

# Gyration Point 3.21

## I. Tables and chairs

"Even quite ungainly objects, like chairs and tables, will become almost spherical if you wrap them in enough newspaper."

Martin Q Larsson

play each repetition  
4-40 times, until you  
find a good groove

**Allegro leggiero molto**

Flute *ff* **A** **B**

Clarinet in Bb *ff* bucket mute solo

Trombone *ff* slight vibrato, medium clubs solo

Vibraphone *ff*

Piano *ff*

Violin *ff* arco pizz **on cue** arco pizz arco pizz arco

Violoncello *ff* arco pizz arco pizz arco pizz arco

**Stand up and read:**

A plain rectangular table has two planes of symmetry, which divide the sphere into four segments. We can consider any one of these segments as the orbifold - its boundary consists of two semicircles that intersect each other at the zenith and at the nadir, at angle  $\pi/2$ . So this boundary curve has type \*22, and indeed \*22 is the orbifold notation for the symmetry group of the table.

Fl. solo **C** solo

Cl. *mf* *f*

Tbn. *mf* *f*

Vib. *f*

Pno. *mf*

Vln. *mf* *f*

Vc. *mf* *f*

19 **D**

Fl. *mp*

Cl.

Tbn.

Vib.

Pno. *solo*

Vln. *mp*

Vc. *mp*

**Stand up and read:**

A plain square table has two further (diagonal) planes of symmetry, and the four symmetry planes divide the sphere into eight segments, the typical segment having two corners at angle  $\pi/4$ . This time the symmetry group is  $*44$ .

27 **E**

Fl. *mp*

Cl. *mp*

Tbn. *mp*

Vib. *mp* *arco* *solo*

Pno. *mp*

Vln. *mp* *solo*

Vc. *mp*

**F**

34

Fl. *mf*

Cl. *mf*

Tbn. *mf*

Vib.

Pno. *mf*

Vln. *mf*

Vc. *mf*

**Stand up and read (right after vl):**  
 We might also write 1\*, so as to give the star something to hang on to – digits 1 have no significance in this notation, except as place-fillers.

**Stand up and read:**  
 A chair has a single plane of symmetry, which cuts the sphere in a great circle, that is to say, a boundary curve without corners, type\*.

**II. Gyration points and cone points**

**G**

attacca

43

Fl. *mf*

Cl. *mf*

Tbn. *mf*

Vib. *mf*

Pno. *mf*

Vln. *mf*

Vc. *mf*

medium clubs

solo

solo

solo

51 **H** **I** solo

**Stand up and read:**  
 An orbifold may have some special points that do not lie on boundary curves. A gyration is a rotation in the group whose centre does not lie on any mirror.

Fl. *f*

Cl. *f*

Tbn. *f*

Vib. *f*

Pno. *f*

Vln. *f*

Vc. *f*

61 solo

**Stand up and read:**  
 A point of the surface is called an *m*-fold gyration point if it is the centre of some gyration of order *m*, but not of any gyration of higher order.

Fl. *ff*

Cl. *ff*

Tbn. *ff*

Vib. *ff*

Pno. *ff*

Vln. *ff*

Vc. *ff*

69

Fl.

Cl.

Tbn.

Vib.

Pno.

Vln.

Vc.

**J**

solo

*fff*



75

Fl.

Cl.

Tbn.

Vib.

Pno.

Vln.

Vc.

*fff*

**Stand up and read:**  
 The image in the orbifold of an  $m$ -fold symmetry point is called a cone point of order  $m$  – it is a point around which the angle is rather  $2\pi/m$  than  $2\pi$ .