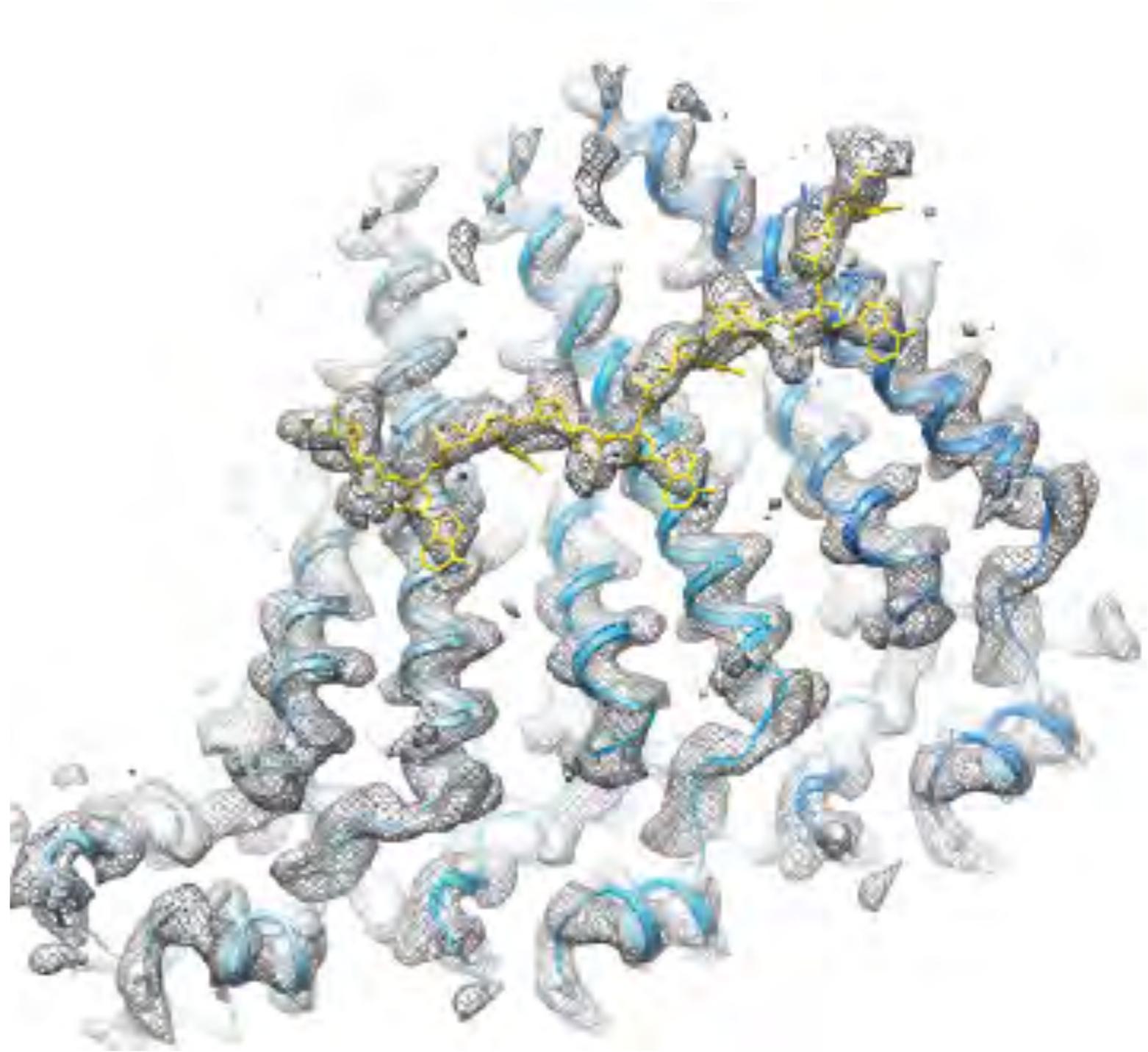
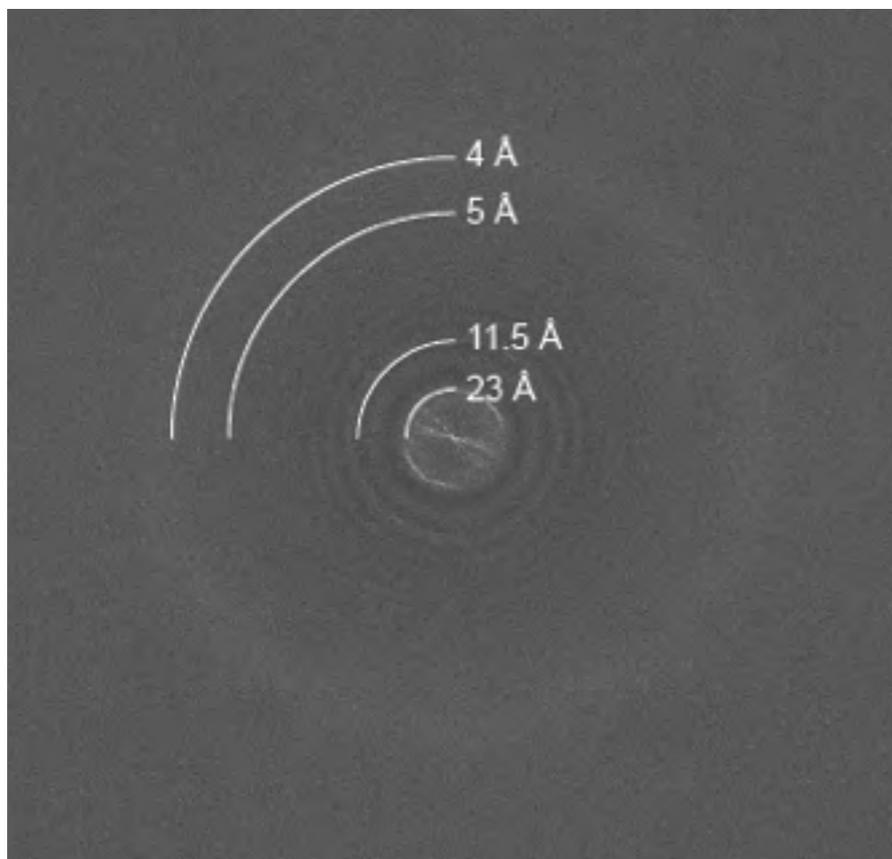
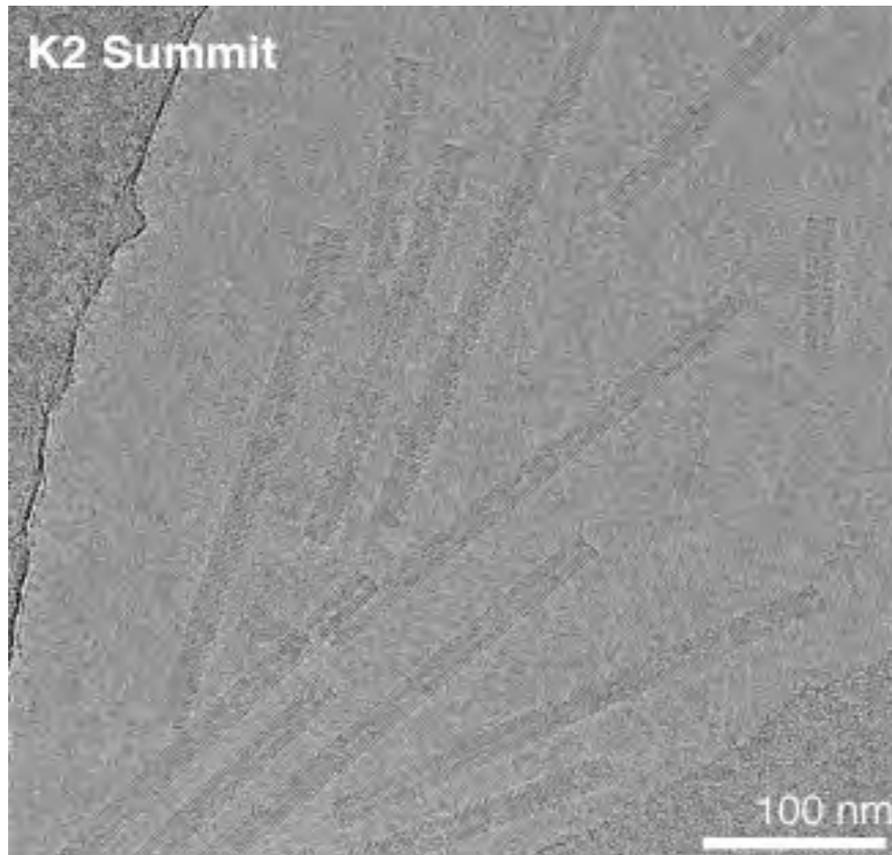


# Direct Detector Forum NRAMM workshop

Carsten Sachse  
Nov 11, 2014

# TMV structure from a single micrograph



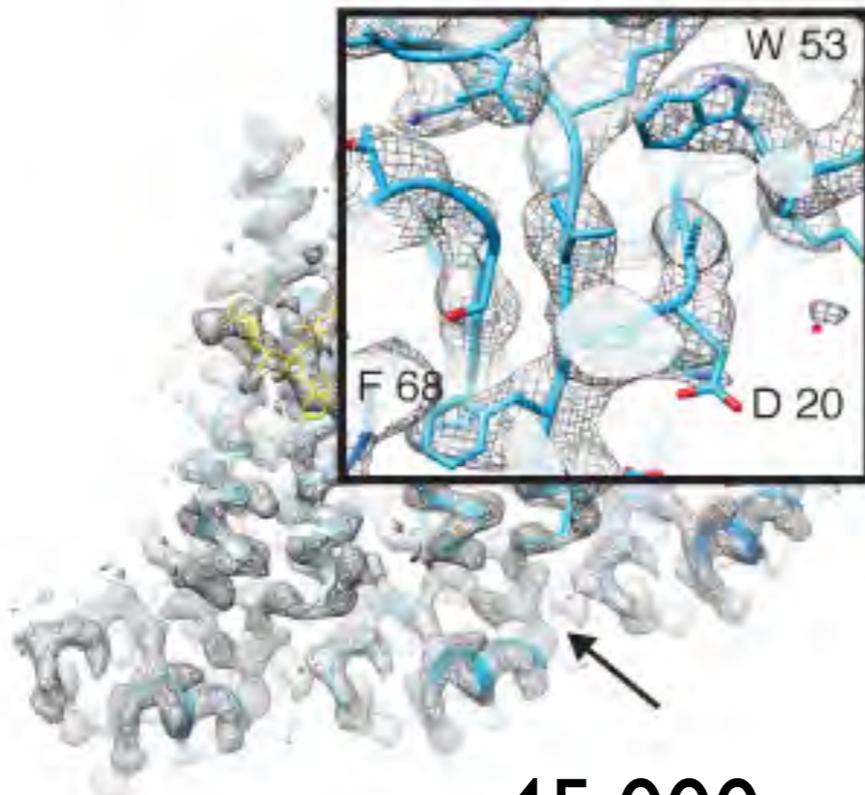
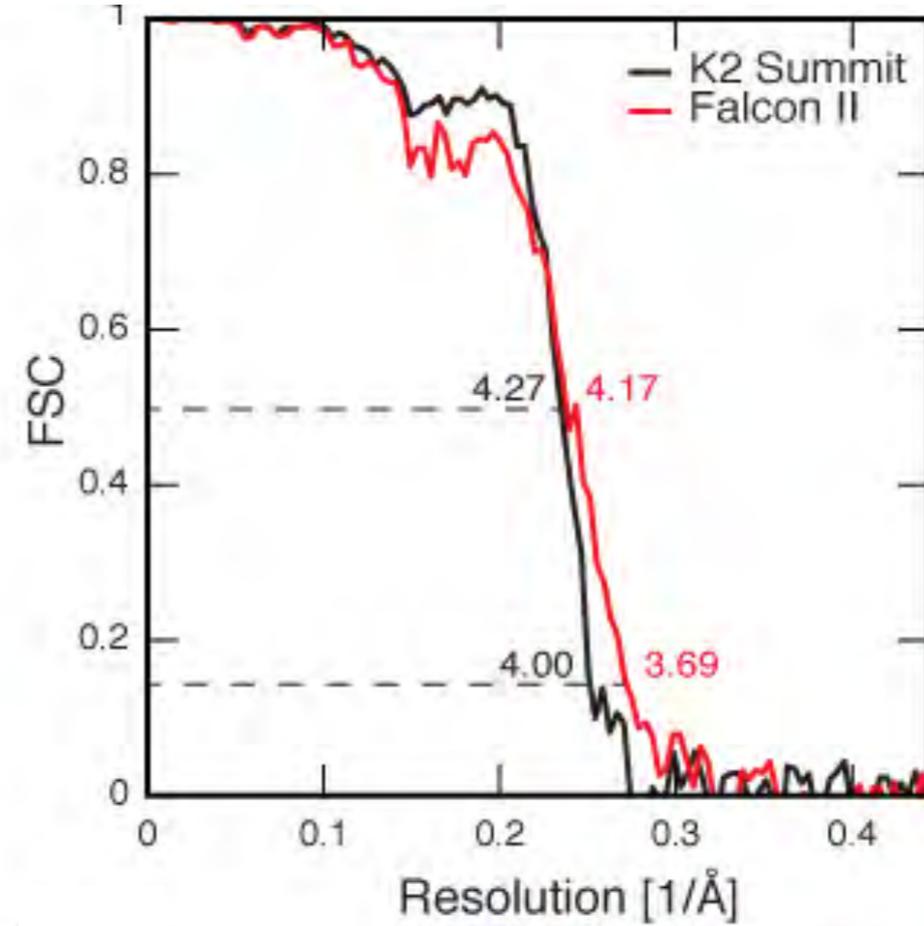
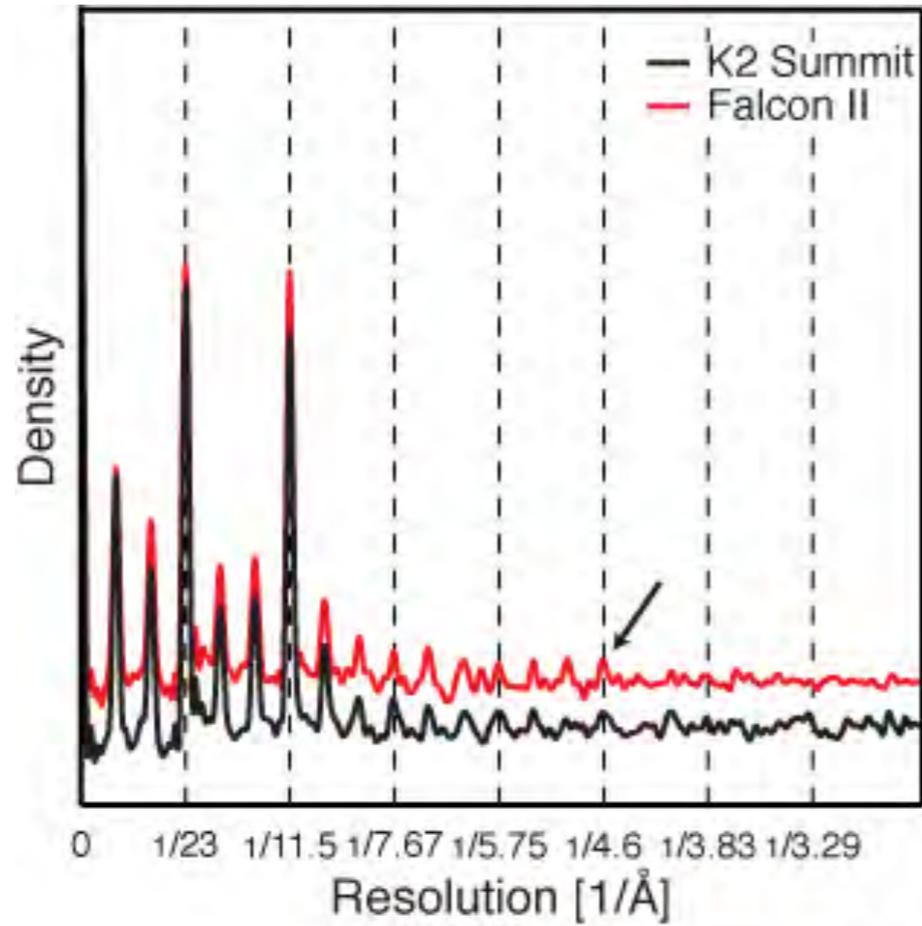
**Resolution 4.2 Å**

# Direct comparison of K2 Summit and Falcon II at the MRC-LMB Titan Krios

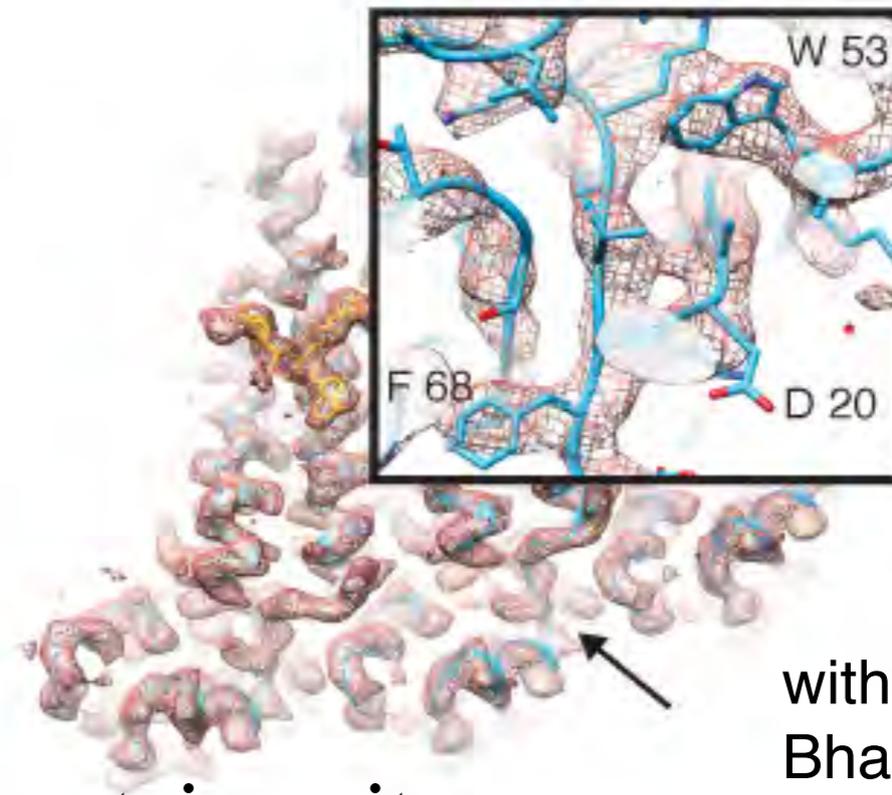
	<b>Post-Gif K2</b>	<b>Falcon II</b>
Voltage (kV)	300	300
Imaging mode	EFTEM	Nanoprobe
Pixel size (Å)	1.13	1.06
Dose rate (e	7	50
Total dose (e-/Å <sup>2</sup> )	43	43
Exposure time (s)	4.4	1.0
Frames	22	16

with Tanmay  
Bharat (MRC-LMB)  
unpublished

# Comparison of K2 Summit and Falcon II

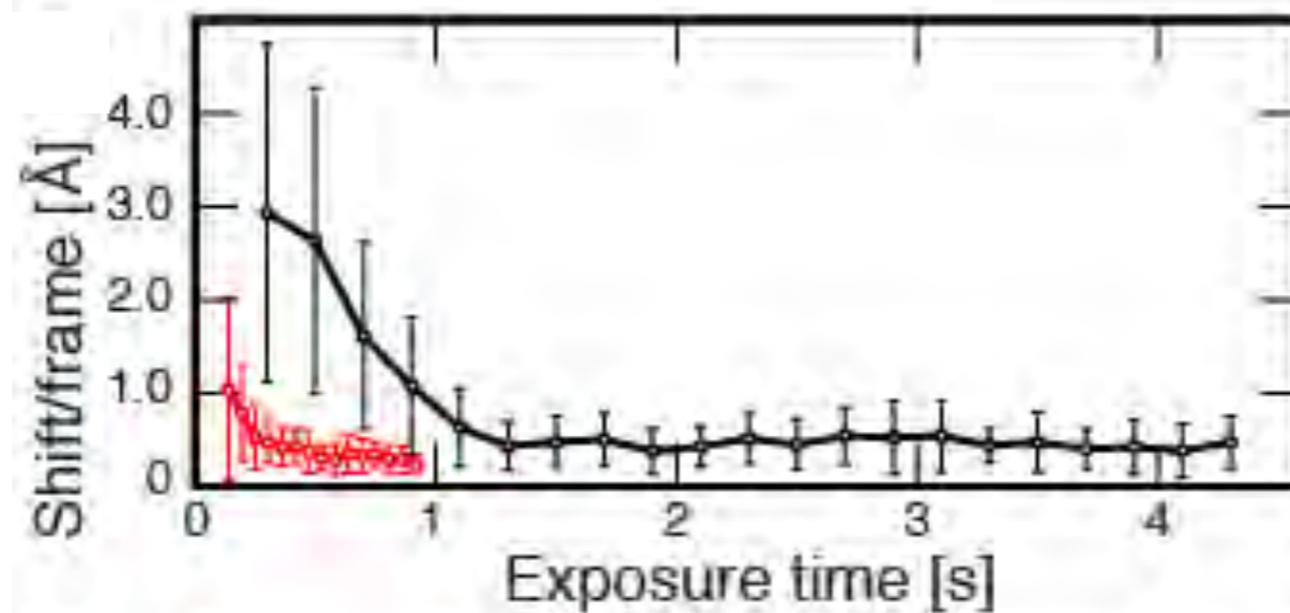
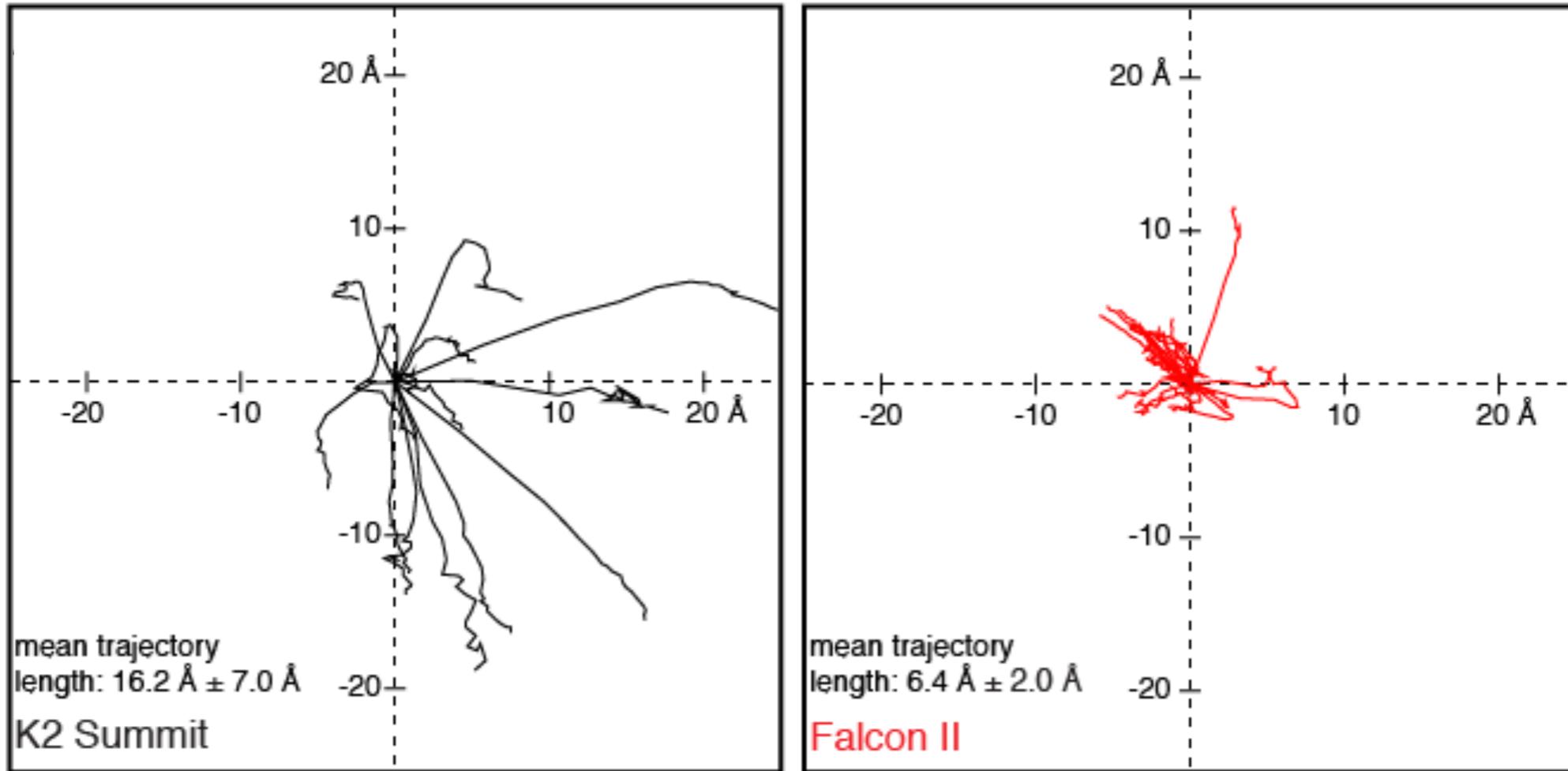


45,000 asymmetric units



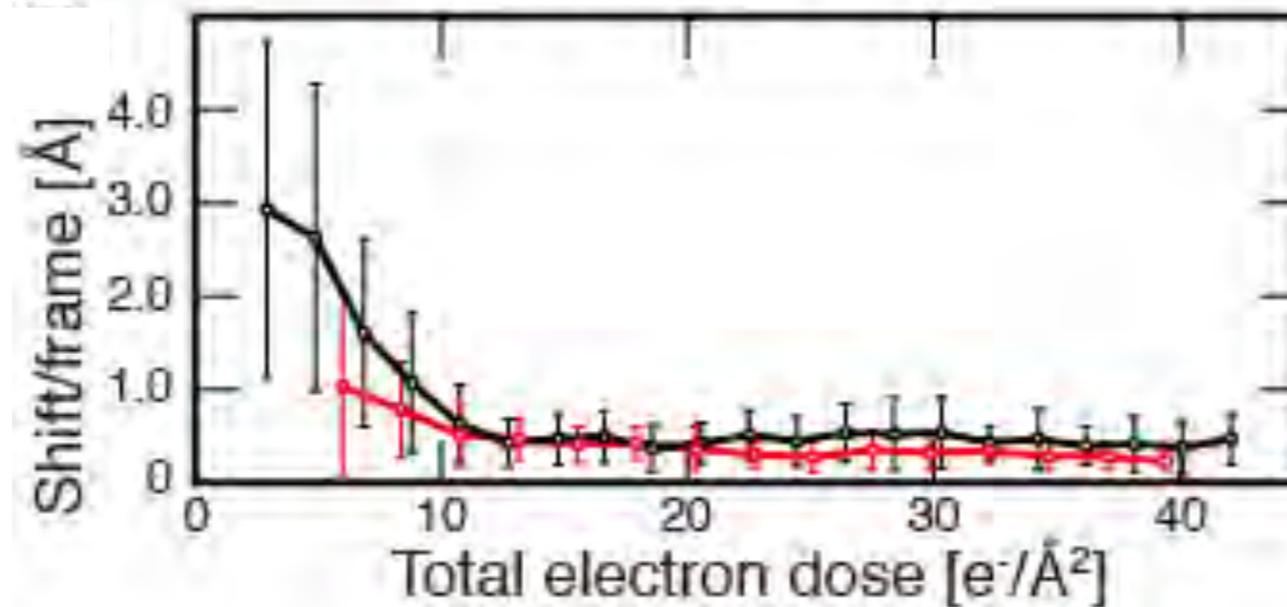
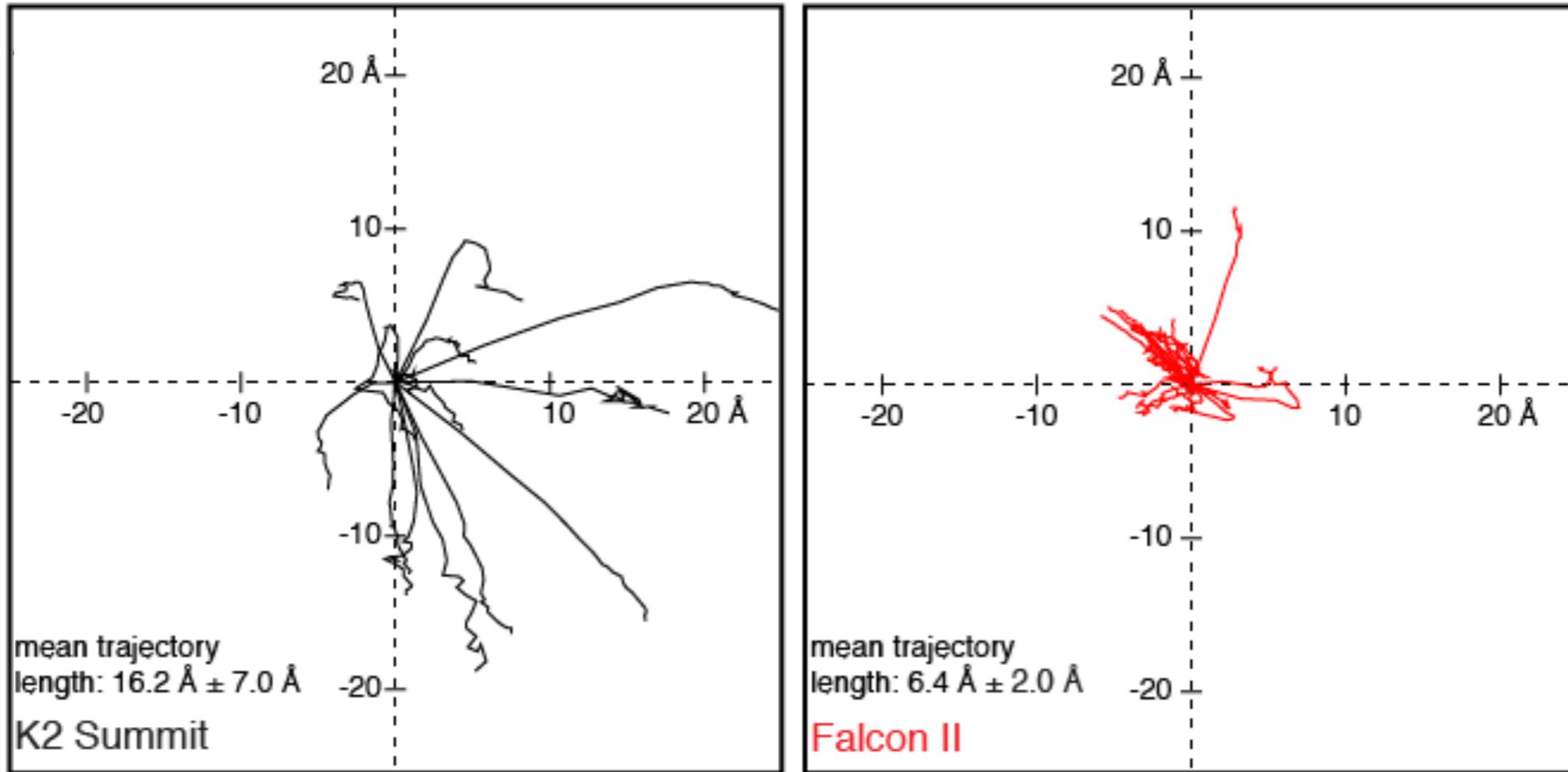
with Tanmay  
Bharat (MRC-LMB)  
unpublished

# Sample movement of K2 and Falcon II



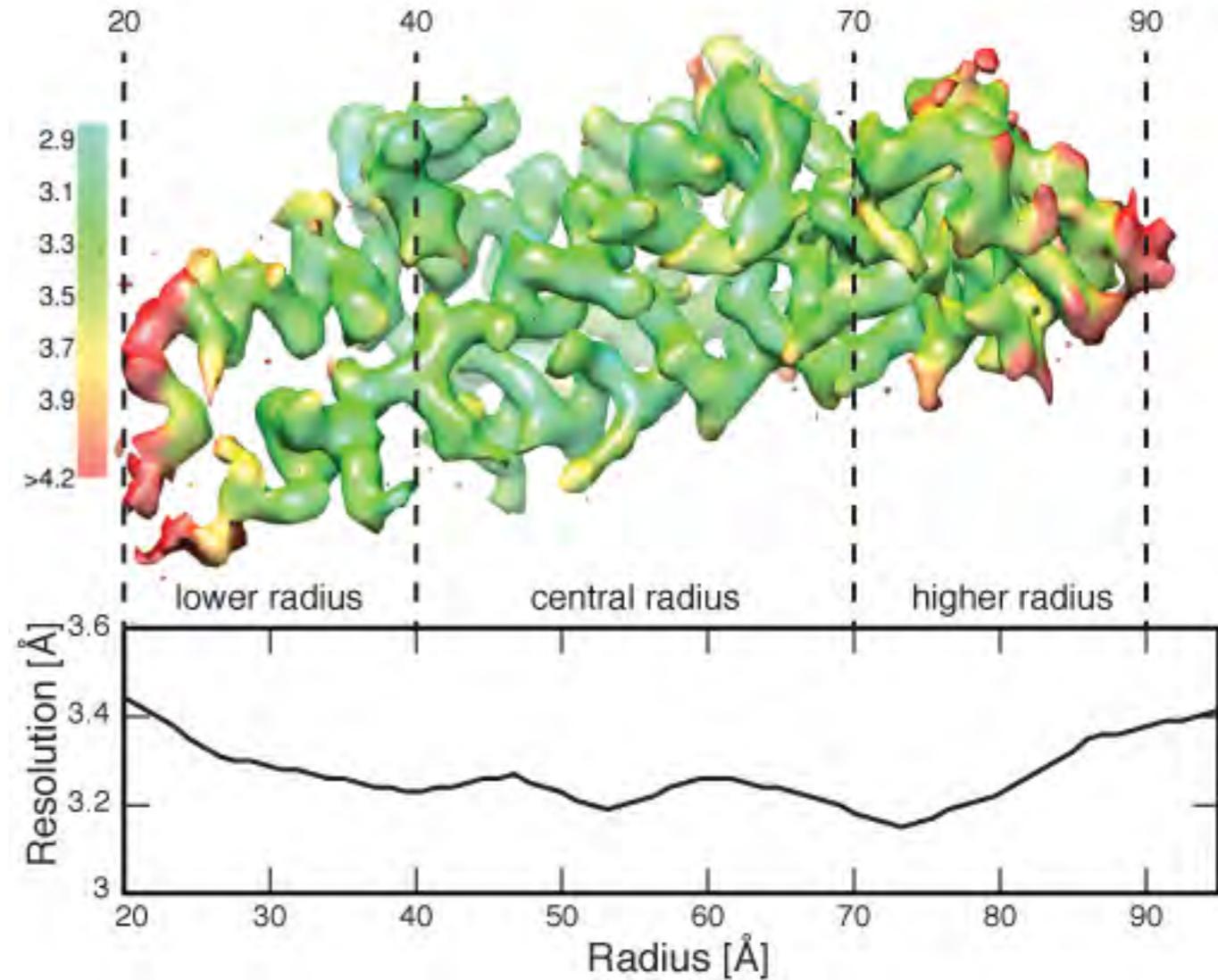
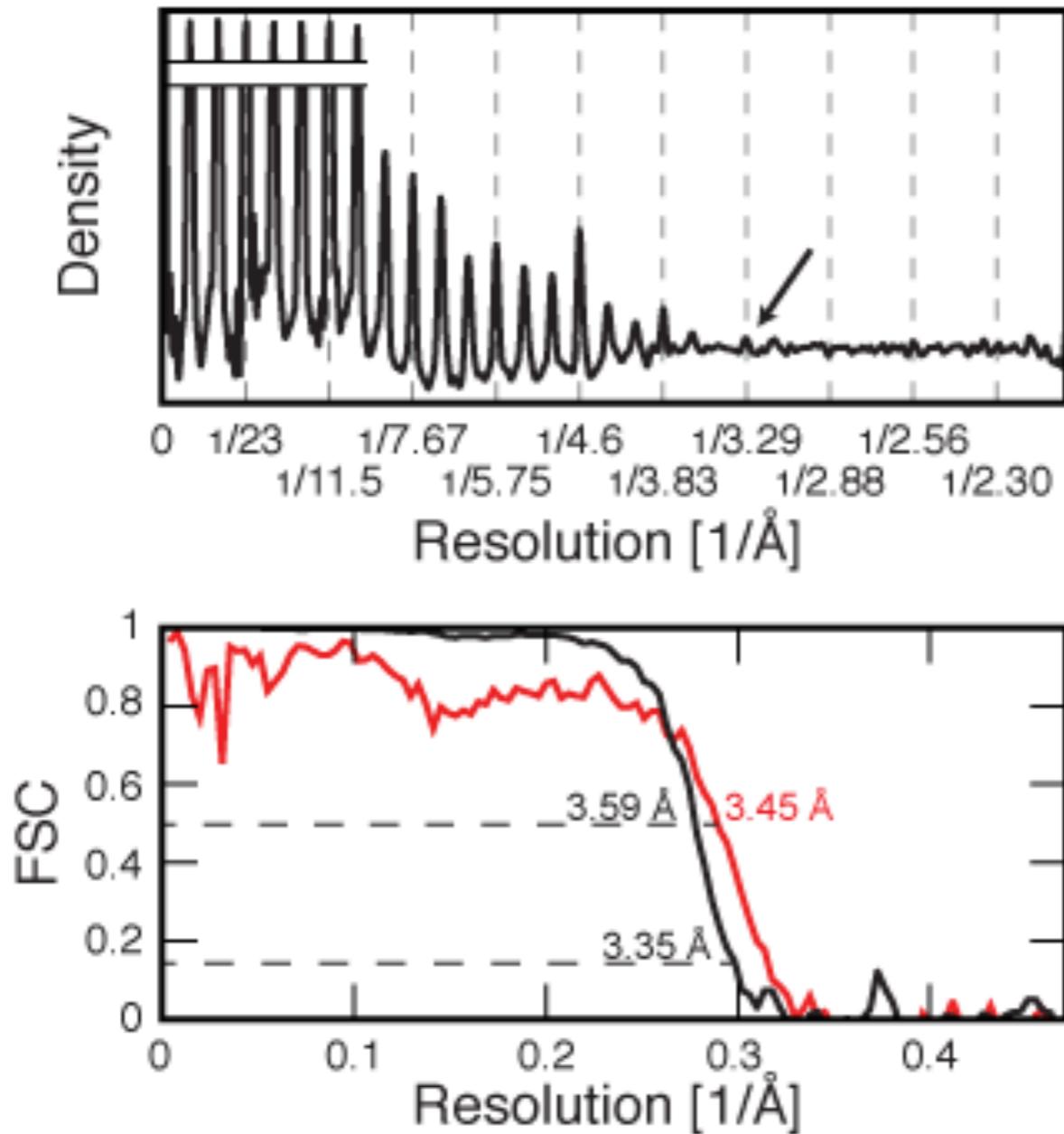
with Tanmay  
Bharat (MRC-LMB)  
unpublished

# Sample movement of K2 and Falcon II



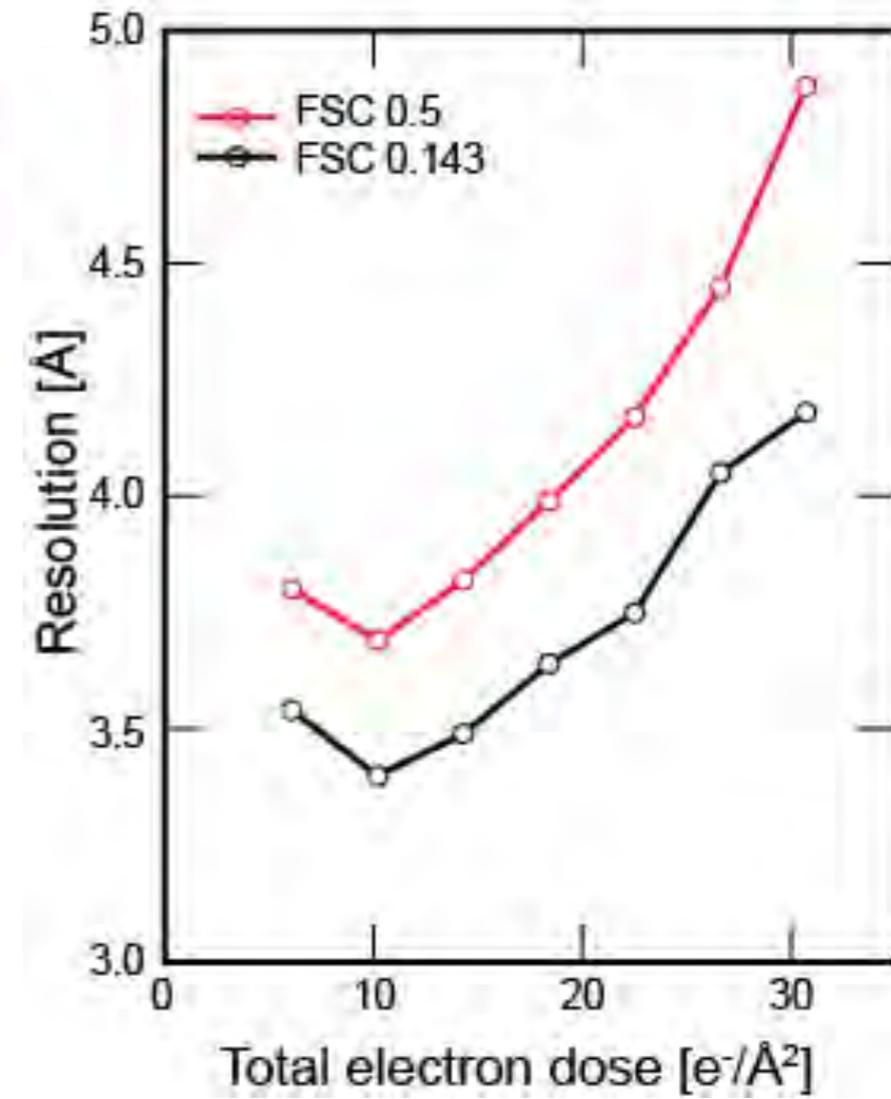
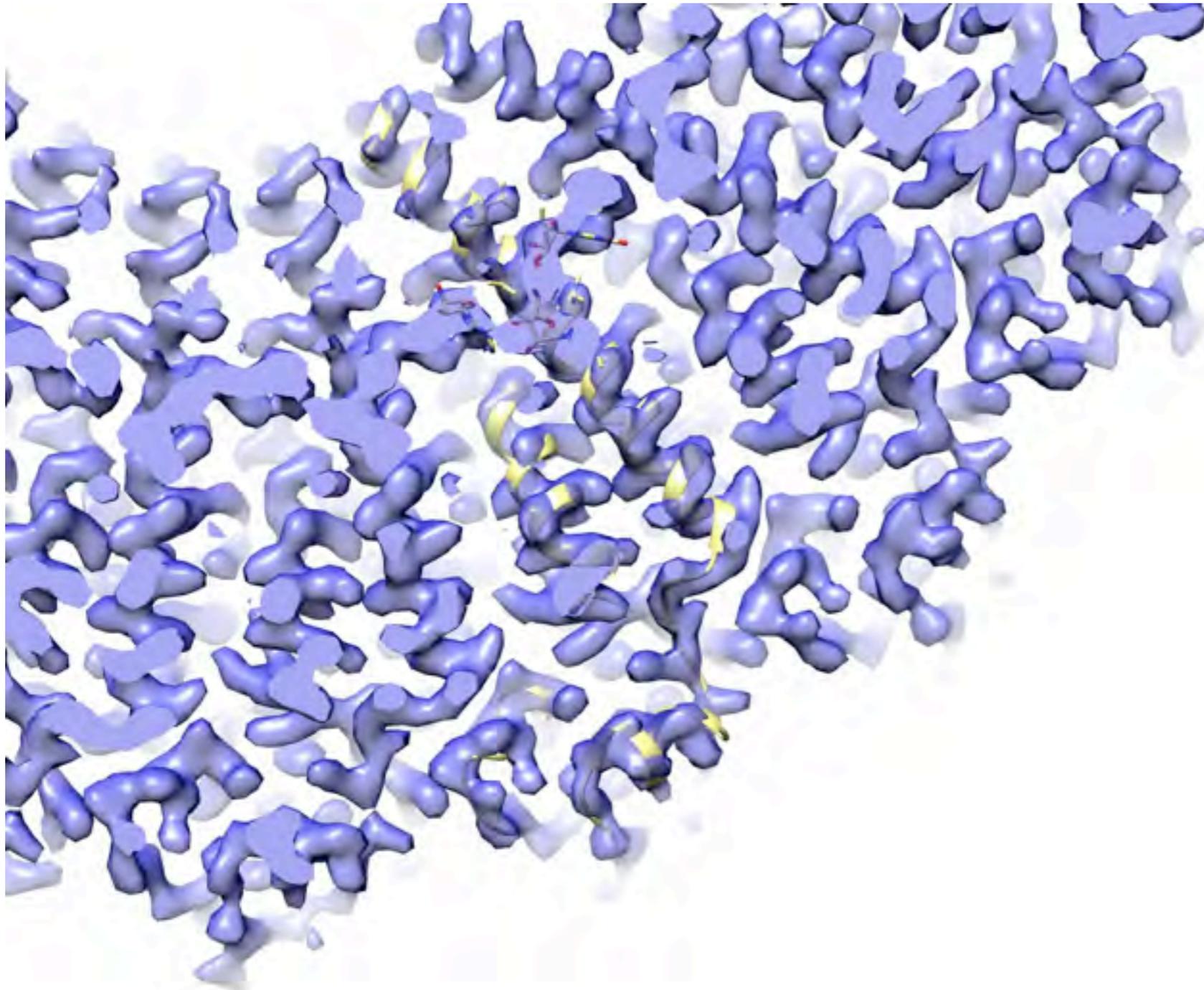
with Tanmay  
Bharat (MRC-LMB)  
unpublished

# TMV structure at $< 3.3 \text{ \AA}$ resolution

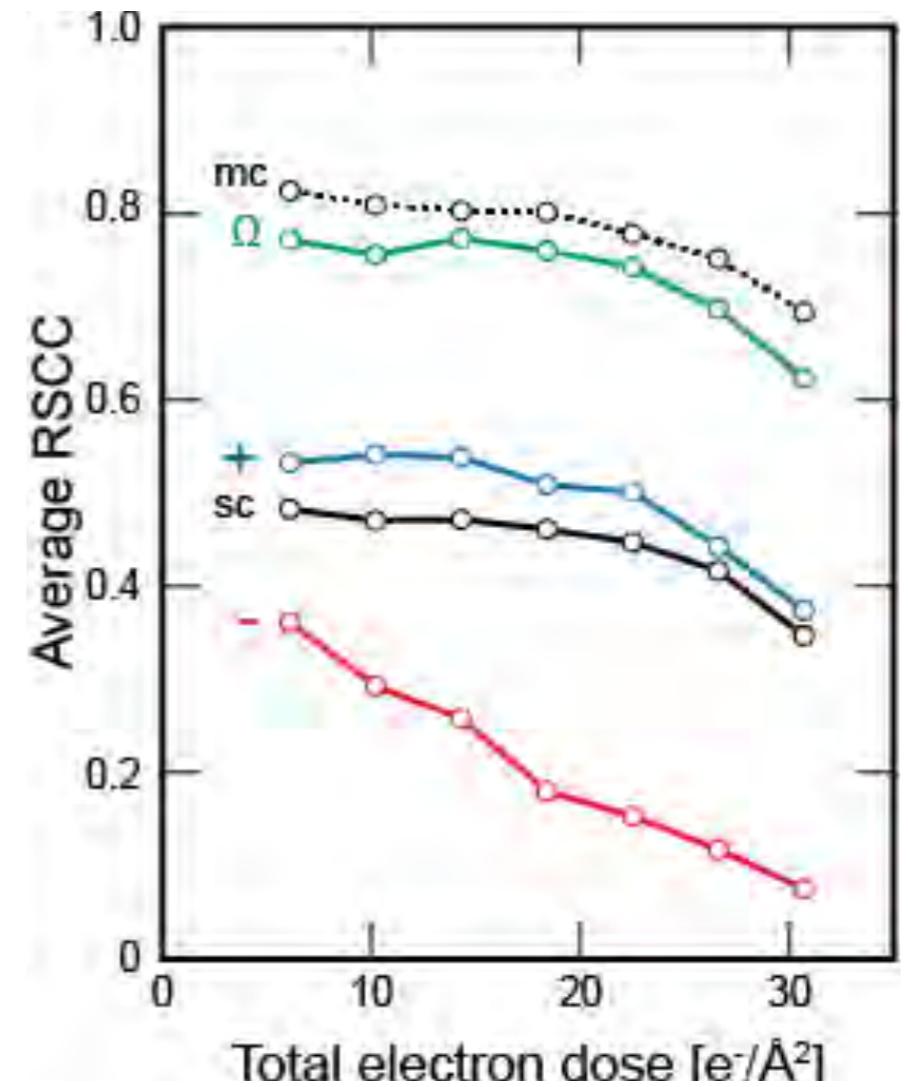
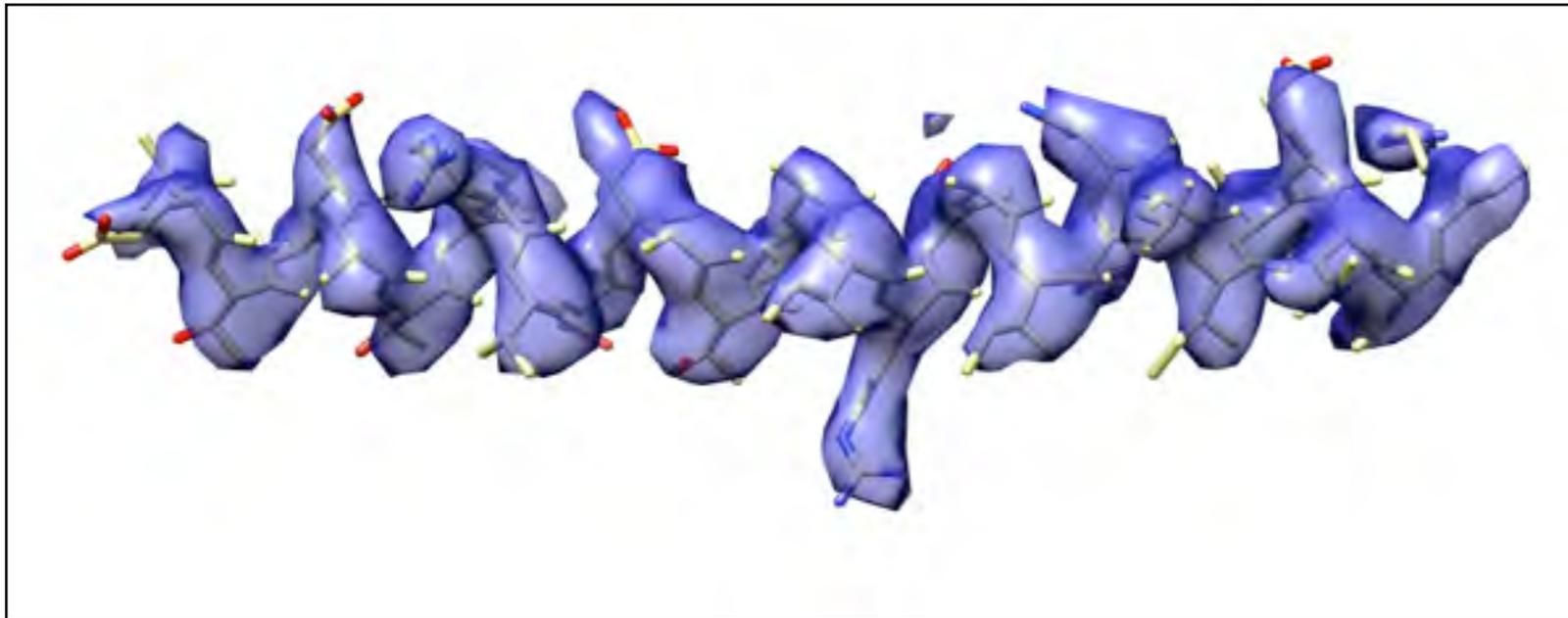


450,000 asymmetric units (109 micrographs) unpublished

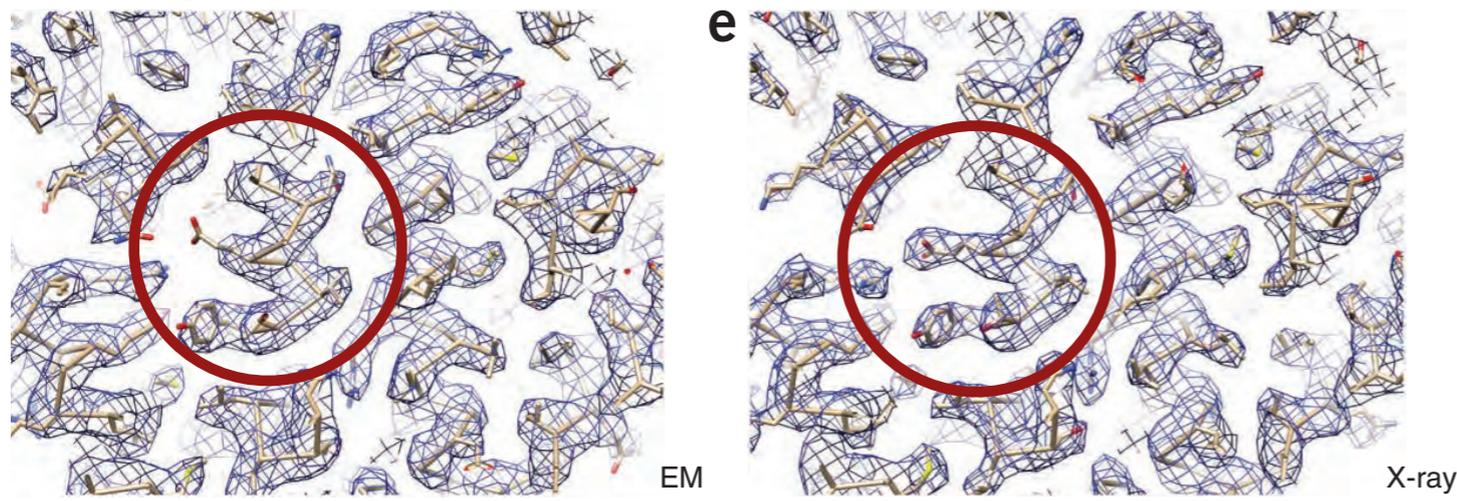
# The effect of dose on TMV structure



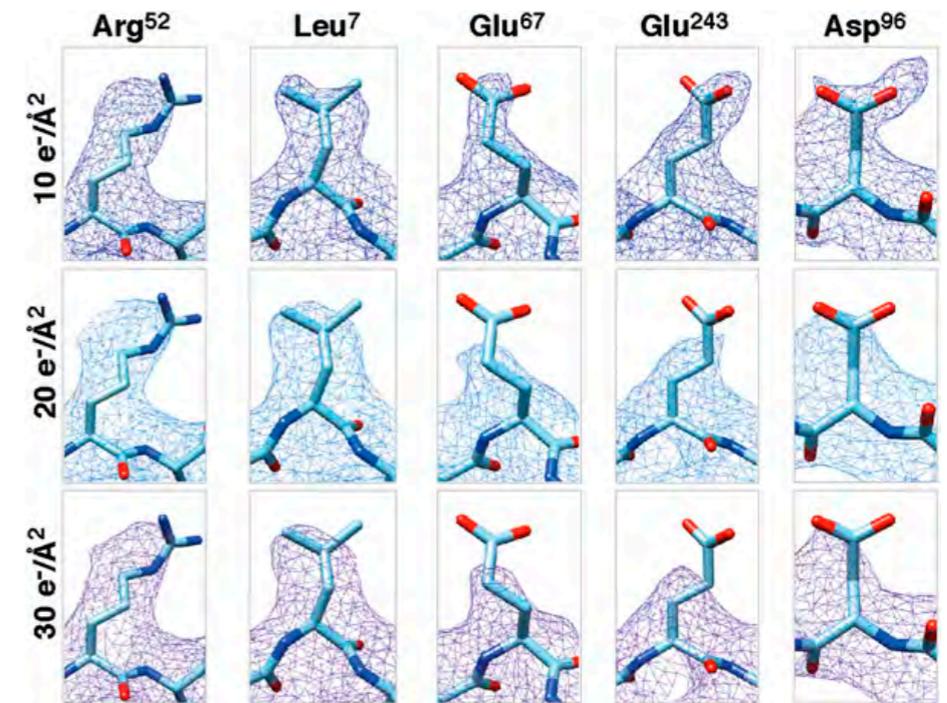
# Side-chain specific radiation damage



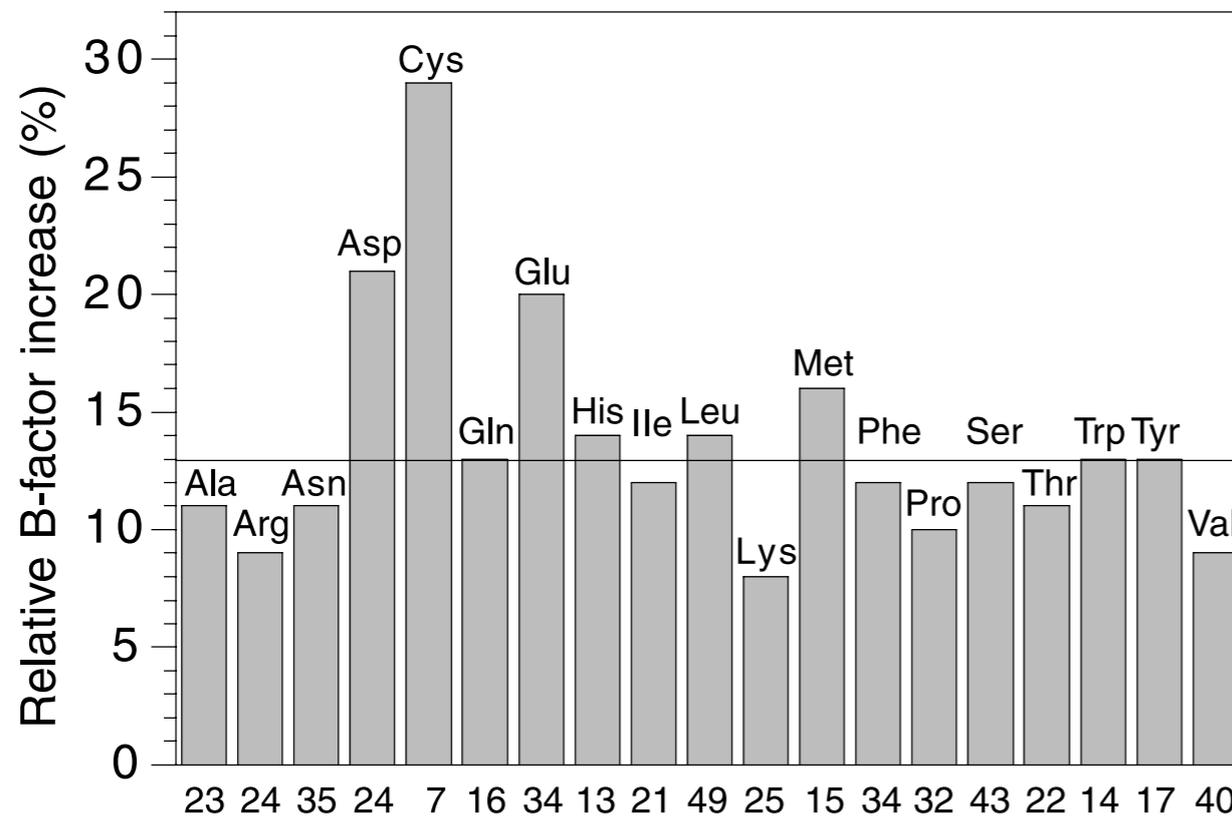
# Side-chain specific radiation damage



Li, et al. (2013). Nat Methods 10, 584–590.



Bartesaghi, et al. (2014)  
Proc Natl Acad Sci USA.



Weik, et al. (2000). Proc Natl Acad Sci USA 97, 623–628.

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TMV



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