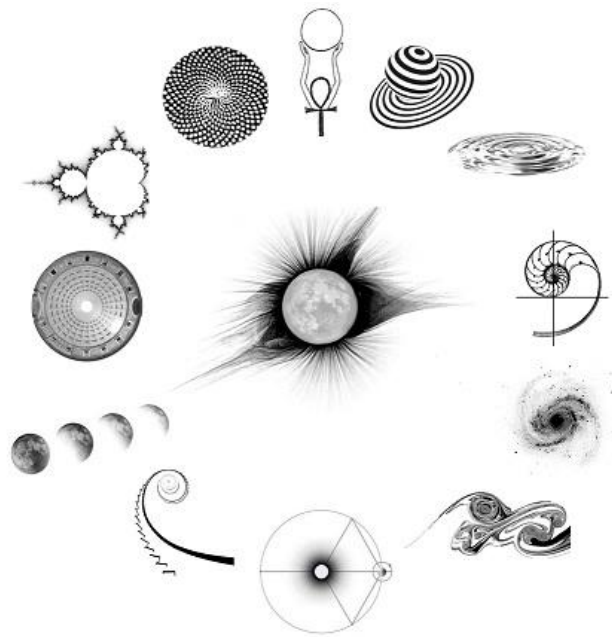


# CIRCLES

FOR PIANO SOLO AND  
BACKING TRACK



BY

Mark Mitchell

2020

## FOREWORD

I have long been aware of the minimalist style of composition: Steve Reich, John Adams, etc. I remember being particularly struck with Gavin Bryars' "Jesus' Blood Never Failed Me Yet" when, as a student in 1985, I saw Maguy Marin's dance company perform it; also watching the mesmerising film *Koyaanisqatsi* with the music of Philip Glass. I even tried it out in a couple of student works, but never went beyond that.

Then I performed Ludovico Einaudi's *Night* from the *Elements* collection, a piano solo performed with a pre-recorded backing track. The experience was rewarding and inspired to write my own music in a similar vein. When I was done the first piece I sat back and wondered what to call it. The title "Nautilus" came to me: a beautiful, self-similar, fractal shape that occurs in nature. *Elements* features a unique graphic symbol for each piece, so following Einaudi's lead, I found a picture of a cross section of a Nautilus shell and created a simple black-and-white graphic from it, placing it under the music's title.

Now I decided to create a set of twelve pieces, each with a unique graphic, connected by the concept of Circles. I came up with a dozen titles, created graphics and then wrote pieces inspired by them. I realized I had a large collection of digital synths, effects, plugins and techniques I had never explored, so I challenged myself to start from scratch with each movement and use some resources I had never used before. Pursuing this challenge over a period of about five months from February to July 2020 was very gratifying.

I am delighted with the result. I have had especially profound experiences listening to these pieces on headphones while staring at the starry expanse on a summer's night. For me they evoke the wonder, dread, joy and awe of that experience very eloquently. I trust others will respond to the music similarly.

Mark Mitchell  
January 2021



Mark Mitchell Music  
Box 1019  
Magrath, AB TOK 1J0  
MarkMitchell-Music.com

recordings can be found on [Spotify](#), [Apple Music](#),  
iTunes and other online music services.

## NOTES

### 1 - CIRCLES



*Circles* references the mathematical constant pi ( $\pi = 3.1415926...$ ) in two ways. First I used it to create a funky nine-note rhythm, where the digits of pi are converted to sixteenth-note values:



The rhythmic motif formed by the first three notes (3-1-4) is also common, heard in sixteenths, eighths and even quarters.

Secondly, pi was used to define the size of the five main sections of the movement, multiplying the digits by nine and making the sections that many bars long (i.e., 27, 9, 36, 9, 45). These sections are articulated by six strikes of the gong (the sixth one being needed to mark the end of the fifth section).

I would also note that in this piece (and all movements of *Circles*), the device of panning some sounds left to right in a continuous cycle is meant to evoke the circle, as this is essentially the effect of a sound revolving around your head.

### 2 - RIPPLES



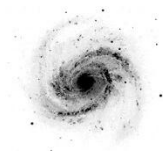
The widening circles of waves on a still pond's surface are evoked by waves of notes in this movement.

### 3 - NAUTILUS



I have long been fascinated by fractal structures in nature, and the shell of a nautilus is a famous example. The gentle spiral curve is defined by rectangles of the golden mean (where the ratio of the short side to the long side is equal to that of the long side in relation to the sum of both sides). Spirals are deformed three dimensional circular paths. In *Nautilus*, the constantly repeating harmonic pattern is meant to evoke the repeating shapes withing the nautilus shell.

### 4 - GALAXY



In the backing track of this ominous movement, my voice can be faintly heard whispering the first few verses of Genesis,

"In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of

the deep. And the Spirit of God moved upon the face of the waters. And God said, Let there be light: and there was light. And God saw the light, that it was good”.

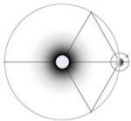
Galaxies form in circular patterns and feature spirals that have the same proportions as the nautilus shell, except on the scale of thousands of light years!

## 5 – CORIOLIS



The rotation of a planet creates forces that result in circular swirling patterns in it's atmosphere (like hurricanes or Jupiter's eye, for example).

## 6 – TIME



Time is defined for us by circles: the rotation of the earth on it's axis, the orbit of the moon around the earth and our orbit around the sun. This movement is the one most specifically reminiscent of Einaudi's *Night*.

## 7 – ASCENT



The graphic for *Ascent* was made from a photograph of one of the spiral staircases in the Nauvoo temple, looking up from the bottom. In that space we contemplate our ascent from this fallen world to the highest heavens. The form of this movement came to me as I meditated in the temple in Cardston one day, and expresses the story of the Garden, the Fall, and our ascent back to God's presence.

## 8 – LUNA



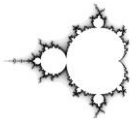
The closest Beethoven ever came to minimalism is the constantly undulating triplets in the famous *Moonlight Sonata*. When I approached composing a piece evoking the moon, it was an obvious association to make. This movement is the most harmonically dynamic and complex of the set and the most rhythmically fluid. When making the final recording of the backing track, I decided to play the piano part freely, with all the rubato you would use if your were playing unaccompanied, and then mapped that tempo onto the backing track. So, where all the other movements are strict in their tempo, this one is very flexible.

## 9 – OCLUSUS



The graphic for this movement was made from a photograph of the ceiling of the Pantheon, a Roman temple built to all the gods, which was later repurposed as a Christian church. The dome is a half sphere topped with a circular opening that is left uncovered, allowing in the natural sun, rain and wind (hence the sound of swirling leaves in the track). This oculus (or eye) creates a beam of light that describes circular paths on the interior as the earth revolves through the day. I love the interplay of images here: light, circles, eyes, pupils, windows to the soul and to God, who searches us with his “all seeing eye”, an ancient Egyptian symbol.

## 10 – MANDELBROT



Books have been written on this amazing phenomenon, named after the mathematician who discovered it. The Mandelbrot set is a miracle, partly because the formula that defines it is so very simple:

$$z_{n+1} = z_n^2 + c$$

Graphing this set on a cartesian plane creates a bulbous partial circle (the graphic for this movement). Counting how many values of  $n$  it takes to be in the set and assigning that point a colour based on that calculation creates beautiful shapes and patterns on the boundaries that reflect many patterns seen in nature: fern fronds, galactic spirals and nautilus shells, as well as natural processes of growth, death and the balancing of ecosystems. Looking at the two-dimensional graph, as you zoom in on the crenellated boundaries, looking at finer and finer detail, the patterns repeat in an infinite succession, varied but often repeating shapes over infinite scales. The music is meant to evoke several dives into deeper and deeper scales where we encounter variants of themes we heard before.

I had an amazing experience in the composition of this piece that illustrates the ubiquity of these fundamental mathematical principles. A prominent feature of the Mandelbrot set is instances of the Fibonacci sequence, where each number is the sum of the two numbers before it: 1, 1, 2, 3, 5, 8, 13, 21, 34, etc. This pattern also appears frequently in plants and animals. Knowing this, I consciously embedded a Fibonacci sequence at two parallel spots in the piece. I used an eighth-note scale pattern, starting back at the beginning note after 1 note, then 2, then 3, then 5, then 8 and finally (or so I thought) 13.



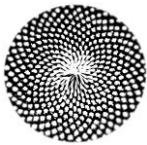
Then there is a loud flourish of repeated notes before the transition to the next section. Weeks after writing it, on a whim I counted up the eighth notes in that

climactic repeated note section. I was astounded to find it was exactly 21 eighth notes, the next number in the series!



This happened at a completely subconscious level, which made sense since I tried to not over-think the composition, but just let it flow.

## 11 – SUNFLOWER



The graphic here is made from a photograph of an actual sunflower blossom. The seeds in a sunflower blossom exhibit the Fibonacci series and a beautiful Moiré interference pattern, like two inverted spirals superimposed one on top of the other. This is represented musically in the track with a quick falling pattern that is superimposed over itself in a gradually tightening stretto. The music generally reflects a sunny disposition.

## 12 – SUNRISE



This may be my favourite movement. The graphic symbol is taken directly from an ancient Egyptian Book of the Dead where it connotes the sunrise. The ankh symbol is not only anthropomorphic, it represents a key, the key to light, life and salvation that unlocks a blessed afterlife. The repeating harmonic pattern that leads to the climax comes from a favourite passage in Puccini's *Il tabarro*. The strange choir at the end of the movement was created using a digital morphing of the source sound (a granular synth) with a recording of my voice. I improvised words in a made-up language for the vocal part as I played the synth voices on the keyboard. It was improvised in one take with only the slightest touching up afterwards. This sums up my aesthetic for the whole set: striving to let my inner, non-rational, intuitive voice have as much room for expression as possible.