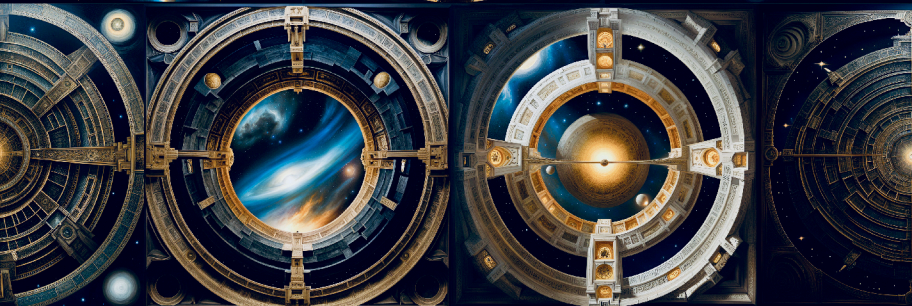




R. MICHAEL WAHLQUIST

MEGA STRUCTURES



FOR MY SON, ENDER  
PER CARITATEM AD ASTRA  
THROUGH LOVE TO THE STARS



The first ideas for the project that would become *Megastructures* were conceived in May of 2023, shortly before I lined up six very busy months for myself that kept me from pursuing the concept. It was a demanding time searching for a new teaching position while preparing numerous recitals and concerts of my music. I did everything from organizing a festival of my hymns and directing the premiere of my oratorio *Redeemed from the Fall* to playing for a silent film festival, putting on a recital of my electronic music, and hauling my own piano to campus so that I could torture it for a 10th anniversary concert for my album *Map of Trees*. By October, I finally embarked on this new musical project, which had been simmering and waiting.

The whole fabric of the album can be summed up in the first words I wrote as I put down my ideas back in May: massively multilayered improvisations. I wanted to combine my love of dense sonic textures with the joy of improvising at the piano.

Besides, I needed a break from musical notation after the 200 pages and 90 minutes' worth of notes for my oratorio! Working with my own piano and home recording setup, I held a series of recording sessions while the kids were at school and when the neighbors' lawn mowers were silent. The cats had to be locked up and all devices had to be shut off to get a good recording in my living room—the internet router, the furnace, even the refrigerator! Despite my efforts, a few promising recordings were cut short by unexpected interruptions. After numerous sessions, I had recorded the raw material for the album—everything from sparse, minimalist chord progressions and lonely melodies to wild flights of improvisatory fancy. Some takes even used extended techniques such as muting/scraping the piano strings, playing with marbles inside the piano, or inserting craft sticks between the piano strings to alter the sound. Throughout the sessions there were intriguing surprises from improvisation's infinite well.



The construction phase of the project took place at the computer, assembling the large musical structures from the raw recorded materials. The results were delightfully unpredictable, and at times I felt I was grasping a writhing, fourth-dimensional snake by the tail. Track after track came into focus once I found the right treatment for each improvisation or set of improvisations. Some tracks (4, 12, 15, 18) contain numerous improvisations which are fashioned together to form large harmonic webs. Others (1, 5, 7, 10, 13, 17) are derived from a single improvisation layered with transformed versions of itself. I called seven of the tracks 'hypercanons' since they are built from between twelve to sixty time-displaced iterations of a single improvisation. Only one track (11) is a true simple canon of an improvisation—nothing else seemed necessary. Throughout the album, various digital effects and dynamic/spatial contourings have been applied, often transforming the rich natural sound of the piano into unrecognizable aural constellations.

The music of *Megastructures* invites the listener on a journey with a loved one, traveling away from Earth, away from the Sun, and eventually beyond the edges of the observable universe. For me, the analogy was of choosing the principles by which you will set your course and then following them, as I have tried to do with my life, my career and with the plans for this very album. What I have learned is that even when you think you know exactly where you're going and how you'll get there, there will always be unexpected challenges which lead to unanticipated resolutions which result in unforeseen wonders.

If you are listening, thank you for joining me on this flight.

R. Michael Wahlquist  
Rexburg, Idaho  
November 2023



# MEGASTRUCTURES

BY R. MICHAEL WAHLQUIST (2023)

## 1. GEGENSCHNITT

We look to the night sky. At the point exactly opposite the sun, where the dense mass of Earth might be expected to block the Sun's light most completely, there is a faint glow. This is Gegenschein or counter-glow, the nebulous backscattered light of the Sun revealed on interplanetary dust. This marks our course—away! Away from the Sun, away to the edge of all that is known.



## 2. HYPERCANON I - TRANSIENT IONOSPHERIC LUMINOUS EVENTS

As we ascend, there are fleeting glimpses of elves and sprites, those weird electric discharges at the extreme edge of the Earth's atmosphere. Passing into space, the strange lights linger on our retinas like an omen for the journey ahead.



## 3. HYPERCANON II - ORBITAL PHASING

Adjusting orbit, we circle the Earth in all its living glory, its days and nights, its storms & lights. Nearly every mark that humanity has left on the universe can be found on this fragile sphere, already so distant.

## 4. HELIOSEISMOLOGICAL READINGS

All instruments directed to the Sun, we take measure of its blinding power, seeking to understand what is at the core of this endless explosion at the heart of our system.



**5. TRIMMING THE LIGHTSAILS TO THE STELLAR WIND**  
We begin our journey away from the sun by extending and trimming the lightsails to the stellar wind, vast wings to carry us to the stars. It will be some time before we leave the Sun's radiant influence as it pushes us towards interstellar space.

#### **6. HYPERCANON III - STARTIDE SARGASSO**

Our search begins at the 'ghost moon' of the L5 Lagrangian point—a cloud of interplanetary dust, and perhaps more, trapped by the combined pull of the Earth & Moon.

#### **7. KORDYLEWSKI CLOUD ARTIFACT**

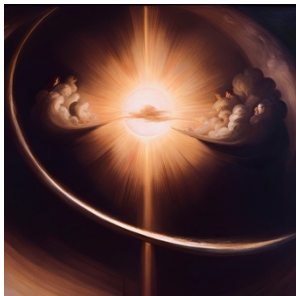
Eureka! An artifact, an inexplicable dark wedge of rock that might have been mistaken for a small asteroid with one exception—it insistently points like the needle of a compass in one particular direction. Taking the object on board, it floats in the hold of the ship, a cosmic lodestone to guide our way.

#### **8. HYPERCANON IV - THE EINSTEIN CROSS AND HUCHRA'S LENS**

We set our course in the direction indicated by the artifact—directly towards the Einstein Cross and Huchra's Lens, where gravitational lensing of a distant galaxy causes four images of a yet more distant quasar to appear. Is this our destination?

#### **9. HYPERCANON V - CROSSING THE HELIOSHEATH**

Thanks to the artifact's power, we rapidly accelerate and cross the immense distance of space where the Sun's influence is still felt, however minutely, its outflowing energy eventually forming a loose edge where the swirl of true interstellar medium finally releases us from the Sun's pull.





#### 10. TINY SHINY BEAUTIFUL FRAGILE HOME

Looking back, even the Sun is now another star. Barely visible on the scopes we can make out our tiny, shiny, beautiful, fragile home.

#### 11. HOLD ME AS THE LIGHT FADES

A moment together in the interstellar darkness.

#### 12. SUPERVOID SIGNALS

Traveling now at unimaginable speed, we detect signals in our path emerging from a supervoid, a massive gap between galaxies.

#### 13. THE COLOSSUS STARLESS

Slowing as we enter the starless void, the source of the signals comes into view—an impossibly massive megastructure. Our ship is dwarfed by its colossal size as we investigate what seems to be a solid, impenetrable object larger in circumference than the orbit of Earth around the Sun. As its full scope and shape become apparent, so too does its purpose...

#### 14. HYPERCANON VI - STARBRIDGE TRANSIT

Embracing the unknown, we allow the megastructure to direct us to its core, feeding our ship into the wormhole at its center. We begin a transit to a destination beyond our control.

#### 15. STARS SLIP LIKE SAND FROM MY HAND

Disorienting moments pass as we exit at the other end of the starbridge and get our bearings. We find ourselves far beyond any light ever observed from Earth. Every star and cosmic wonder in view is new to human eyes.





## 16. HYPERCANON VII - EXODAWN

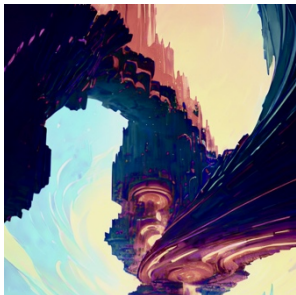
We step onto an unfamiliar world and watch as its star rises in the alien sky. The sound moves through the odd-tasting air with strange effect. Clearly this is not our voyage's end.

## 17. THE RUN TO THE EDGE OF ALL THAT IS KNOWN

Back to the ship. We now have the means to go farther, faster than anyone has ever dreamed possible, so we set our course to see if there is an edge to the infinity of creation. There does not seem to be—only a limit to what we can observe.

## 18. THE LIGHT OF A BILLION YEARS IN YOUR EYES

A moment together awash in the light which has shone from endless ages and from the ends of eternity.



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Piano improvisations, recording, composition,  
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Album artwork created from prompts by  
R. Michael Wahlquist using Dream by WOMBO



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