

# Pre-alignment, outside the target chamber

use these screws to  
adjust tip, tilt, and  
distance of crystal



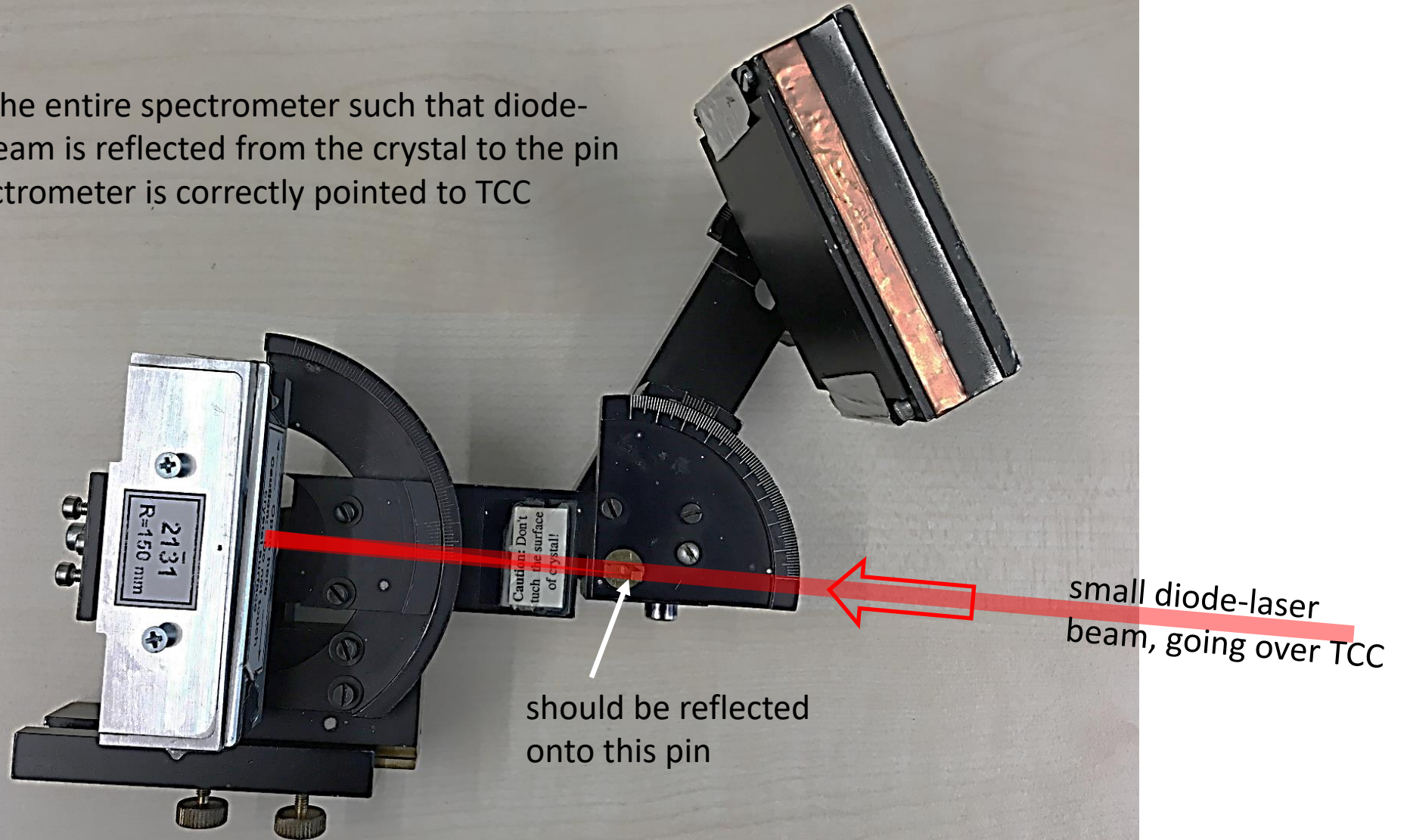
achieve small focus,  
centered on this pin  
→ this is the center of  
the Rowland-circle

expanded collimated  
HeNe-beam



## Alignment inside the target chamber

direct the entire spectrometer such that diode-laser beam is reflected from the crystal to the pin  
→ spectrometer is correctly pointed to TCC

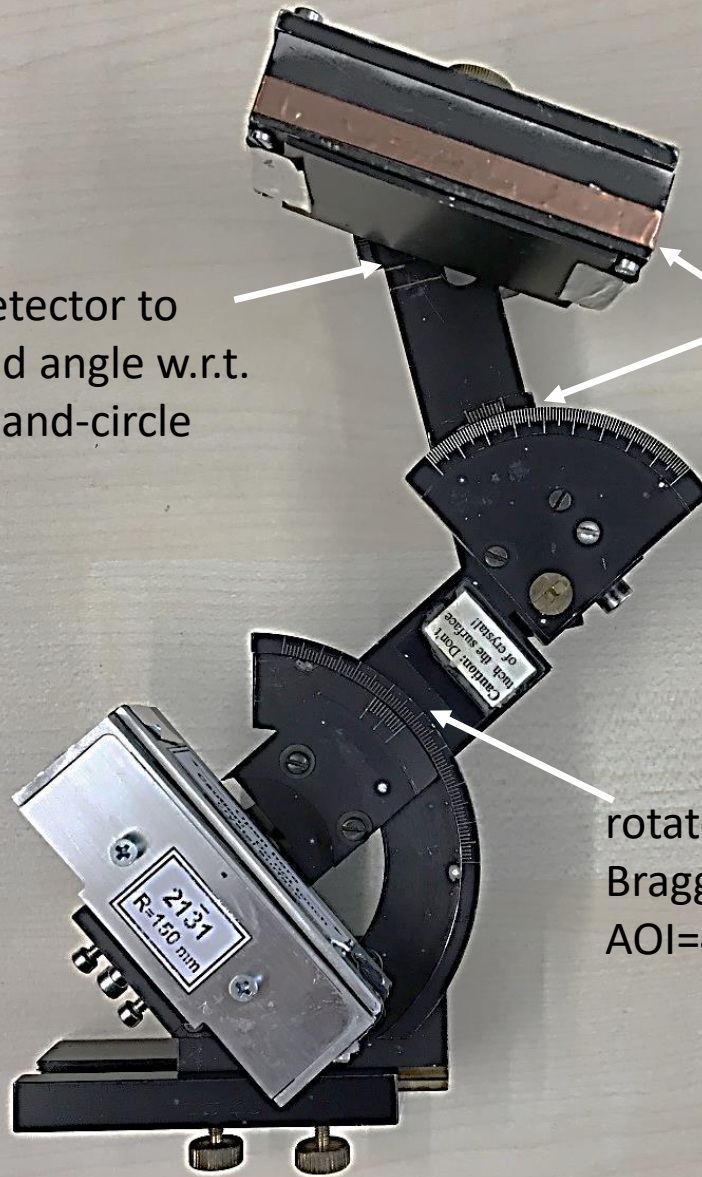


## Alignment inside the target chamber

rotate detector to  
calculated angle w.r.t.  
the Rowland-circle

adjust this distance and  
rotate this arm to bring  
detector to calculated position

rotate to set crystal to central  
Bragg-angle (shown here is  
AOI=40°, i.e.  $\theta_B=50^\circ$ )





# Alignment inside the target chamber

focused by crystal to a  
line onto the detector

vertical  
line focus

point-source  
at TCC

adjust distance  $a$  (TCC-crystal),  
to minimize the width of the  
line on the detector \*)

\*) I think the people from Jena replaced  
the film cassette with a small CCD-  
camera, to more accurately determine  
the best focusing

