



Full wwPDB EM Validation Report ⓘ

Nov 7, 2024 – 05:32 PM EST

PDB ID : 9C2T
EMDB ID : EMD-45160
Title : Infectious B19V capsid
Authors : Lee, H.; Hafenstein, S.
Deposited on : 2024-05-31
Resolution : 3.10 Å (reported)

This is a Full wwPDB EM Validation 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.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

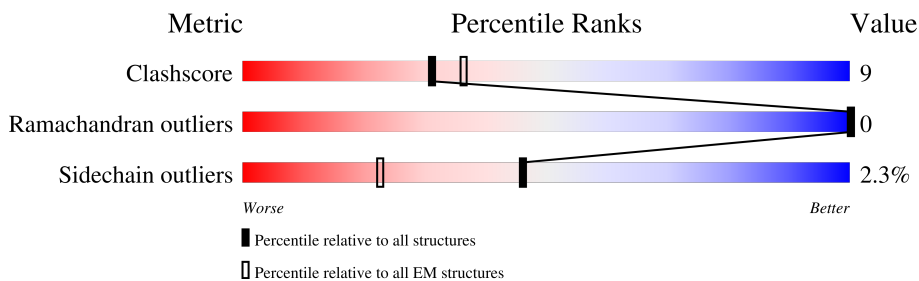
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.10 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	553	
1	B	553	
1	C	553	
1	D	553	
1	E	553	
1	F	553	
2	S	375	

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 26970 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 Capsid protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	517	4021	2569	679	758	15	0	0
1	B	517	4021	2569	679	758	15	0	0
1	C	517	4021	2569	679	758	15	0	0
1	D	517	4021	2569	679	758	15	0	0
1	E	517	4021	2569	679	758	15	0	0
1	F	517	4021	2569	679	758	15	0	0

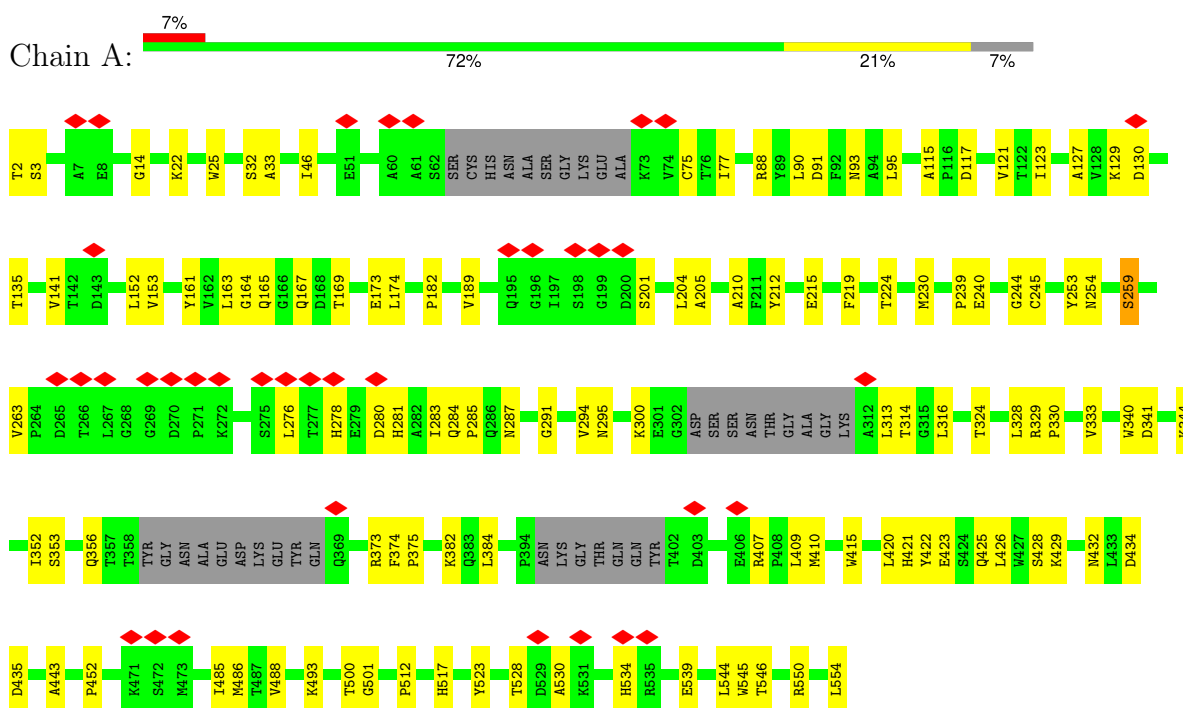
- Molecule 2 is a protein called Alpha-1-antichymotrypsin His-Pro-less.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	S	359	2844	1826	466	539	13	0	0

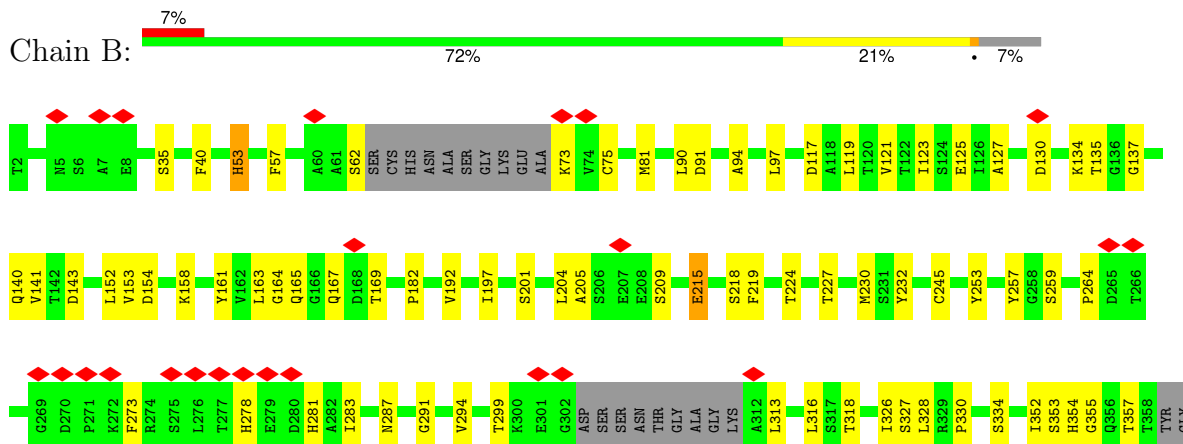
3 Residue-property plots

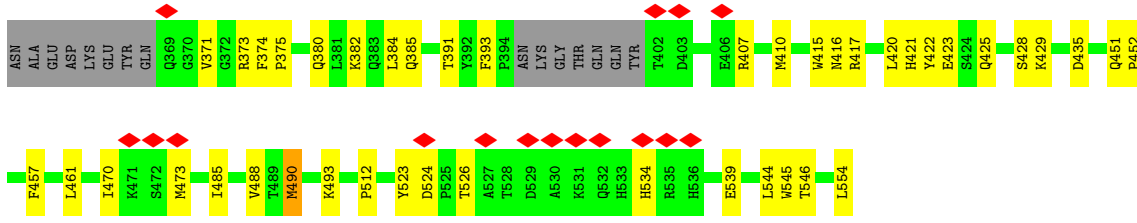
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Capsid protein 2

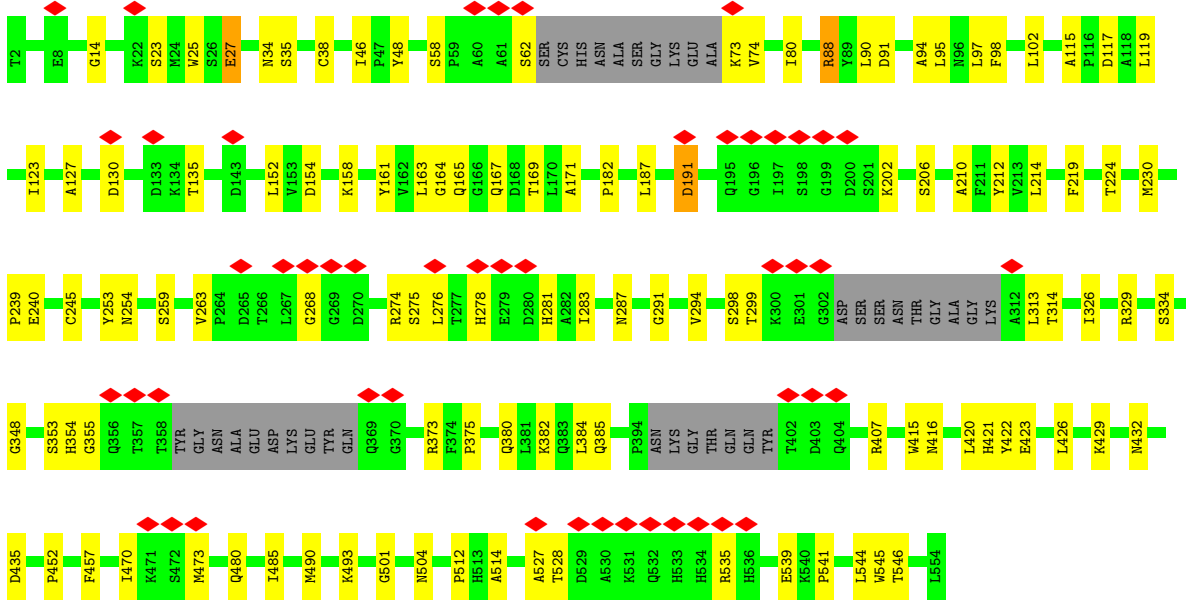


- Molecule 1: Capsid protein 2

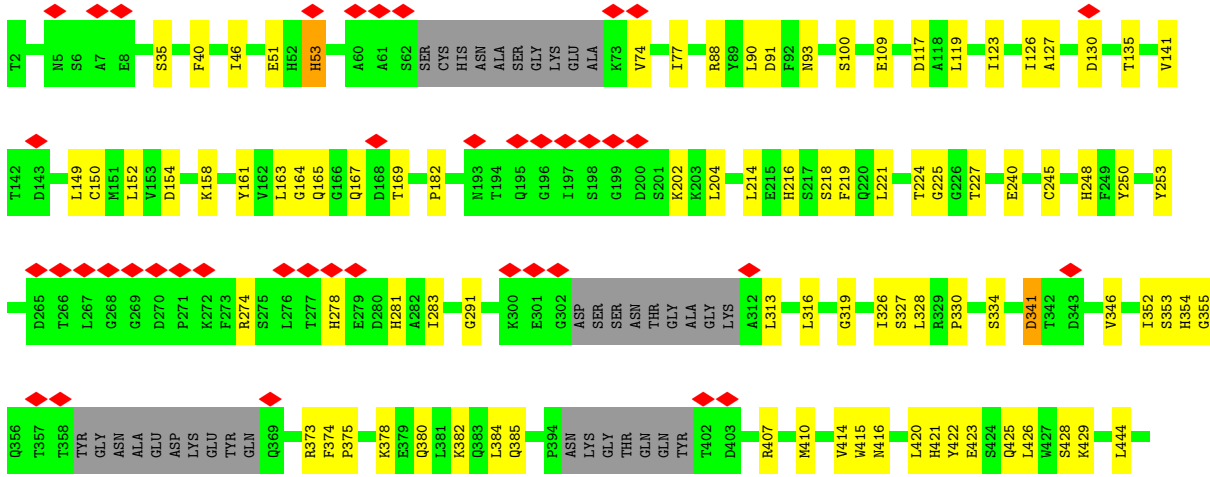
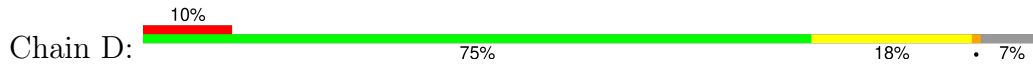


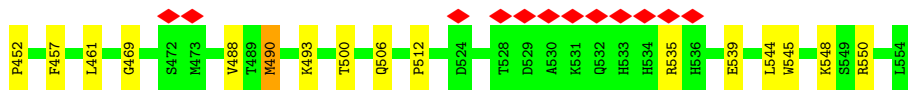


• Molecule 1: Capsid protein 2

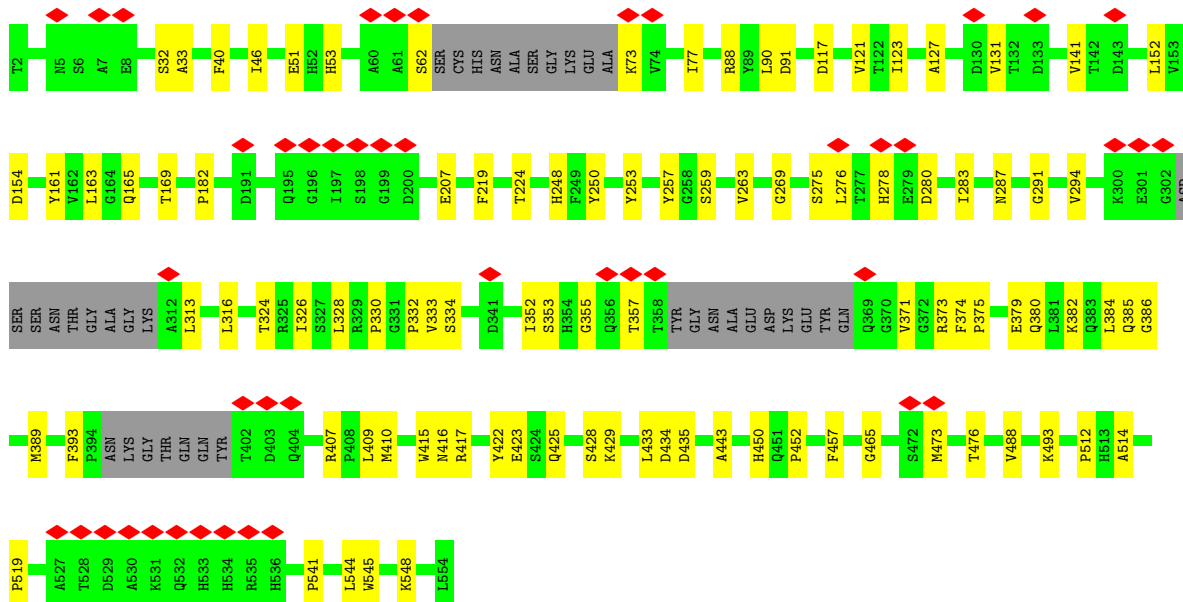
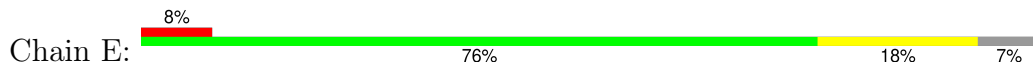


• Molecule 1: Capsid protein 2

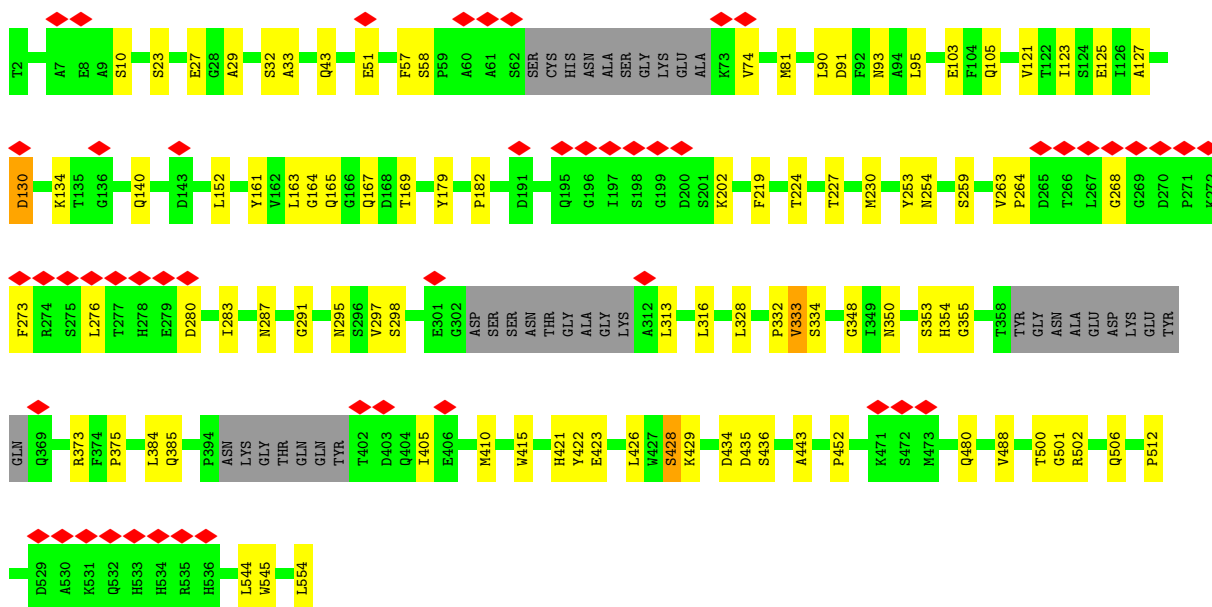
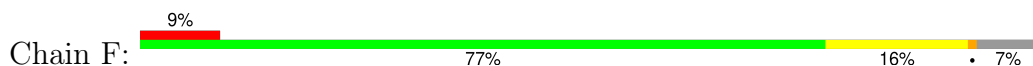




• Molecule 1: Capsid protein 2



• Molecule 1: Capsid protein 2



• Molecule 2: Alpha-1-antichymotrypsin His-Pro-less



G48	L49	A50	S51	A52	N53	V54	D55	F56	A57	F58	S59	L60	Y61	K62	O63	L64	V65	L66	D70	I74	F75	S76	F77	L78	S79	I80	S81	T82	A83	L84	A85	F86	L87	S88	L89	G90	A91	H92	N93	T94	T95	L96	T97	E98	I99	L100	K101	G102	L103	K104	F105	M106	L107	T108	E109	T110	S111			
E112	A113	E114	I115	H116	Q117	S118	F119	Q120	H121	L122	L123	R124	T125	K62	L126	M127	Q128	S129	S130	D131	E132	L133	Q134	L135	S136	M137	G138	N139	A140	M141	F142	V143	K144	E145	Q146	L147	S148	L149	L150	D151	R152	F153	T154	E155	D156	A157	K158	R159	L160	Y161	G162	S163	E164	A165	F166	A167	T168	D169	F170	Q171
D172	S173	A174	A175	A176	K177	K178	L179	I180	N181	D182	Y183	V184	K185	N186	G187	T188	R189	G190	K191	I192	T193	D194	L195	I196	K197	D198	L199	D200	S201	Q202	T203	M204	M205	V206	L207	V208	N209	Y210	I211	F212	F213	K214	K215	K216	W217	E218	M219	P220	F221	D222	P223	Q224	H227	R230	L233					
K236	K237	W238	V241	P242	M243	M244	H247	H248	I251	P252	Y253	F254	R255	D256	E257	E258	L259	S260	C261	E265	L266	K267	G270	N271	A272	S273	I277	L278	Q281	D282	K283	M284	E285	E286	A289	M290	L291	L292	P293	E294	T295	L296	K297	R298	W299	R300	D301	S302	L303	E304	F305									
R306	E307	I308	G309	E310	L311	Y312	L313	P314	S319	R320	D321	Y322	N323	L324	N325	D326	I327	L328	L329	Q330	L331	G332	I333	E334	E335	A336	F337	T338	S339	K340	A341	D342	L343	S344	G345	I346	T347	G348	A349	R350	N351	L352	A353	V354	S355	Q356	V357	V358	H359	K360	A361	V362	L363	D364	V365	F366	E367	E368		
G369	T370	E371	A372	S373	ALA	ALA	THR	ALA	VAL	LYS	ILE	THR	LEU	LEU	SER	ALA	LEU	VAL	GLU	THR	R390	T391	R394	R397	L400	M401	I402	T406	D407	T408	Q409	N410	I411	F412	F413	M414	S415	N419	P420	K421	Q422																			

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	380278	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	100	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.256	Depositor
Minimum map value	-0.162	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.013	Depositor
Recommended contour level	0.05	Depositor
Map size (\AA)	552.96, 552.96, 552.96	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	0.27	0/4144	0.47	0/5649
1	B	0.27	0/4144	0.48	0/5649
1	C	0.27	0/4144	0.48	0/5649
1	D	0.27	0/4144	0.47	0/5649
1	E	0.27	0/4144	0.48	0/5649
1	F	0.27	0/4144	0.47	0/5649
2	S	0.27	0/2900	0.53	0/3924
All	All	0.27	0/27764	0.48	0/37818

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	4021	0	3883	81	0
1	B	4021	0	3883	80	0
1	C	4021	0	3883	81	0
1	D	4021	0	3883	73	0
1	E	4021	0	3883	64	0
1	F	4021	0	3883	66	0
2	S	2844	0	2824	92	0
All	All	26970	0	26122	454	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 9.

All (454) 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)
2:S:120:GLN:HE21	2:S:160:LEU:HB3	1.21	1.01
2:S:120:GLN:NE2	2:S:160:LEU:HB3	1.88	0.88
1:A:528:THR:HG22	1:A:530:ALA:H	1.46	0.80
2:S:342:ASP:HA	2:S:350:ARG:HG3	1.63	0.79
2:S:56:PHE:HB2	2:S:103:LEU:HA	1.64	0.79
2:S:346:ILE:HG22	2:S:347:THR:HG23	1.66	0.78
1:B:283:ILE:HG22	1:F:313:LEU:HD13	1.66	0.77
1:A:287:ASN:ND2	1:D:164:GLY:O	2.17	0.77
1:A:169:THR:HB	1:A:182:PRO:HG3	1.68	0.76
2:S:319:SER:HB2	2:S:362:VAL:HG22	1.69	0.75
1:B:313:LEU:HD13	1:C:283:ILE:HG22	1.69	0.74
1:B:287:ASN:ND2	1:F:164:GLY:O	2.19	0.74
1:C:313:LEU:HD13	1:F:283:ILE:HG22	1.69	0.74
1:B:259:SER:HA	1:F:167:GLN:HA	1.70	0.73
1:D:429:LYS:HB2	1:D:452:PRO:HG3	1.71	0.72
2:S:241:VAL:HG21	2:S:420:PRO:HB2	1.71	0.71
2:S:351:ASN:O	2:S:351:ASN:ND2	2.22	0.71
1:C:169:THR:HB	1:C:182:PRO:HG3	1.71	0.71
1:C:167:GLN:HA	1:F:259:SER:HA	1.73	0.70
1:D:169:THR:HB	1:D:182:PRO:HG3	1.72	0.70
2:S:134:GLN:HG3	2:S:214:LYS:HB3	1.73	0.70
1:B:375:PRO:HD3	1:B:544:LEU:HD12	1.73	0.69
1:D:283:ILE:HG22	1:E:313:LEU:HD12	1.74	0.69
1:B:169:THR:HB	1:B:182:PRO:HG3	1.75	0.69
2:S:82:THR:OG1	2:S:139:ASN:ND2	2.25	0.69
2:S:218:GLU:HG3	2:S:219:MET:HG2	1.74	0.69
1:A:375:PRO:HD3	1:A:544:LEU:HD12	1.75	0.68
1:A:167:GLN:HA	1:E:259:SER:HA	1.75	0.68
1:C:375:PRO:HD3	1:C:544:LEU:HD12	1.74	0.68
1:C:95:LEU:HD22	1:C:420:LEU:HD11	1.75	0.67
1:F:291:GLY:HA3	1:F:415:TRP:HB3	1.76	0.67
1:D:384:LEU:O	1:D:407:ARG:NH2	2.27	0.67
1:B:393:PHE:HD1	1:F:295:ASN:HB2	1.60	0.67
1:A:276:LEU:HD22	1:A:283:ILE:HD12	1.77	0.66
1:D:375:PRO:HD3	1:D:544:LEU:HD12	1.77	0.66
1:B:380:GLN:NE2	1:B:416:ASN:O	2.24	0.66
2:S:206:VAL:HG23	2:S:356:GLN:HB2	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:353:SER:OG	1:D:355:GLY:O	2.13	0.66
1:E:169:THR:HB	1:E:182:PRO:HG3	1.78	0.66
2:S:277:ILE:HB	2:S:400:LEU:HB2	1.77	0.66
1:D:410:MET:HB3	1:E:332:PRO:HG3	1.78	0.65
1:B:119:LEU:HD13	1:B:490:MET:HE2	1.76	0.65
1:F:276:LEU:HD13	1:F:283:ILE:HG13	1.79	0.65
1:B:117:ASP:HB2	1:B:493:LYS:HG3	1.78	0.64
1:B:334:SER:O	1:B:385:GLN:NE2	2.31	0.64
1:F:353:SER:OG	1:F:355:GLY:O	2.13	0.64
2:S:64:LEU:HD22	2:S:327:ILE:HD13	1.80	0.64
2:S:313:LEU:HD12	2:S:314:PRO:HD2	1.78	0.64
1:F:169:THR:HB	1:F:182:PRO:HG3	1.79	0.64
2:S:267:LYS:HA	2:S:273:SER:HB2	1.80	0.64
2:S:255:ARG:NH1	2:S:261:CYS:O	2.30	0.64
1:E:62:SER:OG	1:E:73:LYS:NZ	2.30	0.64
2:S:130:SER:OG	2:S:131:ASP:N	2.32	0.63
2:S:78:LEU:O	2:S:82:THR:HG23	1.99	0.63
1:D:334:SER:O	1:D:385:GLN:NE2	2.32	0.63
1:F:334:SER:O	1:F:385:GLN:NE2	2.32	0.63
2:S:100:LEU:HD12	2:S:107:LEU:HD21	1.81	0.62
1:B:62:SER:OG	1:B:73:LYS:NZ	2.32	0.62
1:B:245:CYS:HB3	1:B:554:LEU:HD11	1.79	0.62
1:D:46:ILE:HG23	1:D:88:ARG:HG3	1.80	0.62
2:S:105:PHE:HE1	2:S:115:ILE:HG21	1.64	0.62
1:E:380:GLN:NE2	1:E:416:ASN:O	2.25	0.62
1:A:90:LEU:HD11	1:A:123:ILE:HD11	1.80	0.62
2:S:112:GLU:OE1	2:S:112:GLU:N	2.19	0.62
1:A:501:GLY:HA3	1:D:158:LYS:HD3	1.82	0.62
2:S:177:LYS:HD2	2:S:196:ILE:HG23	1.80	0.62
1:B:291:GLY:HA3	1:B:415:TRP:HB3	1.82	0.61
1:C:62:SER:OG	1:C:73:LYS:NZ	2.33	0.61
1:E:263:VAL:HG13	1:E:276:LEU:HD21	1.83	0.61
1:C:353:SER:OG	1:C:355:GLY:O	2.17	0.61
1:D:416:ASN:HA	1:E:434:ASP:HB2	1.82	0.61
1:A:91:ASP:OD2	1:A:169:THR:OG1	2.19	0.60
2:S:221:PHE:HB2	2:S:367:GLU:HA	1.83	0.60
1:C:91:ASP:OD2	1:C:169:THR:OG1	2.19	0.60
2:S:100:LEU:O	2:S:105:PHE:HB2	2.01	0.60
1:B:91:ASP:OD2	1:B:169:THR:OG1	2.20	0.59
1:B:167:GLN:HA	1:C:259:SER:HA	1.84	0.59
1:B:318:THR:OG1	1:C:407:ARG:NH2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:74:VAL:HG11	1:D:313:LEU:HB2	1.84	0.59
1:B:384:LEU:O	1:B:407:ARG:NH2	2.32	0.59
1:D:119:LEU:HD13	1:D:490:MET:HE2	1.83	0.59
2:S:256:ASP:OD1	2:S:298:ARG:NH2	2.35	0.59
1:C:27:GLU:OE1	1:D:216:HIS:ND1	2.34	0.59
1:E:269:GLY:HA3	2:S:227:HIS:HD2	1.67	0.59
1:B:90:LEU:HD11	1:B:123:ILE:HD11	1.83	0.59
2:S:367:GLU:OE1	2:S:367:GLU:N	2.29	0.59
1:F:127:ALA:HA	1:F:224:THR:HG23	1.84	0.57
2:S:346:ILE:HG21	2:S:352:LEU:HD22	1.85	0.57
1:C:135:THR:HG21	1:D:135:THR:HA	1.87	0.57
1:C:165:GLN:HG3	1:F:253:TYR:HA	1.85	0.57
2:S:135:LEU:HD21	2:S:211:ILE:HD11	1.87	0.57
1:A:127:ALA:HA	1:A:224:THR:HG23	1.86	0.57
1:D:380:GLN:NE2	1:D:416:ASN:O	2.26	0.57
2:S:192:ILE:HD13	2:S:210:TYR:HB2	1.85	0.57
1:A:115:ALA:HB2	1:A:239:PRO:HA	1.86	0.57
1:D:278:HIS:O	1:D:281:HIS:NE2	2.38	0.57
1:A:167:GLN:NE2	1:E:257:TYR:O	2.38	0.57
1:D:123:ILE:O	1:D:227:THR:HA	2.05	0.57
1:E:384:LEU:O	1:E:407:ARG:NH2	2.28	0.57
1:C:152:LEU:HB2	1:C:219:PHE:HB3	1.87	0.56
1:F:95:LEU:HD13	1:F:426:LEU:HD21	1.87	0.56
1:C:291:GLY:HA3	1:C:415:TRP:HB3	1.87	0.56
1:C:152:LEU:HD23	1:C:214:LEU:HD23	1.87	0.56
1:F:375:PRO:HD3	1:F:544:LEU:HD12	1.87	0.56
1:A:294:VAL:HG11	1:E:410:MET:HG2	1.88	0.56
1:C:94:ALA:HB3	1:C:97:LEU:HG	1.88	0.56
1:C:314:THR:OG1	1:C:329:ARG:NH2	2.36	0.56
1:A:117:ASP:HB2	1:A:493:LYS:HG3	1.88	0.56
1:D:313:LEU:HD11	1:D:327:SER:HB2	1.88	0.56
1:B:134:LYS:HB3	1:B:140:GLN:HB3	1.87	0.56
1:E:90:LEU:HD11	1:E:123:ILE:HD11	1.88	0.56
1:E:334:SER:O	1:E:385:GLN:NE2	2.39	0.56
1:A:244:GLY:N	1:A:550:ARG:O	2.37	0.56
1:E:131:VAL:HG22	1:E:141:VAL:HG22	1.88	0.56
1:B:416:ASN:HA	1:F:434:ASP:HB2	1.88	0.55
1:D:378:LYS:NZ	1:D:548:LYS:O	2.34	0.55
1:A:164:GLY:O	1:E:287:ASN:ND2	2.39	0.55
1:C:298:SER:HA	1:C:348:GLY:HA2	1.88	0.55
1:C:164:GLY:O	1:F:287:ASN:ND2	2.34	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:353:SER:OG	1:E:355:GLY:O	2.25	0.55
1:B:326:ILE:HD11	1:C:384:LEU:HD11	1.88	0.55
1:C:528:THR:HG22	1:D:204:LEU:HD21	1.87	0.55
1:A:291:GLY:HA3	1:A:415:TRP:HB3	1.88	0.55
1:E:207:GLU:OE1	1:E:207:GLU:N	2.35	0.55
1:E:373:ARG:NH2	1:E:423:GLU:OE2	2.34	0.54
1:F:429:LYS:HB2	1:F:452:PRO:HG3	1.88	0.54
1:E:375:PRO:HD3	1:E:544:LEU:HD12	1.89	0.54
2:S:294:GLU:HA	2:S:297:LYS:HG2	1.89	0.54
1:A:422:TYR:HB2	1:A:545:TRP:HB3	1.89	0.54
1:E:51:GLU:HG2	1:E:53:HIS:CD2	2.41	0.54
2:S:304:GLU:OE2	2:S:306:ARG:NH2	2.41	0.54
1:E:127:ALA:HA	1:E:224:THR:HG23	1.88	0.54
2:S:230:ARG:HD3	2:S:238:TRP:CD2	2.42	0.54
1:E:46:ILE:HG23	1:E:88:ARG:HG3	1.89	0.54
1:A:2:THR:OG1	1:A:3:SER:N	2.41	0.54
1:B:57:PHE:O	1:B:81:MET:HA	2.06	0.54
1:B:353:SER:OG	1:B:355:GLY:O	2.26	0.54
1:C:95:LEU:HD13	1:C:426:LEU:HD21	1.90	0.53
1:F:32:SER:OG	1:F:33:ALA:N	2.41	0.53
1:A:263:VAL:HG13	1:A:276:LEU:HD21	1.88	0.53
1:A:287:ASN:ND2	1:D:428:SER:OG	2.41	0.53
1:B:204:LEU:HD12	1:B:205:ALA:H	1.73	0.53
1:B:524:ASP:OD2	1:B:526:THR:OG1	2.26	0.53
1:D:291:GLY:HA3	1:D:415:TRP:HB3	1.90	0.53
1:F:123:ILE:O	1:F:227:THR:HA	2.08	0.53
1:D:127:ALA:HA	1:D:224:THR:HG23	1.89	0.53
1:E:117:ASP:HB2	1:E:493:LYS:HG3	1.90	0.53
1:F:512:PRO:HD3	1:F:545:TRP:CE2	2.44	0.53
1:A:283:ILE:HG22	1:D:313:LEU:HD13	1.91	0.53
1:E:379:GLU:HG3	1:E:548:LYS:HD3	1.91	0.53
1:C:373:ARG:NH2	1:C:423:GLU:OE2	2.34	0.53
1:D:253:TYR:HA	1:E:165:GLN:HG3	1.91	0.53
1:E:121:VAL:HG13	1:E:488:VAL:HG22	1.90	0.53
1:C:115:ALA:HB2	1:C:239:PRO:HA	1.90	0.52
1:C:299:THR:OG1	1:F:268:GLY:O	2.27	0.52
1:A:152:LEU:HB2	1:A:219:PHE:HB3	1.92	0.52
1:B:512:PRO:HD3	1:B:545:TRP:CE2	2.45	0.52
1:C:117:ASP:HB2	1:C:493:LYS:HG3	1.90	0.52
1:B:287:ASN:ND2	1:F:428:SER:OG	2.43	0.52
1:B:299:THR:OG1	1:C:268:GLY:O	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:410:MET:HG2	1:E:294:VAL:HG21	1.91	0.52
1:E:91:ASP:OD2	1:E:169:THR:OG1	2.28	0.52
1:A:189:VAL:HG11	1:E:382:LYS:HD3	1.90	0.52
1:F:121:VAL:HG13	1:F:488:VAL:HG22	1.91	0.52
1:A:341:ASP:N	1:A:344:LYS:O	2.39	0.52
1:B:470:ILE:HB	1:B:473:MET:HG2	1.91	0.52
1:C:334:SER:O	1:C:385:GLN:NE2	2.39	0.52
2:S:243:MET:HG2	2:S:314:PRO:HA	1.91	0.52
1:D:152:LEU:HB2	1:D:219:PHE:HB3	1.92	0.52
1:A:165:GLN:HG3	1:E:253:TYR:HA	1.93	0.51
1:F:373:ARG:NH2	1:F:423:GLU:OE2	2.33	0.51
1:A:314:THR:OG1	1:A:329:ARG:NH2	2.41	0.51
1:B:192:VAL:HG13	1:B:201:SER:HB3	1.92	0.51
1:C:485:ILE:HD11	1:D:461:LEU:HD21	1.92	0.51
1:D:422:TYR:HB2	1:D:545:TRP:HB3	1.92	0.51
1:A:500:THR:HB	1:C:102:LEU:HD21	1.93	0.51
1:B:127:ALA:HA	1:B:224:THR:HG23	1.91	0.51
1:B:167:GLN:NE2	1:C:254:ASN:O	2.43	0.51
1:C:90:LEU:HD11	1:C:123:ILE:HD11	1.91	0.51
1:E:429:LYS:NZ	1:E:450:HIS:O	2.44	0.51
1:E:330:PRO:HB3	1:E:352:ILE:HG12	1.93	0.51
1:E:512:PRO:HD3	1:E:545:TRP:CE2	2.46	0.51
1:F:51:GLU:HG3	1:F:51:GLU:O	2.11	0.51
1:F:333:VAL:HG13	1:F:443:ALA:HA	1.92	0.51
1:D:161:TYR:CE1	1:D:163:LEU:HB2	2.46	0.51
2:S:91:ALA:HB3	2:S:96:LEU:HG	1.91	0.51
2:S:320:ARG:HH22	2:S:422:GLN:HG2	1.76	0.51
2:S:278:LEU:HD11	2:S:397:ARG:HB2	1.92	0.51
2:S:285:GLU:OE2	2:S:285:GLU:N	2.19	0.51
2:S:252:PRO:HB2	2:S:265:GLU:HB3	1.93	0.51
1:C:274:ARG:HG3	1:C:274:ARG:HH11	1.76	0.51
1:C:34:ASN:N	1:C:34:ASN:OD1	2.44	0.50
1:E:291:GLY:HA3	1:E:415:TRP:HB3	1.92	0.50
1:B:121:VAL:HG13	1:B:488:VAL:HG22	1.93	0.50
2:S:111:SER:O	2:S:115:ILE:HG12	2.12	0.50
1:E:32:SER:OG	1:E:33:ALA:N	2.45	0.50
1:C:354:HIS:O	1:C:373:ARG:NH1	2.44	0.50
1:E:357:THR:HB	1:E:371:VAL:HG13	1.93	0.50
1:F:134:LYS:HG3	1:F:140:GLN:HB3	1.93	0.50
1:B:354:HIS:O	1:B:373:ARG:NH1	2.45	0.50
1:B:417:ARG:H	1:F:434:ASP:HB2	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:298:SER:HA	1:F:348:GLY:HA2	1.93	0.50
2:S:64:LEU:HD11	2:S:322:TYR:CD1	2.46	0.50
1:C:23:SER:HB3	1:D:221:LEU:HB2	1.93	0.50
1:D:91:ASP:OD2	1:D:169:THR:OG1	2.30	0.50
1:B:161:TYR:CE2	1:B:163:LEU:HB2	2.46	0.50
1:B:204:LEU:HD12	1:B:205:ALA:N	2.27	0.49
1:A:161:TYR:CE2	1:A:163:LEU:HB2	2.46	0.49
1:F:130:ASP:OD1	1:F:480:GLN:NE2	2.41	0.49
1:A:512:PRO:HD3	1:A:545:TRP:CE2	2.47	0.49
1:F:90:LEU:HD11	1:F:123:ILE:HD11	1.94	0.49
1:F:295:ASN:HD22	1:F:350:ASN:HD21	1.60	0.49
1:B:330:PRO:HB3	1:B:352:ILE:HG12	1.95	0.49
1:C:263:VAL:HG13	1:C:276:LEU:HD21	1.93	0.49
1:D:117:ASP:HB2	1:D:493:LYS:HG3	1.95	0.49
1:C:514:ALA:HA	1:C:541:PRO:HA	1.94	0.49
1:E:248:HIS:HB3	1:E:250:TYR:CE1	2.48	0.49
1:C:380:GLN:NE2	1:C:416:ASN:O	2.29	0.49
1:F:91:ASP:OD2	1:F:169:THR:OG1	2.27	0.49
1:C:527:ALA:HB3	1:D:204:LEU:HD13	1.94	0.49
1:D:51:GLU:OE1	1:D:53:HIS:HB3	2.13	0.49
2:S:207:LEU:HD23	2:S:357:VAL:HG13	1.95	0.49
1:A:300:LYS:HD3	2:S:227:HIS:HE2	1.77	0.48
1:F:29:ALA:HB3	1:F:103:GLU:HG2	1.95	0.48
1:A:253:TYR:HA	1:D:165:GLN:HG3	1.94	0.48
1:C:278:HIS:O	1:C:281:HIS:NE2	2.46	0.48
1:A:330:PRO:HB3	1:A:352:ILE:HG12	1.95	0.48
1:D:245:CYS:O	1:D:382:LYS:NZ	2.41	0.48
1:D:90:LEU:HD11	1:D:123:ILE:HD11	1.94	0.48
1:D:126:ILE:O	1:D:225:GLY:N	2.31	0.48
1:B:245:CYS:O	1:B:382:LYS:NZ	2.33	0.48
1:C:97:LEU:HD13	1:C:171:ALA:HB3	1.94	0.48
1:E:152:LEU:HB2	1:E:219:PHE:HB3	1.94	0.48
1:A:285:PRO:HB2	1:D:444:LEU:HD21	1.95	0.48
2:S:50:ALA:HB1	2:S:409:GLN:O	2.13	0.48
2:S:192:ILE:HG23	2:S:360:LYS:HD3	1.96	0.48
1:A:204:LEU:HD12	1:A:205:ALA:H	1.78	0.48
1:A:240:GLU:HG2	1:A:420:LEU:HB3	1.96	0.48
1:A:523:TYR:OH	1:A:539:GLU:OE2	2.32	0.48
1:E:77:ILE:HA	1:E:324:THR:HB	1.95	0.48
1:E:259:SER:HB2	1:E:276:LEU:HD12	1.95	0.48
1:B:523:TYR:OH	1:B:539:GLU:OE2	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:109:GLU:O	1:D:550:ARG:NH1	2.38	0.48
1:B:410:MET:HB3	1:F:332:PRO:HG3	1.96	0.47
2:S:198:ASP:OD1	2:S:199:LEU:N	2.46	0.47
1:B:165:GLN:HG3	1:C:253:TYR:HA	1.95	0.47
1:D:248:HIS:HB3	1:D:250:TYR:CE1	2.49	0.47
1:F:161:TYR:CE2	1:F:163:LEU:HB2	2.48	0.47
1:F:316:LEU:HG	1:F:328:LEU:HB2	1.96	0.47
2:S:86:PHE:HB2	2:S:161:TYR:CD1	2.49	0.47
1:A:129:LYS:HB3	1:A:141:VAL:HG13	1.95	0.47
1:C:240:GLU:HG2	1:C:420:LEU:HB3	1.95	0.47
1:F:57:PHE:O	1:F:81:MET:HA	2.14	0.47
2:S:86:PHE:HB2	2:S:161:TYR:HD1	1.79	0.47
2:S:309:GLY:N	2:S:391:THR:O	2.43	0.47
1:A:534:HIS:CD2	1:A:534:HIS:H	2.32	0.47
1:B:429:LYS:HB2	1:B:452:PRO:HG3	1.96	0.47
1:C:25:TRP:O	1:D:218:SER:HA	2.14	0.47
1:E:333:VAL:HG12	1:E:443:ALA:HA	1.97	0.47
1:A:95:LEU:HD13	1:A:426:LEU:HD21	1.97	0.47
1:B:278:HIS:O	1:B:281:HIS:NE2	2.48	0.47
1:F:152:LEU:HB2	1:F:219:PHE:HB3	1.97	0.47
2:S:91:ALA:O	2:S:92:HIS:ND1	2.47	0.47
2:S:223:PRO:HA	2:S:367:GLU:HG2	1.96	0.47
1:A:340:TRP:CZ3	2:S:230:ARG:HG3	2.49	0.47
1:A:421:HIS:CE1	1:A:544:LEU:HD13	2.50	0.47
1:B:121:VAL:HG22	1:B:488:VAL:HG13	1.96	0.47
1:C:127:ALA:HA	1:C:224:THR:HG23	1.96	0.47
1:D:330:PRO:HB3	1:D:352:ILE:HG12	1.95	0.47
1:D:500:THR:HG21	1:D:506:GLN:HE21	1.80	0.47
1:A:46:ILE:HG23	1:A:88:ARG:HG3	1.97	0.46
1:B:94:ALA:HB3	1:B:97:LEU:HG	1.98	0.46
2:S:119:PHE:O	2:S:123:LEU:HG	2.15	0.46
1:A:278:HIS:O	1:A:281:HIS:NE2	2.48	0.46
1:B:125:GLU:HG3	1:B:485:ILE:HD12	1.97	0.46
1:B:152:LEU:HB2	1:B:219:PHE:HB3	1.97	0.46
1:B:264:PRO:HG3	1:B:273:PHE:CZ	2.50	0.46
1:E:161:TYR:CE2	1:E:163:LEU:HB2	2.51	0.46
2:S:89:LEU:HD21	2:S:156:ASP:OD1	2.15	0.46
2:S:200:ASP:OD1	2:S:201:SER:N	2.48	0.46
1:A:93:ASN:OD1	1:A:426:LEU:N	2.42	0.46
1:B:53:HIS:O	1:B:53:HIS:ND1	2.49	0.46
1:E:514:ALA:HA	1:E:541:PRO:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:58:SER:O	1:C:202:LYS:NZ	2.43	0.46
1:A:32:SER:OG	1:A:33:ALA:N	2.49	0.46
1:E:514:ALA:HB2	1:E:519:PRO:HB3	1.97	0.46
1:F:421:HIS:CE1	1:F:544:LEU:HD13	2.51	0.46
2:S:252:PRO:HG2	2:S:265:GLU:OE2	2.16	0.46
1:B:134:LYS:NZ	1:B:137:GLY:O	2.46	0.45
2:S:61:TYR:O	2:S:65:VAL:HG23	2.16	0.45
1:B:158:LYS:HD3	1:C:501:GLY:HA3	1.98	0.45
1:E:429:LYS:HB2	1:E:452:PRO:HG3	1.96	0.45
1:D:512:PRO:HD3	1:D:545:TRP:CE2	2.51	0.45
1:B:425:GLN:NE2	1:B:428:SER:HB2	2.31	0.45
1:C:429:LYS:HG3	1:C:452:PRO:HD3	1.99	0.45
2:S:86:PHE:CZ	2:S:141:MET:HB2	2.51	0.45
1:A:153:VAL:HG11	1:A:230:MET:HG3	1.99	0.45
1:E:326:ILE:HG13	1:E:326:ILE:O	2.16	0.45
2:S:116:HIS:ND1	2:S:161:TYR:OH	2.44	0.45
1:A:25:TRP:O	1:B:218:SER:HA	2.17	0.45
1:A:429:LYS:HB2	1:A:452:PRO:HG3	1.99	0.45
1:E:386:GLY:O	1:E:389:MET:HB2	2.17	0.45
1:F:422:TYR:HB2	1:F:545:TRP:HB3	1.99	0.45
1:B:123:ILE:O	1:B:227:THR:HA	2.17	0.45
1:C:470:ILE:HB	1:C:473:MET:HG2	1.97	0.45
1:A:384:LEU:O	1:A:407:ARG:NH2	2.30	0.45
1:D:373:ARG:NH2	1:D:423:GLU:OE2	2.46	0.45
1:A:435:ASP:HB3	1:E:415:TRP:CE2	2.52	0.44
1:C:421:HIS:CE1	1:C:544:LEU:HD13	2.52	0.44
1:F:500:THR:HG22	1:F:502:ARG:H	1.82	0.44
1:A:434:ASP:HB2	1:E:416:ASN:HA	1.99	0.44
1:C:535:ARG:HD3	1:C:539:GLU:HG3	1.99	0.44
2:S:80:ILE:HD11	2:S:359:HIS:CD2	2.51	0.44
2:S:205:MET:HE3	2:S:354:VAL:HA	1.99	0.44
1:A:425:GLN:NE2	1:A:428:SER:HB2	2.32	0.44
1:B:253:TYR:HA	1:F:165:GLN:HG3	2.00	0.44
1:D:421:HIS:CE1	1:D:544:LEU:HD13	2.51	0.44
1:A:245:CYS:SG	1:A:554:LEU:HD11	2.57	0.44
1:B:435:ASP:HB3	1:C:415:TRP:CE2	2.53	0.44
2:S:259:LEU:HD22	2:S:298:ARG:HH22	1.83	0.44
1:E:465:GLY:N	1:E:476:THR:O	2.34	0.44
1:A:215:GLU:OE1	1:A:215:GLU:N	2.50	0.44
1:B:313:LEU:HD11	1:B:327:SER:HB2	2.00	0.44
1:C:422:TYR:HB2	1:C:545:TRP:HB3	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:167:GLN:NE2	1:F:254:ASN:O	2.49	0.44
1:D:46:ILE:HD13	1:D:149:LEU:HD11	1.99	0.44
1:D:240:GLU:HG2	1:D:420:LEU:HB3	2.00	0.44
1:F:164:GLY:O	1:F:428:SER:OG	2.32	0.44
1:A:485:ILE:HD11	1:B:461:LEU:HD21	1.98	0.44
1:F:354:HIS:O	1:F:373:ARG:NH1	2.51	0.44
1:C:80:ILE:HD12	1:C:187:LEU:HD21	2.00	0.44
1:C:512:PRO:HD3	1:C:545:TRP:CE2	2.52	0.44
1:D:150:CYS:HB3	1:D:219:PHE:CE1	2.53	0.44
1:E:316:LEU:HG	1:E:328:LEU:HB2	2.00	0.44
2:S:141:MET:HE2	2:S:205:MET:HG3	2.00	0.44
2:S:204:MET:HE3	2:S:353:ALA:H	1.83	0.44
1:F:23:SER:OG	1:F:125:GLU:OE2	2.27	0.43
1:F:263:VAL:HG22	1:F:276:LEU:HD21	2.00	0.43
2:S:105:PHE:HE1	2:S:115:ILE:CG2	2.29	0.43
1:A:353:SER:HB2	1:A:373:ARG:H	1.83	0.43
1:B:209:SER:O	1:C:504:ASN:ND2	2.42	0.43
1:B:373:ARG:NH2	1:B:423:GLU:OE2	2.37	0.43
1:B:257:TYR:O	1:F:167:GLN:NE2	2.51	0.43
2:S:99:ILE:HG23	2:S:100:LEU:HD23	2.00	0.43
1:B:357:THR:N	1:B:371:VAL:O	2.47	0.43
1:D:354:HIS:O	1:D:373:ARG:NH1	2.50	0.43
2:S:74:ILE:HD13	2:S:415:SER:HB2	1.99	0.43
2:S:297:LYS:HG3	2:S:298:ARG:N	2.34	0.43
2:S:312:TYR:HB2	2:S:394:ARG:HA	2.00	0.43
1:C:38:CYS:HB2	1:C:98:PHE:HB3	1.99	0.43
1:C:130:ASP:OD1	1:C:480:GLN:NE2	2.43	0.43
1:C:326:ILE:HD11	1:F:384:LEU:HD11	1.99	0.43
1:D:154:ASP:HB2	1:D:457:PHE:HE2	1.84	0.43
1:E:248:HIS:CE1	1:E:382:LYS:HG2	2.53	0.43
1:F:105:GLN:HB2	1:F:545:TRP:CH2	2.54	0.43
1:C:191:ASP:OD1	1:C:191:ASP:N	2.51	0.43
1:E:154:ASP:HB2	1:E:457:PHE:HE2	1.84	0.43
2:S:80:ILE:HD13	2:S:209:ASN:HD22	1.83	0.43
2:S:116:HIS:O	2:S:120:GLN:OE1	2.35	0.43
1:A:384:LEU:HD11	1:D:326:ILE:HD11	2.00	0.43
1:C:291:GLY:O	1:C:407:ARG:HD2	2.19	0.43
2:S:176:ALA:O	2:S:180:ILE:HG22	2.18	0.43
1:A:135:THR:HG21	1:B:135:THR:HA	2.01	0.43
1:A:284:GLN:NE2	1:D:165:GLN:O	2.52	0.43
1:A:373:ARG:NH2	1:A:423:GLU:OE2	2.29	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:415:TRP:CE2	1:F:435:ASP:HB3	2.54	0.43
2:S:283:LYS:HB3	2:S:283:LYS:HE3	1.73	0.43
1:A:22:LYS:NZ	1:B:227:THR:O	2.46	0.42
1:C:161:TYR:CE2	1:C:163:LEU:HB2	2.54	0.42
1:F:500:THR:HG21	1:F:506:GLN:HE21	1.84	0.42
1:B:215:GLU:N	1:B:215:GLU:OE1	2.53	0.42
1:B:391:THR:OG1	1:B:407:ARG:HG3	2.19	0.42
2:S:255:ARG:HH22	2:S:260:SER:HA	1.84	0.42
2:S:390:ARG:HB3	2:S:391:THR:H	1.63	0.42
1:D:535:ARG:HH11	1:D:539:GLU:HG3	1.84	0.42
1:A:210:ALA:HB1	1:A:212:TYR:CE2	2.55	0.42
1:A:486:MET:O	1:A:486:MET:HG3	2.19	0.42
1:C:191:ASP:OD1	1:C:206:SER:HB3	2.19	0.42
1:C:245:CYS:O	1:C:382:LYS:NZ	2.33	0.42
1:C:294:VAL:HG11	1:F:410:MET:HG2	2.00	0.42
1:E:422:TYR:HB2	1:E:545:TRP:HB3	1.99	0.42
1:F:43:GLN:O	1:F:179:TYR:N	2.42	0.42
2:S:157:ALA:O	2:S:162:GLY:N	2.52	0.42
1:B:153:VAL:HG11	1:B:230:MET:HG3	2.00	0.42
1:B:154:ASP:HB2	1:B:457:PHE:HE2	1.84	0.42
1:C:74:VAL:HG11	1:C:313:LEU:HB2	2.02	0.42
1:E:40:PHE:CE2	1:E:488:VAL:HB	2.55	0.42
1:B:232:TYR:OH	1:B:451:GLN:O	2.28	0.42
2:S:142:PHE:HB2	2:S:206:VAL:HG12	2.01	0.42
1:A:121:VAL:HG22	1:A:488:VAL:HG13	2.02	0.42
1:A:333:VAL:HG13	1:A:443:ALA:HA	2.01	0.42
1:F:134:LYS:HE2	1:F:134:LYS:HB3	1.65	0.42
2:S:57:ALA:HB2	2:S:77:PRO:HB3	2.02	0.42
1:A:517:HIS:NE2	1:B:205:ALA:O	2.52	0.42
2:S:189:ARG:NH1	2:S:189:ARG:HA	2.35	0.42
1:B:197:ILE:HD13	2:S:327:ILE:HD12	2.02	0.42
1:C:158:LYS:HD3	1:F:501:GLY:HA3	2.01	0.42
1:D:316:LEU:HG	1:D:328:LEU:HB2	2.01	0.42
1:C:210:ALA:HB1	1:C:212:TYR:CE2	2.55	0.41
1:D:414:VAL:HB	1:E:433:LEU:HD12	2.01	0.41
2:S:329:LEU:HD12	2:S:334:GLU:HB2	2.02	0.41
1:E:121:VAL:HG22	1:E:488:VAL:HG13	2.02	0.41
1:F:93:ASN:OD1	1:F:426:LEU:N	2.47	0.41
1:A:434:ASP:HB2	1:E:417:ARG:H	1.85	0.41
1:F:202:LYS:HE2	1:F:202:LYS:HB3	1.90	0.41
1:A:245:CYS:O	1:A:382:LYS:NZ	2.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:48:TYR:HD2	1:D:469:GLY:H	1.68	0.41
1:A:313:LEU:CD1	1:E:283:ILE:HG22	2.50	0.41
1:B:164:GLY:O	1:C:287:ASN:ND2	2.54	0.41
1:C:259:SER:HB3	1:C:276:LEU:HD12	2.01	0.41
1:C:527:ALA:HB2	1:D:202:LYS:HD3	2.02	0.41
1:D:93:ASN:OD1	1:D:426:LEU:N	2.51	0.41
1:F:426:LEU:HA	1:F:426:LEU:HD23	1.77	0.41
2:S:412:PHE:CD1	2:S:412:PHE:N	2.88	0.41
1:A:77:ILE:HA	1:A:324:THR:HB	2.02	0.41
1:A:254:ASN:H	1:D:167:GLN:HE21	1.68	0.41
1:A:316:LEU:HG	1:A:328:LEU:HB2	2.01	0.41
1:A:409:LEU:HD23	1:E:409:LEU:HD23	2.02	0.41
1:A:429:LYS:HG3	1:A:452:PRO:HD3	2.02	0.41
1:B:40:PHE:CE2	1:B:488:VAL:HB	2.55	0.41
1:D:341:ASP:HB2	1:D:346:VAL:HG23	2.03	0.41
1:F:263:VAL:HG13	1:F:276:LEU:HD21	2.03	0.41
2:S:312:TYR:CD2	2:S:394:ARG:HG3	2.55	0.41
1:C:46:ILE:HG23	1:C:88:ARG:HG3	2.02	0.41
1:D:77:ILE:HD11	1:D:319:GLY:HA2	2.02	0.41
1:A:173:GLU:HG3	1:A:174:LEU:HG	2.02	0.41
1:A:253:TYR:HB2	1:D:167:GLN:NE2	2.36	0.41
1:A:254:ASN:O	1:D:167:GLN:NE2	2.54	0.41
1:C:154:ASP:HB2	1:C:457:PHE:HE2	1.85	0.41
1:D:40:PHE:CE2	1:D:488:VAL:HB	2.56	0.41
1:D:425:GLN:NE2	1:D:428:SER:HB2	2.36	0.41
1:F:74:VAL:HG11	1:F:313:LEU:HB2	2.02	0.41
1:F:297:VAL:HG13	1:F:405:ILE:HG21	2.03	0.41
2:S:142:PHE:HB3	2:S:168:THR:HG21	2.03	0.41
2:S:143:VAL:HG21	2:S:149:LEU:HD13	2.03	0.41
2:S:199:LEU:HD12	2:S:199:LEU:HA	1.92	0.41
2:S:233:LEU:HD11	2:S:419:ASN:OD1	2.20	0.41
1:A:14:GLY:N	1:B:141:VAL:O	2.46	0.41
1:B:316:LEU:HG	1:B:328:LEU:HB2	2.03	0.41
1:B:421:HIS:CE1	1:B:544:LEU:HD13	2.56	0.41
1:B:422:TYR:HB2	1:B:545:TRP:HB3	2.03	0.41
1:C:119:LEU:HD13	1:C:490:MET:HE3	2.03	0.41
2:S:184:VAL:O	2:S:188:THR:HG22	2.20	0.41
1:A:295:ASN:HB2	1:E:393:PHE:HD2	1.86	0.40
1:F:264:PRO:HG3	1:F:273:PHE:CZ	2.57	0.40
1:D:152:LEU:HD23	1:D:214:LEU:HD23	2.03	0.40
1:E:425:GLN:NE2	1:E:428:SER:HB2	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:S:159:ARG:HD3	2:S:159:ARG:HA	1.86	0.40
2:S:176:ALA:HA	2:S:179:LEU:HG	2.04	0.40
1:A:259:SER:HB2	1:A:276:LEU:HD12	2.02	0.40
1:C:14:GLY:N	1:D:141:VAL:O	2.39	0.40
1:C:435:ASP:HB3	1:F:415:TRP:CE2	2.56	0.40
1:D:415:TRP:CE2	1:E:435:ASP:HB3	2.56	0.40
2:S:221:PHE:CD2	2:S:244:MET:HB2	2.56	0.40

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	507/553 (92%)	498 (98%)	9 (2%)	0	100	100
1	B	507/553 (92%)	495 (98%)	12 (2%)	0	100	100
1	C	507/553 (92%)	495 (98%)	12 (2%)	0	100	100
1	D	507/553 (92%)	494 (97%)	13 (3%)	0	100	100
1	E	507/553 (92%)	502 (99%)	5 (1%)	0	100	100
1	F	507/553 (92%)	498 (98%)	9 (2%)	0	100	100
2	S	355/375 (95%)	342 (96%)	13 (4%)	0	100	100
All	All	3397/3693 (92%)	3324 (98%)	73 (2%)	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	439/466 (94%)	429 (98%)	10 (2%)	45	70
1	B	439/466 (94%)	427 (97%)	12 (3%)	40	67
1	C	439/466 (94%)	431 (98%)	8 (2%)	54	76
1	D	439/466 (94%)	431 (98%)	8 (2%)	54	76
1	E	439/466 (94%)	434 (99%)	5 (1%)	70	84
1	F	439/466 (94%)	429 (98%)	10 (2%)	45	70
2	S	313/333 (94%)	299 (96%)	14 (4%)	23	53
All	All	2947/3129 (94%)	2880 (98%)	67 (2%)	46	70

All (67) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	75	CYS
1	A	130	ASP
1	A	201	SER
1	A	259	SER
1	A	280	ASP
1	A	356	GLN
1	A	374	PHE
1	A	410	MET
1	A	432	ASN
1	A	546	THR
1	B	35	SER
1	B	53	HIS
1	B	75	CYS
1	B	130	ASP
1	B	143	ASP
1	B	215	GLU
1	B	294	VAL
1	B	374	PHE
1	B	420	LEU
1	B	490	MET
1	B	534	HIS
1	B	546	THR
1	C	27	GLU
1	C	35	SER
1	C	88	ARG
1	C	191	ASP

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Mol	Chain	Res	Type
1	C	230	MET
1	C	275	SER
1	C	432	ASN
1	C	546	THR
1	D	35	SER
1	D	53	HIS
1	D	100	SER
1	D	130	ASP
1	D	274	ARG
1	D	341	ASP
1	D	374	PHE
1	D	490	MET
1	E	275	SER
1	E	278	HIS
1	E	280	ASP
1	E	374	PHE
1	E	473	MET
1	F	10	SER
1	F	27	GLU
1	F	58	SER
1	F	130	ASP
1	F	230	MET
1	F	280	ASP
1	F	333	VAL
1	F	428	SER
1	F	436	SER
1	F	554	LEU
2	S	51	SER
2	S	56	PHE
2	S	86	PHE
2	S	103	LEU
2	S	130	SER
2	S	177	LYS
2	S	213	PHE
2	S	247	HIS
2	S	261	CYS
2	S	273	SER
2	S	319	SER
2	S	333	ILE
2	S	351	ASN
2	S	358	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13)

such sidechains are listed below:

Mol	Chain	Res	Type
1	A	287	ASN
1	A	421	HIS
1	B	167	GLN
1	B	216	HIS
1	B	287	ASN
1	D	167	GLN
1	D	421	HIS
1	D	425	GLN
1	E	53	HIS
1	F	295	ASN
1	F	421	HIS
1	F	425	GLN
2	S	139	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](#)

There are no chain breaks in this entry.

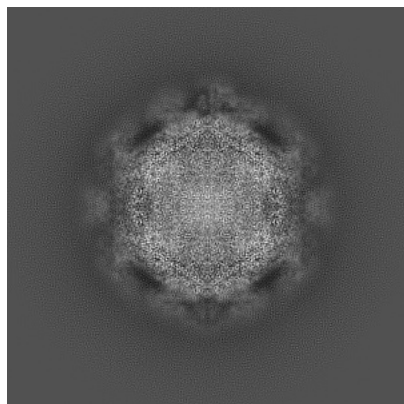
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-45160. These allow visual inspection of the internal detail of the map and identification of artifacts.

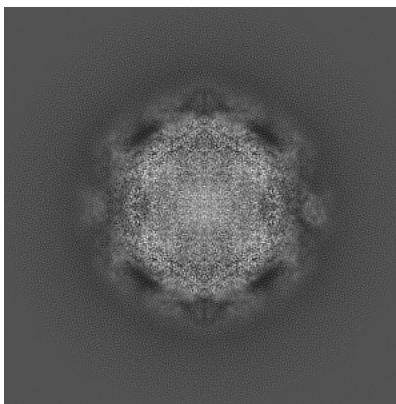
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

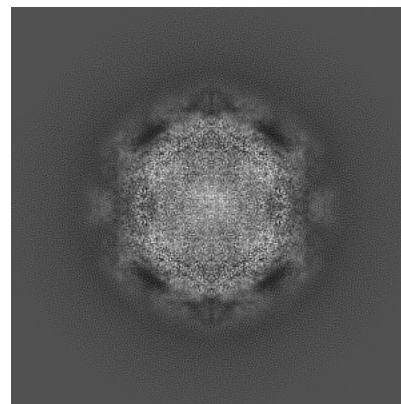
6.1.1 Primary map



X

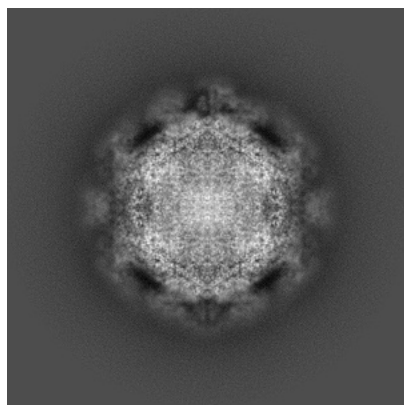


Y

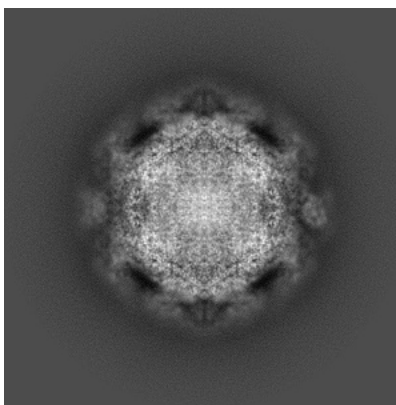


Z

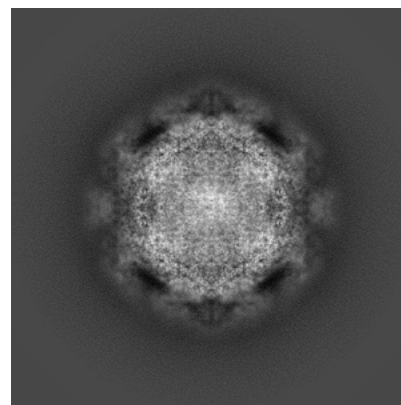
6.1.2 Raw map



X



Y

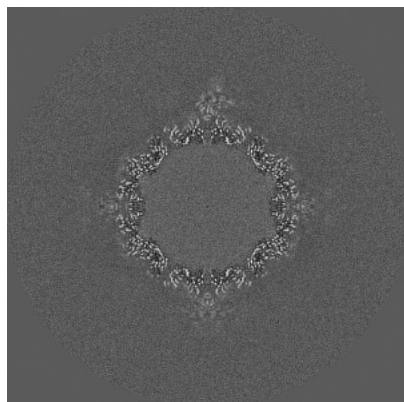


Z

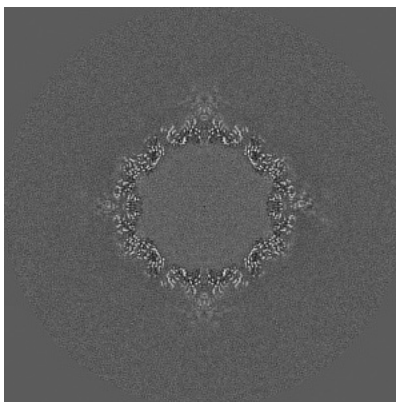
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

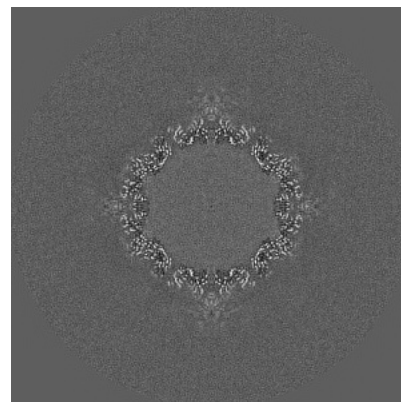
6.2.1 Primary map



X Index: 256

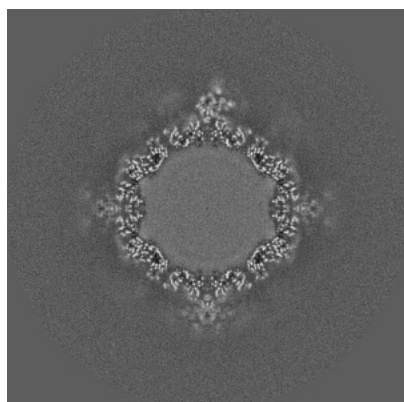


Y Index: 256

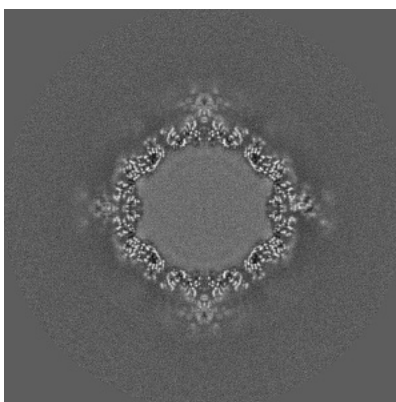


Z Index: 256

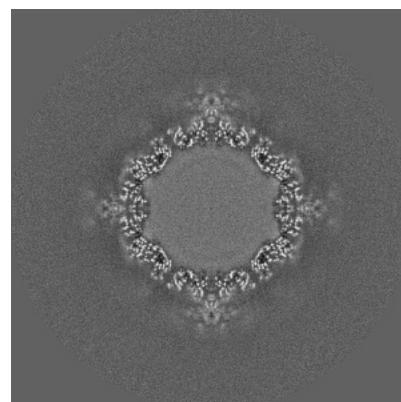
6.2.2 Raw map



X Index: 256



Y Index: 256

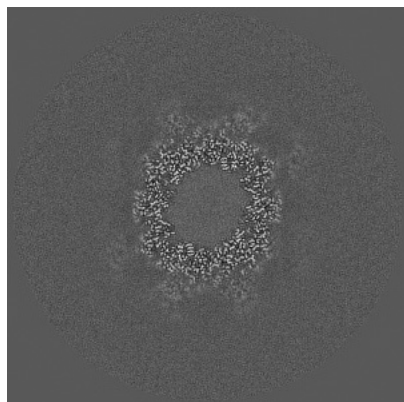


Z Index: 256

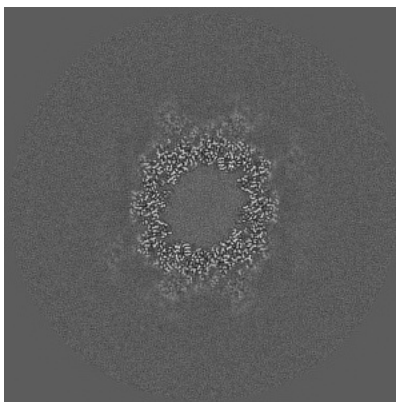
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

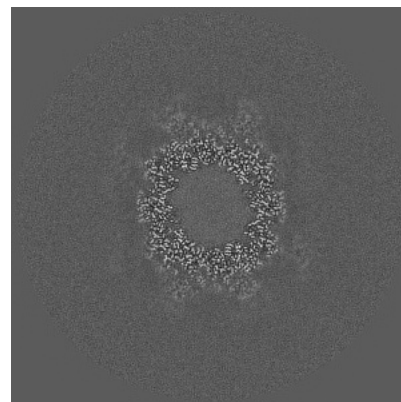
6.3.1 Primary map



X Index: 192

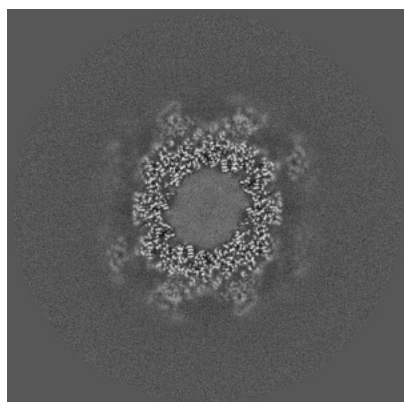


Y Index: 192

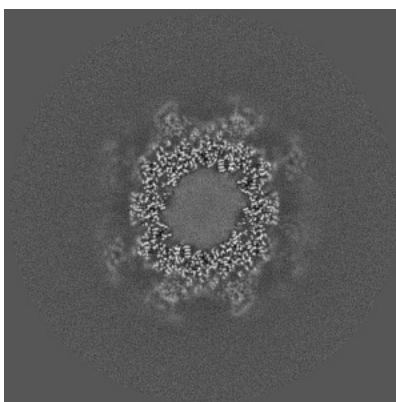


Z Index: 320

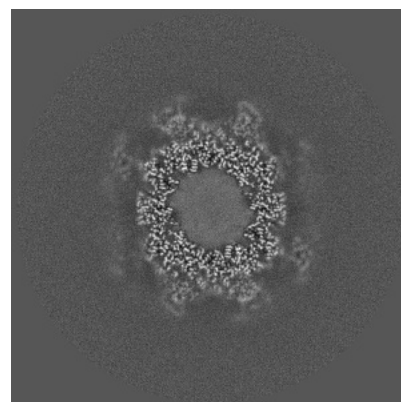
6.3.2 Raw map



X Index: 192



Y Index: 192

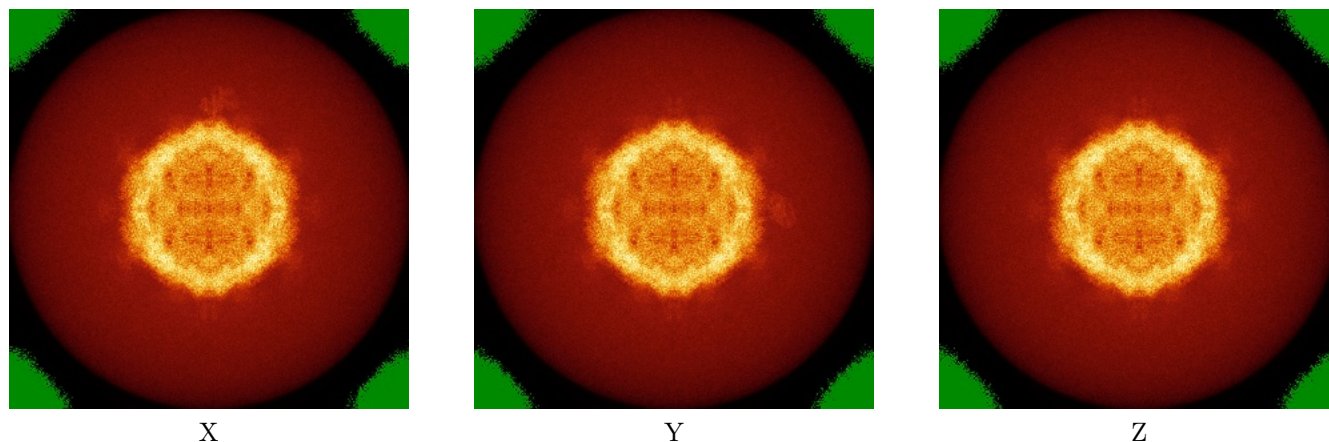


Z Index: 320

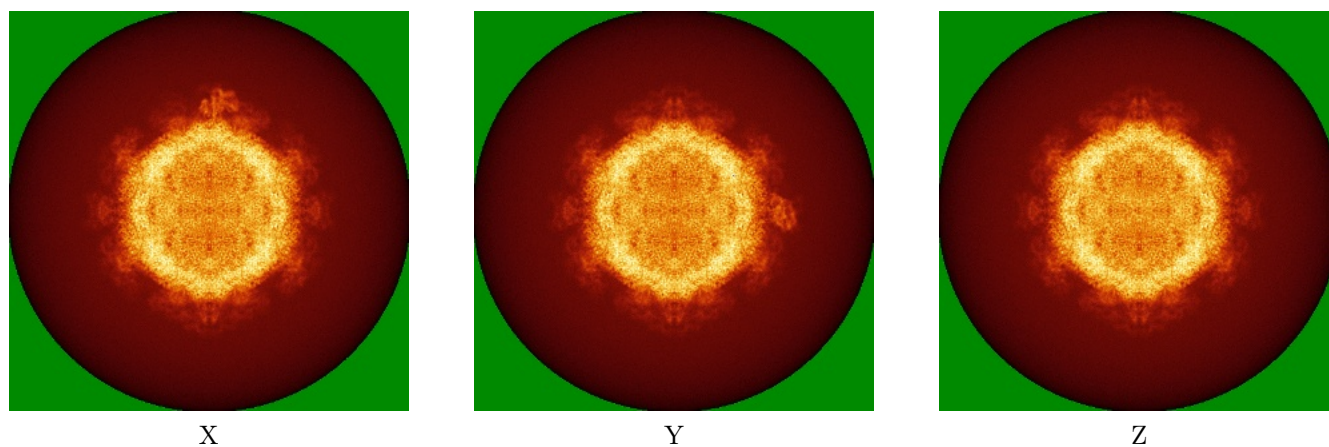
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



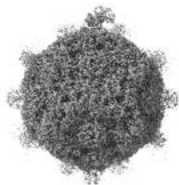
6.4.2 Raw map



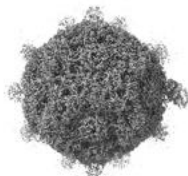
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

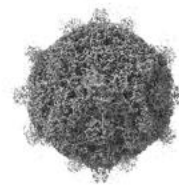
6.5.1 Primary map



X



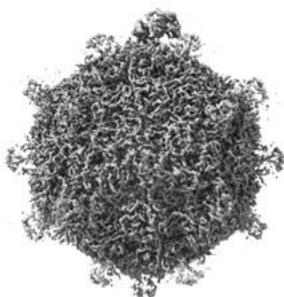
Y



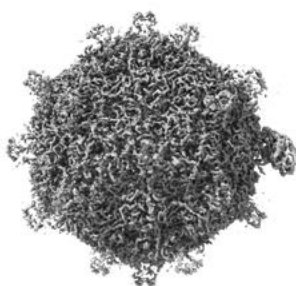
Z

The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

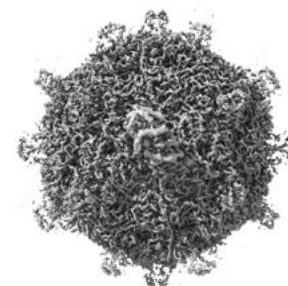
6.5.2 Raw map



X



Y



Z

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.

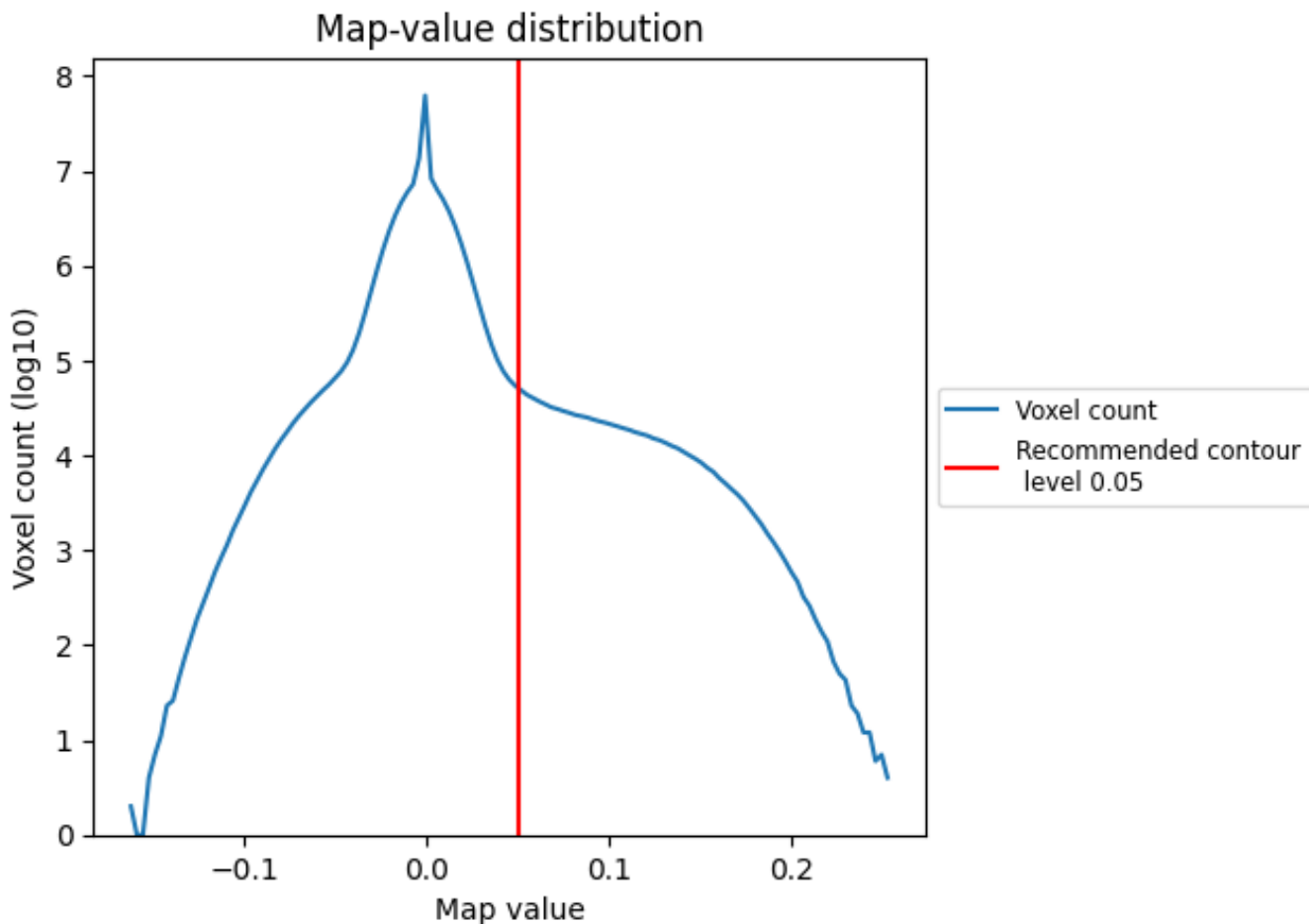
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

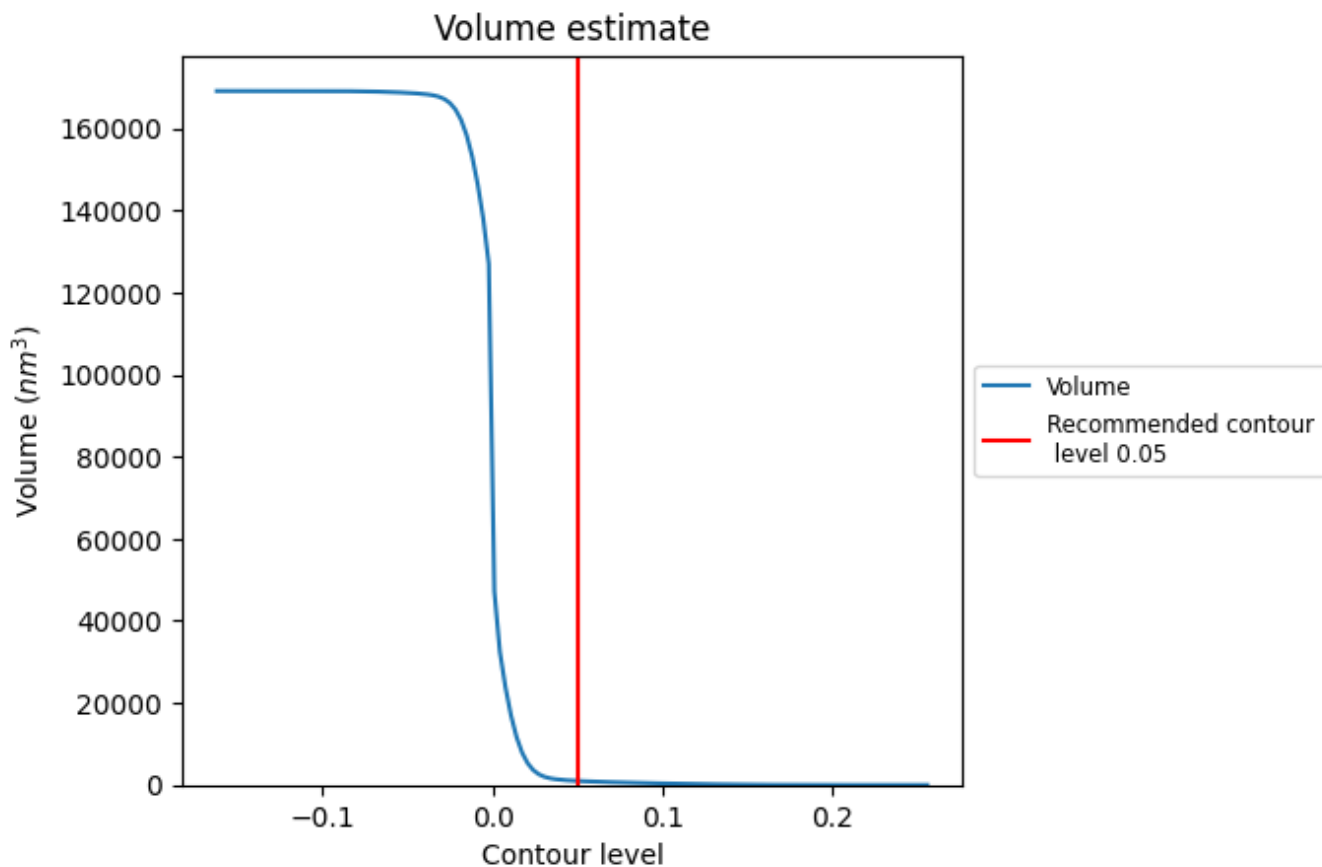
This section contains the results of statistical analysis of the map.

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.

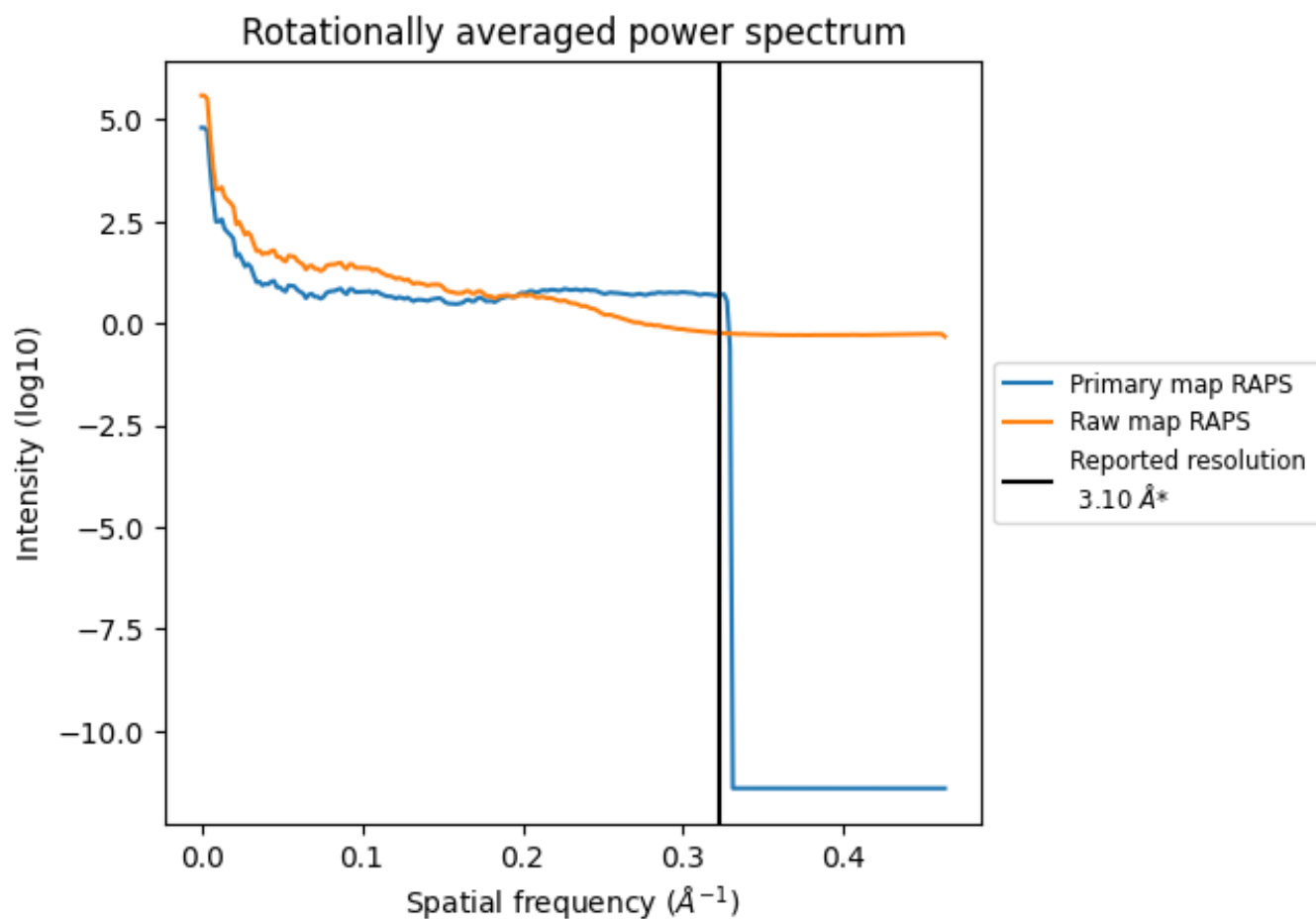
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 987 nm^3 ; this corresponds to an approximate mass of 891 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](#)

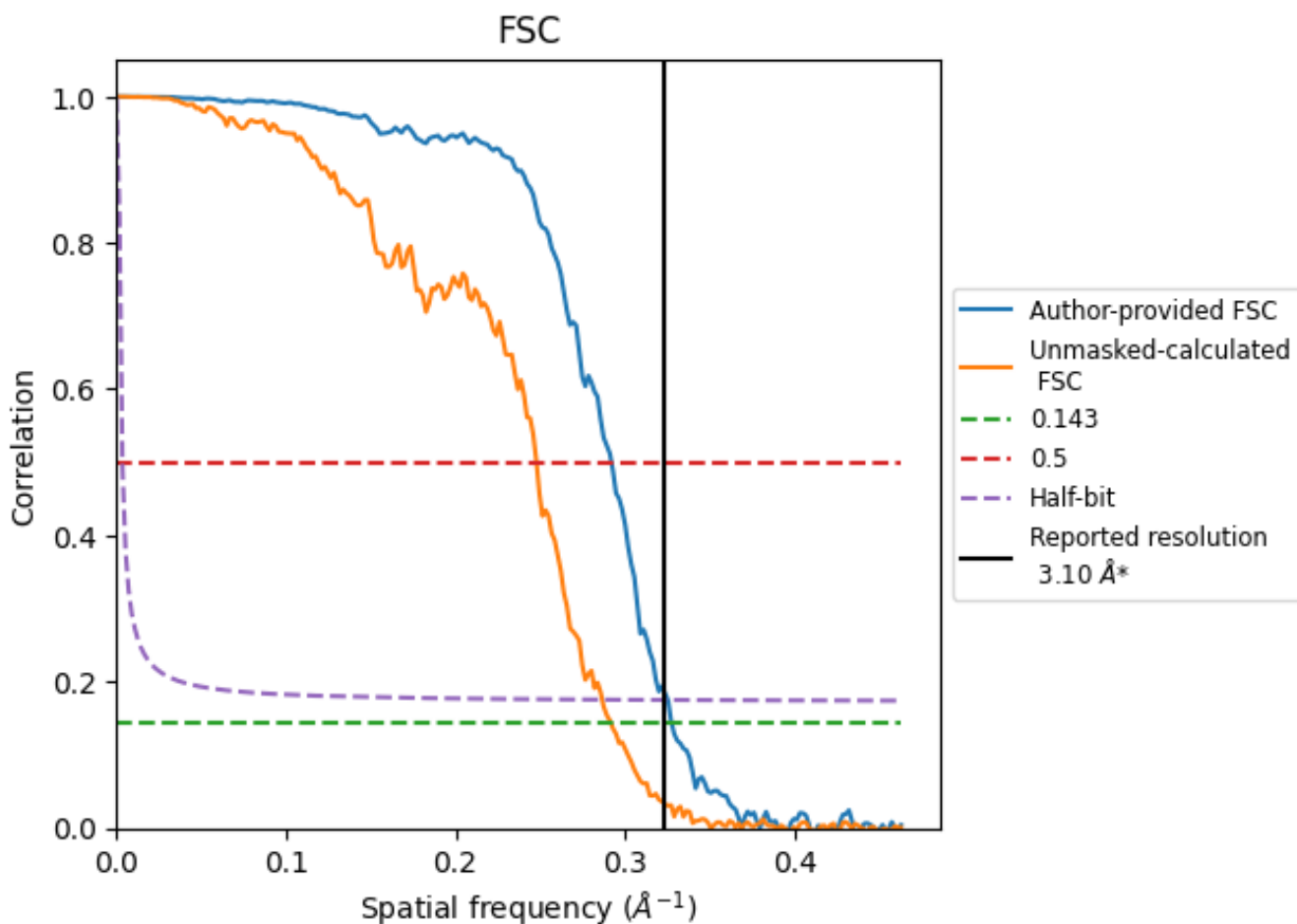


*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

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 0.323 Å⁻¹

8.2 Resolution estimates [i](#)

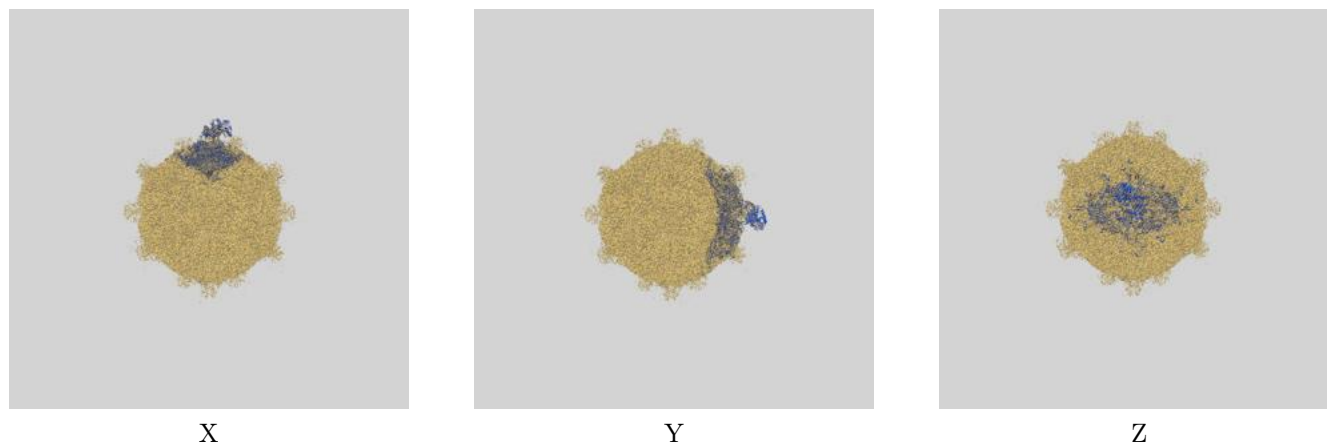
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.05	3.42	3.07
Unmasked-calculated*	3.43	4.04	3.49

*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 3.43 differs from the reported value 3.1 by more than 10 %

9 Map-model fit [i](#)

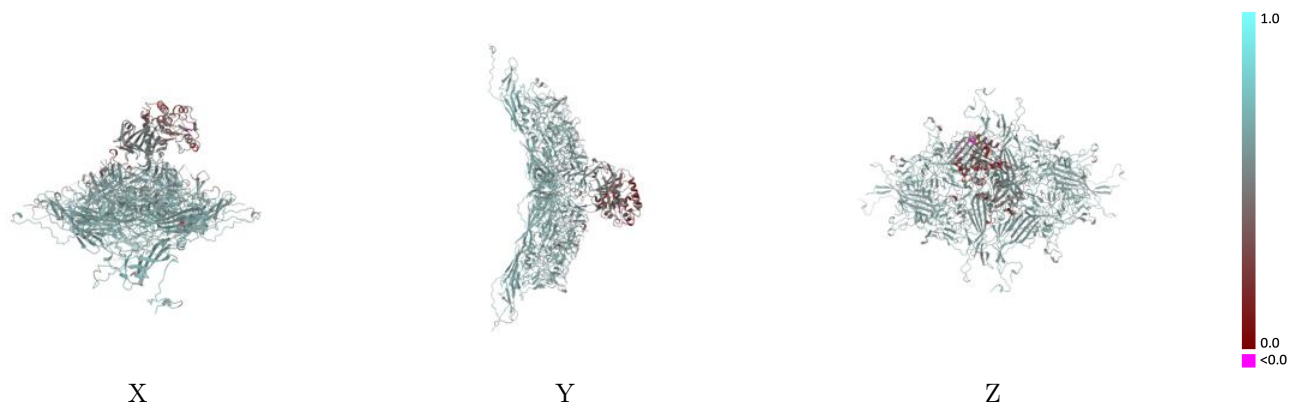
This section contains information regarding the fit between EMDB map EMD-45160 and PDB model 9C2T. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



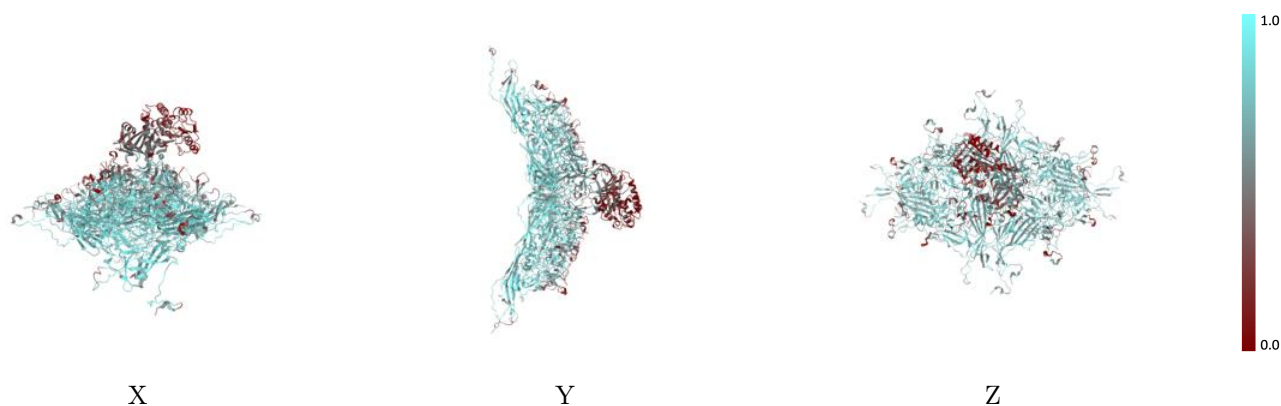
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



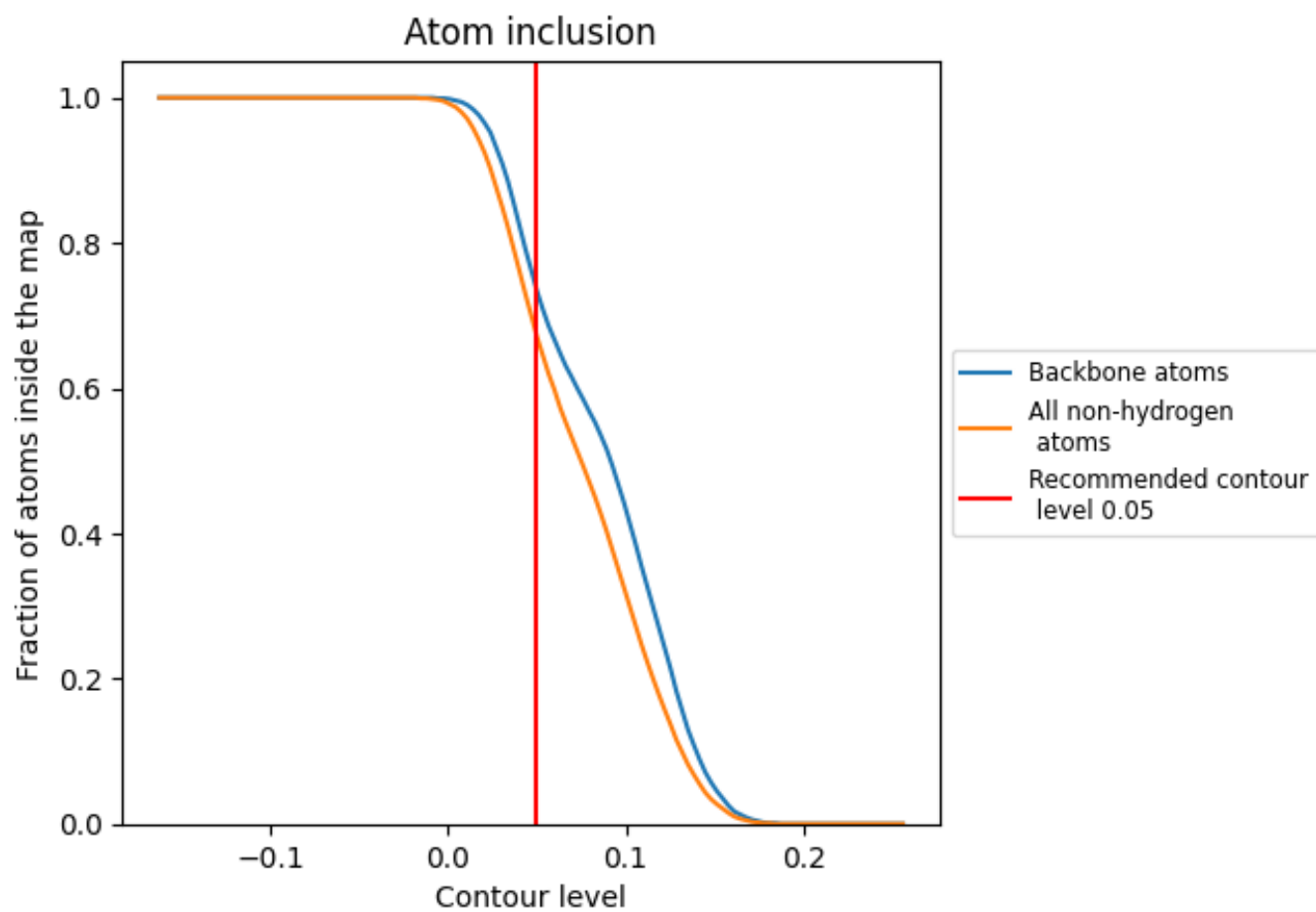
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.05).

















9.4 Atom inclusion [i](#)



At the recommended contour level, 74% of all backbone atoms, 67% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6720	 0.5710
A	 0.7290	 0.5930
B	 0.7240	 0.5910
C	 0.7090	 0.5850
D	 0.7060	 0.5890
E	 0.7190	 0.5920
F	 0.7090	 0.5900
S	 0.2980	 0.4120

