

CONSTELLATION TUNING

Base	Ratio	Num	Denom	Partial	Cents Off
1	1/1	1	1	1	0
1	3/2	3	1	3	0
1	5/4	5	1	5	0
1	7/4	7	1	7	0
1	11/8	11	1	11	0
1	13/8	13	1	13	0
1	17/16	17	1	17	0
1	19/16	19	1	19	0
1	21/16	21	1	21	0
1	23/16	23	1	23	0
1	29/16	29	1	29	0
1	31/16	31	1	31	0
1	7/6	7	3	299	1.93110343
1	19/12	19	3	203	2.84508536
1	6/5	3	5	77	4.50256183
1	23/20	23	5	147	-2.3538196
1	13/17	13	7	119	-2.07956067
1	19/14	19	7	87	2.84508536
1	31/28	31	7	1131	-4.1498092
1	11/9	11	9	39	-4.925278
1	17/9	17	9	121	1.59047696
1	12/11	3	11	2233	-0.9160155
1	17/11	17	11	99	1.59047696
1	14/13	7	13	69	1.93110343
1	19/13	19	13	187	-0.7120025
1	29/26	29	13	143	2.79607175
1	23/15	23	15	49	-2.3538196
1	31/30	31	15	33	-3.4939145
3	1/1	1	1	3	0
3	7/4	7	1	21	0
3	11/8	11	1	33	0
3	13/8	13	1	39	0
3	23/16	23	1	69	0
3	29/16	29	1	87	0
3	4/3	1	3	1	0
3	5/3	5	3	5	0
3	7/6	7	3	7	0
3	11/6	11	3	11	0
3	13/12	13	3	13	0
3	17/12	17	3	17	0
3	19/12	19	3	19	0
3	23/12	23	3	23	0
3	29/24	29	3	29	0
3	31/24	31	3	31	0
3	8/5	1	5	77	4.50256183
3	11/10	11	5	847	4.50256183
3	19/10	19	5	91	-3.8007349
3	14/9	7	9	299	1.93110343
3	19/18	19	9	203	2.84508536
3	16/11	1	11	2233	-0.9160155
3	29/22	29	11	253	-0.621963
3	29/26	29	13	429	2.79607175
3	23/15	23	15	147	-2.3538196
3	31/30	31	15	99	-3.4939145
5	1/1	1	1	5	0
5	7/6	7	3	187	3.0887324
5	11/6	11	3	147	3.93015844
5	19/12	19	3	253	-2.794395
5	8/5	1	5	1	0
5	6/5	3	5	3	0
5	7/5	7	5	7	0
5	11/10	11	5	11	0
5	13/10	13	5	13	0
5	17/10	17	5	17	0
5	19/10	19	5	19	0
5	21/20	21	5	21	0
5	23/20	23	5	23	0
5	29/20	29	5	29	0
5	31/20	31	5	31	0
5	25/14	25	7	143	1.73036901
5	19/11	19	11	69	-2.794395
5	25/22	25	11	91	1.73036901
5	27/22	27	11	49	-3.2089612
5	23/13	23	13	1131	-2.0005426
5	25/13	25	13	77	1.73036901
5	28/15	7	15	299	1.93110343
5	19/15	19	15	203	2.84508536

7	1/1	1	1	7	0
7	3/2	3	1	21	0
7	7/4	7	1	49	0
7	11/8	11	1	77	0
7	13/8	13	1	91	0
7	17/16	17	1	119	0
7	21/16	21	1	147	0
7	27/16	27	1	377	-4.5860531
7	29/16	29	1	203	0
7	4/3	1	3	299	1.93110343
7	5/3	5	3	187	3.0887324
7	13/12	13	3	121	-4.7626826
7	23/12	23	3	429	-1.3446479
7	8/7	1	7	1	0
7	12/7	3	7	3	0
7	10/7	5	7	5	0
7	11/7	11	7	11	0
7	13/7	13	7	13	0
7	17/14	17	7	17	0
7	19/14	19	7	19	0
7	23/14	23	7	23	0
7	29/28	29	7	29	0
7	31/28	31	7	31	0
7	14/9	7	9	87	-2.2096162
7	17/9	17	9	847	1.59047696
7	23/18	23	9	143	-1.3446479
7	25/18	25	9	39	4.93933017
7	13/11	13	11	33	-4.7626826
7	16/13	1	13	69	1.93110343
7	23/13	23	13	99	-1.3446479
11	1/1	1	1	11	0
11	3/2	3	1	33	0
11	7/4	7	1	77	0
11	9/8	9	1	99	0
11	11/8	11	1	121	0
11	13/8	13	1	143	0
11	17/16	17	1	187	0
11	23/16	23	1	253	0
11	5/3	5	3	147	3.93015844
11	19/12	19	3	2233	2.84508536
11	6/5	3	5	847	4.50256183
11	17/10	17	5	299	-1.157629
11	27/20	27	5	119	2.91208487
11	11/7	11	7	69	-3.5063017
11	15/14	15	7	377	-0.6558947
11	11/9	11	9	429	-4.925278
11	29/18	29	9	1131	-4.925278
11	16/11	1	11	1	0
11	12/11	3	11	3	0
11	20/11	5	11	5	0
11	14/11	7	11	7	0
11	13/11	13	11	13	0
11	17/11	17	11	17	0
11	19/11	19	11	19	0
11	21/11	21	11	21	0
11	23/22	23	11	23	0
11	29/22	29	11	29	0
11	31/22	31	11	31	0
11	15/13	15	13	203	-0.6558947
11	23/13	23	13	39	3.41803477
11	29/26	29	13	49	-2.7156618
11	31/30	31	15	91	1.26876814
13	1/1	1	1	13	0
13	3/2	3	1	39	0
13	7/4	7	1	91	0
13	11/8	11	1	143	0
13	23/16	23	1	299	0
13	29/16	29	1	377	0
13	7/6	7	3	121	-4.7626826
13	17/12	17	3	147	-3.9212566
13	9/5	9	5	187	-1.8505978
13	19/10	19	5	99	3.50098006
13	8/7	1	7	119	2.07956067
13	17/14	17	7	253	2.93512483
13	19/14	19	7	1131	2.84508536
13	17/9	17	9	49	-3.9212566
13	16/13	1	13	1	0
13	24/13	3	13	3	0
13	20/13	5	13	5	0
13	14/13	7	13	7	0
13	22/13	11	13	11	0
13	17/13	17	13	17	0
13	19/13	19	13	19	0
13	21/13	21	13	21	0
13	23/13	23	13	23	0
13	29/26	29	13	29	0
13	31/26	31	13	31	0
13	19/15	19	15	33	3.50098006
13	31/30	31	15	429	-3.4939145

17	1/1	1	1	17	0
17	7/4	7	1	119	0
17	11/8	11	1	187	0
17	31/16	31	1	33	3.28196127
17	13/12	13	3	147	-3.9212566
17	31/24	31	3	11	3.28196127
17	11/10	11	5	299	-1.157629
17	21/20	21	5	143	2.42300116
17	23/20	23	5	39	-4.4333803
17	27/20	27	5	23	3.76764904
17	13/7	13	7	253	2.93512483
17	23/14	23	7	7	4.42205617
17	16/9	1	9	121	1.59047696
17	14/9	7	9	847	1.59047696
17	13/9	13	9	49	-3.9212566
17	23/18	23	9	87	2.21243998
17	16/11	1	11	99	1.59047696
17	31/22	31	11	3	3.28196127
17	18/13	9	13	377	1.76710646
17	27/26	27	13	1131	1.76710646
17	29/26	29	13	19	3.50807425
17	17/15	17	15	77	-1.4982554
17	23/15	23	15	13	-4.4333803
19	1/1	1	1	19	0
19	25/16	25	1	119	3.64087211
19	27/16	27	1	1	-3.3780187
19	4/3	1	3	203	2.84508536
19	5/3	5	3	253	-2.794395
19	11/6	11	3	2233	2.84508536
19	29/24	29	3	23	3.13913785
19	31/24	31	3	49	-2.9417748
19	6/5	3	5	91	-3.8007349
19	13/10	13	5	99	3.50098006
19	21/20	21	5	5	4.33350426
19	8/7	1	7	87	2.84508536
19	13/7	13	7	1131	2.84508536
19	25/14	25	7	17	3.64087211
19	31/28	31	7	21	-2.9417748
19	20/11	5	11	69	-2.794395
19	31/22	31	11	429	2.56995877
19	16/13	1	13	187	-0.7120025
19	26/15	13	15	33	3.50098006
19	19/15	19	15	3	-4.8023167
19	29/15	29	15	147	0.78531825
21	1/1	1	1	21	0
21	7/4	7	1	147	0
21	9/8	9	1	377	-4.5860531
21	23/16	23	1	121	3.58063013
21	27/16	27	1	1131	-4.5860531
21	29/16	29	1	19	-2.8450854
21	4/3	1	3	7	0
21	7/6	7	3	49	0
21	11/6	11	3	77	0
21	13/12	13	3	91	0
21	17/12	17	3	119	0
21	29/24	29	3	203	0
21	17/10	17	5	143	2.42300116
21	8/7	1	7	3	0
21	11/7	11	7	33	0
21	13/7	13	7	39	0
21	23/14	23	7	69	0
21	29/28	29	7	87	0
21	16/9	1	9	299	1.93110343
21	10/9	5	9	187	3.0887324
21	23/18	23	9	429	-1.3446479
21	13/11	13	11	99	-4.7626826
21	21/11	21	11	5	-3.9301584
21	23/22	23	11	11	3.58063013
21	18/13	9	13	29	-4.5860531
21</					

49	1/1	1	1	49	0
49	3/2	3	1	147	0
49	15/8	15	1	23	2.3538196
49	17/16	17	1	13	-2.0795607
49	13/12	13	3	847	-4.7626826
49	31/24	31	3	253	-1.1400949
49	9/5	9	5	11	-3.9301584
49	27/20	27	5	33	-3.9301584
49	31/20	31	5	19	1.13934459
49	8/7	1	7	7	0
49	12/7	3	7	21	0
49	11/7	11	7	77	0
49	13/7	13	7	91	0
49	17/14	17	7	119	0
49	29/28	29	7	203	0
49	16/9	1	9	87	-2.2096162
49	13/9	13	9	1131	-2.2096162
49	25/18	25	9	17	-1.4138294
49	18/11	9	11	5	-3.9301584
49	13/11	13	11	29	2.71566181
49	21/11	21	11	187	-0.841426
49	31/22	31	11	69	-1.1400949
49	17/13	17	13	1	-2.0795607
49	19/13	19	13	143	-2.7915632
49	25/13	25	13	377	0.35327702
49	19/15	19	15	31	-1.8605419
69	1/1	1	1	69	0
69	7/4	7	1	121	3.58063013
69	13/8	13	1	7	-1.9311034
69	23/16	23	1	99	-3.2757513
69	4/3	1	3	23	0
69	11/6	11	3	253	0
69	13/12	13	3	299	0
69	17/12	17	3	49	4.42205617
69	23/12	23	3	33	-3.2757513
69	9/5	9	5	31	-2.7906355
69	11/10	11	5	19	2.2794395
69	13/7	13	7	1	-1.9311034
69	17/14	17	7	21	4.42205617
69	19/14	19	7	187	-2.6431059
69	29/28	29	7	143	0.86496832
69	14/9	7	9	429	-1.3446479
69	23/18	23	9	11	-3.2757513
69	25/18	25	9	3	3.00822673
69	31/18	31	9	119	2.4263971
69	15/11	15	11	377	2.92473542
69	29/22	29	11	91	0.86496832
69	29/26	29	13	77	0.86496832
69	16/15	1	15	147	-2.3538196
69	17/15	17	15	39	-4.4338303
69	23/15	23	15	847	1.22681053
77	1/1	1	1	77	0
77	5/4	5	1	3	-4.5025618
77	11/8	11	1	847	0
77	29/16	29	1	2233	0
77	31/16	31	1	299	3.62258774
77	5/3	5	3	1	-4.5025618
77	11/6	11	3	1131	2.55306645
77	27/20	27	5	13	0.8325242
77	8/7	1	7	11	0
77	12/7	3	7	33	0
77	9/7	9	7	99	0
77	11/7	11	7	121	0
77	13/7	13	7	143	0
77	17/14	17	7	187	0
77	23/14	23	7	253	0
77	11/9	11	9	377	2.55306645
77	25/18	25	9	429	4.93933017
77	29/18	29	9	31	-0.7754688
77	16/11	1	11	7	0
77	12/11	3	11	21	0
77	14/11	7	11	49	0
77	13/11	13	11	91	0
77	17/11	17	11	119	0
77	21/11	21	11	147	0
77	29/22	29	11	203	0
77	23/13	23	13	17	-2.9351248
77	27/26	27	13	5	0.8325242
77	31/26	31	13	23	3.62258774
87	1/1	1	1	87	0
87	7/4	7	1	19	-2.8450854
87	9/8	9	1	49	2.20961619
87	13/8	13	1	1131	0
87	25/16	25	1	17	0.79578675
87	27/16	27	1	147	2.20961619
87	4/3	1	3	29	0
87	7/6	7	3	203	0
87	13/12	13	3	377	0
87	19/12	19	3	69	3.13913785
87	8/5	1	5	2233	4.50256183
87	10/7	5	7	31	-3.9844299
87	9/7	9	7	7	2.20961619
87	17/14	17	7	847	3.8009315
87	23/14	23	7	143	0.86496832
87	19/18	19	9	23	3.13913785
87	25/18	25	9	121	2.38626371
87	31/18	31	9	299	-3.8557567
87	16/11	1	11	253	-0.621963
87	23/22	23	11	91	0.86496832
87	25/22	25	11	99	2.38626371
87	16/13	1	13	429	2.79607175
87	14/13	7	13	187	-3.5570879
87	23/13	23	13	77	0.86496832
87	31/26	31	13	13	4.48755606
87	29/15	29	15	21	-2.0597671

91	1/1	1	1	91	0
91	4/3	1	3	121	-4.7626826
91	5/3	5	3	19	3.80073489
91	7/6	7	3	847	-4.7626826
91	29/20	29	5	33	0.6558947
91	8/7	1	7	13	0
91	12/7	3	7	39	0
91	11/7	11	7	143	0
91	23/14	23	7	299	0
91	29/28	29	7	377	0
91	14/9	7	9	1131	-2.2096162
91	19/18	19	9	3	-1.0015818
91	25/18	25	9	253	1.5212954
91	12/11	3	11	99	-4.7626826
91	14/11	7	11	29	2.71566181
91	13/11	13	11	429	-4.7626826
91	15/11	15	11	31	-1.2687681
91	21/11	21	11	87	2.71566181
91	31/22	31	11	1	-3.0711983
91	16/13	1	13	7	0
91	24/13	3	13	21	0
91	14/13	7	13	49	0
91	22/13	11	13	77	0
91	17/13	17	13	119	0
91	21/13	21	13	147	0
91	29/26	29	13	203	0
91	23/15	23	15	2233	0.36184221
91	29/15	29	15	11	0.6558947
99	1/1	1	1	99	0
99	5/4	5	1	31	3.4939145
99	11/8	11	1	17	-1.590477
99	31/16	31	1	3	1.69148431
99	4/3	1	3	33	0
99	11/6	11	3	91	4.76268264
99	13/12	13	3	429	0
99	31/24	31	3	1	1.69148431
99	6/5	3	5	119	2.91208487
99	17/10	17	5	21	-3.0887324
99	19/10	19	5	377	3.67760956
99	21/20	21	5	13	0.8325242
99	10/7	5	7	1131	-0.6558947
99	11/7	11	7	39	4.76268264
99	13/7	13	7	23	1.34464787
99	15/14	15	7	847	-3.2089612
99	16/9	1	9	11	0
99	14/9	7	9	77	0
99	11/9	11	9	121	0
99	13/9	13	9	143	0
99	17/9	17	9	187	0
99	23/18	23	9	253	0
99	31/22	31	11	2233	0.77546879
99	21/13	21	13	5	0.8325242
99	17/15	17	15	7	-3.0887324
99	23/15	23	15	19	2.2794395
119	1/1	1	1	119	0
119	7/4	7	1	13	-2.0795607
119	17/16	17	1	253	0.85556416
119	19/16	19	1	1131	0.76552469
119	21/16	21	1	39	-2.0795607
119	5/3	5	3	99	-2.9120849
119	19/12	19	3	377	0.76552469
119	25/24	25	3	31	0.58182963
119	31/24	31	3	77	3.28196127
119	6/5	3	5	143	2.42300116
119	9/5	9	5	429	2.42300116
119	8/7	1	7	17	0
119	11/7	11	7	187	0
119	23/14	23	7	49	4.42205617
119	16/9	1	9	847	1.59047696
119	10/9	5	9	33	-2.9120849
119	23/18	23	9	19	-0.6326454
119	17/11	17	11	23	0.85556416
119	31/22	31	11	21	3.28196127
119	14/13	7	13	1	-2.0795607
119	19/13	19	13	87	0.76552469
119	21/13	21	13	3	-2.0795607
119	23/15	23	15	91	-4.4333803
121	1/1	1	1	121	0
121	3/2	3	1	91	4.76268264
121	7/4	7	1	847	0
121	9/8	9	1	17	-1.590477
121	23/16	23	1	87	0.62196302
121	7/6	7	3	1131	2.55306645
121	19/12	19	3	3	3.76110087
121	23/12	23	3	29	0.62196302
121	31/24	31	3	39	-3.2337937
121	8/7	1	7	69	-3.5806301
121	17/14	17	7	147	0.84142604
121	14/9	7	9	377	2.55306645
121	19/18	19	9	1	3.76110087
121	25/18	25	9	21	-0.5724034
121	31/18	31	9	13	-3.2337937
121	16/11	1	11	11	0
121	12/11	3	11	33	0
121	14/11	7	11	77	0
121	18/11	9	11	99	0
121	13/11	13	11	143	0
121	17/11	17	11	187	0
121	23/22	23	11	253	0
121	24/13	3	13	7	4.76268264
121	15/13	15	13	2233	-0.6558947
121	21/13	21	13	49	4.76268264
121	23/13	23	13	429	3.41803477

143	1/1	1	1	143	0
143	3/2	3	1	429	0
143	13/8	13	1	29	-2.7960718
143	17/16	17	1	19	0.7120025
143	25/16	25	1	7	4.35287461
143	5/3	5	3	119	-2.4230012
143	17/12	17	3	203	3.55708785
143	19/10	19	5	17	1.9105031
143	9/7	9	7	23	1.34464787
143	17/14	17	7	87	3.55708785
143	25/14	25	7	1	4.35287461
143	27/14	27	7	69	1.34464787
143	16/11	1	11	13	0
143	12/11	3	11	39	0
143	14/11	7	11	91	0
143	23/22	23	11	299	0
143	29/22	29	11	377	0
143	16/13	1	13	11	0
143	24/13	3	13	33	0
143	14/13	7	13	77	0
143	18/13	9	13	99	0</

847	1/1	1	1	847	0
847	5/4	5	1	33	-4.5025618
847	9/8	9	1	119	-1.590477
847	23/16	23	1	19	-2.2231223
847	29/16	29	1	3	0.91601551
847	4/3	1	3	1131	2.55306645
847	5/3	5	3	11	-4.5025618
847	19/12	19	3	21	3.76110087
847	23/12	23	3	203	0.62196302
847	29/24	29	3	1	0.91601551
847	13/10	13	5	69	4.55360903
847	27/20	27	5	143	0.8325242
847	8/7	1	7	121	0
847	9/7	9	7	17	-1.590477
847	23/14	23	7	87	0.62196302
847	16/9	1	9	377	2.55306645
847	19/18	19	9	7	3.76110087
847	25/18	25	9	147	-0.5724034
847	31/18	31	9	91	-3.2337937
847	16/11	1	11	77	0
847	29/22	29	11	2233	0
847	31/22	31	11	299	3.62258774
847	24/13	3	13	49	4.76268264
847	23/13	23	13	187	-2.9351248
847	31/26	31	13	253	3.62258774
847	28/15	7	15	99	3.20896116
847	26/15	13	15	23	4.55360903
1131	1/1	1	1	1131	0
1131	3/2	3	1	847	-2.5530665
1131	7/4	7	1	31	4.14980921
1131	19/16	19	1	21	1.20803441
1131	23/16	23	1	203	-1.9311034
1131	27/16	27	1	119	-4.1435434
1131	29/16	29	1	1	-1.6370509
1131	4/3	1	3	377	0
1131	19/12	19	3	7	1.20803441
1131	7/5	7	5	99	0.6558947
1131	13/10	13	5	23	2.00054258
1131	12/7	3	7	121	-2.5530665
1131	9/7	9	7	91	2.20961619
1131	19/14	19	7	3	1.20803441
1131	23/14	23	7	29	-1.9311034
1131	25/14	25	7	253	3.73091158
1131	19/18	19	9	299	3.13913785
1131	12/11	3	11	77	-2.5530665
1131	16/13	1	13	87	0
1131	14/13	7	13	19	-2.8450854
1131	18/13	9	13	49	2.20961619
1131	25/13	25	13	17	0.79578675
1131	27/26	27	13	147	2.20961619
1131	28/15	7	15	33	0.6558947
1131	17/15	17	15	5	-2.4328377
2233	1/1	1	1	2233	0
2233	5/4	5	1	87	-4.5025618
2233	11/8	11	1	3	0.91601551
2233	29/16	29	1	253	0.29405249
2233	5/3	5	3	29	-4.5025618
2233	11/6	11	3	1	0.91601551
2233	17/12	17	3	99	2.50649247
2233	27/20	27	5	377	0.8325242
2233	15/14	15	7	299	-0.3618422
2233	16/9	1	9	31	-0.7754688
2233	17/9	17	9	33	2.50649247
2233	19/18	19	9	147	-3.7172436
2233	16/11	1	11	203	0
2233	12/11	3	11	19	-2.8450854
2233	29/22	29	11	23	0.29405249
2233	20/13	5	13	429	-1.7064901
2233	17/13	17	13	91	-4.7952225
2233	29/26	29	13	39	3.71208726
2233	26/15	13	15	121	0.6558947