Inventory

The supplemental information contains the following items:

Methods: describe the bioinformatic approaches and processes used to re-analyze ChIP-seq data and the information of data availability and deposition.

Table S1: related to Figure 1A, summarize all the citations for ChIP-seq data source used to generate Figure 1A.

Table S2: related to Figure 1A, includes all the data points used to plot the histone PTMs in Figure 1A.

References for supplemental information

Supplemental Information

A G(enomic)P(ositioning)S(ystem) for Plant RNAPII Transcription

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Methods

All custom Python, Bash and R scripts used in the computational analyses below are shared on GitHub (https://github.com/simras/scripts_histone_marks).

Retrieval of data

All histone mark ChIP-seq datasets were wild type (Col-0) *Arabidopsis thaliana* seedlings, 5 days to 3 weeks old (see supplementary table S2 for more information). These data sets were identified through queries to the SRA [S1] and DNA Data Bank of Japan (DDBJ) [S2]. SRA-files were retrieved from the SRA and uncompressed using fastq-dump.

Mapping and calculation of genomic coverage

Before mapping, the most frequent 3'adapters were removed with cutadapt [S3]. Reads from ChIP-seq libraries were aligned to the *Arabidopsis Thaliana* genome TAIR10 using the STAR Ver 2.60c aligner [S4] (options: --outSAMmultNmax 1, --seedSearchStartLmax 30, --alignEndsType EndToEnd, --alignIntronMax 1) [S5]. Clustering, normalization and peak calling were performed with MACS2 (options: -w -S -g 1.35+08 -m 3,50).

Estimation of gene borders

Boundaries of protein coding genes were normalized for Col-0 seedling using Araport11 gene annotation [S6] and in-house and published datasets of TSS-seq and Direct RNA-Seq (DR-Seq) were

merged and normalized by calculating the average coverage *e* for each dataset as the fraction of basecalls *R* over the genome length *l*.

$$e = \frac{R}{l}$$

The basecall count in each position c_i was normalized to n_i as follows.

$$n_i = \frac{c_i}{e}$$

TSS or TTS were assigned when non-zero datapoint in the corresponding data track inside the transcript boundary. The coordinate of the maximal datapoint was selected and assigned to the gene features. These boundary windows were estimated by including all transcript boundaries and protein coding transcript boundaries annotated for each gene.

Quantification of rate of transcription

Rate of transcription was calculated using native transcription profile from pNET-seq datasets [S7] in all conditions (total RNA, Unphosphorylated, Serine 2P and Serine 5P). UMIs were trimmed and duplicated reads removed [S3]. The 2nd mate reads were mapped with STAR ver 2.6.0c (options: --outSAMmultNmax 1, --seedSearchStartLmax 30, --alignEndsType EndToEnd, --alignIntronMax 1) and non-uniquely mapped reads discarded. The inverted reads were overlapped with our custom normalized gene annotation [S4]. Transcripts Per Million (TPM) was calculated for each protein coding genes with a custom python script. Finally, each gene was associated the corresponding TPM value and the genes between highest (25th higher quantile) and lowest (25th lower quantile) transcription rate were used to plot the metagene profiles.

Binned metagene profiles

To calculate mean coverage across a metagene, ChiP-Seq genomic coverage was overlapped with our normalized annotation of protein coding genes using bedtools intersect [S8]. The genomic coverage was averaged with a custom script for 200 bins for each coding gene boundaries. Flanks 500nt upstream and downstream of protein coding genes were averaged in 100 bins. The relative enrichment along bins was associated a z-scores by withdrawing the mean enrichment divided by the standard deviation. The Z-scores available in Table S1 were plotted in R [S9].

Table S1

Histone PTMs / Variants	Residue	Modification	Abbreviation	Reference
H2A	Lysine 121	Mono-ubiquitination	H2AK121Ub	[S10]
H2B	Lysine 122 to 145	Mono-ubiquitination	H2Bub	[S11]
H3	Lysine 4	Mono-methylation	H3K4me1	[S12]
		Di-methylation	H3K4me2	[S12]
		Tri-methylation	H3K4me3	[S13]
	Lysine 9	Acetylation	H3K9ac	[S14]
	Lysine 14	Acetylation	H3K14ac	[S14]
	Lysine 18	Acetylation	H3K18ac	[S14]
	Lysine 36	Di-methylation	H3K36me2	[S15]
		Tri-methylation	H3K36me3	[S16]
H4	Lysine 5	Acetylation	H4K5ac	[S14]
	Lysine 8	Acetylation	H4K8ac	[S14]
	Lysine 12	Acetylation	H4K12ac	[S14]
	Lysine 16	Acetylation	H4K16ac	[S14]

Table S2

	Z-scores at individual positions**							
Genomic positions*	H2AK121ub	H3K36me2	H3K36me3	H3K4me1	H3K4me2	H3K4me3	H2Bub	H3ac&H4ac
1	-0.29666	-0.90033	-0.74564	-0.96442	-0.43629	-0.01856	-0.76545	-0.12261
2	-0.30495	-0.90444	-0.74964	-0.9697	-0.44006	-0.01883	-0.77194	-0.12342
3	-0.31342	-0.908	-0.75567	-0.9753	-0.44423	-0.01933	-0.7789	-0.12419
4	-0.32114	-0.91148	-0.76269	-0.98066	-0.44891	-0.01993	-0.78585	-0.12533
5	-0.32887	-0.91376	-0.76696	-0.98588	-0.45311	-0.02061	-0.79182	-0.12703
6	-0.33631	-0.92127	-0.77118	-0.99122	-0.45714	-0.02161	-0.79857	-0.12877
7	-0.34502	-0.93159	-0.77603	-0.99642	-0.46138	-0.02245	-0.80529	-0.13056
8	-0.35391	-0.94042	-0.78023	-1.00107	-0.4655	-0.02325	-0.81204	-0.13272
9	-0.36242	-0.94974	-0.78208	-1.00565	-0.46954	-0.02425	-0.81804	-0.13545
10	-0.37081	-0.9561	-0.78676	-1.01138	-0.47465	-0.02591	-0.82516	-0.13863
11	-0.37826	-0.96247	-0.79051	-1.01614	-0.47942	-0.02742	-0.83201	-0.14167
12	-0.38759	-0.96973	-0.79574	-1.02235	-0.48394	-0.02938	-0.83882	-0.14493
13	-0.39738	-0.97929	-0.79989	-1.02752	-0.488	-0.03106	-0.84517	-0.14848
14	-0.40757	-0.98859	-0.80471	-1.03136	-0.49202	-0.03278	-0.85178	-0.1523
15	-0.41679	-0.99531	-0.81162	-1.03544	-0.49672	-0.03502	-0.8588	-0.15702
16	-0.4256	-0.99788	-0.81545	-1.04067	-0.50161	-0.03732	-0.86543	-0.16139
17	-0.43443	-1.00529	-0.81981	-1.04558	-0.50612	-0.03952	-0.87178	-0.16624
18	-0.44363	-1.01339	-0.82566	-1.05087	-0.5104	-0.0419	-0.87909	-0.1716
19	-0.45255	-1.02143	-0.82878	-1.05631	-0.51432	-0.04432	-0.88632	-0.17728
20	-0.46151	-1.02696	-0.83154	-1.06145	-0.51877	-0.04658	-0.89259	-0.18282
21	-0.47143	-1.03256	-0.83484	-1.06525	-0.52328	-0.04894	-0.89904	-0.18896
22	-0.48176	-1.03633	-0.8399	-1.06906	-0.52739	-0.05168	-0.90509	-0.19495
23	-0.49205	-1.04065	-0.84452	-1.07345	-0.53181	-0.05448	-0.91116	-0.2013
24	-0.50272	-1.04763	-0.8489	-1.07765	-0.53622	-0.05745	-0.91728	-0.20813
25	-0.51269	-1.05163	-0.85519	-1.08181	-0.54033	-0.06001	-0.92315	-0.21497
26	-0.52277	-1.05432	-0.85817	-1.086	-0.54397	-0.06291	-0.92964	-0.22199
27	-0.53409	-1.05565	-0.86331	-1.09036	-0.54806	-0.06596	-0.93648	-0.22941
28	-0.54479	-1.05652	-0.86863	-1.09419	-0.55154	-0.06894	-0.94271	-0.23746
29	-0.55586	-1.06576	-0.87426	-1.09853	-0.55471	-0.07184	-0.94897	-0.24559
30	-0.56621	-1.07254	-0.8784	-1.10235	-0.55811	-0.07513	-0.95469	-0.25396
31	-0.57636	-1.07835	-0.88039	-1.10622	-0.5622	-0.07836	-0.96103	-0.26253
32	-0.58717	-1.08357	-0.88185	-1.10989	-0.56549	-0.08152	-0.96632	-0.27127
33	-0.59787	-1.08405	-0.88495	-1.11313	-0.56845	-0.08435	-0.97178	-0.28023
34	-0.60708	-1.08801	-0.88782	-1.11584	-0.57116	-0.08762	-0.97716	-0.28922
35	-0.61657	-1.09984	-0.8922	-1.11925	-0.57452	-0.09084	-0.98271	-0.29862
36	-0.62735	-1.10808	-0.89596	-1.12267	-0.57761	-0.09397	-0.98825	-0.30784
37	-0.63677	-1.1139	-0.89852	-1.12565	-0.58	-0.09646	-0.99413	-0.31711
38	-0.64703	-1.11852	-0.90024	-1.12816	-0.58368	-0.0993	-0.99869	-0.32748
39	-0.65697	-1.1243	-0.90151	-1.13079	-0.58637	-0.10156	-1.00253	-0.33741
40	-0.66542	-1.12727	-0.90115	-1.13333	-0.5894	-0.10401	-1.00723	-0.34727
41	-0.67309	-1.12989	-0.9014	-1.13613	-0.59196	-0.10643	-1.01109	-0.35748
42	-0.68032	-1.13446	-0.90301	-1.13789	-0.59366	-0.10835	-1.01461	-0.36719
43	-0.68812	-1.14036	-0.90364	-1.14016	-0.59532	-0.11053	-1.01853	-0.37713
44	-0.69575	-1.14616	-0.90444	-1.14185	-0.59602	-0.11238	-1.02198	-0.38666
45	-0.70338	-1.15035	-0.90439	-1.14412	-0.59756	-0.11412	-1.02511	-0.39625
46	-0.70968	-1.15303	-0.90397	-1.14554	-0.59787	-0.11538	-1.02797	-0.40583
47	-0.71662	-1.15697	-0.90518	-1.14823	-0.59795	-0.11666	-1.03182	-0.4152
48	-0.72096	-1.15754	-0.90506	-1.14965	-0.59782	-0.1171	-1.03537	-0.42418
49	-0.72623	-1.1564	-0.90657	-1.15043	-0.5972	-0.1177	-1.03781	-0.43326
50	-0.73109	-1.16045	-0.90469	-1.15161	-0.5966	-0.11806	-1.04044	-0.44186
51	-0.73561	-1.1671	-0.90166	-1.15326	-0.59546	-0.11801	-1.04327	-0.4505
52	-0.7384	-1.1685	-0.89774	-1.15412	-0.59408	-0.11753	-1.04518	-0.45888
53	-0.7409	-1.16793	-0.89501	-1.15439	-0.59174	-0.11663	-1.04758	-0.46654
54	-0.74105	-1.17415	-0.89347	-1.15368	-0.58937	-0.11608	-1.04968	-0.47367
55	-0.74025	-1.17863	-0.89069	-1.15261	-0.58651	-0.11391	-1.05106	-0.48031
56	-0.73938	-1.1825	-0.88722	-1.15196	-0.58303	-0.11138	-1.05166	-0.48656
57	-0.73728	-1.17992	-0.88458	-1.15132	-0.57813	-0.10767	-1.05311	-0.49117
58	-0.73414	-1.17776	-0.88005	-1.15147	-0.57306	-0.10326	-1.05385	-0.49602
59	-0.73008	-1.17488	-0.87502	-1.15039	-0.56726	-0.0977	-1.05464	-0.49998
60	-0.72404	-1.17441	-0.86759	-1.14991	-0.56065	-0.09128	-1.05505	-0.50305

61	-0.71647	-1.1773	-0.86012	-1.14844	-0.55402	-0.08381	-1.05478	-0.50459
62	-0.70896	-1.17773	-0.85264	-1.14609	-0.54679	-0.07506	-1.05397	-0.50562
63	-0.69897	-1.18004	-0.84419	-1.14415	-0.53868	-0.06494	-1.05337	-0.50492
64	-0.687	-1.18214	-0.83663	-1.14212	-0.52945	-0.054	-1.0525	-0.50261
65	-0.67513	-1.18591	-0.82815	-1.13874	-0.51808	-0.04192	-1.05089	-0.49924
66	-0.66074	-1.18842	-0.81975	-1.13497	-0.50712	-0.0289	-1.04883	-0.49433
67	-0.64574	-1.18772	-0.80794	-1.13149	-0.4946	-0.01456	-1.04678	-0.4877
68	-0.6287	-1.18625	-0.79662	-1.12754	-0.48118	0.001038	-1.0436	-0.47921
69	-0.61089	-1.18042	-0.78217	-1.12388	-0.46627	0.017907	-1.04119	-0.46866
70	-0.59162	-1.17979	-0.77013	-1.12019	-0.45037	0.036371	-1.03795	-0.45626
71	-0.57141	-1.18299	-0.75595	-1.11509	-0.43343	0.056523	-1.03437	-0.4413
72	-0.54758	-1.18569	-0.74288	-1.10923	-0.41517	0.077264	-1.03147	-0.42428
73	-0.52196	-1.18533	-0.72801	-1.10422	-0.39545	0.099289	-1.02775	-0.40532
74	-0.49447	-1.18279	-0.71205	-1.09894	-0.3741	0.123133	-1.02217	-0.38379
75	-0.4658	-1.17619	-0.69616	-1.09257	-0.35079	0.148801	-1.01693	-0.35932
76	-0.43399	-1.17447	-0.67731	-1.08534	-0.32668	0.175955	-1.01129	-0.33249
77	-0.40196	-1.16639	-0.65516	-1.07778	-0.30067	0.205019	-1.00452	-0.30296
78	-0.36672	-1.15677	-0.63466	-1.07107	-0.27314	0.235614	-0.99634	-0.27118
79	-0.33034	-1.15154	-0.61268	-1.06323	-0.24384	0.267517	-0.98772	-0.23691
80	-0.29135	-1.14724	-0.59122	-1.05409	-0.21387	0.300705	-0.97919	-0.1997
81	-0.25237	-1.14083	-0.5665	-1.04445	-0.1816	0.336128	-0.96894	-0.1591
82	-0.21021	-1.13862	-0.54288	-1.03472	-0.14833	0.372614	-0.95805	-0.11595
83	-0.16655	-1.13116	-0.51925	-1.02444	-0.11322	0.410287	-0.94694	-0.07023
84	-0.12026	-1.1211	-0.49389	-1.01364	-0.07647	0.449469	-0.93472	-0.02172
85	-0.07186	-1.11107	-0.46891	-1.00388	-0.038	0.490106	-0.92141	0.02933
86	-0.02382	-1.10326	-0.44084	-0.99369	0.002326	0.533459	-0.90774	0.082448
87	0.02784	-1.09562	-0.41368	-0.98199	0.043763	0.577472	-0.89353	0.138783
88	0.081968	-1.09038	-0.38351	-0.9694	0.0871	0.623317	-0.87809	0.197788
89	0.136943	-1.08038	-0.35169	-0.95775	0.132345	0.670345	-0.86207	0.259099
90	0.193605	-1.06733	-0.31948	-0.94564	0.178887	0.719131	-0.84426	0.322193
91	0.250582	-1.0562	-0.28796	-0.93396	0.226946	0.769459	-0.82822	0.38716
92	0.307844	-1.04696	-0.25264	-0.9197	0.27667	0.82165	-0.80967	0.456752
93	0.370043	-1.03579	-0.21886	-0.90637	0.327738	0.875242	-0.79014	0.528258
94	0.431497	-1.02178	-0.18503	-0.89176	0.380289	0.930285	-0.76939	0.602107
95	0.495344	-1.0062	-0.14981	-0.87694	0.43383	0.985638	-0.74782	0.677643
96	0.560497	-0.992	-0.11059	-0.8623	0.487717	1.0423	-0.72503	0.755543
97	0.626858	-0.9769	-0.06959	-0.84683	0.543471	1.100608	-0.70133	0.835506
98	0.693705	-0.95823	-0.02865	-0.83157	0.599584	1.159763	-0.67747	0.916629
99	0.761275	-0.9422	0.011738	-0.81656	0.656485	1.2194	-0.65475	0.9984
100	0.826975	-0.91886	0.050666	-0.80022	0.715714	1.280423	-0.62914	1.08248
101	0.9401	-0.89785	0.133533	-0.77659	0.823677	1.400671	-0.57641	1.241505
102	1.106226	-0.86843	0.25982	-0.74306	0.977905	1.581525	-0.49282	1.477467
103	1.273461	-0.83343	0.38445	-0.70925	1.130691	1.760223	-0.40508	1.713512
104	1.437194	-0.81134	0.507841	-0.67684	1.277655	1.93186	-0.31646	1.942418
105	1.596628	-0.79488	0.626666	-0.64534	1.415711	2.094771	-0.22841	2.158653
106	1.744079	-0.7773	0.738397	-0.61477	1.544197	2.245376	-0.14321	2.355105
107	1.880228	-0.75627	0.845503	-0.58593	1.662238	2.383572	-0.0593	2.53133
108	2.004416	-0.7455	0.949824	-0.55836	1.771012	2.508615	0.019572	2.685314
109	2.117306	-0.7375	1.042547	-0.53083	1.868741	2.617866	0.096702	2.818194
110	2.216653	-0.72842	1.123551	-0.50288	1.958276	2.71346	0.171542	2.930344
111	2.303323	-0.71655	1.200989	-0.47554	2.037813	2.795871	0.242744	3.021088
112	2.378573	-0.7057	1.271604	-0.44894	2.108163	2.863938	0.314949	3.09406
113	2.442834	-0.6928	1.336497	-0.42078	2.171379	2.918589	0.388945	3.148453
114	2.497081	-0.67263	1.396967	-0.39265	2.227461	2.960604	0.457486	3.186378
115	2.536577	-0.65598	1.446459	-0.36417	2.276581	2.991825	0.523486	3.20867
116	2.565813	-0.64385	1.490117	-0.33698	2.318145	3.010935	0.586072	3.217842
117	2.587454	-0.63469	1.528729	-0.30703	2.354598	3.018745	0.645439	3.214475
118	2.599206	-0.62823	1.565583	-0.27555	2.384539	3.016433	0.700524	3.1995
119	2.604989	-0.62411	1.593992	-0.24521	2.40994	3.005661	0.755193	3.174175
120	2.605964	-0.62489	1.625264	-0.21549	2.431486	2.985669	0.804785	3.140242
121	2.600375	-0.61227	1.658088	-0.18373	2.447548	2.959154	0.852951	3.09883
122	2.590537	-0.59406	1.687877	-0.15215	2.457759	2.927059	0.899414	3.051268
123	2.570305	-0.57359	1.71048	-0.11888	2.466066	2.889552	0.945669	2.999468
124	2.547201	-0.55934	1.725372	-0.08525	2.469861	2.846303	0.990229	2.942442
125	2.519769	-0.55224	1.741003	-0.05299	2.469586	2.798128	1.03359	2.881973

126	2.493067	-0.5398	1.752769	-0.0176	2.467293	2.746969	1.076174	2.81814
127	2.462023	-0.53123	1.763974	0.016968	2.461853	2.692277	1.112178	2.752226
128	2.425574	-0.52424	1.773701	0.053025	2.453247	2.634386	1.147556	2.683974
129	2.390874	-0.51415	1.778454	0.088643	2.443561	2.574538	1.183788	2.614509
130	2.35168	-0.51363	1.777768	0.120848	2.433663	2.512487	1.215269	2.542702
131	2.311385	-0.5174	1.778791	0.156407	2.418662	2.447551	1.24486	2.470565
132	2.272513	-0.5162	1.780198	0.190504	2.401428	2.380202	1.277596	2.396797
133	2.230694	-0.5049	1.783286	0.224786	2.381706	2.312012	1.307795	2.322767
134	2.185421	-0.49369	1.785249	0.258408	2.359165	2.241989	1.334661	2.249323
135	2.140664	-0.47872	1.778085	0.294032	2.335607	2.171198	1.361475	2.174931
136	2.093813	-0.47461	1.77837	0.33078	2.311191	2.100443	1.386286	2.100432
137	2.0463	-0.45559	1.777612	0.366036	2.285924	2.030108	1.407607	2.026987
138	1.999688	-0.44083	1.774607	0.399744	2.258956	1.958701	1.430844	1.954254
139	1.953341	-0.43425	1.767968	0.435007	2.229439	1.887217	1.451911	1.881043
140	1.907412	-0.42286	1.761091	0.469124	2.198418	1.816906	1.47296	1.80956
141	1.862117	-0.40514	1.756895	0.503513	2.165234	1.747333	1.490942	1.73993
142	1.81728	-0.37897	1.755579	0.537801	2.132043	1.677722	1.509746	1.671341
143	1.772382	-0.35831	1.751794	0.569707	2.098032	1.608905	1.525157	1.604163
144	1.726211	-0.34207	1.745793	0.601062	2.060858	1.539469	1.542658	1.536643
145	1.679737	-0.33277	1.739675	0.633283	2.023505	1.470812	1.55961	1.470759
146	1.634899	-0.32134	1.73428	0.664695	1.984262	1.403234	1.575267	1.407202
147	1.590102	-0.3127	1.726876	0.695764	1.944873	1.337289	1.587208	1.344237
148	1.546694	-0.31002	1.717659	0.725562	1.906325	1.272377	1.593784	1.281428
149	1.502532	-0.30031	1.708984	0.751479	1.866273	1.209188	1.601058	1.220014
150	1.461323	-0.29725	1.697382	0.776779	1.824923	1.146793	1.611159	1.161015
151	1.421873	-0.29176	1.68376	0.803892	1.781902	1.084671	1.619165	1.102651
152	1.381378	-0.28016	1.675498	0.831919	1.740639	1.024625	1.625049	1.04594
153	1.340853	-0.26343	1.672203	0.86076	1.699471	0.966806	1.632029	0.99116
154	1.301535	-0.23702	1.665897	0.889706	1.657795	0.909327	1.636585	0.938301
155	1.267522	-0.219	1.661432	0.916596	1.616845	0.85314	1.639704	0.887551
156	1.23373	-0.21124	1.651753	0.941023	1.575804	0.79784	1.639165	0.838421
157	1.197444	-0.20801	1.640976	0.966577	1.534841	0.744418	1.640759	0.790103
158	1.160006	-0.19297	1.629878	0.992023	1.493727	0.692264	1.641396	0.742732
159	1.12707	-0.18449	1.620602	1.015825	1.45228	0.642039	1.64142	0.696782
160	1.095415	-0.17056	1.611421	1.038444	1.411271	0.593081	1.642047	0.652784
161	1.06336	-0.15117	1.604735	1.062634	1.370538	0.544536	1.644098	0.609285
162	1.032834	-0.13313	1.603303	1.085056	1.330568	0.497531	1.644125	0.568157
163	1.004126	-0.11791	1.594607	1.10591	1.29132	0.453275	1.644072	0.528549
164	0.976645	-0.11135	1.583858	1.126723	1.252479	0.410151	1.642084	0.490093
165	0.947961	-0.08608	1.568801	1.147477	1.214199	0.368726	1.641033	0.452422
166	0.92014	-0.05603	1.555456	1.166405	1.176241	0.328027	1.643073	0.416103
167	0.892834	-0.03209	1.549257	1.18322	1.139331	0.288522	1.64495	0.380909
168	0.86611	-0.01768	1.533634	1.200473	1.102798	0.250717	1.646866	0.346788
169	0.839234	0.011275	1.517729	1.21952	1.066465	0.213324	1.646828	0.313657
170	0.816233	0.02458	1.49995	1.237805	1.030622	0.177815	1.644636	0.281483
171	0.791226	0.035848	1.485538	1.255912	0.995887	0.144333	1.641059	0.250574
172	0.767516	0.068103	1.477681	1.273177	0.960382	0.11126	1.637702	0.22104
173	0.745397	0.097608	1.468942	1.291515	0.925019	0.078428	1.633488	0.192488
174	0.720547	0.110129	1.45884	1.306554	0.890011	0.047643	1.628801	0.164685
175	0.698496	0.132892	1.450082	1.320088	0.85606	0.017381	1.621952	0.137624
176	0.678811	0.161652	1.434933	1.333982	0.823561	-0.01165	1.613471	0.110874
177	0.659861	0.176996	1.420498	1.345944	0.792395	-0.03979	1.605835	0.085489
178	0.639912	0.190247	1.406033	1.358074	0.761233	-0.06704	1.598329	0.061243
179	0.620275	0.212384	1.393019	1.37153	0.731145	-0.09301	1.590731	0.037598
180	0.601056	0.233821	1.380553	1.384656	0.702527	-0.11737	1.580323	0.014875
181	0.584855	0.258061	1.369395	1.396337	0.673876	-0.14205	1.572086	-0.00752
182	0.566943	0.287896	1.364143	1.407793	0.644679	-0.16611	1.565123	-0.02842
183	0.550207	0.311134	1.359318	1.417803	0.617196	-0.18883	1.558538	-0.04896
184	0.534173	0.338527	1.350239	1.427886	0.590197	-0.20969	1.548717	-0.06925
185	0.518549	0.37219	1.337764	1.437814	0.562833	-0.22933	1.539627	-0.08884
186	0.504018	0.386392	1.317727	1.445531	0.536128	-0.24921	1.528705	-0.108
187	0.48859	0.409068	1.295713	1.45495	0.510351	-0.26802	1.515799	-0.1256
188	0.472018	0.43798	1.275976	1.460382	0.485037	-0.28708	1.507858	-0.14279
189	0.45693	0.466574	1.266218	1.468995	0.461183	-0.3048	1.497349	-0.15981
190	0.442112	0.49729	1.25592	1.475703	0.438272	-0.32155	1.48636	-0.17584

191	0.42614	0.534316	1.246773	1.479774	0.414825	-0.33826	1.476265	-0.19082
192	0.411527	0.57338	1.237437	1.483798	0.391278	-0.3535	1.464579	-0.20579
193	0.39731	0.585494	1.21971	1.489178	0.369077	-0.36879	1.454327	-0.22003
194	0.384959	0.59969	1.201759	1.492519	0.347114	-0.38316	1.443928	-0.23359
195	0.373055	0.627085	1.186415	1.500266	0.326136	-0.39665	1.435831	-0.24708
196	0.359916	0.644846	1.17504	1.506342	0.307093	-0.40919	1.425708	-0.25959
197	0.349251	0.671312	1.166587	1.510231	0.288049	-0.42154	1.414552	-0.27124
198	0.3373	0.696629	1.150439	1.511104	0.269935	-0.43352	1.402158	-0.28263
199	0.324482	0.724685	1.133184	1.512118	0.25264	-0.44523	1.390046	-0.2941
200	0.312806	0.766298	1.117811	1.514673	0.236095	-0.45649	1.380524	-0.30549
201	0.301324	0.805175	1.106853	1.519373	0.219048	-0.46693	1.368551	-0.31598
202	0.291905	0.84008	1.09196	1.523242	0.202979	-0.47781	1.35693	-0.32582
203	0.281667	0.87869	1.077689	1.527643	0.186799	-0.48731	1.345727	-0.33593
204	0.27239	0.895969	1.063655	1.530566	0.171024	-0.49653	1.331973	-0.34564
205	0.265162	0.909594	1.0486	1.531794	0.156712	-0.50567	1.319268	-0.35488
206	0.256081	0.939127	1.031075	1.533079	0.142049	-0.51439	1.304095	-0.36382
207	0.246552	0.974106	1.015624	1.534864	0.127442	-0.52252	1.290735	-0.37247
208	0.237322	0.998967	0.9963	1.537545	0.113405	-0.53049	1.277148	-0.38101
209	0.22943	1.033937	0.975264	1.538513	0.099986	-0.53823	1.262527	-0.3896
210	0.221819	1.069406	0.951364	1.540278	0.086793	-0.54579	1.250174	-0.39786
211	0.213313	1.102878	0.928728	1.542213	0.07435	-0.55332	1.237305	-0.40498
212	0.205979	1.14535	0.91023	1.54178	0.062327	-0.55999	1.224473	-0.41149
213	0.197746	1.178333	0.891413	1.541544	0.05071	-0.56704	1.209679	-0.41797
214	0.189193	1.215459	0.873075	1.538381	0.039136	-0.57378	1.193134	-0.4242
215	0.179983	1.235684	0.855571	1.539163	0.027384	-0.58001	1.176828	-0.43013
216	0.170759	1.269776	0.838497	1.537641	0.016611	-0.58625	1.160155	-0.43566
217	0.16471	1.295032	0.818885	1.537011	0.006032	-0.59167	1.141195	-0.44066
218	0.15979	1.328213	0.801293	1.533883	-0.00428	-0.5971	1.126295	-0.44582
219	0.155207	1.368916	0.784082	1.531577	-0.01397	-0.60286	1.111136	-0.4503
220	0.151265	1.408446	0.767546	1.530678	-0.02303	-0.6083	1.096491	-0.45391
221	0.145143	1.44212	0.750825	1.529552	-0.03132	-0.61299	1.082898	-0.45761
222	0.138486	1.469913	0.733695	1.527716	-0.0391	-0.61817	1.069174	-0.46118
223	0.13325	1.500467	0.718678	1.525877	-0.04776	-0.62244	1.056311	-0.46469
224	0.127729	1.547235	0.700624	1.52449	-0.05591	-0.62617	1.041304	-0.46788
225	0.123721	1.586926	0.680904	1.521614	-0.06327	-0.62994	1.027714	-0.4704
226	0.120629	1.614378	0.66106	1.518625	-0.07198	-0.63476	1.017132	-0.47281
227	0.11665	1.633797	0.643419	1.516477	-0.08007	-0.63901	1.005879	-0.47476
228	0.112883	1.64234	0.621843	1.512481	-0.08803	-0.64308	0.992655	-0.4773
229	0.109532	1.645575	0.597965	1.506687	-0.09626	-0.646	0.975298	-0.47835
230	0.106058	1.662919	0.575342	1.499987	-0.10354	-0.64907	0.957652	-0.4799
231	0.102628	1.718239	0.555884	1.495309	-0.11075	-0.6523	0.942122	-0.48109
232	0.10002	1.756443	0.537941	1.49009	-0.11723	-0.65595	0.92601	-0.4822
233	0.097137	1.806167	0.525361	1.484034	-0.12276	-0.65961	0.910843	-0.48352
234	0.095165	1.832822	0.511839	1.480238	-0.12904	-0.66343	0.896983	-0.48366
235	0.093245	1.842818	0.497389	1.475156	-0.13488	-0.66636	0.881754	-0.48342
236	0.089896	1.845468	0.477685	1.471679	-0.14038	-0.66909	0.867242	-0.48361
237	0.087554	1.852697	0.455798	1.465304	-0.14678	-0.672	0.851172	-0.48339
238	0.083839	1.882848	0.437526	1.460817	-0.1525	-0.67415	0.836132	-0.48218
239	0.081808	1.91503	0.421318	1.455906	-0.1587	-0.67716	0.818098	-0.48187
240	0.079571	1.962562	0.404147	1.450739	-0.16473	-0.6799	0.801476	-0.48157
241	0.076562	1.990861	0.390119	1.443778	-0.16973	-0.68196	0.786795	-0.48032
242	0.073441	2.020259	0.373262	1.435377	-0.17576	-0.68417	0.770046	-0.47873
243	0.070884	2.039183	0.351427	1.423985	-0.18091	-0.68618	0.752449	-0.47745
244	0.0705	2.039539	0.333264	1.414262	-0.18599	-0.68776	0.735809	-0.47567
245	0.067503	2.051043	0.315906	1.405551	-0.19149	-0.69015	0.718328	-0.47352
246	0.063544	2.057861	0.295965	1.396848	-0.19571	-0.69282	0.700052	-0.47166
247	0.059831	2.062232	0.274384	1.388608	-0.20038	-0.69563	0.679196	-0.46967
248	0.057514	2.0615	0.25355	1.376679	-0.20532	-0.698	0.659557	-0.46723
249	0.053903	2.057214	0.232297	1.365817	-0.21084	-0.7003	0.64102	-0.46525
250	0.049992	2.048155	0.210467	1.35693	-0.21637	-0.7021	0.622666	-0.46341
251	0.045917	2.066283	0.189072	1.342472	-0.2216	-0.70408	0.601166	-0.46151
252	0.042515	2.069966	0.165358	1.327293	-0.22746	-0.70637	0.582325	-0.45915
253	0.038487	2.084534	0.141144	1.313982	-0.23301	-0.70904	0.563185	-0.45723
254	0.03624	2.08843	0.119124	1.299329	-0.23865	-0.71115	0.54394	-0.4542
255	0.033918	2.091691	0.100061	1.285571	-0.24303	-0.71273	0.524954	-0.45143

256	0.030563	2.097236	0.080616	1.269763	-0.24777	-0.71468	0.506408	-0.44822
257	0.028478	2.08527	0.059811	1.253382	-0.2535	-0.71687	0.487511	-0.44472
258	0.024746	2.080663	0.03951	1.235808	-0.25769	-0.71863	0.469278	-0.4409
259	0.021485	2.068909	0.018461	1.218885	-0.26253	-0.72085	0.451212	-0.43736
260	0.018372	2.075609	0.000264	1.20272	-0.26751	-0.72303	0.431744	-0.43345
261	0.015224	2.056031	-0.01624	1.184717	-0.27252	-0.72471	0.413437	-0.42935
262	0.012034	2.040442	-0.03625	1.165304	-0.27818	-0.7264	0.393614	-0.42522
263	0.008061	2.028672	-0.06146	1.145104	-0.2842	-0.7288	0.373178	-0.42149
264	0.003324	2.015601	-0.08117	1.125068	-0.28972	-0.73176	0.353661	-0.41771
265	-0.00237	2.003821	-0.10388	1.103032	-0.29519	-0.73383	0.331765	-0.41333
266	-0.0078	1.989074	-0.12317	1.08101	-0.30128	-0.73691	0.310458	-0.40996
267	-0.01252	1.969899	-0.14165	1.058972	-0.30679	-0.73898	0.290776	-0.40634
268	-0.0187	1.922152	-0.16228	1.035078	-0.3145	-0.74124	0.268537	-0.40451
269	-0.02473	1.885465	-0.17925	1.008076	-0.32194	-0.74357	0.242923	-0.40126
270	-0.03091	1.861324	-0.1974	0.978564	-0.32958	-0.74627	0.217005	-0.39897
271	-0.04046	1.848655	-0.21602	0.947381	-0.33686	-0.74873	0.193841	-0.39705
272	-0.04898	1.808422	-0.23618	0.917631	-0.34532	-0.7513	0.169378	-0.3954
273	-0.05934	1.769268	-0.25757	0.884433	-0.355	-0.75428	0.14283	-0.3948
274	-0.07193	1.721983	-0.28044	0.85091	-0.36498	-0.75759	0.116374	-0.39469
275	-0.08588	1.685592	-0.30167	0.819588	-0.37569	-0.761	0.092813	-0.39537
276	-0.10086	1.644602	-0.3256	0.786003	-0.38693	-0.76483	0.068163	-0.39641
277	-0.117	1.600263	-0.34607	0.747208	-0.39754	-0.76873	0.041077	-0.39823
278	-0.13707	1.565305	-0.3665	0.709085	-0.41003	-0.7725	0.014725	-0.40128
279	-0.15487	1.513491	-0.38739	0.671777	-0.42216	-0.77641	-0.01395	-0.40538
280	-0.17404	1.461905	-0.4066	0.6316	-0.43475	-0.78106	-0.04318	-0.4103
281	-0.19565	1.403409	-0.42937	0.590777	-0.44901	-0.78544	-0.0722	-0.41626
282	-0.21889	1.353057	-0.44975	0.549334	-0.46393	-0.79008	-0.10431	-0.423
283	-0.24236	1.306364	-0.47048	0.508697	-0.47992	-0.79521	-0.13483	-0.43067
284	-0.2638	1.253276	-0.48981	0.464898	-0.49674	-0.79984	-0.16382	-0.43991
285	-0.28773	1.17572	-0.513	0.41858	-0.51337	-0.80463	-0.1955	-0.45043
286	-0.31627	1.117084	-0.54066	0.372195	-0.53132	-0.81017	-0.22679	-0.46281
287	-0.34461	1.048252	-0.56935	0.325179	-0.55129	-0.81686	-0.25893	-0.47617
288	-0.37525	0.972781	-0.59825	0.276832	-0.57257	-0.82347	-0.29304	-0.49096
289	-0.40894	0.910482	-0.618	0.225642	-0.59392	-0.83003	-0.32761	-0.50713
290	-0.44373	0.855951	-0.64183	0.171983	-0.61595	-0.83639	-0.36391	-0.52584
291	-0.48078	0.783636	-0.67018	0.11752	-0.63932	-0.8437	-0.39924	-0.54658
292	-0.51667	0.706451	-0.6969	0.061508	-0.66378	-0.85209	-0.43642	-0.56966
293	-0.55534	0.634103	-0.72594	0.005714	-0.68817	-0.85999	-0.47423	-0.59544
294	-0.59408	0.546623	-0.75225	-0.05122	-0.7133	-0.86796	-0.51428	-0.62312
295	-0.63294	0.470172	-0.77905	-0.10714	-0.73875	-0.8759	-0.55325	-0.6513
296	-0.67175	0.405418	-0.8049	-0.16323	-0.76526	-0.88382	-0.59129	-0.68088
297	-0.71175	0.357951	-0.82517	-0.22035	-0.79127	-0.89086	-0.62978	-0.7103
298	-0.75043	0.283706	-0.84579	-0.27424	-0.81732	-0.89681	-0.66739	-0.74017
299	-0.78511	0.211641	-0.86778	-0.3267	-0.84092	-0.9016	-0.70482	-0.76901
300	-0.8184	0.139158	-0.89212	-0.3777	-0.8622	-0.90506	-0.73901	-0.79667
301	-0.84784	0.077715	-0.90948	-0.41347	-0.87972	-0.90724	-0.76308	-0.81727
302	-0.87104	0.036577	-0.92064	-0.43418	-0.89334	-0.90991	-0.77583	-0.83144
303	-0.89346	0.007382	-0.93039	-0.45443	-0.90674	-0.91244	-0.78834	-0.84487
304	-0.91522	-0.02752	-0.94125	-0.47323	-0.91966	-0.91466	-0.80142	-0.85806
305	-0.93568	-0.05664	-0.95199	-0.49197	-0.93212	-0.91652	-0.81388	-0.87087
306	-0.95633	-0.0787	-0.96152	-0.51051	-0.94421	-0.91799	-0.8253	-0.88266
307	-0.97653	-0.10476	-0.96954	-0.52791	-0.95595	-0.91953	-0.83686	-0.89408
308	-0.99429	-0.12661	-0.97589	-0.54443	-0.96785	-0.9209	-0.84769	-0.90475
309	-1.01138	-0.1511	-0.98259	-0.56153	-0.97921	-0.9218	-0.85748	-0.91464
310	-1.0289	-0.17335	-0.99031	-0.577	-0.98991	-0.92256	-0.86737	-0.92436
311	-1.04556	-0.18935	-0.99716	-0.59252	-0.99942	-0.92321	-0.87581	-0.93324
312	-1.06256	-0.20106	-1.00337	-0.60704	-1.00901	-0.92333	-0.88385	-0.94095
313	-1.07803	-0.21052	-1.00991	-0.62174	-1.01776	-0.92367	-0.89163	-0.94805
314	-1.09315	-0.22509	-1.01614	-0.6348	-1.02581	-0.92325	-0.89908	-0.95477
315	-1.10657	-0.22886	-1.01967	-0.64786	-1.03352	-0.92215	-0.90545	-0.96083
316	-1.11952	-0.23586	-1.02334	-0.65993	-1.04071	-0.92106	-0.91165	-0.96625
317	-1.13232	-0.23937	-1.02647	-0.67177	-1.04731	-0.91964	-0.91773	-0.97111
318	-1.14427	-0.24424	-1.03126	-0.6819	-1.05302	-0.91766	-0.92307	-0.97556
319	-1.15514	-0.25146	-1.0352	-0.69157	-1.05802	-0.91563	-0.92765	-0.979
320	-1.16517	-0.25916	-1.03791	-0.70007	-1.06267	-0.91274	-0.93229	-0.98162

321	-1.17499	-0.26581	-1.04031	-0.70814	-1.06629	-0.90995	-0.93601	-0.98356
322	-1.18423	-0.27353	-1.0424	-0.71536	-1.06971	-0.90708	-0.93951	-0.98455
323	-1.19141	-0.28065	-1.04511	-0.72377	-1.07292	-0.9037	-0.94277	-0.98507
324	-1.19816	-0.28576	-1.04948	-0.73089	-1.07567	-0.90004	-0.94561	-0.98468
325	-1.20451	-0.29984	-1.05333	-0.73718	-1.07781	-0.89613	-0.94812	-0.98377
326	-1.21015	-0.30778	-1.05599	-0.74254	-1.07941	-0.8918	-0.95011	-0.98173
327	-1.2147	-0.30808	-1.05735	-0.74728	-1.08056	-0.88708	-0.95152	-0.97936
328	-1.21821	-0.31468	-1.05765	-0.75147	-1.0813	-0.88134	-0.95162	-0.9763
329	-1.22277	-0.31945	-1.05681	-0.75503	-1.08142	-0.87584	-0.95162	-0.9725
330	-1.22583	-0.31994	-1.05415	-0.75872	-1.081	-0.87031	-0.95144	-0.96808
331	-1.22726	-0.32596	-1.05255	-0.76039	-1.0799	-0.86402	-0.9507	-0.96322
332	-1.22935	-0.33077	-1.05299	-0.76248	-1.07852	-0.85754	-0.95002	-0.95772
333	-1.23026	-0.32825	-1.05419	-0.76499	-1.07722	-0.85095	-0.94886	-0.95152
334	-1.23024	-0.32401	-1.052	-0.7675	-1.07508	-0.84417	-0.94763	-0.94467
335	-1.23092	-0.32853	-1.05206	-0.76863	-1.07299	-0.83746	-0.94603	-0.93713
336	-1.23051	-0.32999	-1.04991	-0.77004	-1.07034	-0.82973	-0.94346	-0.92905
337	-1.22889	-0.32774	-1.04665	-0.76959	-1.06768	-0.82192	-0.94114	-0.92064
338	-1.22657	-0.32525	-1.04393	-0.76835	-1.0639	-0.81343	-0.93816	-0.9114
339	-1.22286	-0.32251	-1.0425	-0.76734	-1.06047	-0.80528	-0.93483	-0.90182
340	-1.21864	-0.32299	-1.03842	-0.76657	-1.05671	-0.79667	-0.93235	-0.89153
341	-1.21365	-0.3225	-1.0315	-0.766	-1.05206	-0.78709	-0.92919	-0.88071
342	-1.20882	-0.31907	-1.02681	-0.76463	-1.04776	-0.77771	-0.92633	-0.8698
343	-1.20327	-0.3143	-1.02388	-0.76309	-1.04315	-0.76819	-0.92321	-0.85875
344	-1.19618	-0.30954	-1.02074	-0.76136	-1.03772	-0.75879	-0.91874	-0.84688
345	-1.18997	-0.3079	-1.01696	-0.75902	-1.03136	-0.749	-0.91434	-0.83409
346	-1.18269	-0.30855	-1.01241	-0.75682	-1.02519	-0.73917	-0.90971	-0.82161
347	-1.17574	-0.3172	-1.00829	-0.75355	-1.01893	-0.72879	-0.90548	-0.80933
348	-1.16822	-0.3158	-1.00283	-0.75107	-1.01303	-0.71876	-0.90074	-0.79648
349	-1.15998	-0.30693	-0.9951	-0.74845	-1.0064	-0.70824	-0.89553	-0.78373
350	-1.15225	-0.30089	-0.98913	-0.7447	-0.99955	-0.69756	-0.89026	-0.77056
351	-1.14441	-0.29807	-0.98016	-0.74065	-0.99268	-0.68645	-0.88475	-0.75751
352	-1.13634	-0.29481	-0.97464	-0.73701	-0.98523	-0.67554	-0.87935	-0.74383
353	-1.12713	-0.28989	-0.96878	-0.73389	-0.97718	-0.66441	-0.87322	-0.72977
354	-1.11762	-0.28996	-0.96303	-0.73063	-0.96908	-0.65326	-0.86658	-0.71584
355	-1.10677	-0.28731	-0.95585	-0.72735	-0.96101	-0.64212	-0.85985	-0.70159
356	-1.09625	-0.29243	-0.95032	-0.72426	-0.9533	-0.63089	-0.85398	-0.68699
357	-1.0856	-0.29159	-0.94531	-0.72095	-0.94491	-0.61932	-0.8479	-0.6724
358	-1.0743	-0.28427	-0.9378	-0.71835	-0.9364	-0.60729	-0.84132	-0.6573
359	-1.06348	-0.28221	-0.92907	-0.71327	-0.92778	-0.59511	-0.83551	-0.64226
360	-1.05309	-0.26994	-0.92	-0.70818	-0.91844	-0.58244	-0.83006	-0.62719
361	-1.04111	-0.26975	-0.90979	-0.70353	-0.90891	-0.57005	-0.82369	-0.61208
362	-1.02953	-0.27188	-0.89974	-0.69866	-0.89983	-0.55776	-0.81701	-0.59653
363	-1.01791	-0.27197	-0.89084	-0.69423	-0.89062	-0.54518	-0.81037	-0.5805
364	-1.00612	-0.26753	-0.88313	-0.68856	-0.88089	-0.53252	-0.80316	-0.5649
365	-0.99387	-0.26775	-0.87681	-0.68321	-0.87111	-0.52007	-0.79584	-0.54956
366	-0.98057	-0.26066	-0.86803	-0.67693	-0.86167	-0.50727	-0.78748	-0.53392
367	-0.9682	-0.2523	-0.86021	-0.67322	-0.85225	-0.49502	-0.77989	-0.51857
368	-0.95491	-0.24282	-0.85036	-0.6685	-0.84201	-0.48202	-0.77218	-0.50293
369	-0.94228	-0.23442	-0.84081	-0.66373	-0.83138	-0.46902	-0.76435	-0.48699
370	-0.92982	-0.22566	-0.8321	-0.6579	-0.8211	-0.45565	-0.75635	-0.47096
371	-0.91691	-0.22092	-0.82313	-0.65285	-0.81084	-0.44229	-0.74862	-0.455
372	-0.90361	-0.21176	-0.81425	-0.6476	-0.80041	-0.42934	-0.74015	-0.43864
373	-0.89017	-0.20482	-0.8042	-0.64179	-0.78987	-0.41628	-0.73246	-0.42249
374	-0.87652	-0.1945	-0.79387	-0.63622	-0.77885	-0.40344	-0.72371	-0.40653
375	-0.86294	-0.18727	-0.78439	-0.63071	-0.76855	-0.39093	-0.71507	-0.39024
376	-0.8489	-0.17844	-0.7761	-0.62432	-0.75773	-0.37797	-0.7063	-0.37414
377	-0.83557	-0.16752	-0.76894	-0.61964	-0.74691	-0.36499	-0.69814	-0.35866
378	-0.82164	-0.16079	-0.76074	-0.61504	-0.73583	-0.35226	-0.69002	-0.34367
379	-0.80813	-0.15044	-0.75215	-0.60992	-0.72465	-0.3397	-0.68123	-0.32812
380	-0.79303	-0.14659	-0.74213	-0.60557	-0.71372	-0.32665	-0.67223	-0.31283
381	-0.77725	-0.14262	-0.73287	-0.60018	-0.70275	-0.31358	-0.664	-0.29756
382	-0.76351	-0.13966	-0.72502	-0.59545	-0.69176	-0.30043	-0.65528	-0.28275
383	-0.74979	-0.13437	-0.7169	-0.59065	-0.68117	-0.28767	-0.64553	-0.26794
384	-0.73665	-0.12565	-0.70749	-0.58455	-0.66992	-0.27478	-0.63645	-0.25321
385	-0.72319	-0.11998	-0.70074	-0.57883	-0.6588	-0.26212	-0.62849	-0.23845

386	-0.70898	-0.11279	-0.69224	-0.57405	-0.64793	-0.24929	-0.61988	-0.22446
387	-0.69411	-0.10829	-0.68386	-0.57047	-0.63718	-0.23649	-0.61044	-0.21046
388	-0.6792	-0.09985	-0.67515	-0.56622	-0.62664	-0.22402	-0.60046	-0.19625
389	-0.66533	-0.08997	-0.66597	-0.56044	-0.61617	-0.21195	-0.59145	-0.18198
390	-0.65143	-0.08786	-0.65697	-0.55509	-0.60569	-0.19956	-0.58168	-0.16768
391	-0.63749	-0.08813	-0.65042	-0.54931	-0.59481	-0.18703	-0.57151	-0.15408
392	-0.62449	-0.08997	-0.64211	-0.54436	-0.58389	-0.17469	-0.56088	-0.14041
393	-0.61103	-0.08886	-0.63223	-0.53923	-0.57274	-0.16255	-0.55138	-0.12714
394	-0.59906	-0.09024	-0.62175	-0.53252	-0.56196	-0.15089	-0.54127	-0.11384
395	-0.58597	-0.08837	-0.61376	-0.52649	-0.5515	-0.13872	-0.53155	-0.10064
396	-0.57465	-0.08423	-0.60624	-0.52078	-0.54102	-0.12716	-0.52209	-0.08815
397	-0.5625	-0.09333	-0.59864	-0.51522	-0.53124	-0.11553	-0.51366	-0.0759
398	-0.54968	-0.09848	-0.58957	-0.50939	-0.52106	-0.10443	-0.50481	-0.0635
399	-0.53801	-0.09865	-0.5831	-0.50425	-0.51076	-0.09317	-0.49546	-0.05154
400	-0.52494	-0.10099	-0.57653	-0.49951	-0.50035	-0.08219	-0.48552	-0.03908

*The 500 bp regions upstream of transcription start sites (TSSs) are represented by genomic position 1 to 100 (5 bp bins). Gene body regions are represented by genomic position 101 to 300. The 500 bp regions downstream of gene poly (A) sites (PASs) are represented by genomic position 301 to 400 (5 bp bins).

**Z-scores were calculated as described in Methods.

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