

jovan.pesec

DDD ... CD-v4m-2002-101

performed with Nemesys GigaStudio by Jovan Pesec at the v4m studio

project.generative.interactive.music



z.a.p.k.o.s..c.p.y

music.from.outer.space

design.by.judith.p.fischer  
images.generated.with.ultra.fractal.by.jovan.pesec

## epilogue

*ArtSong™* is a music composition program with an ongoing objective of providing 'absolute' composer control over the algorithmically generated output. Originally created circa 1996 as a sequel to several previous fractal-based algorithmic music composition programs, *ArtSong™* added sieves (logical pitch filters) and rhythmic coefficients to better control the 'chaotic' fractal output. From these two basic built-in control algorithms, *ArtSong™* has continued to evolve into an open-ended composition environment using plug-in algorithms with currently over 23 composition and control algorithms. In a continuing effort to further improve *ArtSong™* and increase its usability,

*Jovan Pesec* (vison4media) and *Dave Strohbeen* (ArtSong) have formed a 'collaborative' association for the development of custom algorithms to support the composition work of Jovan Pesec (v4m) in exchange for musical examples and usability information. The most recent version of *ArtSong™* has already benefited from this collaboration.

### *Dave Strohbeen*

menasha.2002.march

# jovan.pesec z.a.r.k.o.s..c.r.y

music.from.outer.space

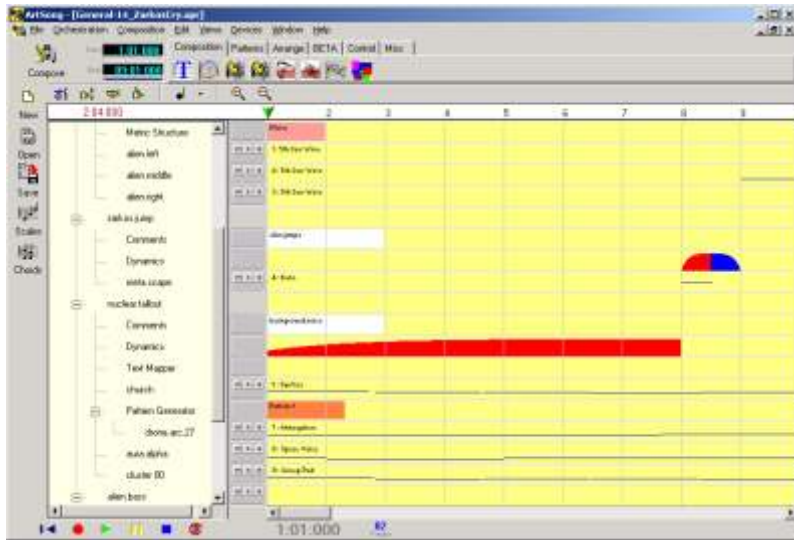


fractal.sci.fi.music.composed.with.artsong™  
performed.with.nemesys.gigastudio  
2002.by.jovan.pesec.at.the.v4m.studio.in.vienna

**project.generative.interactive.music**

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## ArtSong™

As shown in the picture above, *ArtSong™* developed by *Dave Strohbeen*, uses an innovative Explorer-oriented composition concept with several composition components for different requirements, which work together in fractal and recursive loops. **zarkos.cry** – sci-fi-music from outer space could not have been composed in a conventional way (i.e. with a notation program). But with a generator like *ArtSong™* ... well, sit back and enjoy the result! .

## the.making.of.zarkos.cry

After starting the *g.i.m.project*, I thought it would be very interesting to compose some pieces based on images of stars, galaxies, quasars, magnetospheres of planets, other space-related sources, as well as fractals. Looking for a suitable music generating program I stumbled upon *ArtSong™*, developed by the excellent algorithm designer and programmer *Dave Strohbeen*. A productive co-operation started. *ArtSong™* was really excellent, but for my project I needed a number of special modules, which Dave programmed to suit my ideas. *ArtSong™* was great to start with, but now it is perfect. The best music generator program you can get on the market. I generated the fractal images with *UltraFractal*, the art images I got from *Judith.P.Fischer*, and the sources of images of stars, galaxies and so on I found on the internet (<http://hubble.stsci.edu/gallery>). The Hubble Site is produced by the Space Telescope Science Institute's Office of Public Outreach. The music was fine-tuned with NTONYX StyleEnhancer, recorded with Nemesys GigaStudio 160 and polished up with CoolEditPro.

Enjoy,

**Jovan Pesec**

vienna.2002.june

## 01.alien.invaders

4.sci.fi.orchestra - recorded.2001.12.22

Alien invaders are coming from **Ganymede**, the moon of Jupiter. The are invading in the night, we hear their strange speech and their heavy footsteps of her boots. Their commander is **Zarkos**.

*alien.invaders* is based on reverse linear random numbers and a random seed of the diameter of Ganymede.

## 02.einsteins.umbrella.lost.in.space

4.alien.guitars.&.neutrino.smog - recorded.2002.02.07



You're hovering around in the Milky Way with a space craft in the milky way, and suddenly an umbrella appears, twirling in the neutrino smog, followed by an UFO. You can see dancing aliens behind the bulleyes. And suddenly you hearing this shrill alien guitar band playing a funky parody of J.S. Bach. But before you can recognize the piece, everything disappears like a nightmare...

*einsteins.umbrella.lost.in.space* is based on Einsteins birthday, date of death, date on which he was awarded with the Nobel Prize, on the formula of the relativity theory  $E=m*c^2$ , the fractal *EinsteinsUmbrellaLostInSpace* by Jovan Pesec, and rhythms of J.S.Bach Orchestra Suite Nr. 2 in B minor: BWV 1067, No. 7 Badinerie.

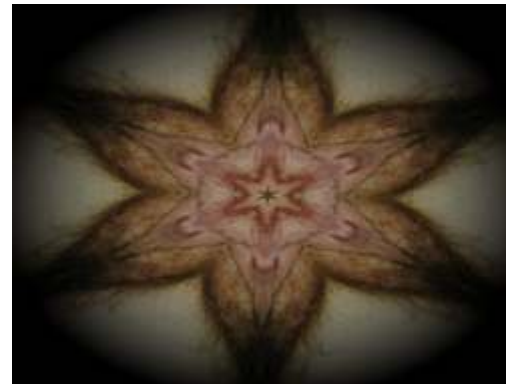
**Dave Struhben:** "...I like this new version much better...it much better conveys the sense of something crazy/unexpected appearing out of 'nowhere' and then disappearing...."

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## 04.alien.chickens.in.their.eggs

4.string.orchestra - recorded.2002.02.10

dedicated.2.georg.kugi.hopefully.the.conductor.of.this.piece



Druuna is a female alien. Druuna is Zarkos' mother. She left six eggs in a nest, in a cave in the rocky mountains of Ganymede. The birth hour of the alien chickens draws near. The chickens start wriggling in their confinement. They knock on the inside of their eggshells. The first shell breaks and the other alien babies grow

more excited. One egg after the other breaks, and finally all aliens disappears in the rainy atmosphere of Jupiter's moon Ganymede.

*alien.chickens.in.their.eggs* is based on the image *DruunasEgg* of Judth.P.Fischer (see [www.judith-p-fischer.com](http://www.judith-p-fischer.com)) and Judith's birthday in the random number generator.

**Jovan Pesec:** "...this piece was first envisioned for SCI-FI-orchestra, but then I decided, it would be a good idea to implement the hatching of the alien chickens only using strings, the wood of the instruments and the bows. Please forgive me, musicians...."

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## 05.red.giant.in.front.of.monier.nebula

4.sci.fi.orchestra - recorded.2002.04.09  
dedicated.to.oliver.peschetz



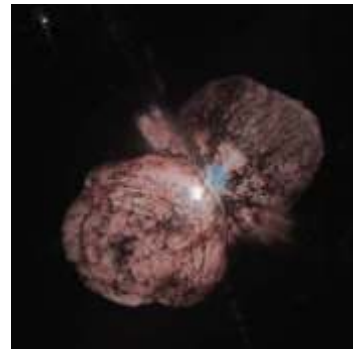
In 1999 I generated with *Ultra Fractal* by the remarkable programmer *Frederic Slijkerman* a series of fractals which I collected under the title '*in space*'. They can be viewed on my Internetsite [jovanpese.net/fracatals](http://jovanpese.net/fracatals). One of them was the fractal *RedGiantInFrontOfMonierNebula*. (The other one which I based a piece of this

album on was *EinsteinsUmbrellaLost in Space*). The inspiration for it came from a picture in the famous magazine "*Bild der Wissenschaften*".

*The composition uses a very clean texture and is based on the aforementioned image, scanned by the 2D Quadratic Image Mapper and on the birthday of my son Oliver, as initial value for the random generator. The idea behind is an exploding star in front of a stabile nebula of gas and dust, as well as some blinking fixed stars in contrast to the dark space.*

## 03.eta.carinea

fantasy.4.xylophone.bass.&.drums - recorded.2002.03.10  
dedicated.2.judith.p.fischer



A huge, billowing pair of gas and dust clouds is captured in this stunning Hubble telescope picture of the super-massive star Eta Carinae. Even though Eta Carinae is more than 8,000 light-years away, features 10 billion miles across (about the diameter of our solar system) can be distinguished. Eta Carinae suffered giant outburst about 150 years ago, when it became one of the brightest stars in the southern sky. Though the star released as much visible light as a supernova explosion, it

survived the outburst. Somehow, the explosion produced two lobes and a large, thin equatorial disk, all moving outward at about 1.5 million miles per hour. Estimated to be 100 times heftier than our Sun, Eta Carinae may be one of the most massive stars in our galaxy.

The image was captured in this stunning NASA Hubble Space Telescope.

*To reflect the billowing pair of gas and dust clouds of the doomed star **Eta Carinae** the composition uses a thematic sequence of **ABBCBBA**.*

## 06.two.bubbles.in.the.large.magellanic.cloud

dance.4.harpsicord.solo - recorded.2002.03.23  
dedicated.2.oskar



This is a Hubble telescope image of the tattered debris of a star that exploded 3,000 years ago as a supernova. This supernova remnant, called *NI32D*, lies 169,000 light-years from Earth in the satellite galaxy, the *Large Magellanic Cloud*.

A Hubble snapshot of the supernova's inner regions shows the complex collisions that take place as fast-moving material slams into cool, dense interstellar clouds. This level of detail in the expanding filaments could only be seen previously in much closer supernova remnants. Now, Hubble's capabilities extend the detailed study of supernovae to the distance of a neighboring galaxy.

*It's paradoxical that this supernova is described by an ancient instrument like the harpsicord. It exploded 3,000 years ago - 2,400 years before the Barock epoch even. So the harpsicord demonstrates the transience and shows quite nicely the extraordinary capabilities of ArtSong™.*

## 08.cats.ey

4.guitar.quartet - recorded.2002.05.12  
dedicated.2.alexander.ustinov



This Hubble telescope image shows one of the most complex planetary nebulae ever seen, NGC 6543, nicknamed the "Cat's Eye Nebula." Hubble reveals surprisingly intricate structures including concentric gas shells, jets of high-speed gas, and unusual shock-induced knots of gas. Estimated to be 1,000 years old, the nebula is a visual "fossil record" of the dynamics and late evolution of a dying star.

A preliminary interpretation suggests that the object might be a double-star system. The dynamical effects of two stars orbiting one another most easily explains the intricate structures, which are much more complicated than features seen in most planetary nebulae. The two stars are too close together to be individually resolved by Hubble and instead appear as a single point of light at the center of the nebula. Cats.ey.nebula.

*Two tom-cats and a cat in heat, that's the theme of **catseye**, a composition for classical guitar quartet. The tom-cats brawl in a ring of cheering and jeering vagrant cats. All the sounds of the piece are produced by four guitars and the voices of the artists. The composition is based on the image of NGC 6543, "Cat's Eye Nebula" and the name "Alexander Ustinov", team leader of NTONYX, to whom the piece is dedicated. The recording uses samples from my own guitar, built by the famous Spanish guitar maker José Ramirez and played by myself, as well as samples for the Nemesys GigaStudio by www.ntonyx.com.*

## 09.m.13.ggcih

4.harp.orchestra - recorded.2002.01.23  
dedicated.2.ernst.skopal



Based on M13, discovered by Edmond Halley in 1714. M13, also called the 'Great globular cluster in Hercules', is one of the most prominent and best known globulars of the Northern celestial hemisphere. At its distance of 25,100 light years, its angular diameter of 23' corresponds to 165 light years. It contains several 100,000 stars. Globular

cluster M13 was selected in 1974 as target for one of the first radio messages addressed to possible extra-terrestrial intelligent races, and sent by the big radio telescope of the Arecibo Observatory.

*Background of composition m.13.ggcih: Faster than the speed of light, a starship zooms past some brightly blinking fixed stars on the borders of M13. On the ship's trajectory the stardust coalesces to an even tighter cluster of violent nuclear activity, in a black hole in the crux. Finally the starship clears the cluster and heads off into deep space.*

## 07.the.return.of.the.alien.eagles

.impromptu.4.3.grand.pianos.&.4.aliens recorded.2002.02.22  
dedicated.2.judith.p.fischer



Eerie, dramatic pictures from the Hubble telescope show newborn stars emerging from "eggs" — not the barnyard variety — but rather, dense, compact pockets of interstellar gas called evaporating gaseous globules (EGGs). Hubble found the "EGGs," appropriately enough, in the Eagle nebula, a nearby star-forming region 7,000 light-years from Earth in the constellation Serpens.

These striking pictures resolve the EGGs at the tip of finger-like

features protruding from monstrous columns of cold gas and dust in the Eagle Nebula (also called M16). The columns protrude from the wall of a vast cloud of molecular hydrogen, like stalagmites rising above the floor of a cavern. Inside the gaseous towers, which are light-years long, the interstellar gas is dense enough to collapse under its own weight, forming young stars that continue to grow as they accumulate more and more mass from their surroundings.

*When I first saw this image, I immediately had the vision of vertically flying alien eagles, falling and rising along the monstrous columns of the nebula, and crossing the trajectories of horizontally flying UFOs. First I planned the piece as an impromptu for solo piano, but finally the whole composition was realised for three pianos and 8 hands!*

## 10.ganiymed

4.hard.rock.band - recorded.2002.02.27



**Ganymede** [GAN-ee-meed] is the largest moon of Jupiter and is the largest in our solar system with a diameter of 5,262 km (3,280 miles). If Ganymede orbited the Sun instead of Jupiter it could be classified as a planet. Like Callisto, Ganymede is most likely composed of a rocky core with a water/ice mantle and a crust of rock and ice. Its low density of 1.94 gm/cm<sup>3</sup>, indicates that the core takes up about 50% of the satellite's diameter.

Ganymede's mantle is most likely composed of ice and silicates, and its crust is probably a thick layer of water ice. Ganymede has had a complex geological history. It has mountains, valleys, craters and lava flows. Ganymede is mottled by both light and dark regions. It is heavily cratered especially in the dark regions implying ancient origin. The bright regions show a different kind of terrain - one which is grooved with ridges and troughs. These features form complex patterns and have a vertical relief of a few hundred meters and run for thousands of kilometers. The grooved features were apparently formed more recently than the dark cratered area perhaps by tension from global tectonic processes. The real reason is unknown; however, local crust spreading does appear to have taken place causing the crust to shear and separate.

*It's interesting, when I first heard the name Ganymede I thought of a hard rock band, of percussion solos, hard rock distortion guitar riffs. Because the mountains, valleys, craters and lava flows on the surface of Ganymede could in my mind only be expressed by means of such music.*

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## 12.from.orion.with.love

ballad.4.taipan.choir.&.sci.fi.orchestra - recorded.2002.02.27  
dedicated.2.judith.p.fischer



This spectacular color panorama of the center of the Orion Nebula is one of the largest pictures ever assembled from individual images taken with the Hubble telescope.

The seemingly infinite tapestry of rich detail revealed by Hubble shows a churning, turbulent star factory set within a maelstrom of flowing, luminescent gas.

Though this 2.5-light-year-wide view is a small portion of the entire nebula, it includes a star cluster and almost all of the light from the bright glowing clouds

of gas that make up the nebula.

*from.orion.with.love follows no special strategy and has no special background. It transposes only the spectacular color panorama of the center of the Orion Nebula into an ambient piece of music for taipan flute, choir and sci-fi orchestra. Let your soul be carried by the time wind, listen to the music and allow your thoughts to dive into the depth of our wonderful universe...*

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## 13.time.wind

4.sci.fi.orchestra - recorded.2002.04.20  
dedicated.2.alexander.peschetz



Hubble's Supersonic exhaust from *Nebula M2-9* is a striking example of a "butterfly" or a bipolar planetary nebula. Another more revealing name might be the "Twin Jet Nebula." If the nebula is sliced across the star, each side of it appears much like a pair of exhausts from jet engines. Indeed,

because of the nebula's shape and the measured velocity of the gas, in excess of 200 miles per second, astronomers believe that the description as a super-super-sonic jet exhaust is quite apt. Ground-based studies have shown that the nebula's size increases with time, suggesting that the stellar outburst that formed the lobes occurred just 1,200 years ago. M2-9 is 2,100 light-years away in the constellation Ophiucus. The observation was taken Aug. 2, 1997 by the Hubble telescope's Wide Field and Planetary Camera 2. In this image, neutral oxygen is shown in red, once-ionized nitrogen in green, and twice-ionized oxygen in blue.

*The design of time.wind follows the description above. You can watch the twin Jet after the big explosion, the birth of the time wind, the two streams of exhaust from jet engines thinning out into deep space. The oscillating peak tones of crashing nebulae, realised with voices from Sound Spectral in the registers of the outstanding software synthesizer GigaStudio 160, powered by an ArtSong™ project file.*

## 11.space.war

4.sci.fi.orchestra - recorded.2002.04.28



Astronomers have found a spiral galaxy that may be spinning to the beat of a different cosmic drummer. To the surprise of astronomers, the galaxy, called NGC 4622, appears to be rotating in the opposite direction to what they expected. Pictures by NASA's Hubble Space Telescope helped astronomers determine that the galaxy may be spinning clockwise by showing which side of the galaxy is closer to Earth. A Hubble telescope photo of the oddball galaxy is this month's Hubble Heritage offering. The image shows NGC 4622 and its outer pair of winding arms full

of new stars [shown in blue].

The galaxy's core provides new evidence for a merger between NGC 4622 and a smaller galaxy. This information could be the key to understanding the unusual leading arms. Galaxies, which consist of stars, gas, and dust, rotate very slowly. NGC 4622 resides 111 million light-years away in the constellation Centaurus.

### **background of space.war:**

*Zarkos' armada of spaceships is on its way from the Spiral Galaxy NGC 4622 (Zarkos' home) to an interstellar conference on planet JP 1804, located in the CRAB Nebula. Suddenly, sonar pings suggest that Zarkos' fleet is being monitored by an enemy army of space cruisers. A ferocious deep space dog-fight ensues. But Zarkos' army wins the battle, and the piece ends with Zarkos' warriors singing their song of victory.*

## 14.zarkos.cry

4.sci.fi.orchestra - recorded.2002.01.21  
dedicated.2.dave.strohbeen



After the Red Giant's implosion the alien *Zarkos* is hit by nuclear waste from the big crash. He cries, tries to escape - but ultimately dies.

*zarkos.cry* is based on the fractal *Zarkos* by *Jovan Pesec*, generated with *Ultra Fractal™* and on the text: "*zarkos cry sounds through the*

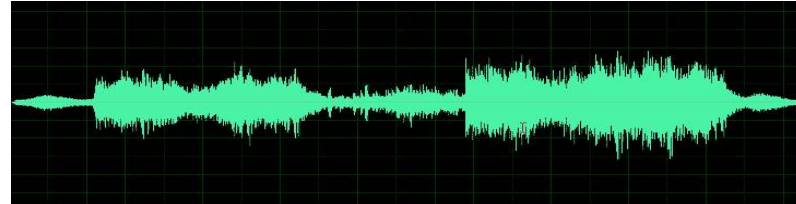
*space*".

*This fractal was (together with "EinsteinsUmbrellaLostInSpace" one of the winning images in a year 2000 fractal art 2000 contest in the category "in space". Both images generated my wish to compose SCI-FI music. With Dave Strahbeens great ArtSong™ computer aided composition program, my wish and my fantasy came true.*

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## 16.is.anybody.out.there?

4.sci.fi.orchestra.&.space.signals - recorded.2002.04.29 - dedicated.2.dave.strohbeen



"Contact," "Star Trek," "Babylon 5," "Star Wars," "Alien," and the rest of the lot have one thing in common. They all deal with alien civilizations and their relationships to humans. Some of these futuristic fictions portray alien life as friendly, some as hostile. Most of the aliens are curiously "humanoid." Many of us dream of one day meeting up with a (friendly) alien race. Much could be learned and discovered about each other. What are we doing right now to make this happen?

Is there anybody out there?

The world's largest supercomputer is searching the sky for alien signals and home computer users are donating their machines' idle time. The internet has made it all possible.

About 500,000 computer users are donating their idle computer time to the search for aliens in what claims to be the largest distributed processing project ever. (note: by 2001, there were 3,000,000 participants). The Seti@home (search for extra terrestrial intelligence) software runs as a screensaver on Windows and Macintosh clients and as a low priority task on Unix machines.

*Background of the composition: Ganymede's Magnetosphere (see WAVimage above):*

*Recorded by NASA's Galileo space probe, these sounds reveal the fact that the solar system's largest moon is also the only one known to possess a planet-like, self-generated magnetic cocoon called magnetosphere, which shields the moon from the magnetic influence of its giant parent body, Jupiter: The real sensation when Galileo first recorded the sound of this magnetosphere was a rhythmic signal embedded in the stream of noise. Some signal, which reminds of a theme from the Jupiter Symphony by W.A.Mozart. But tragedy followed by foot: John Walker, a Harvard student, got extremely nervous when he first listened to the signal. He inadvertently deleted the tape, before radio astronomers could make a backup copy. In later recordings from Galileo, this signal could not be detected anymore.*

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## 17.the.milky.way

4.4.harps.&.orchestra - recorded.2002.05.06  
dedicated.2.michaela



The Milky Way is the galaxy which is the home of our Solar System together with at least 200 billion other stars (more recent estimates have given numbers around 400 billion) and their planets, and thousands of clusters and nebulae. All the objects in the Milky Way Galaxy orbit their common center of mass,

called the Galactic Center. As a galaxy, the Milky Way is actually a giant, as its mass is probably between 750 billion and one trillion solar masses, and its diameter is about 100,000 light years. Radio astronomical investigations of the distribution of hydrogen clouds have revealed that the Milky Way is a spiral galaxy of Hubble type Sb or Sc.

*The composition **the.milky.way** is based on three images, taken from the Hubble telescope of the Milky Way, the Northern Cross (see above), the Southern Cross and the Center. For more information please look at <http://www.artsong.org/v4m>. It starts with an introduction that reminds a little bit of a Barock harp concerto (based on the Northern and Southern Cross) and develops in a modern, very energetic direction. Dave Strohbeens comment on it: "Wow... the most gorgeous piece yet... a great final piece!"*

*The composition is dedicated to my daughter Michaela, who died at the age of 26, and I hope her soul is part of our universe, maybe a blinking fixed star in the Milky Way's Southern Cross...*

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## 15.alien.lullaby

4.metallophon - recorded.2002.04.14  
hommage.2.manuel.de.falla



Glowing like a multi-faceted jewel, the planetary nebula IC 418 (The "Spirograph" Nebula) lies about 2,000 light-years from Earth in the constellation Lepus. In this picture, the Hubble telescope reveals some remarkable textures weaving through the nebula. Their origin, however, is still uncertain.

The alien baby inside the egg, that was the picture which grew up in my mind, when I first saw this image - and it leads directly to the composing of an lullaby- Not an lullaby, which we are use to hear in our world. It should be an lullaby from the outer space!

*The alien embryo inside the egg, that was the picture in my mind, when I first saw this image - and it leads directly to the composing of a lullaby. Not a lullaby from our world, but rather one from outer space... The connection to our world is based on a piece by **Manuel de Falla**, the famous Spanish composer. The rhythm of **alien.lullaby** is taken from his famous berceuse **Nana** from "Siete Canciones Populares Espanolas".*

*Finally, the instrument I chose was the **Metallophon** from the "Bell & Metal Type Instruments" from "Ethno World Library" by Marcel Barsotti. Marcel Barsotti sampled each and every note of this instrument. And its sound adds a transcendent mood to the tune.*

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