



wwPDB EM Validation Summary Report ⓘ

Mar 8, 2026 – 05:12 AM UTC

PDB ID : 5M0R / pdb_00005m0r
EMDB ID : EMD-4139
Title : Cryo-EM reconstruction of the maedi-visna virus (MVV) strand transfer complex
Authors : Pye, V.E.; Ballandras-Colas, A.; Maskell, D.; Locke, J.; Kotecha, A.; Costa, A.; Cherepanov, P.
Deposited on : 2016-10-05
Resolution : 8.20 Å(reported)

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

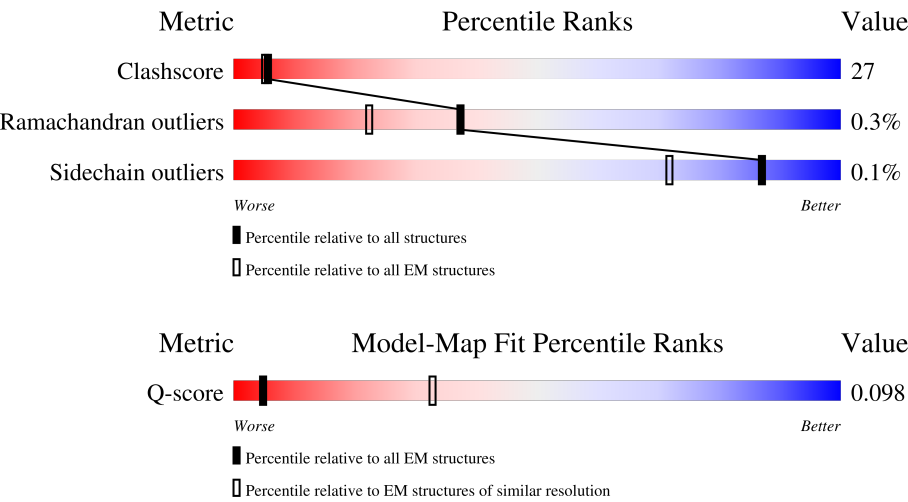
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 8.20 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	337 (7.70 - 8.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	281	
1	B	281	
1	C	281	
1	D	281	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	E	281	
1	F	281	
1	G	281	
1	H	281	
1	I	281	
1	J	281	
1	K	281	
1	L	281	
1	M	281	
1	N	281	
1	O	281	
1	P	281	
2	Q	21	
2	S	21	
3	R	50	
3	T	50	
4	U	23	
4	V	23	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 34774 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called integrase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	276	Total	C	N	O	S	0	0
			2216	1411	387	409	9		
1	B	256	Total	C	N	O	S	0	0
			2075	1321	363	383	8		
1	C	261	Total	C	N	O	S	0	0
			2123	1353	371	391	8		
1	D	216	Total	C	N	O	S	0	0
			1729	1110	297	316	6		
1	E	257	Total	C	N	O	S	0	0
			2090	1333	365	384	8		
1	F	266	Total	C	N	O	S	0	0
			2140	1362	377	393	8		
1	G	205	Total	C	N	O	S	0	0
			1657	1051	284	314	8		
1	H	217	Total	C	N	O	S	0	0
			1761	1129	308	318	6		
1	I	276	Total	C	N	O	S	0	0
			2216	1411	387	409	9		
1	J	256	Total	C	N	O	S	0	0
			2075	1321	363	383	8		
1	K	261	Total	C	N	O	S	0	0
			2123	1353	371	391	8		
1	L	216	Total	C	N	O	S	0	0
			1729	1110	297	316	6		
1	M	257	Total	C	N	O	S	0	0
			2090	1333	365	384	8		
1	N	266	Total	C	N	O	S	0	0
			2140	1362	377	393	8		
1	O	205	Total	C	N	O	S	0	0
			1657	1051	284	314	8		
1	P	217	Total	C	N	O	S	0	0
			1761	1129	308	318	6		

- Molecule 2 is a DNA chain called vDNA, non-transferred strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	Q	21	Total 431	C 203	N 79	O 128	P 21	0	0
2	S	21	Total 431	C 203	N 79	O 128	P 21	0	0

- Molecule 3 is a DNA chain called vDNA-tDNA, transferred strand, joined to a model tDNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	R	41	Total 834	C 396	N 153	O 244	P 41	0	0
3	T	41	Total 834	C 396	N 153	O 244	P 41	0	0

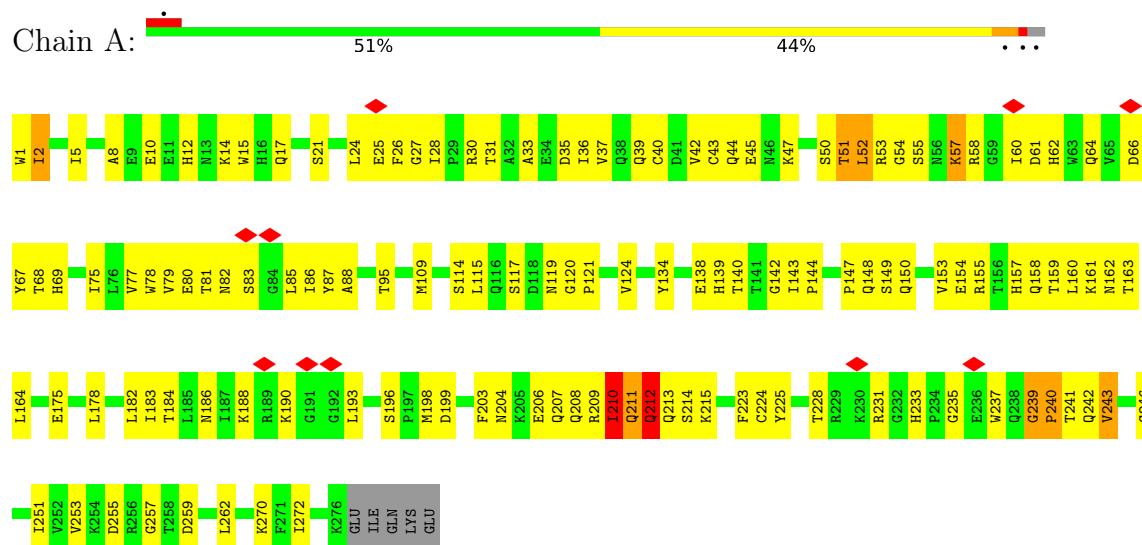
- Molecule 4 is a DNA chain called tDNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	U	16	Total 331	C 159	N 63	O 94	P 15	0	0
4	V	16	Total 331	C 159	N 63	O 94	P 15	0	0

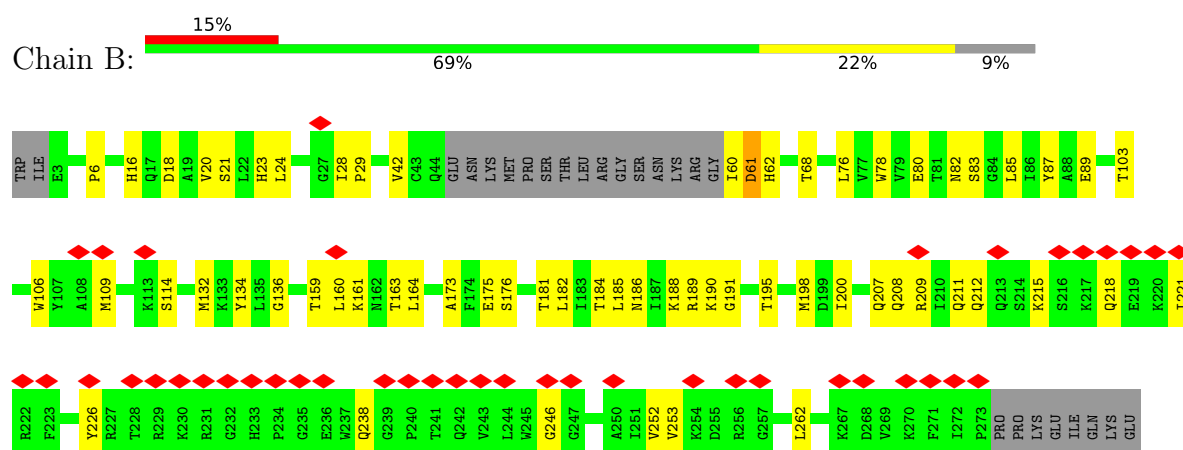
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: integrase

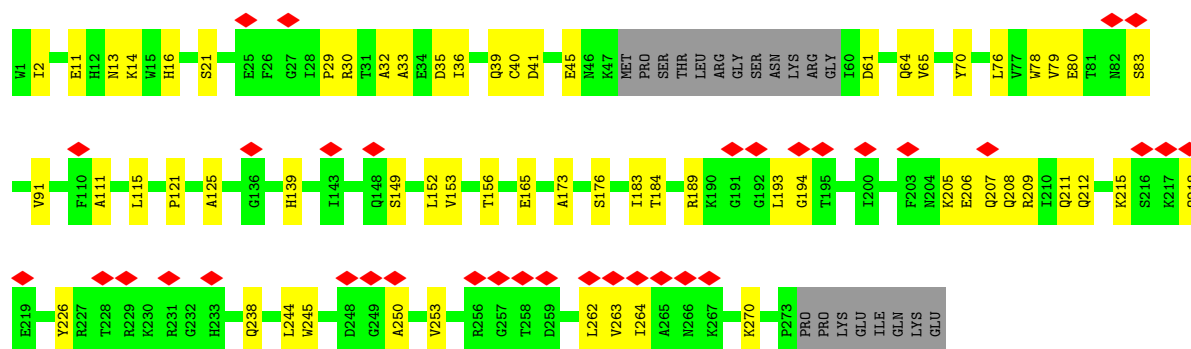


• Molecule 1: integrase

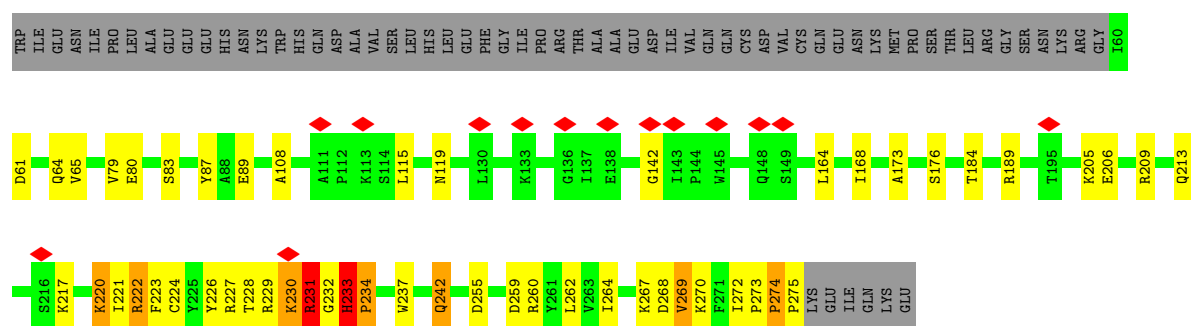


• Molecule 1: integrase

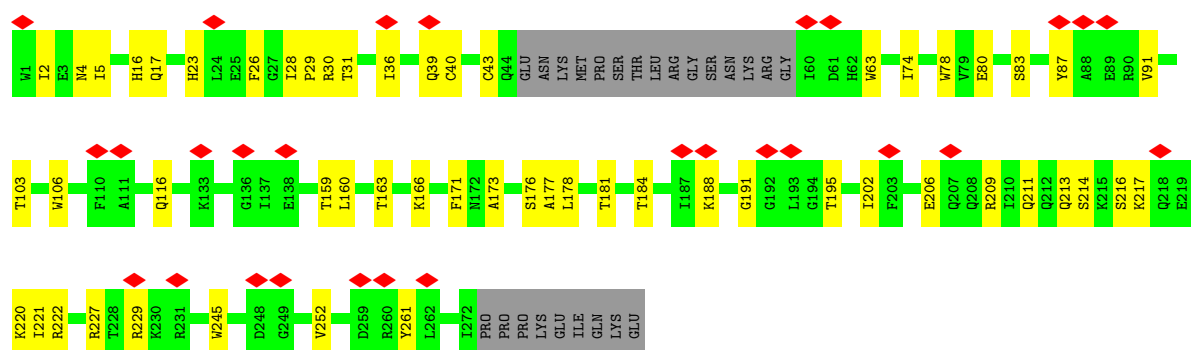




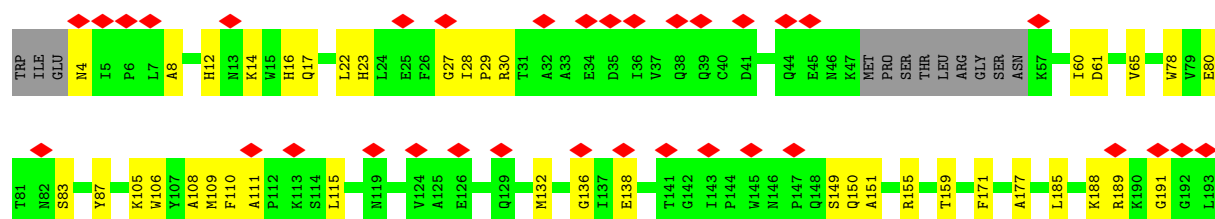
• Molecule 1: integrase



• Molecule 1: integrase

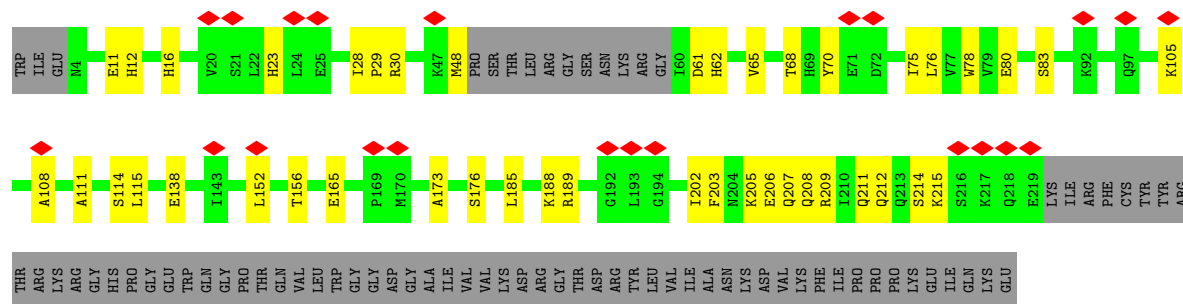


• Molecule 1: integrase

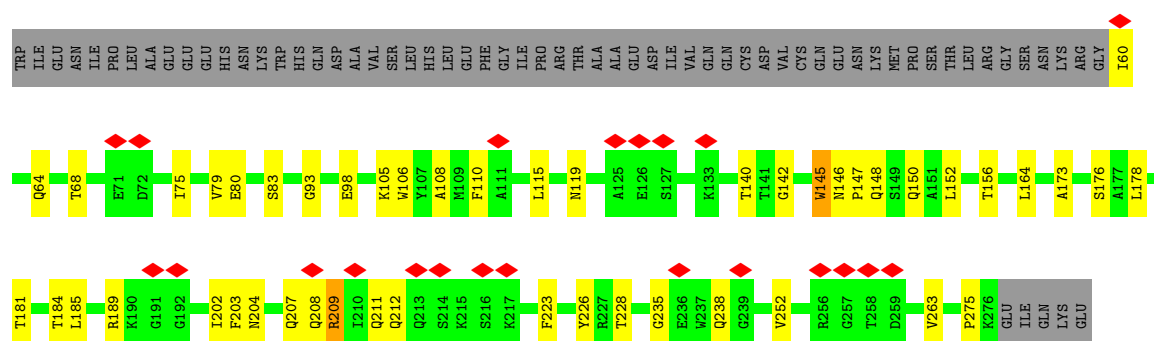




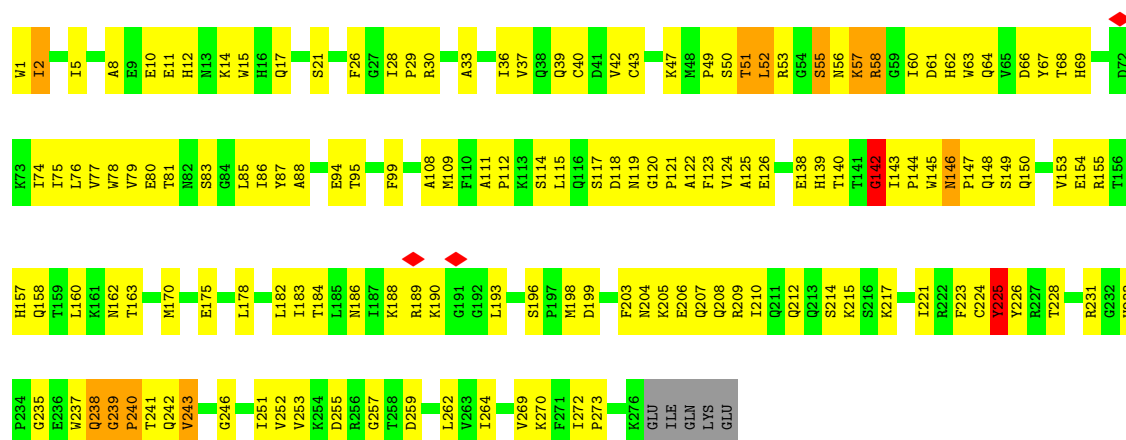
- Molecule 1: integrase



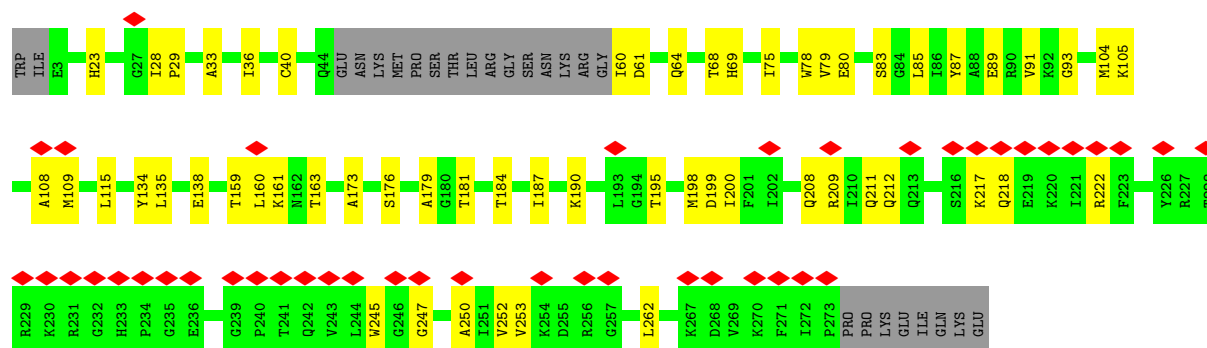
- Molecule 1: integrase



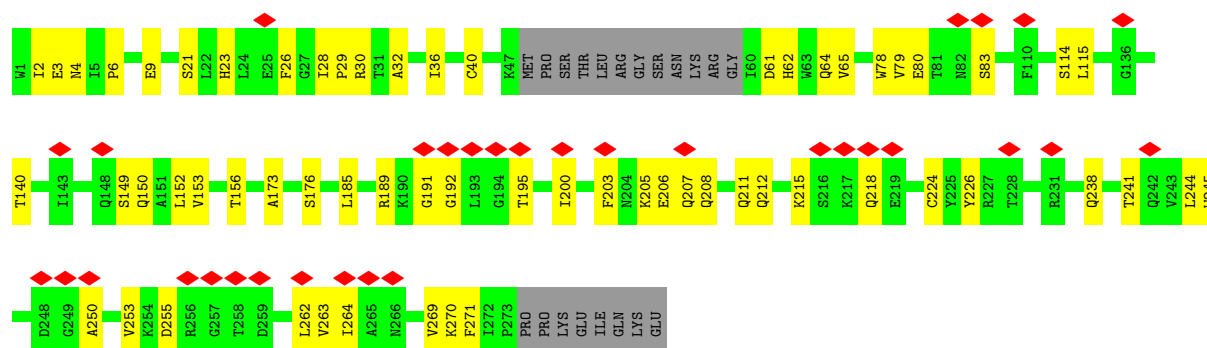
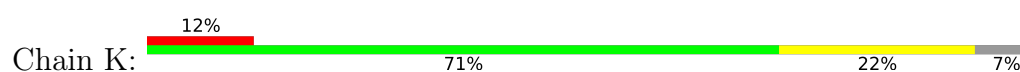
- Molecule 1: integrase



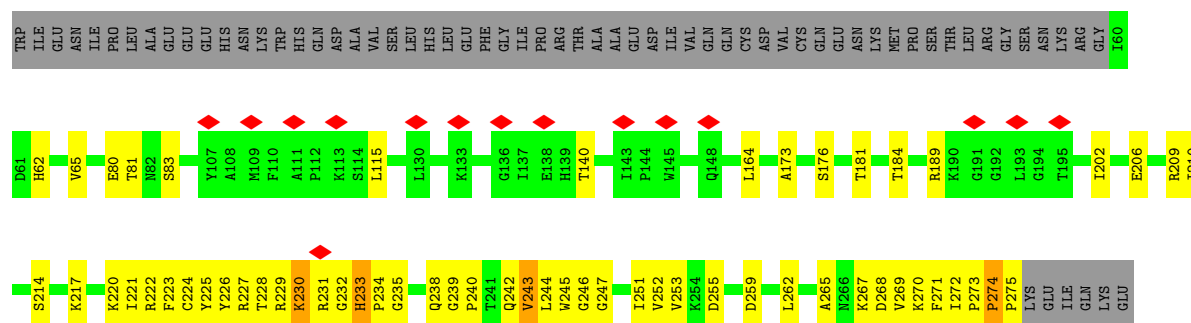
- Molecule 1: integrase



- Molecule 1: integrase

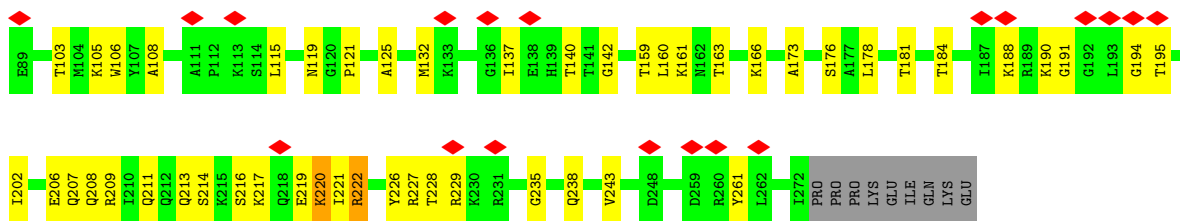


- Molecule 1: integrase

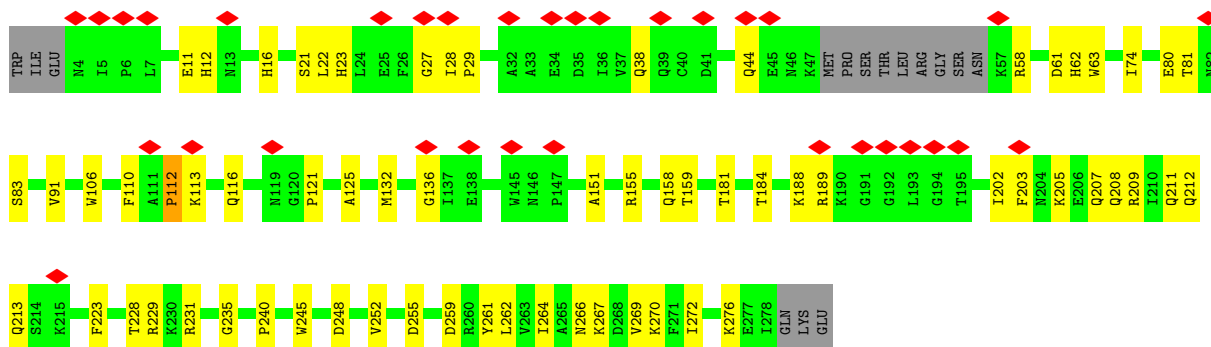


- Molecule 1: integrase

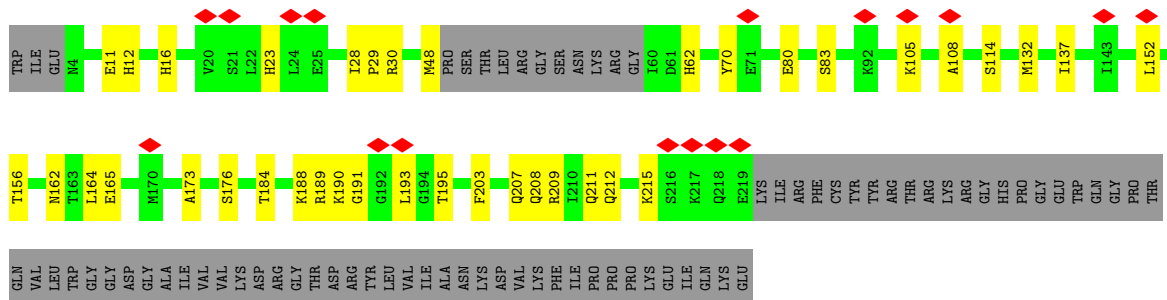




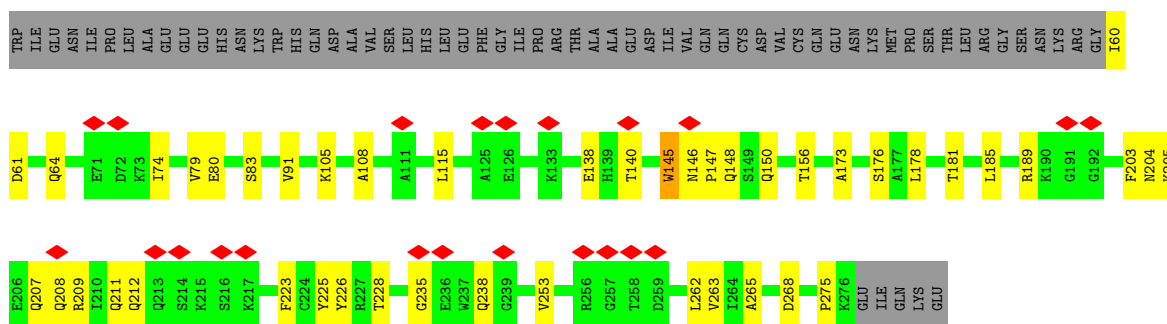
• Molecule 1: integrase



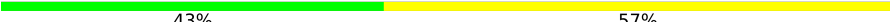
• Molecule 1: integrase

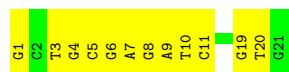


• Molecule 1: integrase



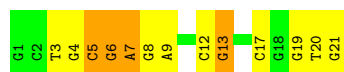
• Molecule 2: vDNA, non-transferred strand

Chain Q:  43% 57%



- Molecule 2: vDNA, non-transferred strand

Chain S:  38% 43% 19%

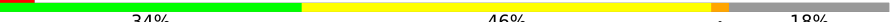


- Molecule 3: vDNA-tDNA, transferred strand, joined to a model tDNA

Chain R:  40% 40% 18%

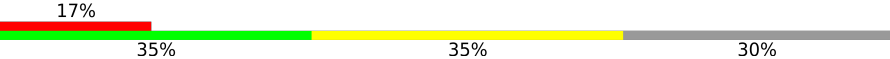


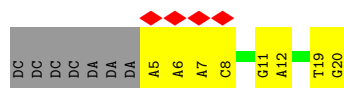
- Molecule 3: vDNA-tDNA, transferred strand, joined to a model tDNA

Chain T:  34% 46% 18%



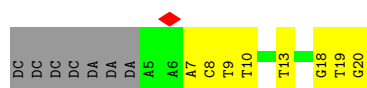
- Molecule 4: tDNA

Chain U:  17% 35% 35% 30%



- Molecule 4: tDNA

Chain V:  35% 35% 30%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	37021	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.47	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.333	Depositor
Minimum map value	-0.201	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.011	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	405.0, 405.0, 405.0	wwPDB
Map dimensions	150, 150, 150	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.7, 2.7, 2.7	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.87	1/2269 (0.0%)	1.02	9/3071 (0.3%)
1	B	0.62	0/2124	0.73	1/2874 (0.0%)
1	C	0.44	0/2174	0.64	0/2942
1	D	0.52	0/1772	0.87	11/2401 (0.5%)
1	E	0.52	0/2140	0.70	1/2896 (0.0%)
1	F	0.59	0/2191	0.76	1/2966 (0.0%)
1	G	0.38	0/1693	0.64	0/2290
1	H	0.42	0/1805	0.70	2/2441 (0.1%)
1	I	1.04	4/2271 (0.2%)	1.45	19/3077 (0.6%)
1	J	0.61	0/2124	0.77	1/2874 (0.0%)
1	K	0.45	0/2174	0.65	0/2942
1	L	0.77	1/1772 (0.1%)	0.72	4/2401 (0.2%)
1	M	0.55	0/2140	0.77	3/2896 (0.1%)
1	N	0.58	0/2191	0.73	1/2966 (0.0%)
1	O	0.39	0/1693	0.62	0/2290
1	P	0.44	0/1805	0.71	1/2441 (0.0%)
2	Q	0.17	0/482	0.30	0/742
2	S	0.45	2/482 (0.4%)	0.63	3/742 (0.4%)
3	R	1.02	1/934 (0.1%)	0.49	2/1437 (0.1%)
3	T	0.26	0/934	0.50	3/1437 (0.2%)
4	U	0.28	0/372	0.38	0/574
4	V	0.15	0/372	0.33	0/574
All	All	0.61	9/35914 (0.0%)	0.78	62/49274 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	I	0	3
All	All	0	4

The worst 5 of 9 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	R	40	DT	O3'-P	-30.49	1.15	1.61
1	L	221	ILE	C-N	23.84	1.67	1.33
1	I	238	GLN	C-N	21.43	1.65	1.33
1	I	142	GLY	C-N	-19.32	1.11	1.33
1	A	239	GLY	C-N	13.63	1.65	1.33

The worst 5 of 62 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	238	GLN	O-C-N	43.60	175.16	122.84
1	I	238	GLN	CA-C-N	-22.22	86.99	121.87
1	I	238	GLN	C-N-CA	-22.22	86.99	121.87
1	A	57	LYS	N-CA-C	-13.37	96.79	111.36
1	M	220	LYS	N-CA-C	12.24	124.17	111.07

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	51	THR	Mainchain
1	I	142	GLY	Peptide
1	I	225	TYR	Mainchain
1	I	51	THR	Mainchain

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2216	0	2173	407	0
1	B	2075	0	2046	52	0
1	C	2123	0	2091	87	0
1	D	1729	0	1705	150	0
1	E	2090	0	2061	99	0
1	F	2140	0	2106	52	0
1	G	1657	0	1626	58	0
1	H	1761	0	1764	102	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	I	2216	0	2175	492	0
1	J	2075	0	2046	116	0
1	K	2123	0	2095	81	0
1	L	1729	0	1702	163	0
1	M	2090	0	2059	95	0
1	N	2140	0	2105	111	0
1	O	1657	0	1626	62	0
1	P	1761	0	1764	85	0
2	Q	431	0	236	58	0
2	S	431	0	236	94	0
3	R	834	0	461	126	0
3	T	834	0	460	150	0
4	U	331	0	183	11	0
4	V	331	0	182	37	0
All	All	34774	0	32902	1855	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 27.

The worst 5 of 1855 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:270:LYS:HZ2	1:H:145:TRP:CD1	1.10	1.66
1:A:212:GLN:HB2	1:D:217:LYS:CD	1.21	1.64
1:A:14:LYS:HB3	1:J:134:TYR:CE1	1.27	1.61
1:I:145:TRP:CB	1:N:229:ARG:HD2	1.28	1.61
1:C:270:LYS:HD3	1:H:145:TRP:CE2	1.31	1.59

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	270/281 (96%)	253 (94%)	16 (6%)	1 (0%)	30	67
1	B	252/281 (90%)	242 (96%)	8 (3%)	2 (1%)	16	54
1	C	257/281 (92%)	249 (97%)	8 (3%)	0	100	100
1	D	214/281 (76%)	203 (95%)	8 (4%)	3 (1%)	9	40
1	E	253/281 (90%)	244 (96%)	8 (3%)	1 (0%)	30	67
1	F	262/281 (93%)	248 (95%)	12 (5%)	2 (1%)	16	54
1	G	201/281 (72%)	197 (98%)	4 (2%)	0	100	100
1	H	215/281 (76%)	211 (98%)	4 (2%)	0	100	100
1	I	274/281 (98%)	255 (93%)	18 (7%)	1 (0%)	30	67
1	J	252/281 (90%)	237 (94%)	15 (6%)	0	100	100
1	K	257/281 (92%)	253 (98%)	4 (2%)	0	100	100
1	L	214/281 (76%)	203 (95%)	9 (4%)	2 (1%)	14	51
1	M	253/281 (90%)	244 (96%)	9 (4%)	0	100	100
1	N	262/281 (93%)	252 (96%)	9 (3%)	1 (0%)	30	67
1	O	201/281 (72%)	194 (96%)	7 (4%)	0	100	100
1	P	215/281 (76%)	209 (97%)	6 (3%)	0	100	100
All	All	3852/4496 (86%)	3694 (96%)	145 (4%)	13 (0%)	37	72

5 of 13 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	231	ARG
1	D	233	HIS
1	I	240	PRO
1	L	233	HIS
1	D	234	PRO

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	237/246 (96%)	234 (99%)	3 (1%)	61	74
1	B	223/246 (91%)	223 (100%)	0	100	100
1	C	228/246 (93%)	228 (100%)	0	100	100
1	D	183/246 (74%)	183 (100%)	0	100	100
1	E	224/246 (91%)	224 (100%)	0	100	100
1	F	228/246 (93%)	228 (100%)	0	100	100
1	G	181/246 (74%)	181 (100%)	0	100	100
1	H	189/246 (77%)	189 (100%)	0	100	100
1	I	237/246 (96%)	236 (100%)	1 (0%)	84	84
1	J	223/246 (91%)	223 (100%)	0	100	100
1	K	228/246 (93%)	228 (100%)	0	100	100
1	L	183/246 (74%)	183 (100%)	0	100	100
1	M	224/246 (91%)	224 (100%)	0	100	100
1	N	228/246 (93%)	228 (100%)	0	100	100
1	O	181/246 (74%)	181 (100%)	0	100	100
1	P	189/246 (77%)	189 (100%)	0	100	100
All	All	3386/3936 (86%)	3382 (100%)	4 (0%)	87	89

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	ILE
1	A	210	ILE
1	A	212	GLN
1	I	2	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 19 such sidechains are listed below:

Mol	Chain	Res	Type
1	K	102	GLN
1	P	102	GLN
1	P	212	GLN
1	O	102	GLN
1	G	46	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	3
1	I	2
1	L	1
3	R	1

The worst 5 of 7 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	44:GLN	C	45:GLU	N	2.19
1	A	224:CYS	C	225:TYR	N	2.02
1	L	221:ILE	C	222:ARG	N	1.67
1	A	239:GLY	C	240:PRO	N	1.65
1	I	238:GLN	C	239:GLY	N	1.65

6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-4139. These allow visual inspection of the internal detail of the map and identification of artifacts.

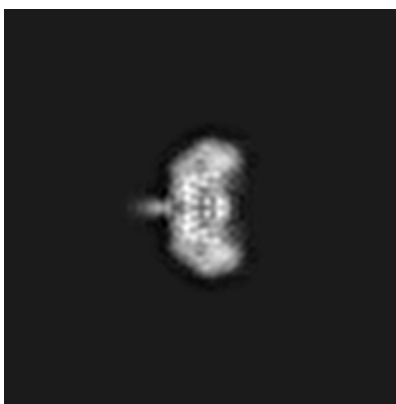
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

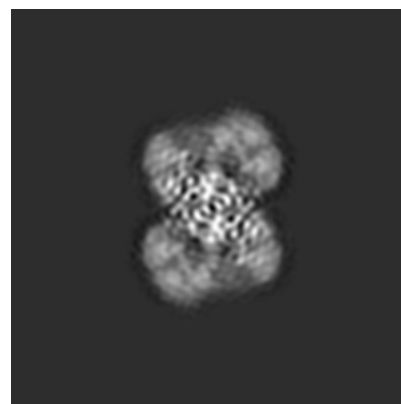
6.1.1 Primary map



X

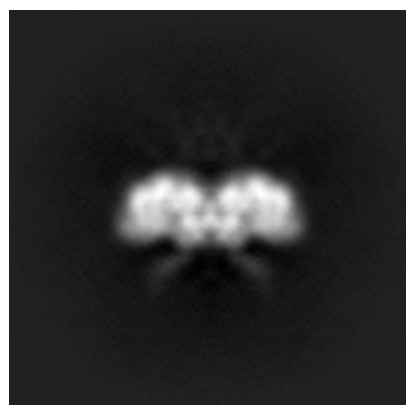


Y

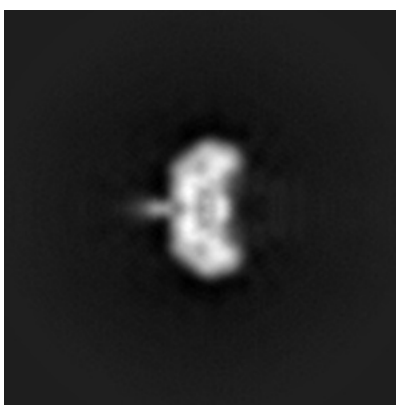


Z

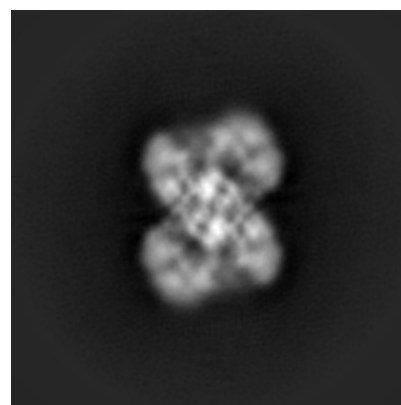
6.1.2 Raw map



X



Y



Z

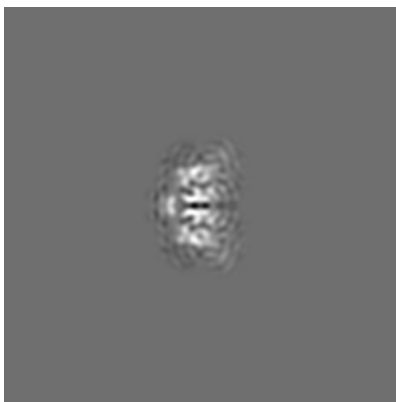
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

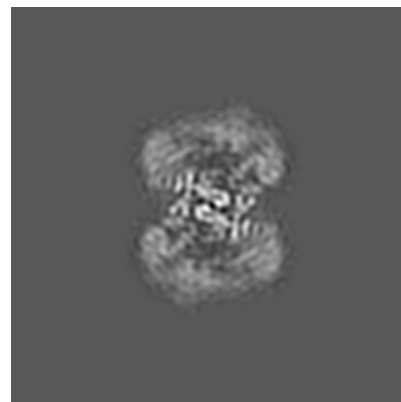
6.2.1 Primary map



X Index: 75

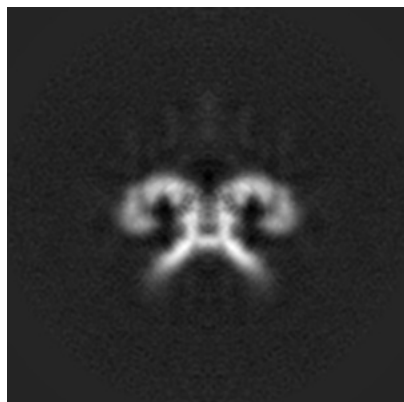


Y Index: 75

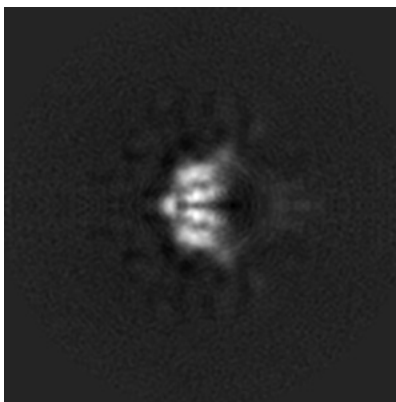


Z Index: 75

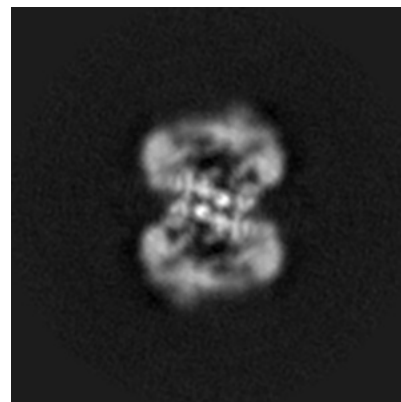
6.2.2 Raw map



X Index: 75



Y Index: 75

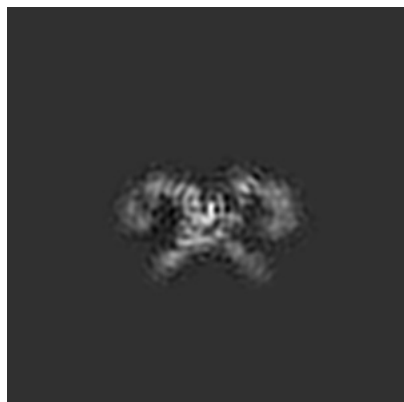


Z Index: 75

The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

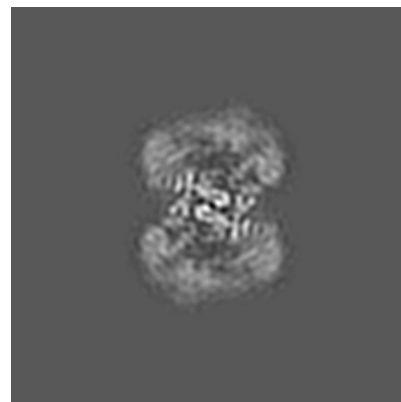
6.3.1 Primary map



X Index: 77

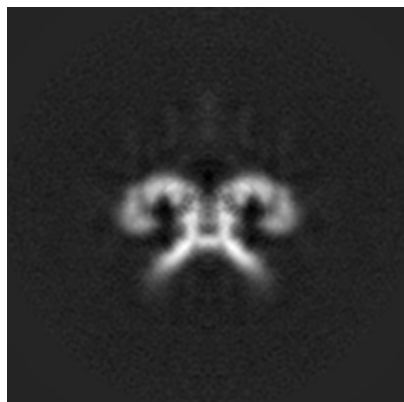


Y Index: 68

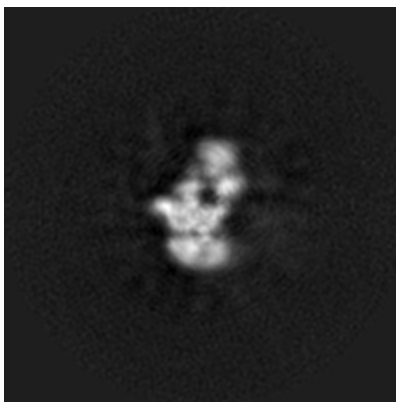


Z Index: 75

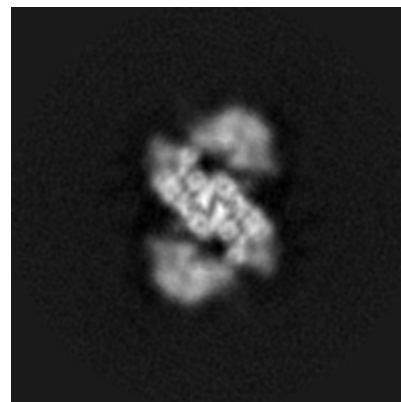
6.3.2 Raw map



X Index: 75



Y Index: 83



Z Index: 69

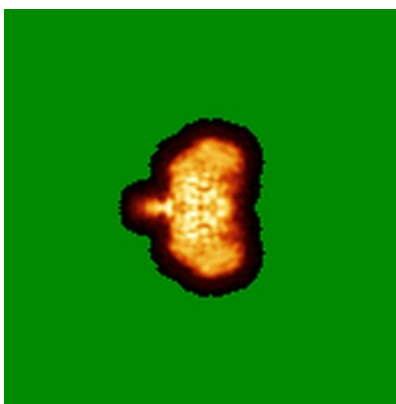
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

6.4.1 Primary map



X



Y

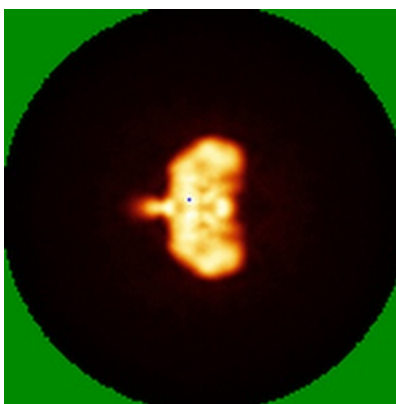


Z

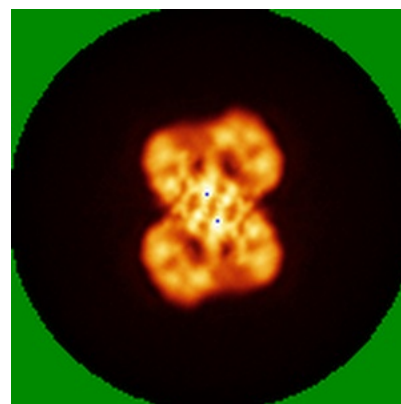
6.4.2 Raw map



X



Y

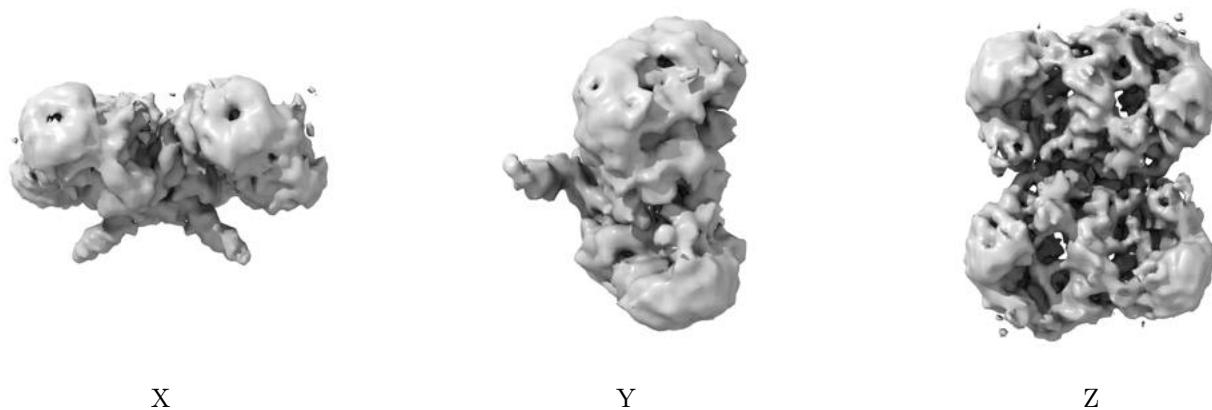


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

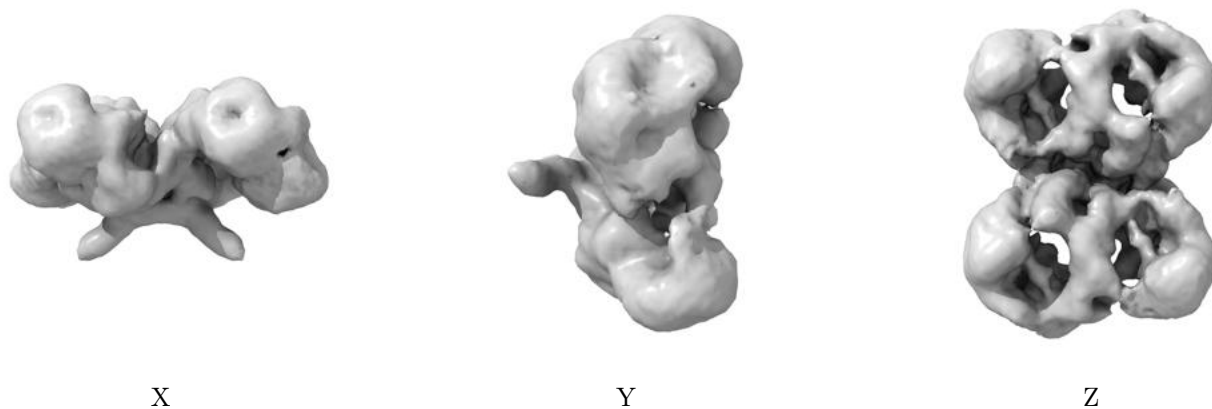
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.06. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

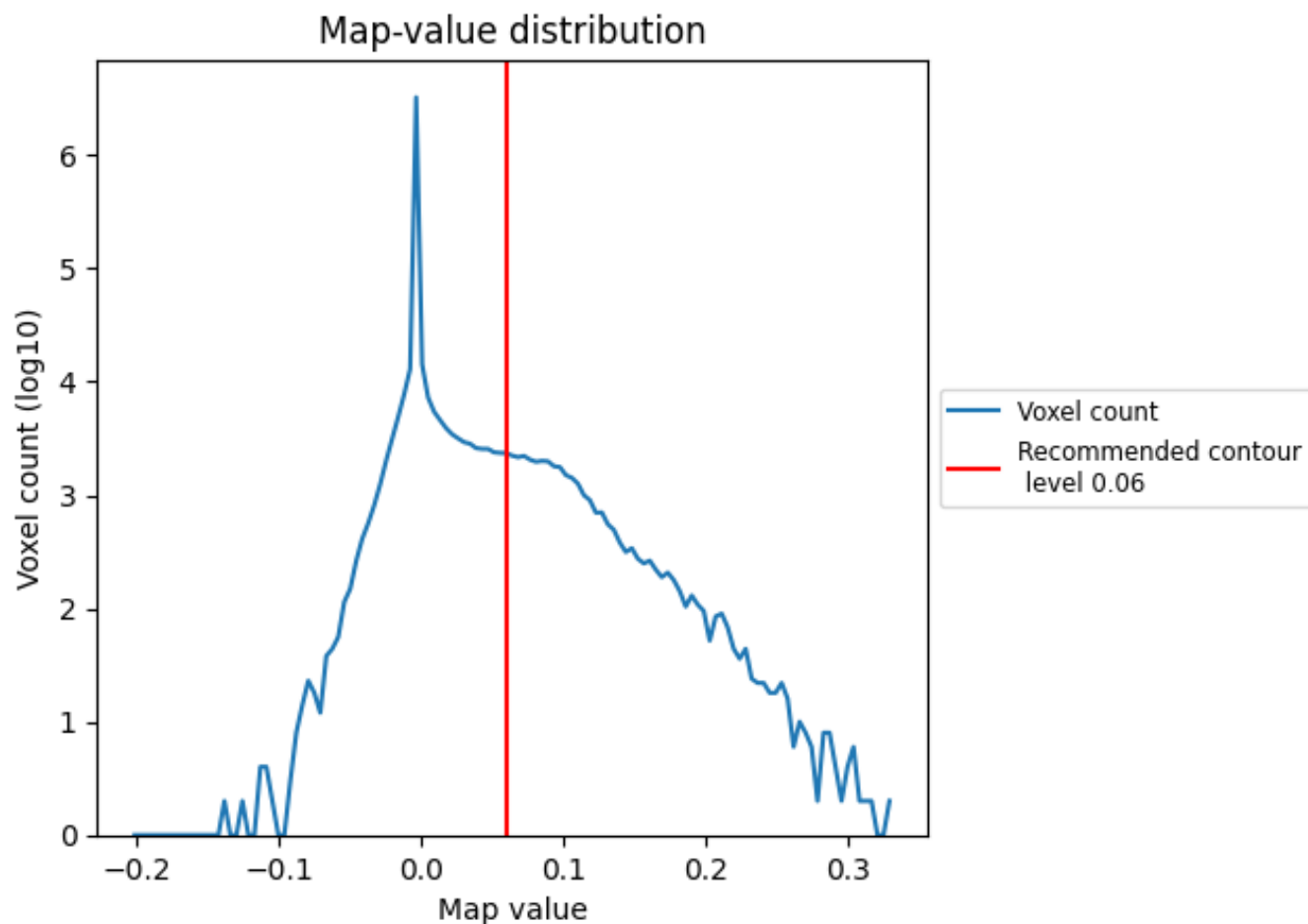
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

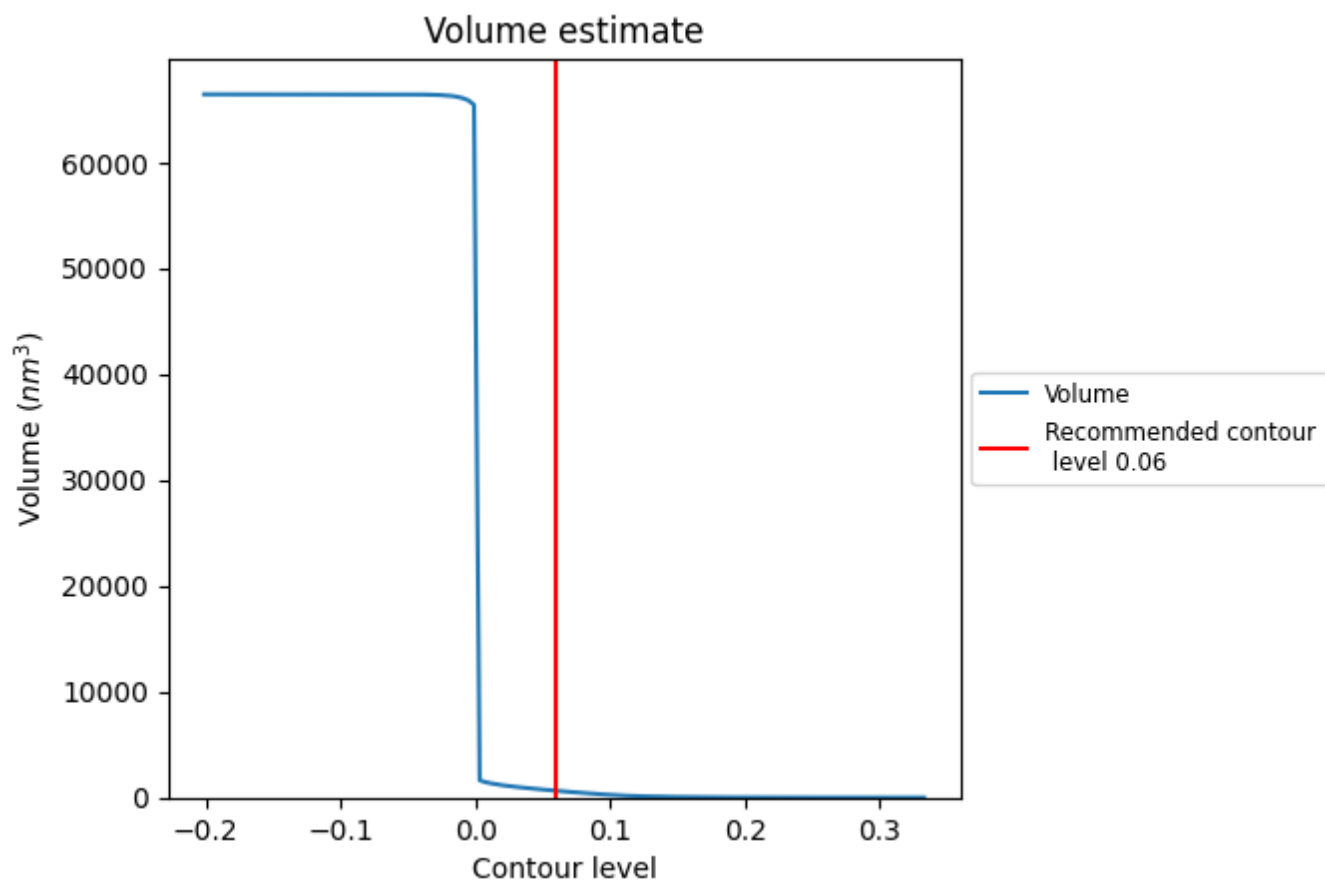
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

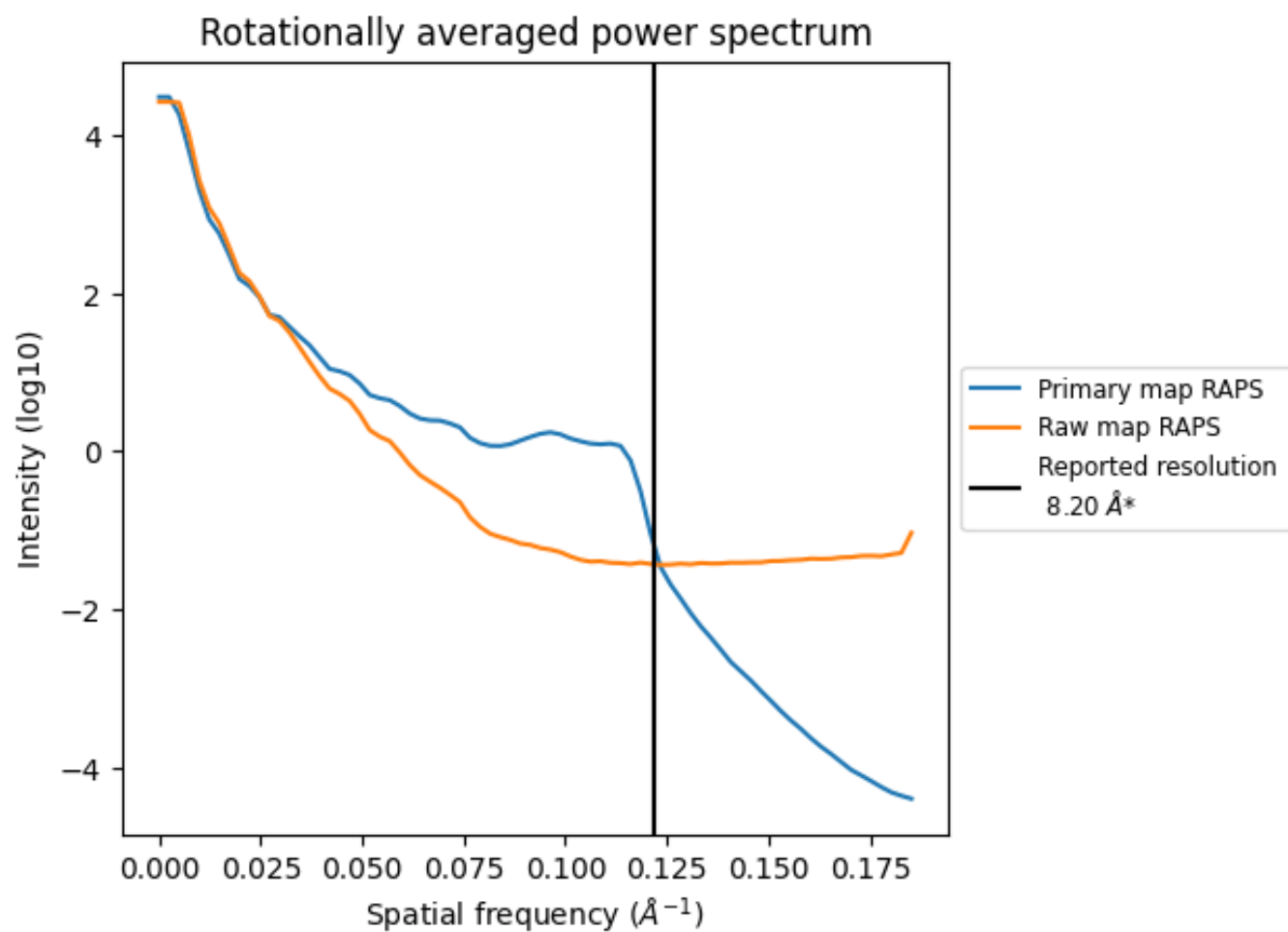
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 644 nm³; this corresponds to an approximate mass of 582 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

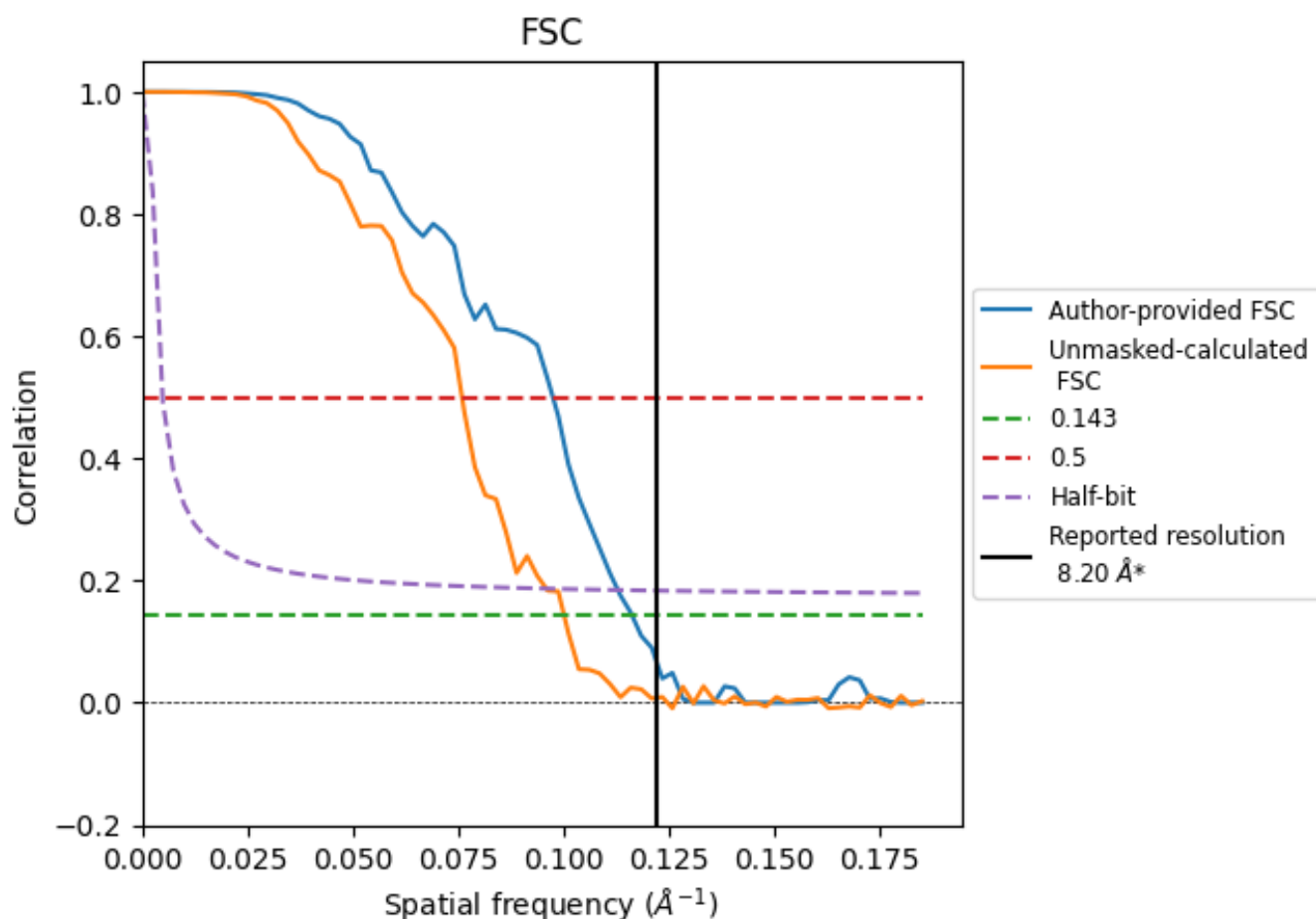


*Reported resolution corresponds to spatial frequency of 0.122 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.122 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

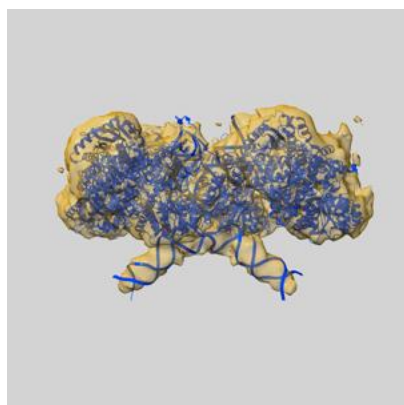
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.20	-	-
Author-provided FSC curve	8.60	10.26	8.85
Unmasked-calculated*	9.98	13.16	10.42

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.98 differs from the reported value 8.2 by more than 10 %

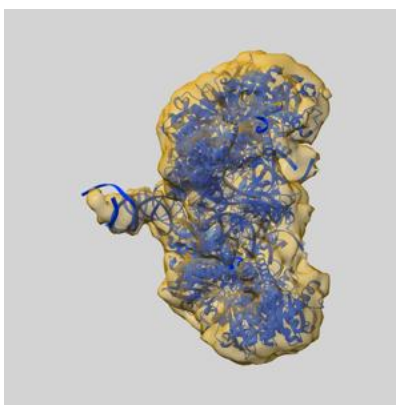
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-4139 and PDB model 5M0R. Per-residue inclusion information can be found in [section 3](#) on [page 6](#).

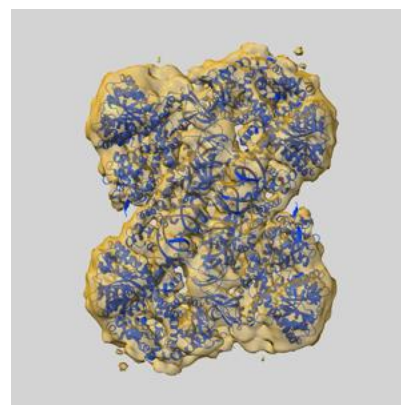
9.1 Map-model overlay [i](#)



X



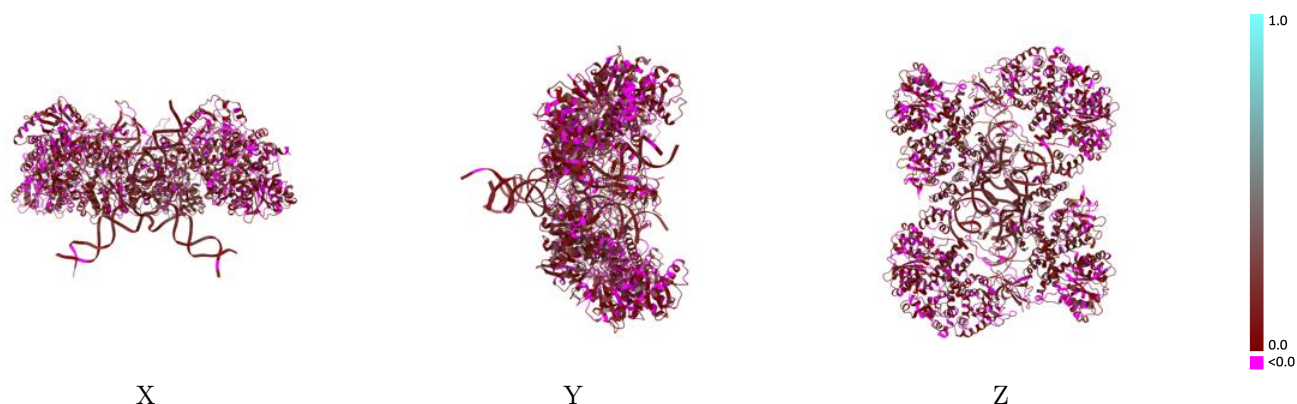
Y



Z

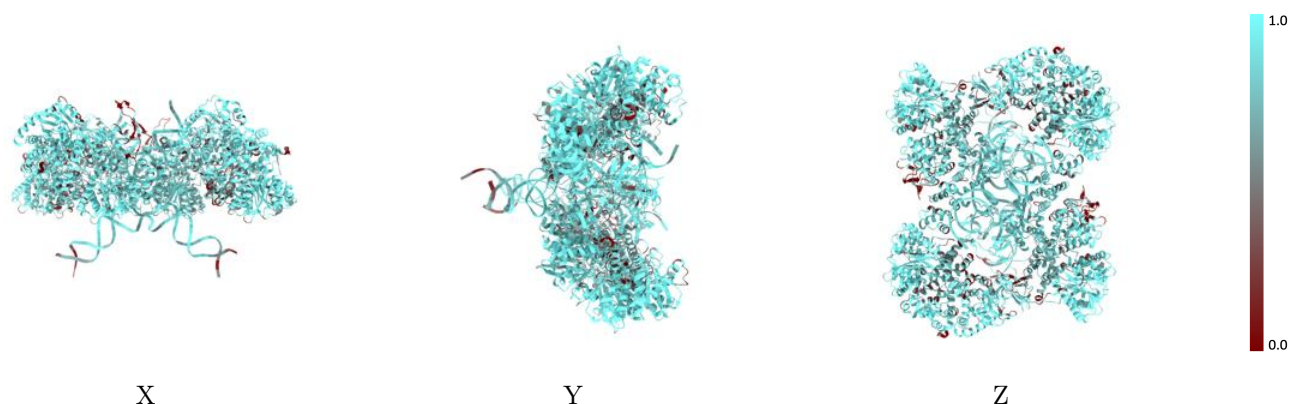
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



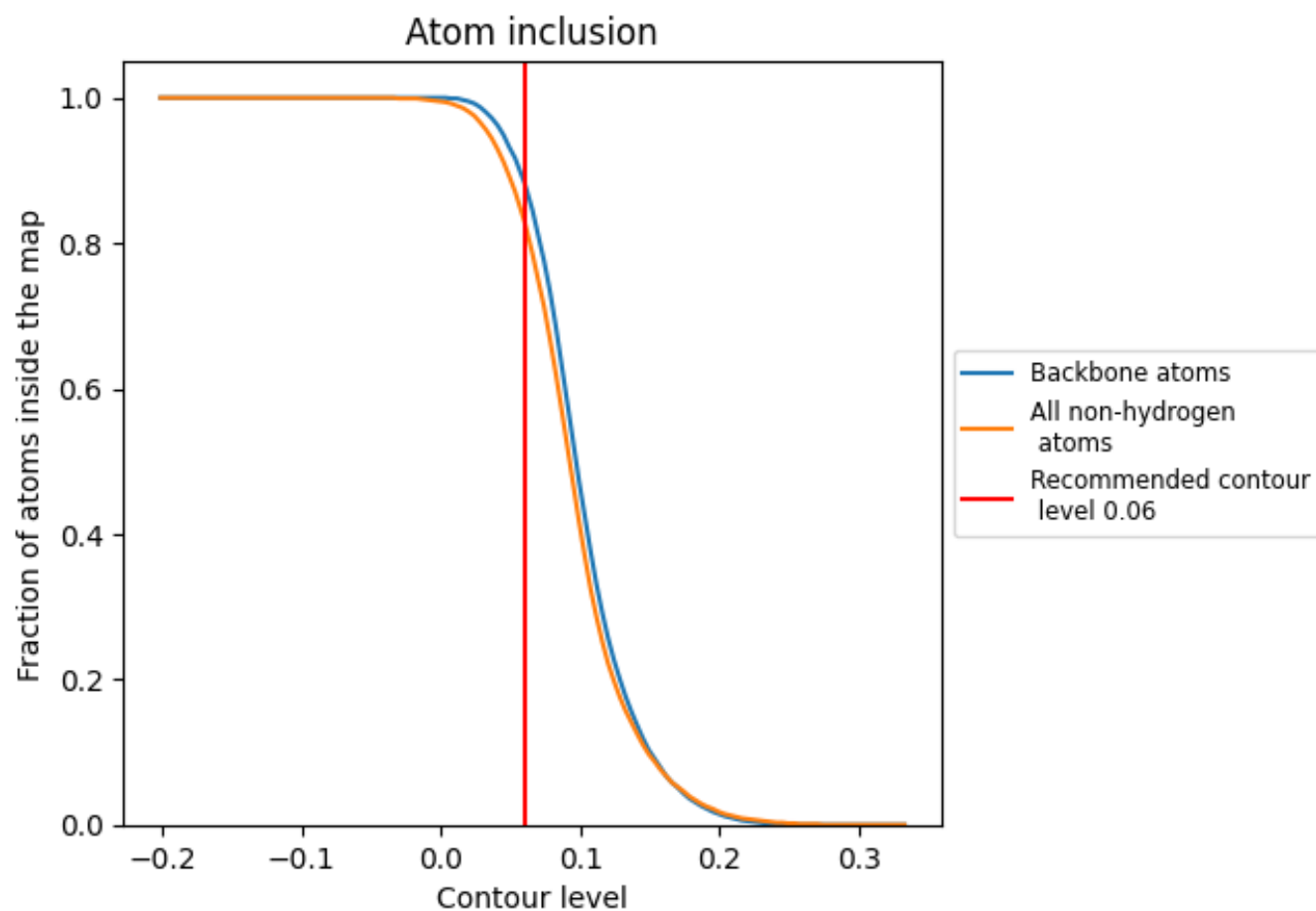
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.06).

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 83% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8310	 0.0980
A	 0.8680	 0.1220
B	 0.7760	 0.1040
C	 0.7980	 0.0890
D	 0.8630	 0.0810
E	 0.8250	 0.0700
F	 0.7880	 0.0910
G	 0.8440	 0.0630
H	 0.8650	 0.0840
I	 0.8680	 0.1310
J	 0.7710	 0.1050
K	 0.8020	 0.0920
L	 0.8690	 0.0870
M	 0.8310	 0.0840
N	 0.8080	 0.1040
O	 0.8560	 0.0650
P	 0.8690	 0.0900
Q	 0.9420	 0.1650
R	 0.8480	 0.1480
S	 0.9350	 0.1410
T	 0.8540	 0.1620
U	 0.7100	 0.1160
V	 0.7670	 0.1380

