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Evidence from giant-clam $\delta^{18}O$ of intense El Ninõ–Southern Oscillation-related variability but reduced frequency 3700 years ago

Yue Hu et al.

Correspondence to: Xiaoming Sun (eessxm@mail.sysu.edu.cn) and Hong Yan (yanhong@ieecas.cn)

Supplementary Tables

Table S1

Calculated $\delta^{18}O_{predicted}$ v.s. *Tridacna* $\delta^{18}O_{YX1}$. Calculated predicted SST (with varying SSS) v.s. predicted SST (with constant SSS).

Time (year)	SSS (‰)	SST (°C)	$\delta^{18}O_{water}$ (‰)	$\delta^{18}O_{predicted}$ (‰)	$\delta^{18}O_{YX1}$ (‰)	Predicted SST (℃) (with varying SSS)	Predicted SST (℃) (with constant SSS)
1994.00	34.55	24.10	0.37	**-0.12**	**-0.65**	**26.57**	**25.48**
1994.14	34.61	26.14	0.38	**-0.54**	**-0.82**	**27.42**	**26.27**
1994.29	33.90	29.53	0.22	**-1.43**	**-1.36**	**29.21**	**28.83**
1994.43	33.74	29.77	0.18	**-1.52**	**-1.49**	**29.62**	**29.41**
1994.57	33.76	29.57	0.18	**-1.47**	**-1.11**	**27.88**	**27.65**
1994.71	33.75	28.26	0.18	**-1.20**	**-0.86**	**26.69**	**26.47**
1994.86	34.16	26.36	0.28	**-0.70**	**-0.92**	**27.41**	**26.74**
1995.00	34.50	24.58	0.36	**-0.24**	**-0.65**	**26.53**	**25.49**
1995.14	34.28	25.91	0.30	**-0.57**	**-0.92**	**27.52**	**26.73**
1995.29	34.08	28.85	0.26	**-1.25**	**-0.84**	**26.93**	**26.35**
1995.43	34.38	30.11	0.33	**-1.44**	**-1.56**	**30.67**	**29.77**
1995.57	33.87	29.17	0.21	**-1.36**	**-1.15**	**28.18**	**27.82**
1995.71	33.34	27.80	0.09	**-1.19**	**-1.07**	**27.24**	**27.46**
1995.86	33.71	24.95	0.17	**-0.50**	**-1.28**	**28.61**	**28.43**
1996.00	34.11	23.43	0.26	**-0.08**	**-0.32**	**24.52**	**23.91**
1996.14	34.10	25.36	0.26	**-0.50**	**-0.43**	**25.07**	**24.48**
1996.29	33.49	28.62	0.12	**-1.33**	**-1.32**	**28.59**	**28.65**
1996.43	33.54	29.97	0.13	**-1.61**	**-1.40**	**29.00**	**29.01**
1996.57	33.68	29.08	0.17	**-1.39**	**-1.15**	**27.99**	**27.84**
1996.71	33.21	28.24	0.06	**-1.31**	**-1.03**	**26.92**	**27.28**
1996.86	33.13	25.83	0.04	**-0.82**	**-1.33**	**28.21**	**28.66**

Time (year)	SSS (‰)	SST (°C)	$\delta^{18}O_{water}$ (‰)	$\delta^{18}O_{predicted}$ (‰)	$\delta^{18}O_{YX1}$ (‰)	Predicted SST (℃) (with varying SSS)	Predicted SST (℃) (with constant SSS)
1997.14	33.71	26.21	0.17	**-0.77**	**-0.96**	**27.11**	**26.93**
1997.29	33.67	29.02	0.16	**-1.38**	**-1.25**	**28.43**	**28.30**
1997.43	33.70	29.81	0.17	**-1.54**	**-1.41**	**29.20**	**29.03**
1997.57	33.44	29.49	0.11	**-1.53**	**-1.27**	**28.28**	**28.39**
1997.71	33.05	28.21	0.02	**-1.35**	**-1.33**	**28.12**	**28.66**
1997.86	33.15	26.39	0.04	**-0.93**	**-1.07**	**27.04**	**27.47**
1998.00	33.86	26.39	0.21	**-0.77**	**-0.78**	**26.42**	**26.08**
1998.14	34.27	27.88	0.30	**-0.99**	**-0.98**	**27.79**	**27.01**
1998.29	33.69	29.53	0.17	**-1.48**	**-1.01**	**27.31**	**27.15**
1998.43	34.02	30.15	0.24	**-1.54**	**-1.36**	**29.34**	**28.83**
1998.57	33.63	30.32	0.15	**-1.66**	**-1.72**	**30.57**	**30.48**
1998.71	33.56	29.00	0.14	**-1.39**	**-1.60**	**29.96**	**29.94**
1998.86	33.24	26.30	0.07	**-0.89**	**-1.28**	**28.10**	**28.44**
1999.00	32.97	25.22	0.00	**-0.73**	**-0.55**	**24.38**	**25.00**
1999.14	33.01	27.48	0.01	**-1.20**	**-0.93**	**26.23**	**26.81**
1999.29	32.68	29.44	-0.06	**-1.69**	**-1.46**	**28.34**	**29.28**
1999.43	33.34	29.75	0.09	**-1.61**	**-1.50**	**29.27**	**29.49**
1999.57	33.07	29.76	0.03	**-1.67**	**-1.64**	**29.64**	**30.15**
1999.71	32.51	28.58	-0.10	**-1.55**	**-1.52**	**28.45**	**29.57**
1999.86	32.54	25.82	-0.09	**-0.95**	**-1.07**	**26.38**	**27.46**
2000.00	33.01	24.74	0.01	**-0.61**	**-0.77**	**25.46**	**26.03**
2000.14	33.38	26.57	0.10	**-0.92**	**-1.41**	**28.85**	**29.03**
2000.29	33.33	29.50	0.09	**-1.55**	**-1.47**	**29.11**	**29.34**
2000.43	33.05	29.49	0.02	**-1.62**	**-1.50**	**28.94**	**29.48**

Time (year)	SSS (‰)	SST (°C)	$\delta^{18}O_{water}$ (‰)	$\delta^{18}O_{predicted}$ (‰)	$\delta^{18}O_{YX1}$ (‰)	Predicted SST (℃) (with varying SSS)	Predicted SST (℃) (with constant SSS)
2000.57	32.45	29.18	-0.12	**-1.69**	**-1.26**	**27.16**	**28.34**
2000.71	32.67	28.20	-0.07	**-1.43**	**-1.45**	**28.30**	**29.24**
2000.86	33.08	25.60	0.03	**-0.78**	**-1.19**	**27.53**	**28.04**
2001.00	33.39	25.40	0.10	**-0.67**	**-0.51**	**24.64**	**24.81**
2001.14	32.99	26.76	0.01	**-1.05**	**-1.00**	**26.53**	**27.13**
2001.29	32.90	29.58	-0.01	**-1.67**	**-1.40**	**28.32**	**29.02**
2001.43	32.69	29.74	-0.06	**-1.75**	**-1.56**	**28.82**	**29.74**
2001.57	33.06	29.64	0.02	**-1.65**	**-1.57**	**29.26**	**29.79**
2001.71	32.72	28.91	-0.06	**-1.57**	**-1.69**	**29.47**	**30.36**
2001.86	32.74	25.50	-0.05	**-0.84**	**-1.25**	**27.42**	**28.28**
2002.00	33.20	24.96	0.06	**-0.62**	**-0.58**	**24.79**	**25.17**
2002.14	33.19	26.65	0.05	**-0.98**	**-0.97**	**26.61**	**27.00**
2002.29	33.97	29.62	0.23	**-1.43**	**-1.44**	**29.64**	**29.19**
2002.43	33.72	29.95	0.18	**-1.56**	**-1.84**	**31.23**	**31.04**
2002.57	33.75	28.88	0.18	**-1.33**	**-1.41**	**29.25**	**29.03**
2002.71	33.88	27.93	0.21	**-1.09**	**-0.93**	**27.17**	**26.81**
2002.86	33.53	26.32	0.13	**-0.83**	**-1.04**	**27.28**	**27.30**
2003.00	33.15	24.76	0.05	**-0.59**	**-0.63**	**24.99**	**25.41**
2003.14	34.00	27.65	0.24	**-1.01**	**-0.91**	**27.21**	**26.72**
2003.29	33.84	30.10	0.20	**-1.56**	**-1.24**	**28.58**	**28.26**
2003.43	33.95	30.28	0.23	**-1.58**	**-1.59**	**30.35**	**29.91**
2003.57	33.42	30.15	0.11	**-1.67**	**-1.60**	**29.79**	**29.92**
2003.71	33.53	28.11	0.13	**-1.21**	**-1.43**	**29.13**	**29.15**
2003.86	33.64	25.13	0.16	**-0.55**	**-0.93**	**26.88**	**26.78**

Time (year)	SSS (‰)	SST (°C)	$\delta^{18}O_{water}$ (‰)	$\delta^{18}O_{predicted}$ (‰)	$\delta^{18}O_{YX1}$ (‰)	Predicted SST (℃) (with varying SSS)	Predicted SST (℃) (with constant SSS)
2003.86	33.64	25.13	0.16	**-0.55**	**-0.93**	**26.88**	**26.78**
2004.00	34.16	24.48	0.28	**-0.29**	**-0.60**	**25.90**	**25.24**
2004.14	34.37	26.67	0.32	**-0.71**	**-1.04**	**28.19**	**27.31**
2004.29	34.12	29.97	0.27	**-1.48**	**-0.90**	**27.27**	**26.66**
2004.43	34.17	30.11	0.28	**-1.49**	**-1.49**	**30.10**	**29.43**
2004.57	34.10	30.23	0.26	**-1.54**	**-1.38**	**29.49**	**28.89**
2004.71	33.57	27.46	0.14	**-1.07**	**-0.96**	**26.97**	**26.94**
2004.86	33.95	25.07	0.23	**-0.47**	**-0.76**	**26.41**	**25.98**

$\delta^{18}O_{predicted}$ and predicted SST are calculated with the combination of two equation: SST (°C) = 21.8 - 4.69 ($\delta^{18}O_{shell}$ - $\delta^{18}O_{water}$) (Grossman and Ku, 1986) and $\delta^{18}O_{water}$ (‰) = 0.23 × SSS – 7.58 (Hong et al., 1997).

Table S2

The profiles of $\delta^{18}O_{A5}$. The left profile is the original isotopic $\delta^{18}O$. The right profile is $\delta^{18}O_{A5}$ resampled with chronology time-scale using AnalySeries 2.0.8.

Number	$\delta^{18}O_{A5}$ (‰)	Age	$\delta^{18}O_{A5}$ (‰)
1	-0.48	1.00	-0.48
2	-0.83	1.14	-1.30
3	-1.54	1.29	-1.63
4	-1.57	1.43	-1.69
5	-1.72	1.57	-1.62
6	-1.70	1.71	-1.69
7	-1.64	1.86	-1.45
8	-1.60	2.00	-0.73
9	-1.69	2.14	-0.86
10	-1.70	2.29	-1.36
11	-1.57	2.43	-1.61
12	-1.17	2.57	-1.68
13	-0.65	2.71	-1.59
14	-0.67	2.86	-1.25
15	-0.89	3.00	-0.29
16	-1.14	3.14	-0.95
17	-1.46	3.29	-1.65
18	-1.59	3.43	-1.44
19	-1.63	3.57	-1.40
20	-1.70	3.71	-1.34
21	-1.66	3.86	-1.03
22	-1.55	4.00	-0.48
23	-1.64	4.14	-1.00
24	-1.36	4.29	-1.51
25	-0.74	4.43	-1.59
26	-0.14	4.57	-1.53
27	-0.41	4.71	-1.36
28	-0.97	4.86	-0.97
29	-1.42	5.00	-0.47
30	-1.67	5.14	-1.12
31	-1.74	5.29	-1.49
32	-1.39	5.43	-1.72
33	-1.29	5.57	-1.66
34	-1.47	5.71	-1.64
35	-1.36	5.86	-1.15
36	-1.37	6.00	-0.61
37	-1.26	6.14	-1.16
38	-1.13	6.29	-1.77
39	-0.54	6.43	-1.89
40	-0.44	6.57	-1.78

41	**-0.61**	**6.71**	**-1.69**
42	**-1.04**	**6.86**	**-1.16**
43	**-1.29**	**7.00**	**-0.63**
44	**-1.56**	**7.14**	**-1.11**
45	**-1.59**	**7.29**	**-1.79**
46	**-1.61**	**7.43**	**-1.63**
47	**-1.56**	**7.57**	**-1.74**
48	**-1.54**	**7.71**	**-1.80**
49	**-1.46**	**7.86**	**-1.50**
50	**-1.32**	**8.00**	**-0.70**
51	**-1.35**	**8.14**	**-1.00**
52	**-0.99**	**8.29**	**-1.85**
53	**-0.50**	**8.43**	**-1.81**
54	**-0.39**	**8.57**	**-1.80**
55	**-0.72**	**8.71**	**-1.74**
56	**-1.14**	**8.86**	**-1.03**
57	**-1.45**	**9.00**	**-0.74**
58	**-1.48**	**9.14**	**-1.06**
59	**-1.56**	**9.29**	**-1.49**
60	**-1.78**	**9.43**	**-1.68**
61	**-1.72**	**9.57**	**-1.64**
62	**-1.66**	**9.71**	**-1.48**
63	**-1.64**	**9.86**	**-1.37**
64	**-1.66**	**10.00**	**-0.74**
65	**-1.56**	**10.14**	**-1.24**
66	**-1.20**	**10.29**	**-1.83**
67	**-0.63**	**10.43**	**-1.77**
68	**-0.60**	**10.57**	**-1.51**
69	**-0.67**	**10.71**	**-1.65**
70	**-0.91**	**10.86**	**-1.12**
71	**-1.61**	**11.00**	**-0.46**
72	**-1.79**	**11.14**	**-1.05**
73	**-1.72**	**11.29**	**-1.70**
74	**-1.93**	**11.43**	**-1.74**
75	**-1.90**	**11.57**	**-1.55**
76	**-1.79**	**11.71**	**-1.62**
77	**-1.82**	**11.86**	**-1.53**
78	**-1.72**	**12.00**	**-0.83**
79	**-1.69**	**12.14**	**-0.84**
80	**-1.71**	**12.29**	**-1.37**
81	**-1.51**	**12.43**	**-1.59**
82	**-1.01**	**12.57**	**-1.53**
83	**-0.64**	**12.71**	**-1.66**
84	**-0.61**	**12.86**	**-1.30**

85	**-0.69**	**13.00**	**-0.54**
86	**-0.98**	**13.14**	**-0.92**
87	**-1.55**	**13.29**	**-1.51**
88	**-1.82**	**13.43**	**-1.85**
89	**-1.79**	**13.57**	**-1.73**
90	**-1.67**	**13.71**	**-1.84**
91	**-1.56**	**13.86**	**-1.70**
92	**-1.78**	**14.00**	**-0.80**
93	**-1.70**	**14.14**	**-1.21**
94	**-1.87**	**14.29**	**-1.57**
95	**-1.78**	**14.43**	**-1.78**
96	**-1.71**	**14.57**	**-1.86**
97	**-1.51**	**14.71**	**-1.98**
98	**-1.04**	**14.86**	**-1.41**
99	**-0.60**	**15.00**	**-0.62**
100	**-0.62**	**15.14**	**-1.29**
101	**-0.81**	**15.29**	**-1.64**
102	**-1.15**	**15.43**	**-1.75**
103	**-1.49**	**15.57**	**-1.73**
104	**-2.07**	**15.71**	**-1.50**
105	**-1.79**	**15.86**	**-1.63**
106	**-1.85**	**16.00**	**-1.13**
107	**-1.80**	**16.14**	**-1.09**
108	**-1.79**	**16.29**	**-1.56**
109	**-1.79**	**16.43**	**-1.73**
110	**-1.83**	**16.57**	**-1.55**
111	**-1.80**	**16.71**	**-1.60**
112	**-1.81**	**16.86**	**-1.50**
113	**-1.49**	**17.00**	**-0.81**
114	**-1.22**	**17.14**	**-0.79**
115	**-0.75**	**17.29**	**-1.33**
116	**-0.79**	**17.43**	**-1.71**
117	**-0.66**	**17.57**	**-1.60**
118	**-0.81**	**17.71**	**-1.52**
119	**-0.98**	**17.86**	**-1.24**
120	**-1.14**	**18.00**	**-0.62**
121	**-1.19**	**18.14**	**-0.70**
122	**-1.41**	**18.29**	**-1.42**
123	**-1.81**	**18.43**	**-1.78**
124	**-1.62**	**18.57**	**-1.73**
125	**-1.74**	**18.71**	**-1.68**
126	**-1.68**	**18.86**	**-1.46**
127	**-1.75**	**19.00**	**-0.60**
128	**-1.52**	**19.14**	**-1.11**

129	**-1.47**	**19.29**	**-1.47**
130	**-1.52**	**19.43**	**-1.67**
131	**-1.44**	**19.57**	**-1.58**
132	**-1.54**	**19.71**	**-1.63**
133	**-1.27**	**19.86**	**-1.18**
134	**-0.85**	**20.00**	**-0.47**
135	**-0.62**	**20.14**	**-0.97**
136	**-0.80**	**20.29**	**-1.21**
137	**-1.06**	**20.43**	**-1.41**
138	**-1.24**	**20.57**	**-1.68**
139	**-1.69**	**20.71**	**-1.46**
140	**-1.84**	**20.86**	**-0.96**
141	**-1.82**	**21.00**	**-0.48**
142	**-1.89**	**21.14**	**-1.00**
143	**-1.77**	**21.29**	**-1.33**
144	**-1.69**	**21.43**	**-1.65**
145	**-1.54**	**21.57**	**-1.62**
146	**-1.45**	**21.71**	**-1.39**
147	**-1.56**	**21.86**	**-1.46**
148	**-1.61**	**22.00**	**-0.79**
149	**-1.69**	**22.14**	**-0.68**
150	**-1.65**	**22.29**	**-1.28**
151	**-1.33**	**22.43**	**-1.56**
152	**-0.73**	**22.57**	**-1.49**
153	**-0.42**	**22.71**	**-1.63**
154	**-0.40**	**22.86**	**-1.54**
155	**-0.57**	**23.00**	**-0.67**
156	**-0.77**	**23.14**	**-0.87**
157	**-1.25**	**23.29**	**-1.55**
158	**-1.32**	**23.43**	**-1.68**
159	**-1.67**	**23.57**	**-1.53**
160	**-1.85**	**23.71**	**-1.43**
161	**-1.80**	**23.86**	**-1.13**
162	**-1.74**	**24.00**	**-0.85**
163	**-1.70**	**24.14**	**-1.00**
164	**-1.64**	**24.29**	**-1.08**
165	**-1.54**	**24.43**	**-1.33**
166	**-1.41**	**24.57**	**-1.56**
167	**-1.58**	**24.71**	**-1.66**
168	**-1.65**	**24.86**	**-1.31**
169	**-1.78**	**25.00**	**-0.45**
170	**-1.65**	**25.14**	**-1.04**
171	**-1.35**	**25.29**	**-1.52**
172	**-0.89**	**25.43**	**-1.65**

173	**-0.80**	**25.57**	**-1.52**
174	**-0.81**	**25.71**	**-1.51**
175	**-0.87**	**25.86**	**-1.09**
176	**-0.81**	**26.00**	**-0.55**
177	**-0.93**	**26.14**	**-1.31**
178	**-1.54**	**26.29**	**-1.69**
179	**-1.74**	**26.43**	**-1.74**
180	**-1.72**	**26.57**	**-1.79**
181	**-1.38**	**26.71**	**-1.71**
182	**-1.51**	**26.86**	**-1.26**
183	**-1.54**	**27.00**	**-0.63**
184	**-1.60**	**27.14**	**-1.20**
185	**-1.73**	**27.29**	**-1.50**
186	**-1.62**	**27.43**	**-1.73**
187	**-1.56**	**27.57**	**-1.69**
188	**-1.15**	**27.71**	**-1.68**
189	**-0.65**	**27.86**	**-1.70**
190	**-0.47**	**28.00**	**-0.67**
191	**-0.53**	**28.14**	**-0.89**
192	**-0.80**	**28.29**	**-1.44**
193	**-0.94**	**28.43**	**-1.60**
194	**-1.10**	**28.57**	**-1.64**
195	**-1.34**	**28.71**	**-1.60**
196	**-1.60**	**28.86**	**-1.26**
197	**-1.75**	**29.00**	**-0.46**
198	**-1.83**	**29.14**	**-0.91**
199	**-1.89**	**29.29**	**-1.24**
200	**-1.90**	**29.43**	**-1.63**
201	**-1.86**	**29.57**	**-1.64**
202	**-1.54**	**29.71**	**-1.53**
203	**-1.73**	**29.86**	**-1.11**
204	**-1.84**	**30.00**	**-0.47**
205	**-1.90**	**30.14**	**-1.04**
206	**-1.80**	**30.29**	**-1.48**
207	**-1.73**	**30.43**	**-1.60**
208	**-1.68**	**30.57**	**-1.40**
209	**-0.95**	**30.71**	**-1.75**
210	**-0.67**	**30.86**	**-1.60**
211	**-0.80**	**31.00**	**-0.71**
212	**-1.06**	**31.14**	**-1.15**
213	**-1.37**	**31.29**	**-1.57**
214	**-1.74**	**31.43**	**-1.71**
215	**-1.35**	**31.57**	**-1.63**
216	**-1.76**	**31.71**	**-1.49**

217	**-1.76**	**31.86**	**-1.25**
218	**-1.79**	**32.00**	**-0.65**
219	**-1.82**	**32.14**	**-1.00**
220	**-1.86**	**32.29**	**-1.34**
221	**-2.00**	**32.43**	**-1.64**
222	**-1.98**	**32.57**	**-1.67**
223	**-1.96**	**32.71**	**-1.61**
224	**-1.74**	**32.86**	**-1.47**
225	**-1.19**	**33.00**	**-0.74**
226	**-0.69**	**33.14**	**-1.10**
227	**-0.54**	**33.29**	**-1.51**
228	**-0.68**	**33.43**	**-1.53**
229	**-0.95**	**33.57**	**-1.73**
230	**-1.38**	**33.71**	**-1.66**
231	**-1.67**	**33.86**	**-1.35**
232	**-1.59**	**34.00**	**-0.82**
233	**-1.68**	**34.14**	**-1.00**
234	**-1.61**	**34.29**	**-1.46**
235	**-1.73**	**34.43**	**-1.75**
236	**-1.88**	**34.57**	**-1.73**
237	**-1.60**	**34.71**	**-1.69**
238	**-1.75**	**34.86**	**-1.49**
239	**-1.78**	**35.00**	**-0.93**
240	**-1.70**	**35.14**	**-1.06**
241	**-1.39**	**35.29**	**-1.47**
242	**-1.48**	**35.43**	**-1.70**
243	**-1.63**	**35.57**	**-1.68**
244	**-1.72**	**35.71**	**-1.70**
245	**-1.53**	**35.86**	**-1.15**
246	**-1.61**	**36.00**	**-0.57**
247	**-0.85**	**36.14**	**-1.16**
248	**-0.98**	**36.29**	**-1.58**
249	**-1.02**	**36.43**	**-1.64**
250	**-1.05**	**36.57**	**-1.65**
251	**-1.33**	**36.71**	**-1.78**
252	**-1.53**	**36.86**	**-1.69**
253	**-1.63**	**37.00**	**-0.76**
254	**-1.68**	**37.14**	**-1.29**
255	**-1.75**	**37.29**	**-1.62**
256	**-1.75**	**37.43**	**-1.55**
257	**-1.67**	**37.57**	**-1.42**
258	**-1.53**	**37.71**	**-1.31**
259	**-1.44**	**37.86**	**-1.10**
260	**-1.62**	**38.00**	**-0.87**

261	**-1.64**	**38.14**	**-1.21**
262	**-1.56**	**38.29**	**-1.45**
263	**-1.60**	**38.43**	**-1.56**
264	**-1.40**	**38.57**	**-1.47**
265	**-1.14**	**38.71**	**-1.46**
266	**-0.70**	**38.86**	**-1.27**
267	**-0.70**	**39.00**	**-0.74**
268	**-0.85**	**39.14**	**-1.02**
269	**-1.12**	**39.29**	**-1.35**
270	**-1.38**	**39.43**	**-1.54**
271	**-1.57**	**39.57**	**-1.57**
272	**-1.64**	**39.71**	**-1.70**
273	**-1.84**	**39.86**	**-1.54**
274	**-1.64**	**40.00**	**-0.96**
275	**-1.56**	**40.14**	**-0.90**
276	**-1.57**	**40.29**	**-1.49**
277	**-1.57**	**40.43**	**-1.69**
278	**-1.42**	**40.57**	**-1.59**
279	**-1.37**	**40.71**	**-1.58**
280	**-1.13**	**40.86**	**-1.28**
281	**-0.98**	**41.00**	**-0.70**
282	**-0.44**		
283	**-0.53**		
284	**-0.58**		
285	**-0.75**		
286	**-1.03**		
287	**-1.42**		
288	**-1.66**		
289	**-1.72**		
290	**-1.72**		
291	**-2.01**		
292	**-1.65**		
293	**-1.66**		
294	**-1.67**		
295	**-1.67**		
296	**-1.71**		
297	**-1.48**		
298	**-1.46**		
299	**-0.89**		
300	**-0.46**		
301	**-0.52**		
302	**-1.07**		
303	**-1.17**		
304	**-1.27**		

305	**-1.42**	
306	**-1.54**	
307	**-1.70**	
308	**-1.65**	
309	**-1.67**	
310	**-1.60**	
311	**-1.51**	
312	**-1.68**	
313	**-1.69**	
314	**-1.53**	
315	**-1.67**	
316	**-1.44**	
317	**-0.73**	
318	**-0.41**	
319	**-0.33**	
320	**-0.76**	
321	**-0.92**	
322	**-1.04**	
323	**-1.12**	
324	**-1.22**	
325	**-1.35**	
326	**-1.31**	
327	**-1.53**	
328	**-1.53**	
329	**-1.85**	
330	**-1.55**	
331	**-1.50**	
332	**-1.37**	
333	**-1.19**	
334	**-0.80**	
335	**-0.42**	
336	**-0.36**	
337	**-0.69**	
338	**-0.87**	
339	**-0.97**	
340	**-1.24**	
341	**-1.17**	
342	**-1.38**	
343	**-1.52**	
344	**-1.67**	
345	**-1.67**	
346	**-1.68**	
347	**-1.71**	
348	**-1.57**	

349	**-1.41**	
350	**-1.38**	
351	**-1.30**	
352	**-1.83**	
353	**-1.43**	
354	**-1.15**	
355	**-1.69**	
356	**-0.31**	
357	**-0.48**	
358	**-0.35**	
359	**-0.73**	
360	**-0.93**	
361	**-1.11**	
362	**-1.23**	
363	**-1.52**	
364	**-1.60**	
365	**-1.63**	
366	**-1.44**	
367	**-1.53**	
368	**-1.45**	
369	**-1.49**	
370	**-1.56**	
371	**-1.72**	
372	**-1.61**	
373	**-1.73**	
374	**-1.56**	
375	**-1.36**	
376	**-0.92**	
377	**-0.51**	
378	**-0.55**	
379	**-0.61**	
380	**-0.78**	
381	**-0.92**	
382	**-1.30**	
383	**-1.49**	
384	**-1.62**	
385	**-1.59**	
386	**-1.70**	
387	**-1.72**	
388	**-1.69**	
389	**-1.57**	
390	**-1.61**	
391	**-1.54**	
392	**-1.42**	

393	**-1.43**	
394	**-1.45**	
395	**-1.47**	
396	**-1.19**	
397	**-1.28**	
398	**-1.11**	
399	**-0.93**	
400	**-0.87**	
401	**-0.81**	
402	**-0.86**	
403	**-0.99**	
404	**-1.01**	
405	**-1.02**	
406	**-0.96**	
407	**-1.18**	
408	**-1.28**	
409	**-1.34**	
410	**-1.35**	
411	**-1.48**	
412	**-1.61**	
413	**-1.60**	
414	**-1.69**	
415	**-1.65**	
416	**-1.64**	
417	**-1.43**	
418	**-1.11**	
419	**-0.45**	
420	**-0.28**	
421	**-0.64**	
422	**-0.88**	
423	**-1.05**	
424	**-1.21**	
425	**-1.34**	
426	**-1.54**	
427	**-1.70**	
428	**-1.73**	
429	**-1.64**	
430	**-1.59**	
431	**-1.50**	
432	**-1.51**	
433	**-1.56**	
434	**-1.57**	
435	**-1.49**	
436	**-1.46**	

437	**-1.38**	
438	**-1.14**	
439	**-0.75**	
440	**-0.58**	
441	**-0.37**	
442	**-0.69**	
443	**-1.07**	
444	**-1.37**	
445	**-1.60**	
446	**-1.70**	
447	**-1.68**	
448	**-1.73**	
449	**-1.70**	
450	**-1.78**	
451	**-1.74**	
452	**-1.78**	
453	**-1.84**	
454	**-1.74**	
455	**-1.79**	
456	**-1.64**	
457	**-1.53**	
458	**-1.29**	
459	**-1.06**	
460	**-0.68**	
461	**-0.54**	
462	**-0.66**	
463	**-0.93**	
464	**-1.27**	
465	**-1.40**	
466	**-1.38**	
467	**-1.55**	
468	**-1.53**	
469	**-1.68**	
470	**-1.73**	
471	**-1.77**	
472	**-1.70**	
473	**-1.75**	
474	**-1.64**	
475	**-1.66**	
476	**-1.69**	
477	**-1.69**	
478	**-1.73**	
479	**-1.74**	
480	**-1.75**	

481	**-1.33**	
482	**-0.67**	
483	**-0.43**	
484	**-0.69**	
485	**-0.70**	
486	**-1.08**	
487	**-1.34**	
488	**-1.45**	
489	**-1.58**	
490	**-1.59**	
491	**-1.62**	
492	**-1.66**	
493	**-1.61**	
494	**-1.72**	
495	**-1.61**	
496	**-1.51**	
497	**-1.51**	
498	**-1.15**	
499	**-0.61**	
500	**-0.33**	
501	**-0.52**	
502	**-0.72**	
503	**-1.03**	
504	**-1.14**	
505	**-1.26**	
506	**-1.19**	
507	**-1.59**	
508	**-1.61**	
509	**-1.66**	
510	**-1.63**	
511	**-1.70**	
512	**-1.57**	
513	**-1.53**	
514	**-1.50**	
515	**-1.55**	
516	**-1.12**	
517	**-0.95**	
518	**-0.52**	
519	**-0.37**	
520	**-0.52**	
521	**-0.66**	
522	**-1.00**	
523	**-1.19**	
524	**-1.31**	

525	**-1.40**	
526	**-1.54**	
527	**-1.53**	
528	**-1.57**	
529	**-1.69**	
530	**-1.58**	
531	**-1.52**	
532	**-1.46**	
533	**-1.26**	
534	**-1.43**	
535	**-1.76**	
536	**-1.75**	
537	**-1.74**	
538	**-1.82**	
539	**-1.75**	
540	**-1.55**	
541	**-1.27**	
542	**-0.78**	
543	**-0.59**	
544	**-0.63**	
545	**-0.89**	
546	**-1.17**	
547	**-1.15**	
548	**-1.31**	
549	**-1.44**	
550	**-1.52**	
551	**-1.72**	
552	**-1.69**	
553	**-1.67**	
554	**-1.77**	
555	**-1.71**	
556	**-1.70**	
557	**-1.72**	
558	**-1.65**	
559	**-1.28**	
560	**-1.54**	
561	**-1.52**	
562	**-1.50**	
563	**-1.52**	
564	**-1.49**	
565	**-1.07**	
566	**-0.83**	
567	**-0.67**	
568	**-0.60**	

569	**-0.66**	
570	**-0.73**	
571	**-1.00**	
572	**-1.28**	
573	**-1.27**	
574	**-1.35**	
575	**-1.39**	
576	**-1.54**	
577	**-1.65**	
578	**-1.74**	
579	**-1.72**	
580	**-1.67**	
581	**-1.63**	
582	**-1.61**	
583	**-1.54**	
584	**-1.67**	
585	**-1.67**	
586	**-1.41**	
587	**-1.38**	
588	**-0.85**	
589	**-0.57**	
590	**-0.81**	
591	**-1.02**	
592	**-1.18**	
593	**-1.49**	
594	**-1.50**	
595	**-1.55**	
596	**-1.50**	
597	**-1.56**	
598	**-1.71**	
599	**-1.77**	
600	**-1.71**	
601	**-1.66**	
602	**-1.63**	
603	**-1.60**	
604	**-1.21**	
605	**-0.83**	
606	**-0.80**	
607	**-0.87**	
608	**-0.92**	
609	**-1.07**	
610	**-1.36**	
611	**-1.41**	
612	**-1.73**	

613	**-1.76**	
614	**-1.74**	
615	**-1.78**	
616	**-1.67**	
617	**-1.75**	
618	**-1.71**	
619	**-1.61**	
620	**-1.54**	
621	**-1.49**	
622	**-1.18**	
623	**-0.83**	
624	**-0.84**	
625	**-0.94**	
626	**-1.15**	
627	**-1.11**	
628	**-1.41**	
629	**-1.50**	
630	**-1.67**	
631	**-1.61**	
632	**-1.74**	
633	**-1.77**	
634	**-1.63**	
635	**-1.69**	
636	**-1.68**	
637	**-1.80**	
638	**-1.65**	
639	**-1.51**	
640	**-1.25**	
641	**-0.84**	
642	**-0.53**	
643	**-0.52**	
644	**-0.76**	
645	**-1.27**	
646	**-1.51**	
647	**-1.60**	
648	**-1.69**	
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651	**-1.59**	
652	**-1.83**	
653	**-1.74**	
654	**-1.72**	
655	**-1.49**	
656	**-0.40**	

657	**-0.87**	
658	**-1.18**	
659	**-1.27**	
660	**-1.60**	
661	**-1.61**	
662	**-1.63**	
663	**-1.61**	
664	**-1.59**	
665	**-1.47**	
666	**-1.52**	
667	**-1.30**	
668	**-1.44**	
669	**-1.35**	
670	**-1.26**	
671	**-1.19**	
672	**-1.17**	
673	**-1.03**	
674	**-0.79**	
675	**-0.74**	
676	**-1.06**	
677	**-1.10**	
678	**-1.23**	
679	**-1.27**	
680	**-1.22**	
681	**-1.34**	
682	**-1.46**	
683	**-1.63**	
684	**-1.58**	
685	**-1.64**	
686	**-1.45**	
687	**-1.55**	
688	**-1.40**	
689	**-1.57**	
690	**-1.41**	
691	**-1.41**	
692	**-1.54**	
693	**-1.46**	
694	**-1.39**	
695	**-1.40**	
696	**-1.29**	
697	**-0.99**	
698	**-0.70**	
699	**-0.50**	
700	**-0.87**	

701	**-1.00**	
702	**-0.98**	
703	**-1.02**	
704	**-0.98**	
705	**-1.27**	
706	**-1.25**	
707	**-1.36**	
708	**-1.41**	
709	**-1.45**	
710	**-1.26**	
711	**-1.69**	
712	**-1.74**	
713	**-1.49**	
714	**-1.35**	
715	**-1.73**	
716	**-1.72**	
717	**-1.46**	
718	**-1.60**	
719	**-1.81**	
720	**-1.80**	
721	**-1.69**	
722	**-1.62**	
723	**-1.66**	
724	**-1.37**	
725	**-1.34**	
726	**-1.05**	
727	**-0.78**	
728	**-0.83**	
729	**-0.96**	
730	**-0.92**	
731	**-0.91**	
732	**-0.82**	
733	**-0.80**	
734	**-0.95**	
735	**-1.07**	
736	**-1.11**	
737	**-1.45**	
738	**-1.57**	
739	**-1.83**	
740	**-1.67**	
741	**-1.49**	
742	**-1.76**	
743	**-1.67**	
744	**-1.84**	

745	**-1.68**	
746	**-1.71**	
747	**-1.55**	
748	**-1.49**	
749	**-1.56**	
750	**-1.66**	
751	**-1.66**	
752	**-1.64**	
753	**-1.72**	
754	**-1.68**	
755	**-1.47**	
756	**-1.46**	
757	**-1.47**	
758	**-1.88**	
759	**-1.43**	
760	**-1.19**	
761	**-0.77**	
762	**-0.94**	
763	**-0.88**	
764	**-0.76**	
765	**-0.71**	