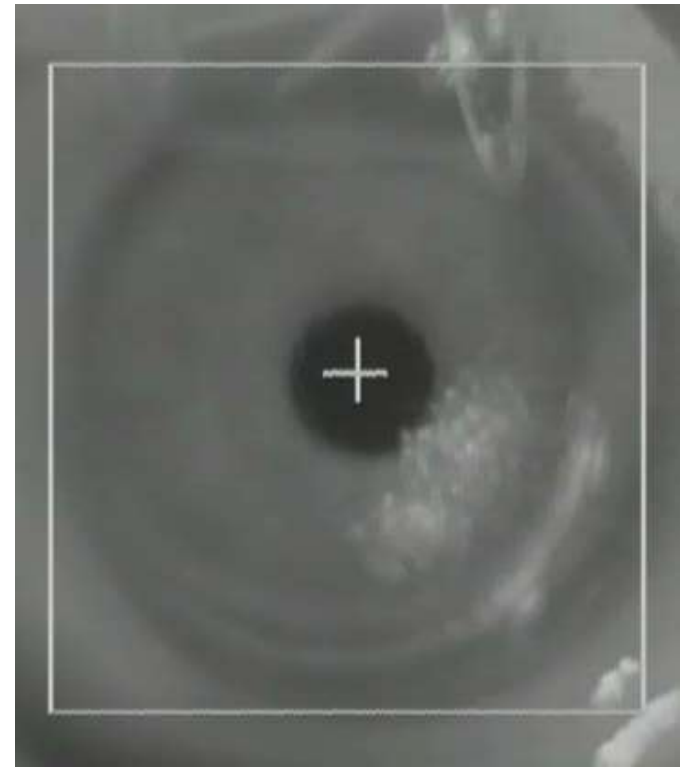
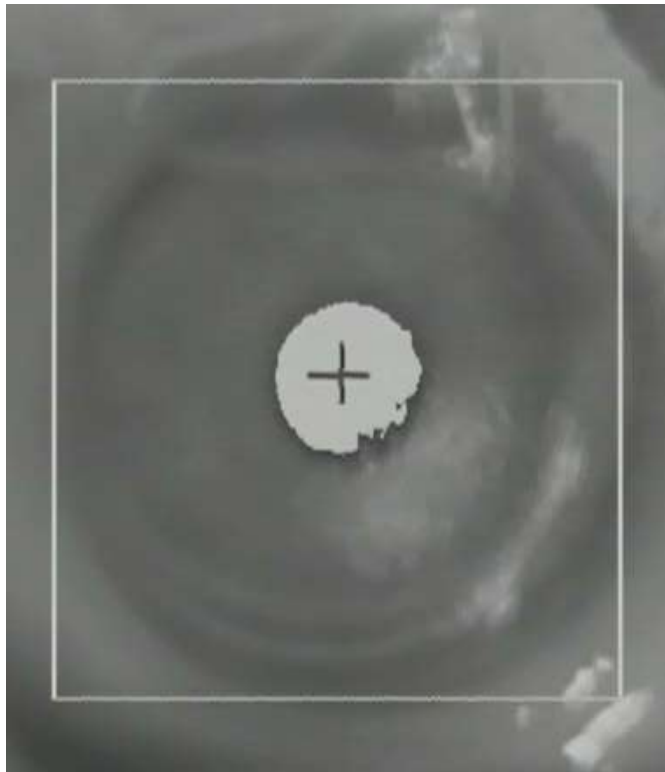
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P 167: The author have no financial interest in the subject matter of this e-poster.

A subset of patients presenting for enhancement surgery following LASIK with the AMO-VISX ActiveTrak system were noted to have superior decentration.

(Mark E .Johnston, Laser in Situ Keratomileusis Decentration with Active Eye-Tracking System ASCRS Poster , 2010)



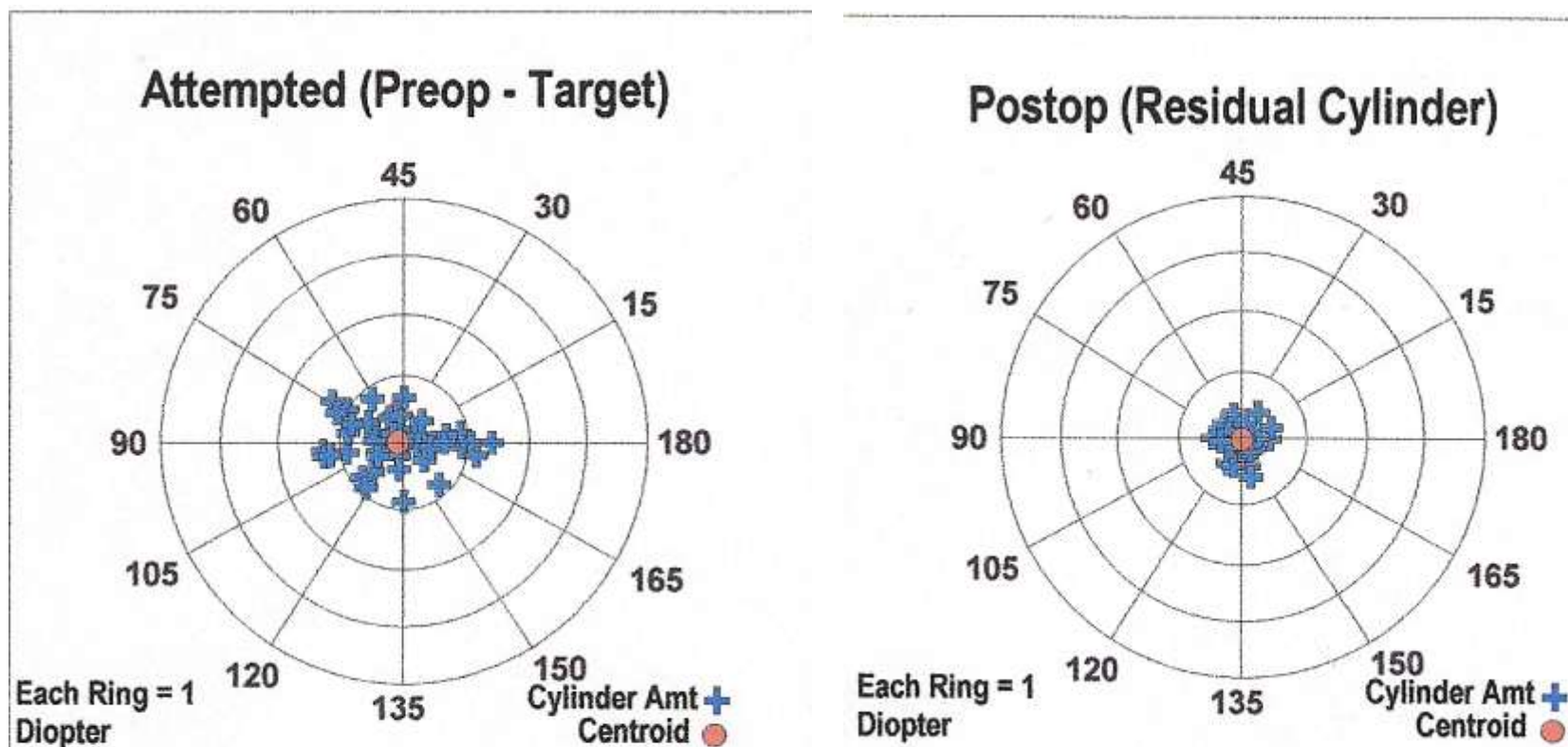
The ActiveTrak system video output feed can be recorded and/or monitored during surgery (See Attached Video)

# Purpose

- Based on historic data without a tracker from our center and a pilot study we discontinued the routine use of the tracking device.
- This study was done to compare our results with and without a tracker.

We used astigmatism as a marker of decentration utilizing the Refractive Surgical Consultant© as our database.

The postoperative cylinder centroid is reported in Diopters (D) and axis as 0 to 180 Degrees.



\*VISX VisionKey Standard ,Wide zone with blend, No tracker (2010)

*Centroid = 0.09 D Axis 85 Degrees*

*Centroid = 0.02 D Axis 121 Degrees*

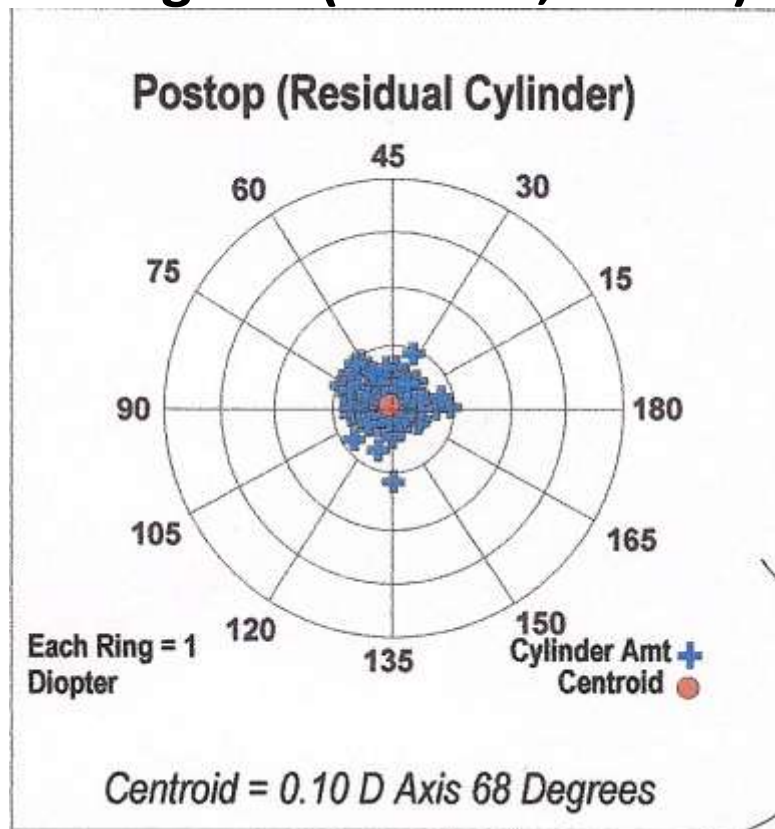
Statistical Summary	N	Mean	St Dev	Min	Max	Centroid	St Dev
Attempted Correction (Preop - Target)	76	0.44	0.43	0.00	1.45	0.09 D Axis 85 Degrees	0.40
Postoperative (Residual Cylinder)	76	0.12	0.18	0.00	0.66	0.02 D Axis 121 Degrees	0.15

# Methods

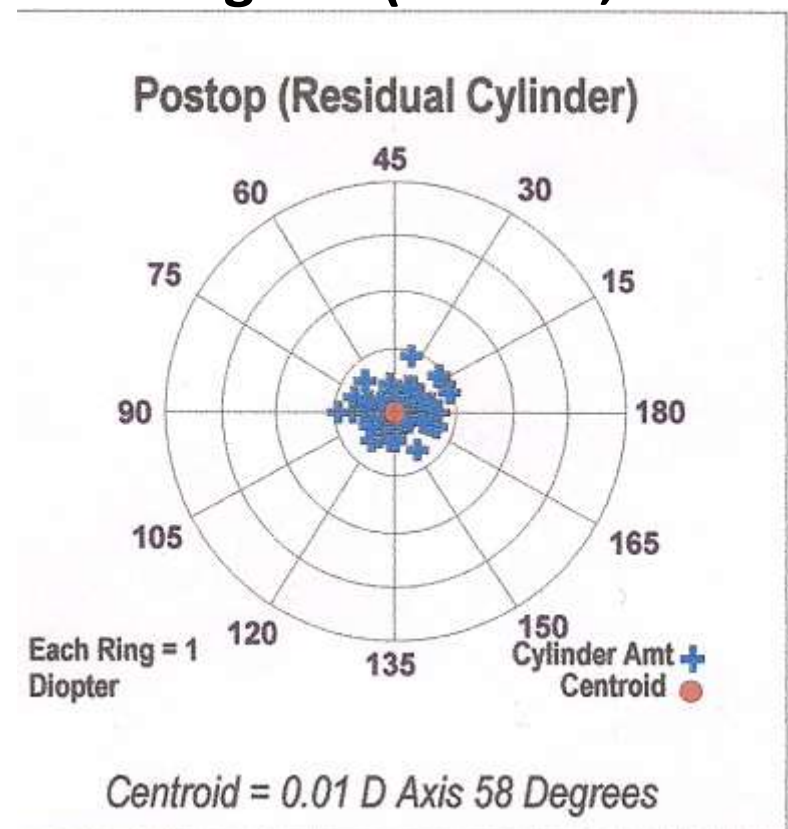
- A retrospective analysis was done on all myopic patients (0-10D) with less than 1.5 D cylinder treated with AMO-Visx CustomVue over a one year period.
- Corrections above (high) and below (low) 6.0 diopters spherical equivalent were analyzed separately.
- Ablations both with and without the tracker were centered on the pupil in low illumination

# Results for low myopia:

**WITH the tracker 0.10 Diopters  
at 68 Degrees (SD 0.24, n=288)**



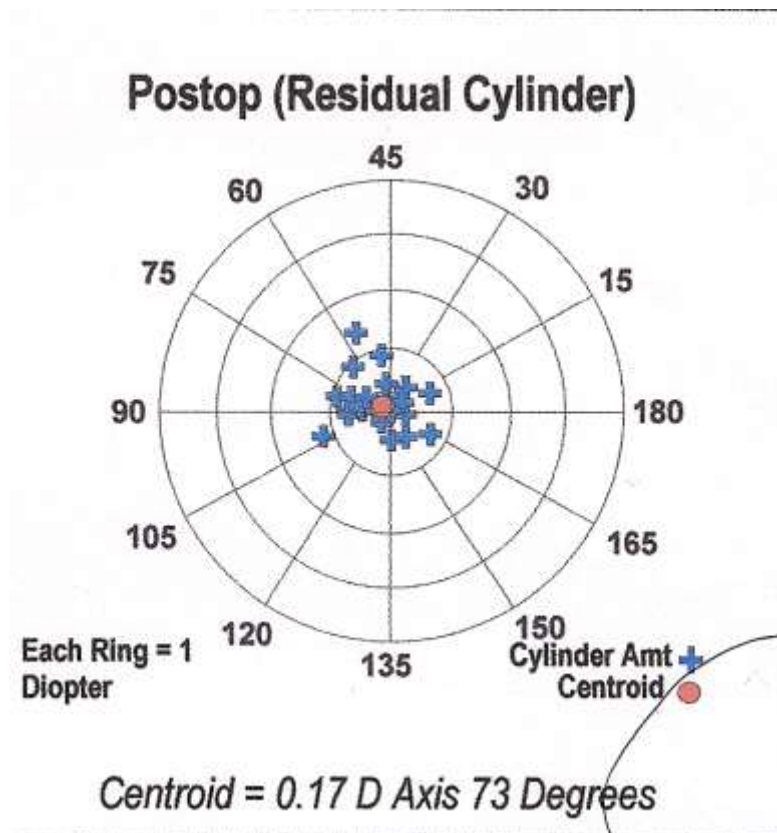
**WITHOUT the tracker 0.01 D  
at 58 Degrees (SD 0.23, n=160)**



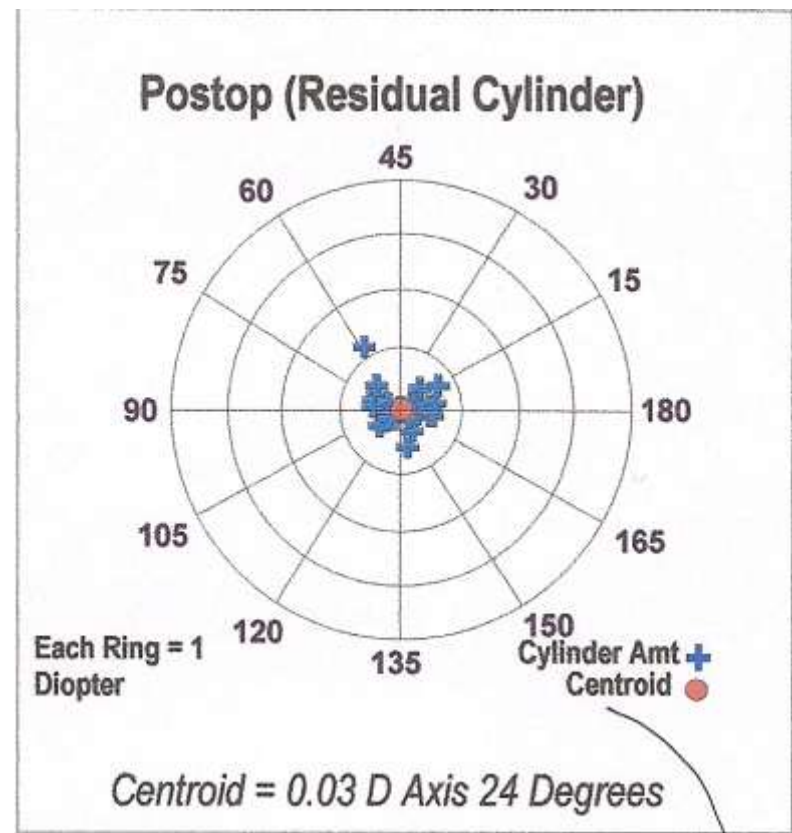
This difference was highly statistically significant ( $P=0.0001$ )

# Results for high myopia:

**WITH the tracker 0.17 D at 73 degrees (SD 0.36, n=43);**



**WITHOUT the tracker 0.03 D at 24 degrees (SD 0.24, n=56).**



This difference was statistically significant ( $P=0.0226$ .)

# Conclusion

- While in general the ActiveTrak system performs well, with careful attention to fixation, superior results were noted without the tracker, even with the longer treatment times with higher corrections.