

Berklee College of Music

**“Time Is Not Real”:  
Revitalizing Vintage Recording Techniques for  
the Here and Now**

Submitted in Partial Fulfillment of the Degree of  
Master of Music in Music Production, Technology, and Innovation

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## **Abstract**

This project aims to revitalize vintage recording techniques in the contemporary hybrid model of music production. Modern popular music has become increasingly electronic. While the current trend is to do everything “in the box”, this project seeks to find the best balance between analog and digital. Two full length albums will be recorded and mixed focusing on blending old and new. The coloration of tape machines, analog consoles, and vintage outboard gear will collide with modern immersive audio techniques and digital editing within ProTools and Ableton Live. The first album is a 13 song collection of jazz fusion compositions performed live in studio with the MarcO Poingt Trio and was recorded on a vintage Neve console. The second album is a 9 song psychedelic rock odyssey under the name Cloudgazer, which was initially mixed in the box but finalized through a 24 track tape machine, SSL console, and various hardware compressors. The author performed on, engineered, and mixed both albums and also produced one music video to accompany one song on the Cloudgazer album. Hopefully this project will inspire fellow musicians to look back in time to find new inspiration.

Keywords: Two Albums, Analog Recording, Tape, Console

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## 1. Introduction

Technology is an extension of human evolution. Now more than ever, our thoughts, actions, and connections with other people are in some way intermediated by technology. For many, an iPhone is the first and last thing they see everyday. Be it an email, an online education, a social media post, or a digitally streamed album, technology shapes the contemporary lifestyle. The symbiosis between humans and their technological counterparts continues to grow not only in everyday life, but also in the consumption and development of the arts.

While it is easy to fall into the mindset that the newest innovation is the best, this is not always the case. In audio production, vintage recording equipment such as tape machines and old malfunctioning analog compressors are often cherished for their unique character and ability to add harmonic content and nonlinearities that cannot be emulated to the same degree in the digital domain. For example, legendary mixing engineer Chris Lord-Alge's favorite Urei 1176 compressor, nicknamed "Bluey", was modified incorrectly or miswired, which coincidentally gave it a sound that he favors over all other 1176's, making it a mainstay on the lead vocal tracks on all of his hit records from the 1980s to present day.<sup>1</sup>

While there are inherent colorations and distinct nostalgic flavors present in vintage recording gear, there can also be limitations, such as the inability to recall exact settings, equipment failure, and other assorted unpredictabilities and inconsistencies. These restrictions are often bypassed by working in the digital audio domain instead of the analog domain. However, if you combine the speed and flexibility of digital audio with the vibe and character of analog, the sonic possibilities become endless.

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<sup>1</sup> *1176 Vs. Bluey — Can You Hear the Difference?*, April 2020. <https://youtu.be/m7yqOGGjC8>.

The name of this project, “Time Is Not Real”, has a few key meanings. First is that both contemporary and dated equipment will be used for the recording and mixing of this project, combining the strengths of technology from all eras throughout the timeline of recorded audio. Second is that this project aims to elevate listeners into a realm of timelessness, in which there is no “I”, and no measurement of self or time. The goal is to tear down ego boundaries that cause a perceived separation between self, others, and environment. Musically speaking, this means odd time signatures, polyrhythms, multi-tonality, and various other compositional techniques that are not grounded in the sphere of comfortable rhythm and harmony. Production wise, this project explores the art of immersive audio to gain full manipulation of the stereo field and experiments with delays, reverbs, distortions, etc, to construct an auditory soundscape that challenges the listener’s current model of reality. It is an artist's job to push the boundaries of an audience's perspective so that when they leave the experience, they take with them a new perspective on their life situation and hopefully a broader understanding of their place in the known universe.

## **2. Review of the State of the Art**

### **2.1 Tame Impala: *The Slow Rush***

Since this thesis involves producing a body of musical work, it is important to note and analyze several musical influences that played a role in the inspiration of this project. In terms of production and sonic characteristics, the “vintage/modern” psychedelic vibe of Tame Impala’s 2020 album, *The Slow Rush* is the closest reference for Cloudgazer’s sound qualities. Kevin Parker writes, performs, and mixes all of his own music. This “one-man band” concept is what inspired Cloudgazer to begin as a solo studio project. typically does the same for his own music, but for this project he wants to utilize the strengths of his peers, especially at Berklee Valencia.

Tame Impala's latest releases have seen commercial success and have landed the artist gigs as a producer for Lady Gaga ("Perfect Illusion"), Kanye West ("Violent Crimes"), Travis Scott ("Skeletons"), and many others.<sup>2</sup> He has begun to blend R&B, disco, and other more danceable styles with his brand of heady pop/rock music. *Cloudgazer* is learning to appreciate this musical shift because it caters to both the body and the mind of the listener. Ideally this album will be a comprehensive experience similar to this.

In the song "Tomorrow's Dust", there are nostalgic strings, saturated drums, light airy vocals, distorted guitars, melancholy major 7th chords, and introspective lyrics. It is these contrasting elements of harsh and mellow timbres that reflect the duality of human nature. We need happiness to know sadness, life to know death, and yin to experience yang. "And the day will come, and then it will pass... In the air of today is Tomorrow's Dust".<sup>3</sup> These lyrical phrases encapsulate both the passing of time and the idea that there really is no past nor future, only an underlying, cyclical, ever changing present moment. This theme ties in heavily with the concept of timelessness in this portfolio.

The beginning "Tomorrow's Dust" has a healthy amount of tape hiss. Most contemporary music either uses this as a cliché to give a nostalgic flavor, or attempts to avoid this artifact of analog recording altogether by using digital editing softwares like Izotope Rx to remove unwanted noise. To the author, the hiss in this song is not a tacked-on cliché, but rather an honest capture of the often desired imperfections of tracking to tape. Tape can also produce added saturation, tape compression, subtle variations in the stereo image, the crosstalk (bleed) between channels, a smoothing of high frequencies, a bump of low frequencies, along with the

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<sup>2</sup> Jenkins, Craig. "Tame Impala Made the Perfect Summer Album. Then Summer Got Canceled." *Vulture*, May 20, 2020. <https://www.vulture.com/2020/05/tame-impala-kevin-parker-interview-the-slow-rush-quarantine.html>.

<sup>3</sup> *Tomorrow's Dust*. Kevin Parker, Modular Recordings, February 2020 <https://open.spotify.com/track/666PdikRnUzdvt9p5wWND?si=1Mb-PbBzRmyPFcplv9IO6g>.



occasional flutter/irregularity. These combine together to give the music an added depth and character, while coloring the sound in a way that software plug-ins can only partially imitate.

Finally, the music video for the song “Is It True” off of *The Slow Rush*,<sup>4</sup> is the benchmark for what Cloudgazer is trying to achieve with the visuals that will accompany one song off the album. The goal is to create an audio synced video using vintage found footage and VJ-esq digital effects using Adobe After Effects and Premiere Pro.

## 2.2 Eric Valentine: “Making Records with Eric Valentine: Queens of the Stone Age”

“Songs For the Deaf” (2002) is largely considered to be one of the last great rock albums.<sup>5</sup> To the author, this album sounds very dark, dry, raw, and almost underprocessed, which fits with the album's concept of driving through the desert. The hit single, “No One Knows”, has an ability to sound “rough around the edges” yet professional at the same time. Engineer Eric Valentine has a few videos online in which he does an in depth deconstruction of the song’s ProTools session and mimics similar microphone setups used on the record. The album was mostly tracked on a vintage Quad Eight console using the onboard EQ and preamps.<sup>6</sup>

Valentine notes that they recorded electric guitars through an Ampeg bass amp, and heavily boosted the lower midrange frequencies of 250 Hz and 500 Hz. Prior to the album’s recording, they also bought cheap, broken amp heads from a second hand music store to experiment with getting gnarly guitar tones. A bright salt shaker mic was paired with a smoother tube condenser mic on the front of the guitar cabs. They put a Sennheiser 441 on the back of the

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<sup>4</sup> *Tame Impala - Is It True (Official Video)*. Universal Music Group, 2020.  
[https://www.youtube.com/watch?v=KN8nJFLu1Rk&ab\\_channel=tameimpalaVEVO](https://www.youtube.com/watch?v=KN8nJFLu1Rk&ab_channel=tameimpalaVEVO).

<sup>5</sup> *Eric Valentine's Electric Guitars — Queens Of The Stone Age*. Sound On Sound Magazine, 2016.  
[https://www.youtube.com/watch?v=SiyACb40TUM&ab\\_channel=SoundOnSoundmagazine](https://www.youtube.com/watch?v=SiyACb40TUM&ab_channel=SoundOnSoundmagazine).

<sup>6</sup> “Making Records with Eric Valentine - QOTSA - No One Knows.” Google Drive.  
<https://drive.google.com/file/d/1C1bKfVFcKi8rIsZZVuZsqNNPMSGVkzEF/view>.

cab, and a RCA 44 a few feet away to get darker, low end room sound. The author tries similar techniques when pairing and placing several microphones together on one source to get a desired sound, all while maintaining a desired phase relationship between them. The distorted bass guitar tone on this song is also fascinating because it was recorded at a very quiet volume through a tiny Peavey practice amp with a Coles 4038.

It is really interesting they were able to boost midrange at almost every stage in the recording process, but end up with a final product that does not suffer from clutter in the midrange, where instead there is clarity, punch, and definition. Valentine also says that various instruments were recorded in tight, small rooms to achieve natural room compression with an “in your face” flavor that does not take up too much space due to splashy room reverb.

One other innovative production aspect of this album is that the cymbals were overdubbed. Dave Grohl plays so loudly that they decided they would have better flexibility during mixing if the cymbals were recorded separately from the drums. As a drummer, the author would like to try this, because he has found that when he heavily compresses a drum performance, the cymbals become harsh, overpowering, and take over the drum submix. Eric also blended in speakers used as microphones when recording the drums. These are all techniques that were considered during the recording of this portfolio.

For vocals, they recorded with a Telefunken 251, an RCA varacoustic used as a room mic (with a stereo slap delay added), and another salt shaker mic to blend in a lofi signal. In terms of arrangement, it is texturally interesting that they added a vocal whisper track. The addition of orchestral strings and horns in the bridge pays homage to “A Day in the Life” by the Beatles and is a creative nod to the past.

### 2.3 Improvised Music: The Grateful Dead

To the author, the Grateful Dead is the musical group that best represents timelessness, which is a running theme of this thesis. As a group that has had a devout following for almost 60 years and whose improvisational music consistently reaches unique sonic landscapes, the Dead are the quintessential improvisational band. Their music can be a bit difficult to describe because the art of improvisational music or the “jam” is not well defined. It can be abstract and ever changing. It is as limitless as the present moment itself. Just as a verbal conversation relies on one’s train of thought, listening skills, and ability to communicate with those participating, so does a musical conversation. Acclaimed bass player Victor Wooten claims that the best way to learn the language of improvisation and music as a whole is through the same way that humans learn verbal language: to embrace mistakes, listen intently, and practice.<sup>7</sup> In a flowing improvisation, it can be said that the only mistake is to not listen to the other musicians. Conventional “mistakes” can be legitimized through repetition or can be happy accidents that lead into new musical realms.

For the Grateful Dead and other improvisational acts, jams of the same song from different dates are often completely dissimilar and analyzing them would be like comparing apples to oranges. Each group based in improvisation has their own version of “jamming” which often results in devout, territorial, and sometimes cult-ish followings. Improvisational music depends largely on the musicians’ personal style and ability to play off of each other both individually and as a group as a whole.<sup>8</sup>

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<sup>7</sup> “Music as a Language- Victor Wooten” TED-ED. <https://ed.ted.com/lessons/victor-wooten-music-as-a-language>

<sup>8</sup> McNally, Dennis. *A Long Strange Trip: the inside History of the Grateful Dead*. London: Corgi Books, 2015.

Usually bands that rely on improvisation cut shorter studio versions of songs, and then stretch them live. With the MarcO Poingt Trio, the author sought to capture the jam within the studio. This was challenging because it omitted the energy feedback loop that the audience adds to the improvisational space. Through efficiently producing the musicians, the author helped create the proper recording environment to lay the framework for interesting improvised music.

It is not the Dead's particular flavor that the author is trying to emulate, as their style is a far cry from that of MarcO Poingt Trio. Rather, it is the band's ability to interact, defy expectations, and carry the listener into musical realms that are as unique as the present moment.

### **3. Description**

After graduating with a degree in Contemporary Writing and Production from Berklee College of Music in Boston, the author wanted to deepen their knowledge of the studio environment and the process of making records. Upon entering the Music Production, Technology, and Innovation program at Berklee Valencia, the author decided that his culminating experience project would be recording and mixing two full length albums. These two separate bodies of work were vehicles for the author to gain experience working in different analog recording environments.

The author, who plays drums, formed a band with CPPD students Baptiste Watiez, who plays 6 string electric bass, and Marc-Olivier Poingt, who plays piano and composes the group's music. The trio plays melodic jazz fusion and has performed throughout Spain and France. After receiving feedback from some of their musical heroes including Michael League, Victor Wooten, and Bill Laurance, the three decided it was time to record their debut album. On May 10th through 15th 2021, the band along with a few assistant engineers traveled to Portugal to record 13 songs. During this session, the author wore several hats: engineer, drummer, and co-producer.

The main reason why the MarcO Poingt Trio decided to spend six days recording an album at Arda Recorders in Porto was for their exquisite Fazioli grand piano and Neve 8068 console. The onboard Neve 31102 (x24) and Neve 1066 (x8) microphone preamps and EQ were utilized, as well as a printed stereo monitor mix summed through the console. Other preamps used during this session include: API 512c (x4), UnderToneAudio MPDI-4 (x2), Spectra 1964 STX 100 (x2), Coil Audio CA-70 (x2), Ampex 351 (x2, preamps that were gutted from old Ampex tape machines). These preamps were chosen for their coloration, EQs, and different saturation when overdriven to compliment various recorded sources. Other hardware inserts, EQs, and effects sends that were recorded during this session include: EMT 140 plate reverb, Bricasti Design M7 reverb, API 560 parametric EQ (x2), GML 8200 2 channel parametric EQ, and Spectra STX 500 EQ (x2). Certain channels were also recorded with hardware compressors either in parallel to add density or as an insert to control dynamic range, color sound harmonically, and shape waveforms: UnderToneAudio UnFairchild 670M II, Urei 1178, Universal Audio 1176 LN, Spectra 1964 C610 Complimiter (x2), Empirical Labs EL8-X Distressor (x2), Highland Dynamics BG1, Retro Instruments 176, DBX 160 VU, and SSL G-Series Bus Compressor.

A variety of vintage and modern microphones were used including but not limited to a matched vintage Neumann U87 pair, matched Coles 4038 pair and 4050 pair, matched AEA R84 pair, Soyuz 017 tube microphones, matched DPA 4011 pair, Neumann U47 FET, Josephson e22S, and vintage Gefell UMT 70S and M 930 pairs. This combination of equipment was researched and selected to record both “clean” and colorful captures of the instruments. See Appendix C for the full input list of this session.

For the Cloudgazer album, about 75 percent of the music was recorded at the author's home studio, RuffRecords, in Dayton, Ohio during the quarantined summer of 2020. Remaining overdubs including lead and backing vocals, an electric guitar solo, tabla, modular synthesizers, and a trumpet solo were recorded at Berklee Valencia's Ann Kreis Scoring Stage (AKSS). The author also recorded digital synthesizers and designed sounds in Ableton Live 11 during this time. All nine songs were then mixed in ProTools using various learned mixing techniques including immersive audio automation with DearVR. On June 4th, the author traveled to Rockaway Studio in Castellon, Spain with advisor Dani Castelar and a few fellow MPTI students to run the stems of the Cloudgazer songs through the Otari 24 track tape machine, SSL 4048 G console, and various outboard gear. The reasoning behind this was to have sufficient time throughout the academic year to complete the mixes and utilize all the advantages of a digital audio workflow and then transfer the stereo buses back into the analog domain to add warmth, nonlinearities, and the thick harmonic content that comes from running sound through analog equipment.

At Rockaway the following equipment was used: Otari MTR 90 MKII 24 track 2 inch tape machine, SSL E and G channel strips, UBK Clariphonic parallel EQ, Matt Audio C1 valve limiter, Smart Research CL1A compressor, Rupert Neve Designs Portico II master bus processor, Universal Audio 1176 (x2), Empirical Labs EL8-X Distressor (x2), and MVA LA2A leveling amplifier (x2). The SSL E EQs were mainly chosen for their iconic low end boost, and the compressors were chosen to add a final snap and crispness to drum and vocal tracks and to solidify the bass tracks.

#### 4. Innovative Aspects

From recording through digitally emulated preamps, to editing with tempo detecting software, to artificial intelligence mastering services, modern popular music is increasingly done entirely on the computer. There are many advantages to having an entirely “in the box” workflow. With just a laptop, one can record and mix from virtually any location, recall settings and past projects in seconds, edit timing and pitch effortlessly, and have access to a seemingly endless supply of software plug-ins that can manipulate audio in almost any fashion imaginable.

Why then do countless musicians, engineers, and producers insist on working in seemingly outdated and potentially expensive analog recording studios? Could it be the same reason why people often prefer writing with pencils instead of typing with a keyboard? Is it the focus and vibe of being in an environment that’s sole purpose is to create music? Is it the quality of the audio when working in the analog domain? Or the sonic characteristics of hardware equipment that has yet to be fully emulated in the digital realm? Perhaps it is simply just for the love of the craft? It is clear that the newest innovation is not always the best innovation. In other words, both “old” analog and “new” digital workflows have complimentary benefits. Hence, this project seeks to combine the strengths of all technologies throughout the timeline of recorded audio.

This project claims innovation in its approach to recording 22 songs. Projects in this same area of hybrid recording are often done more digital than analog and do not have the same emphasis on revitalizing vintage equipment. The project utilizes two vintage analog consoles: a Neve 8068 (one of the first in-line monitor consoles first produced in 1976)<sup>9</sup> and a Solid State Logic 4048G (SSL 4000 series consoles were first released in 1979).<sup>10</sup> The project utilizes

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<sup>9</sup> *The History of Neve*, 2021, AMS-Neve Ltd. <https://www.ams-neve.com/history-19-c.asp>

<sup>10</sup> *Our History*, 2021, Solid State Logic. <https://www.solidstatellogic.com/our-history>

several modern and vintage microphones, hardware compressors, and analog and digital reverbs and effects. One such analog reverb was an echo chamber with a variable ceiling to control reflections. The author mic'd this chamber in mid side to have greater control of the reverb's stereo image.

The author's 16 microphone approach to recording the grand piano is innovative in that it was designed to be as comprehensive and flexible as possible so that later in the mixing stage, virtually any piano sound can be achieved depending on microphone selection, balance, and processing. The following was recorded: a stereo tube pair on the hammers if attack is desired, a pair of small diaphragm condensers in ORTF<sup>11</sup> in the body of the piano for intimacy/proximity, a ribbon pair (slightly compressed) and a small diaphragm condenser pair (uncompressed) a few feet from the strings in the classical piano spaced pair miking position,<sup>12</sup> a farther spaced pair to capture close room sound, an even farther spaced pair in omni mode about 15 feet from the instrument and 15 feet in the air to capture more room sound, the echo chamber captured in M/S,<sup>13</sup> an AKG D12 (phase flipped) under the instrument for added low end and "knock", and finally a single condenser microphone at the heel of the piano.<sup>14</sup>

While the trio album used a lot of equipment on its way into Pro Tools, the Cloudgazer album came back out of the box and into the analog world to finalize the mix. The mix was

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<sup>11</sup> ORTF is a stereo recording technique devised by the "Office de Radiodiffusion-Télévision Française" in which two identical cardioid microphones are spread 17cm apart at a 110 degree angle. The stereo image is produced by the difference in level due to the microphones' off axis response, as well as the difference in time of sound reaching each microphone.

<sup>12</sup> A spaced pair of microphones refers to a stereo recording technique in which two microphones are distanced apart from one another so that the stereo image is created by the difference in time of the signal reaching each capsule.

<sup>13</sup> M/S or Mid-Side refers to a stereo recording technique in which one microphone with a figure of 8 polar pattern captures the "sides" of a source, while another microphone with a cardioid polar pattern captures the center information. A three track matrix is then formed by duplicating the "side" channel, flipping the phase, and panning the side tracks left and right.

<sup>14</sup> Castelar, Daniel. "Stereo Miking Techniques." Lecture, Hybrid Recording 1 MTI-525



divided into thirds. First an in the box mix was done and then 12 stereo bus tracks were bounced out of ProTools while bypassing any 2 bus/master fader processing. These 12 stereo stems were then recorded through the SSL console and onto the 24 track tape machine and back into ProTools for a clean tape capture. A second print was then recorded from the tape with any added console EQ moves, and various outboard gear and finally back into ProTools. Later, for each of the 12 stems per song, the author would choose either the in the box stem, the clean tape stem, or the processed tape stem, make any final mix edits and run everything through the 2 bus/master fader processing. This workflow is not the most conventional path when recording to tape, but it allowed the author to take full advantage of both digital and analog domains.

## **5. New Skills Acquired**

The most important new skill acquired during the project was experience and comfortability working 12+ hour days in professional studios. If an aspiring engineer is to be competitive and effective in the studio environment as a working professional, it is essential to have prior experience in various rooms. Along with this, it is important to know the different workflows and signal flows of different popular analog consoles such as the two used in this project. Familiarity with tape machines, different microphones, hardware and software processors are all essential in becoming a seasoned producer and engineer.

Prior to coming to Valencia, the author had not recorded a grand piano or a live jazz band before. Throughout several sessions in the AKSS and the culminating experience session at Arda, a new confidence has emerged regarding different techniques of recording of piano as well as how to capture live improvisational music in the studio.

Repetition and hands-on learning can be the best way to learn. Recording and mixing 22 dense songs have each taught their own lessons. Once both of these albums are mastered and

released on labels, the author will have a credible portfolio under his belt to find more work as a freelance drummer, producer, and engineer.

## **6. Challenges**

Coming into this project, there were many expected challenges. The Covid-19 pandemic presented expected challenges regarding travel and crossing international borders to record. This was overcome by communicating with Arda to ensure everyone had proper paperwork and negative test results. In terms of engineering, it was an expected challenge to get accustomed to using a lot of unfamiliar equipment in a short amount of time. Reference mixes were prepared to get used to listening on new speakers in a new control room. Tape hiss is another expected challenge because while it is inevitable, it can be both desirable and undesirable. After the tape stems were printed, strip silence and Izotope Rx were occasionally used on sections that were too noisy. Hiss and crosstalk were also left in on other sections where the artifacts were found desirable.

Throughout the course of this project, there were also many unexpected challenges. One challenge was that after the second day of recording in Portugal, it was decided that the temperature of the live room was slightly too cold for the pianist. Unfortunately, changing the temperature meant we would need to re-tune the piano. This was the best option to get the best performance. In the future, the author will confirm the temperature of the live room prior to the first piano tuning. Another unforeseen challenge was that certain microphones and compressors were unavailable at the start of the session. To remedy this, the author had to think on his feet to make new equipment selections that resembled the initial plan of attack. A third unexpected challenge was the frequency by which equipment failed. Entire preamps had to be swapped on the console, the EMT plate reverb died several days in a row, and there was occasional random

noise from the bass amp. Thankfully, our wonderful assistant engineer kept us on track despite equipment issues by staying late after our sessions had ended to reprint any tracks that had issues. Another unexpected issue was the amount of bleed between instruments. The studio advertised three isolation booths, but they had single doors instead of double airlock doors. So the amount of bleed was significantly higher than that of the AKSS. This is an unanticipated limitation in terms of comping takes together. A final unexpected challenge was that running stereo stems through a console, tape machine, and outboard gear affects the balance of the stereo images. This was remedied in ProTools with the dual mono trim plugin to rebalance both channels of audio.

## **7. Future Ramifications**

For the MarcO Poingt Trio album, the band is still refining the comps of all the songs. Final mixes will likely be finished in Fall of 2021 and a mastering engineer has yet to be chosen. The band is currently in the process of negotiating a deal with the french jazz label La Laborie but is also considering a few others. The band will do performances at jazz festivals in Switzerland and France this summer. Post Covid, they plan on touring the album in Europe and beyond. With an album release comes cover art, promotion, content, and music videos that need to be completed.

For the Cloudgazer album, the final mixes are extremely close to completion. A mastering engineer has yet to be chosen for this record as well. Cloudgazer is looking to release on an indie label such as PNKSLM, Beyond Beyond Beyond, In the Red, Jagjaguar, or Castle Face. It is planned to release two singles prior to the full album release. As with the trio album, cover art, promotion, content, and a second music video will also need to be completed.

## 8. Conclusions

Recorded music is a snapshot of life. This tangible replayable artform has the ability to transcend time for both the listener and the creator. Music, especially improvised music, can create an immensely strong connection between the musicians, listener, and the perceived present moment. Timelessness is evident throughout the studio environment in that both modern innovations and vintage equipment can see equal use and benefit creators. Right now, anything is sonically possible.

### Appendix A: Production Budget


<b>MATERIALS (disposables)</b>	<b>Proposed</b>	<b>Real</b>
Hard Drive (SSD)	\$150	\$150
Memory cards	\$75	\$0
<b>EQUIPMENT</b>		
INTERFACE (purchase) 120 days	\$700	\$0
MacBook Pro 13" (purchase) 120 days	\$2,500	\$0
CAMERA (rental) 10 days	\$1,200	\$0
<b>PERSONNEL</b>		
MUSICIANS	\$3,000	\$100
ENGINEERS	\$2,000	\$0
CAMERAMEN	\$1,000	\$0
EDITORS	\$2,000	\$0
<b>STUDIO</b>		
BERKLEE AKSS (\$50 an hour, est.)	\$5,000	\$0
HOME Studio (\$20 an hour)	\$2,000	\$0
ROCKAWAY (€200 a day includes 2 inch Tape and assistant engineer)	\$242.18	\$242.18
ARDA Recorders Studio A (€500 a day includes piano tuning and assistant engineer)	\$3632.68	\$4907.58
<b>OVERHEAD</b>		
RENT + All Utilities	\$5,000	\$5,000

FOOD	\$1750	\$1750
<b>FEES</b>		
YOUR FEE	\$5,000	\$0
<b>TOTALS</b>	<b>\$35,249.86</b>	<b>\$12,149.76</b>

## Appendix B: Gantt Chart



# Appendix C: Arda Recorders MarcO Trio Session Input List



**ARDA RECORDERS**

## INPUT LIST

Date: 10/5/21

Artist	MarcO trio
Producer	
Engineer	Sam Ruff
Assistant	Barbara Santos
Studio	A

Source	Mic	Tie-line	Pre-amp	Insert	Input	Obs.
Piano ORTF	Shoeps	3/4	31102		Mon <del>15/16</del> 3/4	15/16
Hammers LR	Soyuz O-17	5/6	CA-70		PT 33/34	17/18
Spaced 1	U038	7/8	HPD1	BG1	Mon 7/8	15/16
Spaced 2	DPA	9/10	STX		PT 35/36	15/16
Room Close	TLH 103	11/12	S12	SGO	Mon 11/12	11/20
Room Far	U87	13/14	S12	6M1+SSL	PT 37/38	11/22
Back Mono	C37-p	15	31102		Mon 15	14
Down Mono	D12	16	31102		Mon 16	14
Echo (Mamb)	Vint 70	<sup>des</sup> 1-2	31102		Mon 17/18	echo R (Ø) to 25/26 Ch 39 (Øw)
Kick in	Beta 52	1			1	1
Kick out	w47	2		1178	2	1
Snr 1 top	e22	3			5	2
Snr 1 bot	Sm7B	4		CRX 8 (1)	6	2
Snr 2 top	e22	5			9	3
Snr 2 bot	414	6		CRX 8 (2)	10	3

(+351) 221 146 783 | <https://www.ardarecorders.com> | [booking@ardarecorders.com](mailto:booking@ardarecorders.com)

*Tracking*  
*Mixer/Mixdown*

Source	Mic	Tie-line	Pre-amp	Insert	Input	Obs.
Tom 1	w 930	7			13	4
Tom 2	w 930	8			14	4
Drum	023	9			19	13
OH C	wunder	12			20	5/6
OH L/R	4050	10/11			21/22	5/6 x 7/8 23/24
Hi-hat	Km 84	13			25	BUS 1/2 SPECTRA
Ride	Kw 84	14			26	-
Room L/R	R 84	15/16			27/28	BUS 3/4 UFC → 11/12
Crunch	Behr 91	Aes 1	Ampex	DBx 160	29	→ 45/44
BASS D.I.	REDDI	AES 6	1066		30	27
BASS D.I. Fuzz	Mult REDDI		Ampex	176	31	28
Bass Amp	421	6	1073		32	28
M7					→ 42/43	Aux 3/4 23/24
Plate					→ 41	Aux 2 29
BUS 1/2	→ Spectra					7/8
BUS 3/4	→ Unfeirchild					→ 11/12
<del>REDDI</del>						



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