



wwPDB EM Validation Summary Report ⓘ

Jan 24, 2024 – 05:39 PM EST

PDB ID : 8U7L
EMDB ID : EMD-41985
Title : Cryo-EM structure of LRRK2 bound to type II inhibitor GZD824
Authors : Zhu, H.; Sun, J.
Deposited on : 2023-09-15
Resolution : 3.60 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.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

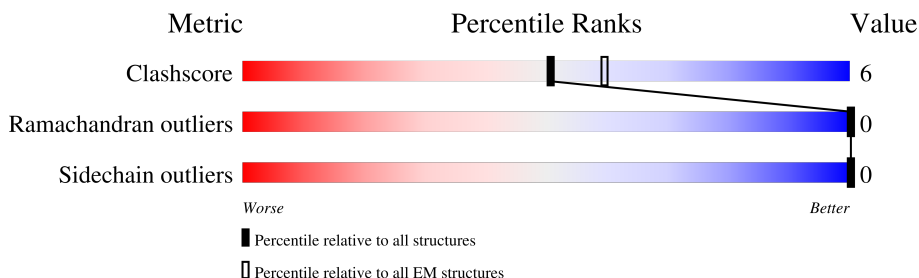
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.60 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)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	2527	
1	B	2527	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 24222 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.

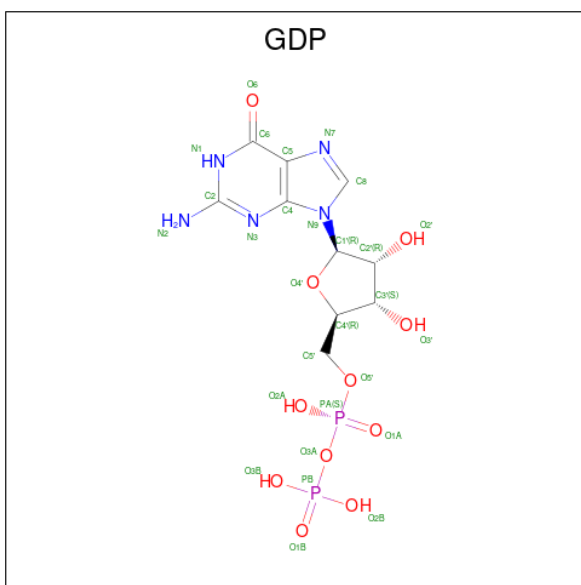
- Molecule 1 is a protein called Leucine-rich repeat serine/threonine-protein kinase 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	B	1705	Total 12044	C 7765	N 2066	O 2143	S 70	0	0
1	A	1705	Total 12044	C 7765	N 2066	O 2143	S 70	0	0

There are 6 discrepancies between the modelled and reference sequences:

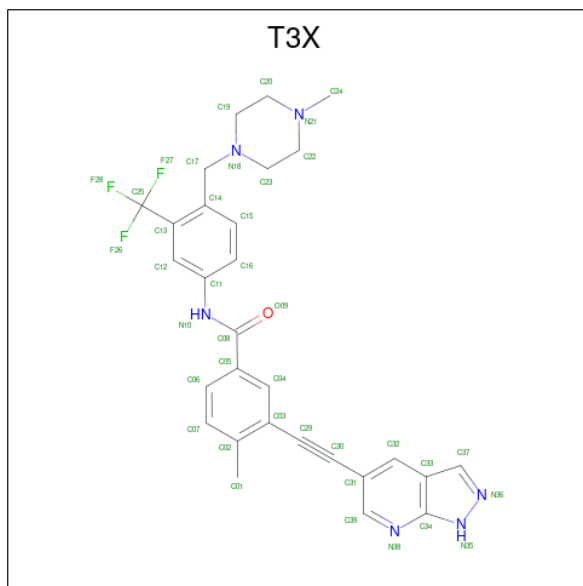
Chain	Residue	Modelled	Actual	Comment	Reference
B	50	HIS	ARG	conflict	UNP Q5S007
B	1647	THR	SER	conflict	UNP Q5S007
B	2397	THR	MET	conflict	UNP Q5S007
A	50	HIS	ARG	conflict	UNP Q5S007
A	1647	THR	SER	conflict	UNP Q5S007
A	2397	THR	MET	conflict	UNP Q5S007

- Molecule 2 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



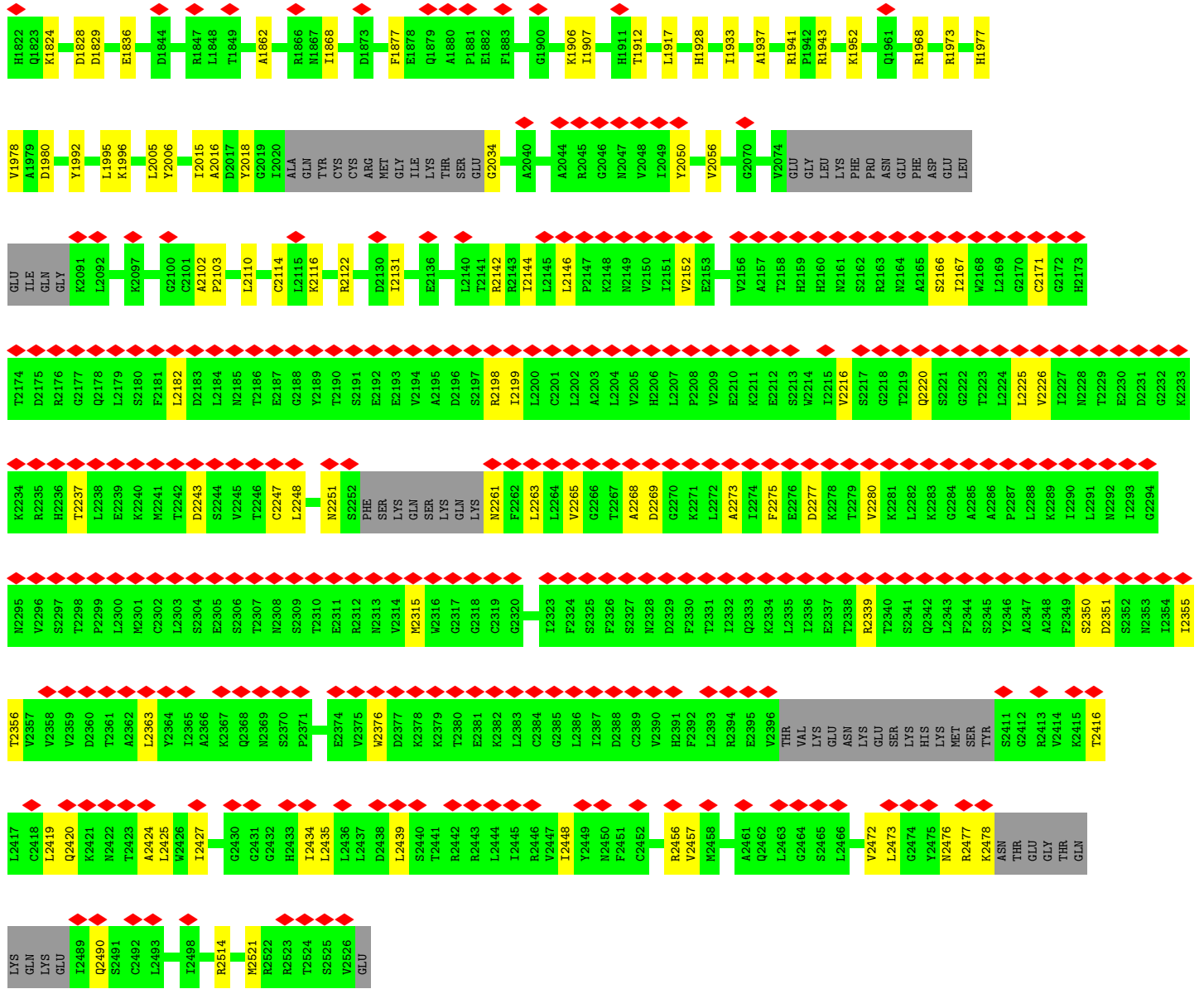
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	B	1	28	10	5	11	2	0
2	A	1	28	10	5	11	2	0

- Molecule 3 is 4-methyl-N-{4-[(4-methylpiperazin-1-yl)methyl]-3-(trifluoromethyl)phenyl}-3-[(1H-pyrazolo[3,4-b]pyridin-5-yl)ethynyl]benzamide (three-letter code: T3X) (formula: C₂₉H₂₇F₃N₆O).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	F	N	O	
3	B	1	39	29	3	6	1	0
3	A	1	39	29	3	6	1	0

ASP	ILE	HIS	LEU	VAL	LEU	ALA	LEU	ASN	ARG	PHE	ILE	GLY	ASN	PRO	G558	I559	Q560	K561	C562	G563	L564	K565	V566	I567	S568	S569	I570	V571	H572	F573	S574	D575	A576	L577	GLU	MET	LEU	SER	LEU	G584	A585	M586	D587	S588	V589	L590	H591	T592	L593	Q594	M595	Y596	P597	D598	D599	Q600
E601	I602	Q603	C604	G605	G606	L607	S608	L609	I610	G611	Y612	LEU	THR	L623	G624	H625	L626	L627	A628	K629	I630	L631	V632	S633	S634	R637	F638	K639	D640	V641	A642	E643	I644	F649	Q650	L651	A654	I655	L656	K657	Q658	L659	E660	S661	F662	S663	K664	L665								
L666	V667	H668	F671	D672	L673	V674	I675	F676	H677	S680	S681	N682	I683	M684	E685	K751	Q686	K687	D688	Q689	Q690	F691	L692	M693	L694	C695	C696	K697	C698	F699	A700	K701	V702	A703	M704	D705	D706	Y707	L708	K709	L713	E714	R715	A716	C717	D718	Q719	N720	N721	S722	I723	M724	V725	E726	L729	L730
L731	G732	A733	D734	N735	D736	Q737	A738	GLU	GLY	S742	S743	L744	V748	E750	K751	E752	S753	L760	L761	L762	N763	S764	G765	S766	R767	K773	T776	I779	G780	I786	R793	L794	A795	F808	K812	V813	E814	D824	K825	T826	S827	M828	L829	R830	K831	Q832	T833									
H834	S837	A840	R841	M842	V843	I844	Q847	H848	K849	S850	A851	V852	GLU	GLY	THR	ALA	VAL	LEU	GLN	ARG	CYS	SER	ASN	PRO	LEU	GLN	ARG	HIS	SER	LEU	PHE	ILE	PRO	ASP	ASP	LEU	LEU	LYS	ARG	SER	VAL	ARG	ARG	ILE	LEU	SER	ASP	ASP	ASP	LEU	ASP					
GLY	SER	GLU	GLY	PHE	LEU	VAL	LYS	LYS	SER	ASN	SER	ILE	VAL	GLY	PHE	TYR	ARG	ASP	ALA	VAL	LEU	GLN	SER	VAL	VAL	VAL	GLY	HIS	SER	ASN	PRO	LEU	GLN	ARG	HIS	SER	LEU	LEU	LYS	ARG	SER	VAL	ARG	ARG	ILE	LEU	SER	ASP	ASP							
ASP	SER	LEU	ARG	SER	SER	LEU	GLN	HIS	MET	ARG	HIS	SER	ASP	ILE	SER	LEU	ALA	GLU	R981	E982	I997	K1003	H1012	L1023	Q1029	L1030	C1031	H1039	L1040	L1042	H1043	F1047	L1054	M1062	M1068	D1069	I1070	V1074	D1077	P1078	I1079															
Q1087	L1090	N1093	Q1094	L1095	T1103	L1104	V1105	K1108	S1120	C1123	S1124	P1125	L1126	R1127	S1137	K1138	N1139	H1140	F1148	L1149	E1150	A1151	R1161	M1162	N1163	K1179	F1185	P1189	I1192	D1202	L1211	L1222	L1225	I1232	L1237	S1238	E1239	K1240																		
L1252	L1257	K1258	E1259	L1260	L1267	L1270	L1273	D1274	V1275	S1276	M1278	L1279	E1280	L1281	F1284	P1285	S1292	E1301	M1305	F1306	D1307	F1308	H1309	H1310	I1311	G1312	C1313	K1327	K1328	L1337	V1340	G1344	K1358	LYS	SER	ASP	LEU	GLY	MET	GLN	S1366	D1372	V1373	K1374												
D1375	I1378	Q1379	I1380	R1381	D1382	K1383	R1384	K1385	R1386	N1391	V1392	F1395	R1398	F1401	P1406	M1409	L1416	A1417	V1418	Y1419	D1420	G1424	P1433	M1437	R1441	P1446	V1450	G1451	T1452	H1453	S1457	ASP	GLU	LYS	GLN	ARG	K1463	K1468	Q1468	R1477	R1483															
T1491	E1492	E1493	S1494	D1495	A1496	L1497	A1498	K1499	I1505	M1506	M1510	F1511	K1512	L1517	D1525	E1531	K1539	M1540	V1541	P1542	I1543	E1544	R1550	L1553	L1556	F1559	M1560	Q1561	L1562	Q1563	L1564	P1570	H1574	F1575	L1583	H1584	F1585	Q1586	D1587	P1588	A1589	L1590	Q1591	L1592	P1600											
K1601	A1608	Q1609	I1610	L1611	T1612	V1613	VAL	VAL	GLY	GLY	CYS	PRO	LYS	HIS	PRO	LYS	ILE	ILE	SER	ARG	ARG	ASP	VAL	GLU	PHE	PHE	LEU	SER	LYS	ARG	ARG	PHE	P1642	K1643	N1644	Y1645	L1652	L1653	I1658	A1659	PRO	PRO	ILE	GLY	GLU	GLU	TYR	LEU	L1668	S1672	L1673	N1687				
I1692	Y1695	M1702	I1709	L1720	SER	GLY	ARG	GLU	GLU	ARG	A1726	P1729	R1735	I1738	W1742	Y1747	V1750	L1755	D1756	M1757	L1763	K1764	I1765	P1768	R1771	M1788	L1796	D1799	ILE	CYS	GLY	GLU	G1804	E1805	L1813	M1817	D1818	G1819	E1820	I1821	E1822															



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	78975	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	67.04	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.105	Depositor
Minimum map value	-2.057	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.9	Depositor
Map size (\AA)	508.68, 508.68, 508.68	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.413, 1.413, 1.413	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: T3X, GDP

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	0.25	0/12265	0.49	0/16781
1	B	0.26	0/12265	0.50	0/16781
All	All	0.26	0/24530	0.50	0/33562

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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	12044	0	11269	130	0
1	B	12044	0	11269	147	0
2	A	28	0	12	0	0
2	B	28	0	12	0	0
3	A	39	0	0	0	0
3	B	39	0	0	1	0
All	All	24222	0	22562	277	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 6.

The worst 5 of 277 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:B:1709:ILE:HA	1:B:1738:ILE:HD11	1.69	0.73
1:A:2427:ILE:HB	1:A:2435:LEU:HB3	1.72	0.70
1:B:1406:PRO:HG3	1:B:1702:MET:HB3	1.74	0.70
1:A:1709:ILE:HA	1:A:1738:ILE:HD11	1.72	0.70
1:B:2152:VAL:HA	1:B:2171:CYS:HB3	1.73	0.69

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	1673/2527 (66%)	1548 (92%)	125 (8%)	0	100	100
1	B	1673/2527 (66%)	1548 (92%)	125 (8%)	0	100	100
All	All	3346/5054 (66%)	3096 (92%)	250 (8%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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	1135/2281 (50%)	1135 (100%)	0	100	100
1	B	1135/2281 (50%)	1135 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	2270/4562 (50%)	2270 (100%)	0	100 100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	2420	GLN
1	A	1062	ASN
1	A	1087	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

4 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	T3X	B	2602	-	43,43,43	2.87	14 (32%)	55,62,62	1.69	7 (12%)
2	GDP	B	2601	-	24,30,30	0.97	1 (4%)	30,47,47	1.38	4 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	T3X	A	2602	-	43,43,43	2.87	14 (32%)	55,62,62	1.66	7 (12%)
2	GDP	A	2601	-	24,30,30	0.98	1 (4%)	30,47,47	1.38	4 (13%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	T3X	B	2602	-	-	5/23/33/33	0/5/5/5
2	GDP	B	2601	-	-	1/12/32/32	0/3/3/3
3	T3X	A	2602	-	-	5/23/33/33	0/5/5/5
2	GDP	A	2601	-	-	1/12/32/32	0/3/3/3

The worst 5 of 30 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2602	T3X	C17-N18	-10.56	1.27	1.47
3	A	2602	T3X	C17-N18	-10.54	1.27	1.47
3	B	2602	T3X	C24-N21	-8.51	1.27	1.46
3	A	2602	T3X	C24-N21	-8.48	1.27	1.46
3	A	2602	T3X	C03-C29	5.93	1.54	1.43

The worst 5 of 22 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2602	T3X	C31-C39-N38	-7.70	120.15	124.36
3	A	2602	T3X	C31-C39-N38	-7.53	120.24	124.36
3	B	2602	T3X	C39-N38-C34	4.97	121.69	116.69
3	A	2602	T3X	C39-N38-C34	4.84	121.56	116.69
2	A	2601	GDP	PA-O3A-PB	-4.15	118.59	132.83

There are no chirality outliers.

5 of 12 torsion outliers are listed below:

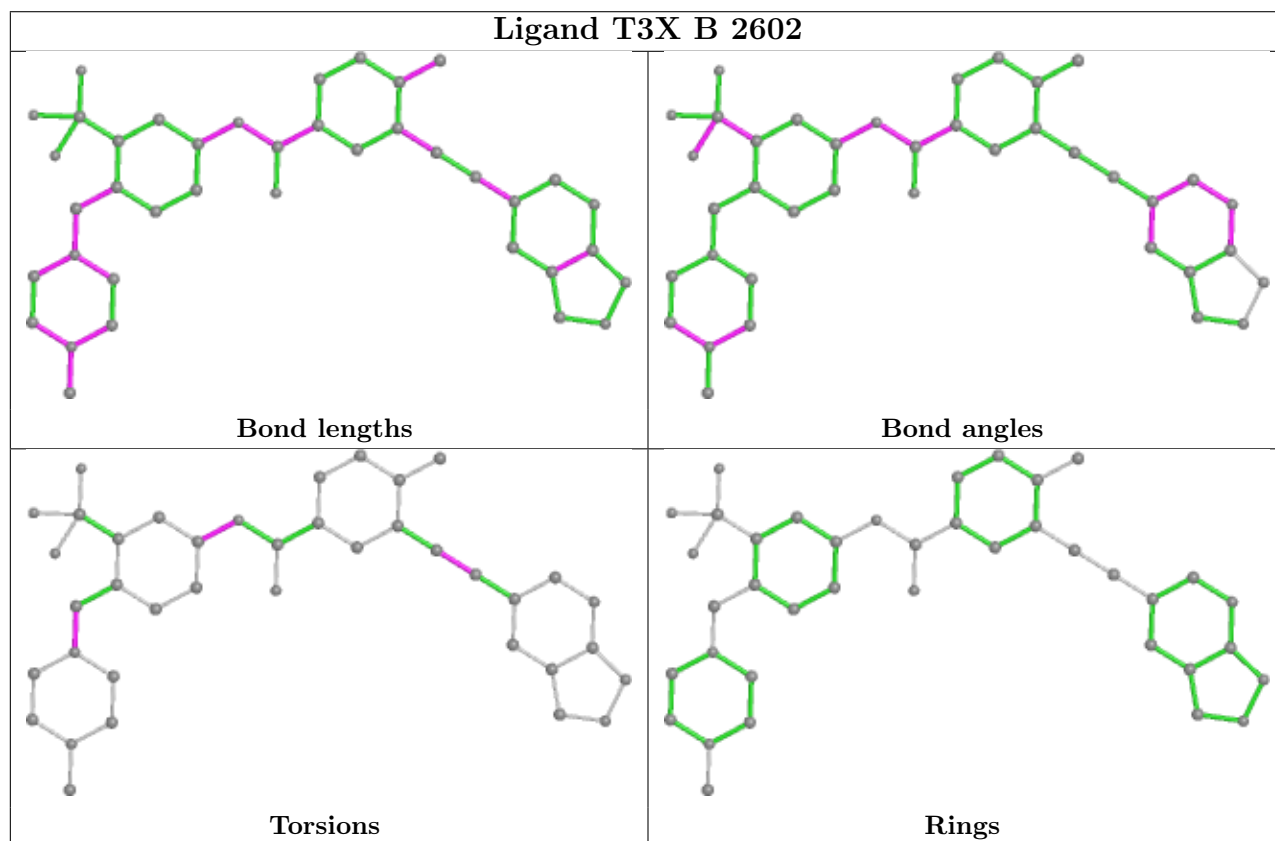
Mol	Chain	Res	Type	Atoms
2	A	2601	GDP	C5'-O5'-PA-O1A
3	B	2602	T3X	C03-C29-C30-C31
3	B	2602	T3X	C14-C17-N18-C23
3	A	2602	T3X	C14-C17-N18-C23
3	B	2602	T3X	C14-C17-N18-C19

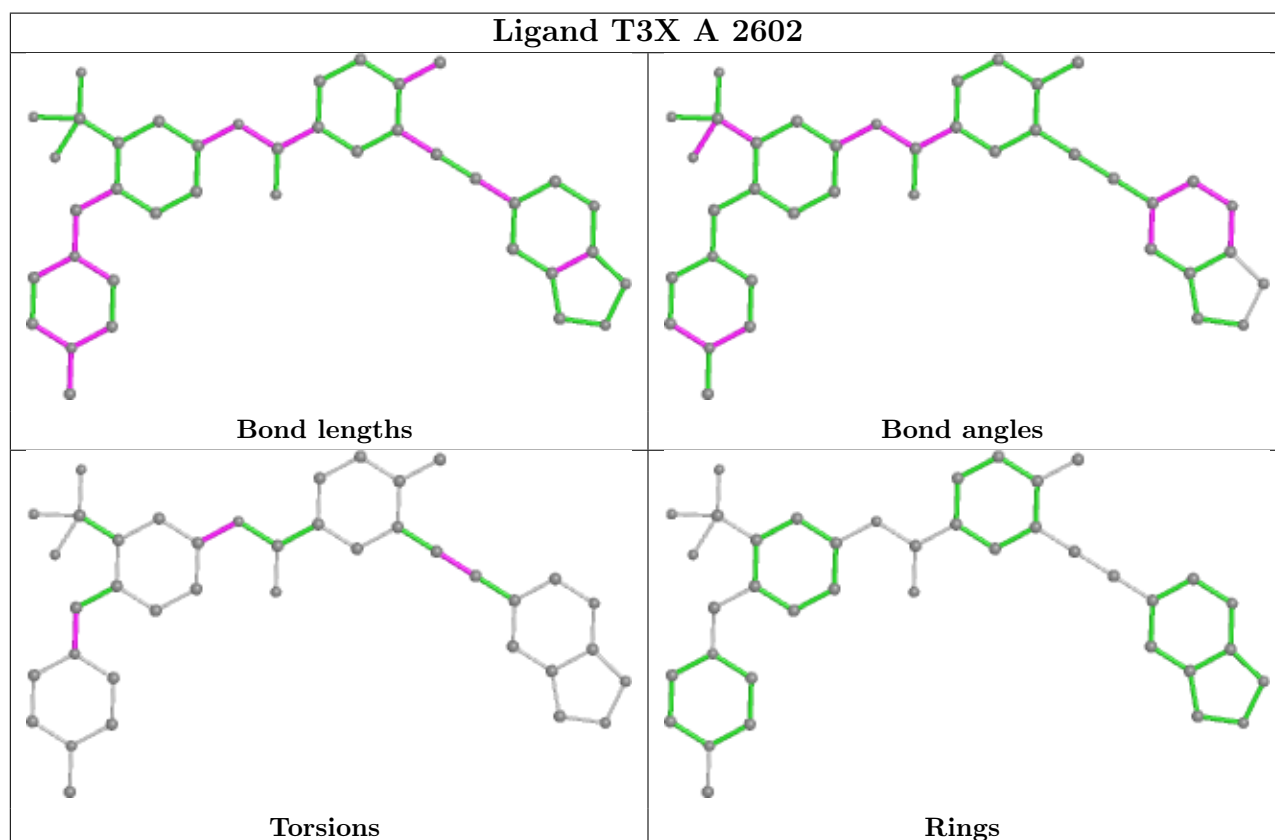
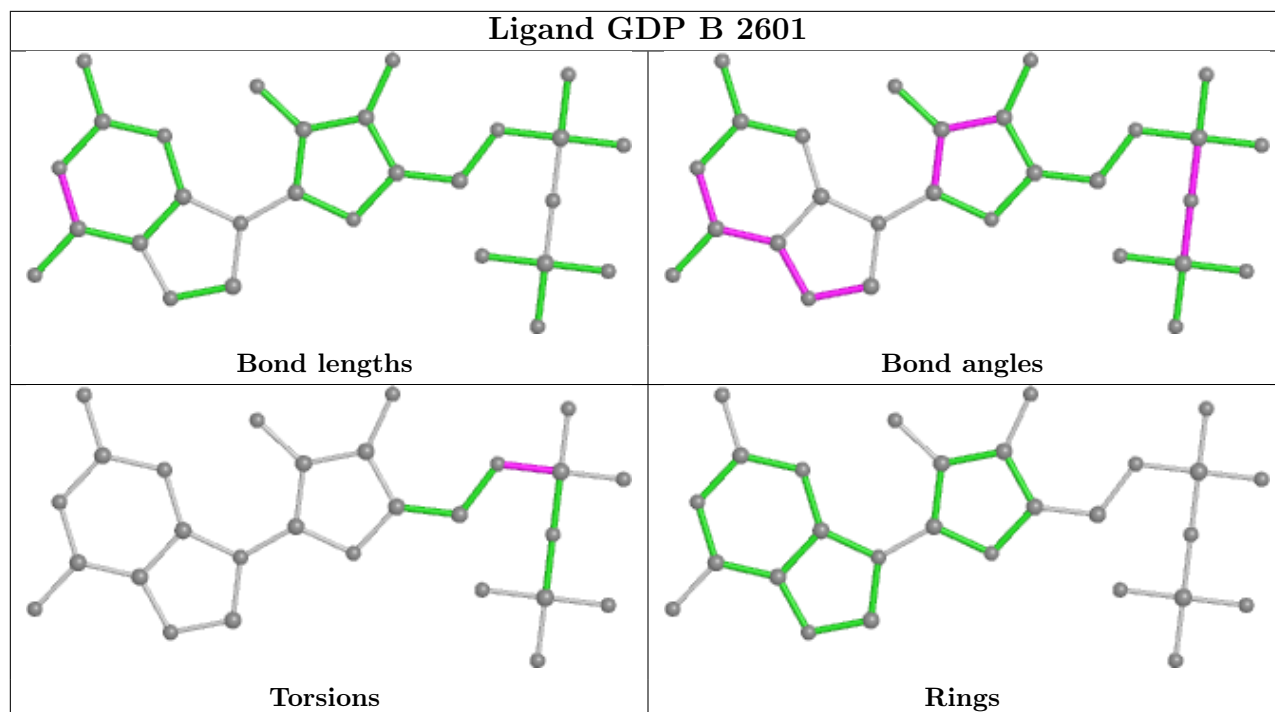
There are no ring outliers.

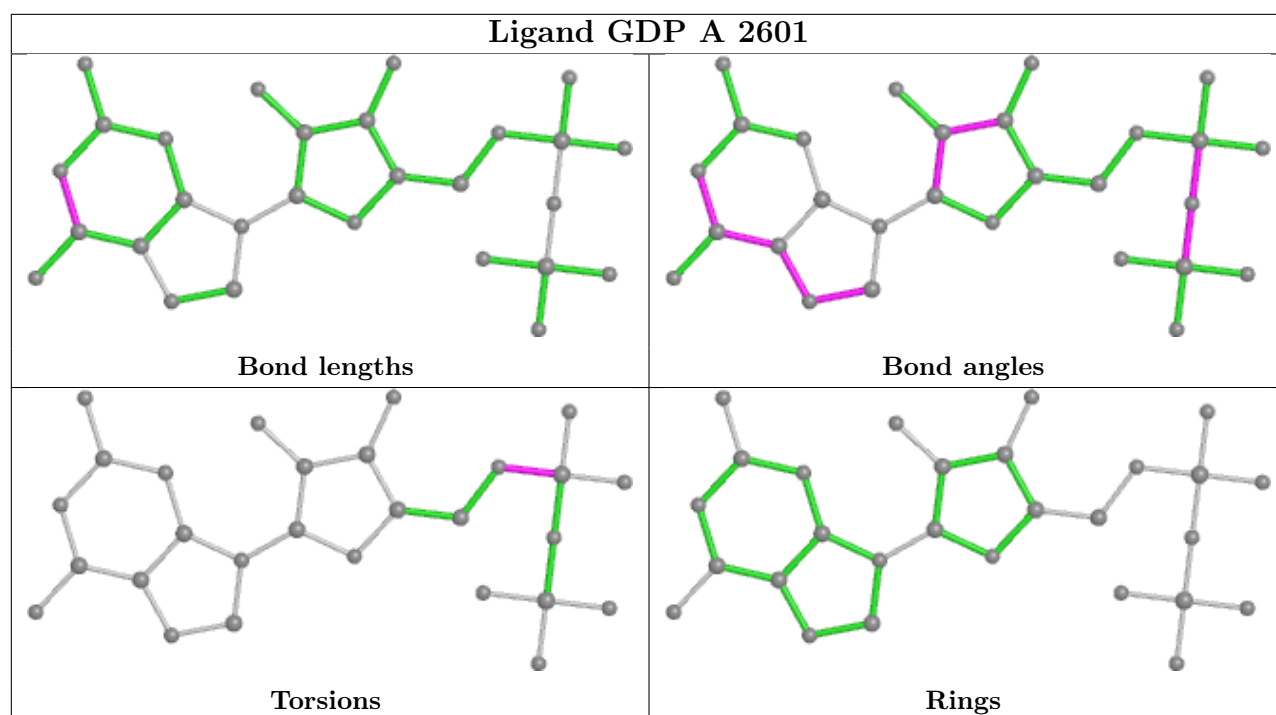
1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	2602	T3X	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

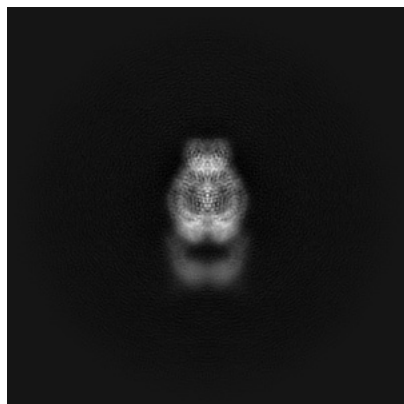
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-41985. These allow visual inspection of the internal detail of the map and identification of artifacts.

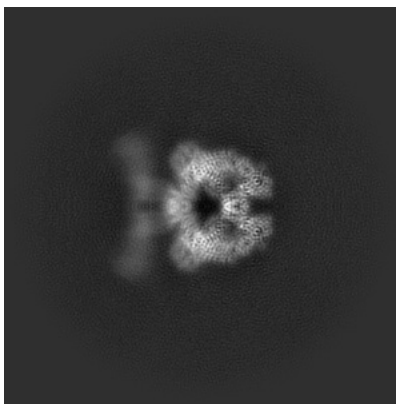
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

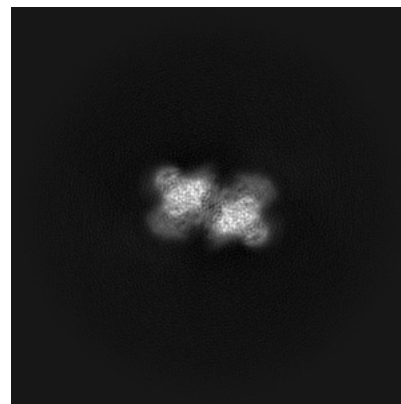
6.1.1 Primary map



X

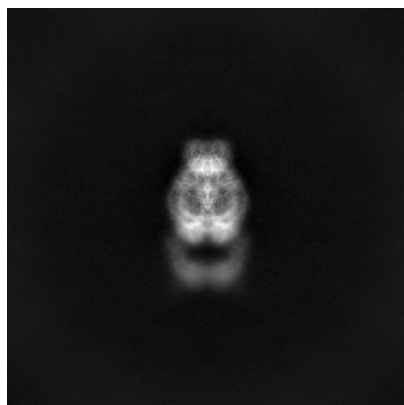


Y

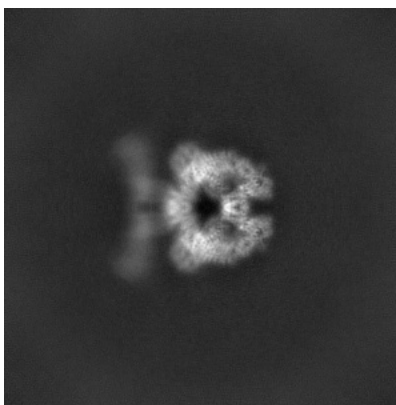


Z

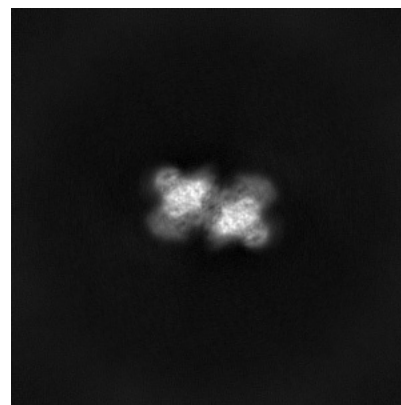
6.1.2 Raw map



X



Y

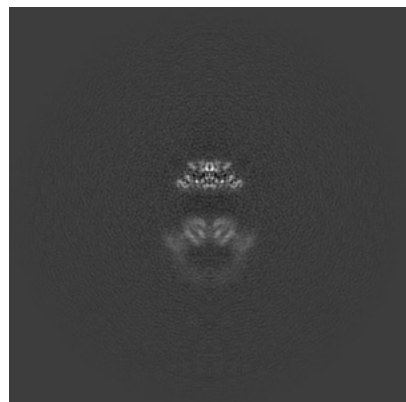


Z

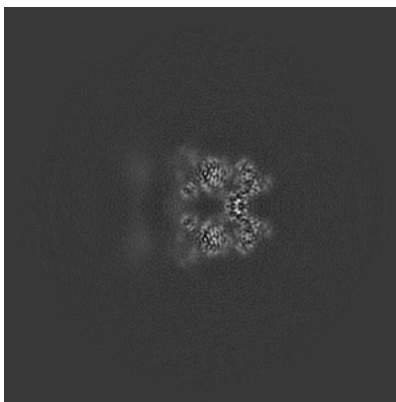
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

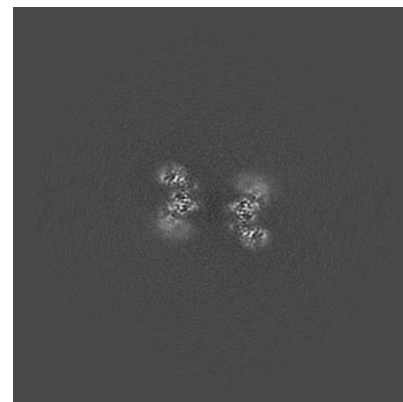
6.2.1 Primary map



X Index: 180

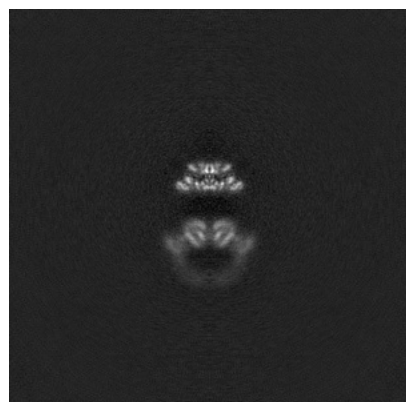


Y Index: 180

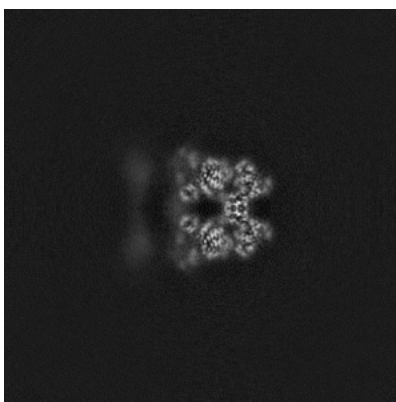


Z Index: 180

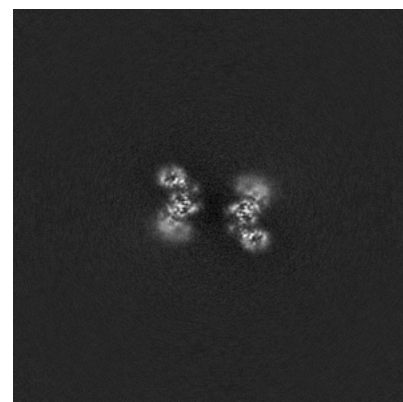
6.2.2 Raw map



X Index: 180



Y Index: 180

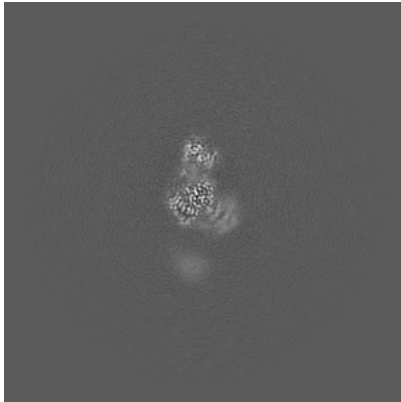


Z Index: 180

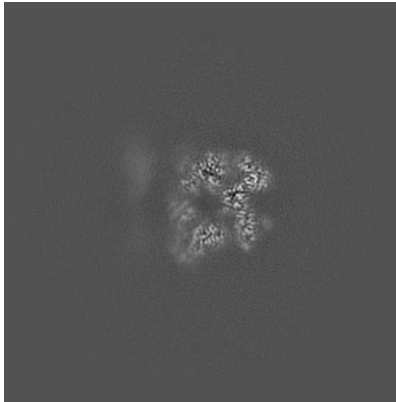
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 208

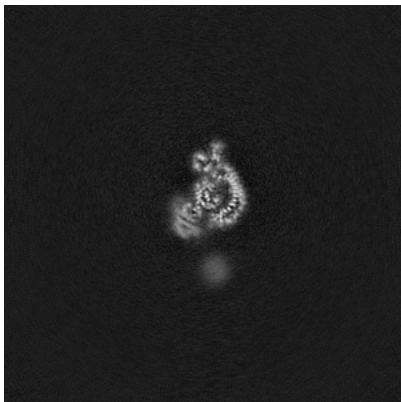


Y Index: 176

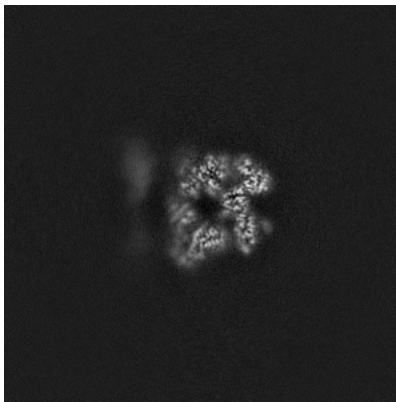


Z Index: 213

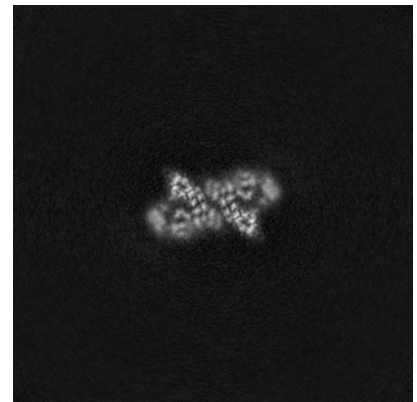
6.3.2 Raw map



X Index: 146



Y Index: 176

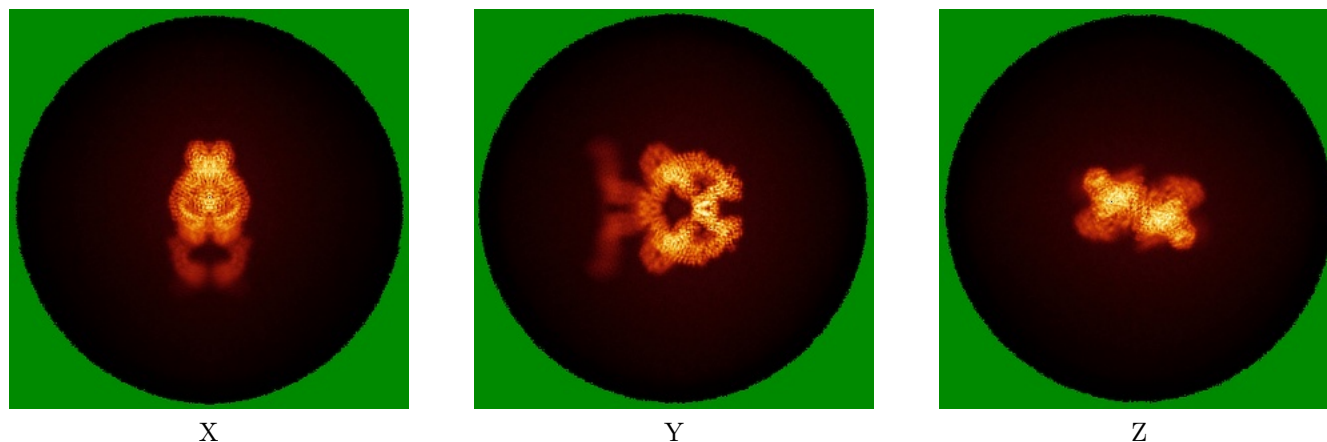


Z Index: 165

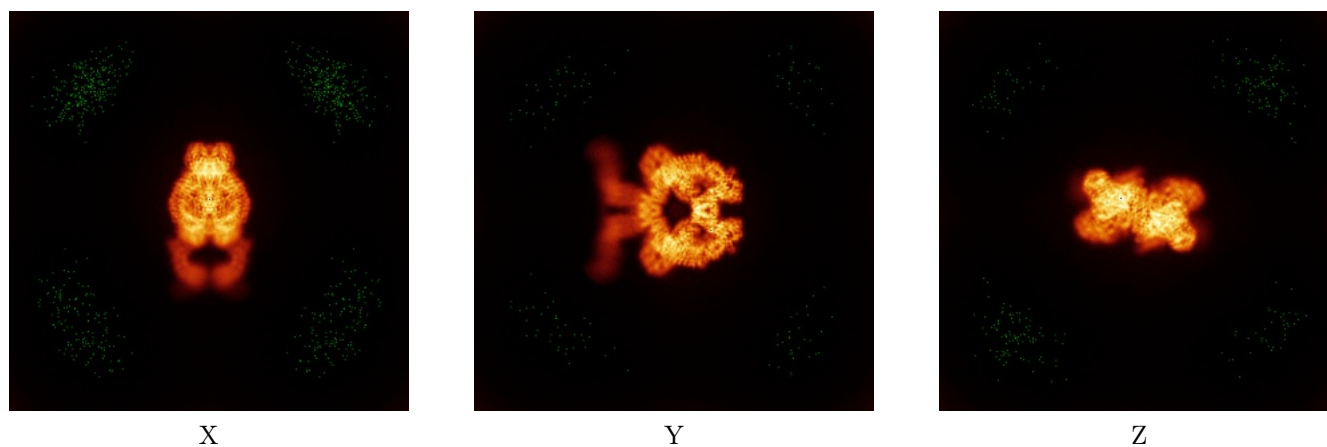
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



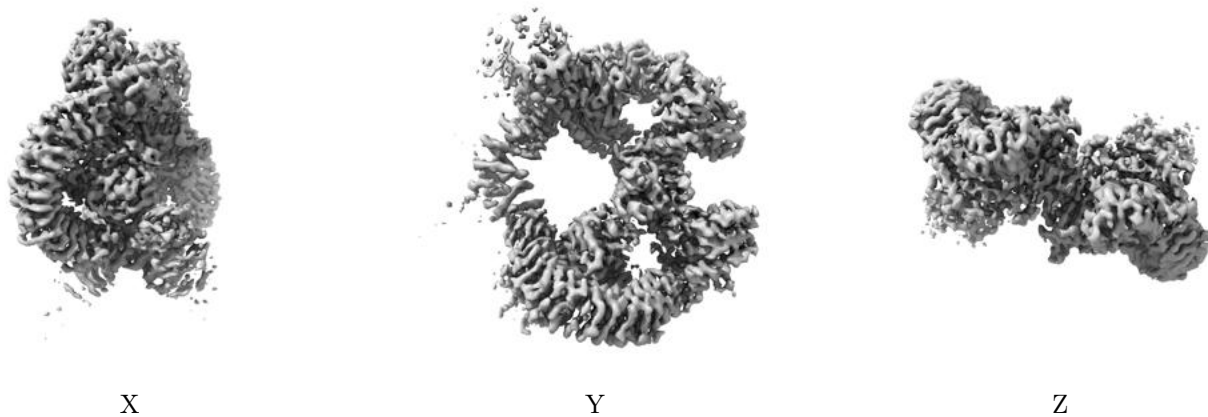
6.4.2 Raw map



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.

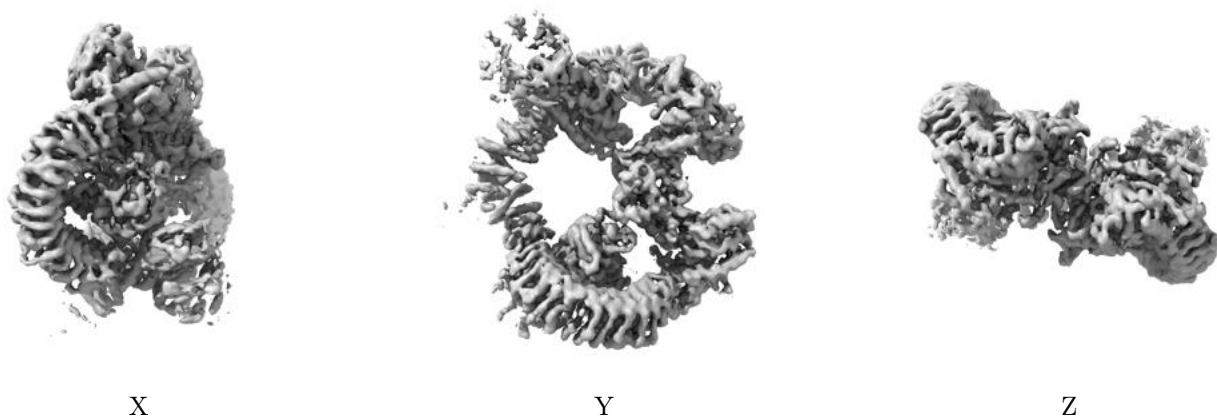
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.9. 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.

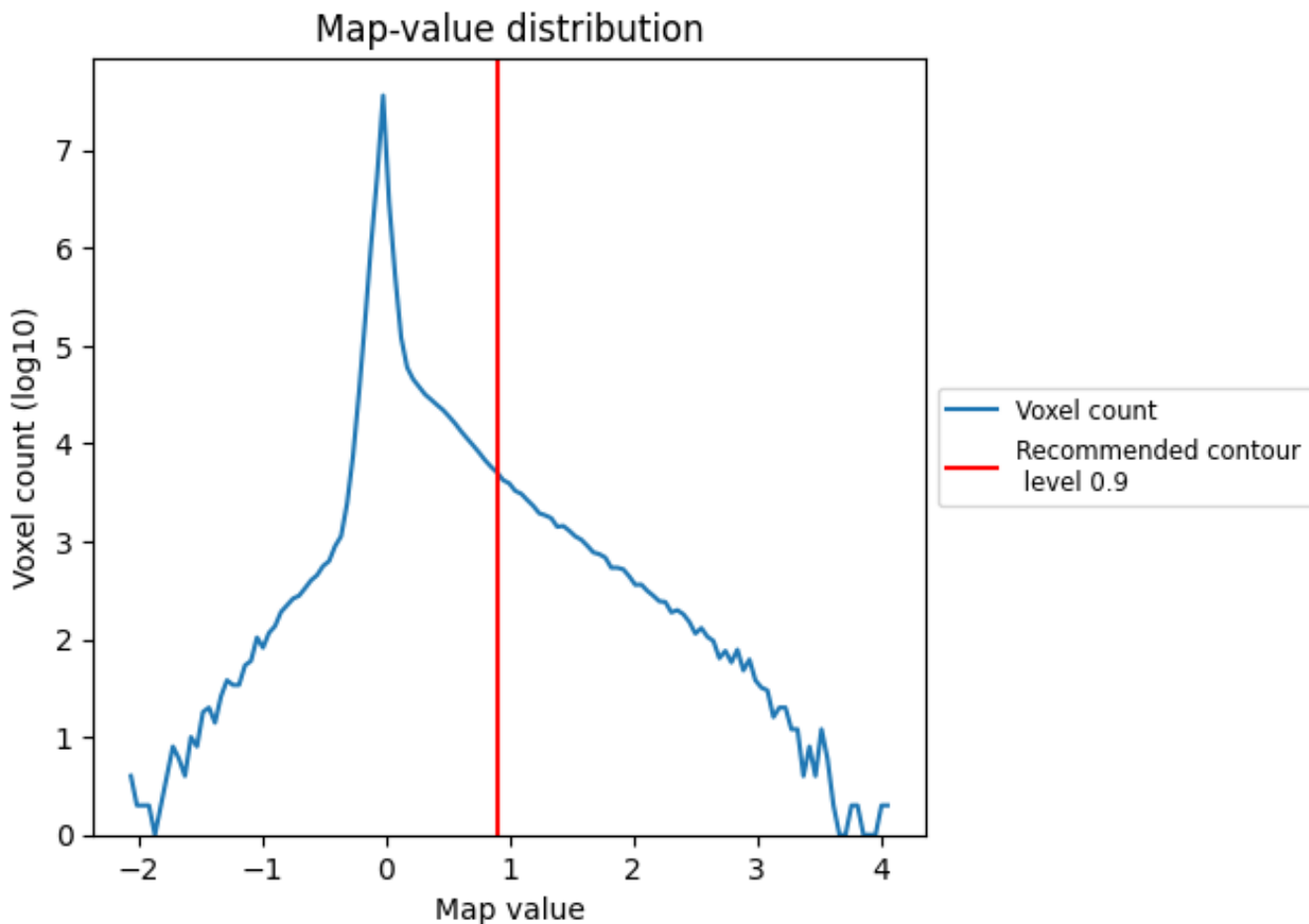
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

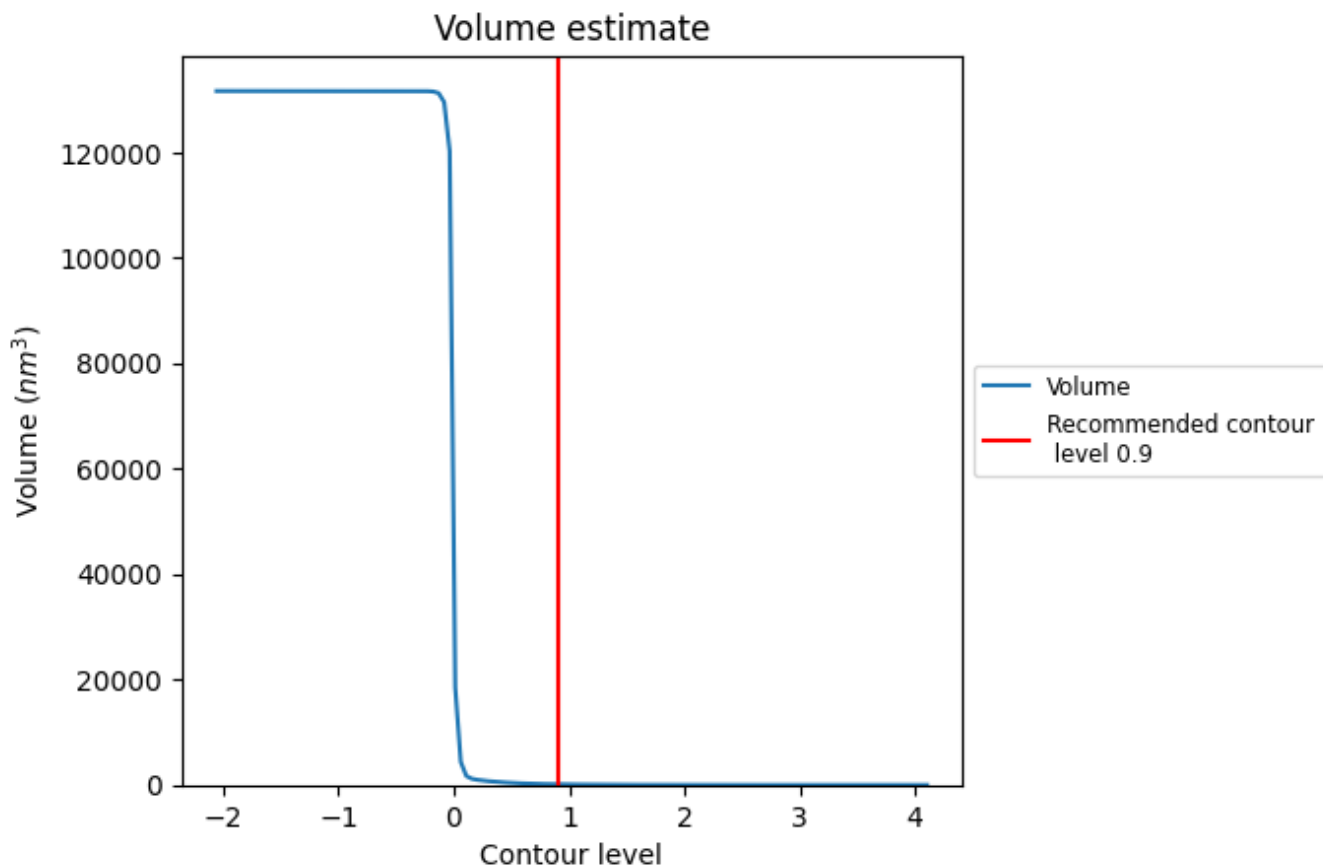
This section contains the results of statistical analysis of the map.

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.

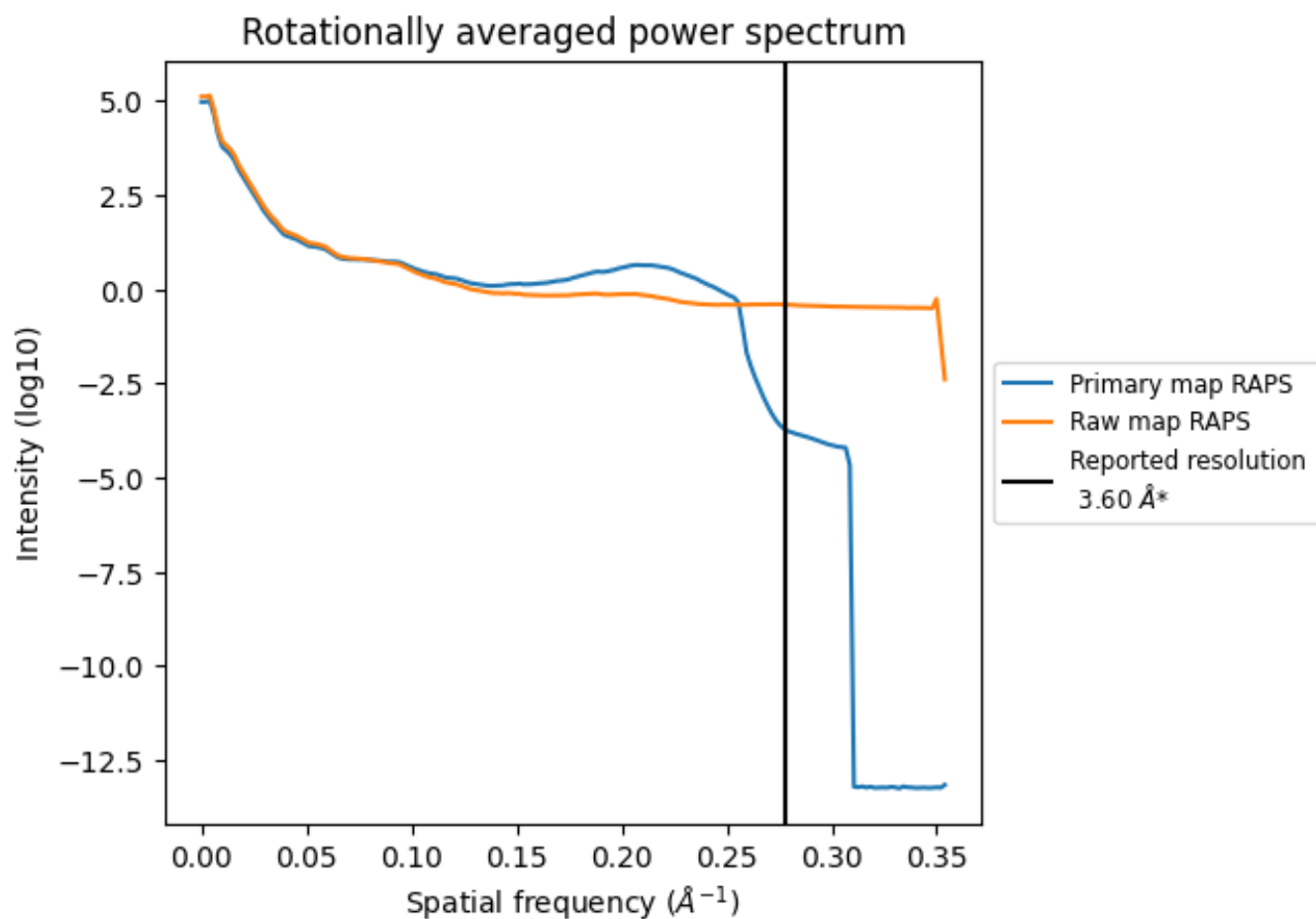
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 128 nm^3 ; this corresponds to an approximate mass of 115 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](#)

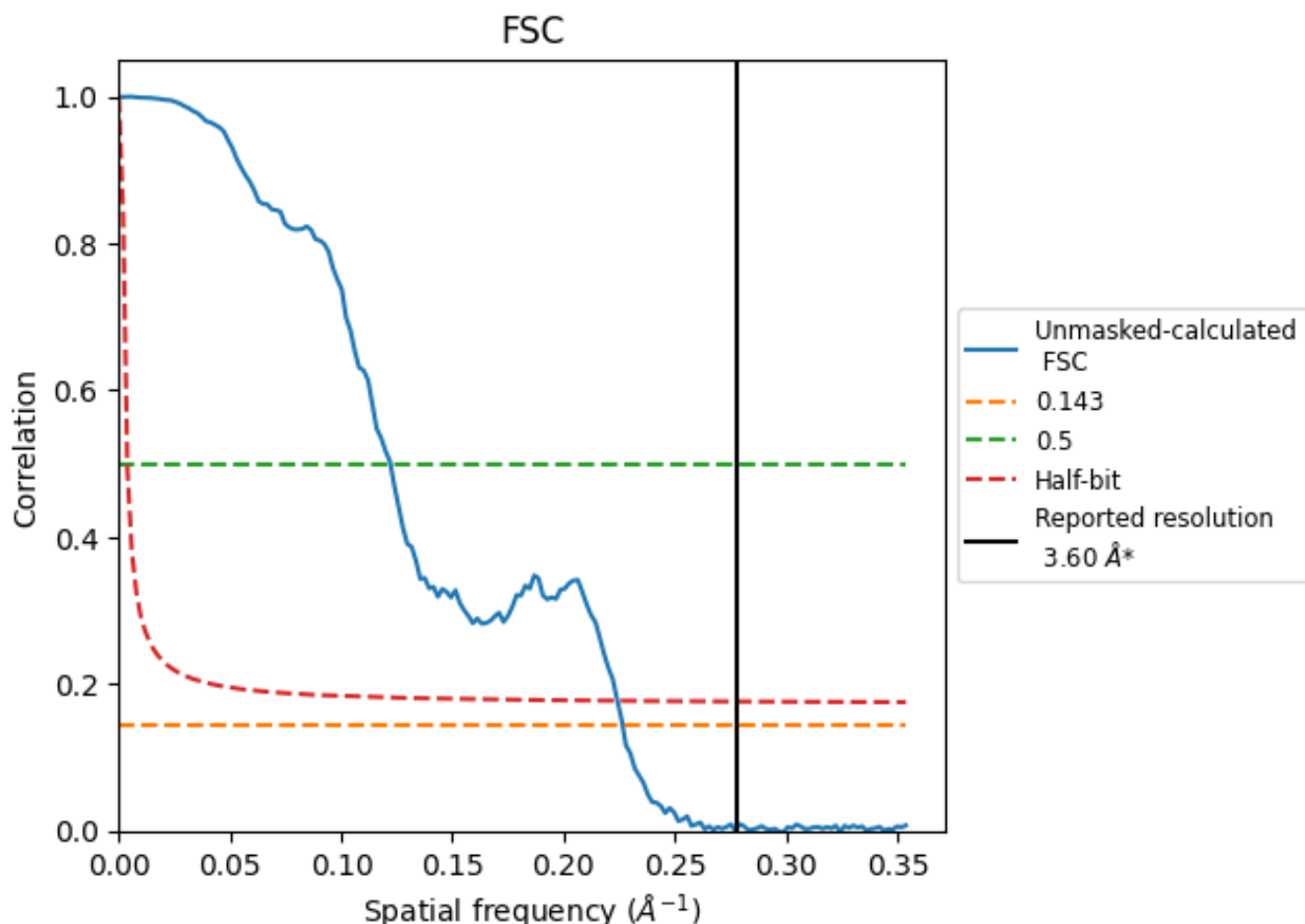


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

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 0.278 \AA^{-1}

8.2 Resolution estimates [i](#)

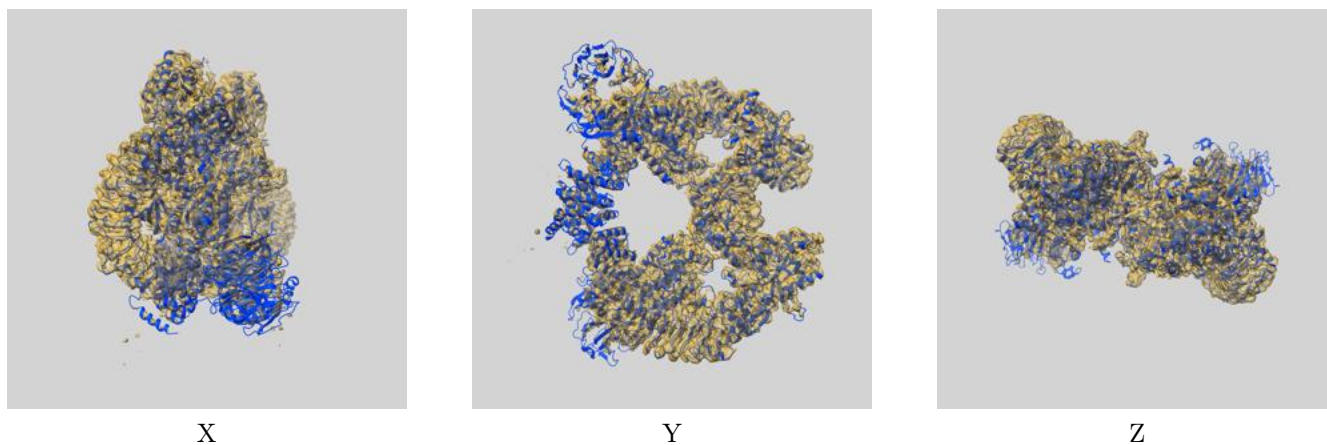
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.42	8.19	4.46

*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 4.42 differs from the reported value 3.6 by more than 10 %

9 Map-model fit [i](#)

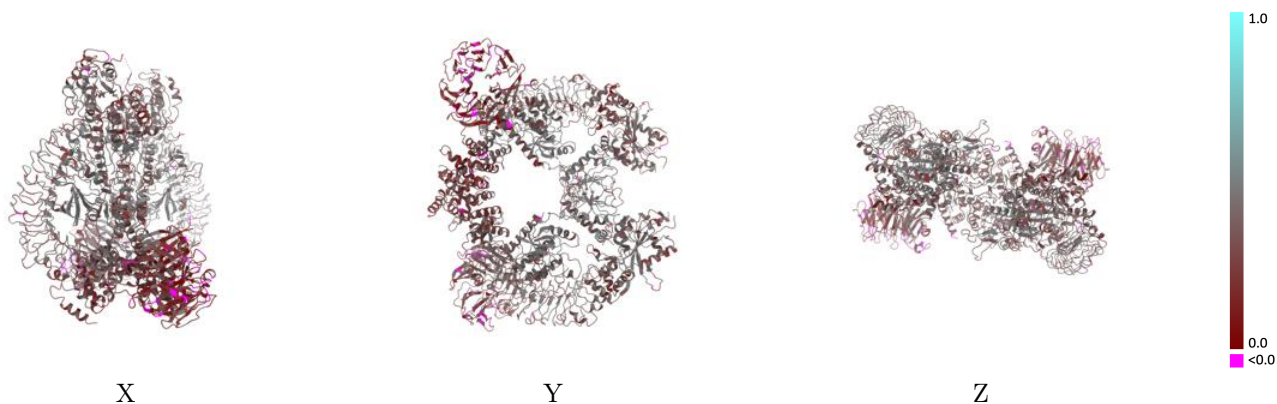
This section contains information regarding the fit between EMDB map EMD-41985 and PDB model 8U7L. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



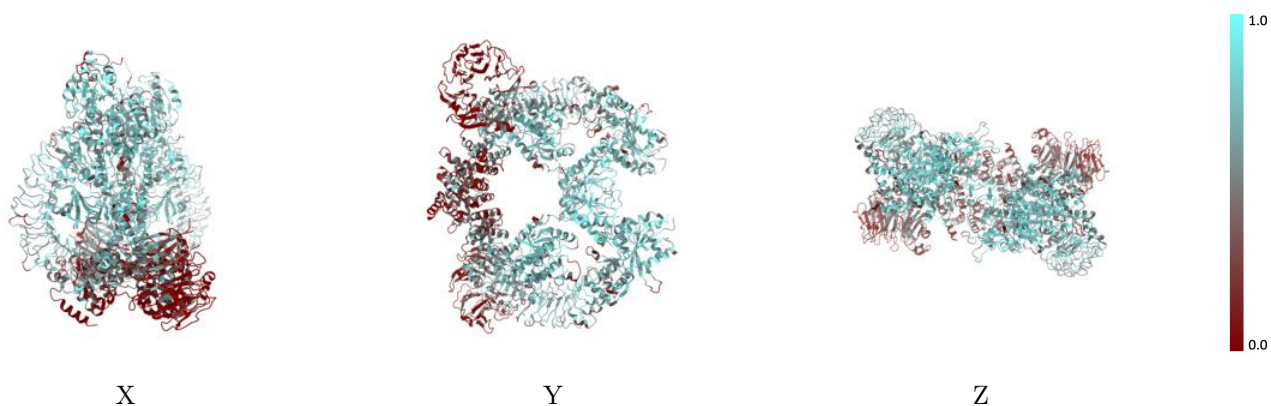
The images above show the 3D surface view of the map at the recommended contour level 0.9 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



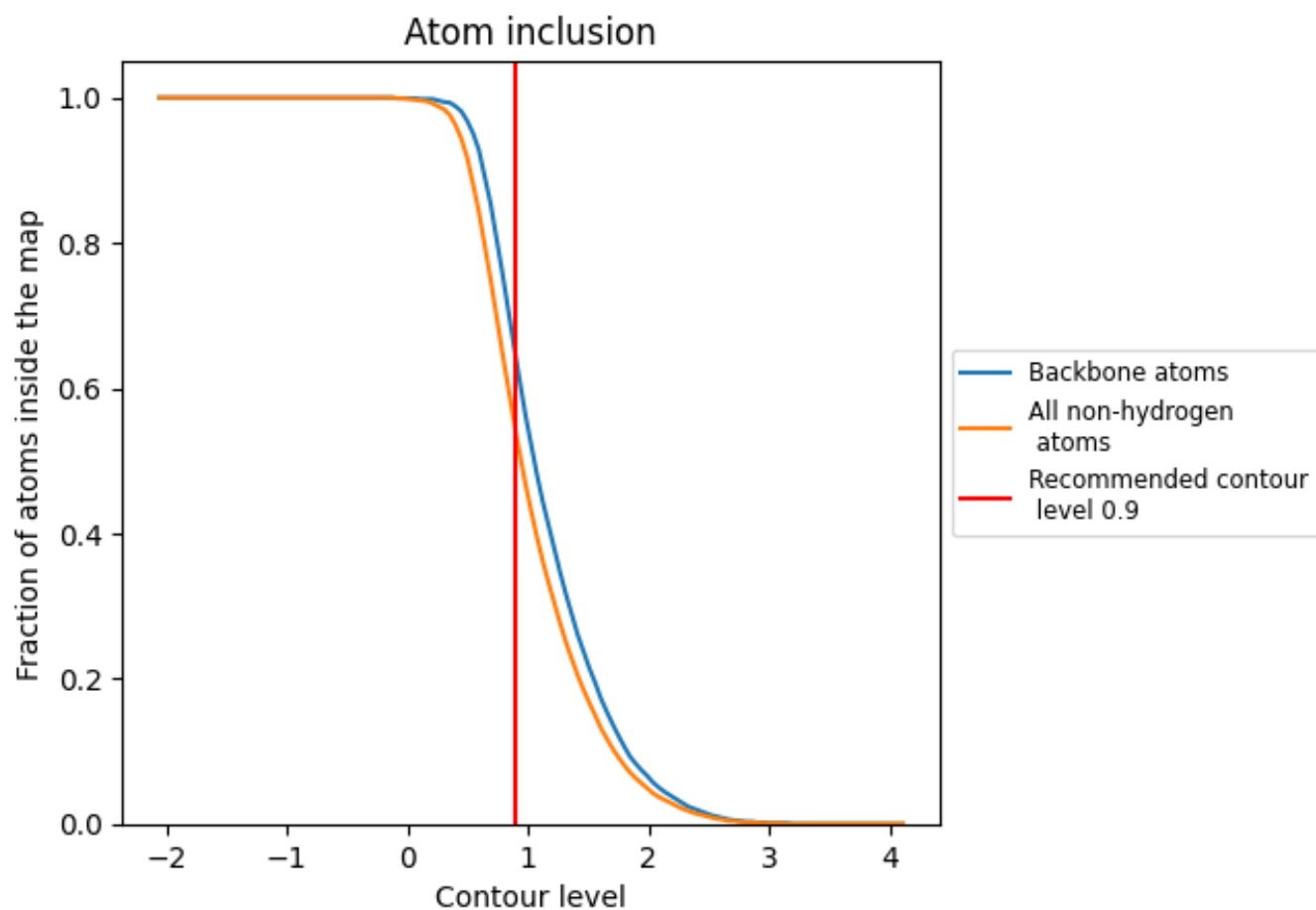
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.9).







9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 54% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.9) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5360	 0.3450
A	 0.5330	 0.3390
B	 0.5390	 0.3500

