Ultra-compact radio sources: angular-size/redshift data

by

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ABSTRACT

A compilation of angular-size/redshift data for ultra-compact radio sources is presented, which data derive from a 2.29 GHz VLBI survey undertaken by Preston et al. The sample has formed the basis of a number of investigations, which attempt to determine cosmological parameters from the angular-size/redshift diagram. Full details of the sample are not in the public domain, which omission is rectified here.

1 INTRODUCTION

The following data set (or part thereof) has been used in a number of cosmological investigations, namely:

Jackson J.C., Dodgson Marina, Deceleration without dark matter, MNRAS 285, 806-810 (1997), arXiv:astro-ph/0605102

Jackson J.C., Tight Cosmological Constraints from the Angular-Size/Redshift Relation for Ultra-Compact Radio Sources, JCAP 0411:007,2004, arXiv:astro-ph/0309390

Jackson J.C., Jannetta A.L., Legacy data and cosmological constraints from the angular-size/redshift relation for ultra-compact radio sources, JCAP0611:002,2006, arXiv:astro-ph/0605065

Jackson J.C., Ultra-compact radio sources and the isotropy and homogeneity of the Universe, MNRAS 426, 779-783 (2012), arXiv:1207.0697

See also:
Jackson, J.C., Is there a standard measuring rod in the Universe?, MNRAS 390, L1–L5 (2008), arXiv:0810.3930, for some critical comments relating to the above papers, particularly the footnote on p. L2.

The raw data are taken from Preston R. A., Morabito D. D., Williams J. G., Faulkner J., Jauncey D. L., Nicolson G. D., A VLBI Survey at 2.29 GHz, AJ, 90, 1599-1641 (1985) (P85), see their Table VI. The survey has been updated with regard to redshift and radio-data, as described in Jackson & Jannetta (2006), giving 613 objects, with $0.0035 \leq z \leq 3.787$; only those with $z > 0.5$ were used in the above investigations. See also Gurvits L. I., ApJ, 425, 442-449 (1994); the data-set used in the latter paper comprised 337 sources taken from P85. The same data-set was also used in MNRAS 285, 806-810 (1997) and JCAP 0411:007,2004, having been kindly supplied by Professor Gurvits. However, it should be stressed that the data-set presented below is in effect a fresh compilation, with the parameters of all 613 sources derived anew. In the region of overlap there is in fact a small systematic difference between the new angular diameters and the old ones, the latter being about 15% smaller than the former. The new diameters were used in JCAP0611:002,2006 and MNRAS 426, 779-783 (2012).

2 DATA TABLE

Column (1): order in P85, Table VI
Column (2): RA hours (B1950)
Column (3): RA minutes
Column (4): RA seconds
Column (5): Dec degrees
Column (6): Dec minutes
Column (7): Dec seconds
Column (8): redshift
Column (9): angular size in milliarcseconds
Column (10): uncertainty in angular size
Column (11): total radio flux density at 2.29 GHz (Jy)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
756	12	22	31.6	13	9	50.0	0.0035	2.851	0.056	5.200
759	12	28	17.6	12	40	2.0	0.0044	3.101	0.017	139.220
172	2	38	37.4	-8	28	9.0	0.0049	1.359	0.041	0.453
830	13	33	47.2	-33	42	40.0	0.0125	2.571	0.040	3.014
1062	17	18	46.1	-64	57	48.0	0.0142	2.071	0.029	4.066
43	0	36	44.2	3	3	25.0	0.0147	2.641	0.026	1.380
1150	19	41	23.3	-55	28	6.0	0.0155	1.713	0.029	0.836
58	0	55	5.6	30	4	57.0	0.0165	1.802	0.088	2.200
65	1	4	39.2	32	8	44.0	0.0170	3.436	0.123	4.000
203	3	16	29.6	41	19	52.0	0.0170	3.093	0.047	24.800
99	1	31	5.6	-52	15	26.0	0.0200	0.952	0.080	1.072
115	1	49	20.8	71	0	21.0	0.0220	2.555	0.084	1.500
1022	16	37	56.8	82	38	18.0	0.0247	2.516	0.096	2.100
1262	22	1	46.3	4	25	30.0	0.0270	1.715	0.094	0.855
654	11	1	40.5	38	28	42.0	0.0300	1.823	0.189	1.000
1373	23	35	59.0	26	45	16.0	0.0302	3.616	0.069	5.300
273	4	30	31.6	5	14	58.0	0.0330	2.172	0.073	6.400
1020	16	37	9.2	-77	10	2.0	0.0427	2.821	0.042	3.811
57	0	55	1.6	-1	39	39.0	0.0448	2.896	0.025	4.000
73	1	11	8.6	2	6	24.0	0.0470	0.578	0.272	0.348
222	3	38	23.3	-21	29	8.0	0.0477	0.576	0.714	0.900
1366	23	31	17.9	-24	0	15.0	0.0480	0.917	0.060	0.793
256	4	15	0.6	37	54	20.0	0.0485	2.666	0.047	10.900
958	15	14	45.3	-24	11	23.0	0.0486	1.817	0.102	1.900
854	13	49	52.5	-43	57	54.0	0.0500	0.950	0.070	0.489
1106	18	7	18.5	69	48	57.0	0.0510	1.809	0.101	3.100
956	15	14	6.8	0	26	0.0	0.0525	1.860	0.054	1.870
325	5	21	12.9	-36	30	16.0	0.0546	2.048	0.074	3.500
385	6	25	20.0	-35	27	20.0	0.0553	2.114	0.043	11.500
1124	18	45	37.7	79	43	6.0	0.0561	3.682	0.059	7.300
993	16	3	38.9	0	8	30.0	0.0590	2.712	0.025	1.700
921	14	41	43.6	25	14	24.0	0.0620	1.260	0.091	0.550
1103	18	6	15.2	-45	53	17.0	0.0697	1.978	0.122	1.800
1259	22	0	39.4	42	2	9.0	0.0700	1.792	0.064	4.200
1172	20	5	46.6	-48	58	43.0	0.0710	1.084	0.083	1.026
36	0	34	30.6	-1	25	38.0	0.0730	2.886	0.023	2.900
202	3	16	13.3	-44	25	11.0	0.0759	2.248	0.052	0.971

879	14	4	45.6	28	41	29.0	0.0766	1.622	0.140	1.700
982	15	55	33.7	-14	1	26.0	0.0970	1.147	0.237	0.700
1078	17	33	24.4	-56	31	40.0	0.0980	2.455	0.031	4.778
1153	19	46	12.0	70	48	22.0	0.1008	2.677	0.247	0.700
749	12	19	1.1	28	30	36.0	0.1020	1.540	0.061	1.470
1288	22	21	28.6	-11	41	36.0	0.1150	1.893	0.204	0.500
1257	21	55	58.3	-30	27	54.0	0.1160	1.292	0.109	0.350
894	14	17	2.6	-19	14	42.0	0.1200	2.273	0.046	1.194
846	13	45	6.4	12	32	17.0	0.1217	2.327	0.089	4.300
422	7	23	17.9	-0	48	55.0	0.1280	1.326	0.199	2.100
1327	23	0	23.4	-18	57	34.0	0.1283	1.926	0.073	0.996
739	12	15	21.2	30	23	40.0	0.1300	1.299	0.108	0.530
198	3	9	44.8	41	8	49.0	0.1340	1.964	0.265	0.600
977	15	49	28.2	-79	5	17.0	0.1501	2.445	0.028	5.167
895	14	18	6.2	54	36	58.0	0.1526	1.301	0.255	1.000
662	11	6	11.2	2	18	56.0	0.1570	2.125	0.029	0.716
1027	16	41	34.4	17	21	21.0	0.1620	2.607	0.120	2.500
1383	23	49	22.4	-1	25	55.0	0.1740	2.037	0.030	1.170
497	8	29	10.9	4	39	50.0	0.1800	1.511	0.301	0.700
1006	16	16	22.3	85	9	26.0	0.1830	2.835	0.158	1.100
1353	23	24	19.6	-2	18	44.0	0.1880	2.511	0.027	1.910
1322	22	54	46.0	7	27	8.0	0.1900	1.105	0.098	0.880
440	7	36	42.6	1	43	59.0	0.1910	1.510	0.128	2.900
322	5	14	19.3	-45	59	58.0	0.1940	1.531	0.077	1.355
601	10	20	4.2	-10	22	33.0	0.1970	1.824	0.091	0.684
1066	17	21	32.0	34	20	41.0	0.2060	2.190	0.128	1.500
824	13	30	20.5	2	16	8.0	0.2156	2.207	0.070	2.900
271	4	28	6.9	20	31	11.0	0.2190	2.416	0.081	3.453
951	15	9	43.7	2	14	32.0	0.2194	2.067	0.035	0.730
39	0	35	47.2	-2	24	9.0	0.2197	2.325	0.021	4.280
1339	23	14	2.2	3	48	57.0	0.2199	2.769	0.026	2.690
1204	20	58	42.2	-42	31	6.0	0.2210	1.830	0.026	1.064
199	3	12	38.4	10	1	41.0	0.2220	2.048	0.134	1.200
200	3	12	56.3	-77	3	0.0	0.2230	1.206	0.073	0.476
1183	20	21	13.4	61	27	18.0	0.2270	2.427	0.101	2.260
3	0	3	22.4	38	3	33.0	0.2290	0.938	0.497	0.600
1388	23	52	37.8	49	33	27.0	0.2379	1.755	0.150	2.300
746	12	17	38.3	2	20	22.0	0.2390	1.679	0.114	0.470
1171	20	4	25.1	-44	43	28.0	0.2400	1.548	0.049	0.865
395	6	42	24.7	21	25	2.0	0.2449	2.188	0.079	1.800
480	8	14	51.7	42	32	8.0	0.2453	1.171	0.199	1.600
886	14	13	33.9	13	34	18.0	0.2467	2.658	0.195	0.900
717	11	51	49.3	-34	48	48.0	0.2580	2.525	0.069	5.300
107	1	37	22.9	1	16	36.0	0.2600	2.140	0.095	1.111
460	7	54	22.6	10	4	39.0	0.2660	1.577	0.199	0.900
687	11	28	57.5	-4	43	45.0	0.2660	0.895	0.127	0.745
1372	23	35	34.3	3	10	12.0	0.2700	2.440	0.040	1.050
306	4	59	54.3	25	12	12.0	0.2775	2.264	0.054	4.000
800	13	2	55.5	-10	17	10.0	0.2784	1.228	0.103	1.030
177	2	44	4.6	-45	12	13.0	0.2800	1.824	0.028	1.004
1070	17	25	56.3	4	29	28.0	0.2930	1.326	0.076	0.840
1260	22	1	1.4	31	31	6.0	0.2950	1.990	0.062	2.020
204	3	17	0.1	18	50	42.0	0.3000	1.308	0.120	0.742
1140	19	28	49.3	73	51	45.0	0.3021	1.992	0.093	3.000
23	0	19	51.7	-0	1	42.0	0.3050	2.568	0.025	2.240

264	4	22	12.5	0	29	17.0	0.3100	0.945	0.254	0.800
618	10	34	55.8	−29	18	27.0	0.3120	0.651	0.341	1.300
866	13	55	57.3	−41	38	19.0	0.3130	2.466	0.101	3.100
175	2	40	19.2	−21	45	10.0	0.3140	1.839	0.156	0.640
931	14	51	18.3	−37	35	23.0	0.3140	2.264	0.090	1.500
1031	16	45	27.9	17	25	27.0	0.3141	1.557	0.083	1.400
581	10	3	25.9	83	4	57.0	0.3220	1.037	0.143	1.070
1089	17	49	10.4	9	39	43.0	0.3220	1.656	0.254	1.100
1293	22	27	45.0	−39	58	16.0	0.3230	1.681	0.070	1.020
368	6	7	26.0	−15	42	3.0	0.3240	1.544	0.135	1.000
858	13	52	6.9	−10	26	22.0	0.3320	1.431	0.250	0.800
29	0	24	2.8	34	52	6.0	0.3330	1.273	0.177	0.900
716	11	50	48.0	49	47	50.0	0.3340	2.353	0.173	1.600
708	11	46	22.4	−3	47	30.0	0.3410	1.781	0.128	0.456
1174	20	7	20.4	77	43	58.0	0.3420	1.287	0.295	1.200
1236	21	39	60.0	−4	51	28.0	0.3440	1.044	0.310	0.600
6	0	3	40.2	−6	40	17.0	0.3470	1.540	0.069	1.690
548	9	25	33.5	−20	21	45.0	0.3480	0.950	0.094	0.837
469	8	4	58.4	49	59	23.0	0.3510	1.551	0.306	1.300
653	11	1	7.9	−32	35	5.0	0.3554	1.819	0.170	0.800
953	15	10	8.9	−8	54	47.0	0.3610	0.753	0.075	3.140
104	1	34	49.8	32	54	20.0	0.3670	3.379	0.103	10.500
569	9	54	57.8	65	48	15.0	0.3680	1.468	0.232	0.900
127	2	2	0.9	−76	34	26.0	0.3890	2.151	0.082	1.589
940	14	56	29.2	4	28	9.0	0.3915	1.396	0.203	0.700
1273	22	8	42.9	−13	42	59.0	0.3920	1.547	0.112	0.782
763	12	36	52.3	7	46	45.0	0.4000	0.665	0.148	0.650
478	8	12	47.3	2	4	13.0	0.4020	1.826	0.073	1.310
128	2	2	7.4	14	59	50.0	0.4050	1.746	0.100	3.200
296	4	54	26.5	6	40	29.0	0.4050	1.156	0.099	0.500
972	15	46	58.3	2	46	5.0	0.4144	1.473	0.081	0.790
742	12	16	1.0	−1	3	14.0	0.4150	1.066	0.194	0.280
314	5	7	7.5	17	56	58.0	0.4160	0.942	0.443	0.700
740	12	15	24.9	−0	13	6.0	0.4184	1.670	0.209	0.370
657	11	3	58.4	−0	36	41.0	0.4233	2.031	0.026	0.673
437	7	35	14.1	17	49	9.0	0.4240	1.481	0.120	2.000
536	9	12	1.4	2	58	36.0	0.4270	0.648	0.144	0.680
869	13	58	56.8	62	25	8.0	0.4310	2.233	0.075	3.400
755	12	22	23.4	21	39	23.0	0.4350	1.941	0.155	1.200
976	15	48	21.2	11	29	47.0	0.4360	1.836	0.168	0.700
294	4	54	18.0	−81	5	54.0	0.4440	0.798	0.099	1.093
1050	17	6	11.7	0	38	55.0	0.4490	1.661	0.063	0.500
614	10	31	56.0	56	44	18.0	0.4500	2.425	0.125	1.800
701	11	43	54.8	−28	42	38.0	0.4500	0.915	0.119	0.396
400	6	46	19.6	−30	40	54.0	0.4550	0.859	0.369	0.900
446	7	42	30.7	31	50	16.0	0.4611	1.109	0.173	1.100
989	16	2	13.0	1	25	59.0	0.4616	0.938	0.091	0.470
1384	23	51	35.4	−0	36	29.0	0.4620	2.743	0.027	2.490
136	2	11	59.8	17	8	52.0	0.4720	0.729	0.539	1.200
1121	18	42	43.4	68	6	20.0	0.4720	1.946	0.150	1.200
998	16	7	9.3	26	49	18.0	0.4730	2.360	0.057	3.100
1274	22	9	32.3	8	4	25.0	0.4840	2.086	0.135	1.200
1331	23	7	57.6	10	39	13.0	0.4940	1.452	0.275	0.700
1224	21	28	52.7	−12	20	21.0	0.5010	1.694	0.051	1.690
490	8	23	13.6	3	19	15.0	0.5060	1.447	0.059	1.420

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1281	22	14	7.0	35	3	15.0	0.5100	1.421	0.207	1.000
1297	22	32	11.5	-48	51	31.0	0.5100	1.963	0.042	0.797
151	2	21	50.0	6	45	49.0	0.5110	1.792	0.138	1.400
31	0	26	34.8	34	39	58.0	0.5170	2.658	0.215	1.800
268	4	25	8.6	4	50	30.0	0.5170	1.646	0.119	0.619
411	7	10	4.0	43	54	29.0	0.5180	2.487	0.114	2.000
1357	23	26	36.0	-50	12	13.0	0.5180	0.756	0.078	0.471
512	8	42	6.5	-75	29	20.0	0.5210	2.525	0.105	2.413
619	10	36	39.5	-15	25	28.0	0.5250	1.328	0.049	0.738
571	9	55	25.4	32	38	23.0	0.5305	1.335	0.333	0.700
786	12	53	35.8	-5	31	8.0	0.5362	1.454	0.052	11.800
184	2	52	0.3	-54	54	2.0	0.5390	1.049	0.077	1.940
833	13	34	59.8	-12	42	9.0	0.5390	0.759	0.123	0.748
346	5	38	43.5	49	49	43.0	0.5450	3.932	0.106	14.000
1176	20	8	33.7	-6	53	2.0	0.5470	1.552	0.077	2.100
971	15	43	36.2	0	35	42.0	0.5500	1.824	0.159	1.180
770	12	41	27.6	16	39	18.0	0.5551	3.115	0.077	2.500
274	4	31	4.4	-51	15	42.0	0.5570	2.098	0.056	0.714
695	11	36	38.5	-13	34	5.0	0.5580	1.974	0.048	3.400
81	1	18	9.5	-27	17	7.0	0.5590	1.075	0.266	1.000
593	10	12	0.5	23	16	12.0	0.5650	1.680	0.150	0.800
721	11	56	37.4	-22	11	31.0	0.5650	0.752	0.085	0.777
82	1	19	3.1	11	34	9.0	0.5700	1.824	0.120	1.800
245	4	5	27.4	-12	19	32.0	0.5726	1.807	0.067	2.700
241	4	3	14.0	-13	16	18.0	0.5740	2.399	0.077	4.000
369	6	10	43.8	26	5	30.0	0.5800	1.535	0.123	0.650
935	14	52	25.0	30	8	6.0	0.5800	2.252	0.085	3.400
307	5	0	45.2	1	58	54.0	0.5846	1.274	0.123	2.000
661	11	5	17.7	-68	4	36.0	0.5880	1.140	0.107	0.510
1069	17	25	47.6	12	18	3.0	0.5880	1.815	0.076	1.085
544	9	20	48.2	-39	46	42.0	0.5910	1.933	0.097	2.100
1026	16	41	17.6	39	54	10.0	0.5928	1.525	0.041	7.600
79	1	16	24.2	8	14	5.0	0.5940	2.193	0.148	1.300
1117	18	30	52.4	28	31	17.0	0.5940	2.883	0.148	1.900
629	10	45	40.1	-18	53	44.0	0.5950	1.030	0.053	0.895
242	4	3	59.2	76	48	53.0	0.5985	3.172	0.035	4.400
1381	23	45	27.7	-16	47	53.0	0.6000	1.371	0.035	4.287
1191	20	32	58.5	10	45	43.0	0.6010	1.218	0.226	0.700
72	1	10	3.8	31	52	24.0	0.6030	2.120	0.377	0.700
967	15	38	30.1	14	57	25.0	0.6050	1.481	0.060	1.500
118	1	50	57.0	-33	25	11.0	0.6100	0.690	0.414	1.000
1076	17	32	35.7	9	28	52.0	0.6100	2.339	0.149	1.500
1267	22	5	10.0	-63	40	31.0	0.6180	2.343	0.065	0.927
630	10	46	22.6	-40	58	8.0	0.6200	1.942	0.066	1.474
1041	16	55	44.0	7	46	0.0	0.6210	1.679	0.092	1.630
1164	19	54	39.0	-38	53	13.0	0.6300	1.589	0.124	1.000
659	11	4	36.6	16	44	17.0	0.6320	1.762	0.150	1.100
775	12	44	6.7	-25	31	27.0	0.6330	0.856	0.105	1.360
441	7	38	0.2	31	19	2.0	0.6350	1.349	0.121	1.900
1128	19	1	2.3	31	55	14.0	0.6350	2.373	0.091	3.100
865	13	55	38.2	44	8	34.0	0.6460	2.525	0.193	0.800
1166	19	58	4.6	-17	57	17.0	0.6500	0.797	0.118	1.120
1141	19	29	8.0	-45	43	5.0	0.6520	1.674	0.030	0.785
391	6	37	23.4	-75	13	37.0	0.6530	1.973	0.028	5.998
835	13	36	15.7	-23	46	1.0	0.6570	0.930	0.155	0.450

551	9	32	43.7	2	17	12.0	0.6590	2.707	0.067	0.559
1099	18	0	3.2	44	4	19.0	0.6630	1.569	0.124	0.790
1112	18	23	14.9	56	49	18.0	0.6640	1.594	0.149	1.600
748	12	18	49.9	-2	25	12.0	0.6650	1.901	0.177	0.800
124	1	59	30.3	-11	46	59.0	0.6690	2.135	0.081	2.200
75	1	13	43.2	-11	52	3.0	0.6700	2.218	0.108	2.700
533	9	6	17.3	43	5	59.0	0.6700	1.713	0.042	1.751
947	15	4	13.0	37	42	24.0	0.6710	1.993	0.067	0.518
1364	23	29	37.8	-41	35	12.0	0.6715	1.292	0.208	1.100
78	1	15	43.7	2	42	19.0	0.6720	1.234	0.213	1.800
1255	21	55	22.3	-15	15	16.0	0.6720	2.247	0.075	0.960
1317	22	51	51.9	13	25	49.0	0.6730	1.972	0.110	1.100
1378	23	44	3.8	9	14	6.0	0.6770	1.904	0.075	1.900
1102	18	3	39.2	78	27	54.0	0.6800	1.244	0.129	2.600
1221	21	26	33.9	-18	34	33.0	0.6800	1.772	0.096	1.400
509	8	38	1.7	13	23	6.0	0.6808	2.103	0.117	1.700
384	6	22	2.7	-44	11	23.0	0.6880	1.885	0.040	0.745
1115	18	28	13.5	48	42	40.0	0.6920	2.457	0.038	11.000
547	9	23	55.3	39	15	22.0	0.6948	2.011	0.076	4.200
563	9	50	4.6	74	50	8.0	0.6950	2.592	0.148	1.200
1185	20	22	20.9	-70	17	9.0	0.6970	1.831	0.089	0.629
627	10	42	19.5	7	11	25.0	0.6980	0.996	0.063	0.500
147	2	19	38.3	-16	28	55.0	0.7000	0.337	0.270	0.319
1240	21	43	38.8	-15	39	37.0	0.7010	1.364	0.073	1.000
639	10	53	36.3	81	30	35.0	0.7060	0.729	1.013	0.600
375	6	15	32.8	82	3	57.0	0.7100	1.454	0.245	1.300
852	13	49	18.8	64	46	19.0	0.7100	2.811	0.156	1.200
567	9	53	59.8	25	29	34.0	0.7120	0.698	0.373	1.300
671	11	16	6.2	-46	17	50.0	0.7130	2.064	0.064	1.784
60	0	56	31.8	-0	10	9.0	0.7190	1.688	0.119	2.200
863	13	54	42.1	19	33	43.0	0.7200	1.415	0.074	1.800
1387	23	52	17.8	-4	21	45.0	0.7200	1.357	0.075	0.248
723	11	56	57.8	29	31	26.0	0.7290	1.797	0.157	1.300
109	1	38	55.6	-9	43	32.0	0.7330	1.602	0.148	0.900
1019	16	36	19.2	47	23	29.0	0.7400	1.139	0.076	1.060
1249	21	49	7.7	5	38	7.0	0.7400	1.500	0.265	0.800
1021	16	37	17.4	57	26	16.0	0.7506	1.135	0.233	1.400
1028	16	42	18.0	69	2	14.0	0.7510	1.662	0.139	1.700
764	12	37	7.3	-10	7	1.0	0.7520	1.518	0.058	1.630
1123	18	43	48.3	35	38	4.0	0.7640	2.749	0.221	1.200
1312	22	47	16.1	13	15	16.0	0.7674	1.827	0.118	1.000
1088	17	49	3.4	70	6	39.0	0.7700	1.851	0.226	1.100
1304	22	40	41.7	-26	0	14.0	0.7740	1.415	0.090	0.930
1222	21	27	38.4	-9	40	50.0	0.7800	1.452	0.188	0.700
1009	16	22	44.1	-25	20	52.0	0.7860	2.231	0.054	2.308
597	10	16	13.1	-31	8	43.0	0.7940	1.447	0.220	0.600
1300	22	34	1.7	28	13	23.0	0.7950	0.854	0.120	0.910
253	4	13	53.5	-21	3	50.0	0.8080	2.107	0.076	1.944
1010	16	22	57.2	-29	44	41.0	0.8150	1.921	0.084	2.200
1230	21	35	45.4	-24	53	28.0	0.8190	0.897	0.304	0.700
22	0	18	34.5	72	56	4.0	0.8210	2.406	0.161	0.800
605	10	22	1.5	19	27	35.0	0.8280	1.546	0.067	1.040
1104	18	6	56.5	45	41	47.0	0.8300	1.101	0.554	0.500
105	1	35	17.1	-24	46	9.0	0.8310	1.609	0.070	1.490
421	7	23	4.3	67	54	53.0	0.8460	1.953	0.144	1.700

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 539     9   15   10.4   -21   18   57.0    0.8470    1.758    0.094     0.600
 823    13   28   49.7    30   45   58.0    0.8490    3.547    0.051    20.000
 221     3   36   59.0    -1   56   17.0    0.8520    1.094    0.110     2.700
 737    12   13   24.8    35    4   55.0    0.8570    1.730    0.183     1.200
 295     4   54   24.2   -46   20   38.0    0.8580    2.094    0.049     2.439
 781    12   50   14.9   -33    3   42.0    0.8590    1.433    0.057    10.500
1315    22   51   29.5    15   52   54.0    0.8590    1.033    0.064     0.529
 103     1   33   55.1    47   36   13.0    0.8600    1.814    0.249     2.100
1168    20    2   24.4   -18   30   39.0    0.8680    1.747    0.040     0.695
 785    12   52    7.7    11   57   21.0    0.8710    1.635    0.249     0.800
1092    17   51   53.7    44   10   18.0    0.8710    1.774    0.075     1.800
 365     6    5   36.0    -8   34   19.0    0.8720    1.972    0.048     2.806
 948    15    4   16.4   -16   40   59.0    0.8760    1.453    0.079     2.200
1042    16   56    5.6     5   19   48.0    0.8790    1.099    0.056     1.610
 643    10   55   55.3     1   50    0.0    0.8880    1.144    0.059     2.870
 455     7   48    5.0    12   38   46.0    0.8890    1.526    0.143     2.000
 809    13   17    4.7    -0   33   56.0    0.8904    2.098    0.088     1.120
 187     2   56   47.0     7   35   46.0    0.8930    1.218    0.342     0.700
 344     5   37   21.0   -44    6   46.0    0.8940    1.149    0.041     3.777
 132     2    5   26.9    72   15   16.0    0.8950    1.474    0.260     0.800
 212     3   27   43.9   -24    7   23.0    0.8950    0.824    0.132     0.610
 928    14   48   56.5    76   13   34.0    0.8990    1.703    0.266     1.000
1283    22   16   16.4    -3   50   41.0    0.9010    1.064    0.056     1.620
 573     9   57   43.8     0   19   49.0    0.9050    3.372    0.040     6.900
 941    14   58   56.6    71   52   11.0    0.9053    2.116    0.026     0.584
 261     4   20   43.5    -1   27   28.0    0.9150    0.949    0.298     1.000
1324    22   55   22.5   -28   14   26.0    0.9260    1.301    0.069     1.292
 725    11   57   18.3   -21   32   12.0    0.9270    0.632    0.151     0.660
 474     8    8   51.2     1   55   51.0    0.9300    0.600    0.184     0.390
  25     0   22   15.4   -42   18   41.0    0.9370    1.763    0.032     3.240
 494     8   27   54.4    24   21    8.0    0.9390    0.940    0.254     1.300
 166     2   35   52.6    16   24    4.0    0.9400    0.438    0.388     2.000
1196    20   44   34.2    -2   47   26.0    0.9420    2.515    0.022     1.612
 343     5   37   17.2   -15   52    5.0    0.9470    1.747    0.087     0.640
 485     8   20   28.6    22   32   44.0    0.9510    2.270    0.064     2.200
 308     5    2   43.8     4   55   39.0    0.9540    0.991    0.316     0.600
 535     9    7   13.1    -2   19   16.0    0.9570    1.887    0.024     0.565
1390    23   54   55.8   -11   41   59.0    0.9600    1.661    0.121     1.500
 750    12   19   49.4     4   29   51.0    0.9650    1.435    0.078     0.650
1144    19   33   51.0   -40    4   48.0    0.9650    1.810    0.063     1.308
 169     2   37   14.4     4    3   29.0    0.9780    0.568    0.426     0.800
 849    13   47   42.6    53   56    8.0    0.9790    1.332    0.382     0.900
1242    21   45   36.6     6   43   33.0    0.9900    1.664    0.157     3.100
 448     7   43   21.1    -0   36   56.0    0.9940    1.939    0.039     0.946
 135     2    8   57.0   -51   15    8.0    0.9990    1.031    0.051     3.679
1391    23   55   18.2   -53   27   56.0    1.0060    0.659    0.113     1.226
1206    20   59    8.1     3   29   39.0    1.0130    1.167    0.071     0.570
 233     3   55   52.5   -48   20   49.0    1.0160    1.517    0.033     0.620
 534     9    6   35.3     1   33   47.0    1.0180    1.794    0.081     0.760
  97     1   30   17.6   -17   10   11.0    1.0200    1.544    0.197     1.000
 477     8   12   10.7    36   44   27.0    1.0250    1.552    0.122     1.200
 625    10   40    6.0    12   19   15.0    1.0290    2.083    0.041     2.380
 850    13   48   55.9   -28   57   30.0    1.0340    1.797    0.163     1.000
   7     0    3   48.8    -0   21    6.0    1.0370    2.627    0.036     2.650
 676    11   19   52.2    18   21   54.0    1.0400    1.248    0.281     0.800
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761	12	29	26.3	-2	7	38.0	1.0450	2.202	0.139	1.290
522	8	55	55.5	14	21	25.0	1.0480	2.422	0.084	2.500
1084	17	41	20.6	-3	48	49.0	1.0540	2.568	0.021	5.600
1210	21	6	19.4	-41	22	34.0	1.0580	1.346	0.054	2.042
1394	23	56	12.6	19	38	38.0	1.0660	1.155	0.453	0.600
159	2	30	28.8	-79	1	1.0	1.0700	0.895	0.216	0.500
957	15	14	41.0	19	43	11.0	1.0700	0.760	0.070	0.525
1371	23	35	23.1	-2	47	33.0	1.0720	1.136	0.062	0.650
1261	22	1	3.3	17	11	15.0	1.0750	0.838	0.237	1.000
743	12	16	38.6	48	46	35.0	1.0760	1.107	0.414	0.700
89	1	22	55.3	-0	21	34.0	1.0800	1.529	0.160	1.300
299	4	56	8.2	6	3	33.0	1.0800	1.443	0.094	0.847
704	11	44	21.0	40	15	14.0	1.0880	1.399	0.258	0.900
14	0	8	28.9	-26	29	15.0	1.0960	0.405	0.315	0.580
834	13	35	55.2	55	16	16.0	1.0987	0.880	0.581	0.600
987	16	0	11.9	33	35	10.0	1.1000	1.538	0.106	2.700
1012	16	25	56.5	-14	8	56.0	1.1000	1.322	0.356	0.600
269	4	26	54.7	-38	2	52.0	1.1100	0.793	0.112	1.440
642	10	55	37.5	20	7	55.0	1.1100	2.167	0.140	1.200
1241	21	44	42.5	9	15	51.0	1.1130	1.390	0.106	0.780
168	2	37	13.7	-2	47	33.0	1.1160	1.106	0.077	0.626
1130	19	8	12.6	-20	11	57.0	1.1190	1.712	0.062	2.300
610	10	30	7.8	41	31	35.0	1.1200	1.171	0.335	0.800
505	8	34	42.3	25	4	54.0	1.1220	0.741	0.599	0.700
880	14	4	57.2	-34	17	15.0	1.1220	1.789	0.202	1.100
1275	22	9	45.7	23	40	50.0	1.1250	0.663	0.412	0.700
769	12	40	30.0	-29	26	57.0	1.1350	1.620	0.036	0.619
1329	23	3	40.1	-5	16	2.0	1.1390	1.638	0.086	0.567
699	11	42	50.2	-22	33	52.0	1.1410	1.811	0.086	1.090
732	12	10	59.3	13	24	1.0	1.1410	1.727	0.053	0.514
628	10	44	49.7	71	59	27.0	1.1500	0.387	0.818	1.000
1362	23	29	2.1	-16	13	27.0	1.1530	1.758	0.054	1.200
110	1	42	45.0	-27	48	36.0	1.1550	1.286	0.066	0.793
915	14	38	20.3	-34	43	57.0	1.1590	1.277	0.069	0.517
1200	20	53	12.8	-4	28	19.0	1.1770	1.577	0.116	0.588
46	0	38	23.8	-2	2	42.0	1.1780	1.022	0.047	0.674
1175	20	8	25.9	-15	55	38.0	1.1800	0.398	1.163	0.600
801	13	5	22.1	80	24	21.0	1.1830	2.167	0.292	0.700
1368	23	32	46.4	-1	47	45.0	1.1840	1.485	0.048	0.570
950	15	8	15.0	-5	31	49.0	1.1850	1.905	0.047	3.080
685	11	27	35.7	-14	32	54.0	1.1870	1.728	0.029	6.069
911	14	35	18.7	-21	51	58.0	1.1870	1.611	0.089	0.790
1363	23	29	18.9	-38	28	21.0	1.2020	1.099	0.081	0.796
1265	22	4	26.3	-54	1	15.0	1.2060	1.294	0.066	1.649
288	4	46	21.2	11	16	18.0	1.2070	2.001	0.088	1.800
807	13	13	20.1	-33	23	9.0	1.2100	0.859	0.120	1.230
583	10	4	32.3	-1	52	42.0	1.2120	1.254	0.088	0.640
251	4	9	44.7	22	57	28.0	1.2130	2.048	0.111	1.700
1189	20	29	32.6	12	9	29.0	1.2150	1.214	0.157	1.100
488	8	21	37.3	39	26	28.0	1.2160	2.622	0.085	1.900
1163	19	54	22.5	51	23	46.0	1.2200	2.032	0.147	1.400
595	10	15	15.9	35	57	39.0	1.2260	0.585	0.464	0.700
997	16	6	23.4	10	37	0.0	1.2260	1.140	0.088	1.000
810	13	17	53.0	1	55	54.0	1.2350	2.055	0.149	0.610
1161	19	53	48.4	-32	33	49.0	1.2420	1.549	0.136	0.485

1113	18	23	31.1	-45	34	19.0	1.2440	1.380	0.064	0.588
538	9	13	39.5	39	7	2.0	1.2500	0.951	0.402	1.200
714	11	50	23.5	81	15	10.0	1.2500	2.440	0.151	1.000
560	9	45	50.1	40	53	43.0	1.2520	2.109	0.111	1.700
1345	23	19	32.0	27	16	19.0	1.2530	1.805	0.172	1.100
603	10	20	14.6	40	3	27.0	1.2540	1.544	0.190	1.200
218	3	33	22.4	32	8	37.0	1.2580	0.813	0.162	2.300
114	1	48	37.3	27	29	50.0	1.2600	1.242	0.231	0.700
510	8	39	14.2	18	46	26.0	1.2700	1.104	0.097	1.640
621	10	38	40.9	6	25	59.0	1.2700	1.749	0.114	2.200
342	5	37	13.5	53	10	54.0	1.2750	1.046	0.381	0.800
321	5	14	1.1	-16	6	22.0	1.2780	1.883	0.146	0.700
244	4	5	12.0	-38	34	26.0	1.2850	0.979	0.111	2.200
1225	21	31	35.2	-2	6	42.0	1.2850	1.262	0.097	1.030
774	12	43	28.8	-7	14	23.0	1.2860	1.169	0.097	0.720
236	4	0	23.6	-31	55	42.0	1.2880	0.965	0.100	1.150
979	15	51	12.0	13	5	41.0	1.2900	1.583	0.107	0.870
410	7	7	2.5	47	37	8.0	1.2920	0.517	0.770	0.800
960	15	19	37.3	-27	19	31.0	1.2940	0.728	0.141	0.990
320	5	11	41.8	-22	2	41.0	1.2960	1.200	0.187	1.300
959	15	18	44.9	4	41	4.0	1.2960	2.182	0.077	3.000
1356	23	26	33.7	-47	46	52.0	1.2990	2.070	0.047	2.480
290	4	48	0.4	-39	16	16.0	1.3020	1.387	0.064	0.890
790	12	56	13.8	-22	3	21.0	1.3060	0.945	0.171	0.490
600	10	19	39.9	30	56	15.0	1.3160	1.301	0.255	1.000
929	14	49	12.6	-1	15	18.0	1.3190	1.682	0.064	0.803
116	1	49	31.7	21	52	21.0	1.3200	1.292	0.119	1.400
515	8	50	50.2	58	8	56.0	1.3220	1.621	0.148	1.600
1335	23	12	6.4	-31	55	1.0	1.3230	0.528	0.135	0.746
821	13	27	30.0	-31	7	31.0	1.3260	0.438	0.863	0.500
867	13	56	55.1	2	14	6.0	1.3301	1.113	0.087	0.790
266	4	23	57.3	5	11	36.0	1.3330	1.900	0.051	2.900
527	8	59	55.1	-14	3	40.0	1.3330	0.674	0.147	0.590
1005	16	15	19.1	2	53	58.0	1.3390	1.608	0.117	0.620
698	11	42	47.1	5	12	7.0	1.3420	0.573	0.152	0.970
707	11	45	18.1	-7	7	58.0	1.3420	1.747	0.087	0.641
293	4	54	8.9	3	56	15.0	1.3450	1.314	0.092	0.387
1306	22	43	36.3	-3	16	26.0	1.3470	2.073	0.039	0.740
1118	18	31	41.2	-71	11	14.0	1.3560	1.460	0.058	1.364
1008	16	19	14.0	-68	2	13.0	1.3600	1.141	0.048	1.790
74	1	12	43.9	-1	42	55.0	1.3650	0.871	0.174	0.909
791	12	56	27.6	-22	54	28.0	1.3650	0.579	0.087	0.492
963	15	25	16.9	31	25	48.0	1.3800	2.374	0.131	0.690
574	9	57	57.3	56	8	20.0	1.3900	3.014	0.202	0.900
328	5	22	0.4	-61	10	41.0	1.4000	1.168	0.096	0.722
1289	22	23	11.0	-5	12	17.0	1.4040	1.859	0.048	5.200
9	0	5	27.5	-23	56	0.0	1.4070	0.758	0.140	0.590
1350	23	20	57.4	-3	33	32.0	1.4100	0.596	0.171	0.790
591	10	10	54.8	35	0	44.0	1.4140	1.020	0.496	0.600
387	6	29	37.7	-41	52	14.0	1.4160	0.804	0.147	0.488
237	4	2	2.2	-36	13	16.0	1.4170	2.109	0.111	1.700
487	8	20	53.2	56	2	27.0	1.4170	0.424	0.114	0.958
471	8	5	33.7	41	1	33.0	1.4200	1.481	0.306	0.700
1131	19	8	55.7	-21	7	48.0	1.4200	1.242	0.100	0.630
975	15	48	6.9	5	36	11.0	1.4220	1.263	0.063	2.280

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 632    10  48  43.5   -31  22  18.0    1.4290   1.223   0.327   0.500
 965    15  32  20.3     1  41   0.0    1.4350   1.172   0.074   1.190
 891    14  16  38.8     6  42  21.0    1.4360   2.337   0.069   3.410
 217     3  32  25.2   -40  18  24.0    1.4450   1.356   0.041   1.805
 541     9  17  40.3    62  28  38.0    1.4460   1.735   0.181   1.600
1370    23  35  20.7   -18   8  58.0    1.4460   1.810   0.168   0.725
 160     2  32  36.5    -4  15   9.0    1.4500   2.106   0.054   0.912
 613    10  30  52.1   -35  46  27.0    1.4550   1.718   0.073   0.682
 647    10  58  20.1    72  41  45.0    1.4600   2.167   0.150   1.000
 526     8  59  40.0    47   2  57.0    1.4620   1.330   0.135   2.200
1270    22   7  34.1    35  41  15.0    1.4640   1.178   0.402   0.600
 129     2   2   9.7    31  58  10.0    1.4660   1.443   0.134   1.600
1184    20  21  26.6   -33   3  22.0    1.4700   1.792   0.234   0.700
 566     9  52  11.8    17  57  45.0    1.4720   1.484   0.223   1.000
1320    22  53  19.9    41  46  52.0    1.4760   1.327   0.190   1.500
 330     5  24   6.0   -46   0  28.0    1.4790   1.784   0.059   0.895
1199    20  52  50.1   -47  26  19.0    1.4890   1.292   0.082   1.050
1360    23  28   8.8    10  43  45.0    1.4890   2.120   0.053   3.152
 150     2  20  49.6   -34  55   5.0    1.4900   1.243   0.059   0.600
1203    20  58   0.9   -29  45  15.0    1.4920   0.870   0.429   0.500
 882    14   6  17.8    -7  38  15.0    1.4940   1.136   0.067   1.300
 841    13  40  54.5   -17  32  51.0    1.5000   2.185   0.063   0.825
 449     7  43  22.2   -67  19   9.0    1.5100   1.436   0.100   0.620
 836    13  36  32.4   -26   5  18.0    1.5100   1.960   0.031   3.231
 954    15  11   2.2   -10   0  51.0    1.5130   0.943   0.095   0.880
1213    21  13  20.6    29  21   5.0    1.5140   1.095   0.113   1.120
 228     3  48  49.0   -12   2  18.0    1.5200   1.280   0.142   0.492
 902    14  24  46.7   -41  52  54.0    1.5220   1.807   0.058   2.220
 890    14  15  13.4    46  20  55.0    1.5586   2.446   0.216   0.700
1292    22  27   2.3    -8  48  16.0    1.5595   1.038   0.109   1.300
 250     4   6  45.2   -12  46  37.0    1.5630   0.796   0.168   0.580
 508     8  37  12.4     3  30  32.0    1.5700   1.497   0.100   0.650
 908    14  30  36.1   -15  35  35.0    1.5730   1.500   0.083   0.550
1194    20  37  10.7   -25  18  26.0    1.5740   1.124   0.280   0.900
  19     0  13  37.4    -0  31  53.0    1.5750   1.317   0.042   0.855
1234    21  37  27.9    20  57  58.0    1.5760   2.048   0.111   0.900
 424     7  27  58.0   -11  34  51.0    1.5910   1.383   0.059   1.918
 660    11   4  50.4   -44  32  53.0    1.5980   1.743   0.081   1.060
 733    12  11  32.8    33  26  26.0    1.5980   0.708   0.063   1.810
 856    13  51  18.9     2   6  37.0    1.6077   1.788   0.034   0.347
 899    14  21   4.6    12  13  26.0    1.6110   2.079   0.063   0.751
 412     7  11   5.6    35  39  52.0    1.6200   0.708   0.337   1.900
1045    16  56  44.0    47  42  16.0    1.6220   1.526   0.287   0.800
 141     2  16  32.6     1   7  12.0    1.6230   0.724   0.140   0.600
 991    16   2  21.9    -0  10  57.0    1.6288   2.128   0.034   0.720
  94     1  27  15.0    14  31  20.0    1.6301   1.788   0.051   0.579
 689    11  30  46.2     0  57  27.0    1.6330   0.659   0.203   0.330
 158     2  29  52.0   -39  49   0.0    1.6460   1.431   0.093   0.629
1146    19  36  36.1   -15  32  41.0    1.6570   1.074   0.087   1.300
1025    16  38  48.2    39  52  30.0    1.6600   1.245   0.214   1.100
 656    11   2  19.8   -24  15  14.0    1.6660   0.248   0.182   0.484
1218    21  23  13.3   -46  18  50.0    1.6700   2.272   0.059   0.908
1193    20  37   7.5    51   8  36.0    1.6860   2.559   0.069   5.000
1085    17  43  22.3    17  21   8.0    1.7020   1.685   0.218   0.900
1303    22  39  19.9     9  38  10.0    1.7070   1.325   0.086   0.629
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999	16	10	51.8	-77	9	53.0	1.7100	1.604	0.030	2.954
546	9	22	36.0	0	33	26.0	1.7200	1.005	0.108	0.940
1094	17	56	55.9	23	43	56.0	1.7210	1.206	0.387	0.600
686	11	28	12.5	38	31	52.0	1.7330	0.832	0.437	0.900
130	2	2	34.5	-17	15	39.0	1.7400	1.464	0.124	1.200
54	0	48	49.0	-42	42	52.0	1.7490	1.332	0.077	0.714
712	11	48	30.2	-17	7	18.0	1.7510	1.602	0.205	0.900
1105	18	7	13.6	27	57	35.0	1.7600	1.838	0.251	0.700
876	14	3	21.6	-8	33	49.0	1.7630	1.629	0.139	0.730
981	15	55	17.7	0	6	42.0	1.7700	0.554	0.222	0.580
1348	23	20	30.4	-2	7	15.0	1.7740	1.250	0.191	0.330
916	14	38	22.5	38	33	3.0	1.7750	1.807	0.131	0.900
68	1	8	19.0	-7	57	38.0	1.7760	0.660	0.150	1.054
1295	22	29	41.0	-17	14	30.0	1.7800	1.481	0.216	0.900
21	0	16	54.1	73	10	52.0	1.7810	1.727	0.084	1.500
50	0	47	48.2	-57	54	47.0	1.7970	1.980	0.056	1.835
1374	23	37	16.6	-33	26	55.0	1.8020	1.623	0.143	1.700
1358	23	27	46.0	33	32	3.0	1.8090	1.221	0.504	0.500
932	14	51	20.6	-40	0	22.0	1.8100	1.136	0.047	0.734
1013	16	33	30.6	38	14	10.0	1.8136	1.183	0.151	2.100
617	10	34	38.2	-37	28	40.0	1.8210	0.518	0.082	0.567
473	8	5	49.6	-7	42	24.0	1.8370	0.850	0.495	1.100
944	15	2	0.2	10	41	18.0	1.8390	0.823	0.084	2.030
389	6	33	6.4	73	27	36.0	1.8500	1.635	0.307	0.900
1389	23	52	53.3	-45	30	8.0	1.8680	2.042	0.058	0.641
570	9	55	8.5	47	39	29.0	1.8730	1.130	0.286	1.100
1217	21	21	14.8	5	22	27.0	1.8780	0.889	0.133	2.470
862	13	54	28.6	-15	12	51.0	1.8900	1.537	0.059	1.170
1308	22	45	14.1	-12	53	11.0	1.8920	0.883	0.206	0.230
378	6	18	30.2	-25	13	49.0	1.9000	1.396	0.194	0.700
439	7	36	30.3	-6	20	5.0	1.9140	1.728	0.089	1.700
186	2	54	39.3	-33	27	12.0	1.9150	0.638	0.589	0.500
788	12	55	15.2	-31	39	5.0	1.9240	1.940	0.073	1.580
367	6	6	53.4	-22	19	46.0	1.9260	1.196	0.072	0.921
457	7	48	41.0	33	21	3.0	1.9320	0.901	0.487	0.700
1195	20	44	30.9	-16	50	10.0	1.9320	1.965	0.028	6.500
1227	21	34	5.2	0	28	25.0	1.9320	2.098	0.076	2.800
1043	16	56	12.3	34	48	0.0	1.9390	1.526	0.163	0.600
700	11	43	36.4	-24	30	53.0	1.9400	0.835	0.217	1.100
26	0	22	46.7	39	2	59.0	1.9460	1.135	0.418	0.700
454	7	46	39.9	48	22	31.0	1.9510	1.481	0.319	0.700
805	13	8	39.2	14	33	43.0	1.9520	2.739	0.155	1.700
1290	22	23	14.8	21	2	50.0	1.9590	2.138	0.128	0.766
757	12	25	30.8	36	51	47.0	1.9730	1.976	0.140	1.600
53	0	48	36.2	-7	6	21.0	1.9750	1.207	0.094	0.712
402	6	50	35.3	37	9	27.0	1.9820	1.081	0.304	1.000
711	11	48	10.2	-0	7	42.0	1.9828	2.032	0.053	2.510
443	7	40	33.2	82	49	24.0	1.9910	2.255	0.130	1.600
86	1	19	54.3	24	46	52.0	2.0250	1.700	0.279	0.700
812	13	18	28.2	-26	20	14.0	2.0270	1.338	0.085	0.650
263	4	21	32.8	1	57	32.0	2.0480	1.901	0.148	0.800
155	2	26	22.0	-3	50	57.0	2.0550	1.595	0.057	0.809
157	2	29	2.5	13	9	41.0	2.0590	1.612	0.127	2.000
333	5	28	6.8	13	29	42.0	2.0600	2.324	0.275	0.700
414	7	16	13.0	71	26	15.0	2.0600	1.759	0.083	2.735

912	14	35	37.2	63	49	36.0	2.0680	2.353	0.110	1.600
819	13	25	10.6	43	41	59.0	2.0730	1.422	0.368	0.600
1321	22	54	44.6	2	27	14.0	2.0810	0.420	0.241	0.397
825	13	31	10.0	17	4	25.0	2.0840	1.686	0.149	1.000
1007	16	16	36.6	6	20	13.0	2.0860	1.697	0.257	1.100
1346	23	20	3.9	7	55	33.0	2.0900	1.916	0.132	0.900
1098	17	58	44.7	38	48	32.0	2.0920	1.562	0.479	0.600
66	1	6	4.6	1	19	0.0	2.0990	0.785	0.069	3.900
162	2	34	21.6	-30	6	56.0	2.1034	1.123	0.122	0.400
235	4	0	3.6	25	51	47.0	2.1090	1.466	0.167	1.400
672	11	16	20.8	12	51	7.0	2.1180	0.564	0.664	0.500
1258	22	0	7.7	-23	49	42.0	2.1180	1.861	0.079	1.740
918	14	39	54.0	32	47	5.0	2.1200	1.742	0.148	0.900
1243	21	45	51.1	-17	37	50.0	2.1300	2.264	0.048	0.834
602	10	20	11.8	19	8	45.0	2.1360	1.449	0.077	0.570
978	15	50	59.8	-26	55	51.0	2.1450	1.495	0.134	1.500
1323	22	55	4.7	41	38	13.0	2.1500	1.774	0.168	1.800
396	6	42	37.6	-34	56	32.0	2.1650	1.097	0.223	1.200
507	8	36	21.6	71	4	22.0	2.1720	2.688	0.058	4.400
729	12	4	55.1	28	11	41.0	2.1770	1.549	0.085	0.560
615	10	32	37.4	-19	56	2.0	2.1980	1.434	0.036	1.082
703	11	44	4.6	54	13	23.0	2.2010	0.222	2.296	0.600
927	14	48	9.3	-23	17	10.0	2.2150	1.684	0.060	0.427
170	2	37	52.8	-23	22	6.0	2.2230	2.005	0.045	5.550
1310	22	45	51.5	-32	51	43.0	2.2680	1.281	0.035	2.077
37	0	35	19.8	23	50	42.0	2.2700	1.938	0.094	0.785
259	4	20	16.1	2	12	29.0	2.2770	0.691	0.172	0.299
492	8	24	22.3	11	2	19.0	2.2780	2.570	0.062	3.000
302	4	58	41.4	-2	3	34.0	2.2860	1.189	0.133	2.000
1316	22	51	44.4	24	29	24.0	2.3280	1.619	0.180	1.400
907	14	30	10.7	-17	48	24.0	2.3310	1.090	0.095	1.190
119	1	53	4.3	74	28	6.0	2.3380	1.779	0.104	2.100
681	11	23	14.8	26	26	49.0	2.3410	0.901	0.498	0.700
1247	21	49	0.6	-30	42	1.0	2.3450	1.023	0.101	1.350
1231	21	36	2.2	82	25	39.0	2.3570	2.543	0.164	1.100
91	1	23	57.3	25	43	27.0	2.3580	1.253	0.179	0.900
354	5	52	1.4	39	48	22.0	2.3650	1.139	0.151	3.400
137	2	12	49.9	73	35	40.0	2.3670	1.550	0.111	2.300
301	4	57	15.5	2	25	5.0	2.3840	1.925	0.138	1.300
925	14	45	28.3	-16	7	56.0	2.4100	1.389	0.079	1.010
1233	21	36	37.4	14	10	1.0	2.4270	1.730	0.074	1.190
884	14	6	58.4	-26	43	27.0	2.4300	0.785	0.071	0.508
1340	23	14	2.0	-40	57	44.0	2.4480	1.676	0.045	0.525
1354	23	25	11.6	-15	4	27.0	2.4650	1.292	0.269	1.100
873	14	2	11.4	-1	16	3.0	2.5073	0.835	0.098	0.880
1011	16	24	18.3	41	41	24.0	2.5500	2.123	0.141	1.500
604	10	21	56.2	-0	37	42.0	2.5550	1.926	0.081	0.920
838	13	37	46.1	63	44	9.0	2.5584	1.598	0.323	0.600
292	4	51	15.1	-28	12	29.0	2.5590	1.307	0.164	2.300
246	4	5	38.5	-33	11	42.0	2.5620	1.768	0.079	0.723
447	7	42	48.5	10	18	33.0	2.6240	1.344	0.117	3.900
205	3	19	8.2	12	10	32.0	2.6620	1.907	0.102	1.400
213	3	29	0.5	-25	34	53.0	2.6850	1.506	0.101	0.417
173	2	39	47.1	10	48	16.0	2.6940	1.124	0.162	1.800
277	4	34	48.9	-18	50	48.0	2.7020	0.382	0.417	1.300

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 584    10    4   59.8     14    11   11.0      2.7070    1.236    0.123    0.810
 106     1   36   59.3     17    37   56.0      2.7300    1.252    0.132    0.520
 983    15   56   41.2    -24    34   11.0      2.8130    1.599    0.155    0.610
1015    16   35   41.4     -3    34    9.0      2.8560    1.456    0.081    0.320
 282     4   38   43.1    -43    38   55.0      2.8630    2.372    0.039    6.500
1334    23   11   21.9    -45    12   11.0      2.8840    2.063    0.055    2.074
 450     7   43   23.1     25    56   25.0      2.9793    1.124    0.282    0.600
 905    14   27   44.0     54    19   30.0      3.0134    1.874    0.284    0.900
 345     5   37   56.0    -28    41   33.0      3.1040    1.328    0.218    1.000
 860    13   54   22.0    -17    29   24.0      3.1470    1.124    0.075    1.360
1145    19   35   11.9    -69    14   52.0      3.1540    1.811    0.061    1.358
 554     9   38   31.7     11    59   13.0      3.1770    1.305    0.147    0.280
1002    16   14    9.1      5     6   54.0      3.1970    1.085    0.109    0.630
 874    14    2   30.0      4    29   55.0      3.2153    1.292    0.088    0.650
1220    21   26   26.8    -15    51   50.0      3.2680    1.877    0.131    0.900
  20     0   14    4.5     81    18   29.0      3.3660    1.750    0.260    1.000
 397     6   42   53.1     44    54   30.0      3.3960    1.770    0.170    1.200
 382     6   20   51.6     38    58   27.0      3.4690    1.404    0.121    1.800
 966    15   35   42.6      0    28   50.0      3.4970    1.015    0.078    0.880
 922    14   42   50.6     10    11   12.0      3.5220    1.861    0.066    2.010
 760    12   28   20.0    -11    22   36.0      3.5280    1.093    0.056    0.578
1282    22   15   15.7      2     5    7.0      3.5720    1.415    0.043    0.630
 125     2    1    6.1     11    20   22.0      3.6100    0.552    0.409    1.300
 857    13   51   32.1     -1    51   21.0      3.7070    0.744    0.108    0.840
1167    20    0   13.0    -33     0   13.0      3.7730    1.260    0.146    1.100
1148    19   37   12.7    -10     9   40.0      3.7870    1.655    0.201    0.900
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