Jigsaw Zither

**for solo berimbau player with five
live or pre-recorded berimbau players**

David M. Gordon

Jigsaw Zither

for Gregory Beyer and Arcomusical

Duration: ca. 9'30"

Instrumentation

- Player 1 – 2 berimbaus

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone

- Player 2 – 1 berimbau

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone

- Player 3 – 1 berimbau

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone

- Player 4 – 1 berimbau

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone

- Player 5 – 3 berimbaus (Berimbaus 2 and 3 are shared with Player 6)

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone

- Player 6 – 3 berimbaus (Berimbaus 2 and 3 are shared with Player 5)

    2 normal sticks, 1 rubber-wrapped stick, 1 coin or stone
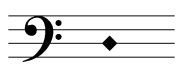
Special Notations

Roughly a quarter-tone flat. The actual size of the interval depends upon the tuning of the instrument (see below).
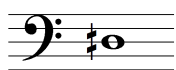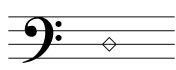
Roughly a quarter-tone sharp. The actual size of the interval depends upon the tuning of the instrument (see below).
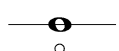
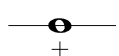Produce the indicated pitch by striking the string with the stick.

Produce the indicated pitch solely by pressing the coin or stone against the string.

Produce the indicated pitch solely by removing the coin or stone from the string.

Open. Hold the gourd away from your body.

Closed. Hold the gourd against your body.

Instrument Tunings

Player 1

Berimbau 1
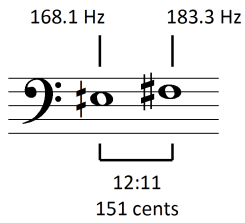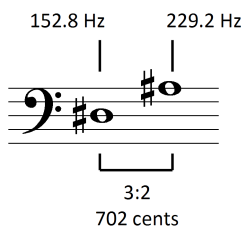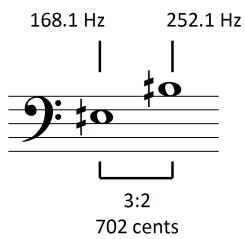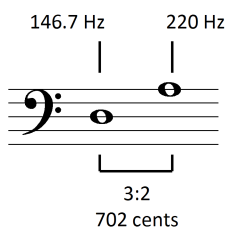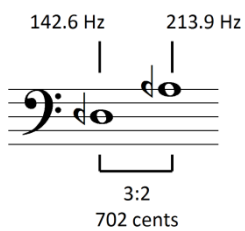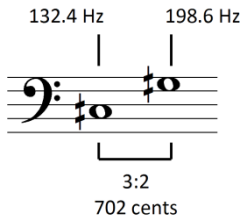
168.1 Hz   183.3 Hz

12:11
151 cents

Berimbau 2

152.8 Hz   229.2 Hz

3:2
702 cents

Player 2

168.1 Hz   252.1 Hz

3:2
702 cents

Player 3

146.7 Hz   220 Hz

3:2
702 cents

Player 4

142.6 Hz   213.9 Hz

3:2
702 cents

Player 5

Berimbau 1

132.4 Hz   198.6 Hz

3:2
702 cents

Berimbau 2 (shared with Player 5)

76.4 Hz   305.5 Hz

4:1
2400 cents

Berimbau 3 (shared with Player 6)

61.1 Hz   305.5 Hz

5:1
2786 cents

Player 6

Berimbau 1

122.2 Hz   183.3 Hz

3:2
702 cents
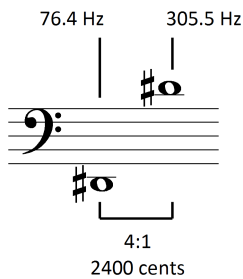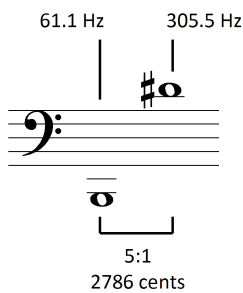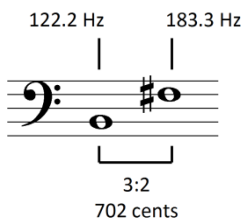
Berimbau 2 (shared with Player 5) – see above

Berimbau 3 (shared with Player 5) – see above

5:4
386 cents

2:1   **6:5**
1200 cents   **316 cents**

(bass clef staff of open string pitches)

5:4
386 cents

13:12	14:13	36:35	25:24	11:10	12:11	13:12	14:13	36:35	25:24	11:10
139 cents	128 cents	49 cents	71 cents	165 cents	151 cents	139 cents	128 cents	49 cents	71 cents	165 cents

- The frequencies listed above represent the preferred tuning for the piece. If, however, the lowness of the range causes some of the berimbau strings to become too loose and thus not resonate properly or hold their pitch, the following alternate frequencies can be used:

<u>Up a step</u>

Player 1, Berimbau 1 – E$^+$ = 189.8 Hz, F♯ = 207 Hz
Player 1, Berimbau 2 – D♯ = 172.5 Hz, A♯ = 258.8 Hz
Player 2 – E$^+$ = 189.8 Hz, B$^+$ = 284.7 Hz
Player 3 – D = 165.6 Hz, A = 248.4 Hz
Player 4 – D^d = 161 Hz, A^d = 241.5 Hz
Player 5, Berimbau 1 – C$^+$ = 149.5 Hz, G$^+$ = 224.3 Hz
Player 5, Berimbau 2 – low D♯ = 86.3 Hz, high D♯ = 345 Hz
Player 5, Berimbau 3 – low B = 69 Hz, high D♯ = 345 Hz
Player 6, Berimbau 1 – B = 138 Hz, F♯ = 207 Hz
Player 6, Berimbau 2 – low D♯ = 86.3 Hz, high D♯ = 345 Hz
Player 6, Berimbau 3 – low B = 69 Hz, high D♯ = 345 Hz

<u>Up a minor third</u>

Player 1, Berimbau 1 – E$^+$ = 200.8 Hz, F♯ = 219 Hz
Player 1, Berimbau 2 – D♯ = 182.5 Hz, A♯ = 273.8 Hz
Player 2 – E$^+$ = 200.8 Hz, B$^+$ = 301.2 Hz
Player 3 – D = 175.2 Hz, A = 262.8 Hz
Player 4 – D^d = 170.3 Hz, A^d = 255.5 Hz
Player 5, Berimbau 1 – C$^+$ = 158.2 Hz, G$^+$ = 237.3 Hz
Player 5, Berimbau 2 – low D♯ = 91.3 Hz, high D♯ = 365 Hz
Player 5, Berimbau 3 – low B = 73 Hz, D♯ = 345 Hz
Player 6, Berimbau 1 – B = 146 Hz, F♯ = 219 Hz
Player 6, Berimbau 2 – low D♯ = 91.3 Hz, high D♯ = 365 Hz
Player 6, Berimbau 3 – low B = 73 Hz, D♯ = 345 Hz

<u>Special Performance Instructions</u>

- All instruments that are performed live must be amplified.

- Parts 2–6 may either be 1) performed live, or 2) pre-recorded and played back through speakers. If parts 2–6 are recorded, the recording must be divided into two different tracks. Track 1 should contain measures 1–273, track 2 should contain measures 275–344, and both tracks should end with approximately 20 seconds of additional silence. An assistant will most likely be needed to start and stop the tracks at the appropriate times, as well as to adjust the volume level of the recording.