

# ***Constellations I: Huzām***

*For Harp or Piano and Tape Loop*

*c. 14-20min*

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*Commissioned by Deutschlandfunk Kultur, December 2018*

# Preparation Instructions

Instrument must be tuned to the following octave-repeating chromatic scale using Middle C = 261.63 Hz as a reference pitch. Certain intervals are left unchanged because they are not used.

Note name	Ratio	Cents	+/- 12-EDO	Hz
C	1/1	1.000	0	261.626 Hz
C#	—	100.000	0	277.183
D	9/8	203.910	3.91	294.329
E <sub>b</sub>	—	300.000	0	311.127
E	27/22	354.547	-45.453	321.086
F	4/3	498.045	-1.955	348.834
F#	—	600.000	0	369.994
G	3/2	701.955	1.955	392.438
A <sub>b</sub>	27/17	800.910	0.910	415.523
A	—	900.000	0	440.000
B <sub>b</sub>	—	1000.000	0	466.164
B	32/17	1095.045	-4.955	492.472

Stereo tape loop should be set at minimum of 12 seconds, maximum of 16 seconds.

Instrument should be mic'd using two microphones in a stereo configuration, which are fed directly into the tape loop.

A stereo monitoring system should be placed in a comfortable position for the performer to hear themselves and the tape loop playback as if they are one and the same (at the same volume). Be aware of spill from the speakers into the microphones.

If performing for a live audience with a PA system for amplification, the tape loop playback must be at the same volume level as the amplified acoustic instrument.

Extraneous noises that may be captured by the microphone and fed into the tape loop should be embraced as part of the performance and rendering of the composition.

# Performance Instructions

This piece is performed in maqām huzām (a branch of maqām segāh), which uses the following pitch classes, identified here by their equivalent Western and Arabic note names and ratios:

Western:	E	F	G	A	B	C	D
Arabic:	segāh	chahargāh	nawā	ḥisār	māhūr	kurdān	muḥayyar
Ratios:	27/22	4/3	3/2	27/17	32/17	1/1	9/8

In all octaves, only the above pitches should be used.

Play one note for as long as it sustains, or until you hear it played back from the tape loop. Then, mark the string/key with a temporary marker, sticker or similar so that it is not played again. Repeat this process until you have played all the afore mentioned notes in all octaves.

Always play all notes gently.

Do not play more than one note in one cycle of the tape loop.

Do not play the same note consecutively in different octaves.

Do not play consecutive notes within the same octave.

Do not to play notes on top of each other—always aim to play a note in a gap between other notes.

Spread the notes out across the entire length of the tape loop.

Consider the groove and shifting tonal focus that develops with each note you add to the tape loop.

Once finished, enjoy the fragmented, maqāmic flow that is playing back from the tape loop for at least a couple of minutes, before slowly fading out the tape loop over 1-2 mins.