



Thesis for Master Degree in  
Music Technology Innovation

Theme:

"Music From the Stars"

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- **Introduction**

*Music From the Stars* is a project that was born out of the curiosity of finding out what the universe sounds like. This is a new musical concept that combines astronomy with music. The main focus is to hear and see how different parts of the universe sound and to develop it as a musical composition.

For a long time, I have had some questions in my head like: What does the universe sound like? Is there any sound out there? What is our relationship with the universe? And how can we transform information from stars into music?

Mankind, from the ancient Incas to Pythagoras has tried to answer some of these questions and through history people around the world have studied the relationship between music and the universe. Great theories and developments have been made in this intense human journey like: Music of the Spheres, this theory says that the whole universe is a gigantic composition made by the vibration of the different planets; each planet vibrates in a different frequency depending on arithmetic proportions of their orbits around the earth. Another good example is the ancient Cosmo vision of the Andean tribes that used music as a tribute to the great colossal; based on these useful studies I had a good reference to develop this idea in different ways.

The interest and eagerness to find answers to these questions led me to ask myself: What if I drew staves in the night sky and made the stars into musical notes? This was the beginning of this project that has taken me into an interesting trip of deep investigation about the universe, its sounds and how it related to my inner self.

- **Description of the Culminating Experience Project (the WORK)**

In order to materialize this project we worked in three important stages: investigation, development and performance.

The first stage of this process, the investigation, allowed me to research for information about the universe and its relationship with music, focused on three main aspects. First, I studied the relation between one star and another and the distances and intervals between them. This is the part of the project that helped me to get deeper into the theoretical concepts needed to develop this idea. Next, I looked out for the possibilities to make this project feasible. The investigation of different theories provided useful information to support the idea, which helped me to develop the project in a more solid way. Music of the Spheres and String Theory are useful examples of these valuable resources.

In the next phase of the investigation, a star map was chosen, and it became the base of this thirty-minute composition. In this part of the project I got involved with astronomy. Google Maps, in sky view, was a necessary tool to search around the universe. Then, I wrote random pentagrams in the chosen sky map called Caldwell catalogue. Based on the positions of the stars, distances and intensity, I found out different patterns of melodies and rhythms.

The stars are the notes in the score, since they are already in the place they should be, thanks to the forces of the universe. This is the part of the composition process that I am using to develop the music. At the end of this stage of the project, I needed to determine the different sounds that I wanted to use to perform the electronic composition. Due to their positions, it is expected that the stars are not on the perfect standard tone pitch; therefore, I assigned this variables to tonal occidental notation. I also used samples of satellite noises captured by utilizing stellar seismology techniques, a scientific methodology in which Scientifics obtain real sounds of stars that are used to reveal information about the inner of the celestial bodies that are not visible with telescopes. These sounds are easily obtained and free to the public, in the web. My last source of music will come from live performance of five instruments: keytar, malletkat, guitar, tabla and computer. The music is composed using Ableton Live & Protools.

The development, the second stage of this project, is focused on the musical composition, a video and a pdf. file explaining the project.

At this point, I am working on the video that will be projected in the introduction of the show. For this video I am going to work with a friend, who is an animator, figuring out the best way to represent graphically the outcomes of this project. The visual part is being produced in Adobe Premier Pro, After Effects and other visual software. This 4 minute long introductory video explains the theory of the Project in a didactical way. We have night pictures of the stars with the pentagrams on it and the audience will be able to visualize the reproduction of what is being listened to.

Finally, I am working on a catalog that explains the process of the composition of the project. This will be a .pdf file that easily explains this piece of work to the public. After the performance we plan to release a digital album and provide download URL´s for free downloading.

The culmination of this project will be the night of the performance. The final show will be performed in the Hemispheric of Valencia – Spain, on the 21<sup>st</sup> of June, at 10:00 pm. To promote the event, it is necessary to use all possible means such as: social networks, posters, flyers and the media. I have created a very strong, persuasive and unified graphic design to publicize the project. The show itself represents all the knowledge and work put into this project and the experience acquired through this endeavor. The climax of this assignment will be provided by music, video, colors, stars and emotions evoked by the presentation.

First, we will start with an introductory chat, secondly, the explanatory video will be presented and finally the live performance will take place. The visuals of the musical performance are going to be projected on the 360<sup>a</sup> dome using Uniview software, which is a 3D star map that is going to take us on a cosmic trip. People who attend this performance will have the unusual experience of hearing how the stars in the night sky sound.

- **Innovative Aspects of the WORK**

First of all, I think that one of the most innovative aspects of the project is that, even though in history we find studies of different types of relationship between stars and music, this is the first time that it is presented in the way this project proposes. Drawing random stars in sky maps may seem a simple idea; but, I found from the research done that nobody has done this yet.

Secondly, the use of new technologies to develop the composition was a powerful tool that embraces innovation. Using Ableton Live to develop an experimental composition rather than using a dance track is a novelty that I found interesting. Furthermore, it helps the project to solidify its design. Using stellar seismology sounds in a musical way constitutes another innovative aspect of this project. Mixing these sounds with human interaction gives to this work a fresh breath of air that converts this piece into a one of a kind composition.

Finally, the way that the concert is going to be presented is a big innovative part of the project. The project tries to create a whole environment to illustrate the concept by using a screen that has 900m<sup>2</sup> and 360° to display visuals and sound. The viewer can reach a profound and vibrant experience of listening and watching different sounds and images of the universe, while being taken on an interstellar trip guided by the music and visuals.

- **New Skills Acquired**

In this amazing journey that I have been on I feel I have developed many skills. The most important ones I think are:

**Production:** In terms of musical production I have learned a lot about which is the best way to put up sounds and composing them into an engaging track. Also, I have acquired a useful knowledge of events production, exemplified in the steps I had to take in order to ensure the performance. For instance, I had to propose the project to the Director of the City of Science and Arts. I had to polish my speech to give my best in the presentation and convince them that this is a project that is worth presenting on their premises, and I have had to do all the follow up to ensure the success of the presentation.

**Organization:** This has been an important skill that I have developed. First of all, choosing and organizing the sounds that could match the stars to make the musical composition was a real commitment. Also, in terms of the event itself it has been a big challenge to think how the project is going to work and create the most adequate parameters for its implementation. Organizing rehearsals with the musicians and talking with the crew that is going to help me with the technical details of the show has been another important aspect of my learning.

**Creative composing techniques:** composing taking into account the positions of the stars was a new thing for me, and getting the technique to develop this method was a mind boggler until I found the best way to do it. I developed this method of composing and arranging and I found it very useful.

**Hybrid ensemble methods:** In this project the human part as well as the digital part is essential. Combining them is a great skill that I have learned. Putting musicians together with electronic music is a basic step in this project and I am very satisfied with the result.

**Transmit emotion through music:** In this area the main goal is to transport the audience on a deep journey in which they can experiment different kinds of sensations. Raising emotion with music is important for me and I believe people will actually feel something when they listen to it

- **Challenges, both anticipated and unexpected**

The first challenge that I knew I was going to have was the method of composing itself. I had first to think about what night sky picture I was going to use. I researched and figured out that it was better to do it with a star map that is more accurate to the real star position.

Then, I had to decide what was the best starting point for the composition. This was a difficult decision because the position of the stars does not align with the lines or the spaces in the staves. Therefore, I had to quantify the stars so that they would be in a tonal way of music. This is best for creating a better human response to the composition.

Finding a venue was a big deal in the development of this task. I wanted to make the final show in the Hemisferic, so I asked for the help from the people around me, and the main contacts in Berklee to make this happen. Finally with all the help that Berklee gave me, I was able to reach my goal: to have my performance there. This was a big achievement for this project. Promoting the event is one of the biggest challenges in any show; I had to use different approaches with different people to engage their interest in the concept and in the show. I have promoted the event in the social media and it has had a good results. Facebook and Twiter were useful tools. People from the Hemisferic have also helped me to promote the event trough their own media.

Organizing my own time between schoolwork, final exams and the project has also been a big challenge. I have learned a lot about taking care of everything to be able to complete all the assignments and continue developing the project. It was hard but not impossible.

- **Future Ramifications and/or plans for the WORK**

For the future I have several plans for the project, I want to continue composing different songs with this technique.

Adding new sounds and developing new ways to be more accurate with the interpretation of the microtonalism of the music in future productions that I create.

Also, I want to sell this project to different Imax theaters and planetariums around the world. It would be great to organize a tour showing this way of composition to other people around the globe.

For the future I want to develop an app that could play the *Music From the Stars* on any intelligent device, something that would start playing at the exact moment that you choose an image from the sky.

- **Conclusion**

In conclusion, this project tries to combine new tendencies found in the arts and science fields, in a way that has not been done before. It is my aspiration that it could be a significant contribution in the understanding of how the universe is a continuous melody, almost imperceptible to the human ear. Once the stars and the music they produce become reachable to the public, I hope that the energy and enlightening generated will help humankind find alternative ways to penetrate their inner selves.



- **Footnotes**

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