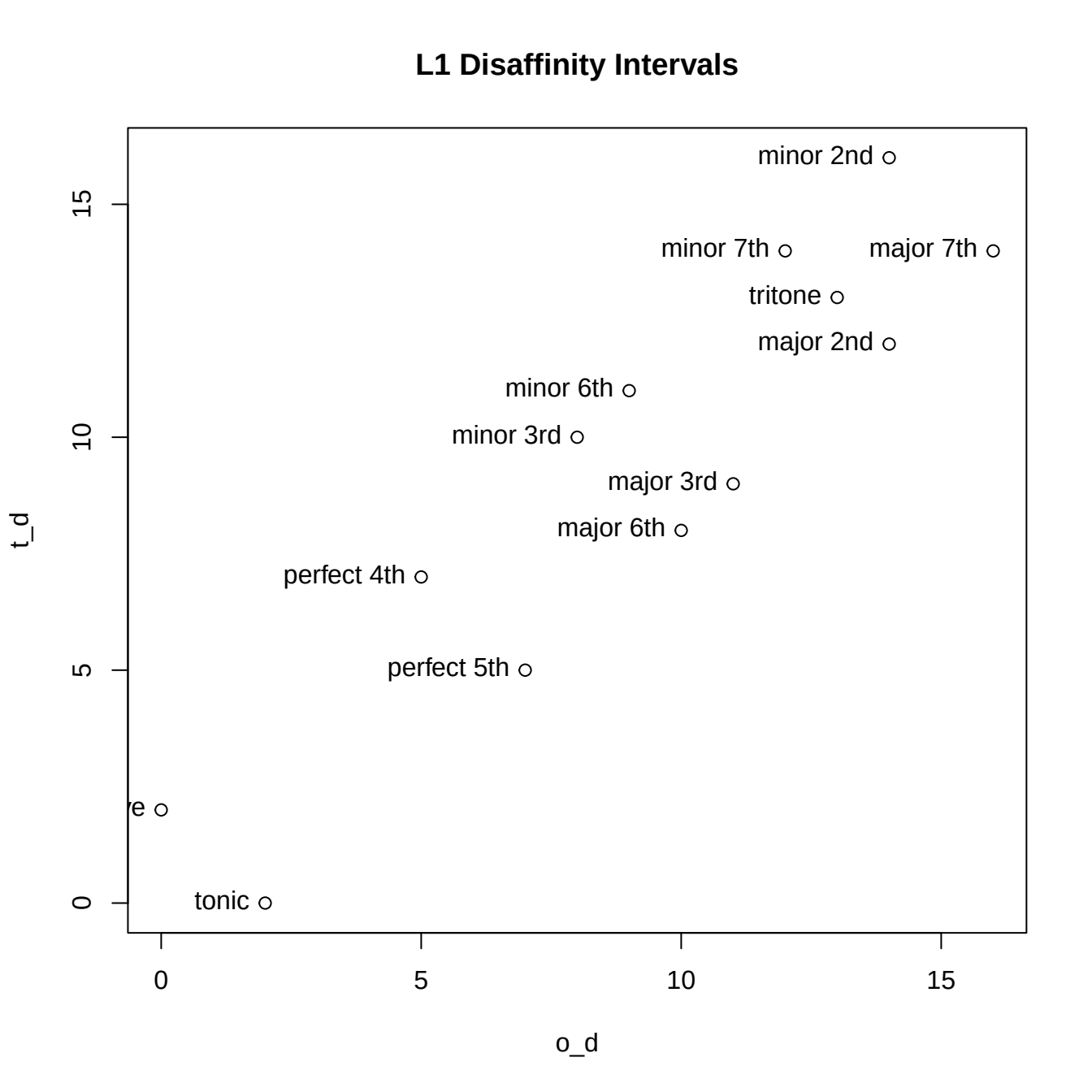
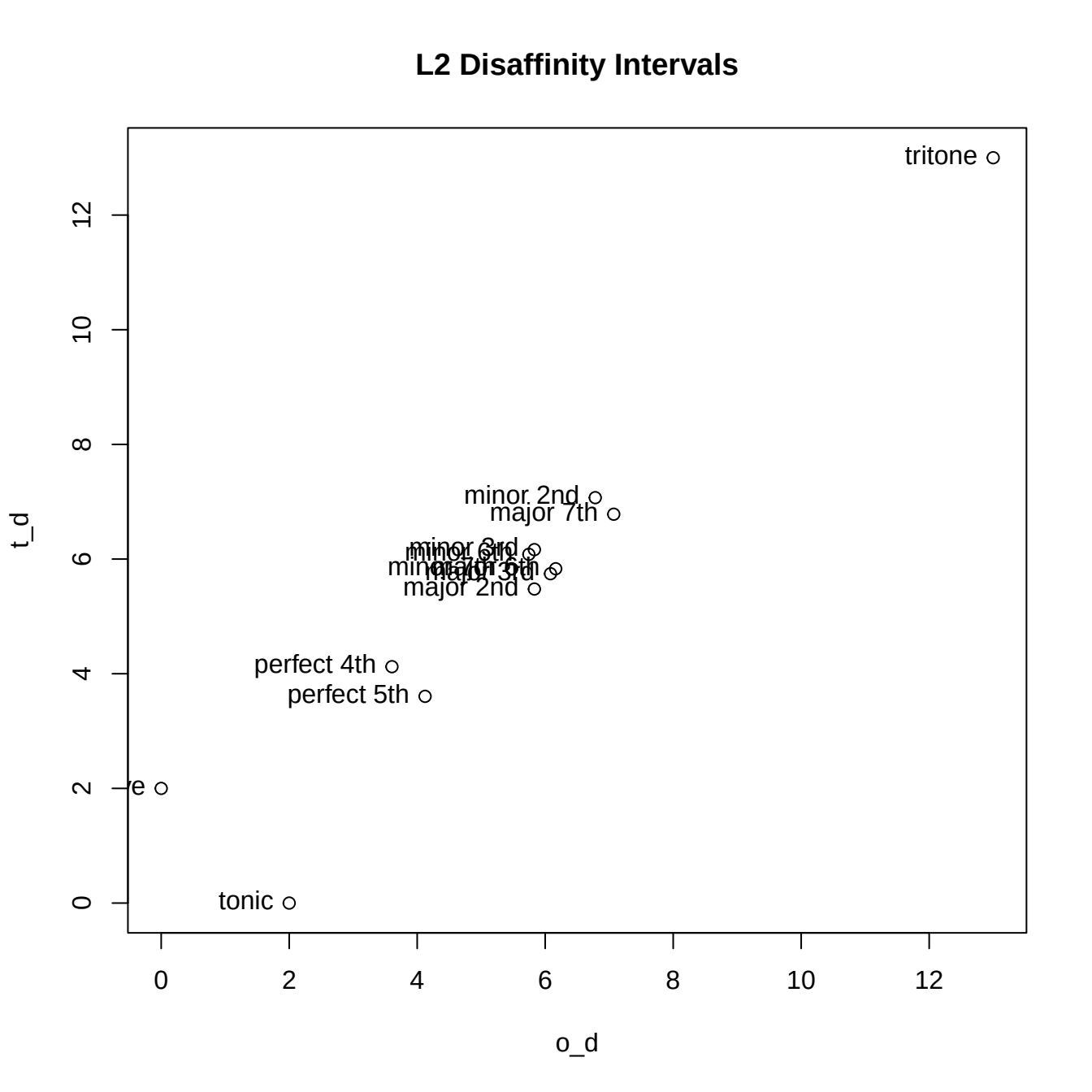
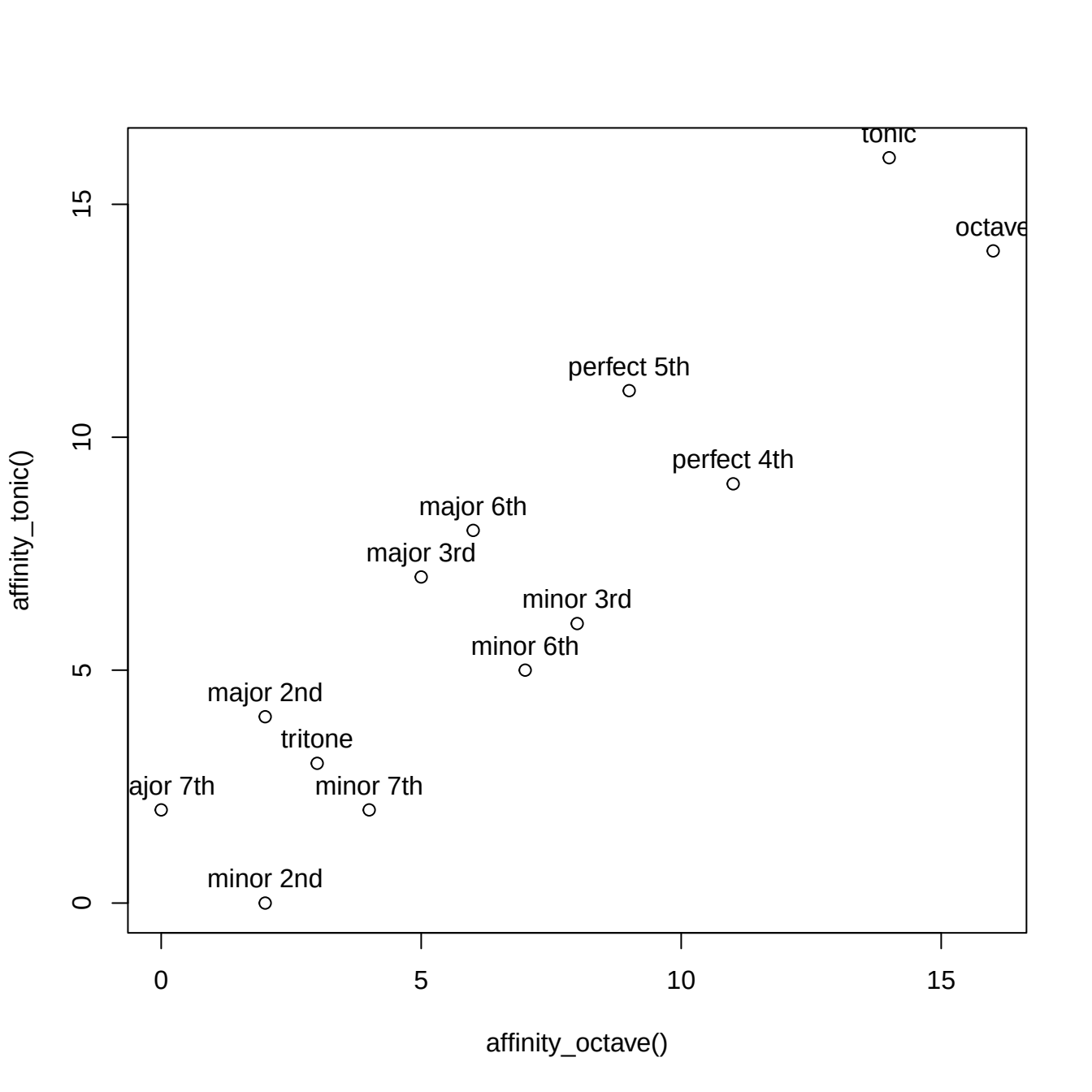
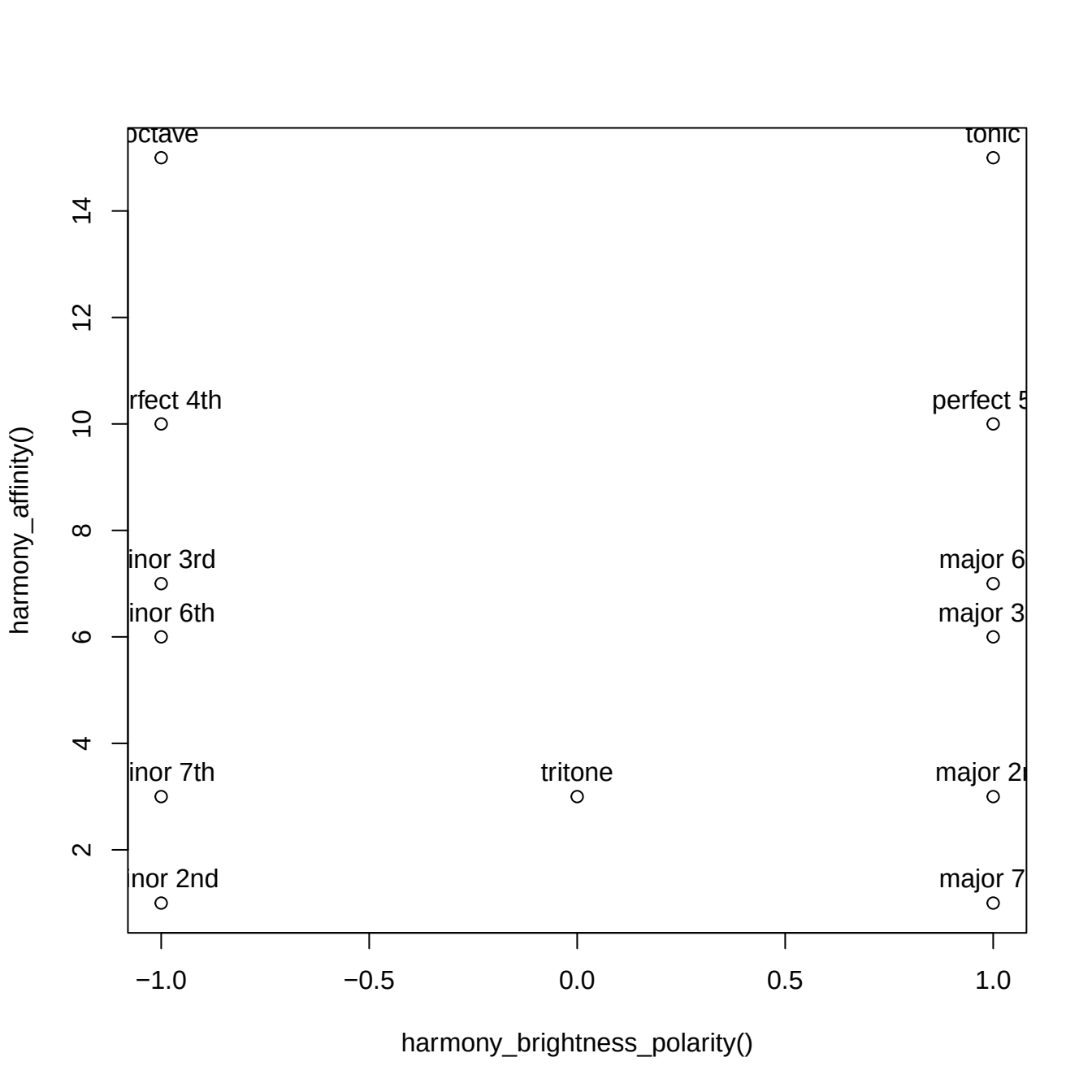
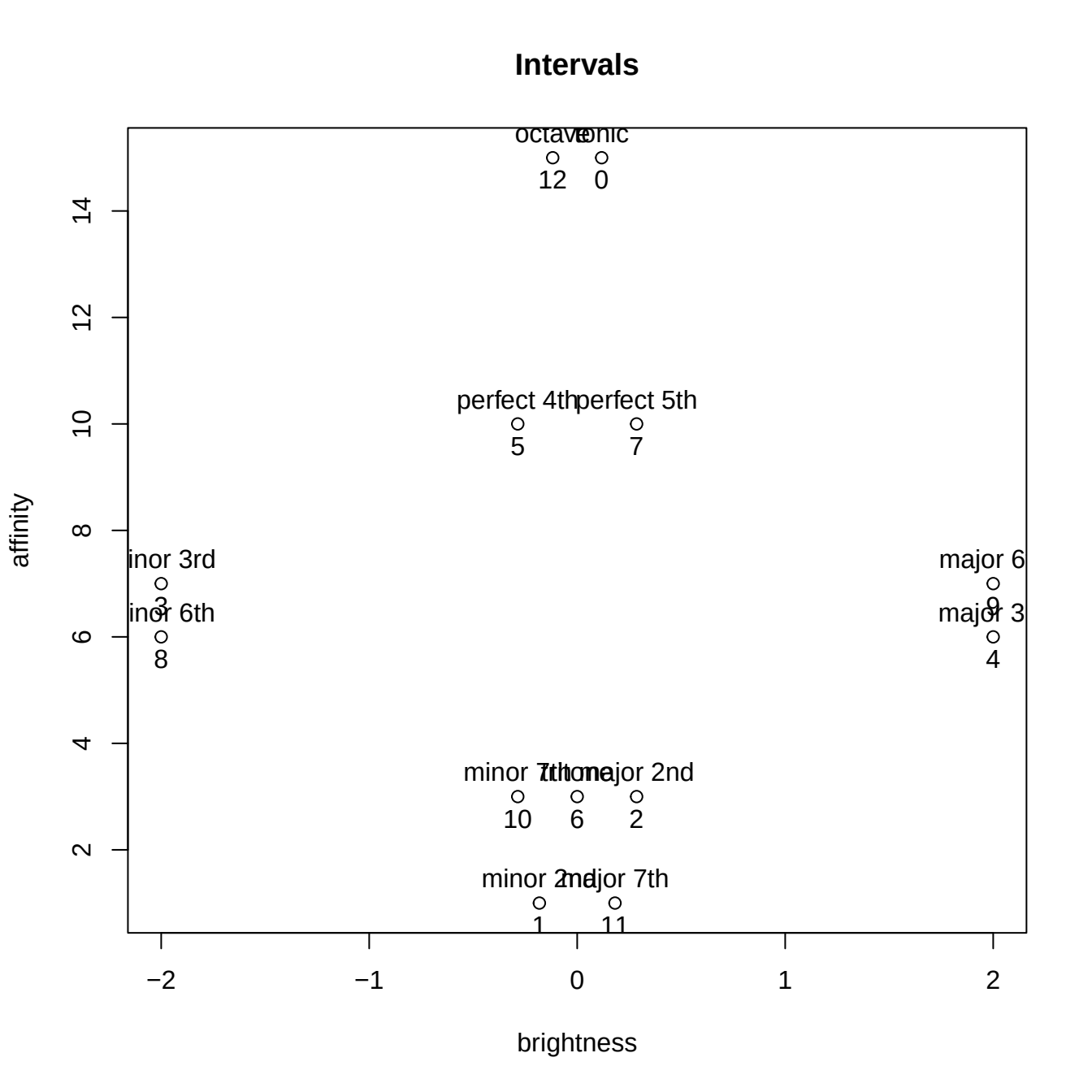
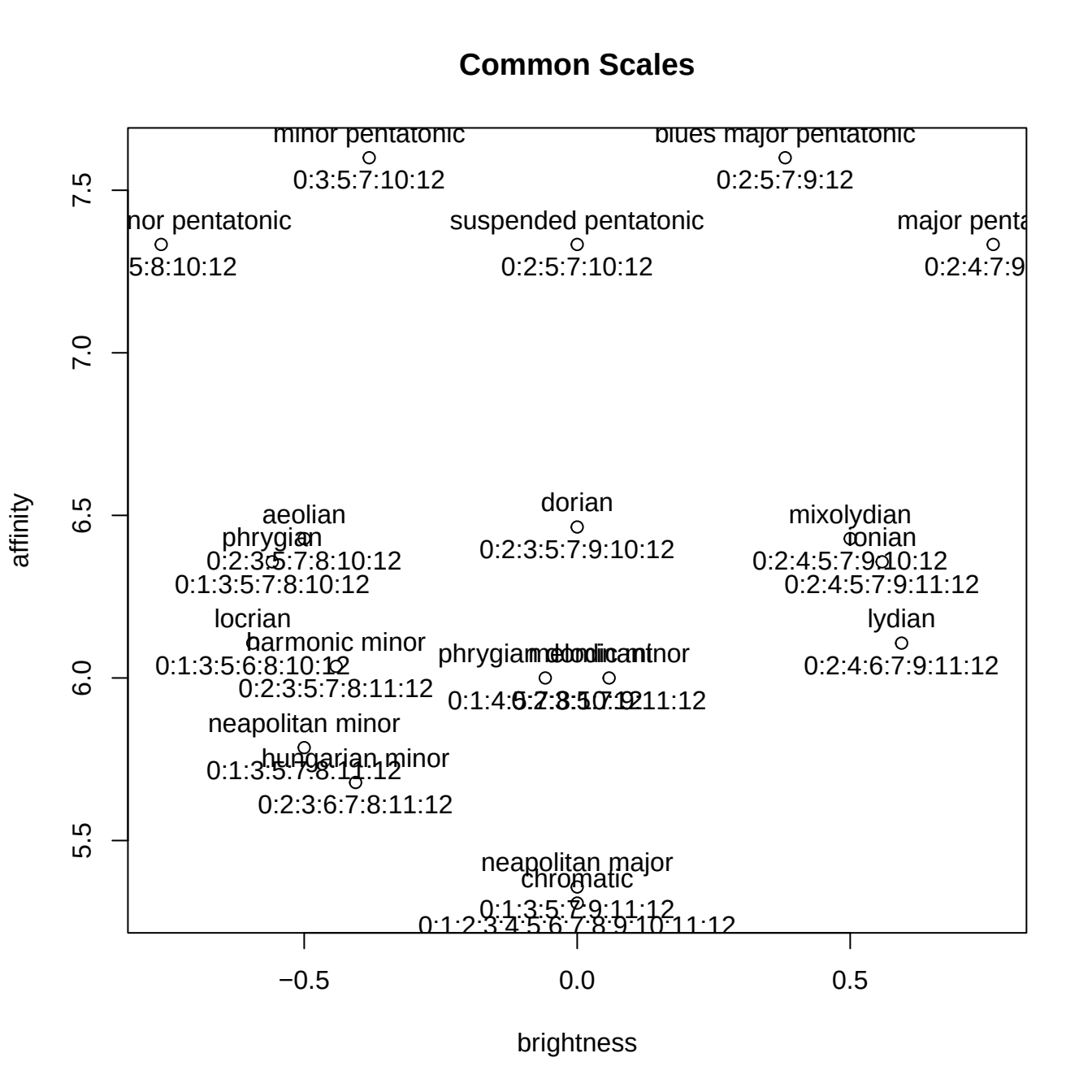

L1 Disaffinity Intervals
minor 2nd
minor 7th
major 7th
tritone
major 2nd
minor 6th
minor 3rd
major 3rd
major 6th
perfect 4th
perfect 5th
e
tonic
t_d
o_d
0
5
10
15

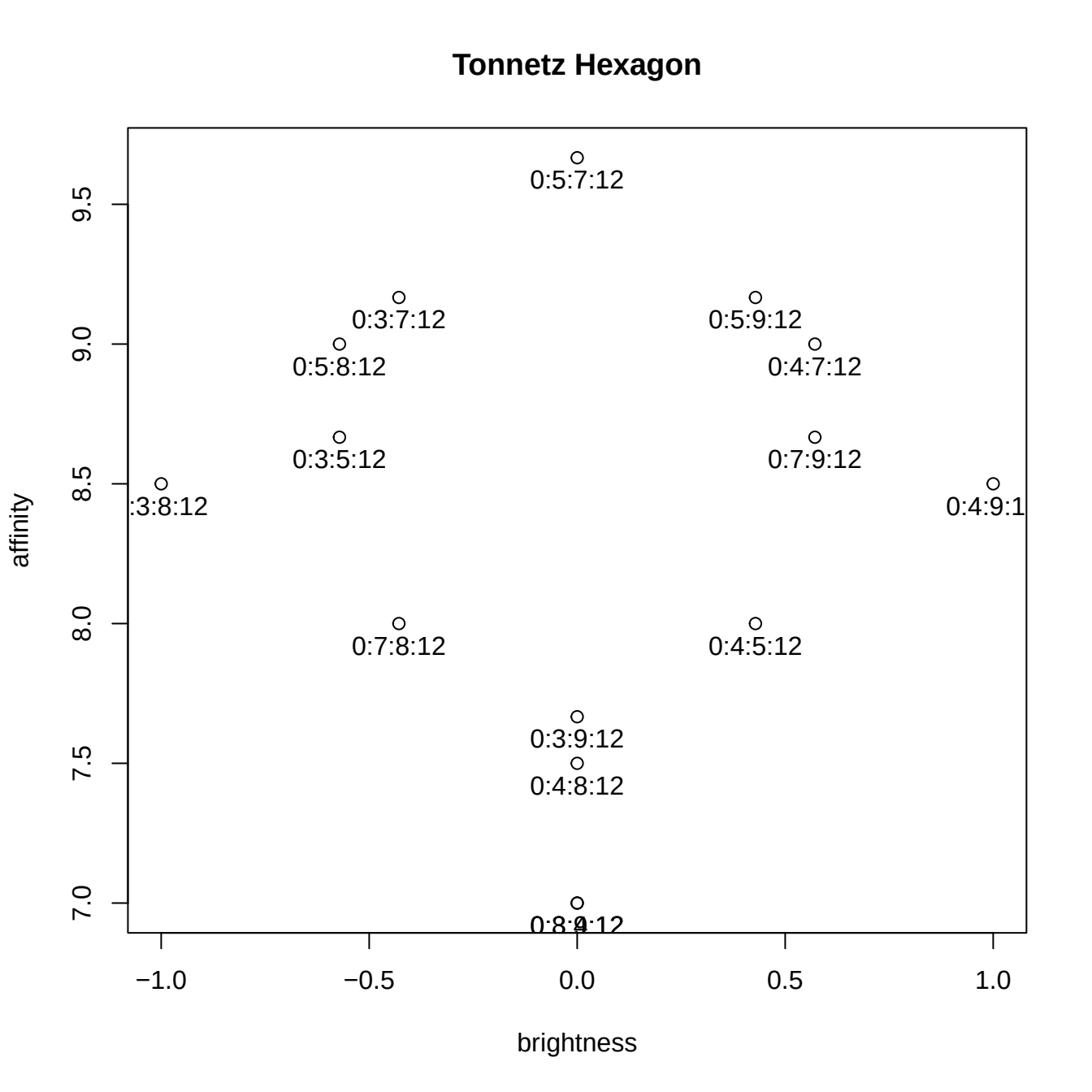

L2 Disaffinity Intervals
tritone
minor 2nd
major 7th
major 2nd
perfect 4th
perfect 5th
tonic
t_d
o_d
0
2
4
6
8
10
12

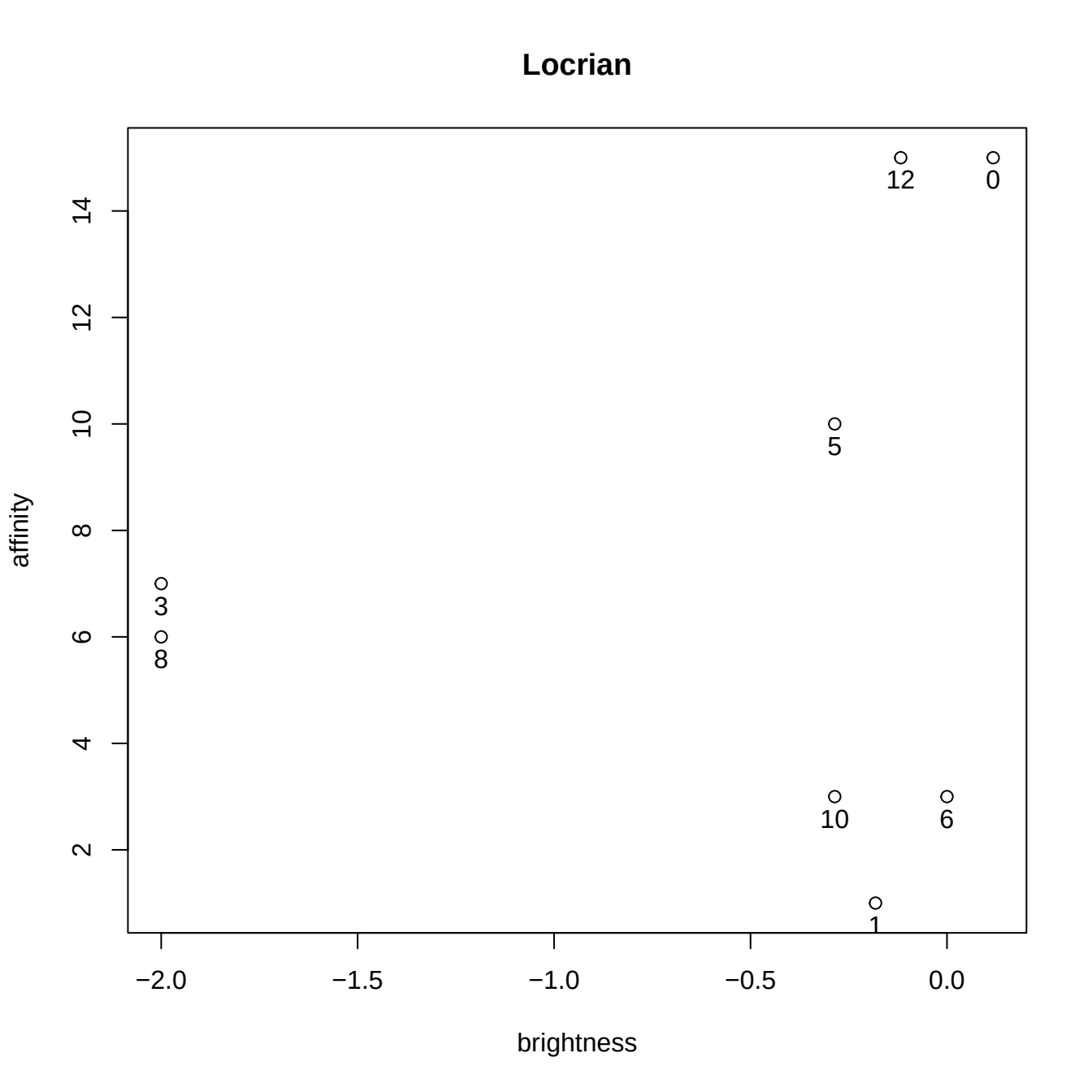

tonic
octave
perfect 5th
perfect 4th
major 6th
major 3rd
minor 3rd
minor 6th
major 2nd
tritone
ajor 7th
minor 7th
minor 2nd
affinity_tonic()
affinity_octave()
0
5
10
15
0
5
10
15

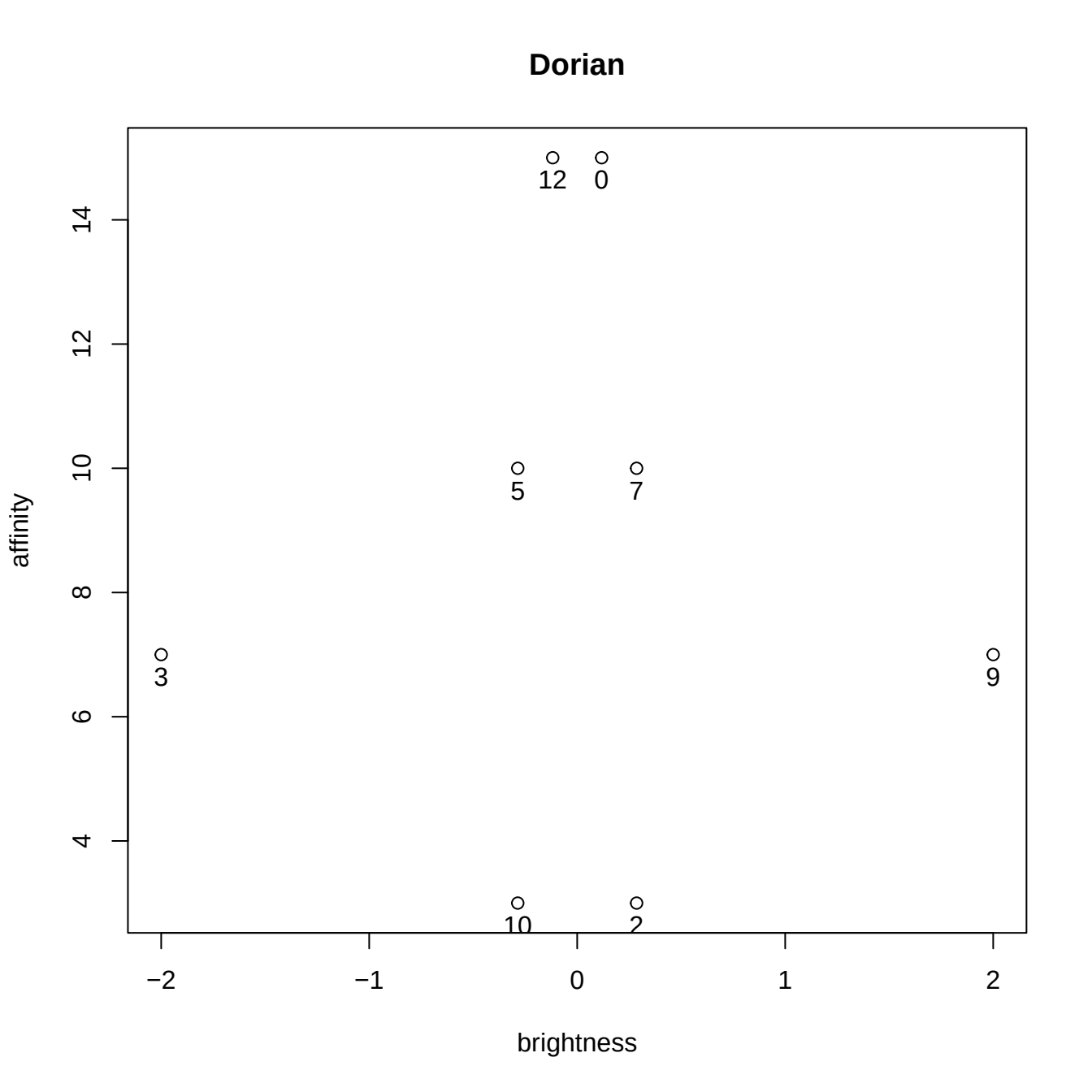

pctave
tonic
rfect 4th
perfect 5
inor 3rd
major 6
inor 6th
major 3
inor 7th
tritone
major 2
nor 2nd
major 7
harmony_affinity()
2
4
6
8
10
12
14
−1.0
−0.5
0.0
0.5
1.0
harmony_brightness_polarity()

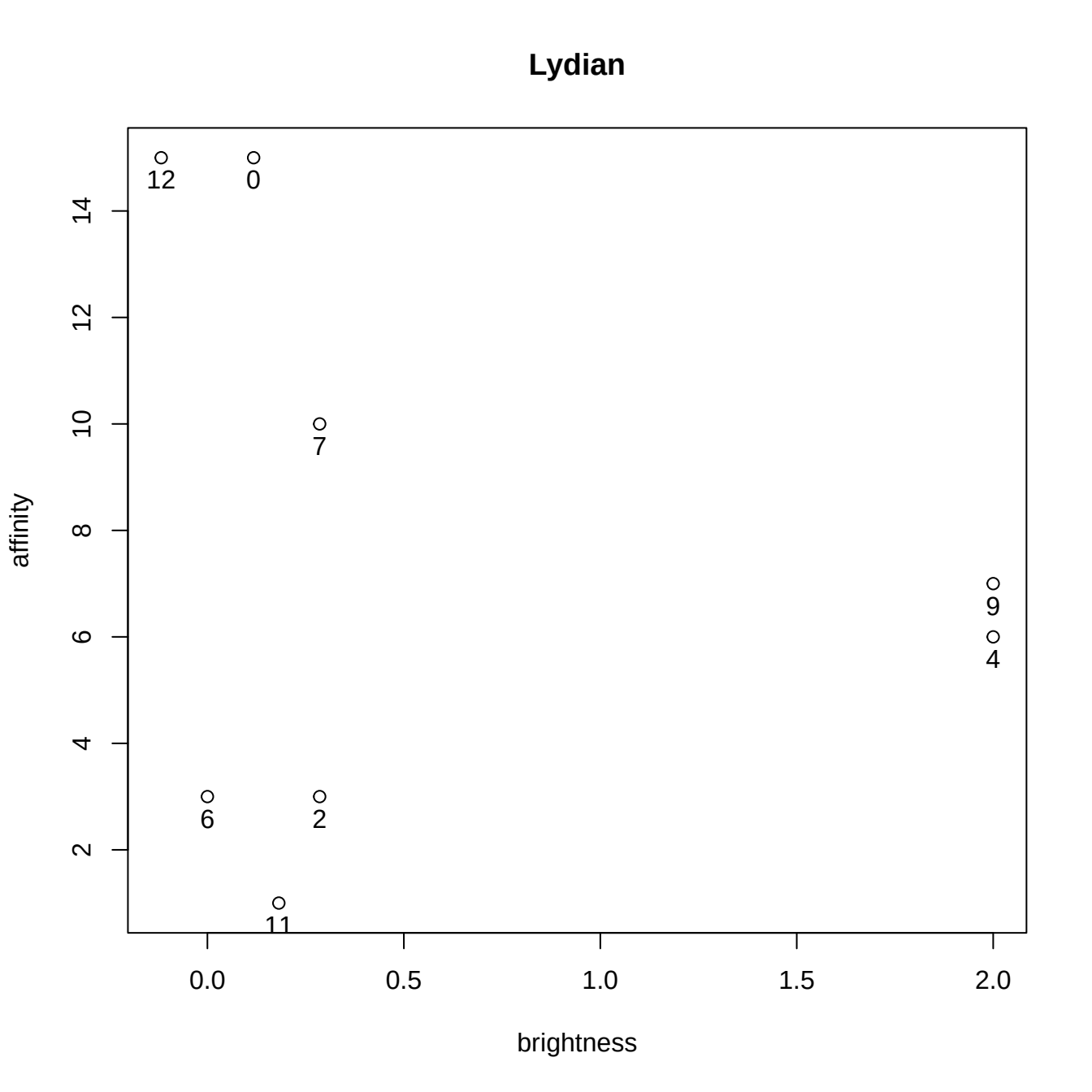

Intervals
octave
12
tonic
0
perfect 4th
5
perfect 5th
7
inor 3rd
3
major 6
9
inor 6th
8
major 3
4
minor 7th
10
major 2nd
2
minor 2nd
1
major 7th
11
affinity
brightness
2
4
6
8
10
12
14
−2
−1
0
1
2

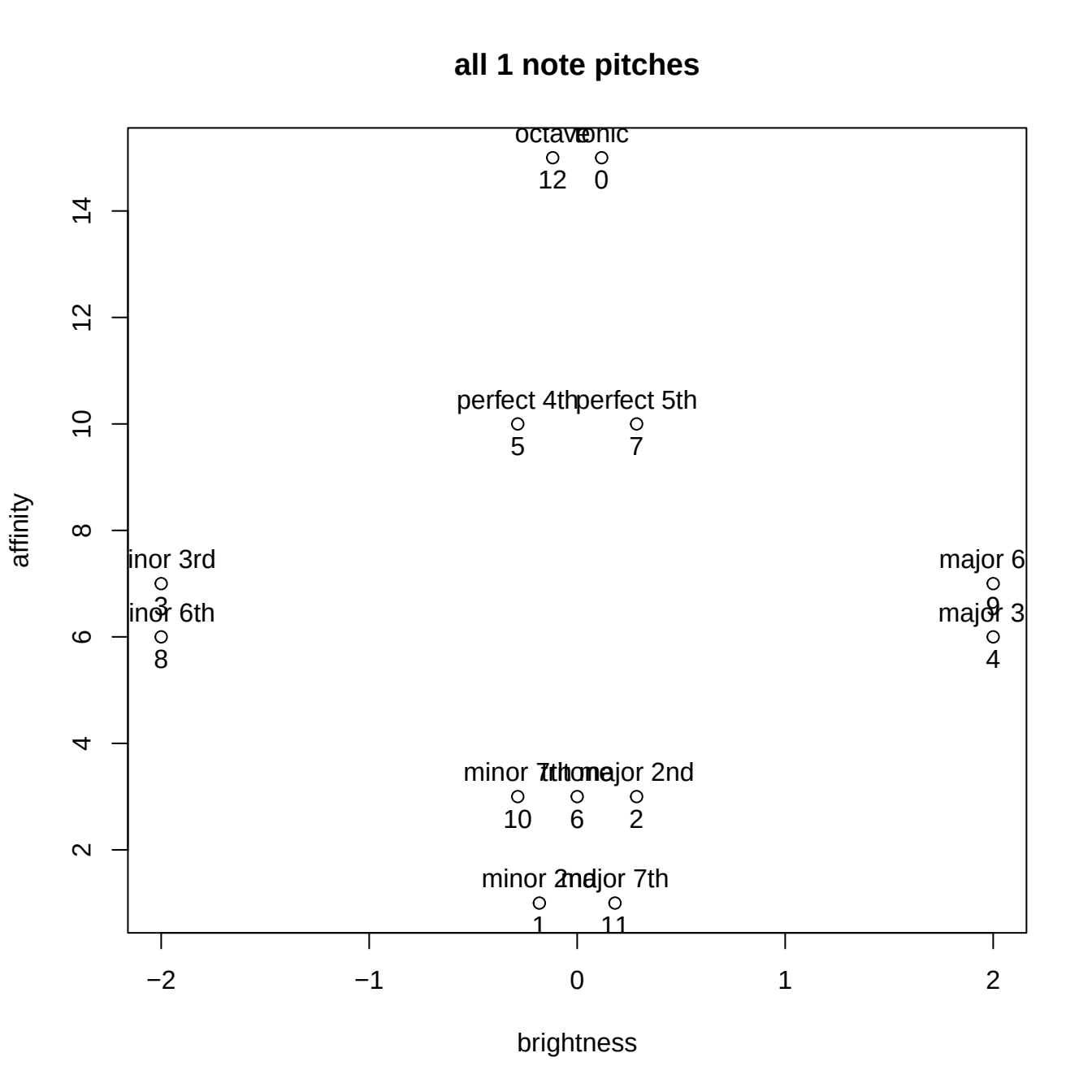

Common Scales
minor pentatonic
0:3:5:7:10:12
blues major pentatonic
0:2:5:7:9:12
nor pentatonic
5:8:10:12
suspended pentatonic
0:2:5:7:10:12
major penta
0:2:4:7:9
aeolian
phrygian
0:2:3:5:7:8:10:12
0:1:3:5:7:8:10:12
dorian
0:2:3:5:7:9:10:12
mixolydian
ionian
0:2:4:5:7:9:10:12
0:2:4:5:7:9:11:12
locrian
harmonic minor
0:1:3:5:6:8:10:12
0:2:3:5:7:8:11:12
phrygian dominant
melodic minor
0:1:4:6:7:8:11:12
lydian
0:2:4:6:7:9:11:12
neapolitan minor
0:1:3:5:7:8:11:12
hungarian minor
0:2:3:6:7:8:11:12
neapolitan major
chromatic
0:1:3:5:7:9:11:12
0:1:2:3:4:5:6:7:8:9:10:11:12
affinity
brightness
7.5
7.0
6.5
6.0
5.5
−0.5
0.0
0.5

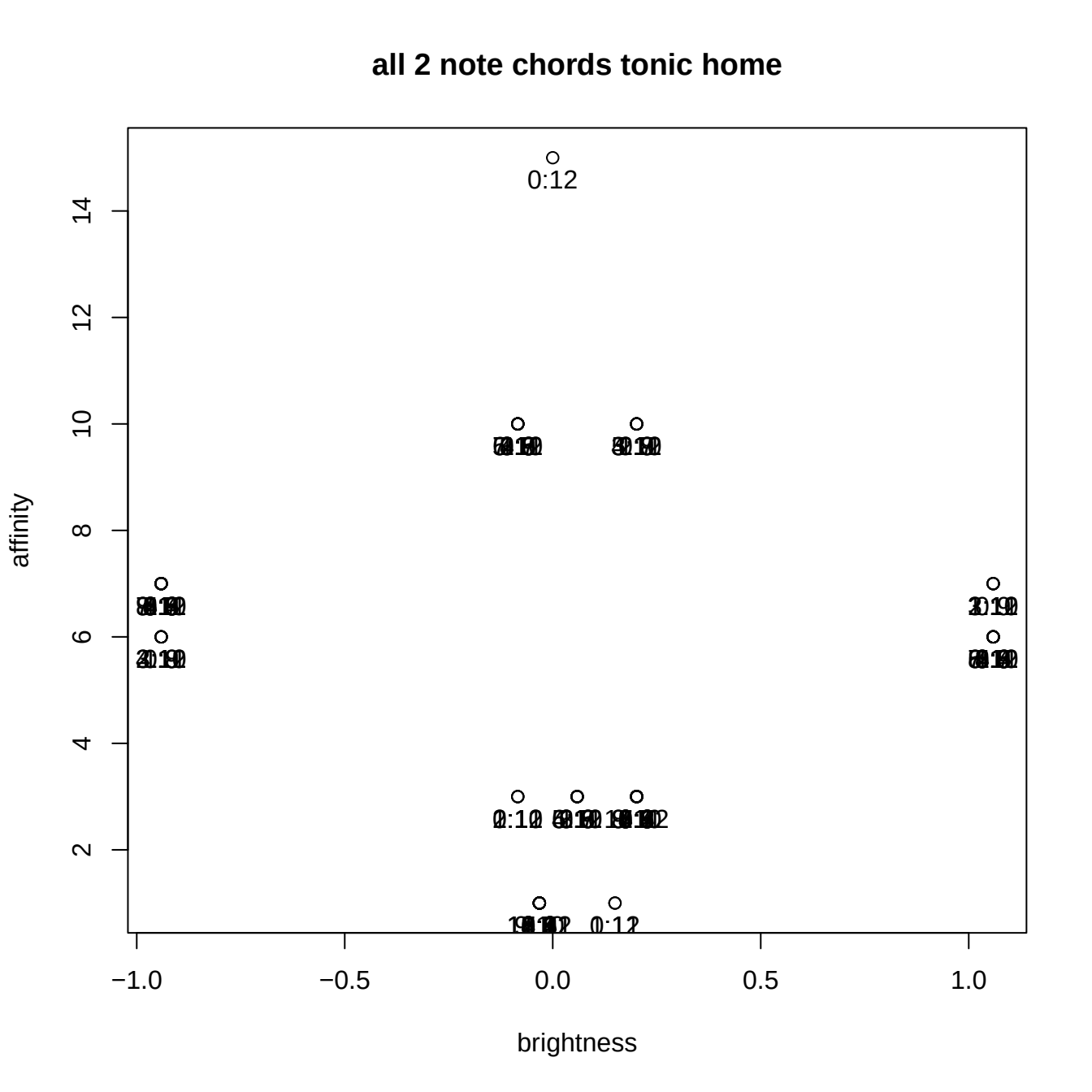

Tonnetz Hexagon
0:5:7:12
0:3:7:12
0:5:9:12
0:5:8:12
0:4:7:12
0:3:5:12
0:7:9:12
:3:8:12
0:4:9:1
0:7:8:12
0:4:5:12
0:3:9:12
0:4:8:12
affinity
brightness
9.5
9.0
8.5
8.0
7.5
7.0
−1.0
−0.5
0.0
0.5
1.0

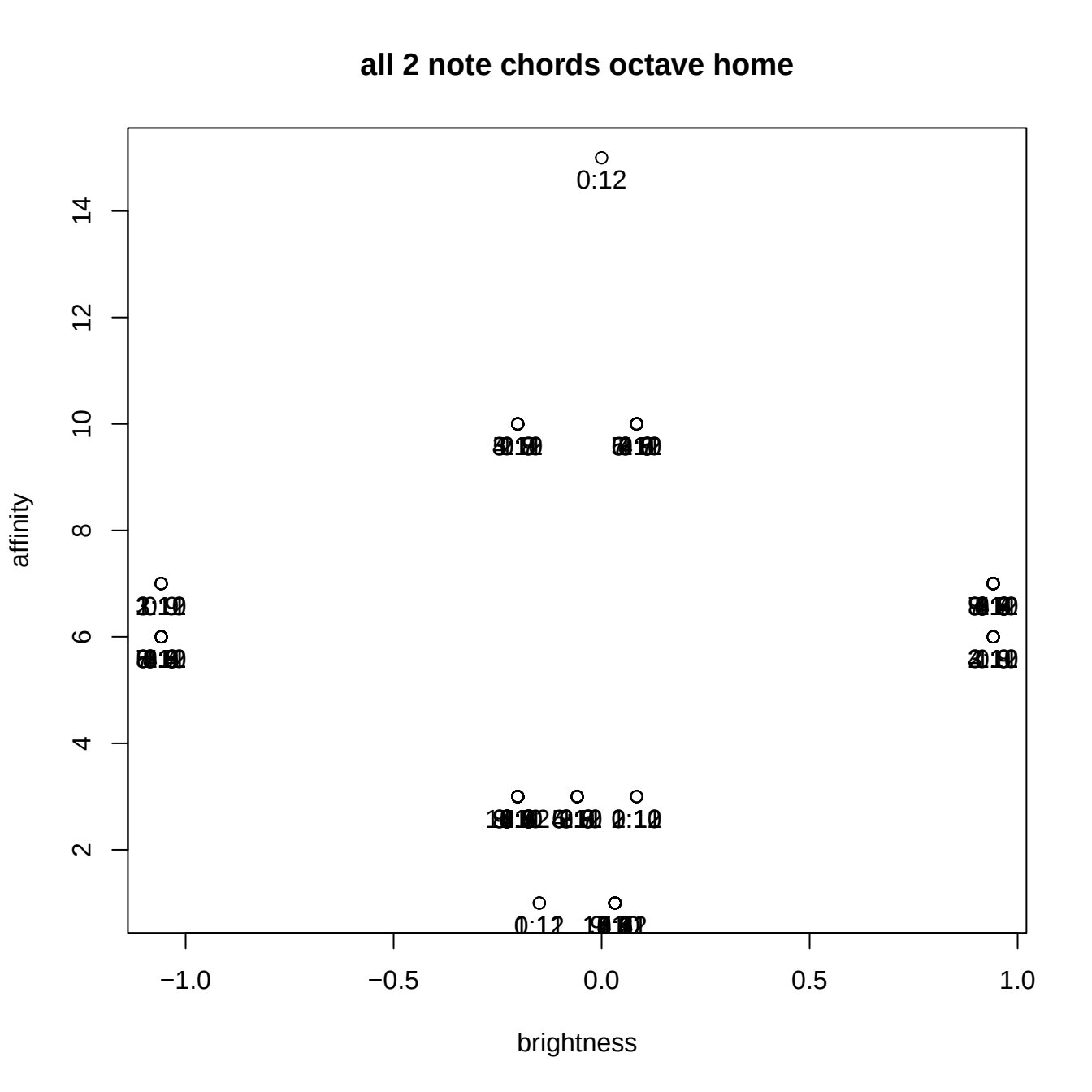

Locrian
affinity
brightness
2
4
6
8
10
12
14
−2.0
−1.5
−1.0
−0.5
0.0
12
0
5
3
8
10
6
1

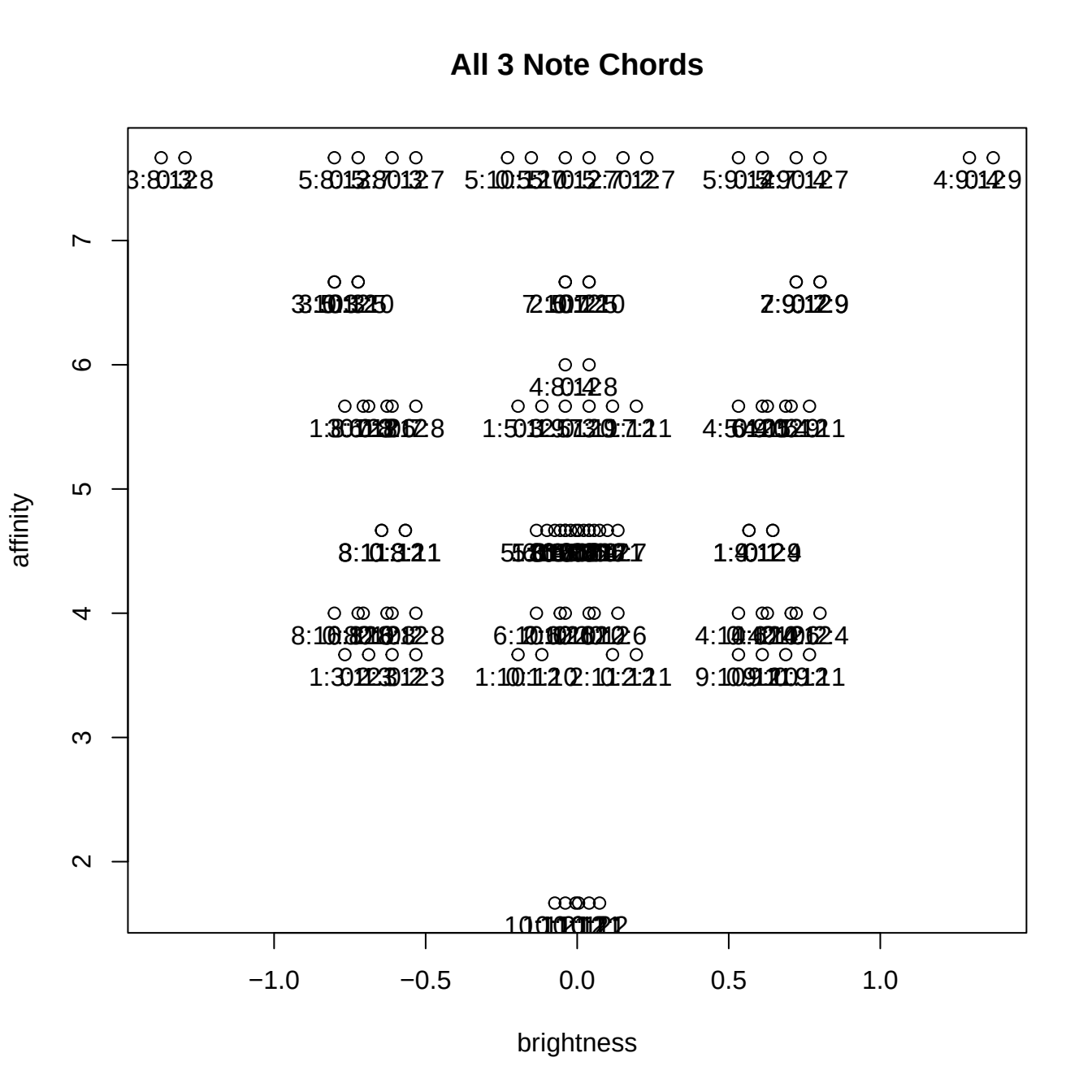

Dorian
affinity
brightness
14
12
10
8
6
4
−2
−1
0
1
2
12
0
5
7
3
9
10
2

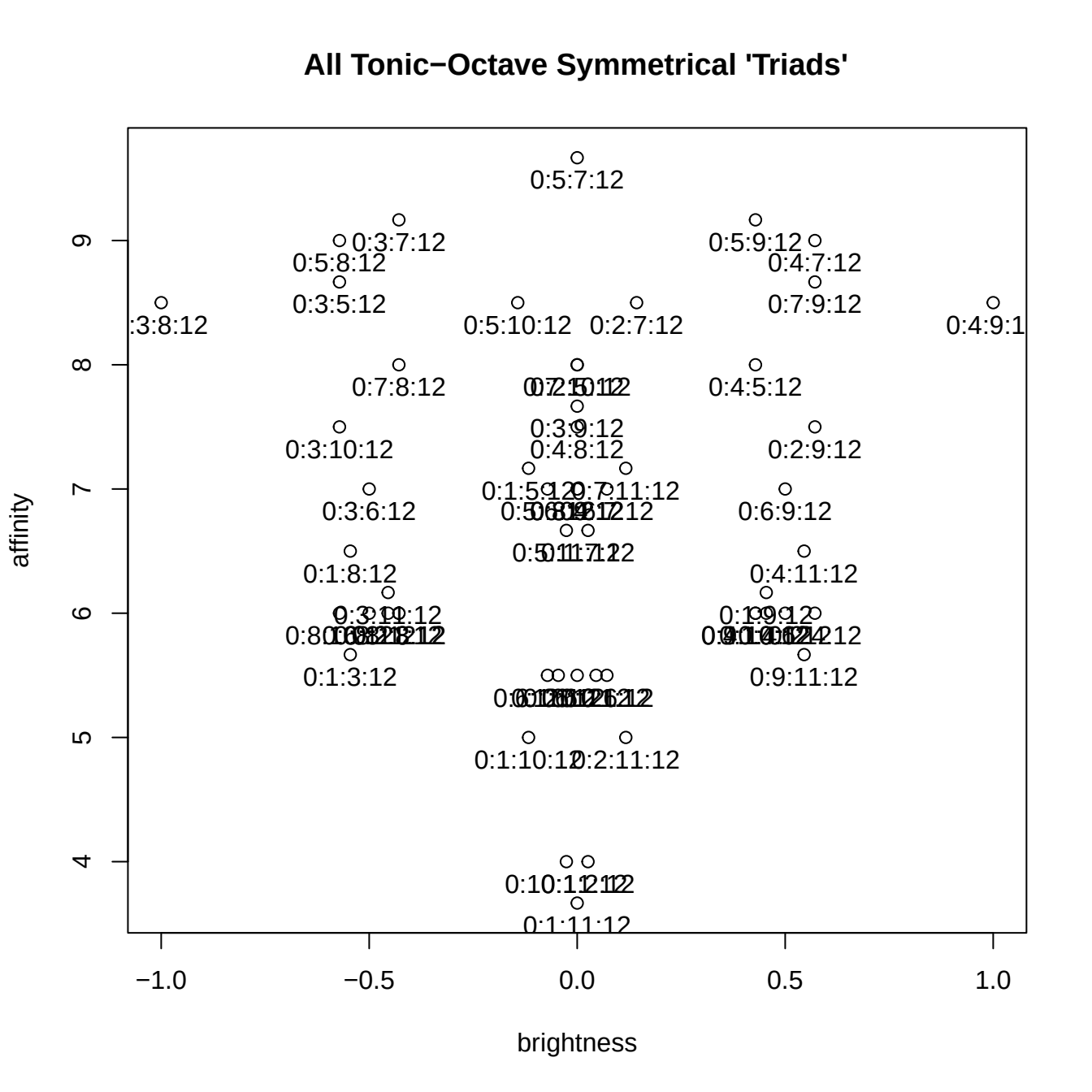

Lydian
affinity
brightness
2
4
6
8
10
12
14
0.0
0.5
1.0
1.5
2.0
12
0
7
6
2
11
9
4

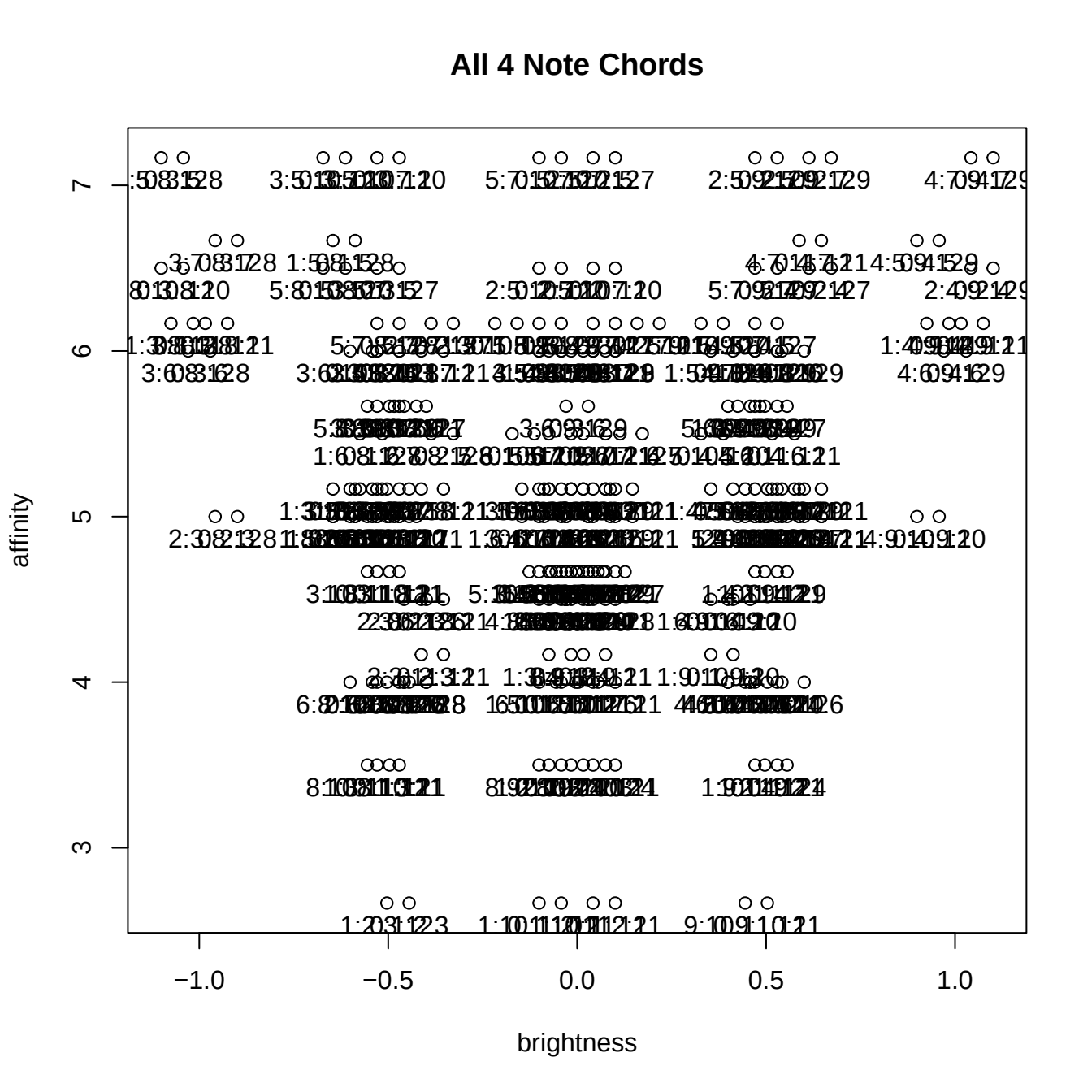

all 1 note pitches
octave
12
tonic
0
perfect 4th
5
perfect 5th
7
inor 3rd
3
inor 6th
8
major 6
9
major 3
4
minor 7th
10
major 2nd
2
minor 2nd
1
major 7th
11
affinity
brightness
14
12
10
8
6
4
2
−2
−1
0
1
2

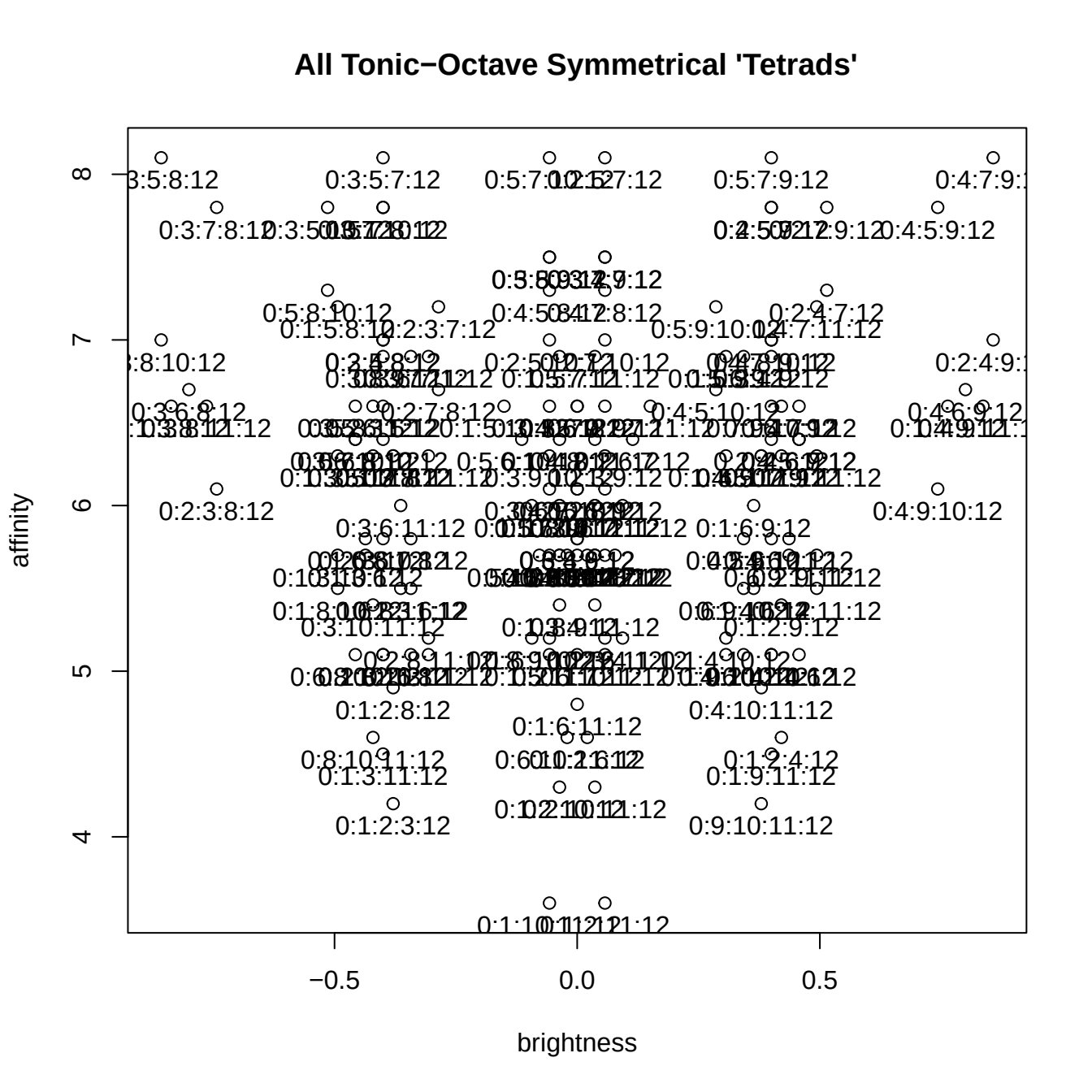

all 2 note chords tonic home
affinity
brightness
14
12
10
8
6
4
2
−1.0
−0.5
0.0
0.5
1.0
0:12

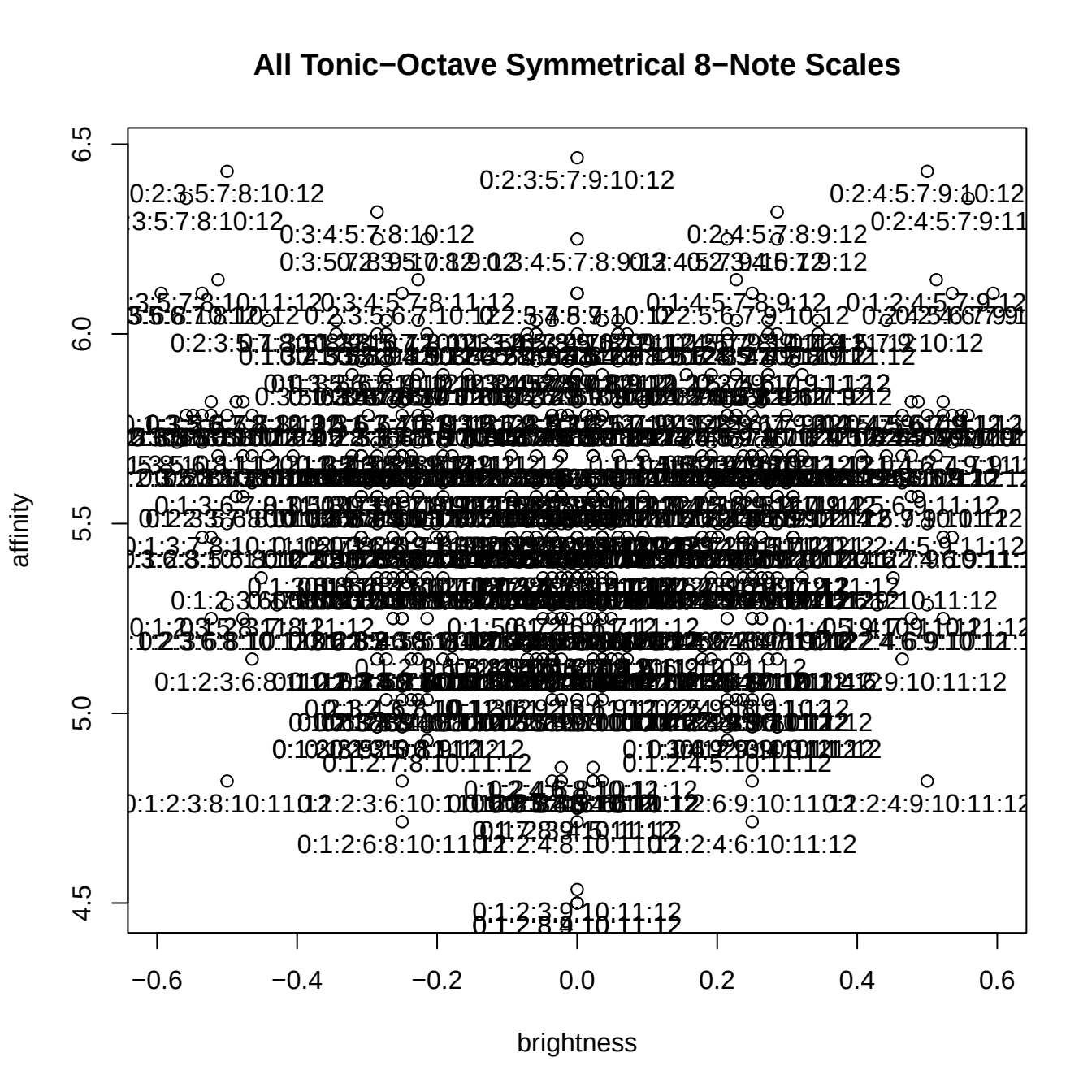

all 2 note chords octave home
affinity
brightness
0:12
2
4
6
8
10
12
14
−1.0
−0.5
0.0
0.5
1.0

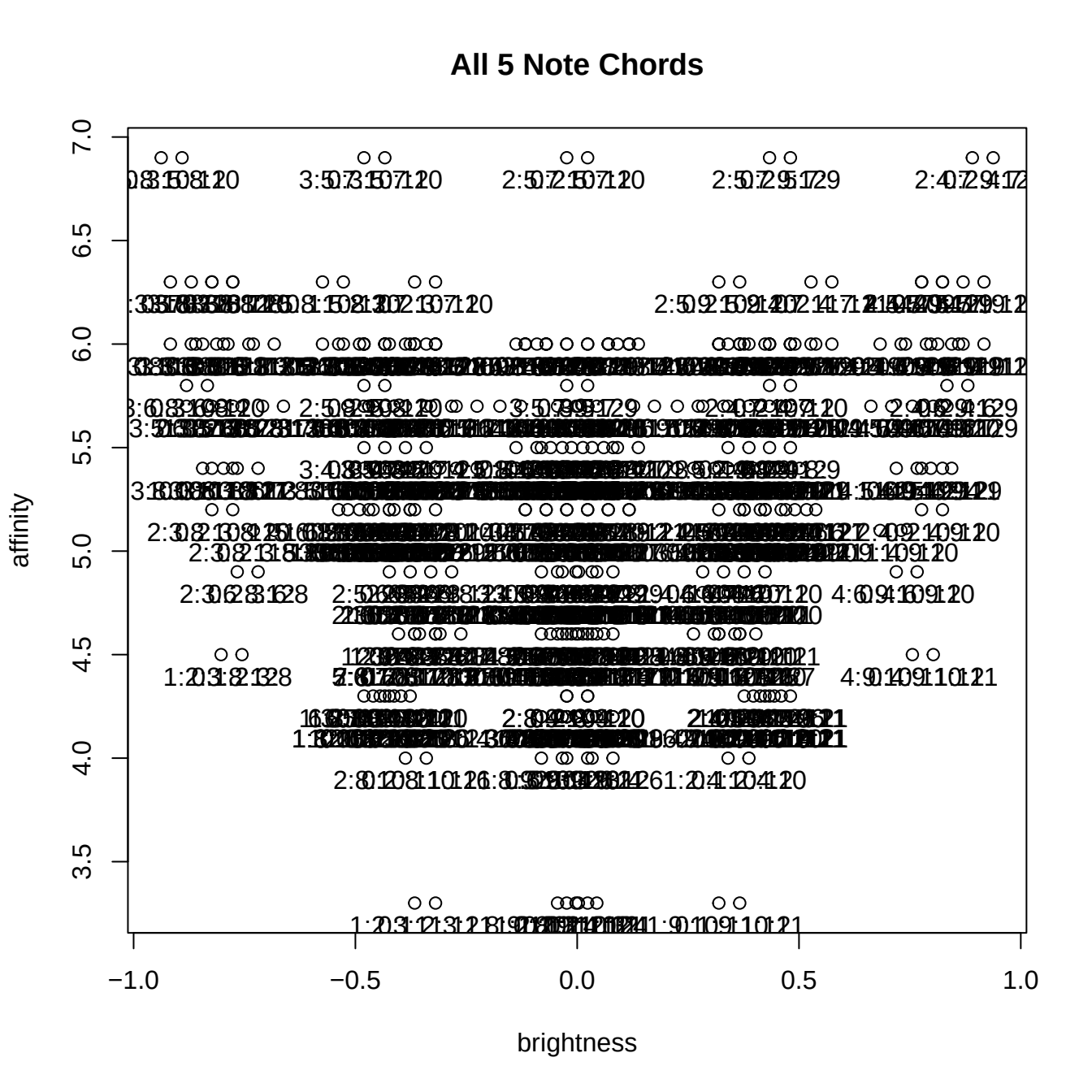

All 3 Note Chords
affinity
brightness
2
3
4
5
6
7
−1.0
−0.5
0.0
0.5
1.0

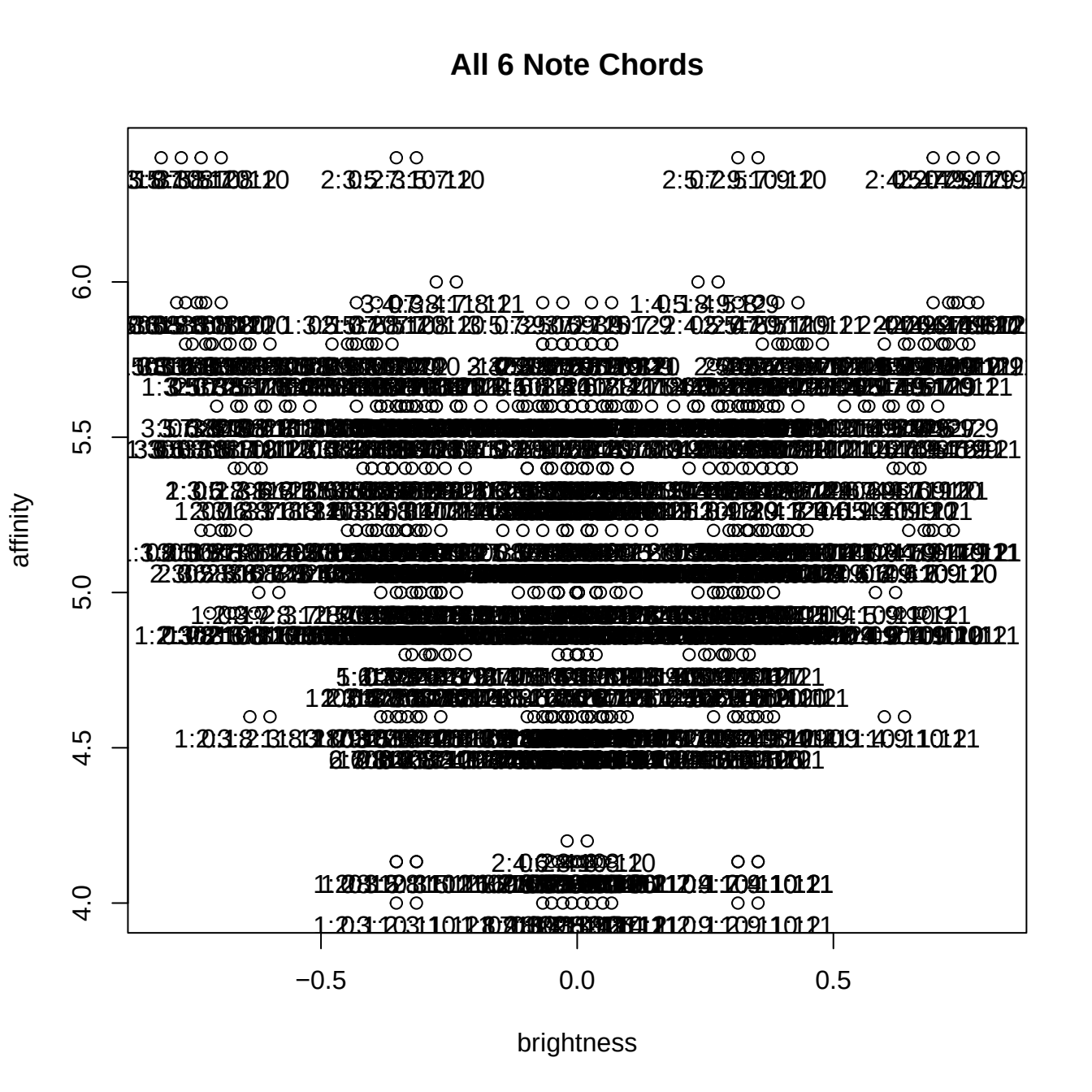

All Tonic−Octave Symmetrical 'Triads'
affinity
brightness
9
8
7
6
5
4
−1.0
−0.5
0.0
0.5
1.0
0:5:7:12
0:3:7:12
0:5:8:12
0:3:5:12
:3:8:12
0:5:10:12
0:2:7:12
0:5:9:12
0:4:7:12
0:7:9:12
0:4:9:1
0:7:8:12
0:4:5:12
0:3:10:12
0:4:8:12
0:2:9:12
0:3:6:12
0:6:9:12
0:1:8:12
0:4:11:12
0:1:3:12
0:9:11:12
0:1:10:12
0:2:11:12
0:1:11:12

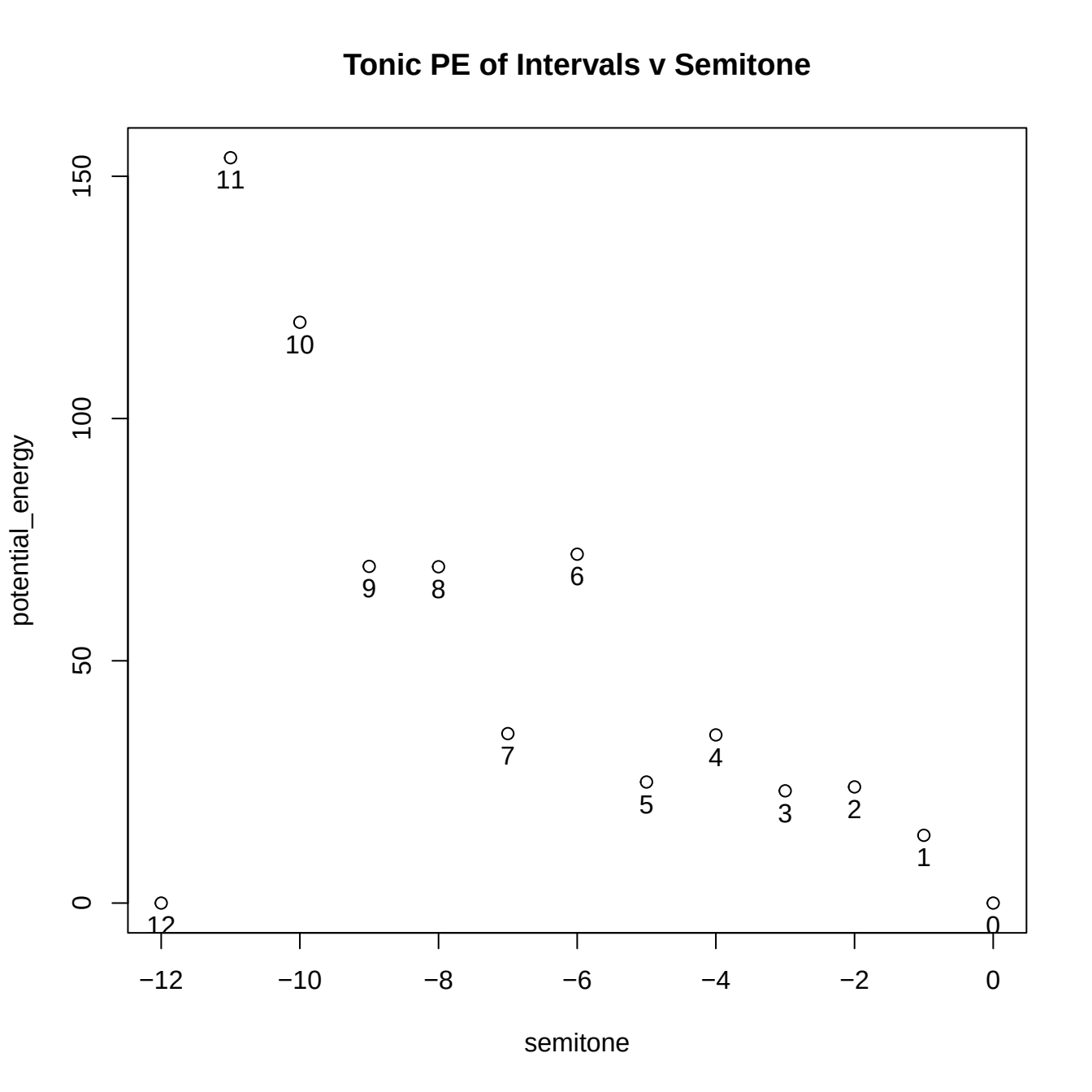

All 4 Note Chords
affinity
brightness
7
6
5
4
3
−1.0
−0.5
0.0
0.5
1.0

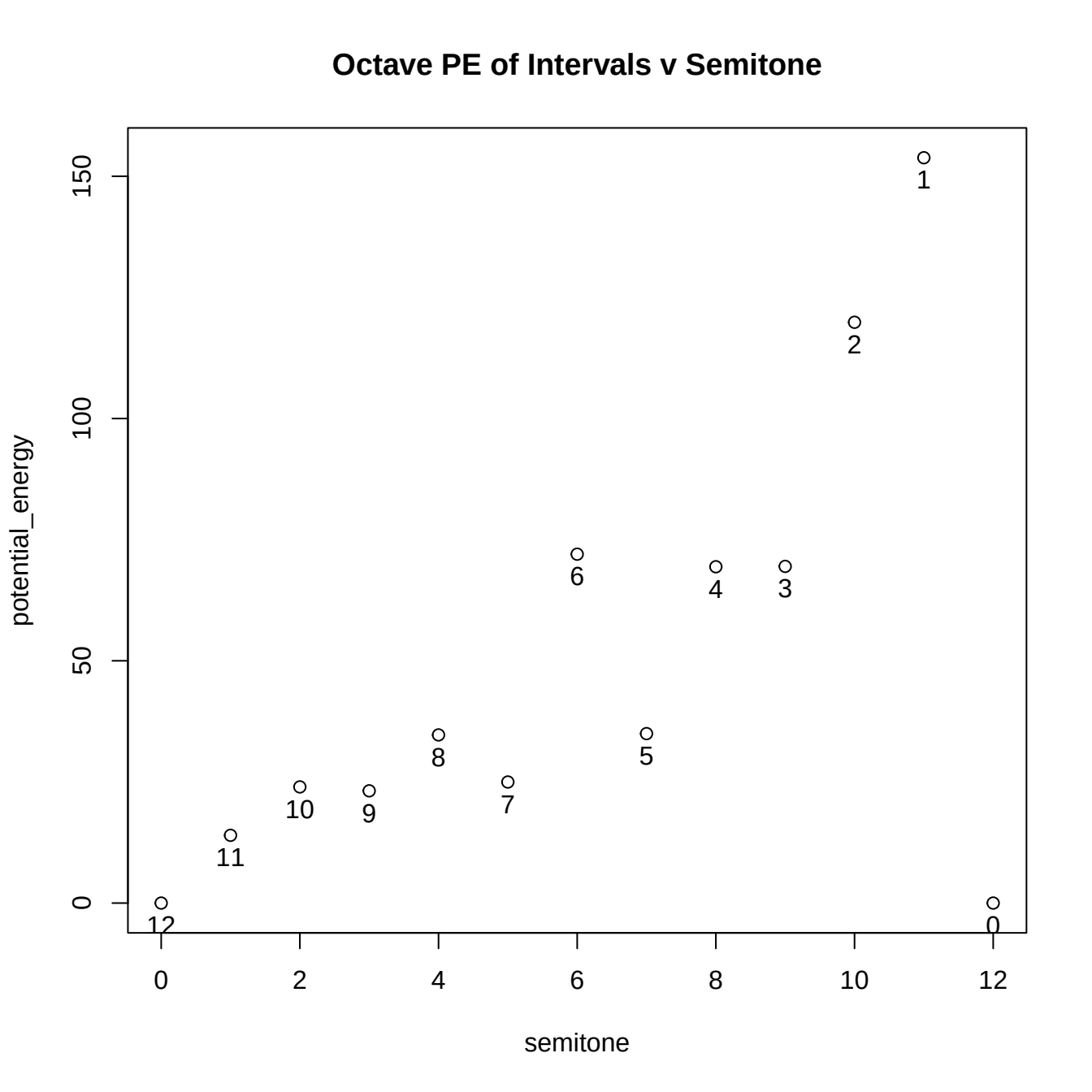

All Tonic−Octave Symmetrical 'Tetrads'
affinity
brightness
8
7
6
5
4
−0.5
0.0
0.5
0:3:5:8:12
0:3:5:7:12
0:5:7:9:12
0:4:7:9:12
0:3:7:8:12
0:4:5:9:12
0:2:3:8:12
0:4:9:10:12
0:3:6:11:12
0:1:6:9:12
0:1:2:8:12
0:4:10:11:12
0:1:6:11:12
0:8:10:11:12
0:1:2:4:12
0:1:3:11:12
0:1:9:11:12
0:1:2:3:12
0:9:10:11:12
0:1:10:11:12

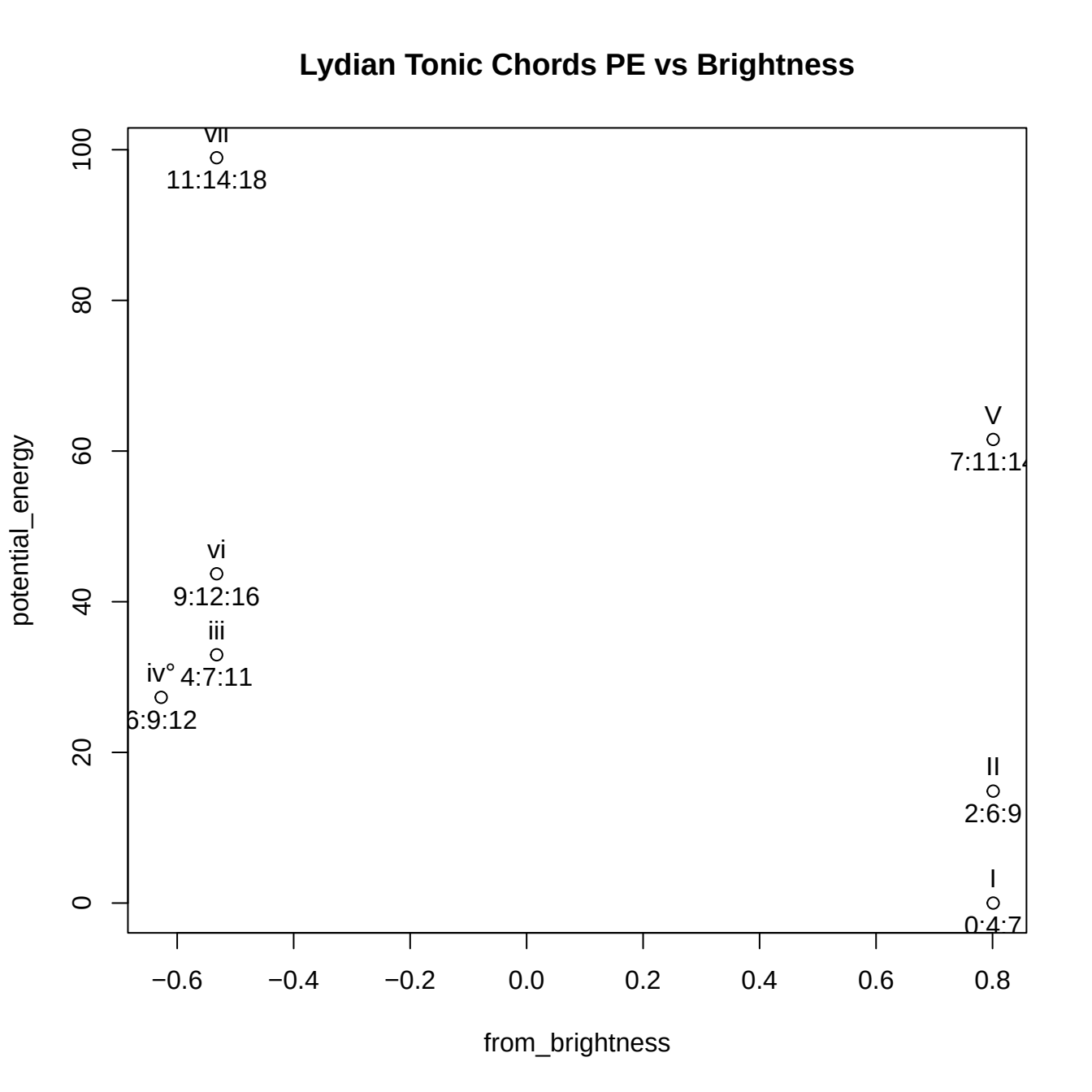

All Tonic−Octave Symmetrical 8−Note Scales
affinity
brightness
6.5
6.0
5.5
5.0
4.5
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0:2:3:5:7:9:10:12
0:2:4:5:7:9:10:12
0:2:4:5:7:9:11
0:2:4:5:7:8:9:12
0:1:4:5:7:8:9:12
0:1:2:4:5:7:9:12
0:1:2:3:9:10:11:12
0:1:2:8:10:11:12

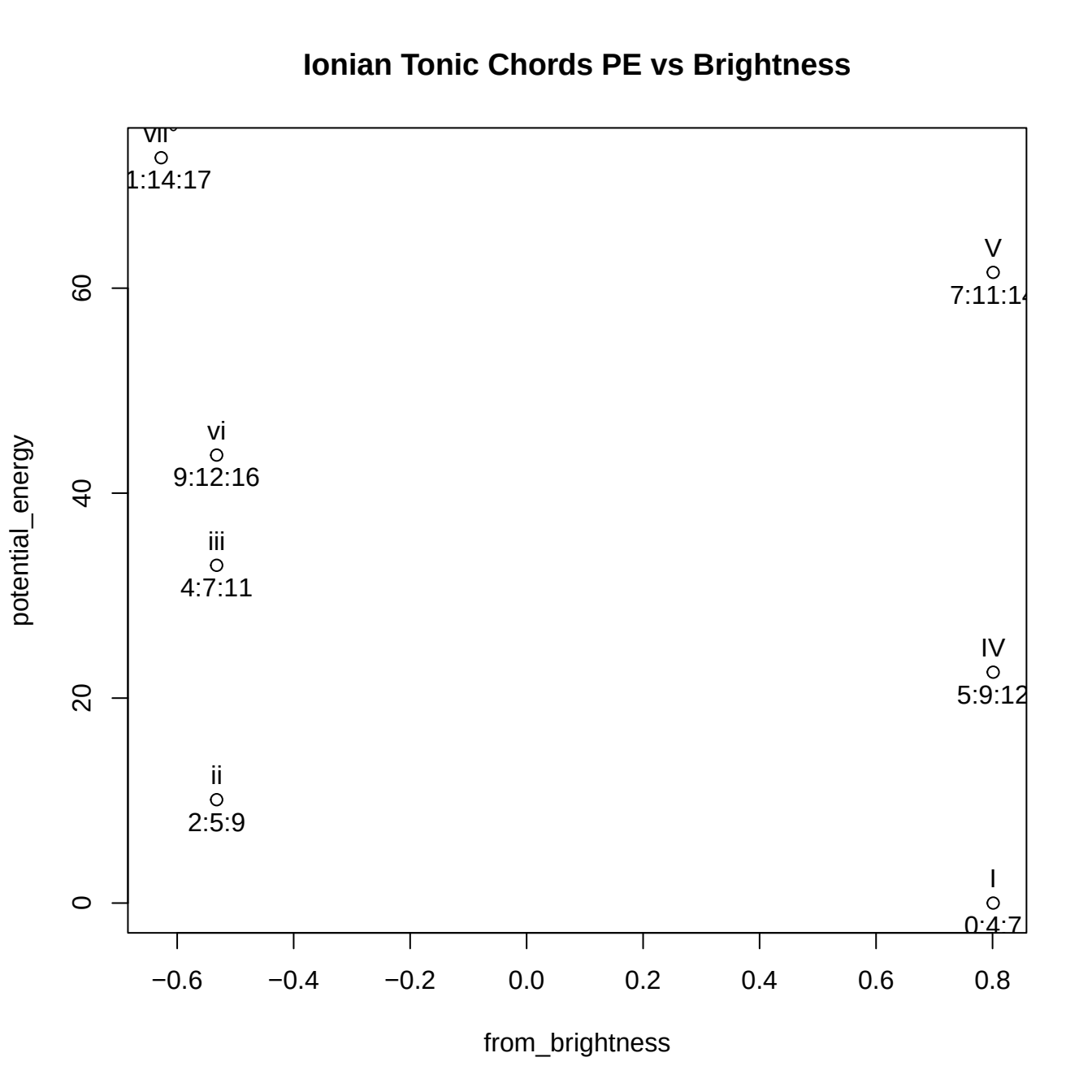

All 5 Note Chords
affinity
brightness
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
−1.0
−0.5
0.0
0.5
1.0

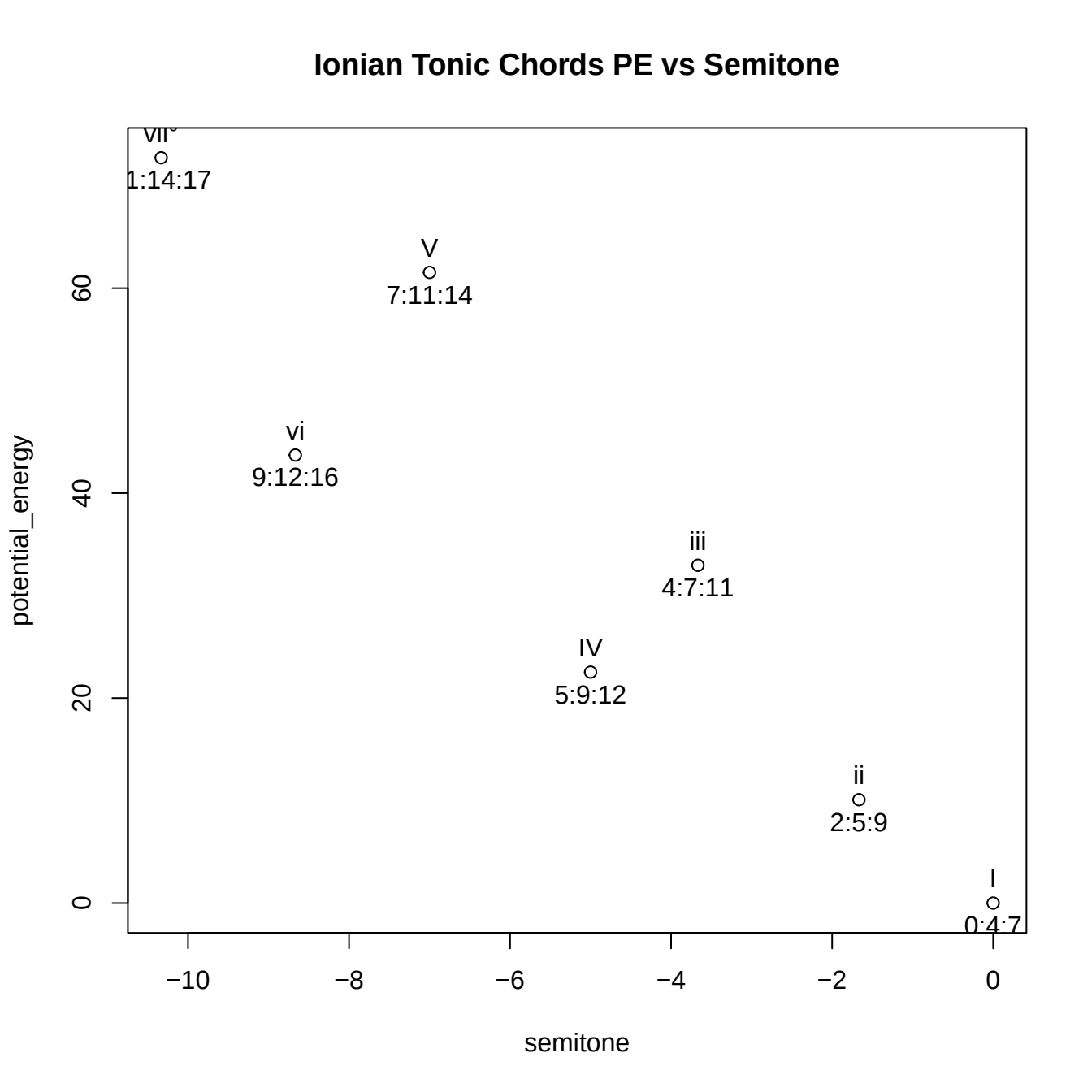

All 6 Note Chords
affinity
brightness
6.0
5.5
5.0
4.5
4.0
−0.5
0.0
0.5

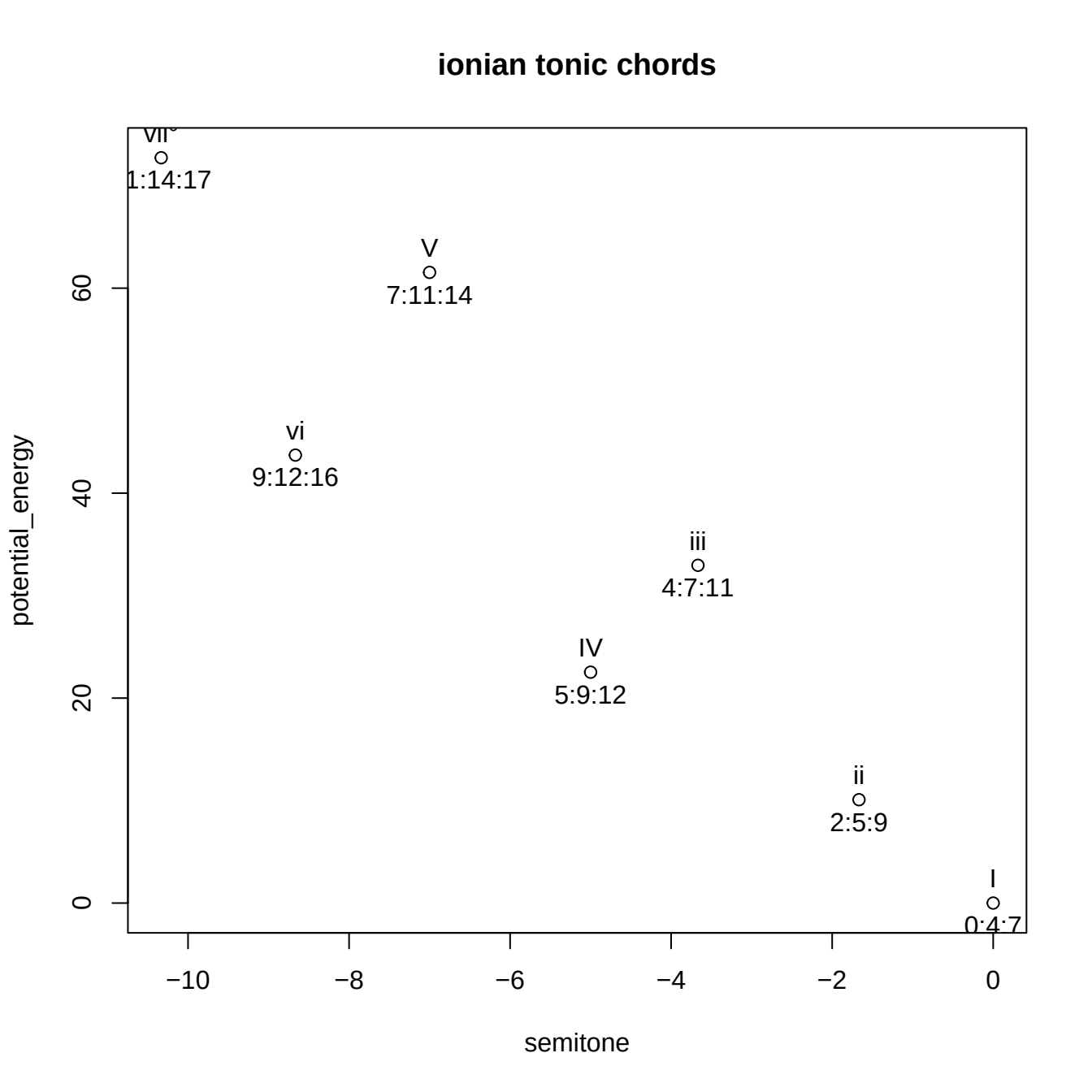

Tonic PE of Intervals v Semitone
potential_energy
0
50
100
150
11
10
9
8
6
7
4
5
3
2
1
12
0
−12
−10
−8
−6
−4
−2
0
semitone

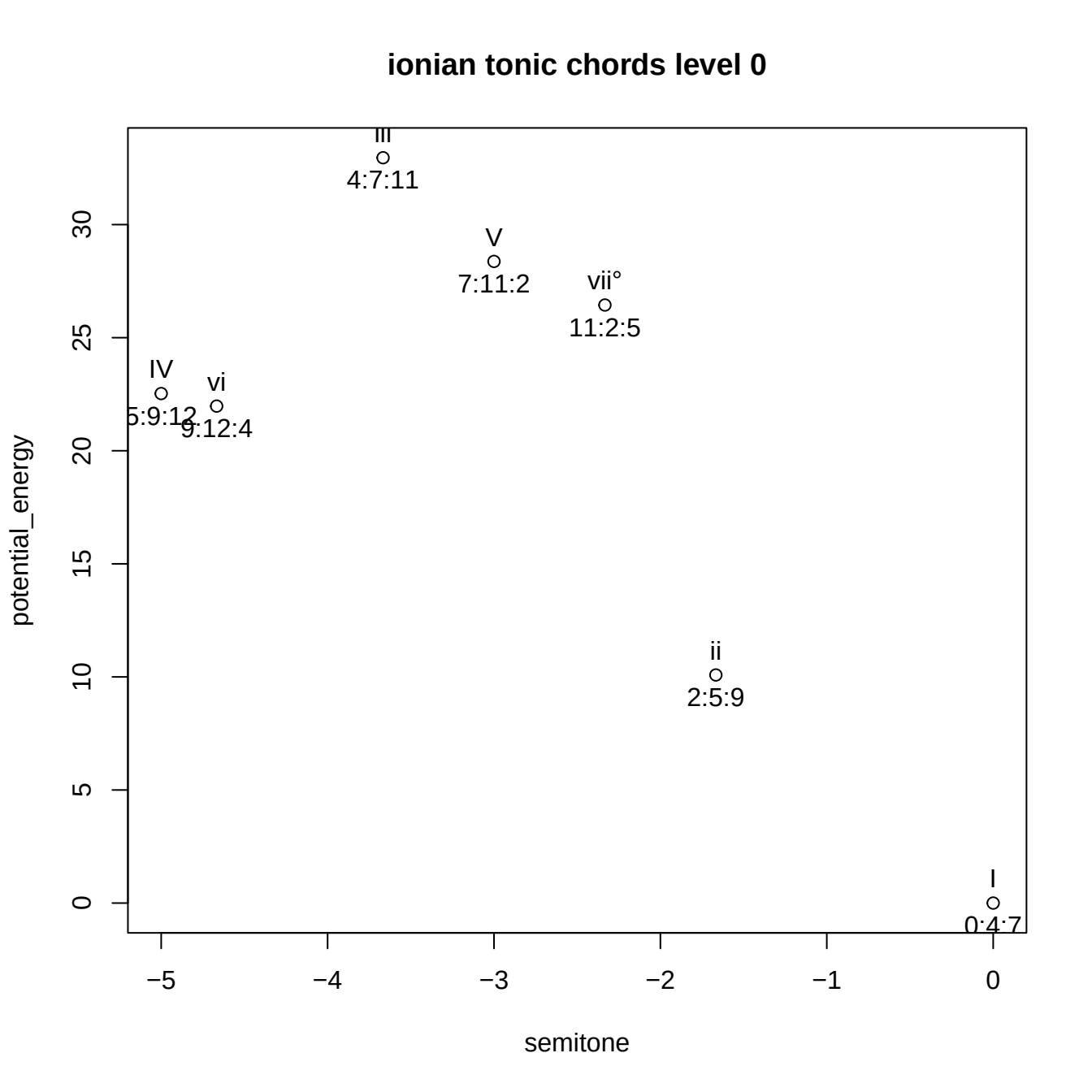

Octave PE of Intervals v Semitone
potential_energy
0
50
100
150
semitone
0
2
4
6
8
10
12
12
11
10
9
8
7
6
5
4
3
2
1
0

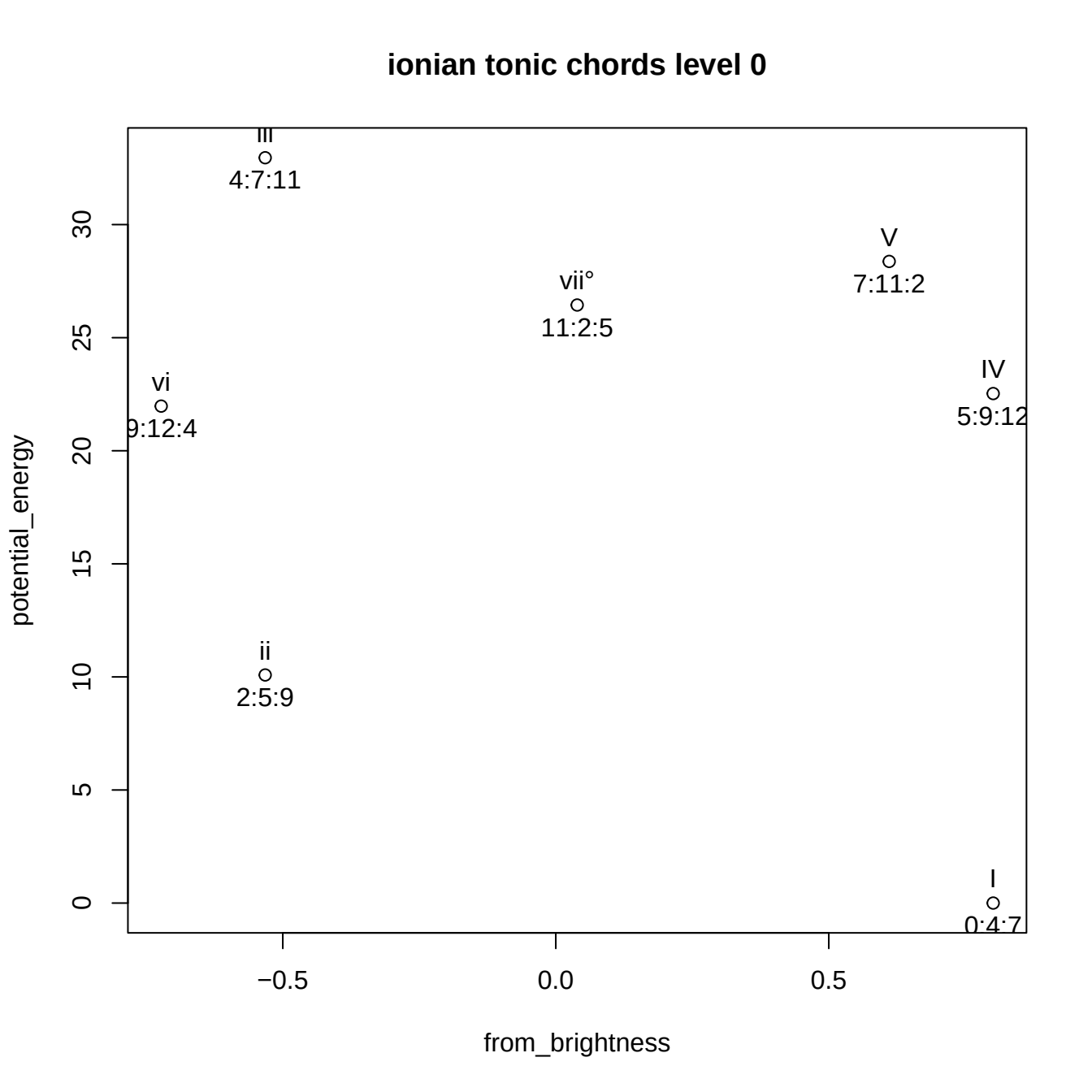

Lydian Tonic Chords PE vs Brightness
potential_energy
from_brightness
100
80
60
40
20
0
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
vii
11:14:18
V
7:11:1
vi
9:12:16
iii
iv° 4:7:11
6:9:12
II
2:6:9
I
0:4:7

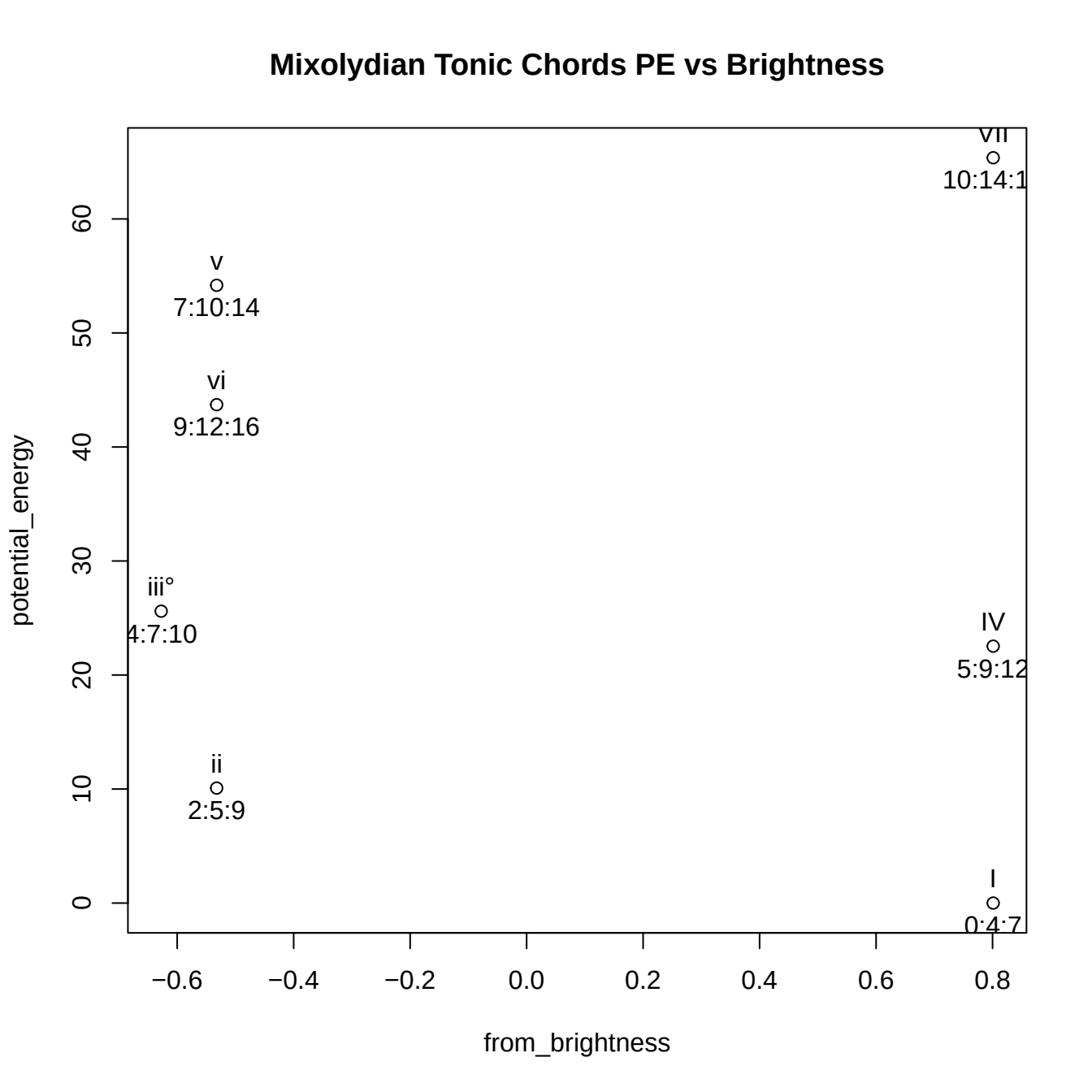

Ionian Tonic Chords PE vs Brightness
vii°
1:14:17
V
7:11:14
vi
9:12:16
iii
4:7:11
IV
5:9:12
ii
2:5:9
I
0:4:7
potential_energy
0
20
40
60
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
from_brightness

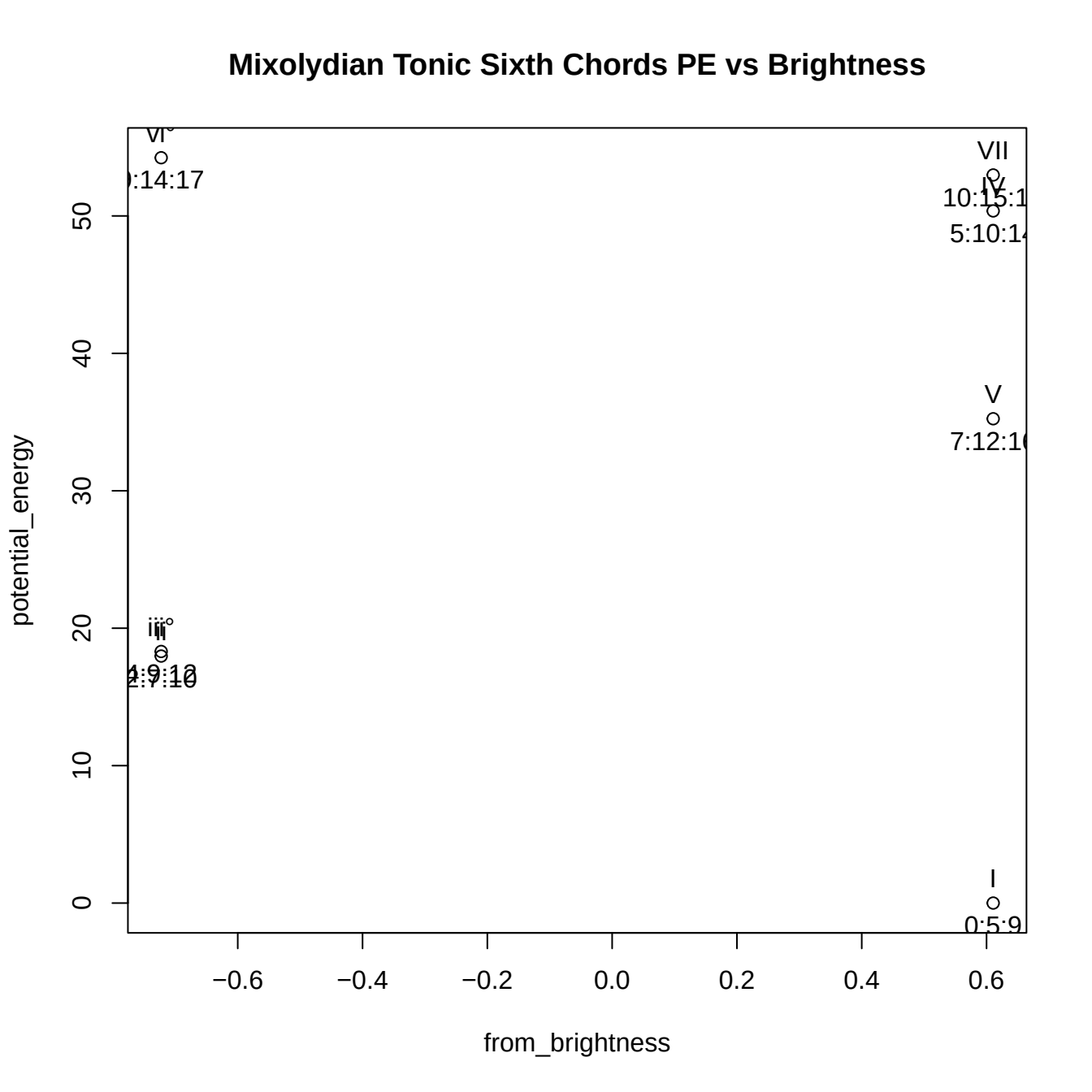

Ionian Tonic Chords PE vs Semitone
vii°
1:14:17
V
7:11:14
vi
9:12:16
iii
4:7:11
IV
5:9:12
ii
2:5:9
I
0:4:7
potential_energy
0
20
40
60
−10
−8
−6
−4
−2
0
semitone

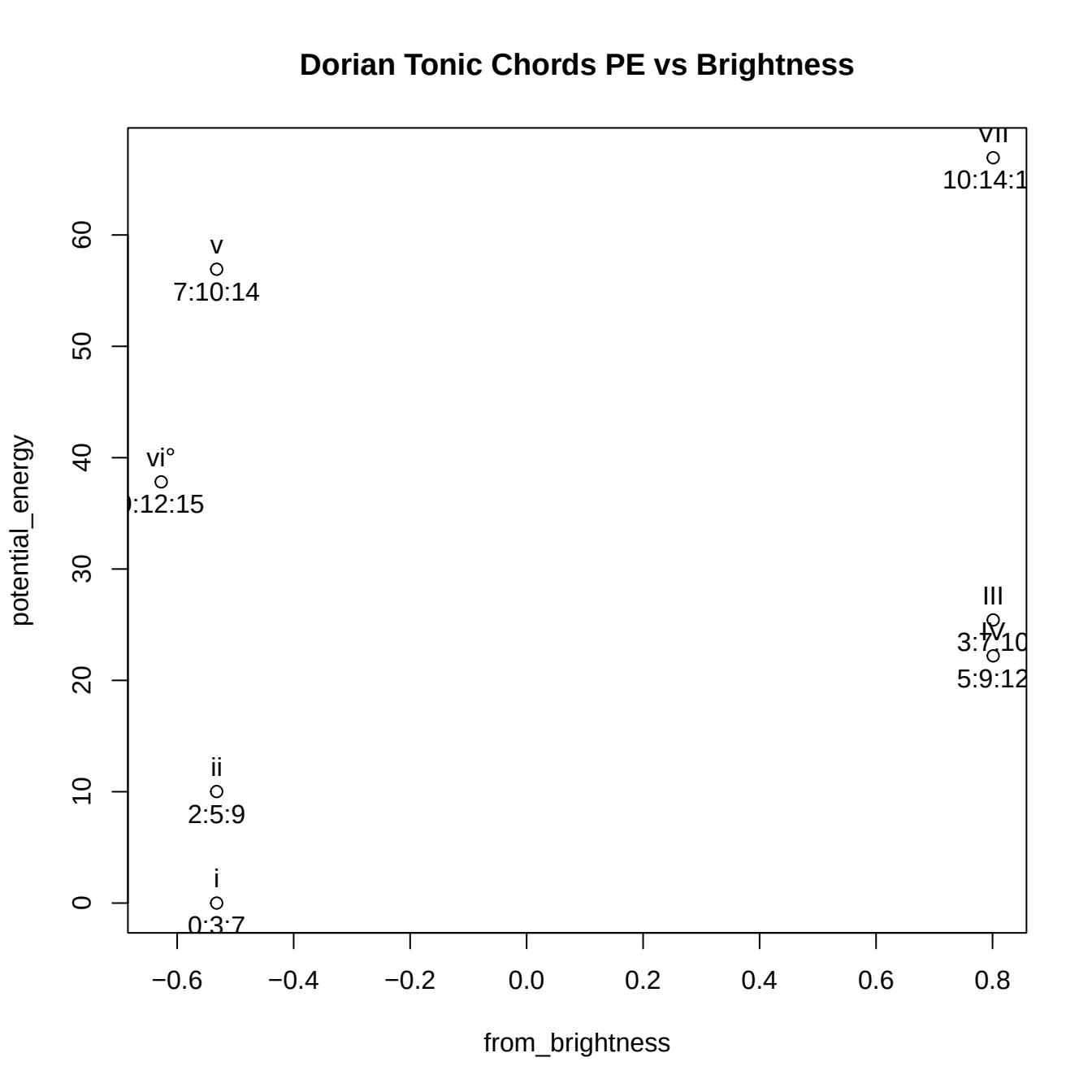

ionian tonic chords
vii°
1:14:17
V
7:11:14
vi
9:12:16
iii
4:7:11
IV
5:9:12
ii
2:5:9
I
0:4:7
potential_energy
0
20
40
60
−10
−8
−6
−4
−2
0
semitone

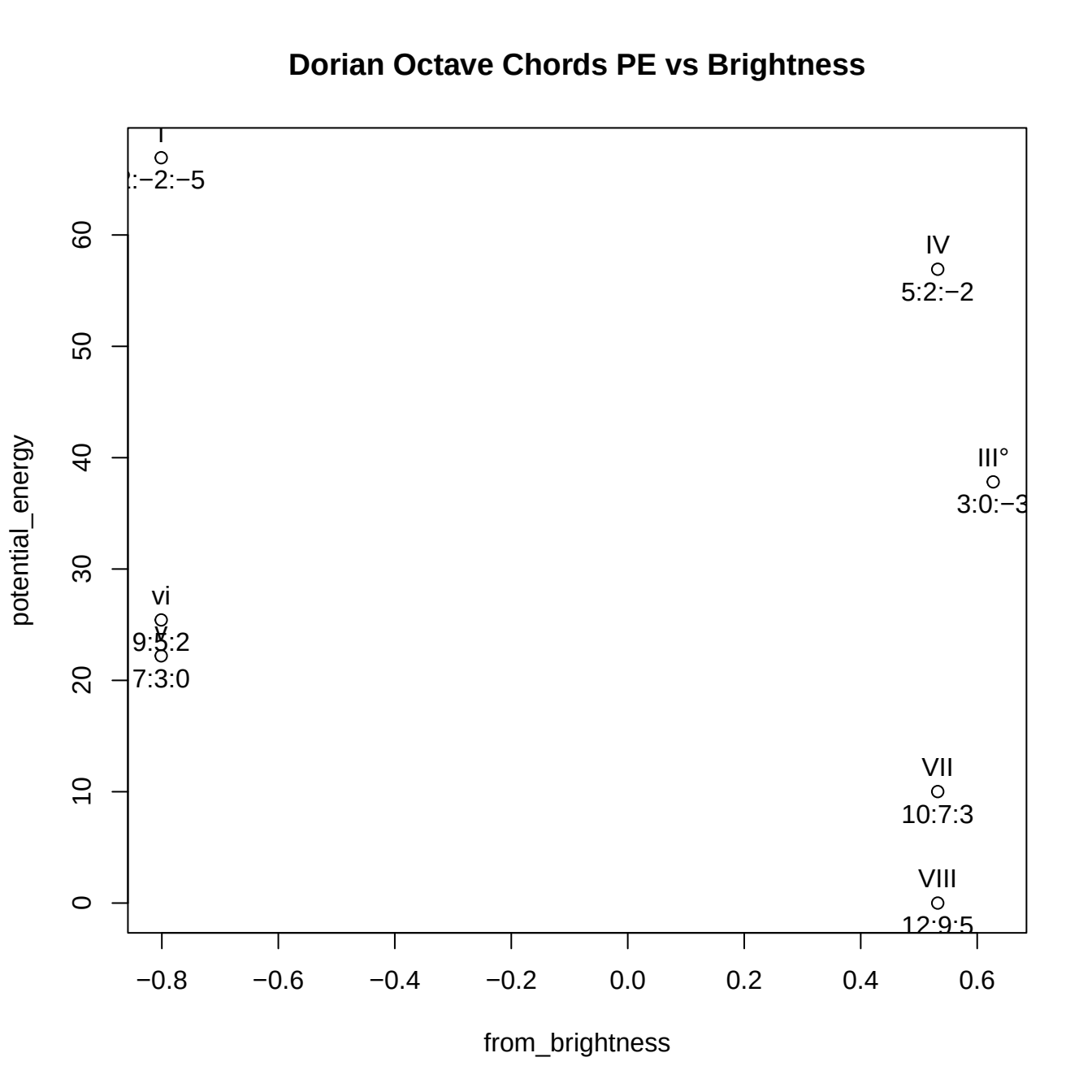

ionian tonic chords level 0
iii
4:7:11
V
7:11:2
vii°
11:2:5
IV
5:9:12
vi
9:12:4
ii
2:5:9
I
0:4:7
potential_energy
0
5
10
15
20
25
30
−5
−4
−3
−2
−1
0
semitone

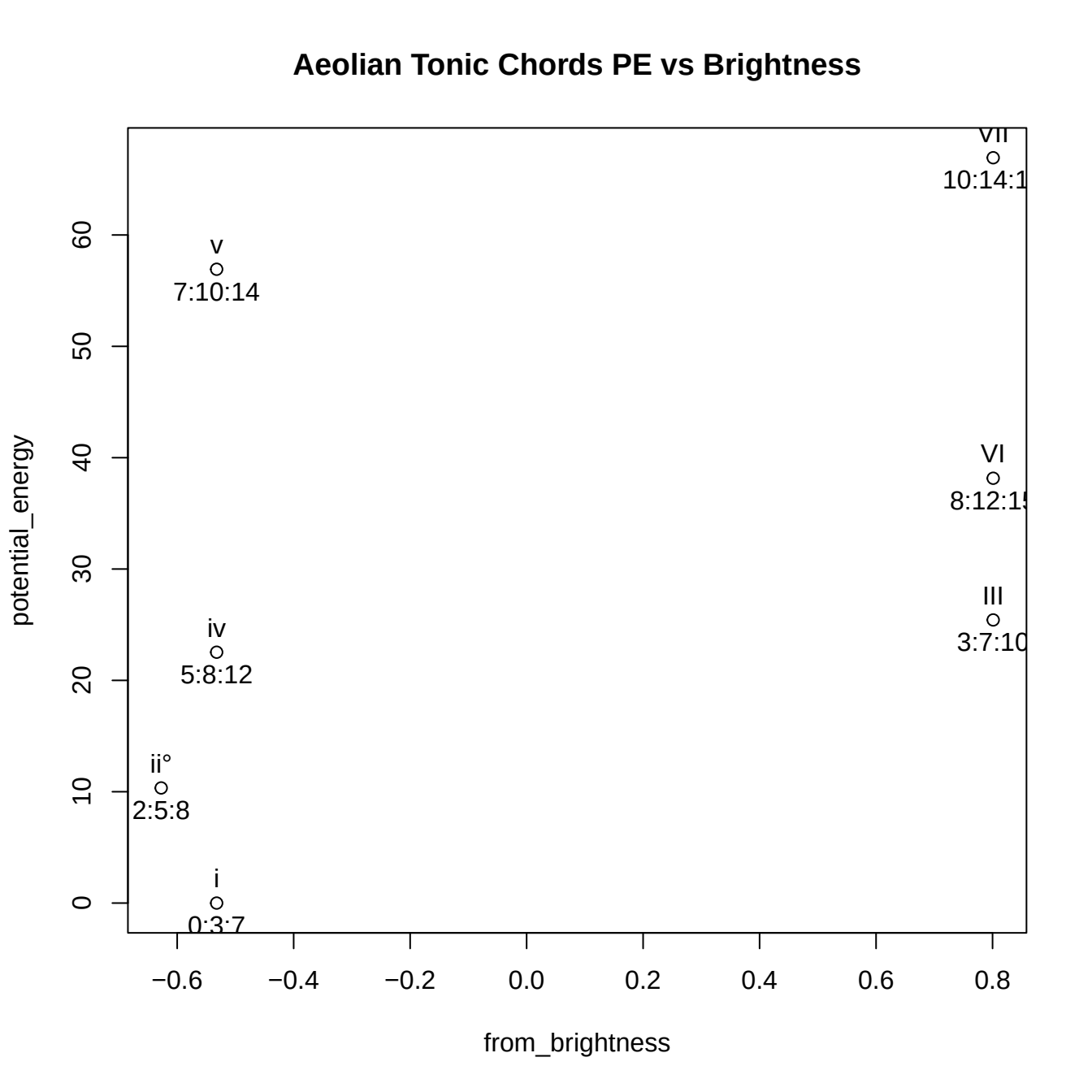

ionian tonic chords level 0
iii
4:7:11
V
7:11:2
vii°
11:2:5
IV
5:9:12
vi
9:12:4
ii
2:5:9
I
0:4:7
potential_energy
0
5
10
15
20
25
30
−0.5
0.0
0.5
from_brightness

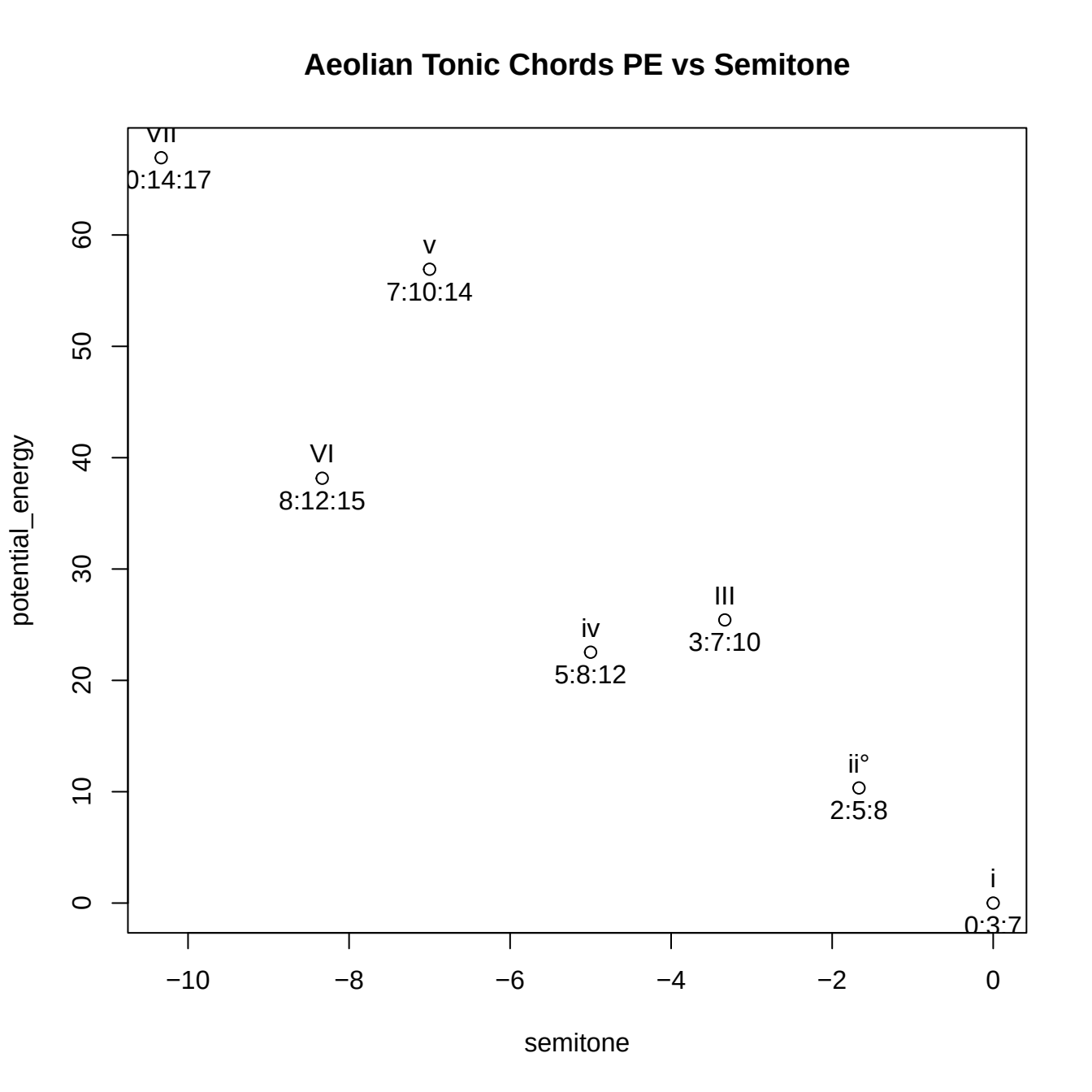

Mixolydian Tonic Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
vii
10:14:1
v
7:10:14
vi
9:12:16
iii°
4:7:10
IV
5:9:12
ii
2:5:9
I
0:4:7

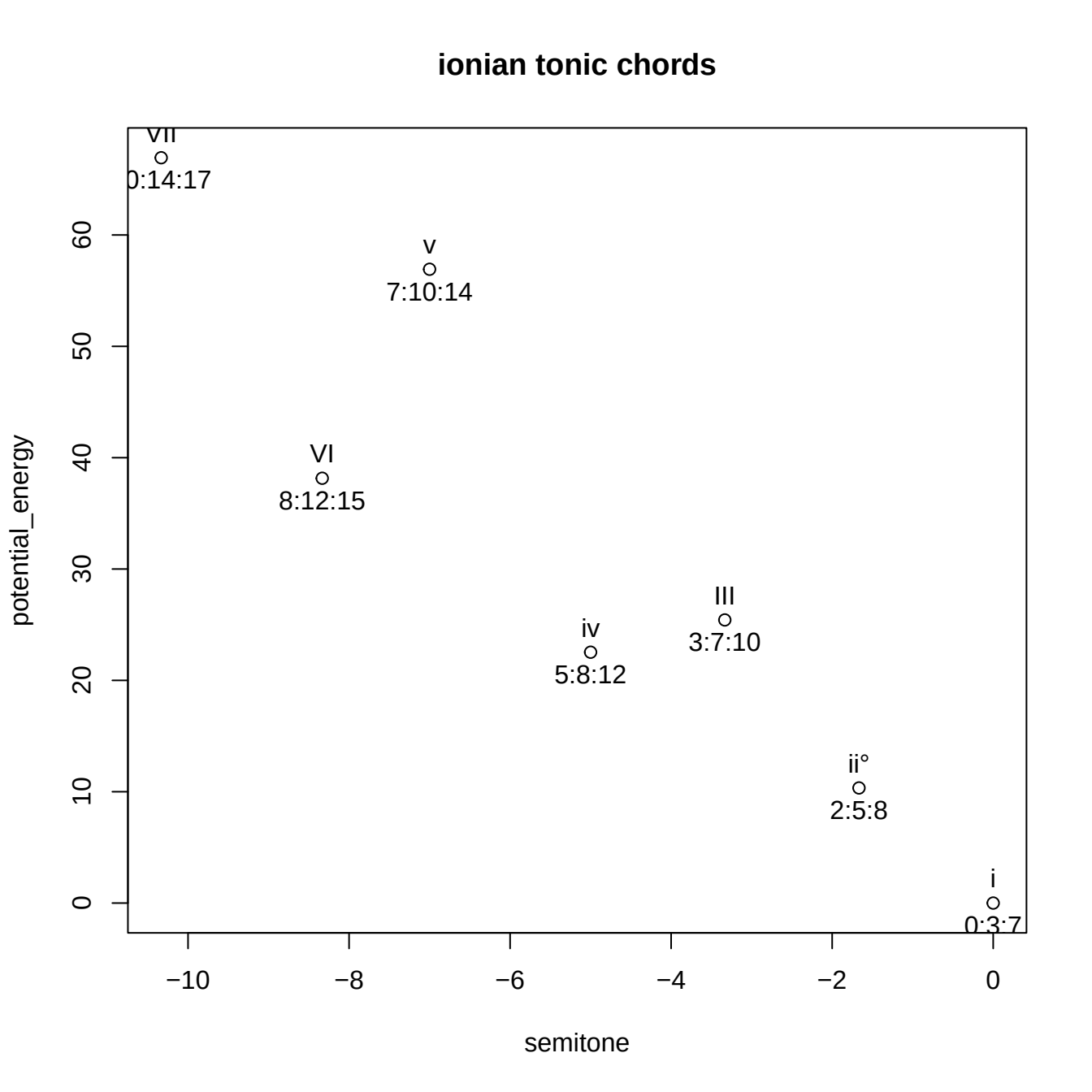

Mixolydian Tonic Sixth Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
VII
V
I

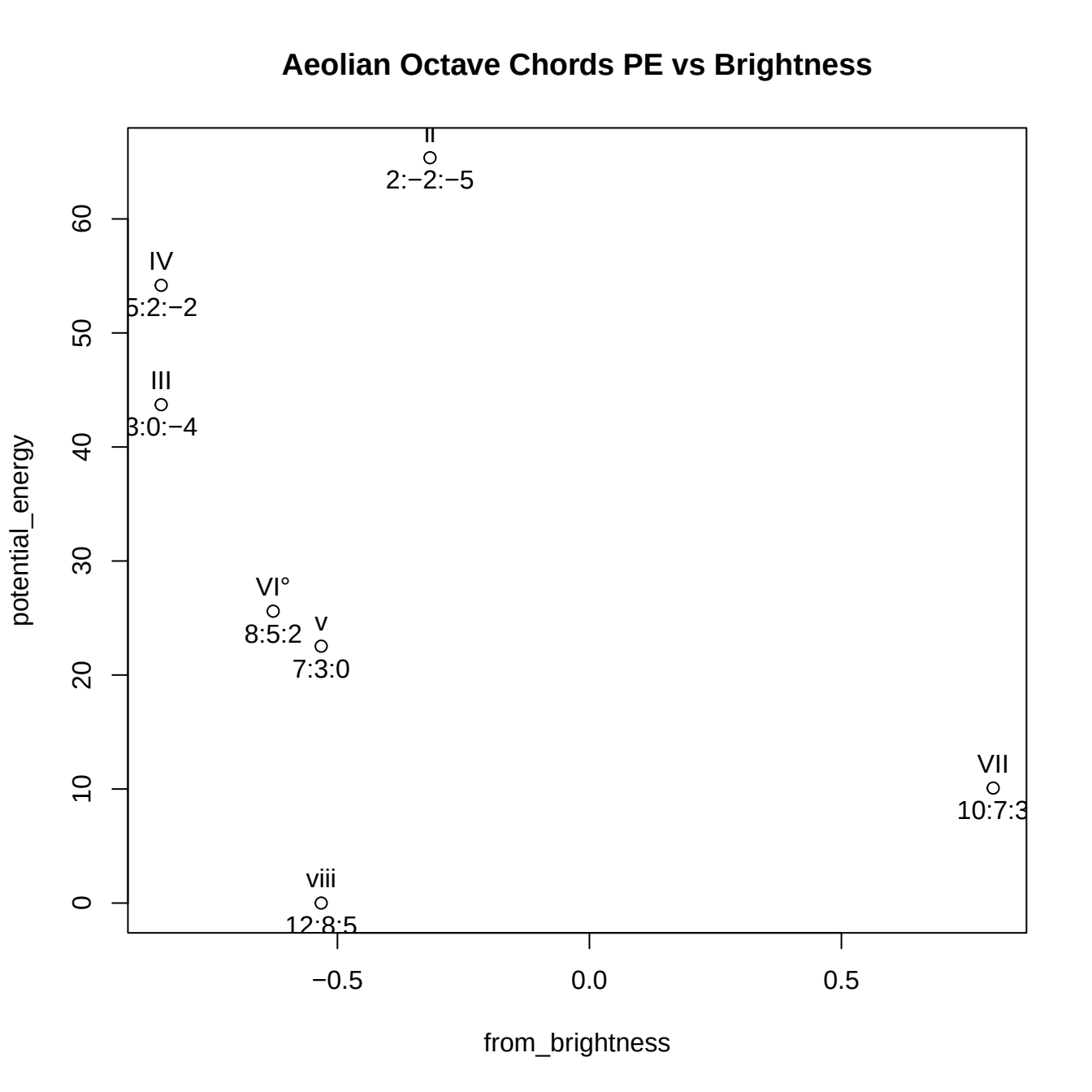

Dorian Tonic Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
v
7:10:14
vi°
:12:15
ii
2:5:9
i
0:3:7
VII
10:14:1
III
IV
3:7:10
5:9:12

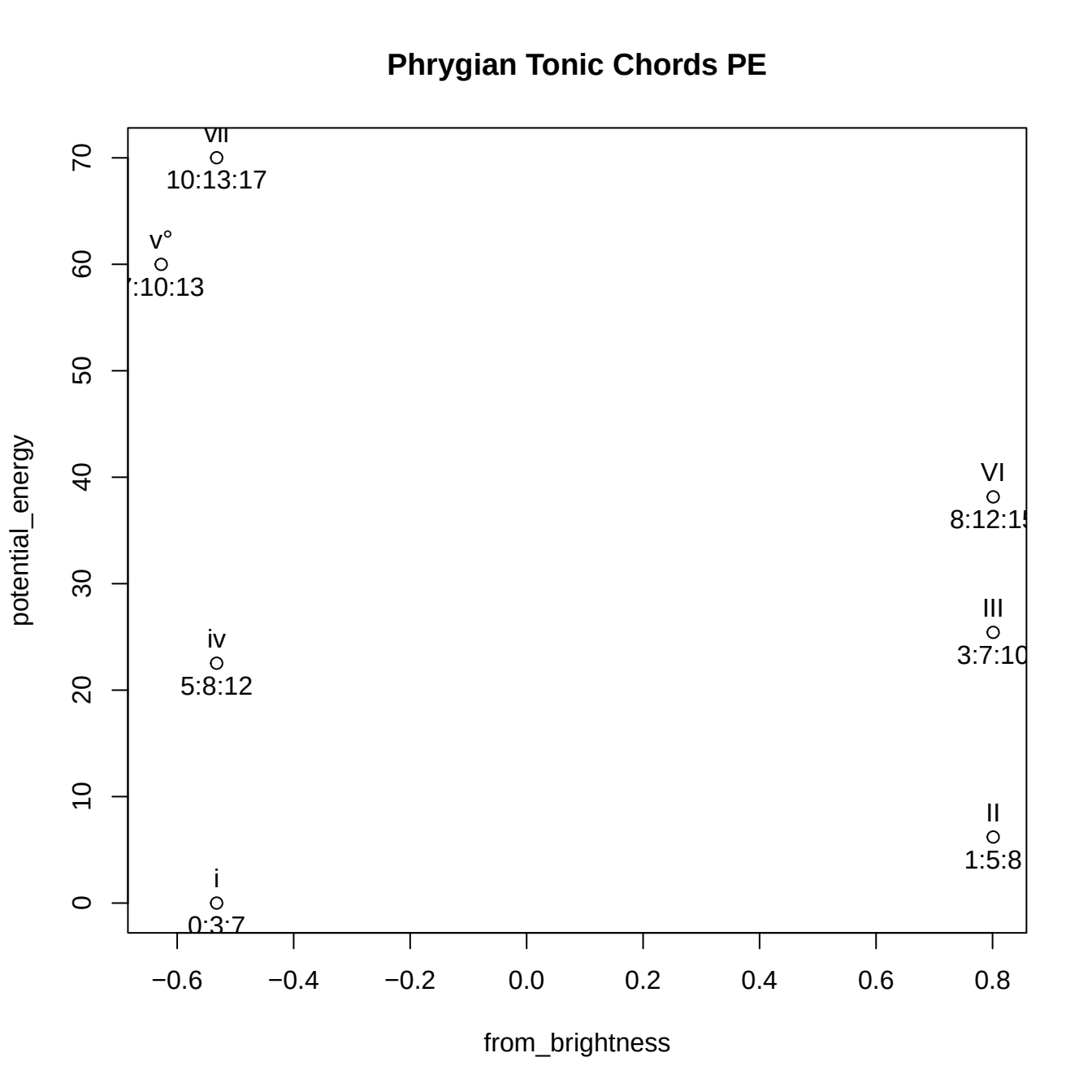

Dorian Octave Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
−0.8
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
:−2:−5
IV
5:2:−2
III°
3:0:−3
vi
9:5:2
7:3:0
VII
10:7:3
VIII
12:9:5

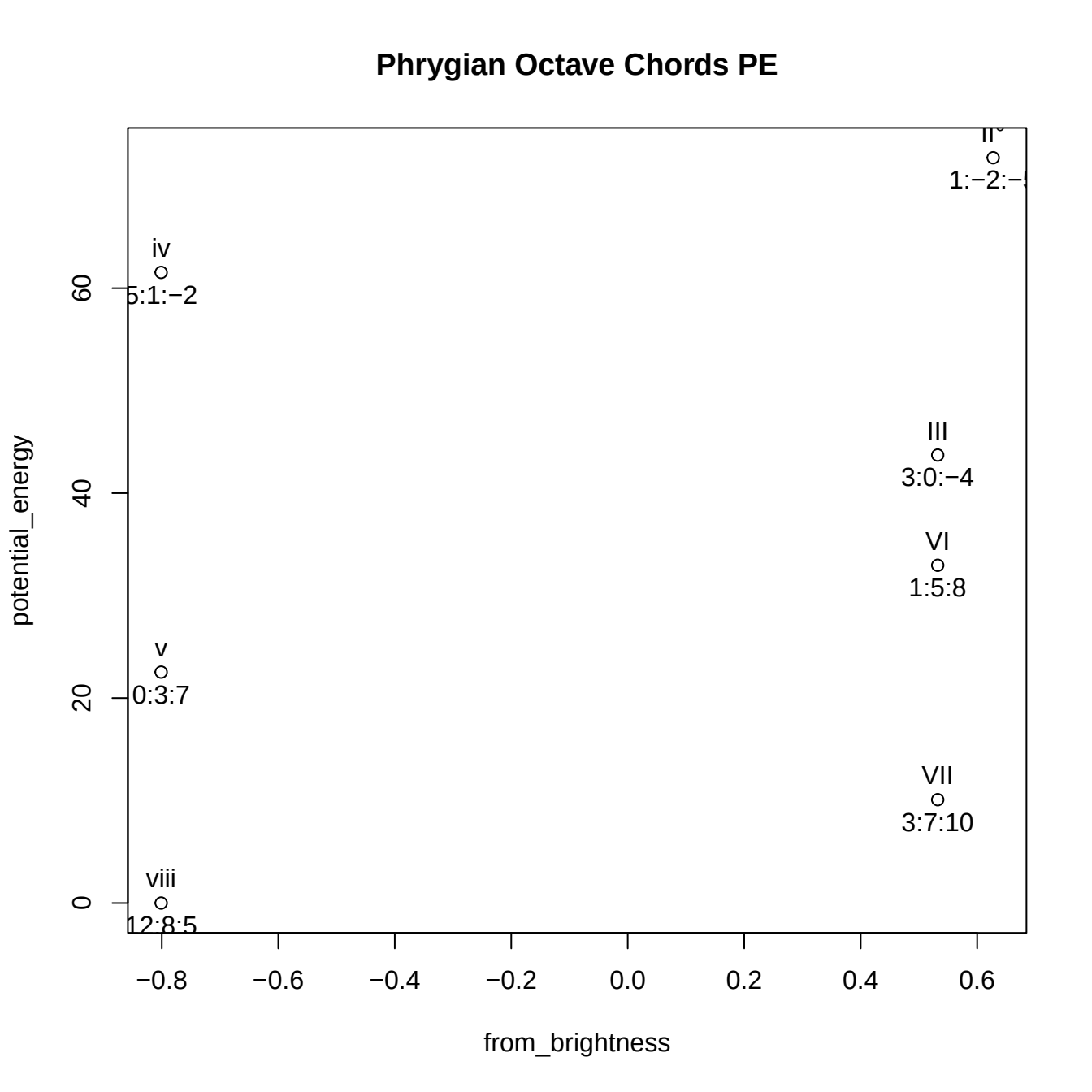

Aeolian Tonic Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
i
0:3:7
ii°
2:5:8
iv
5:8:12
v
7:10:14
III
3:7:10
VI
8:12:15
VII
10:14:1

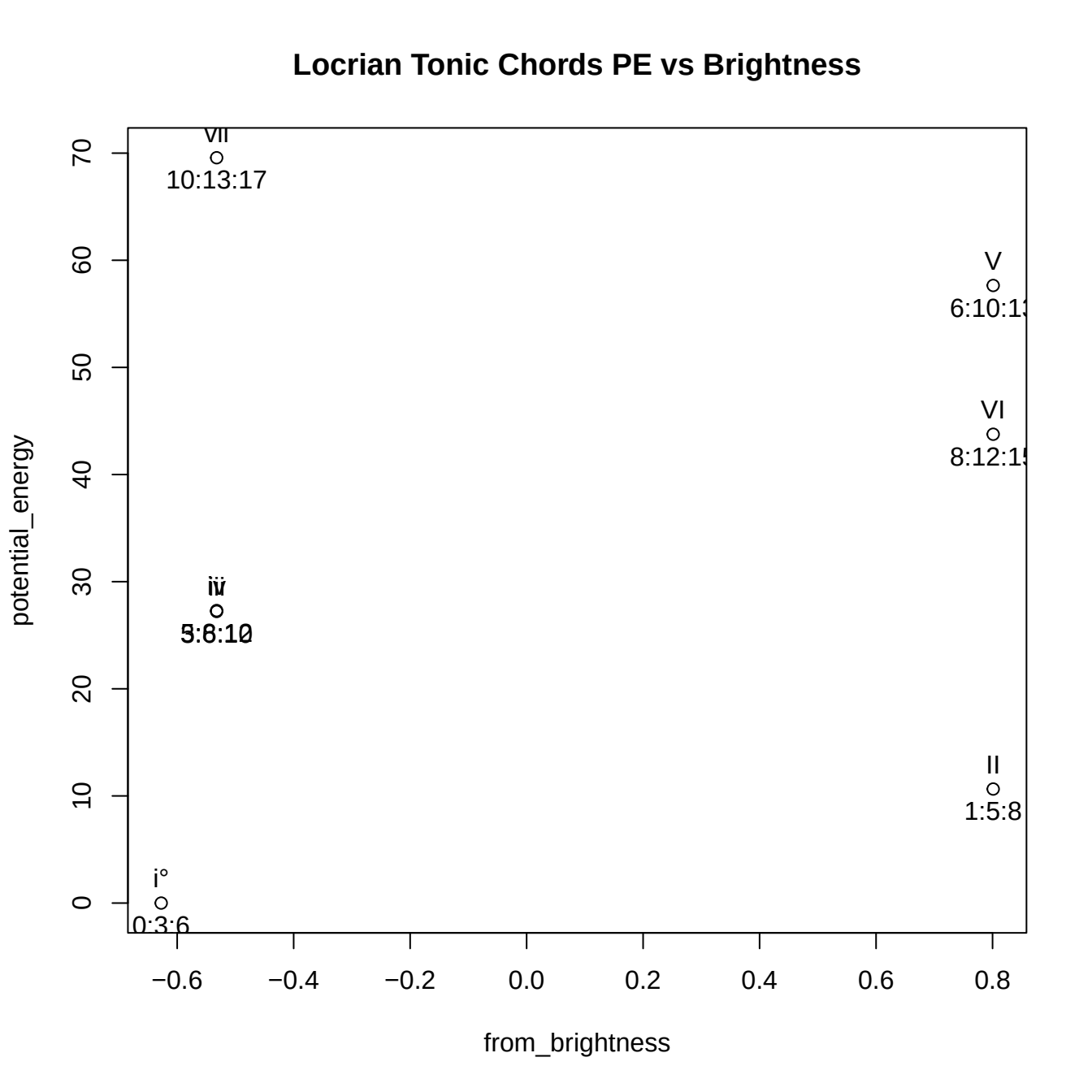

Aeolian Tonic Chords PE vs Semitone
potential_energy
semitone
VII
0:14:17
v
7:10:14
VI
8:12:15
iv
5:8:12
III
3:7:10
ii°
2:5:8
i
0:3:7
0
10
20
30
40
50
60
−10
−8
−6
−4
−2
0

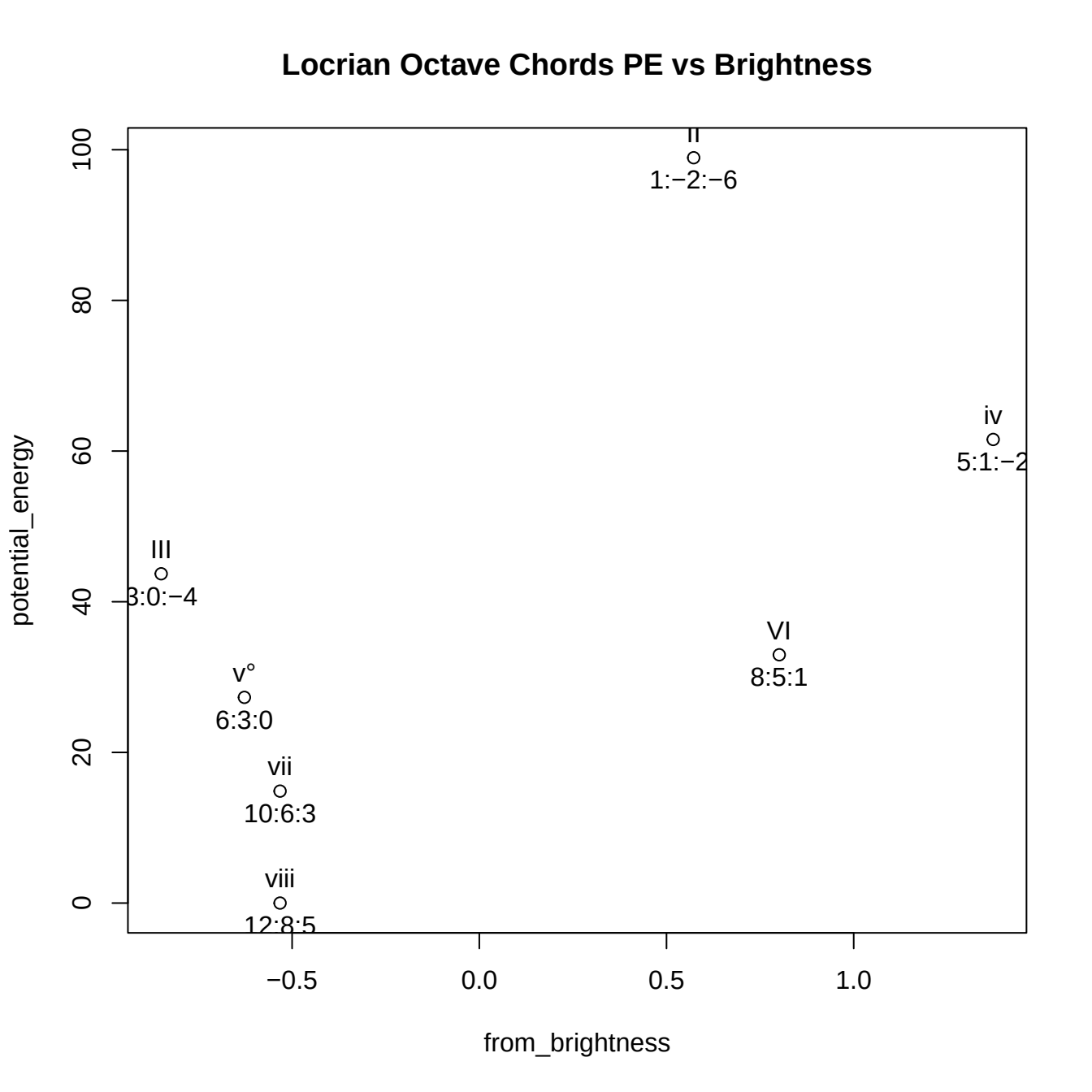

ionian tonic chords
potential_energy
semitone
0
10
20
30
40
50
60
−10
−8
−6
−4
−2
0
VII
0:14:17
v
7:10:14
VI
8:12:15
iv
5:8:12
III
3:7:10
ii°
2:5:8
i
0:3:7


Aeolian Octave Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
−0.5
0.0
0.5
II
2:−2:−5
IV
5:2:−2
III
3:0:−4
VI°
8:5:2
v
7:3:0
VII
10:7:3
viii
12:8:5


Phrygian Tonic Chords PE
potential_energy
from_brightness
vii
10:13:17
v°
:10:13
VI
8:12:1
III
3:7:10
iv
5:8:12
II
1:5:8
i
0:3:7
0
10
20
30
40
50
60
70
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8


Phrygian Octave Chords PE
potential_energy
from_brightness
0
20
40
60
−0.8
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
iv
5:1:−2
III
3:0:−4
VI
1:5:8
v
0:3:7
VII
3:7:10
viii
12:8:5


Locrian Tonic Chords PE vs Brightness
potential_energy
from_brightness
0
10
20
30
40
50
60
70
−0.6
−0.4
−0.2
0.0
0.2
0.4
0.6
0.8
vii°
10:13:17
V
6:10:13
VI
8:12:15
iii
5:8:10
iv
5:8:10
II
1:5:8
i°
0:3:6


Locrian Octave Chords PE vs Brightness
potential_energy
from_brightness
0
20
40
60
80
100
−0.5
0.0
0.5
1.0
II
1:−2:−6
iv
5:1:−2
III
3:0:−4
VI
8:5:1
v°
6:3:0
vii
10:6:3
viii
12:8:5