

Age validation of Black Rockfish, Copper Rockfish, and Cabezon using secondary ion mass spectrometry (SIMS) to elucidate seasonal patterns in otolith stable oxygen isotopes

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Online Resource 1

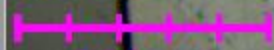
Fig.1 Polarized incident light microscope images of Black Rockfish sagittae analyzed by SIMS. Probe paths are represented by solid black lines with the notation “XS#”. In all cases, the larger number represented by “#” reflects the probe path used in the final analysis. Black spots present on some images are SIMS probe marks made during initial experimental transects. Yellow numbers along each path act as reference points for mapping corresponding $\delta^{18}\text{O}$ values. Yellow circles indicate areas that the corresponding author initially found of interest when deciding the initial probe path.

S6726
OR1974746-8
*Analyze this half

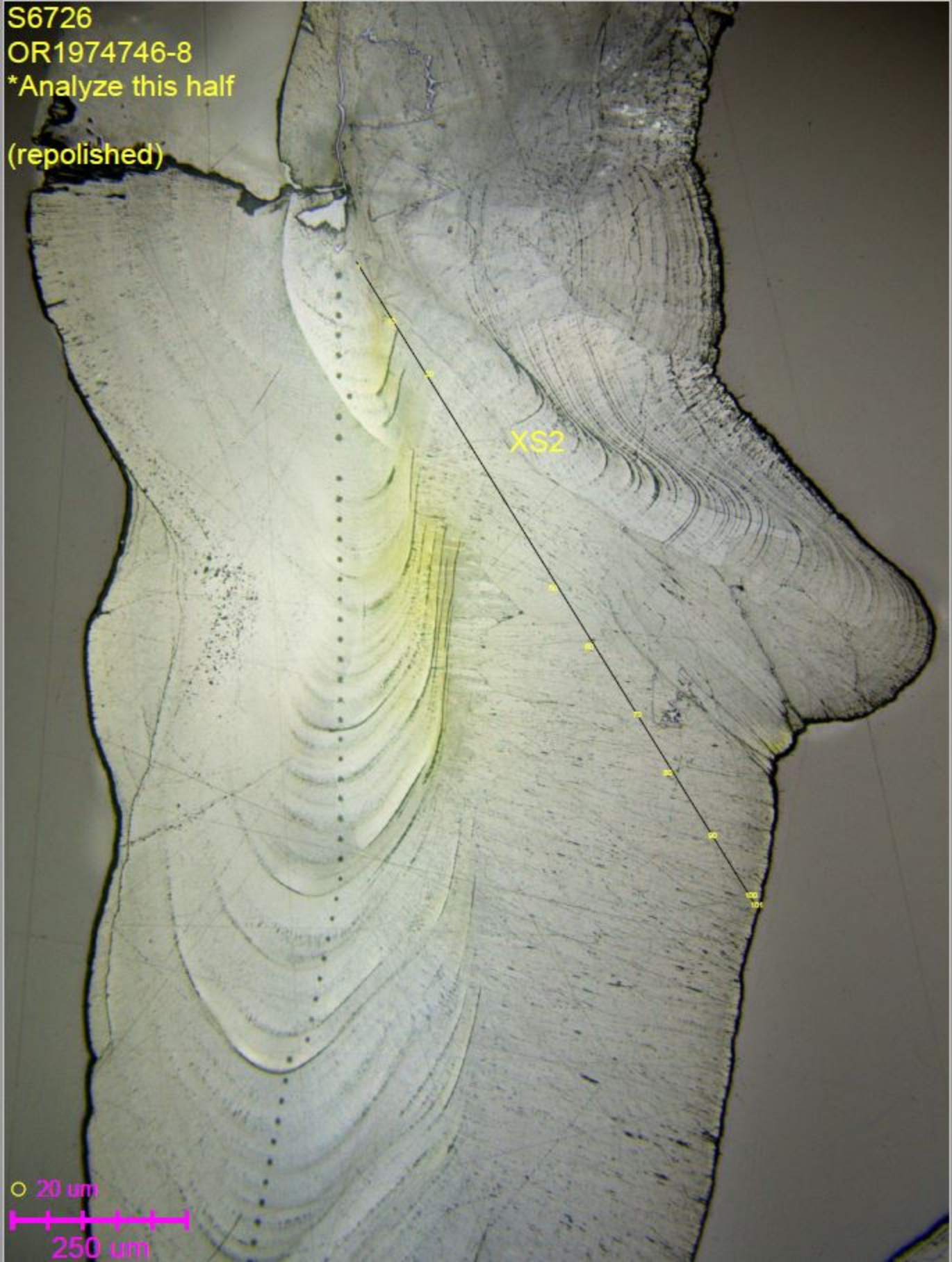
(repolished)

XS2

○ 20 μm

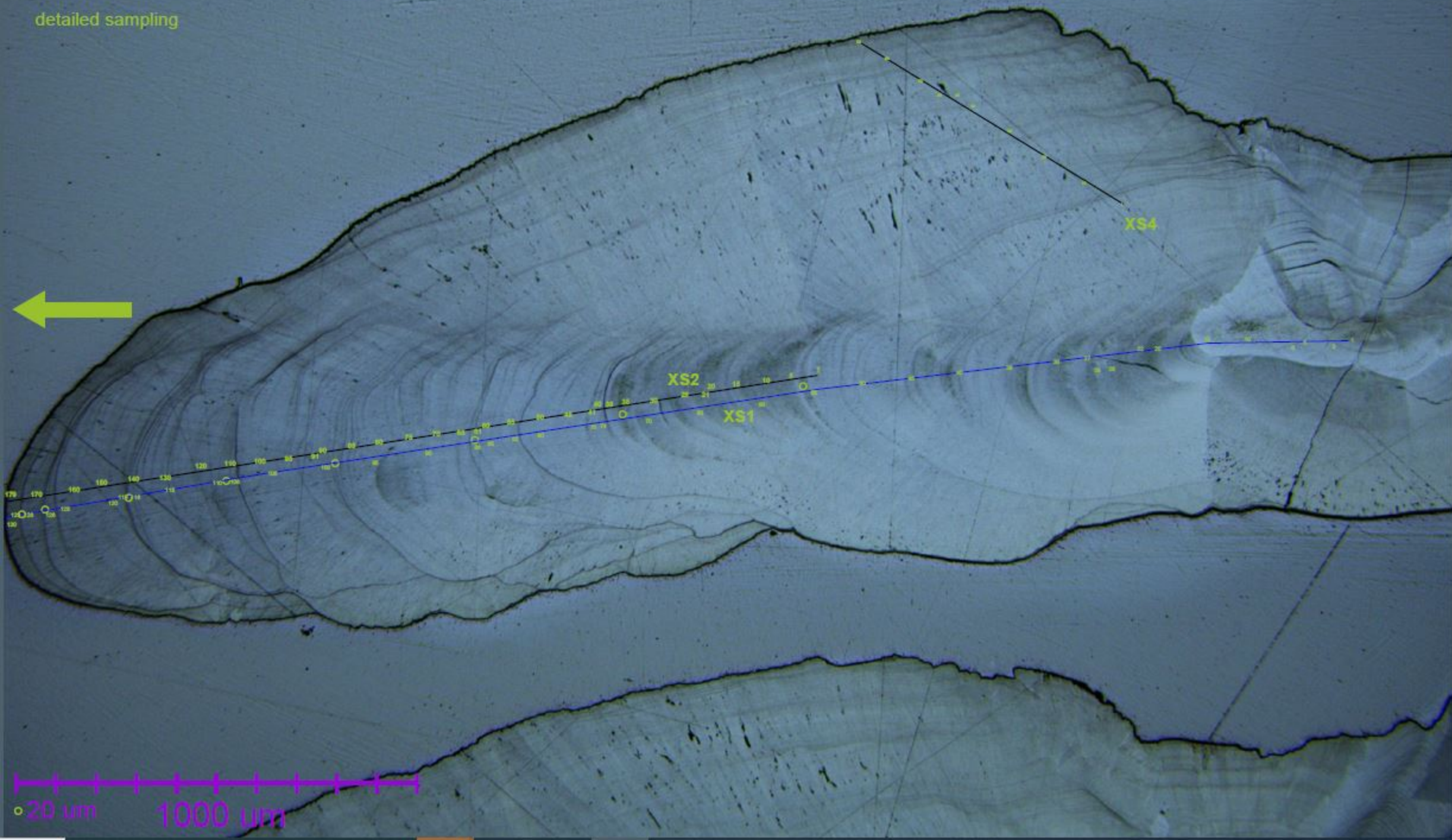


250 μm

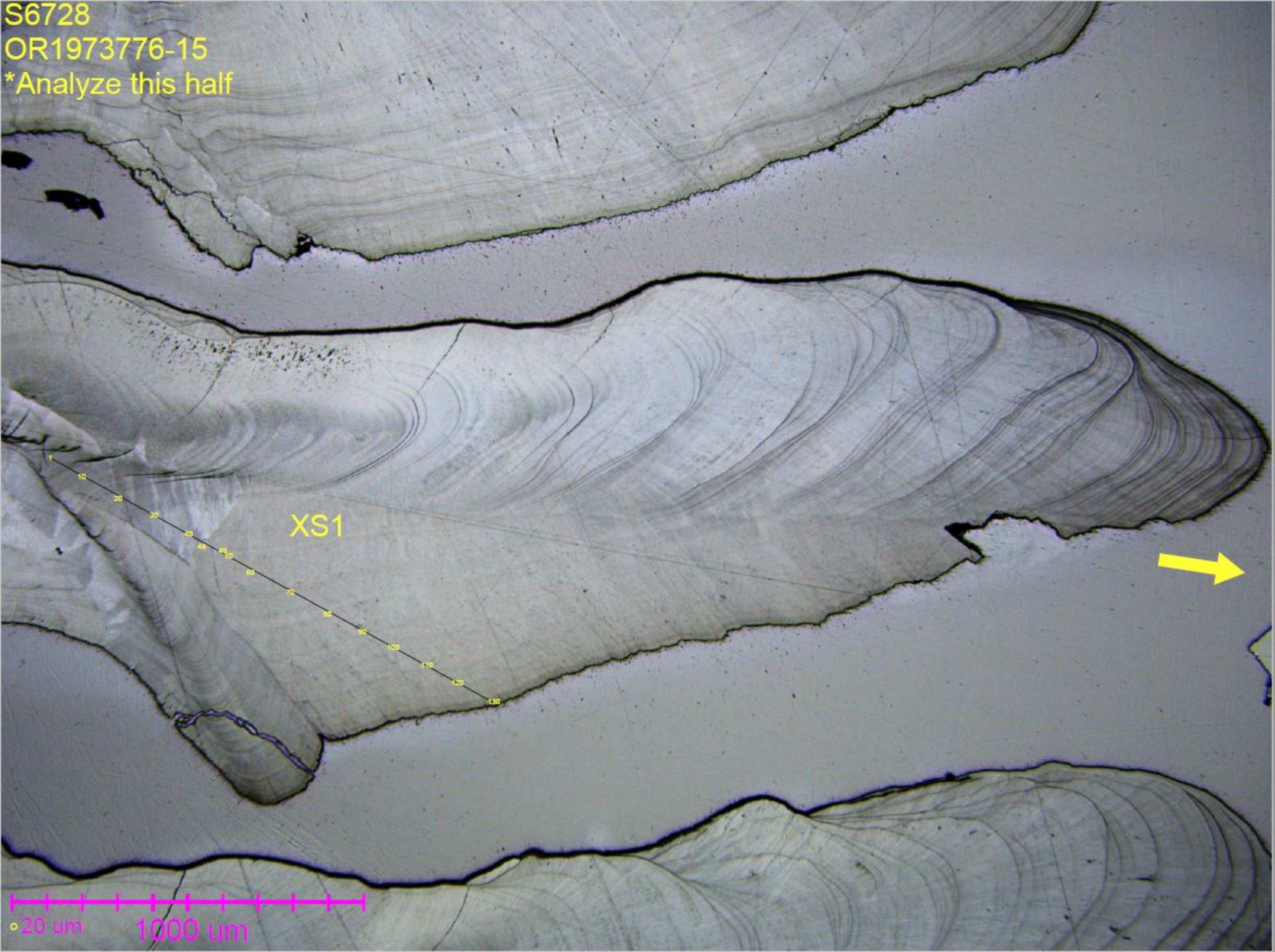


S6727
OR1974746-9
*Analyze this half

detailed sampling



S6728
OR1973776-15
*Analyze this half



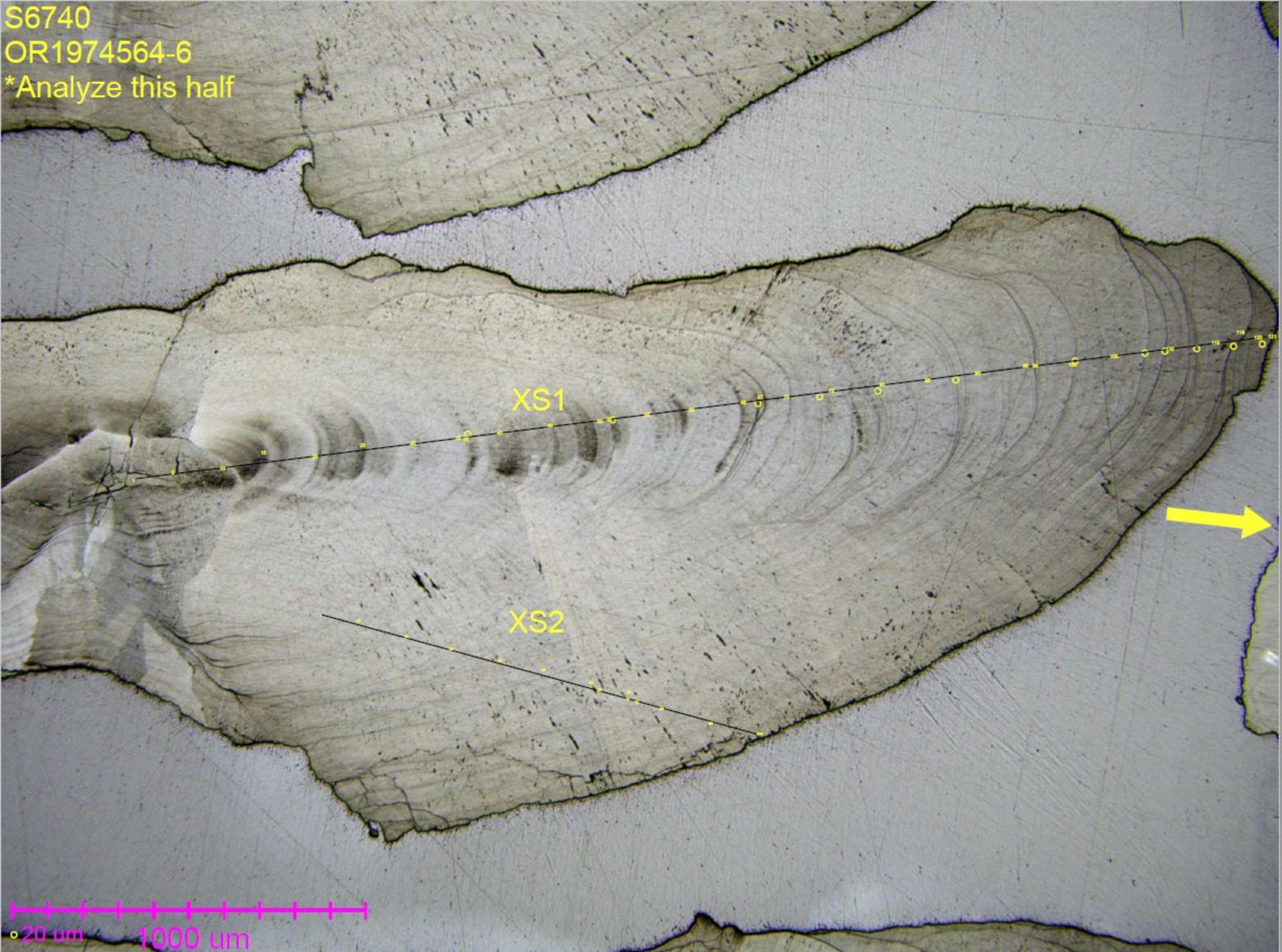
XS1

1000 μm
20 μm

S6740

OR1974564-6

*Analyze this half



XS1

XS2



S6741
OR1974564-22
*Analyze this half



XS1

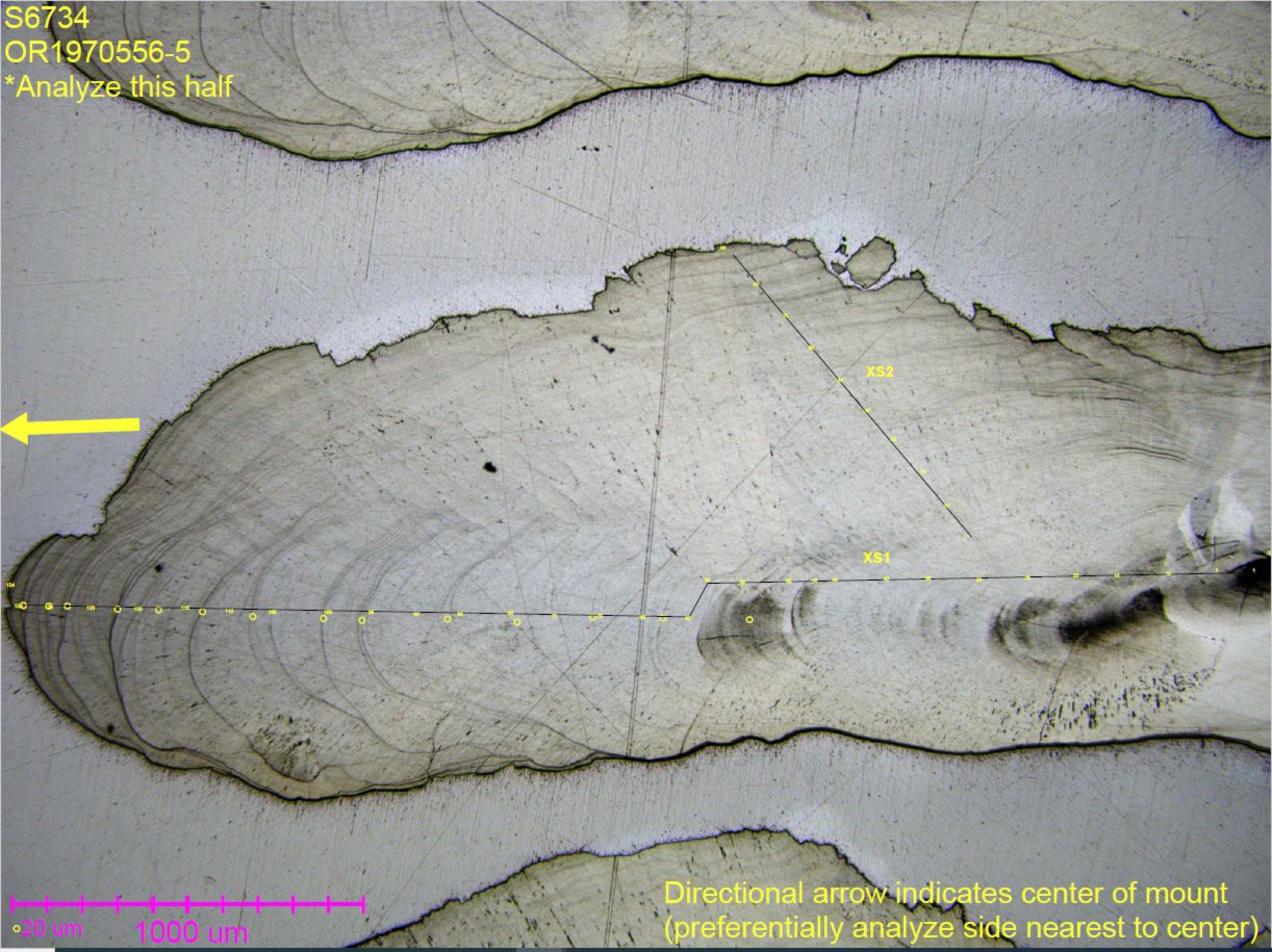
XS2

• 20 μm

500 μm



S6734
OR1970556-5
*Analyze this half

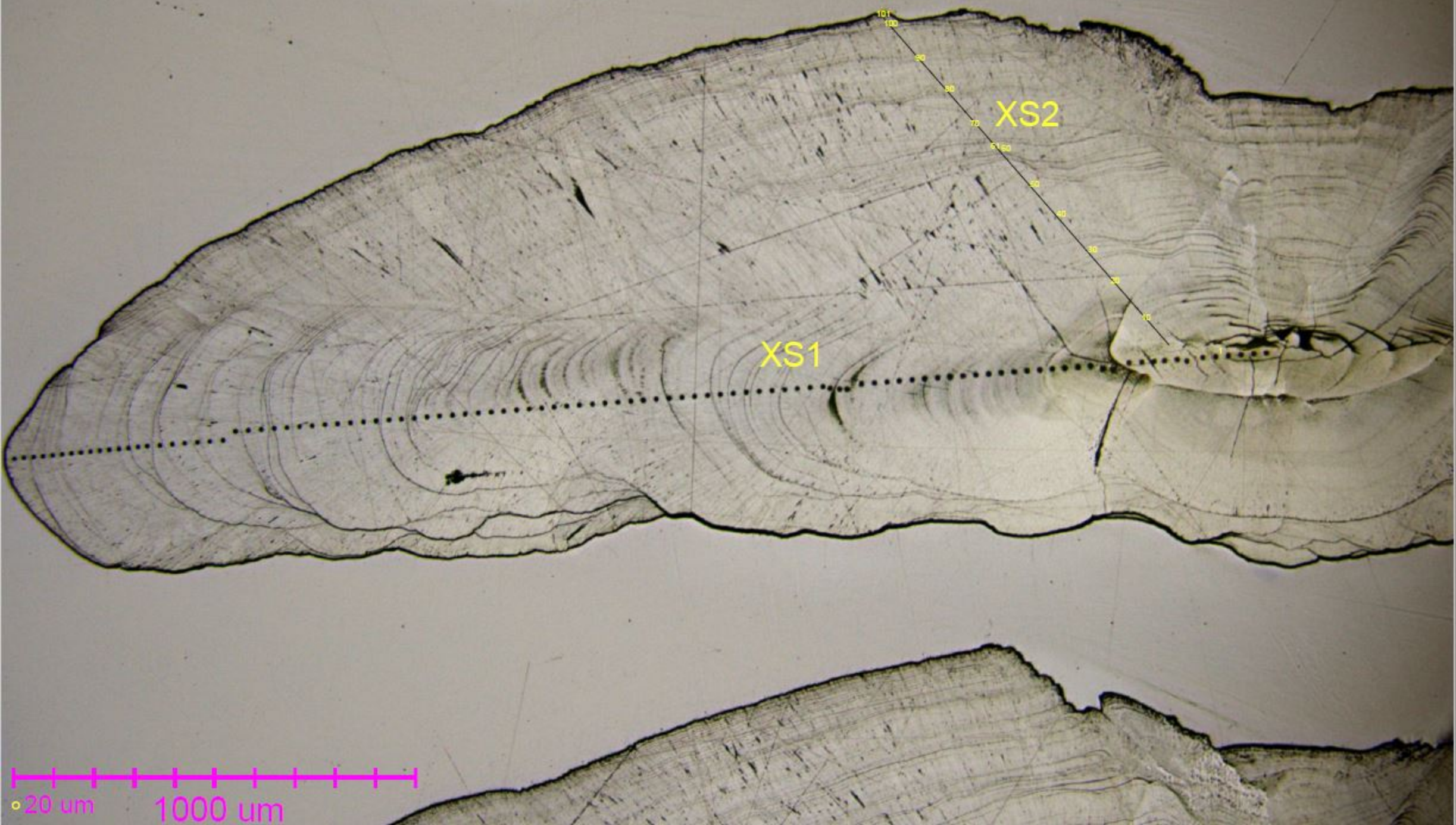


20 μm 1000 μm

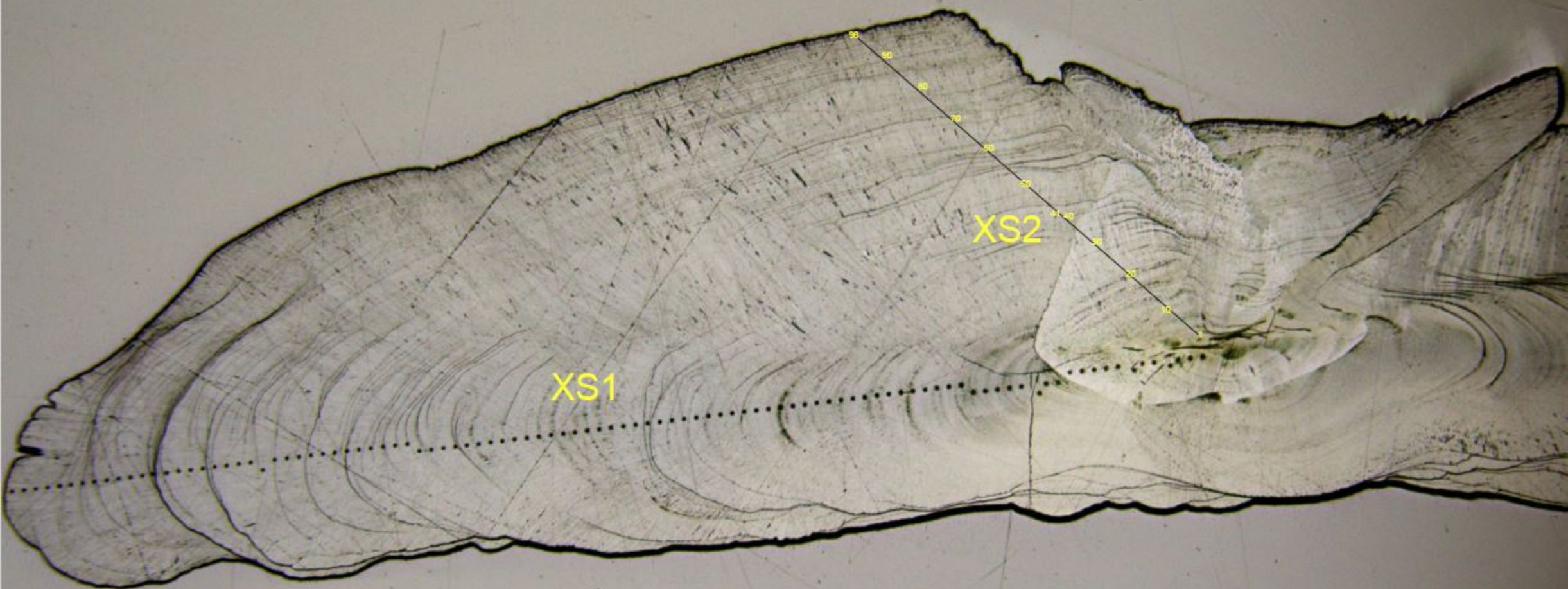
Directional arrow indicates center of mount
(preferentially analyze side nearest to center)

S6736
OR1970556-1
*Analyze this half

(repolished)

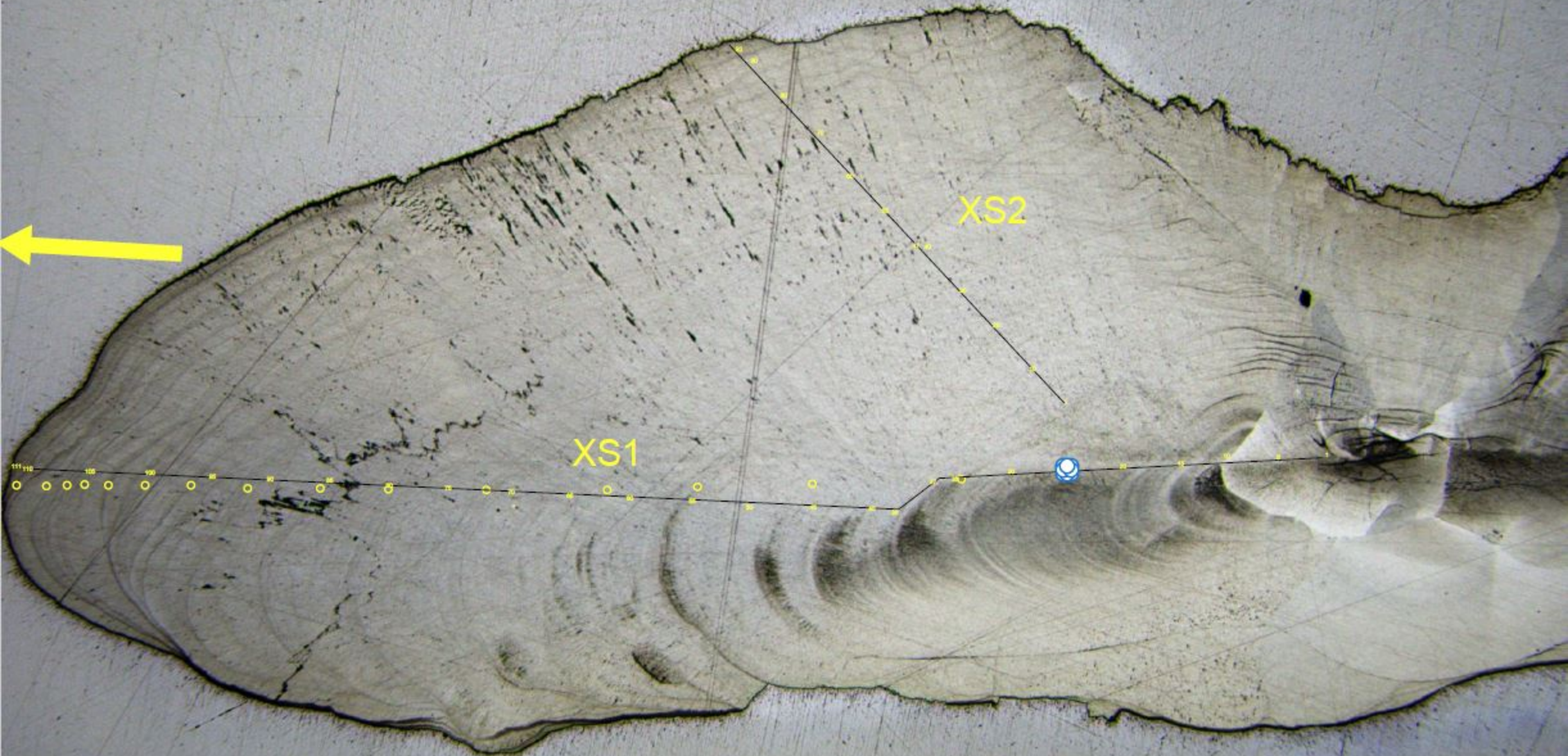


S6737
OR1970556-4
*Analyze this half
(repolished)

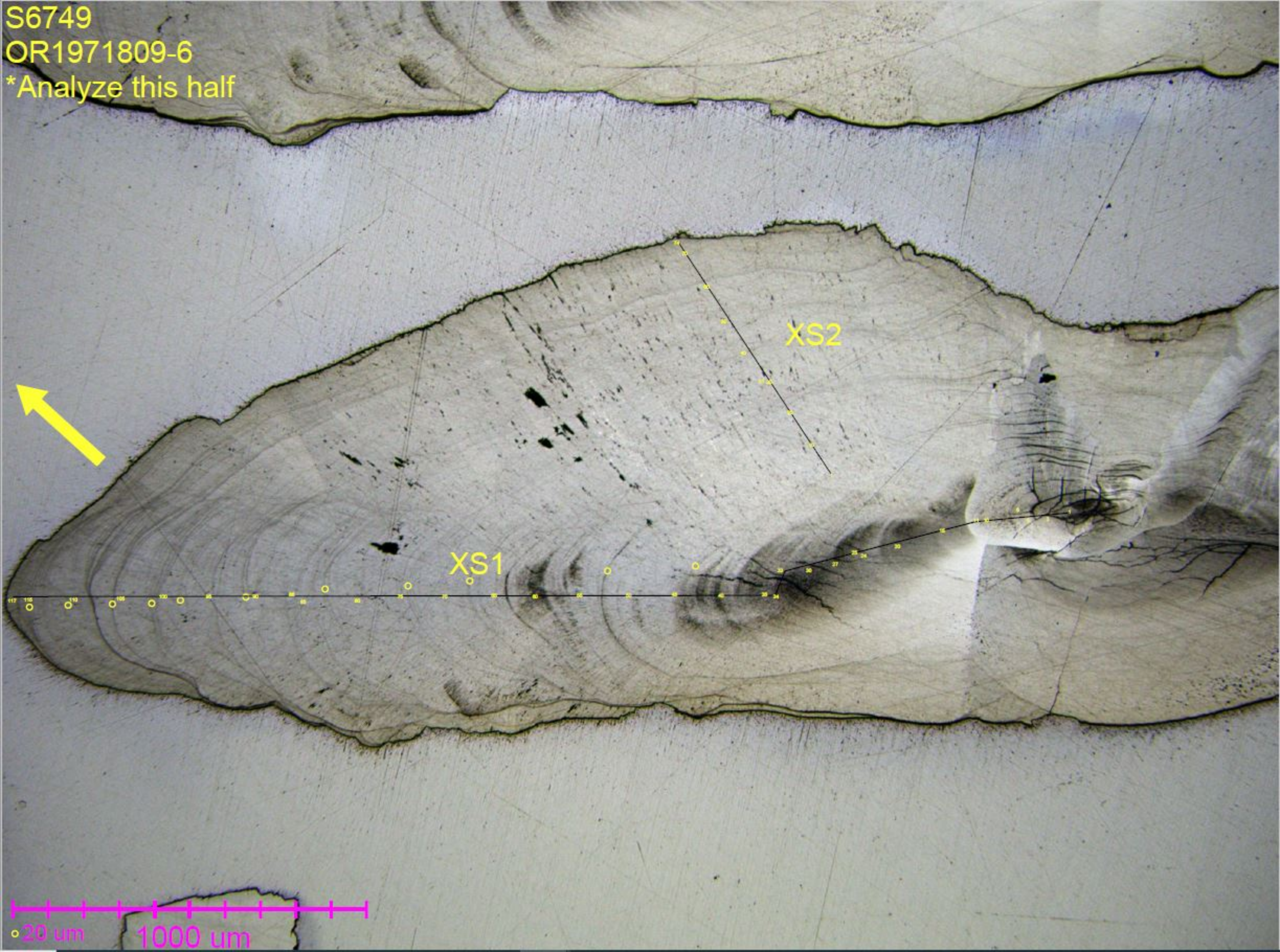


20 μm 1000 μm

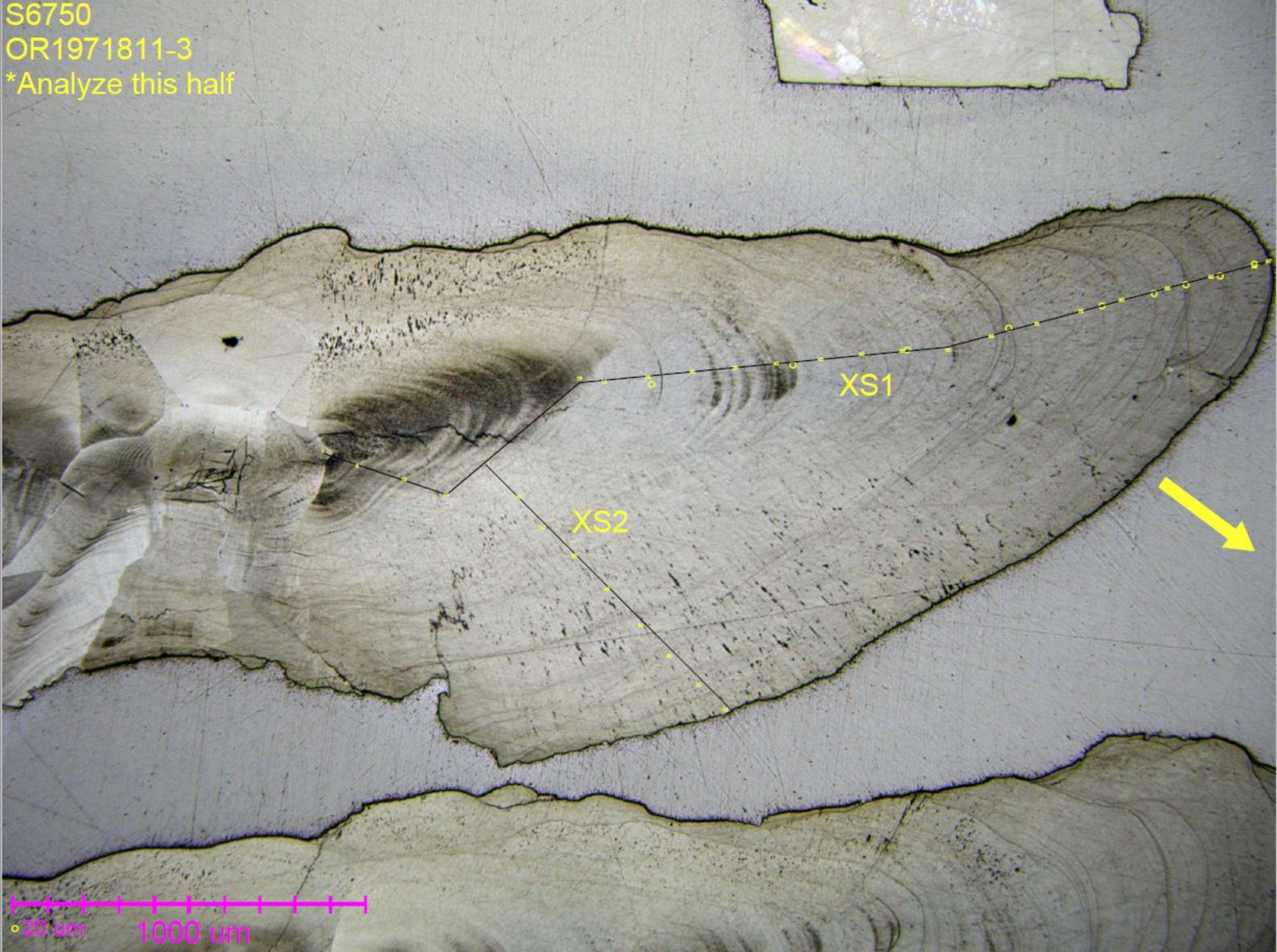
S6743
OR1972346-7
*Analyze this half



S6749
OR1971809-6
*Analyze this half



S6750
OR1971811-3
*Analyze this half

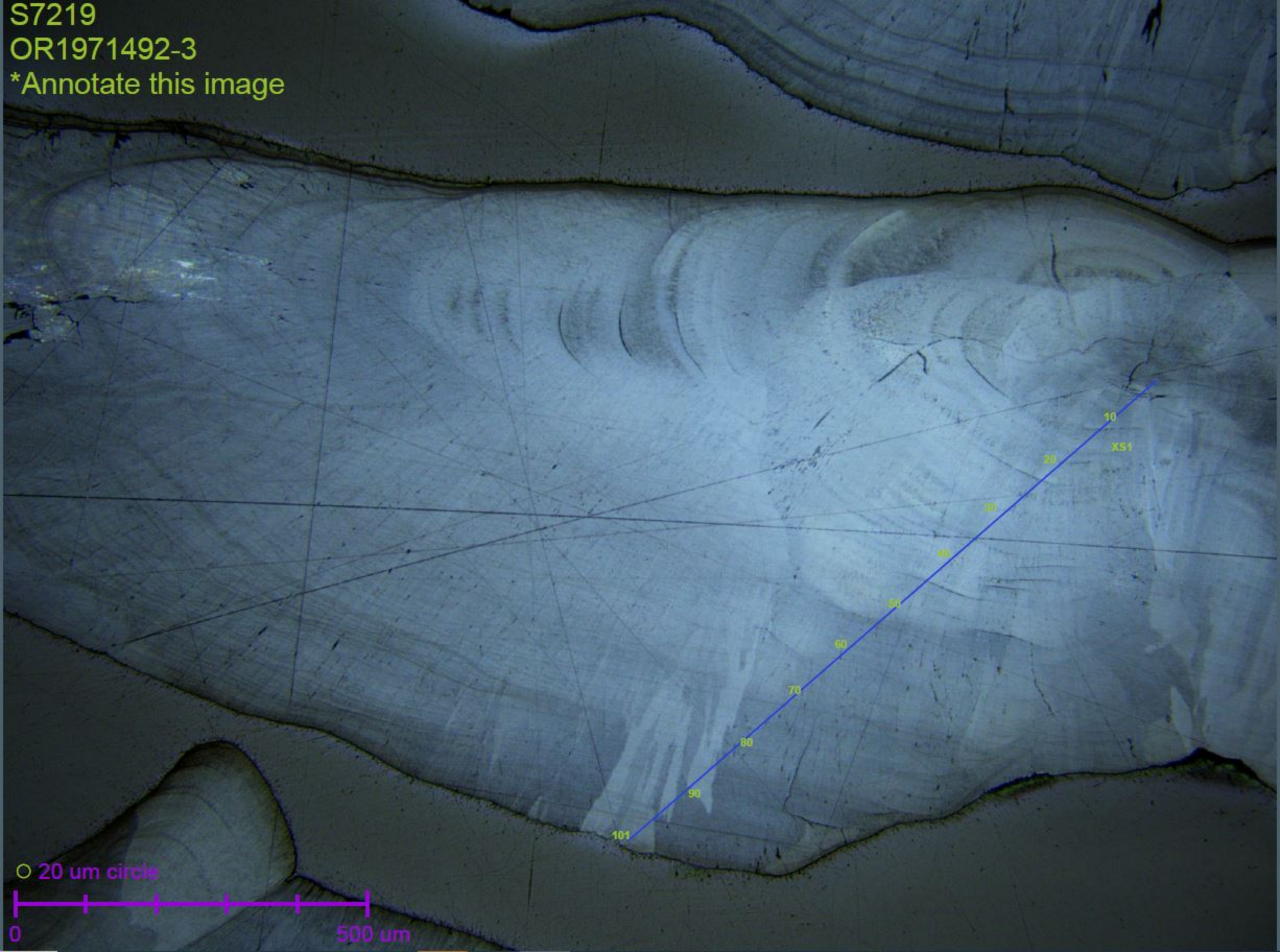


20 μm 1000 μm

Online Resource 1

Fig.2 Polarized incident light microscope images of Copper Rockfish sagittae analyzed by SIMS. Probe paths are represented by solid blue lines, and yellow numbers along each path act as reference points for mapping corresponding $\delta^{18}\text{O}$ values.

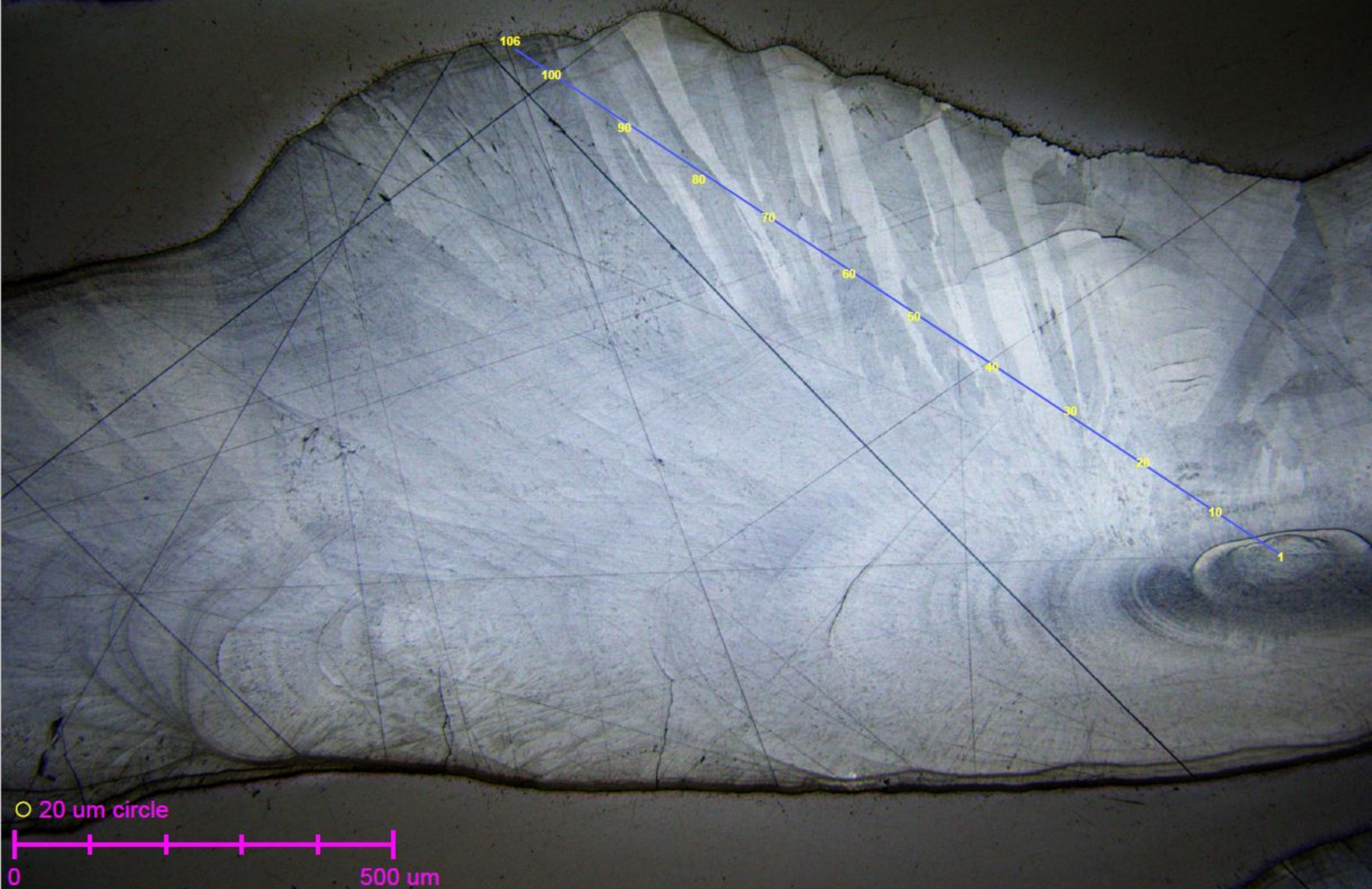
S7219
OR1971492-3
*Annotate this image



○ 20 μm circle

0 500 μm

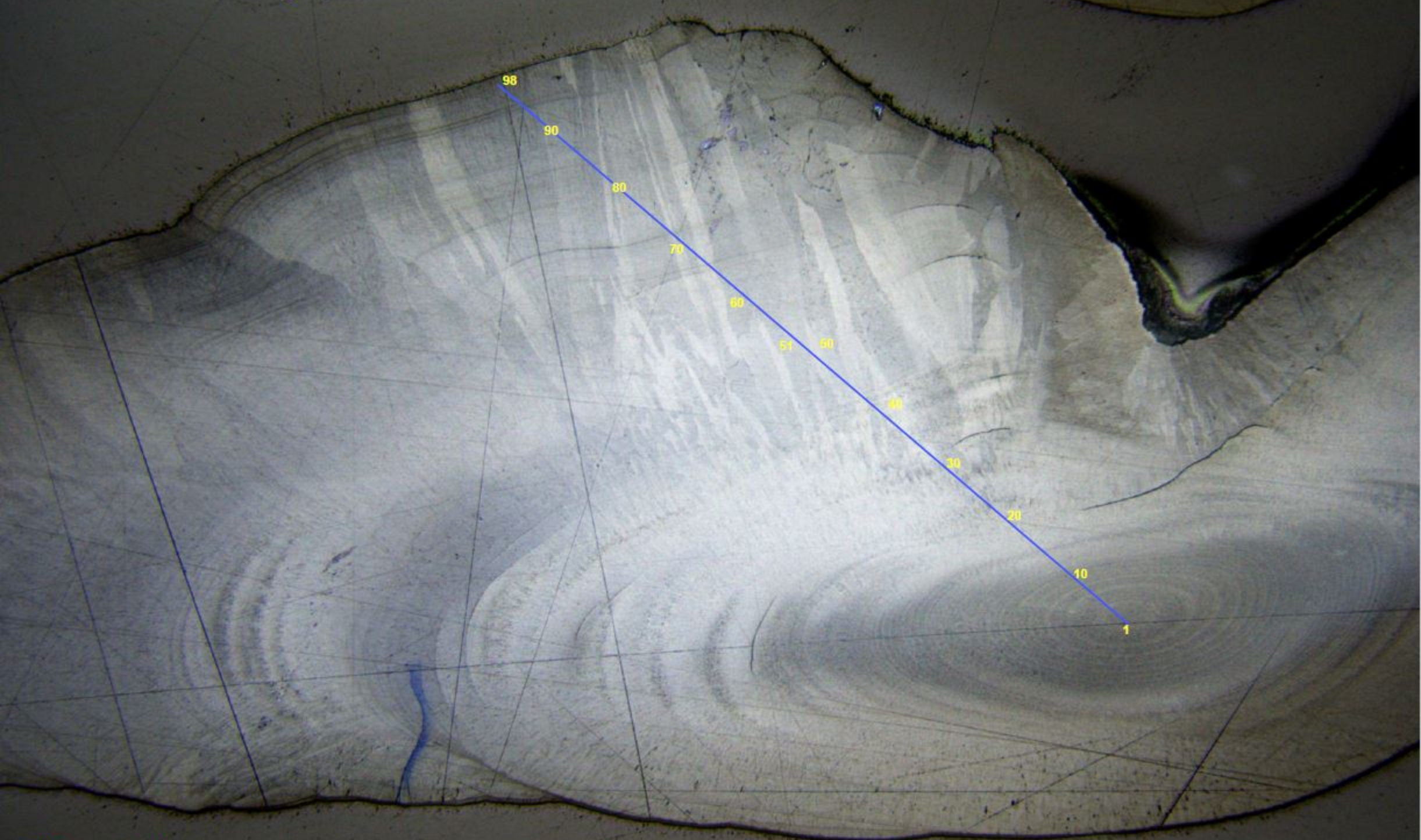
S7222
RC191015-2
*Annotate this image



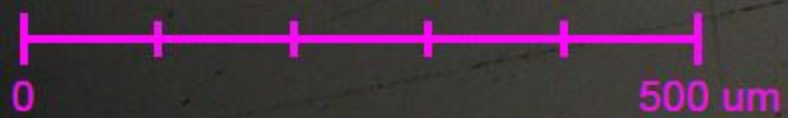
S7223

RC191015-4

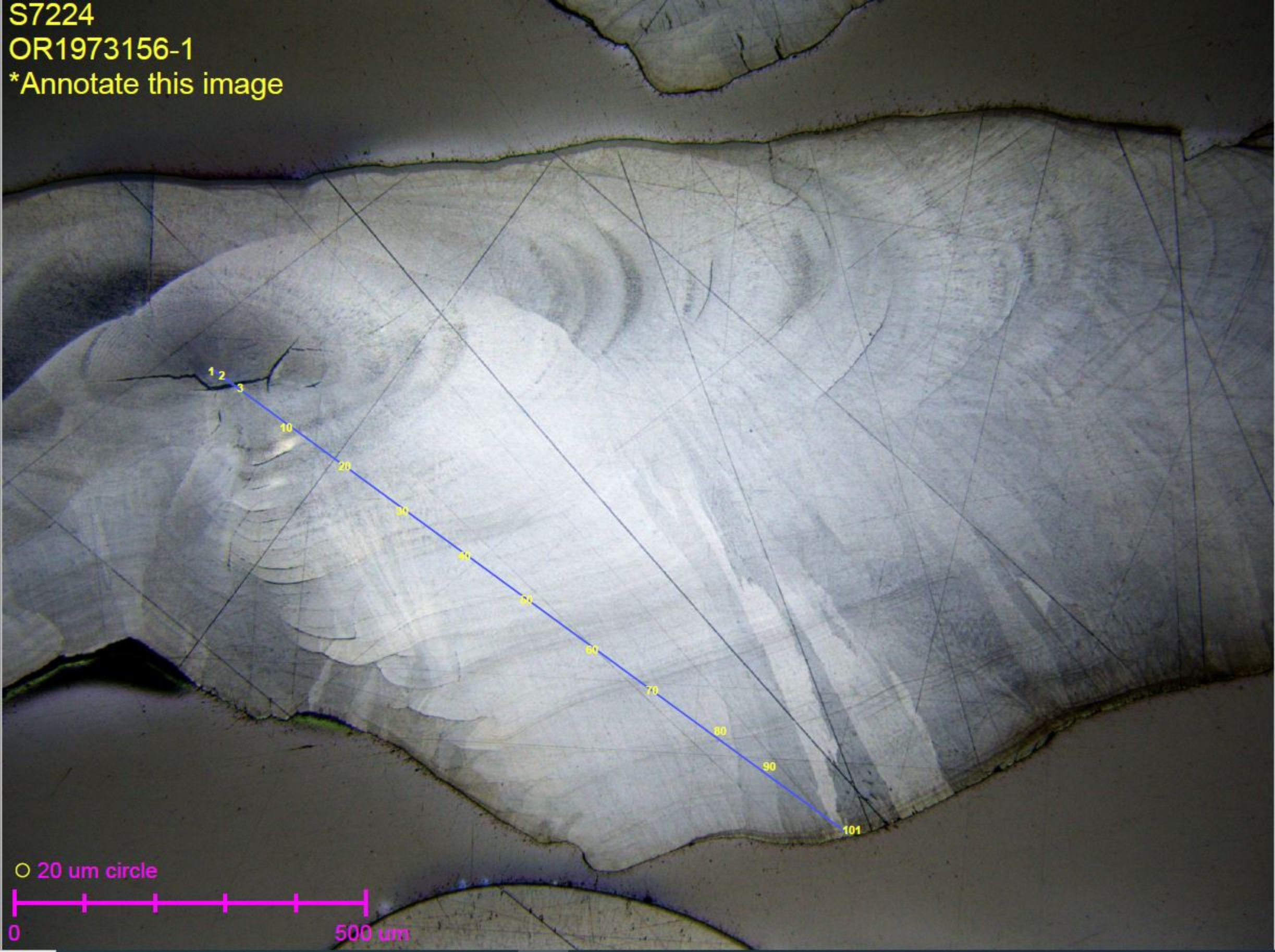
*Annotate this image



○ 20 um circle



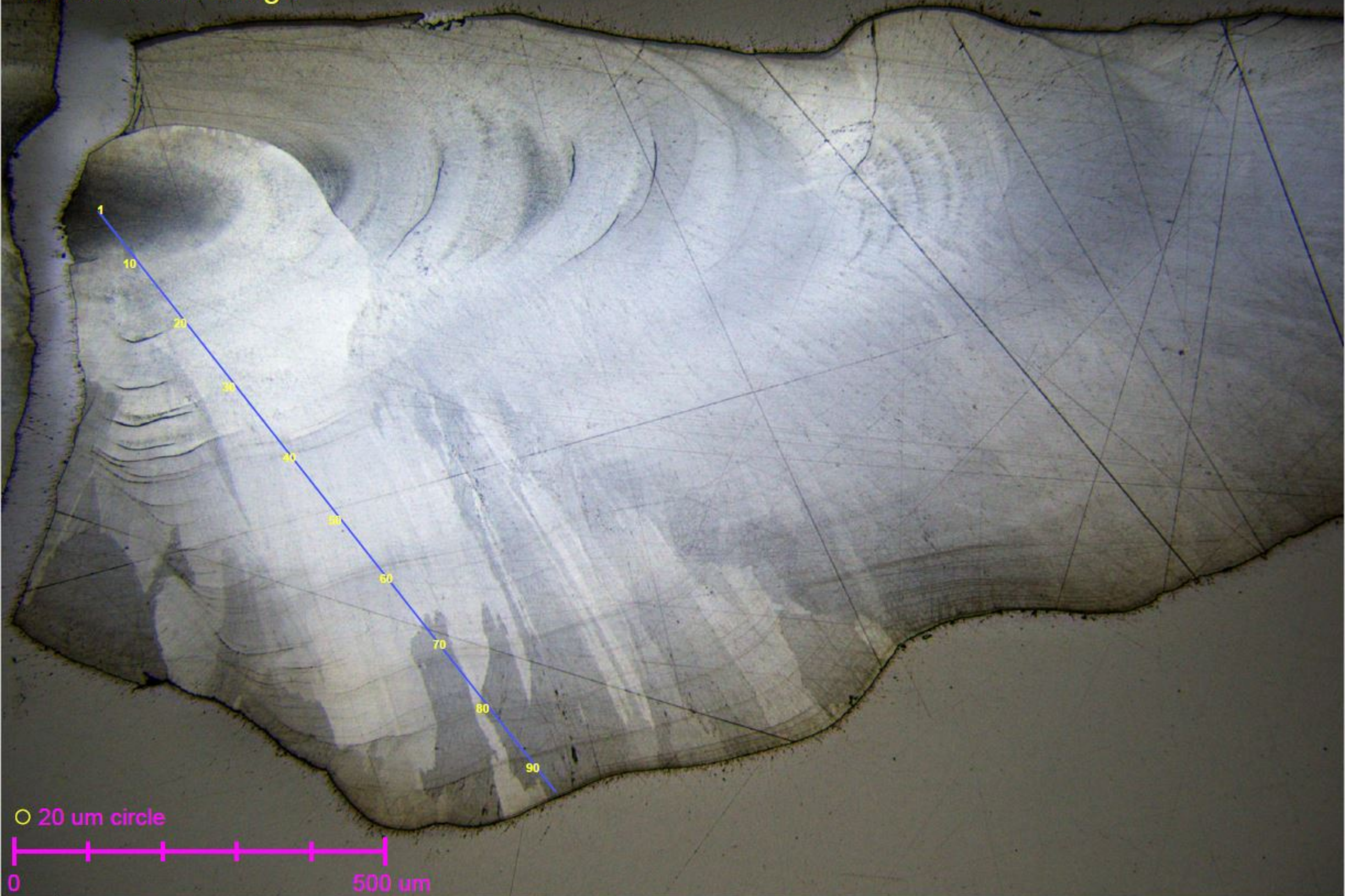
S7224
OR1973156-1
*Annotate this image



○ 20 μm circle

0 500 μm

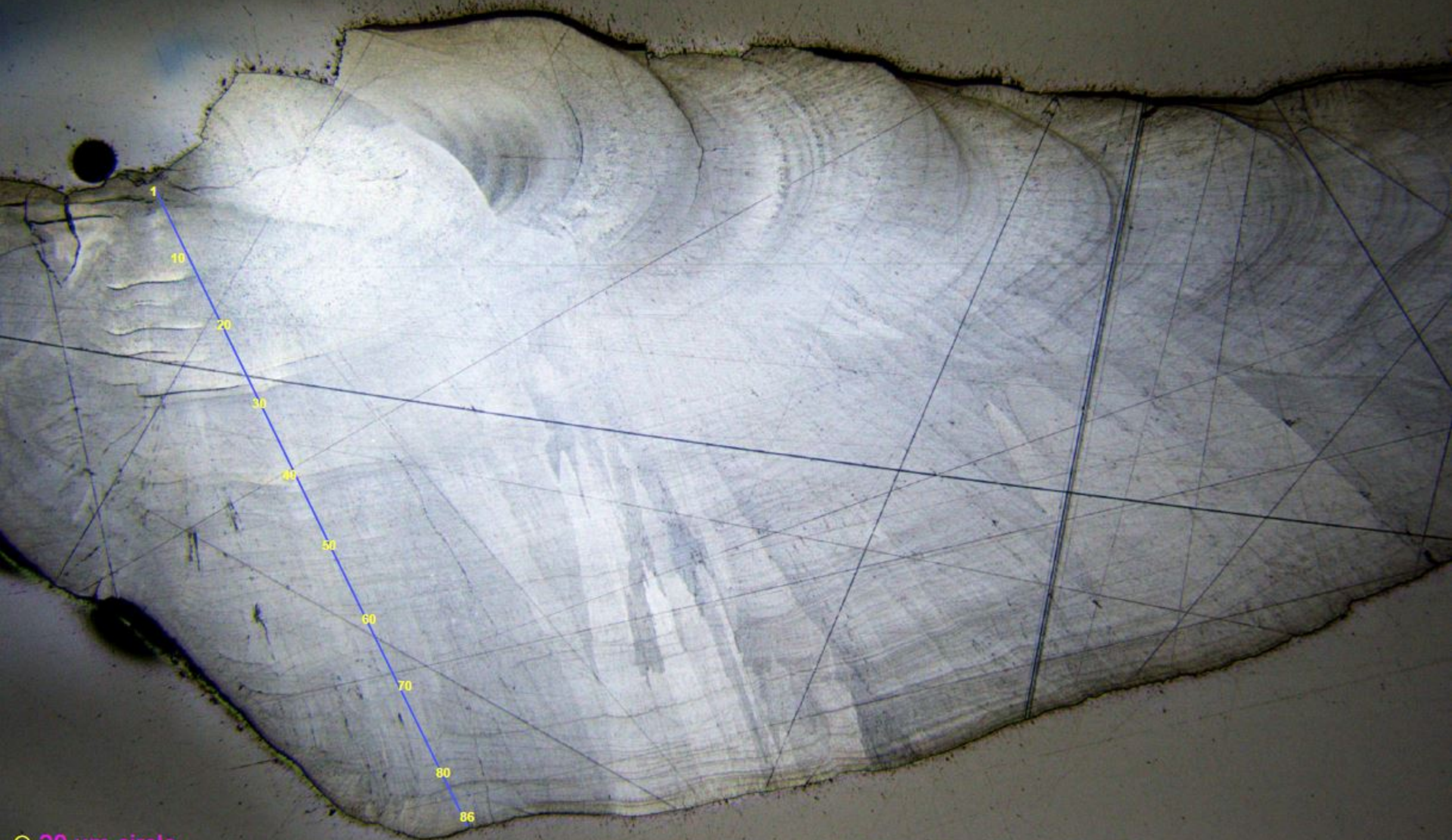
S7225
RC191006-20
*Annotate this image



S7226

RC191006-24

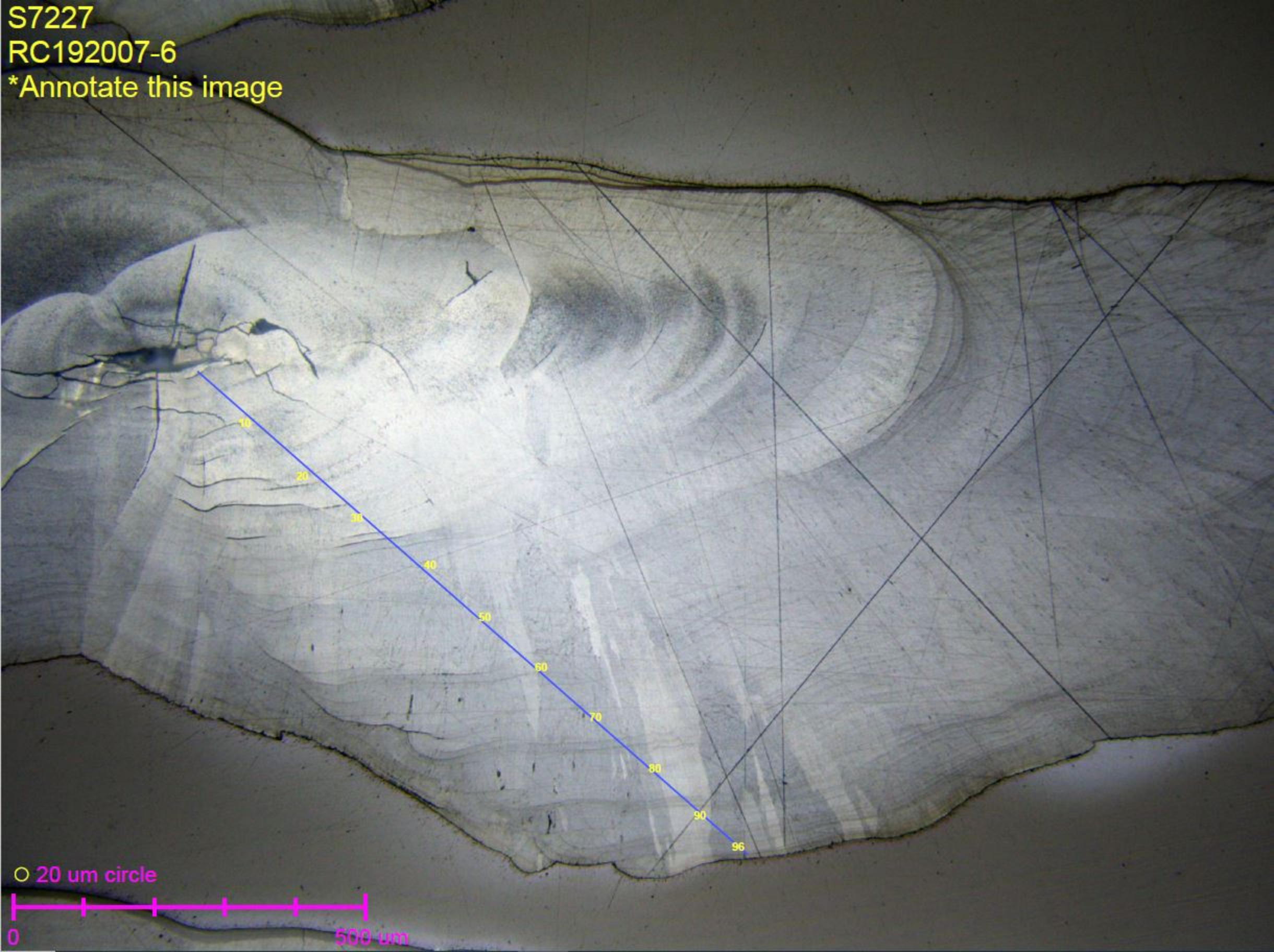
*Annotate this image



○ 20 um circle



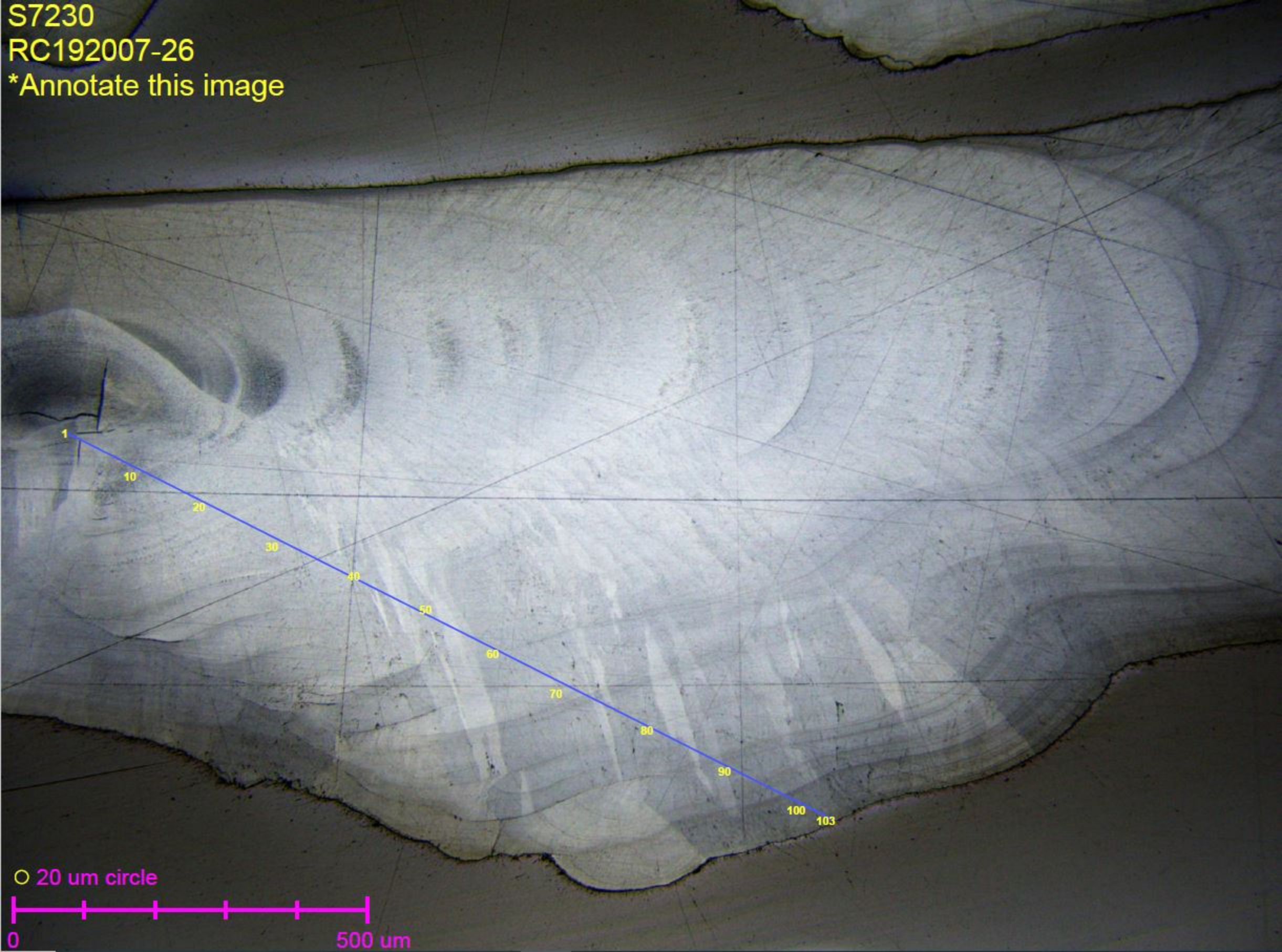
S7227
RC192007-6
*Annotate this image



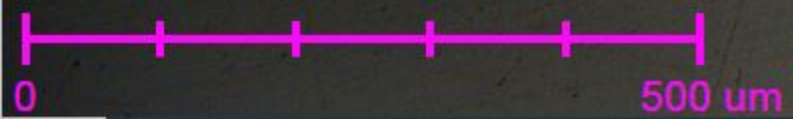
○ 20 μm circle

0 500 μm

S7230
RC192007-26
*Annotate this image



○ 20 um circle



S7234

RC193018-10

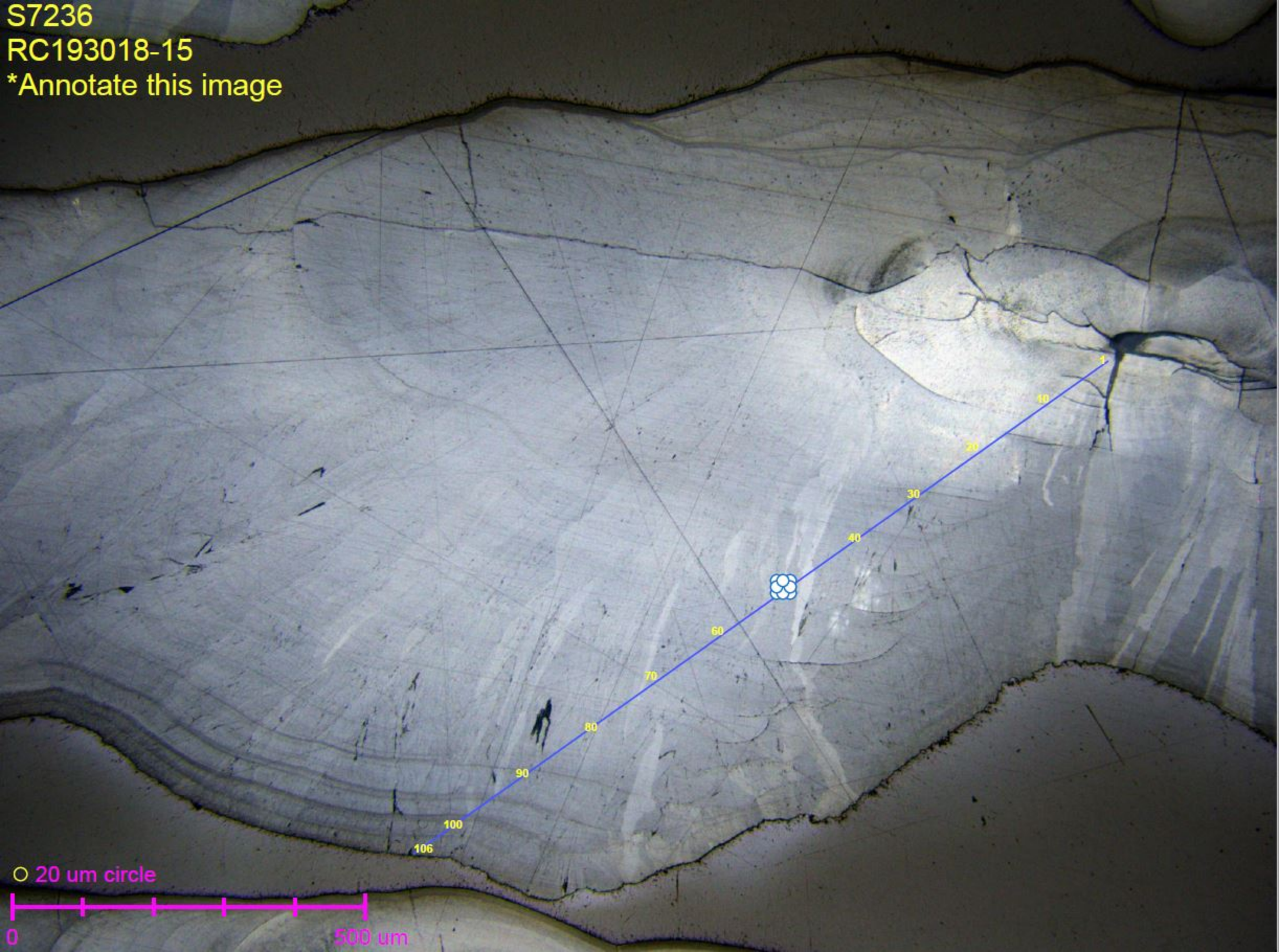
*Annotate this image



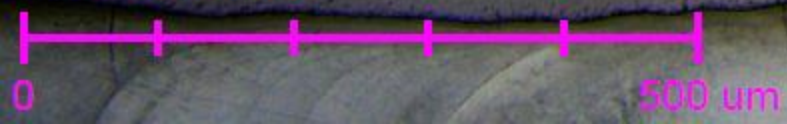
S7236

RC193018-15

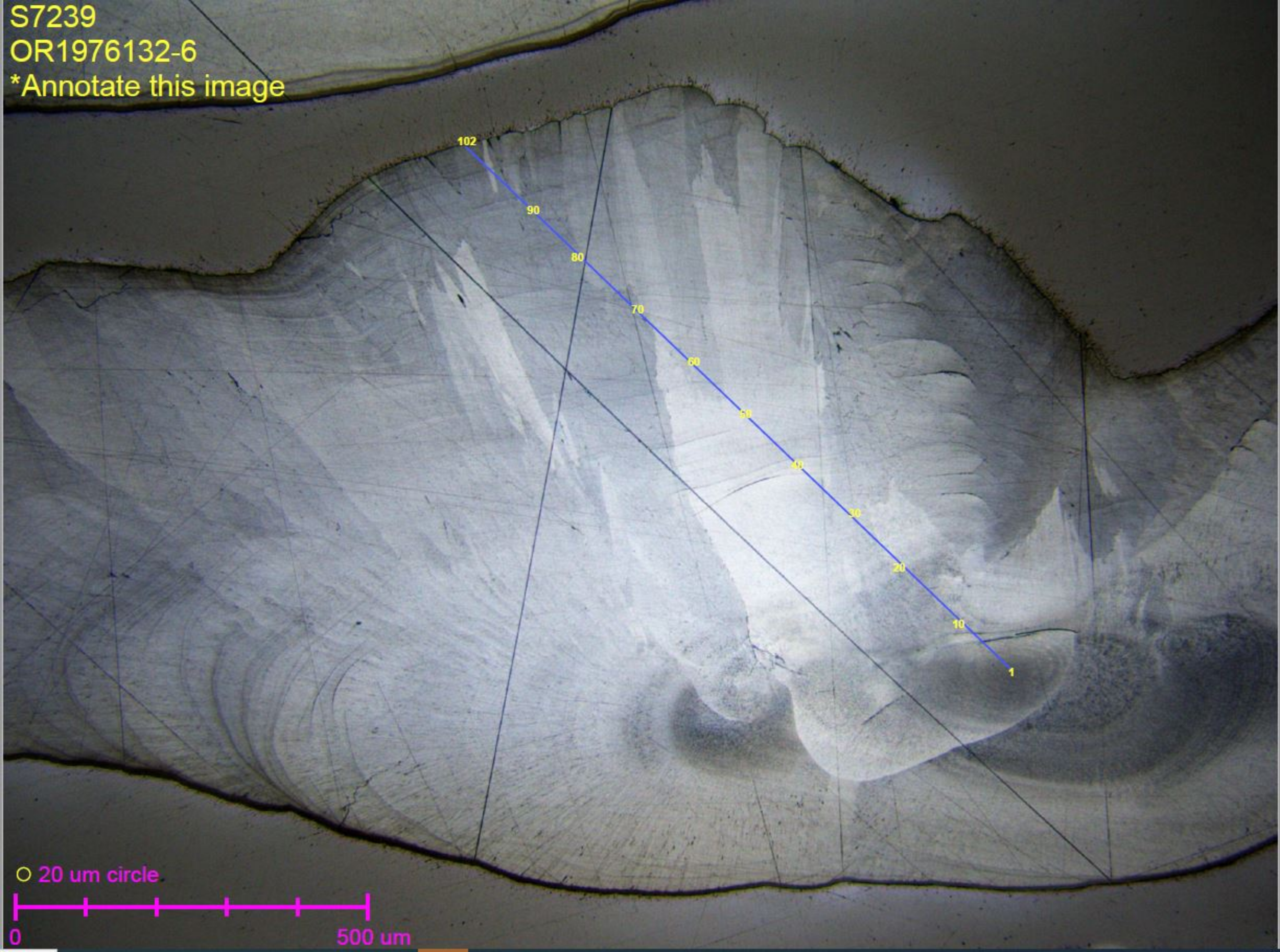
*Annotate this image



○ 20 um circle



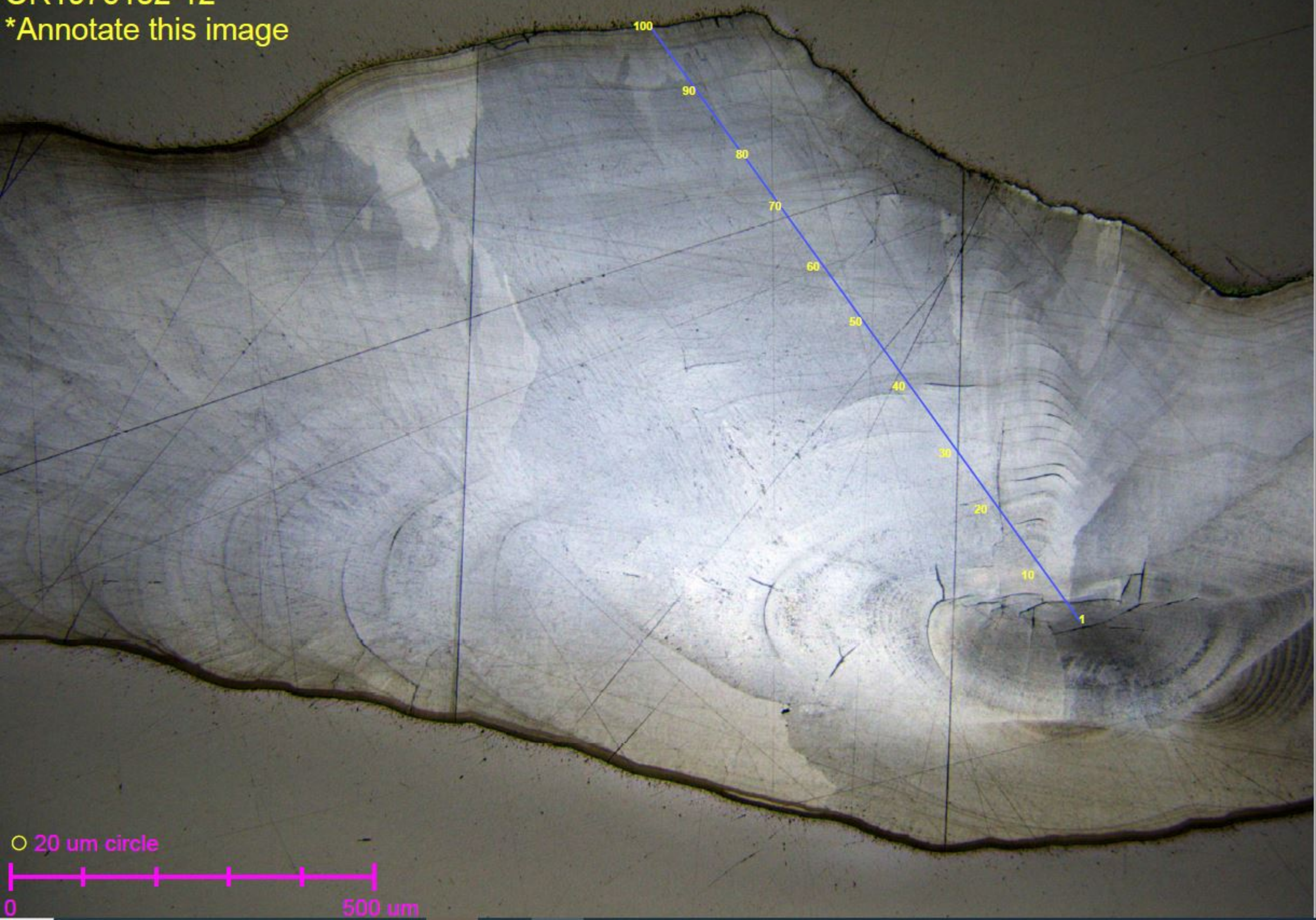
S7239
OR1976132-6
*Annotate this image



○ 20 um circle

0 500 um

S7241
OR1976132-12
*Annotate this image



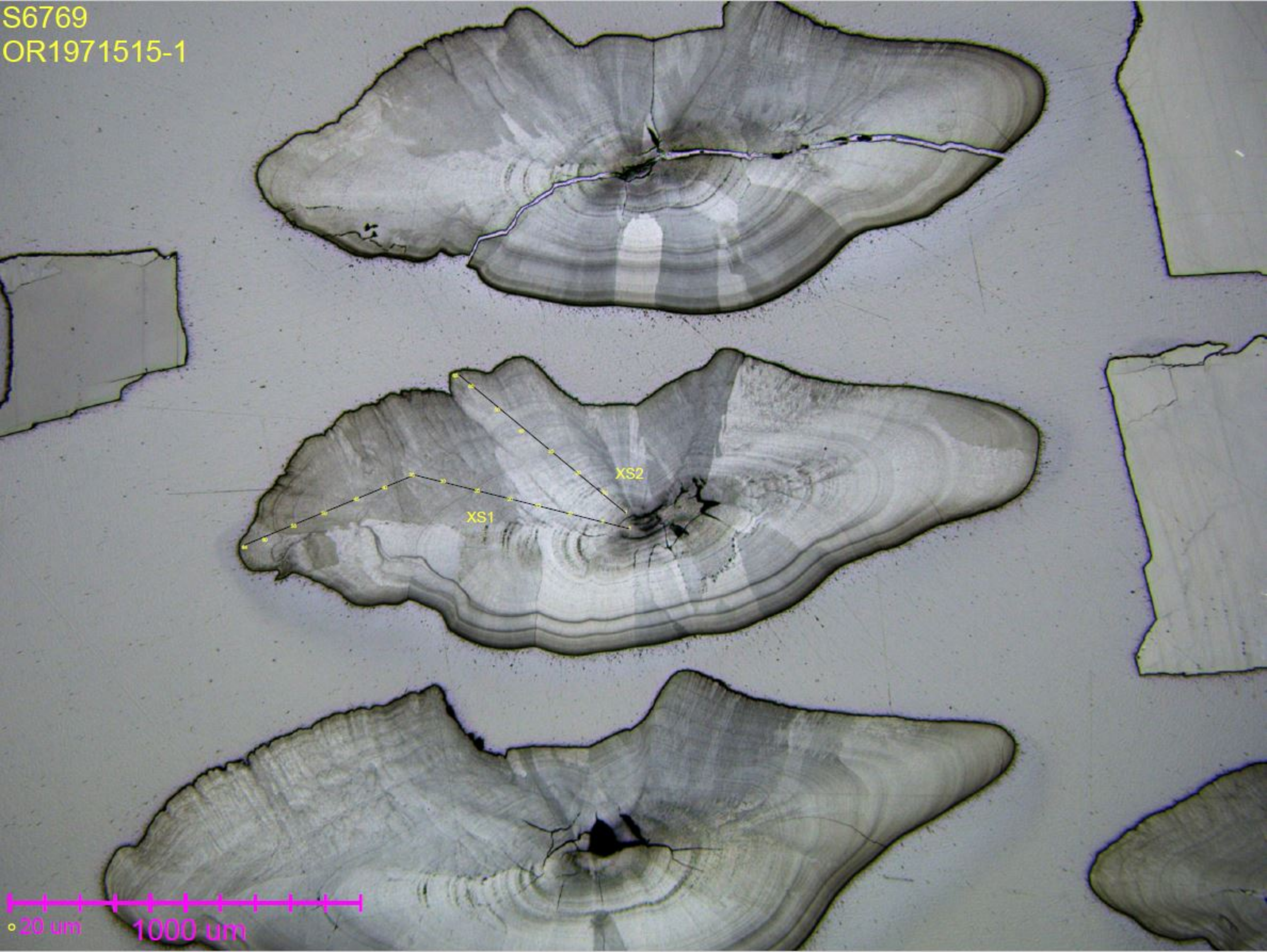
○ 20 um circle



Online Resource 1

Fig.3 Polarized incident light microscope images of Cabezon sagittae analyzed by SIMS. Probe paths are represented by solid black lines with the notation “XS#”. In all cases, the larger number represented by “#” reflects the probe path used in the final analysis. Yellow numbers along each path act as reference points for mapping corresponding $\delta^{18}\text{O}$ values.

S6769
OR1971515-1



20 μm 1000 μm

S6770
OR1974022-1



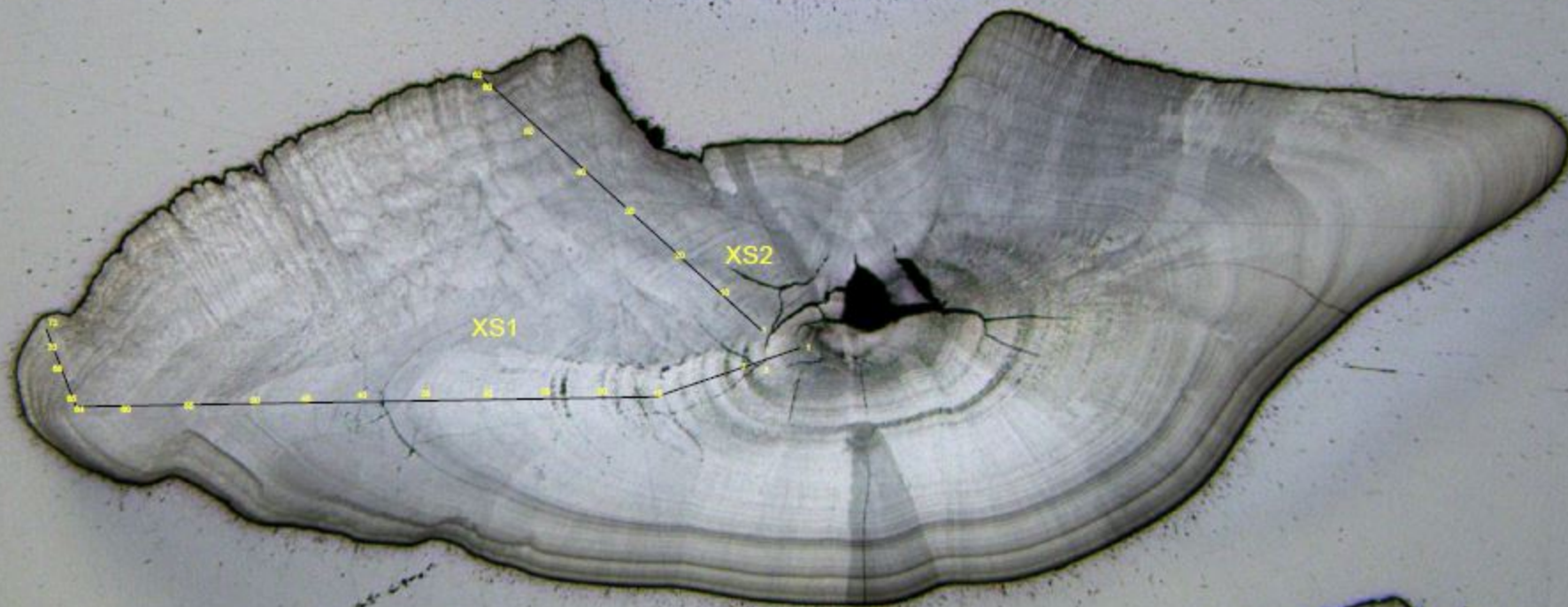
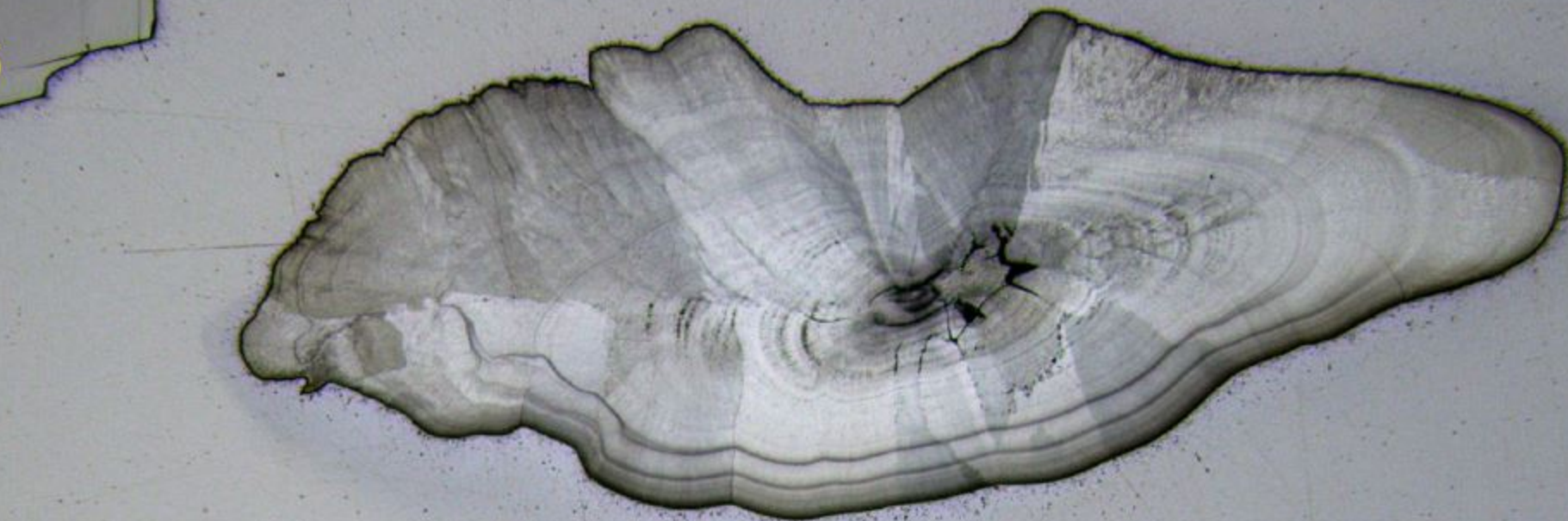
20 μm 1000 μm

S6784
RC191024-3



20 μm 1000 μm

S6786
RC191024-5



20 um 1000 um

S6773
OR1974833-1



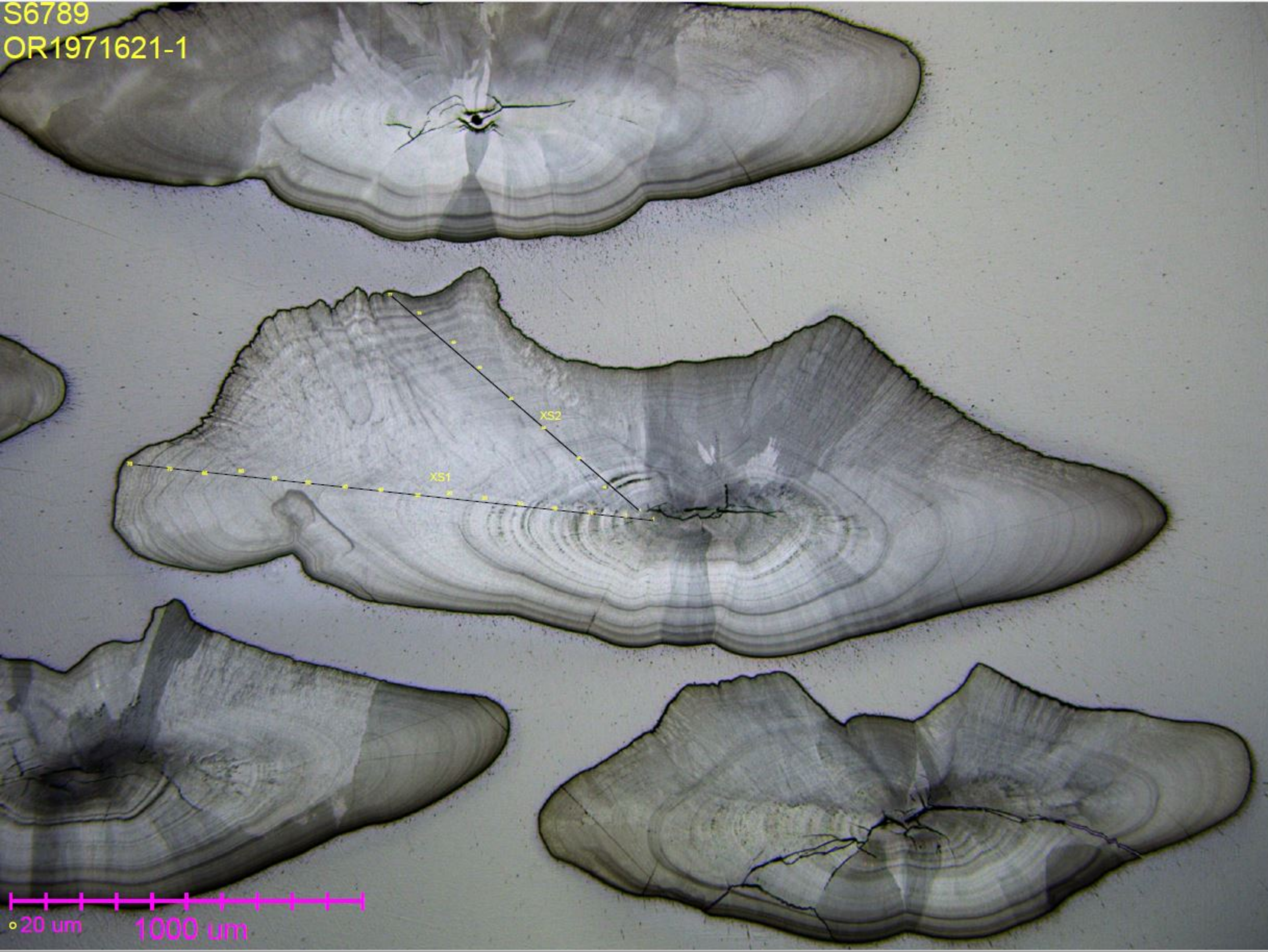
20 μm 1000 μm

S6779
H&L-2



20 μm 1000 μm

S6789
OR1971621-1



S6793
OR1976551-1



20 μm 1000 μm