Supporting Information for
GBNL: Graded Betti Number Learning of Complex Biological Data

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1 Ablation Study

Table S1: Ablation study evaluating the individual and combined contributions of graded Betti features, ESM2 protein embeddings, and standard persistent homology (PH) features for protein-DNA/RNA binding affinity prediction. Performance is reported on the S186, S142, and S322 datasets as the Pearson correlation coefficient R_p, with the corresponding RMSE values shown in parentheses in kcal/mol. All values are averaged over twenty independent runs with different random seeds. Higher R_p and lower RMSE indicate better predictive performance.

Feature set	**S186**	**S142**	**S322**
Graded Betti only	0.550 (2.21)	0.582 (2.40)	0.487 (2.47)
ESM2 only	0.690 (1.80)	0.615 (2.28)	0.655 (2.04)
Standard PH only	0.569 (2.14)	0.602 (2.31)	0.553 (2.31)
PH + ESM2	0.684 (1.82)	0.648 (2.19)	**0.662 (2.03)**
Graded Betti + ESM2	**0.691 (1.81)**	**0.66 (2.17)**	0.657 (2.04)

2 Results: Experimental vs. Predicted Binding Affinities

2.1 The S186 Dataset

Table S2: Experimental and predicted binding free energies (ΔG) for the S186 dataset.

PDBID	**Exp BA**	**Pred BA**	**PDBID**	**Exp BA**	**Pred BA**	**PDBID**	**Exp BA**	**Pred BA**
1HVO	-6.760	-7.225	1WET	-7.940	-11.187	2PUF	-7.769	-11.146
1QPZ	-11.704	-10.630	1QP0	-10.165	-10.900	1QP7	-8.327	-8.592
1FJX	-12.070	-12.670	1J75	-10.165	-9.320	1JFS	-11.803	-10.718
1J5K	-7.529	-9.887	1PO6	-9.276	-9.719	1P51	-11.528	-11.275
1QZG	-8.614	-10.069	1OSB	-9.754	-9.755	1HVN	-7.227	-6.759
1BDH	-8.242	-8.067	1QP4	-10.906	-10.984	1QQB	-7.769	-8.240
1TW8	-12.192	-12.372	1QQA	-8.722	-8.270	1DH3	-12.070	-10.208
1JJ4	-11.991	-10.694	1FYM	-10.086	-9.728	1JH9	-11.859	-10.335
1JT0	-9.965	-10.364	1P78	-11.528	-11.543	1P71	-11.528	-11.450
1OMH	-9.754	-9.753	1S40	-12.983	-10.208	1U1L	-9.503	-8.941
1U1R	-9.053	-9.092	1U1N	-8.862	-9.708	1U1O	-9.855	-9.680
2BJC	-14.996	-10.054	1ZZI	-7.713	-9.822	2B0D	-8.242	-9.112
2GII	-12.783	-12.783	2GIE	-12.592	-12.394	2GIH	-12.252	-12.256
2ADY	-10.707	-10.492	2AC0	-10.364	-10.676	2AYB	-11.859	-11.752
2ERE	-10.256	-10.208	2GE5	-8.751	-8.998	2O6M	-10.751	-9.906

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
3D6Z	-8.204	-6.799	2VYE	-9.991	-10.179	3IGM	-8.590	-9.099
3HXQ	-12.572	-12.576	3EQT	-9.514	-9.685	3H15	-7.455	-9.078
2KAE	-11.039	-9.914	3MQ6	-12.572	-11.151	3JSP	-11.995	-12.110
3AAF	-8.994	-9.450	3N1L	-11.407	-11.236	3N1K	-11.236	-11.236
3R8F	-9.487	-9.857	2RRA	-7.940	-8.604	3QMI	-6.709	-6.610
2KXN	-7.700	-8.934	1U1P	-9.107	-9.095	1U1M	-8.901	-9.128
1U1K	-8.856	-9.146	1U1Q	-9.706	-9.321	2AOR	-8.242	-8.332
2AOQ	-7.438	-8.160	2I9K	-12.983	-11.835	2GIJ	-12.783	-12.782
2GIG	-12.252	-12.253	2CCZ	-9.543	-9.982	2AHI	-10.496	-10.708
2ERG	-10.364	-10.108	2AYG	-11.859	-11.862	2ES2	-8.843	-9.416
2ATA	-9.646	-10.484	2NP2	-9.897	-10.506	3D6Y	-6.799	-8.203
2VY1	-9.573	-10.163	3HXO	-12.572	-12.581	3GIB	-12.070	-9.539
3D2W	-9.355	-9.078	2KKF	-5.939	-8.038	3M9E	-9.388	-9.867
3JSO	-12.402	-11.580	3K3R	-11.966	-12.335	3N1I	-11.554	-11.385
3N1J	-11.386	-11.557	3KJP	-11.180	-9.197	3Q0B	-8.134	-9.051
3PIH	-11.890	-10.495	3QMH	-6.502	-6.760	3QMB	-7.438	-6.693
3U7F	-8.482	-9.038	3RN2	-9.476	-8.693	4ATK	-11.956	-12.070
2LTT	-10.628	-10.133	4HIO	-10.467	-10.133	4HIK	-10.388	-10.100
4A76	-9.855	-9.324	4HJ7	-11.209	-10.422	4HID	-8.273	-10.433
4LJ0	-8.590	-9.017	4HT8	-9.471	-11.510	4GCK	-9.256	-9.693
4F2J	-10.364	-10.039	4GCT	-9.915	-9.721	4NI7	-13.223	-10.045
4CH1	-9.003	-9.251	4QJU	-8.768	-10.865	4ZBN	-13.194	-10.140
4R55	-7.876	-9.646	4S0N	-10.751	-9.369	4ZSF	-11.639	-11.021
4RKG	-6.258	-8.954	5A72	-9.916	-10.088	5DWA	-12.332	-10.690
5K83	-7.913	-6.609	5ITH	-10.256	-9.306	5W9S	-9.543	-7.633
5YI3	-8.534	-9.754	5XFP	-8.072	-10.237	5MEY	-9.265	-10.258
5MEZ	-9.001	-10.224	5W2M	-7.084	-7.092	5K17	-6.891	-6.265
6MG1	-10.276	-11.048	5VMV	-12.769	-9.805	6CNQ	-8.242	-8.518
6FQP	-9.229	-9.498	5WWF	-9.029	-9.246	6FQQ	-8.739	-9.538
5ZVB	-5.990	-5.807	5ZVA	-5.809	-5.994	5MPF	-9.605	-9.131
6G1L	-12.332	-11.597	6IIQ	-8.024	-8.403	6IIR	-7.570	-7.953
3ON0	-11.341	-10.844	4HQU	-14.586	-11.762	4HQX	-12.162	-13.474
4A75	-9.232	-9.782	3QSU	-10.511	-10.320	4HJ8	-10.440	-8.443
4HIM	-10.132	-10.447	4HJ5	-9.817	-10.371	4HP1	-7.028	-8.847
4J1J	-8.584	-11.088	4NM6	-8.140	-9.217	4GCL	-9.278	-9.781
3ZPL	-11.751	-10.058	3ZH2	-10.057	-10.890	4HT4	-11.039	-9.919
4LNQ	-8.011	-9.358	4LJR	-10.244	-9.764	4R56	-9.370	-6.164

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
4TMU	-12.030	-7.977	4R22	-10.819	-10.276	4Z3C	-7.661	-8.024
3WPC	-10.496	-11.423	3WPD	-11.619	-10.488	2N8A	-9.573	-9.975
5HRT	-12.114	-9.798	5T1J	-10.526	-9.609	5VC9	-9.265	-7.914
5HLG	-8.873	-10.369	5W9Q	-8.482	-7.551	6ASB	-7.940	-9.285
6ASD	-7.661	-8.706	5K07	-6.122	-8.789	5YI2	-9.738	-8.680
6MG3	-11.449	-10.443	6FWR	-8.873	-10.264	6CNP	-8.391	-8.704
5ZD4	-10.798	-9.442	5ZMO	-9.163	-9.928	6BWY	-6.251	-9.687
6CRM	-7.264	-11.759	6CC8	-7.181	-9.422	6BUX	-5.807	-7.535
6A2I	-8.701	-7.300	5ZKI	-8.015	-9.841	6KBS	-7.713	-9.830
5ZKL	-10.479	-10.538	5ZMD	-7.407	-9.002	6ON0	-9.605	-9.870

2.2 The S142 Dataset

Table S3: Experimental and predicted binding free energies (ΔG) for the S142 dataset.

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
2A9X	-9.303	-10.473	3BX3	-9.874	-10.284	3IRW	-14.996	-11.346
3IWN	-12.270	-13.266	3K0J	-10.992	-12.732	3QGB	-11.528	-11.272
2XS2	-10.113	-7.344	3QGC	-10.982	-11.091	4GHA	-8.590	-9.518
3V6Y	-11.464	-11.558	2LUP	-6.090	-9.969	4M59	-9.531	-12.078
2MTV	-9.526	-7.575	4RCM	-6.350	-8.768	5EIM	-8.123	-8.037
5GXH	-7.661	-9.352	5KLA	-10.334	-11.677	5EN1	-8.942	-8.920
5F5H	-9.668	-9.548	5WZK	-9.265	-10.278	5HO4	-9.462	-9.153
5U9B	-9.388	-8.399	5WZJ	-10.751	-10.393	5TF6	-11.639	-10.197
5SZE	-10.459	-9.299	5WZG	-10.218	-10.354	5M8I	-5.736	-8.418
5UDZ	-9.592	-8.432	5YTV	-8.043	-7.913	6FQ3	-8.015	-8.680
5YTX	-8.007	-8.025	5YKI	-12.030	-9.498	6DCL	-10.647	-9.177
6GD3	-5.191	-8.436	6G2K	-6.427	-8.578	6CMN	-11.727	-9.590
5YTS	-7.577	-7.544	5WWG	-9.077	-8.893	5WWF	-9.029	-8.777
5YTT	-7.394	-7.730	6FQR	-6.073	-7.331	6GX6	-7.264	-6.107
5WWE	-8.550	-9.052	6GC5	-8.435	-6.123	6RT6	-6.755	-7.439
6NOF	-10.617	-10.476	6R7B	-10.558	-9.283	6NOC	-10.490	-10.608
6NOH	-10.421	-10.598	6A6J	-9.068	-8.604	6NOD	-10.280	-11.411
6G99	-6.176	-8.955	6RT7	-7.405	-7.235	6U9X	-10.086	-9.517

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
6NY5	-9.952	-10.058	6GBM	-5.556	-9.276	1EC6	-7.990	-8.215
1M8Y	-9.270	-12.626	1RPU	-13.300	-9.854	1UTD	-16.890	-9.025
2B6G	-10.600	-9.883	2ERR	-12.200	-8.730	2F8K	-10.300	-9.521
2G4B	-7.830	-8.004	2KFY	-8.840	-8.235	2KG0	-7.400	-8.317
2KG1	-7.450	-8.066	2KX5	-11.400	-10.711	2KXN	-8.170	-8.520
2L41	-4.250	-7.391	2LA5	-11.500	-10.650	2LEB	-9.320	-9.403
2LEC	-9.440	-9.346	2M8D	-8.730	-8.557	2MJH	-9.670	-8.932
2MXY	-7.900	-6.865	2MZ1	-6.870	-7.919	2N82	-10.300	-9.990
2RRA	-7.940	-8.340	2RU3	-8.520	-9.249	2XC7	-7.040	-8.415
2XFM	-8.240	-7.512	2XNR	-5.400	-7.238	2ZKO	-8.050	-9.846
3BSB	-10.200	-11.009	3BSX	-11.500	-10.532	3BX2	-9.970	-9.886
3EQT	-9.520	-9.562	3GIB	-10.690	-9.069	3K49	-12.050	-10.890
3K4E	-10.800	-11.583	3K5Q	-9.300	-8.987	3K5Y	-10.540	-9.138
3K5Z	-9.380	-10.044	3K61	-8.890	-9.736	3K62	-8.740	-9.416
3K64	-9.220	-9.080	3L25	-8.175	-9.889	3LQX	-12.220	-11.041
3MDG	-7.850	-8.541	3MOJ	-13.000	-10.866	3NCU	-10.300	-9.436
3NMR	-8.440	-7.327	3NNH	-6.190	-8.412	3O3I	-6.520	-7.071
3O6E	-7.070	-6.522	3Q0L	-12.300	-11.563	3Q0M	-12.500	-12.203
3Q0N	-10.500	-11.819	3Q0P	-12.800	-10.550	3Q0Q	-13.300	-12.919
3Q0R	-13.800	-12.187	3Q0S	-10.800	-13.100	3QG9	-10.600	-11.410
3U4M	-15.900	-11.271	3V71	-11.100	-10.082	3V74	-11.600	-11.444
3WBM	-9.980	-10.359	4CIO	-9.760	-8.356	4ED5	-9.080	-8.419
4ERD	-9.540	-9.431	4HT8	-9.380	-10.120	4JVH	-9.590	-8.857
4KJI	-8.940	-10.143	4LG2	-9.540	-8.546	4NL3	-7.380	-10.311
4O26	-8.200	-9.945	4OE1	-12.110	-9.528	4QI2	-9.440	-9.448
4QVC	-11.560	-10.141	4QVD	-10.120	-11.080	4R3I	-7.770	-7.439
4RCJ	-8.180	-8.683	4TUX	-10.400	-9.879	4U8T	-9.130	-7.510
4Z31	-8.790	-9.128	5DNO	-7.830	-8.487	5ELR	-6.250	-9.016
5V7C	-6.990	-9.281	5W1I	-12.790	-10.724	5WZH	-10.460	-10.501
6D12	-9.300	-10.253						

2.3 The S322 Dataset

Table S4: Experimental and predicted binding free energies (ΔG) for the S322 dataset.

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
1HVO	-6.760	-7.226	1WET	-7.940	-11.440	2PUF	-7.769	-11.062
1QPZ	-11.704	-10.478	1QP0	-10.165	-11.059	1QP7	-8.327	-8.090
1FJX	-12.070	-12.625	1J75	-10.165	-8.913	1JFS	-11.803	-10.968
1J5K	-7.529	-8.077	1PO6	-9.276	-9.632	1P51	-11.528	-11.447
1QZG	-8.614	-9.820	1OSB	-9.754	-9.755	1HVN	-7.227	-6.768
1BDH	-8.242	-8.273	1QP4	-10.906	-10.964	1QQB	-7.769	-8.822
1TW8	-12.192	-12.403	1QQA	-8.722	-7.864	1DH3	-12.070	-10.220
1JJ4	-11.991	-10.522	1FYM	-10.086	-9.240	1JH9	-11.859	-8.205
1JT0	-9.965	-10.360	1P78	-11.528	-11.575	1P71	-11.528	-11.430
1OMH	-9.754	-9.754	1S40	-12.983	-9.734	1U1L	-9.503	-8.950
1U1R	-9.053	-9.083	1U1N	-8.862	-9.706	1U1O	-9.855	-9.703
2BJC	-14.996	-9.816	1ZZI	-7.713	-7.881	2B0D	-8.242	-9.204
2GII	-12.783	-12.769	2GIE	-12.592	-12.424	2GIH	-12.252	-12.279
2ADY	-10.707	-10.470	2AC0	-10.364	-10.593	2AYB	-11.859	-11.559
2ERE	-10.256	-10.138	2GE5	-8.751	-9.085	2O6M	-10.751	-9.741
3D6Z	-8.204	-6.800	2VYE	-9.991	-9.808	3IGM	-8.590	-8.929
3HXQ	-12.572	-12.333	3EQT	-9.514	-9.508	3H15	-7.455	-8.929
2KAE	-11.039	-9.052	3MQ6	-12.572	-11.236	3JSP	-11.995	-11.966
3AAF	-8.994	-9.124	3N1L	-11.407	-11.237	3N1K	-11.236	-11.407
3R8F	-9.487	-10.585	2RRA	-7.940	-8.340	3QMI	-6.709	-6.576
2KXN	-7.700	-8.578	1U1P	-9.107	-9.067	1U1M	-8.901	-8.950
1U1K	-8.856	-9.146	1U1Q	-9.706	-9.325	2AOR	-8.242	-7.950
2AOQ	-7.438	-8.185	2I9K	-12.983	-11.701	2GIJ	-12.783	-12.756
2GIG	-12.252	-12.261	2CCZ	-9.543	-9.670	2AHI	-10.496	-10.680
2ERG	-10.364	-10.131	2AYG	-11.859	-11.871	2ES2	-8.843	-8.864
2ATA	-9.646	-10.486	2NP2	-9.897	-10.332	3D6Y	-6.799	-8.203
2VY1	-9.573	-9.619	3HXO	-12.572	-10.434	3GIB	-12.070	-9.425
3D2W	-9.355	-8.362	2KKF	-5.939	-8.160	3M9E	-9.388	-9.679
3JSO	-12.402	-11.844	3K3R	-11.966	-12.410	3N1I	-11.554	-11.391
3N1J	-11.386	-11.543	3KJP	-11.180	-9.107	3Q0B	-8.134	-9.133
3PIH	-11.890	-10.726	3QMH	-6.502	-6.783	3QMB	-7.438	-6.892
3U7F	-8.482	-8.521	3RN2	-9.476	-8.758	4ATK	-11.956	-12.002
2LTT	-10.628	-10.323	4HIO	-10.467	-10.180	4HIK	-10.388	-10.364
4A76	-9.855	-9.274	4HJ7	-11.209	-10.408	4HID	-8.273	-10.425

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
4LJ0	-8.590	-9.068	4HT8	-9.471	-10.284	4GCK	-9.256	-9.689
4F2J	-10.364	-9.878	4GCT	-9.915	-9.858	4NI7	-13.223	-10.345
4CH1	-9.003	-8.548	4QJU	-8.768	-11.131	4ZBN	-13.194	-10.103
4R55	-7.876	-9.325	4S0N	-10.751	-9.301	4ZSF	-11.639	-11.165
4RKG	-6.258	-8.980	5A72	-9.916	-10.278	5DWA	-12.332	-10.896
5K83	-7.913	-7.264	5ITH	-10.256	-8.855	5W9S	-9.543	-7.710
5YI3	-8.534	-9.698	5XFP	-8.072	-9.177	5MEY	-9.265	-9.167
5MEZ	-9.001	-9.384	5W2M	-7.084	-6.741	5K17	-6.891	-8.259
6MG1	-10.276	-10.966	5VMV	-12.769	-9.771	6CNQ	-8.242	-8.108
6FQP	-9.229	-9.097	5WWF	-9.029	-8.842	6FQQ	-8.739	-9.350
5ZVB	-5.990	-5.745	5ZVA	-5.809	-6.015	5MPF	-9.605	-8.895
6G1L	-12.332	-11.340	6IIQ	-8.024	-8.503	6IIR	-7.570	-8.067
3ON0	-11.341	-10.682	4HQU	-14.586	-11.618	4HQX	-12.162	-13.372
4A75	-9.232	-9.764	3QSU	-10.511	-9.271	4HJ8	-10.440	-8.476
4HIM	-10.132	-10.458	4HJ5	-9.817	-10.388	4HP1	-7.028	-8.723
4J1J	-8.584	-10.830	4NM6	-8.140	-8.601	4GCL	-9.278	-9.690
3ZPL	-11.751	-10.363	3ZH2	-10.057	-10.904	4HT4	-11.039	-10.697
4LNQ	-8.011	-9.399	4LJR	-10.244	-9.695	4R56	-9.370	-7.009
4TMU	-12.030	-8.235	4R22	-10.819	-10.117	4Z3C	-7.661	-8.099
3WPC	-10.496	-11.349	3WPD	-11.619	-10.537	2N8A	-9.573	-10.712
5HRT	-12.114	-9.735	5T1J	-10.526	-9.740	5VC9	-9.265	-7.629
5HLG	-8.873	-10.472	5W9Q	-8.482	-7.690	6ASB	-7.940	-8.815
6ASD	-7.661	-8.524	5K07	-6.122	-7.002	5YI2	-9.738	-8.693
6MG3	-11.449	-10.123	6FWR	-8.873	-9.624	6CNP	-8.391	-8.247
5ZD4	-10.798	-9.382	5ZMO	-9.163	-9.646	6BWY	-6.251	-9.902
6CRM	-7.264	-12.002	6CC8	-7.181	-8.992	6BUX	-5.807	-7.637
6A2I	-8.701	-7.286	5ZKI	-8.015	-9.564	6KBS	-7.713	-9.610
5ZKL	-10.479	-10.343	5ZMD	-7.407	-9.140	6ON0	-9.605	-10.027
2A9X	-9.303	-10.690	3BX3	-9.874	-10.327	3IRW	-14.996	-10.938
3IWN	-12.270	-10.902	3K0J	-10.992	-13.127	3QGB	-11.528	-11.195
2XS2	-10.113	-8.308	3QGC	-10.982	-11.351	4GHA	-8.590	-9.688
3V6Y	-11.464	-11.553	2LUP	-6.090	-10.774	4M59	-9.531	-12.018
2MTV	-9.526	-7.708	4RCM	-6.350	-9.235	5EIM	-8.123	-8.468
5GXH	-7.661	-9.430	5KLA	-10.334	-11.633	5EN1	-8.942	-9.055
5F5H	-9.668	-9.147	5WZK	-9.265	-10.225	5HO4	-9.462	-9.166
5U9B	-9.388	-8.906	5WZJ	-10.751	-10.439	5TF6	-11.639	-10.553
5SZE	-10.459	-9.448	5WZG	-10.218	-10.425	5M8I	-5.736	-8.523

PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA	PDBID	Exp BA	Pred BA
5UDZ	-9.592	-9.424	5YTV	-8.043	-7.575	6FQ3	-8.015	-9.025
5YTX	-8.007	-7.615	5YKI	-12.030	-10.131	6DCL	-10.647	-9.099
6GD3	-5.191	-7.380	6G2K	-6.427	-6.590	6CMN	-11.727	-9.537
5YTS	-7.577	-7.593	5WWG	-9.077	-8.937	5YTT	-7.394	-7.684
6FQR	-6.073	-7.266	6GX6	-7.264	-6.113	5WWE	-8.550	-8.960
6GC5	-8.435	-6.263	6RT6	-6.755	-7.768	6NOF	-10.617	-10.414
6R7B	-10.558	-9.604	6NOC	-10.490	-10.480	6NOH	-10.421	-10.600
6A6J	-9.068	-8.690	6NOD	-10.280	-11.608	6G99	-6.176	-8.814
6RT7	-7.405	-7.768	6U9X	-10.086	-9.985	6NY5	-9.952	-10.305
6GBM	-5.556	-9.940	1EC6	-7.990	-9.086	1M8Y	-9.270	-12.676
1RPU	-13.300	-9.964	1UTD	-16.890	-9.426	2B6G	-10.600	-9.984
2ERR	-12.200	-8.837	2F8K	-10.300	-9.838	2G4B	-7.830	-8.527
2KFY	-8.840	-8.242	2KG0	-7.400	-8.542	2KG1	-7.450	-8.217
2KX5	-11.400	-9.900	2L41	-4.250	-7.366	2LA5	-11.500	-9.941
2LEB	-9.320	-9.401	2LEC	-9.440	-9.318	2M8D	-8.730	-8.704
2MJH	-9.670	-8.855	2MXY	-7.900	-6.876	2MZ1	-6.870	-7.895
2N82	-10.300	-10.288	2RU3	-8.520	-9.046	2XC7	-7.040	-8.838
2XFM	-8.240	-7.622	2XNR	-5.400	-7.598	2ZKO	-8.050	-10.387
3BSB	-10.200	-9.906	3BSX	-11.500	-10.581	3BX2	-9.970	-9.808
3K49	-12.050	-10.919	3K4E	-10.800	-11.756	3K5Q	-9.300	-8.994
3K5Y	-10.540	-9.156	3K5Z	-9.380	-9.929	3K61	-8.890	-9.441
3K62	-8.740	-9.403	3K64	-9.220	-9.071	3L25	-8.175	-9.369
3LQX	-12.220	-10.865	3MDG	-7.850	-8.561	3MOJ	-13.000	-10.732
3NCU	-10.300	-9.208	3NMR	-8.440	-7.498	3NNH	-6.190	-8.508
3O3I	-6.520	-7.067	3O6E	-7.070	-6.518	3Q0L	-12.300	-11.788
3Q0M	-12.500	-12.841	3Q0N	-10.500	-12.090	3Q0P	-12.800	-10.631
3Q0Q	-13.300	-12.998	3Q0R	-13.800	-12.026	3Q0S	-10.800	-13.101
3QG9	-10.600	-11.421	3U4M	-15.900	-10.450	3V71	-11.100	-10.349
3V74	-11.600	-11.450	3WBM	-9.980	-10.604	4CIO	-9.760	-8.548
4ED5	-9.080	-8.982	4ERD	-9.540	-9.967	4JVH	-9.590	-8.894
4KJI	-8.940	-10.456	4LG2	-9.540	-8.543	4NL3	-7.380	-10.121
4O26	-8.200	-11.407	4OE1	-12.110	-9.565	4QI2	-9.440	-10.179
4QVC	-11.560	-10.097	4QVD	-10.120	-10.982	4R3I	-7.770	-6.926
4RCJ	-8.180	-8.311	4TUX	-10.400	-9.742	4U8T	-9.130	-7.530
4Z31	-8.790	-8.985	5DNO	-7.830	-8.605	5ELR	-6.250	-8.884
5V7C	-6.990	-8.962	5W1I	-12.790	-11.236	5WZH	-10.460	-10.608
6D12	-9.300	-10.239						