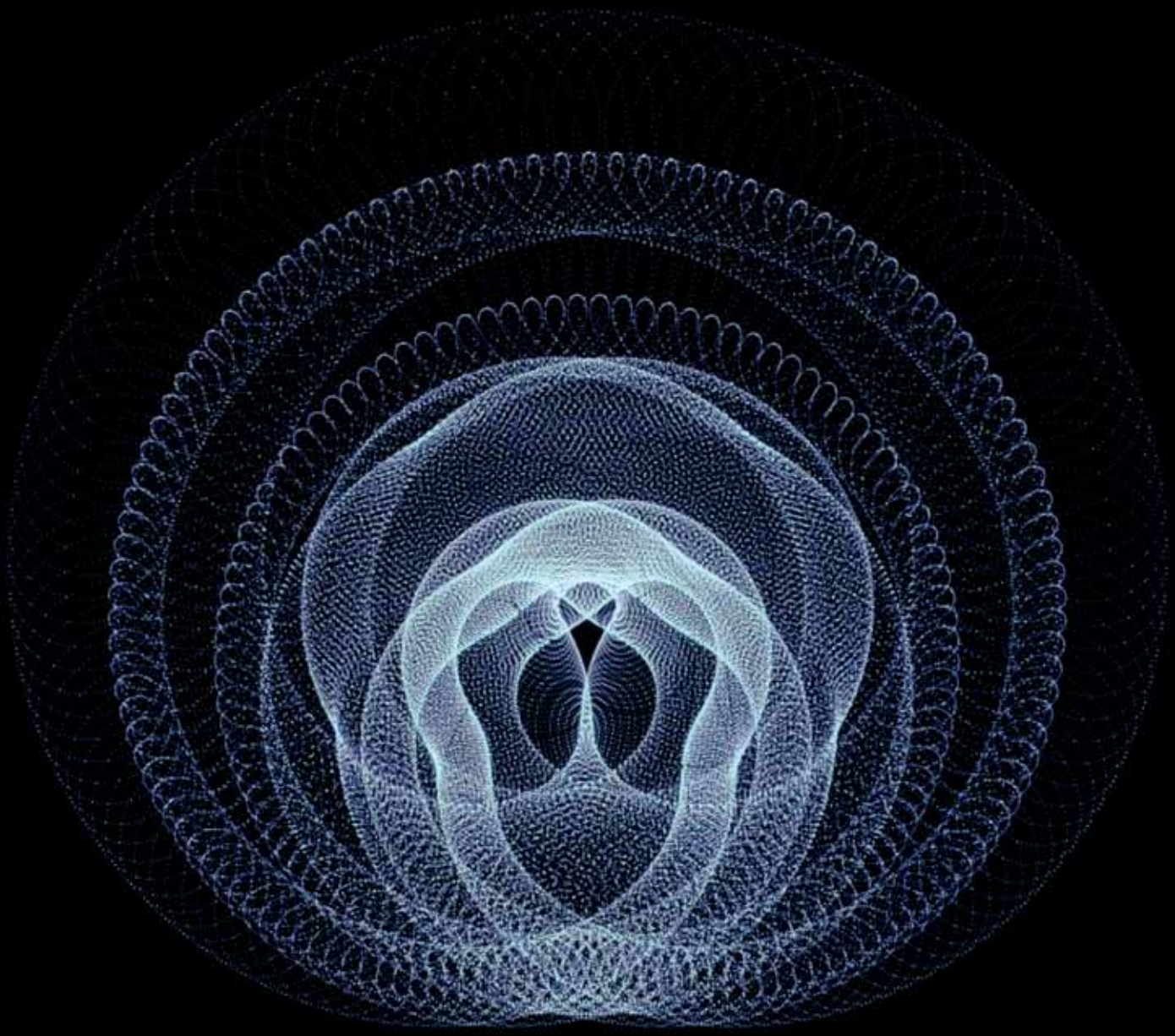
WERKSTATT ATMANI



art from sound light & color sound (word)

声音之光和色彩之声中的艺术（字）

WERSTATT ATMANI (Germany)
Art from sound light & color sound (word)

What connects our cultures?
How can we grow creatively together?
We see everything through light and its antithesis, darkness.
Man stands at the threshold: will he be able to create a center?
Don't we want to perceive, understand the world-to-be in its harmony?
Her laws in light, darkness and the colors that form between them in the center that is being created?

Logos (Greek) - word (English) contain light and sound. In our world, light is found in color and sound in tones.

A new method: cymatics from the Greek kyma – wave. How does the world react when we add sound to a material in an experiment? The sound creates new shapes, shapes previously unknown to nature. We can explore everything with cymatics. Everything is viewed with new eyes and appears as the antithesis of forms and movement, conveyed by rhythm.

In the triptychs, we see the opposite of light and darkness, of male and female (left and right). The image in the middle is freedom, painted between the two poles.

The Tone-Circle-Images depict the shape, notes become shape. Visible tone: harmony.

The light organ holds together that which is falling apart in the world. The begin of a new world in which people create a new harmony determined by the sound of light, the color of light in themselves, the world and cultures.

Atmani is an artist, researcher, composer, singer, author and teacher, whose entire life is dedicated to exploring the tension between image and sound in relation to humans. Atmani gathers together people in his workshop who work with him and are involved in artistic research. In 2000, he founded the „House of Song“ and is the initiator of the World Cymatics Congress.

"...the art of painting with tones"

by Atmani

These words by the poet Christoph M. Wieland open the book on the „theory of sound", published in 1787, written by Ernst Florens Friedrich Chladni, the „father of acoustics". As an introduction to the text the sentence flung a door wide open as Chladni's research was making a direct connection with art. What had he done? He sprinkled glass plates with sand and then made them ring with tones. Figures emerged, which have since become known as „Chladni's sound figures" after their discoverer. The original phenomenon is still being researched to this day, because a full explanation essentially is still lacking and its documentation is still incomplete. In fact there are about 40-50 articles in journals every year attempting to resolve this phenomenon.

Initially it was thought that Chladni's sound figures are produced by vibrations or oscillations in the vibrational bands. However, only a few years later M. Faraday showed that air has a decisive role in the appearance of the characters. After some time, this experiment was repeated in a vacuum. If air actually was responsible, figures would not have formed. But in the experiment, the beginnings of a shape emerged when the glass plate in the vacuum was stroked. We are entering new territory with this experiment, territory that combines art and science, because it is the tone produced by the violin bow that is reflected as a figure. Chladni classified the images scientifically.

The Chladni sound figures generated great interest in Europe. Chladni traveled through many countries to demonstrate the new discovery to rulers and centers of culture. For example, Johann Wolfgang von Goethe and Napoleon were keen to be introduced to the novel achievements.

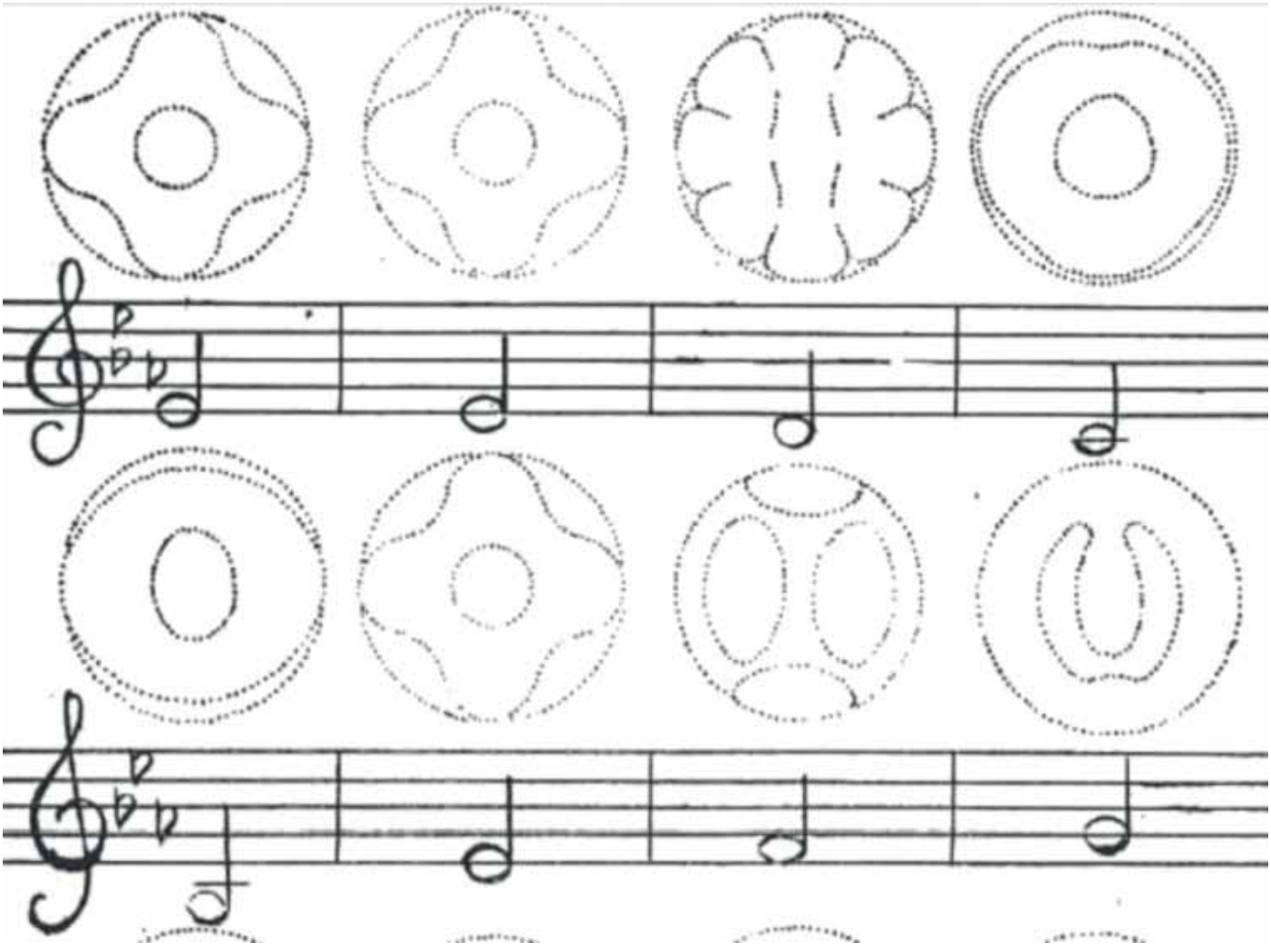
In 1904, the book „Eidophone Voice Figures" by Margaret Watts Hughes was published. In it, she reported how she used a jar-like vessel, in which a tube was inserted laterally. On the top there was a membrane. She then sang through the tube into the jar, the tones and vowels produced beautiful shapes on the membrane. In this experiment, the role of the violin bow was replaced by the human voice. The experience of the experiment made it clear that it is not only the sound, the volume, that has the greatest influence on the figure produced, but there are other factors and the principle of inhaling the voice when singing, known in Italy as ‚Inhalare la voce', is equally as influencial. If you have conquered this technique and you can inhale the sound according to the instructions of the old Italian vocal training, and then the

figures formed in the experiment are finer and more succinctly formed. These sound figures and their structure generate information about the type of singing (centripetal), the volume (centrifugal) and various other parameters.

In a further development, Margaret Watts Hughes was able to make incomparably beautiful and vibrant prints of the vocal-sound figures on the membrane. This step is again both artistic and scientific as it requires great skill to make the prints which require the paper to be positioned by hand.

The voice and hands of Margaret Watts Hughes created exquisite and delightful landscapes, trees, plants, etc.

It is important to emphasize that her investigations of melodies in their constituent tones and the figures formed on the eidophone were the next big step toward the beginnings of cymatics.



The progress made here was in the recognition and conscious manipulation of the tone level through art and science, because although glass plates reached a particular tone more or less by accident and almost always produced a beat amplitude, the tone could not appear in a pure form as the sound plates were not harmonically structured, and one side of the plate would produce one tone or differential tone while the other side would produce another tone. It was crucial that experimentation had begun and alongside it immersion into the world of the tone.

Again, half a century later a person came into the world who determined to be open-minded to all knowledge and who was able to conduct scientific research without losing his artistic approach to nature by observing and studying

animals in the minutest of detail, which then found expression in his drawings and pictures. In his work he was absorbing the intensity of the phenomena, of life itself, and was able to draw the two poles of art and science together so that the preparatory work of Chladni and Margaret Watts Hughes was channeled in full in the form of a synthesis of art and science which now became the basis of the subject he named cymatics. And this was more the result of practical doing or creating. This person was Hans Jenny. Of all the works Jenny produced, we will only refer to the book in which he described experiments showing how the different structures find repetition in segments in the animal kingdom. This was the first time nature's mystery of creation had been understood in that shapes found in nature were recreated both by tones and sounds. In his book „The Laws of Repetition" (1962), he described finding expression of the forms not only in the animal kingdom, but also other areas of nature. He had already formulated this in a previous book in 1954:

"The essence lies in nature itself being deciphered in the scripts".

For example, the crest and trough of a wave capture a rhythm that is a construct of the processes of the poles. It is therefore a compaction and thinning, a switch from pressure to suction, the regularity of which is an expression of periodicity. This is to found everywhere in nature. Under the gaze of cymatics, nature is unlocked in a completely new way. Deep down inside materials are structures and patterns that can be visualized by the techniques applied by modern experimentation. This is not simply the structures of the skin of the zebras, the tortoise shell, etc. but the bone structure itself, detected by the tone in experiments and then discovered in several animals. And so a new way of viewing the world has emerged that allows us all to test how forms are created and at the same time to add to and enhance observations already made (e.g. the experiment with Chladni sound figures described above).

So, for the modern consciousness, it is possible to break new ground in this dimension in which materials are constantly at work both inside and outside in the elements: the music of the universe, infinite creativity (Novalis).

The cymatics of Hans Jenny opened wide a gate to a world view that specifically connects the most advanced research results with newfound laws, which existed in ancient times. Precisely this, was the wish of Max Planck.
"We have seen how physics, which a generation ago could be counted as the oldest and most sophisticated sciences of nature, is currently in a tempestuous period that promises to be perhaps the most interesting of all. Its transformation will lead us not only to the discovery of further new natural phenomena, but certainly also to new insights into the mysteries of cognitive science. Perhaps we are in for a few surprises towards the end, it may well be that certain ancient beliefs that have until now be confined to oblivion are resurrected and gain new importance. [1]

[1] Max Planck, in the journal „Naturwissenschaften", 26.3.1926, p. 260.

The exhibition “Break through to Light”

The creative element, inherent to every cymatics experiment, runs through the three strands of the exhibition „Breakthrough to Light“. In all three there is a meeting of art and science, in the tone circle images, the triptychs and the light organ. Let us now consider the three strands.

Tone circle images

Jenny established the experimental basis for the tone circle images with an experiment using an oscilloscope. This is a test instrument for analyzing physical signals that can be used to visually represent the acoustics of a tone, that is, its vibration. If you input a tone, a circle appears on the screen. If you input two different tones, an interval is created and complex structures are formed. Under the guidance of Atmani, Dr. Ralf Tita has taken this experiment much further. Originally the focus was on comparing the tone movements shown on the oscilloscope with the movements that are made by the planets in the sky (astronomical).

If you incorporate all the research results of the millennium-old history of mankind, from Pythagoras to Kathleen Schlesinger and Maria Renold, there is a broad framework of harmonious relationships that shape the fabric of music in structures in the tone circle images. This corresponds to the study of the movement of the planets, accurately captured by NASA in 8000 mathematical terms applied in sending satellites to explore the cosmos. These terms underlie the corresponding motion images of the planets. One of the peculiarities of the tone circle images is their presentation (projection). While mathematically, straight lines are drawn between the astronomical planet motion images to create an image of the movement, the projection of the tone images is made exclusively with dots. This method produces finer images that are not static. When a key of the piano is depressed, a laser sensor detects the movement and represents it visually as an interval with one or more tones. The result is not just fixed, but corresponds to the sequence of tones played by the artist in the room. At least this is what happens when the tone circle images - integrated in the light organ - are produced live before your eyes in the hands of an artist (see light organ).

In contrast to the light organ, the tone circle images represent the final stage of the process, triggered by the intervals, manifested at the end.

The tone circle images can portray chords, melodies, as well as all stages of a symphony. In a continuation of the work of Hans Jenny, melodies and individual phases of works of composers can be watched in an artistic visual form. The work started by Hans Jenny and Ernst Florens Chladni (Chladni sound figures, tonoscope (Jenny‘s name for the eidophone)), is now being continued in the tone circle images. Creation of a work always requires a creative act. The tone circle images make the selected phases of a composition visible. There is again a balance of art (the composition) and science (through the artistic and mathematical projection). Short-bar segments by Heinrich Schütz have been selected for this exhibition: ‚Peace‘ from the motet ‚Grant us Peace‘, the Jupiter Symphony by Wolfgang Amadeus Mozart and a composition by St. Germain.

Triptychs

The triptychs show the same tone circle image three times. They are each based on a vocal composition by Atmani („The Secrets", hymns). The names underneath the pictures describe the word that is being sung in the chorus.

To the left and right we see the light and dark aspect, the heavenly and the female principle, the animus and anima of the soul. From the point of view of the observer, the left is the light side, far right the darkness, the blackness. The middle has the function of bringing together the opposite of both in a creation that reflects us, humans. Whereas the prints (silkscreen), using vegetable dyes, illustrate the finest of movements, it is the task of the middle image to join the opposites, but also to produce an intensification. The middle images are always hand painted by Atmani. The name of the triptychs:

Das Zeichen sieht er prächtig aufgerichtet - He sees the sign splendidly raised
Ich Bin - I am
Auferstehʼn - resurrected
zum neuen Reich - to the new kingdom
mit Kreuz und Rosen - with cross and roses

The light organ

The light organ being introduced here is the world's first, which in this form is not yet in existence. While the artist is playing, movement of the keys is detected by the laser sensor. The pianist controls the extent of the tones that are projected visually on the wall or walls. In addition, there is a flood of color that the artist can switch on. Led by the artist, the musical element appears in the tone and is projected onto the wall and filled with color. Scriabin was the very first practitioner of this technique in his Prometheus opera, in which two voices of the score were set to light. These were generally sent out to the audience unconverted during the performance, whereas with the light organ, the artist transforms everything in a nonetheless a scientific process (tone circle images).

Partnership

Today:
Search for encounter between cultures
Search for a common basis
How do we look at the world today?
Is it possible to bring harmony to the world?
Understanding of our roots?

So far the world has far been seen in two ways. There was a time, when the world was not looked at, but listened to. It was the Pythagoreans who heard the world by listening.

Akroasis = hearing was central to their contemplation of the world. By this was meant a philosophy born of listening. Somewhat later than the Pythagoreans, a master of music appeared in China. He wrote:

"*The origins of music are ancient. Music emerged from the ground and is rooted in the Great One. The Great One generates two poles (1/n — 1/1— n/1). These two poles create the power of the dark and the light.*

*That, from which all beings arise and have their origin, is the Great One. How they form and perfect is in the duality of the light and the dark. Once the seeds start to rain, they coagulate into a form***"**. [2]

Let us linger here.

Is it not for us to listen today? To interweave everything precious into a future cultural thread of life? Starting with looking and hearing? The arts can help us to understand and to find.

2 Lü Bu We: Chunqiu - Spring and Fall of Lü Bu We, Chapter 2

-The Light Organ-

by Atmani

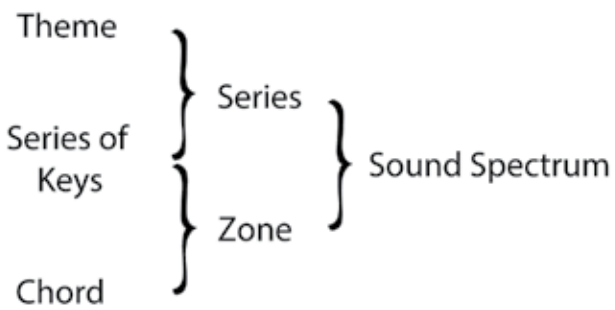
Musicians and painters have always been interested in the relationship between sound and color. In music we talk about the timbre or color of a musical note, in painting the tone or pitch of a color.

Many artists have looked for a relationship between painting and the composition of music. The first to do so was Modest Mussorgsky who composed a work „Paintings at an Exhibition" based on the pictures of Viktor Hartmann. At the time of the emergence of theories of color proposed by Goethe, Runge, Johannes Itten, Kandinsky and Jawlensky, many artists were occupied with their own investigation of the relationship between notes, sound and color.

In 1911, Alexander Skrjabin pioneered a new phase by writing two of the „voices" in his score for Prometheus to be „sung" by light. Since coming across the score for Prometheus in Moscow in 1992/93, the author Atmani has been exploring ways to connect notes, sound and color in one instrument.

Atmani's work with the engineer and computer scientist Dr. Ralf Tita made possible the implementation of his vision. The first step of the implementation was the development of the Tone-Circle-Images, which are a mathematical projection of notes. This method allows a note to be depicted as a circle, a second note as a second circle, but when both are played together (an interval) the result is a specific structured figure. [3]

Both Alexander Skrjabin and Dr. Rudolf Steiner created schemes assigning colors to tones. In a further development of this technique, a laser sensor integrated under a piano keyboard records the movement of a key and sends the measurement to a computer. The computer calculates the Tone-Circle-Images and the colors, which in real-time are then flooded onto the projection surface/wall and into the room. In this process a spectrum of tones is always assigned a base color chosen by the pianist independently of the piano key-color-sounds for a certain phase of a composition. The rationale behind this is a development of the Russian theory of music and composition of Prof. Yuri Kholopov, that views the sound spectrum as the beginning of modern music. If music up to Debussy and Wagner is just about tonal, both gradually become a sound spectrum that replaces the tonal order.



3 Originally, the Tone-Circle-Images were explored in relation to the motion of the astronomical planetary movements.

For instance, Skrjabin's Prometheus is based on the Prometheus chord. Thereafter the sound spectrum becomes the starting point for the composition. The colors of the base phase indicate and intensify the basic style of the sound spectrum whereas the color correlations of the individual notes depict the internal movement. The figures produced by the Tone-Circle-Images can also be differentiated by color allowing the tension between the elements of the composition to emerge clearly.

The pianist operates the controls on the grand piano via a mixer that he or she plays similarly to the various registers of a church organ. This is the way the light organ works, which in fact has also been aided by advances in lighting as now the lights themselves can change color.

Until now, sound, color and form were always separate. In the light organ they become a new, large instrument engaging the human senses, those of the audience and also the pianist.

Years of work by Dr. Ralf Tita along with Atmani are responsible for its design. He absorbed the intention and vision and independently carried out the technical implementation that Atmani accompanied and encouraged.

Visualization of sounds is a major part of cymatics. As such, the light organ is the perfect expression of the new art of cymatics, in which people are animatedly immersed in tone, sound and color while simultaneously a balance is maintained between art and science (colors and Tone-Circle-Images).

The world premiere of the light organ as played by the Russian composer and pianist Nina Aristova will take place on April 26 2017 at the MOCA - Museum of Contemporary Art in Beijing, China. She will be premiering a piece: seven laments of the song „Es ist Nacht" (It is Night) from Atmani's „Manengesang" (Song of the Manes).

The light organ is the highlight of the sub-exhibition „Breakthrough to Light" from the Werstatt-Atmani and part of the main exhibition „Partnerships" of the Gallery of Pashminart together with the MOCA Beijing from April 26 to June 10, 2017.

Atmani, March/April 2017

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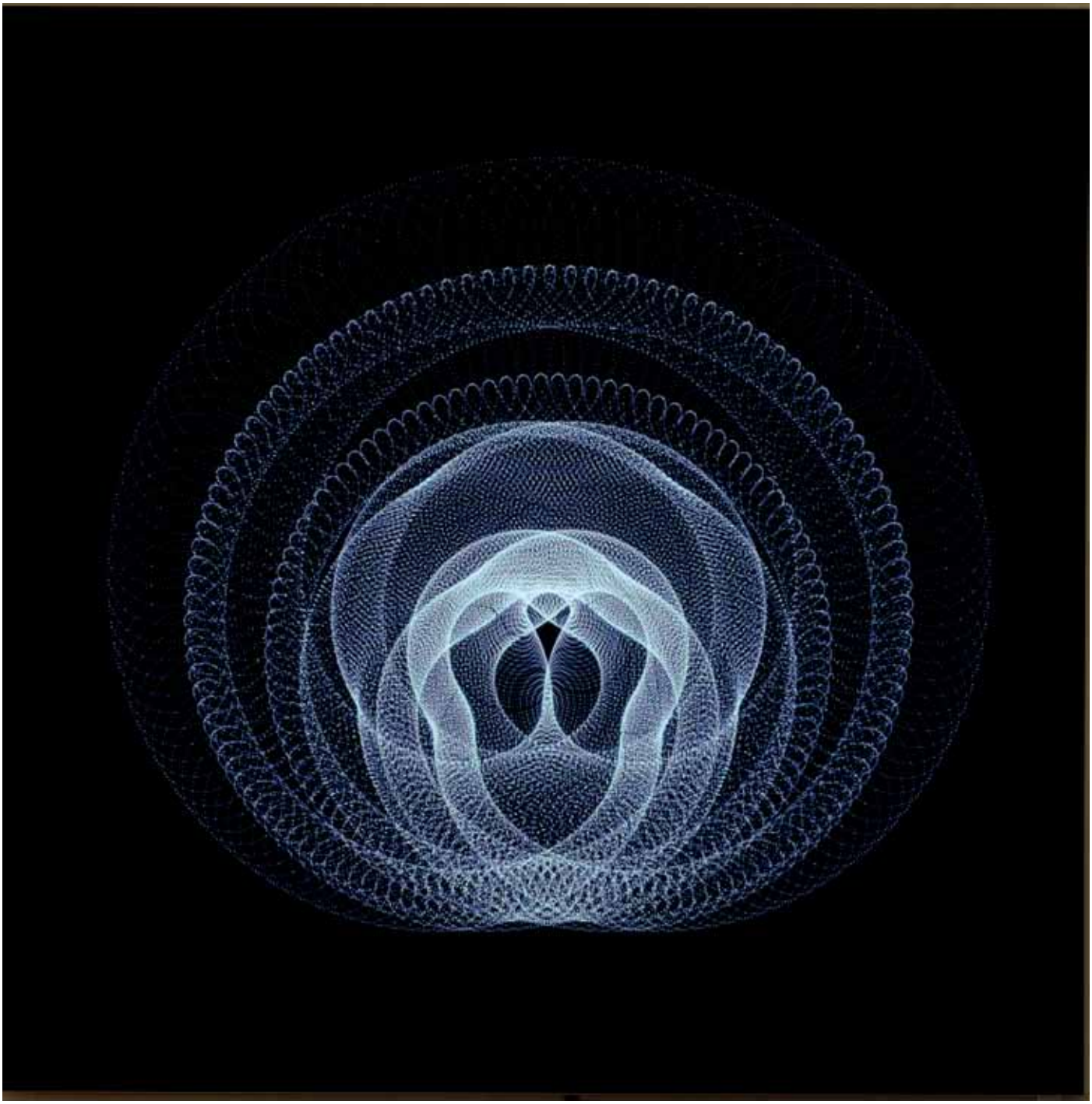


“Tone-Circle-Image”
Wolfgang Amadeus Mozart
Symphony No.41 C-Major, „Jupiter“

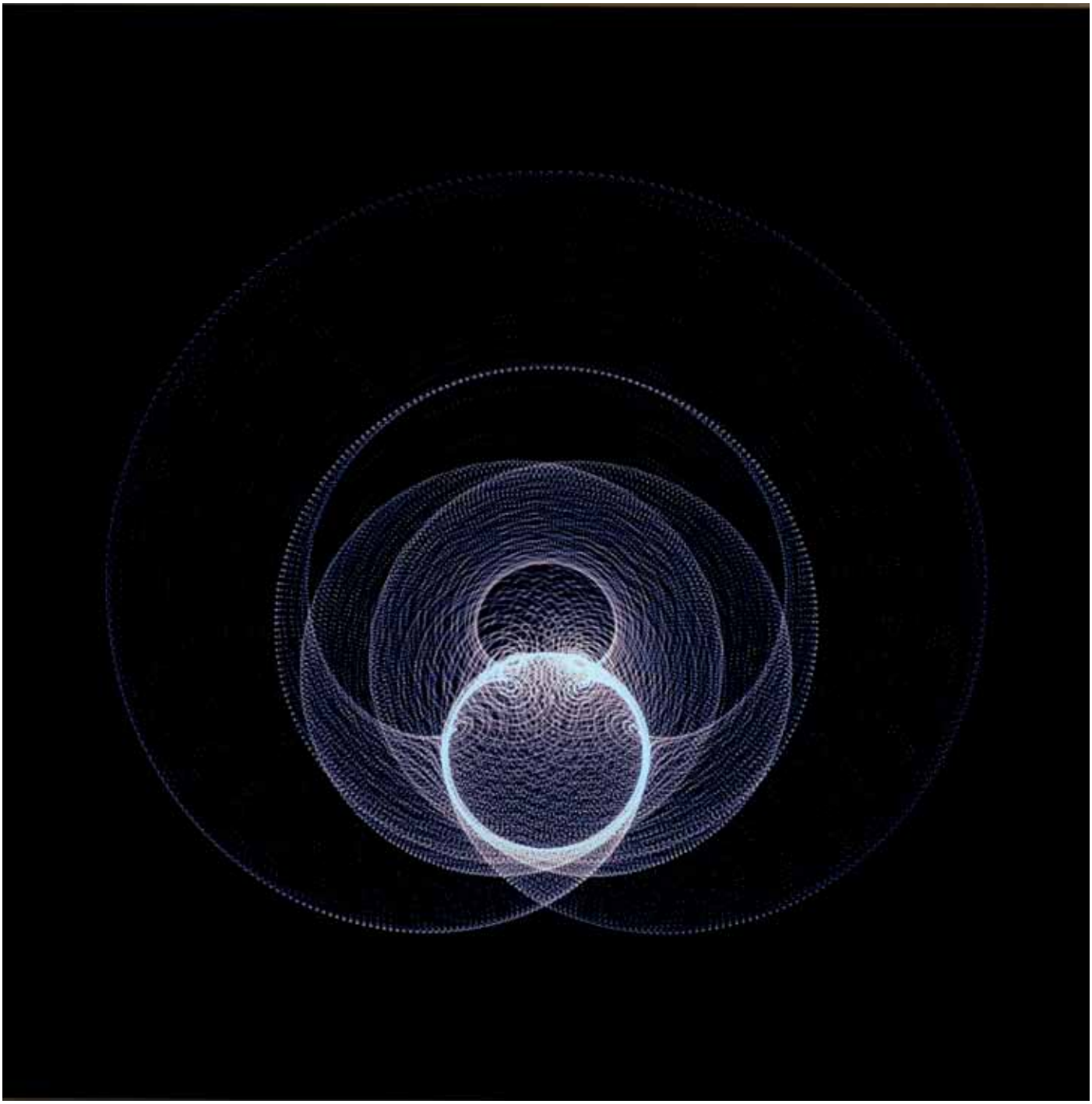
Fabric print, - backlight illumination,
needs a 230V, 26VAC electrical socket

100 x 100 cm
2011

“音调-圆圈-图像”
沃尔夫冈· 阿马多伊斯· 莫扎特
第41交响曲C大调， “木星”

织物印花， - 背光照明，
需要230V，26VAC电插座

100 x 100
2011



“Tone-Circle-Image”
Heinrich Schütz
Grant us peace - Motette

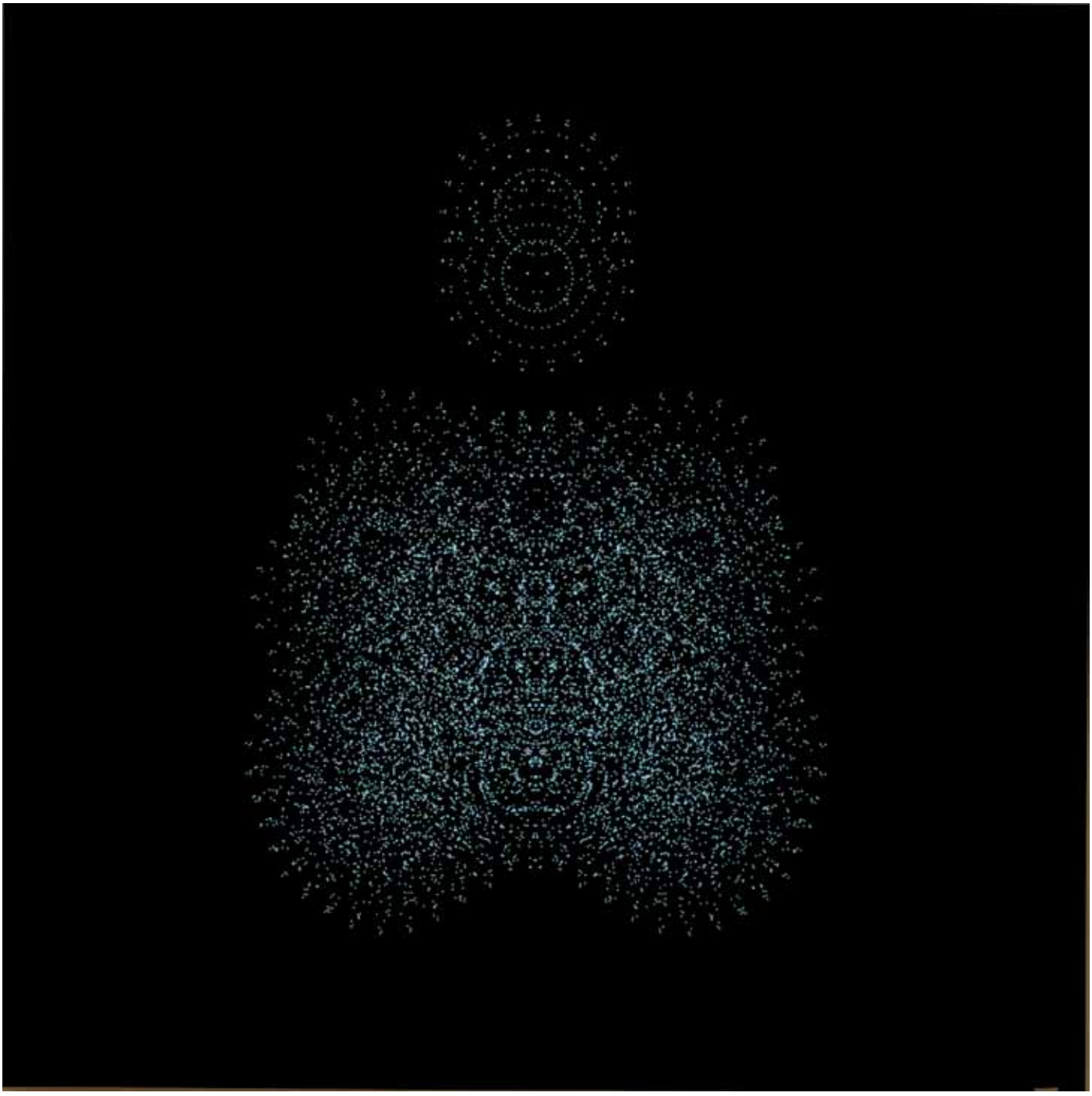
Fabric print, - backlight illumination,
needs a 230V, 26VAC electrical socket

100 x 100 cm
2011

“音调-圆圈-图像”
海因里希· 舒茨 – 赐予我们平安 - 经文歌

织物印花， - 背光照明，
需要230V，26VAC电插座

100 x 100
2011



“Tone-Circle-Image”
S. Germain - Violin Sonata I, Adagio

Fabric print, - backlight illumination,
needs a 230V, 26VAC electrical socket

100 x 100 cm
2011

“音调-圆圈-图像”
圣日耳曼- 小提琴奏鸣曲I，慢板

织物印花， - 背光照明，
需要230V，26VAC电插座

100 x 100
2011

Picture 1/3 from the Triptychs
"He sees the sign splendidly raised" from the series
Breakthrough to Light

handmade screenprint,
plant-color + silver + gold

ca. 71 x 85 cm
2012

三联画图片1/3
"他看到迹象华丽地出现"
出自《光的突破》系列

手工印刷
植物色+银+金

约 71 x 85
2012

Picture 2/3 from the Triptychs
“He sees the sign splendidly raised” from the series
Breakthrough to Light

handmade screenprint,
plant-color + silver + gold

ca. 71 x 85 cm
2012

三联画图片2/3
“他看到迹象华丽地出现”
出自《光的突破》系列

手工印刷
植物色+银+金

约 71 x 85
2012

Picture 3/3 from the Triptychs
"He sees the sign splendidly raised" from the series
Breakthrough to Light

handmade screenprint,
plant-color + silver + gold

ca. 71 x 85 cm
2012

三联画图片3/3
"他看到迹象华丽地出现"
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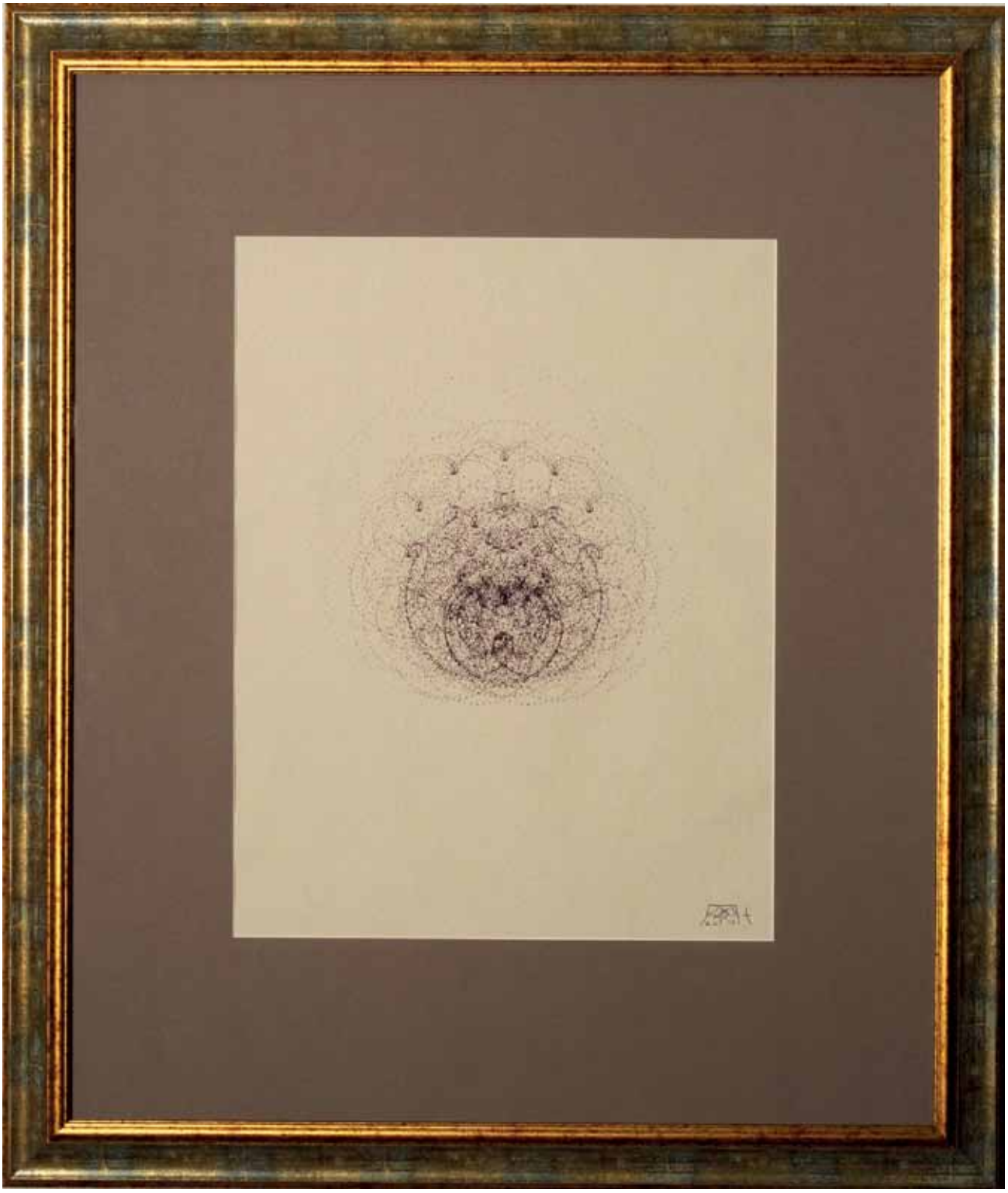

Picture 1/3 from the Triptychs
“resurrect” from the series
Breakthrough to Light

handmade screenprint,
plant-color + silver + gold

ca. 91 x 108 cm
2012

三联画图片1/3
“复活”
出自《光的突破》系列

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“到新的国度”
出自《光的突破》系列

手工印刷
植物色+银+金

约 71 x 85
2012

Picture 1/3 from the Triptychs
“with cross and roses” from the series
Breakthrough to Light

handmade screenprint
plant-color + silver + gold

ca. 71 x 85 cm
2012

三联画图片1/3
“与十字架和玫瑰”
出自《光的突破》系列

手工印刷
植物色+银+金

约71 x 85
2012

Picture 2/3 from the Triptychs
“with cross and roses” from the series
Breakthrough to Light

三联画图片2/3
“与十字架和玫瑰”
出自《光的突破》系列

handmade screenprint
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2012

WERKSTATT ATMANI (德国)
声音之光和色彩之声中的艺术（字）

是什么是我们的文化相连？
我们是如何共同创新成长的？
我们通过光及其对立面 - - 黑暗看到所有。
站在起点的人：他能创建一个中心吗？
难道我们不想感知、理解世界的和谐吗？
我们想看到在光明、黑暗和色彩中形成的世界的规律吗？

Logos (希腊语) – ”道“ 包含了光和声。在我们的世界中，光在色彩中，声在音调中。
一种新的方法：单词Cymatics来自希腊语“kyma” - 波。当我们尝试在声音中添加物质时，这个世界会作出何种反应？声音创造出自然界鲜为人知的新形状。我们可以用cymatics来探索一切。一切都受到新视野的审视，表现为形式和运动的对立，由节奏传达。

在三联画中，我们看到光明与黑暗、男女与女性（左和右）的对立面。 中间的形象是画于两极之间的自由。

音调-圆圈-图像的组合描绘了形状，音符成形。 可见色调：和谐。

发光器把世上分崩离析的事物组合在一起。 它创造了一个新的世界，人们在这个新世界中通过光之声音和光之色彩与文化建立新的和谐。

Atmani是一位艺术家，研究员，作曲家，歌手，作家和老师，他的一生都致力于探索与人类相关的图像与声音之间的紧密关系。Atmani将他参与艺术研究的同事聚集在工作室。 2000年，他创立了“颂之家”，成为世界Cymatics大会的发起者。

“…用音调作画的艺术”

作者 Atmani

诗人Christoph M. Wieland的文字开启了1787出版的《声学理论》，此书由“声学之父”ErnstFlorens Friedrich Chladni撰写。作为本书的介绍的一部分，这句话开门见山的表达了Chladni的研究与艺术有直接的联系。那么他究竟做了什么？他在玻璃盘上撒上沙子并用音调敲击玻璃板。于是，玻璃板上的沙子形成了图像，并因他们的发现者而被称为“Chladni声像”。而原始的现象至今仍在研究中，因为直到现在，都没有完整的基本解释或档案记录。实际上，每念都有40-50篇试图解释这一现象的文章发表。

起初，Chladni声像被认为是因震动或震动带动荡产生。然后，仅在短短几年后，M. Faraday就证明了空气对图像的出现起着决定性的作用。一段时间后，研究人员在真空环境中重复实验。如果空气确实起作用，那么图像就不会形成。但在实验中，当真空中的玻璃板被轻触时，图像便开始出现。这项实验使我们的探索进入了新的领域，一个艺术和科学结合的领域，因为由小提琴弓发出的音调，被反映成图像。Chladni科学地将图像分类。

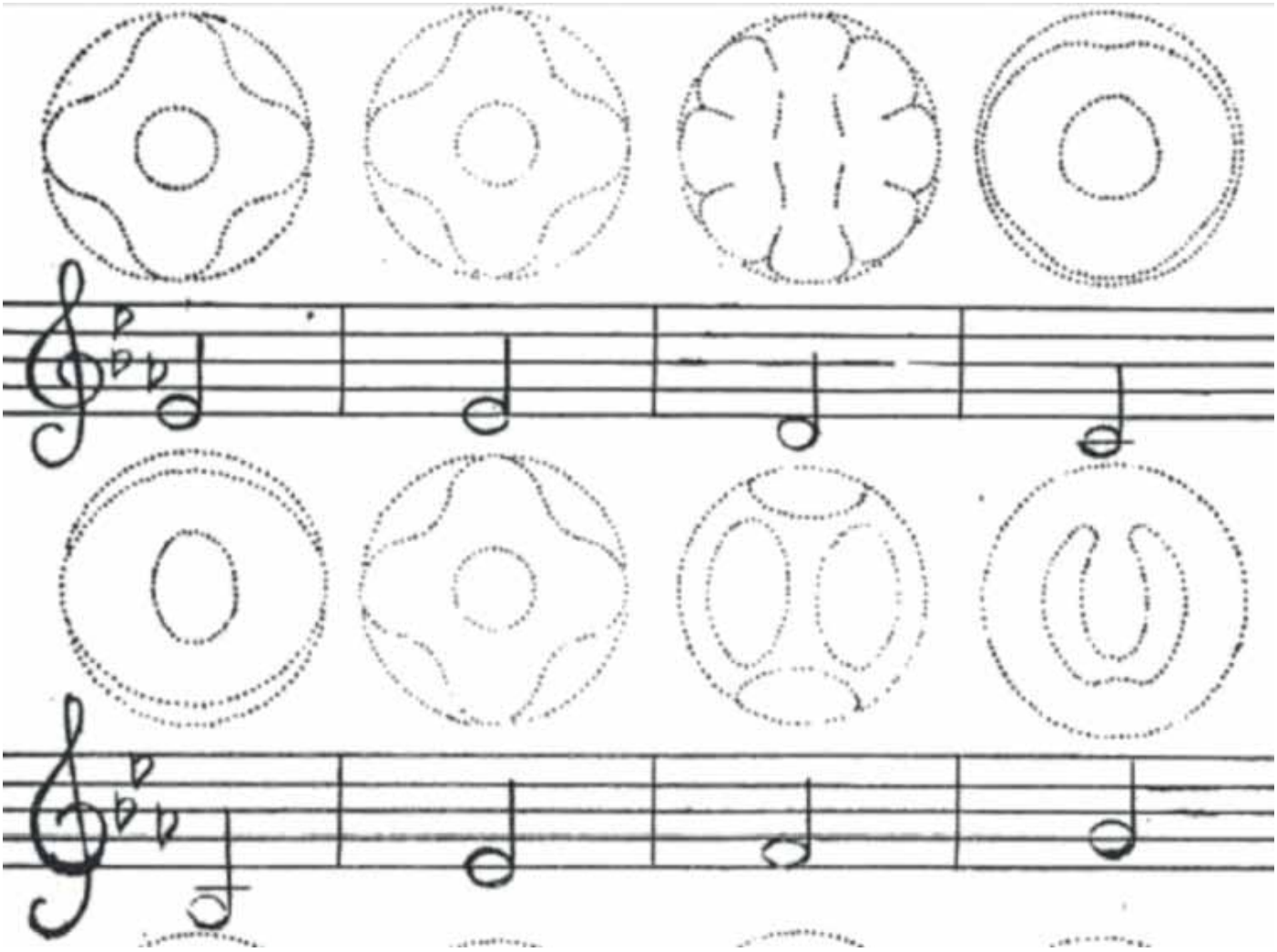
Chladni声像在欧洲引起了极大兴趣。Chladni游历欧洲多个国家并向各国文化中心和统率人物展示这项新发现。其中，诗人歌德（Johann Wolfgang von Goethe）和拿破仑（Napoleon）在得知此项突破性的成就时非常激动

1904年，Margaret Watts Hughes发行了书籍《Eidophone Voice Figures》。她在书中记录了自己的实验过程。她将管子横向插入的罐状容器。容器顶部有一个膜。然后她对着管子唱歌，通过管子将歌声传入罐中，之后，音调和元音在膜上产生了美丽的形状。在这项实验中，小提琴的弓被人声取代。实验清楚地表明，在图像形成的决定性因素中，不仅有声音、音量，还有其他因素和唱歌时吸气（意大利语中为“Inhalal la voce”）的原则，对图像的形成起着同等重要的作用。如果你掌握了这项技能，并能够根据意大利传统发声训练的指示吸气，那么试验中形成的图像会更精美简洁。这些声像和他们的结构透露了歌唱（向心）的类型、音量（离心）和各种其他参数的信息。

随着进一步发展，Margaret Watts Hughes能够在膜上制作出无比美丽且生动形象的声像画作。这个创作过程再次结合了艺术和科学，因为这需要人在图形过程中手工放置纸张，对创作人的技艺要求非常高。

Margaret Watts Hughes的声音和手创造出了美丽动人的景观、树木和植物等。

需要强调的是，她对组成旋律的音调在eidophone（Margaret Watts Hughes在上述实验中使用的设备）上形成的图像的研究为音流学作了很大的铺垫



通过艺术和科学来识别并人为操纵音调是这里的一项进步，因为虽然玻璃板或多或少会意外地达到特定的音调，且几乎总是产生一个拍幅，但由于声板并非谐波结构，所以音调不能以纯净的形式出现，导致板的一侧将产生一个音调或差音，而另一边则会产生另一种音调。非常重要的是，实验已经展开，并沉浸在音调的世界。

半个世纪后，另一个人再次涉足该领域，并决心开放对待所有知识，他仔细观察研究动物，并能在不失去对自然的艺术性感知的情况下进行科学研究，这在他的画作中体现出来。他在自己的作品中吸取生命本身的强度，并将艺术和科学的两极融合在一起，充分利用Chladni和Margaret Watts Hughes的成果，并将其作为被他称作音流学的基础。这实际上更多的是实践和创作的成果。这个

人就是Hans Jenny。在Jenny创作的所有作品中，我们只参考了描述不同结构在动物界中的细分中重现的实验的书籍。这首次揭开了大自然的创作之谜，自然中的形状能通过音调和声音再创。他在《重复法则》（1962）一书中描述了，这种表达形式不仅存在于在动物界，还存在于自然界的其他领域。他早在1954年的书中提出了这一点：

“本质在于自然本身在脚本中被破译”

如波的波峰和波谷捕获极点形成过程中的节奏。因此，这是压缩和打薄，从压力到吸力的转换，其规律性是周期性的表达。这在自然中随处可见。从音流学的角度看，自然以全新的方式解锁。材料内部深处是能通过现代实验应用技术可视化的结构和图案。这不仅是斑马皮或乌龟壳等结构，还是骨架本身，该结构在实验中通过音调检测出来，后来在一些动物中被发现。因此，一种观察世界的新方式便诞生了，这种方式使我们能够检测出形式的创建方式，同时完善加强现有的观察（例如上述Chladni音像实验）。

所以从现代的角度来看，元素内外的材料永恒运动的维度中可能会有新的突破：宇宙的音乐，无限的创造力(Novalis)。

Hans Jenny的音流学为自古以来将最先进的研究成果与新发现的法则互相连接的世界观敞开大门。更精确的说，是Max Planck的愿望。我们见证了在上一代能被列为最古老和复杂的自然科学的物理学进入风起云涌的时代，一个可能成为最有趣的时代。它的转变不仅引导我们进一步探索新的自然现象，还引导我们发出对认知科学的奥秘的新见解。或许我们参与其中仅是为了在最后获得一些惊喜，但同时，还有一些如今已被遗忘的古老信仰在这个过程中重现并再次得到重视。[1]

[1] Max Planck, in the journal „Naturwissenschaften “, 26.3.1926, p. 260.

展览 “光的突破”

每个音流学的实验中的创造性元素贯穿于展览”光的突破“的三条主线。在音圈图像、三联画和光琴这三条主线中，都有艺术和科学的交汇。下面让我们来看一下这三条主线。

音圈图像

Jenny用示波器的实验建立了音圈图像的实验基础。这是用于分析物理信号的测试仪器，可将音调的声学（即其振动）视觉化。当你输入一个音调时，屏幕上会出现一个圆圈。当你输入两个不同的音调时，屏幕上则会出现一个间隔，并形成复杂的结构。在Atmani的指导下，Ralf Tita博士已经对此进行了更深入的实验。最初的重点是将示波器上显示的音调的运动轨迹与天空中的行星（天文）的运动轨迹进行比较。

如果将从Pythagoras 到 Kathleen Schlesinger 和 Maria Renold之间千年的研究成果结果起来，就会发现音圈图像是由一个大框架将音乐巧妙连接而形成的结构。这与对行星运动的研究相呼应，该研究中，NASA通过用于发送卫星以探索宇宙的8000个数学术语精确捕获行星的运动。这些术语是行星运动对应图像的基础。音圈图像的特征之一是它们的表现形式（射影）。在数学中，通过在天文行星运动图像之间绘制直线以创建运动图像，而音调图像的射影仅由点组成。通过这种方式能制作出更精美的动态图像。当按下琴键时，激光传感器检测到该运动并用将一个或多个音调的间隔用视觉化的形式表现出来。结果是固定的，且与艺术家在房间中演奏的音调序列相对应。但这至少是现场制作音圈图像的客观场景。

相较于光琴而言，音圈图像代表了由间隔触发的过程的最后阶段，在最终表现出来。

音圈图像可以描绘和弦，旋律以及交响乐的所有阶段。在Hans Jenny的后续研究中，可以通过艺术视觉形式观看旋律和作曲家的个人阶段作品。由Hans Jenny 和Ernst FlorensChladni (Chladni声像, 音高镜 (Jenny为上述实验设备eidophone取的名字))开启的研究在音圈图像中得到延续。作品的创作离不开创作的行动。音圈图像使音乐作品中选定的片段可视化。艺术（音乐）和科学（通过艺术和数学的射影）再次得到平衡。HeinrichSchütz的短片已被选入本次展览：来自“赐予我们和平”中的“和平”，莫扎特的木星交响曲以及圣日耳曼的音乐作品。

三联画

三联画将相同的音圈图像显示了三次。他们以Atmani的声乐作品（“秘密”，赞歌）作为基础。图片下方的名字描述了合唱中使用的词。

在图片的左右两边，我们分别可以看到光明和黑暗，天理和女性原则，灵魂的阿尼姆斯（女性心中的男性意象）与阿尼玛（男性心中的女性意象）。从观众的角度来看，左边是光明面，右边是黑暗面。中间则是连接两个对立面的角色，是我们——人类的反映。植物染料制成的画作（丝印）能展现出最美的运动轨迹，中间部分的任务不仅是连接两个对立面，还需要产生集约化。中间的图像总是由Atmani手绘而成。三联画的名称：

他看着迹象华丽的出现
我是
复活了
在新的国度
有十字架和玫瑰

光琴

此处介绍的光琴尚不存在。当艺术家演奏时，激光传感器检测到了琴键的运动。钢琴演奏者控制着通过视觉化投射到墙上的音调。此外，艺术家还能开启众多色彩。在艺术家的引导下，音调中的音素被投射到墙上，且充满色彩。Scriabin在他的普罗米修斯话剧中成为这项技术的首位执行者，当时两种声音被设置成光线。但当时在演出的过程中，光线未经转化直接传达给观众。然而，通过这个光琴，艺术家可以通过科学的过程（音圈图像），转化一切。

合作

今天：
搜索文化之间的交锋
寻找共同基础
我们今天如何看待世界？
有可能为这个世界带来和谐吗？
了解我们的根源？

目前为止，这个世界以两种形式展现出来。曾经有一度，这个世界不是靠看，而是靠听来感知的。毕达哥拉斯派通过倾听来感知世界。Akroasis=听力是他们对世界的沉思的核心。这意味着由听而引发的哲学。

在毕达哥拉斯派出现不久后，中国出现了一位音乐大师。他写道：

“音乐源自于远古时代。音乐从大地中出现，根植于伟大。伟大产生两极（1 / n←1/1→n / 1），两极中出现黑暗与光明的力量。

所有事物的根源来自伟大。他们形成和走向完美的过程存在于光明与黑暗的双重性中。种子一旦落下，便会发展成一种形式 “。[2]

让我们在此逗留片刻。

难道如今我们不能通过听觉来感知吗？将所有珍贵的事物织入未来的生活文化之线中。从看和听开始?艺术可以帮助我们理解与探索

[2] Lü Bu We: Chunqiu - Spring and Fall of Lü Bu We, Chapter 2
吕不韦：《吕氏春秋》，第二章

-光琴-

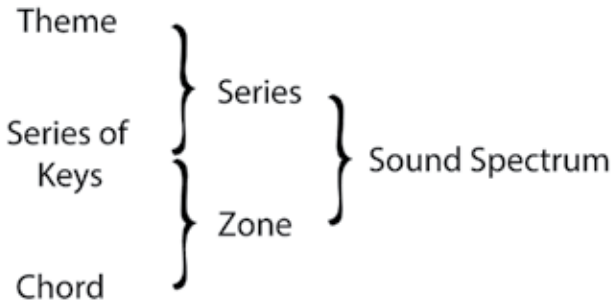
作者Atmani

音乐家和画家一直对声音和色彩之间的关系感兴趣。在音乐中，我们谈论一个音符的音色或颜色，在绘画中，我们谈论一种颜色的色调或音高。

许多艺术家都在寻找绘画与音乐作品之间的关系。第一个这样做的是Modest Mussorgsky，他以Viktor Hartmann的照片作为基础，创作了作品“在展览上绘画”。在Goethe, Runge, Johannes Itten, Kandinsky 和Jawlensky提出的色彩理论时，许多艺术家都在探究音符、声音和色彩之间的关系。

1911年，Alexander Skrjabin开创了一个新的阶段，他将两个在普罗米修斯中被光“唱出”的“声音”写入乐谱。自1992/93年在莫斯科看到普罗米修斯的乐谱后，作者Atmani就一直在探索如何将音符、声音和色彩在一个设备中连接。
* *
*
Atmani与工程师和计算机科学家Ralf Tita博士合作，这使他的愿景得以实现。工作的第一步是开发音圈图像，这是音符的数学射影。该方法能将一个音符通过圆圈的形式描绘出来，第二个音符即形成第二个圆圈，但是当两个音符同时出现（间隔）时，就形成一个特定的结构图。[3]

Alexander Skrjabin和Rudolf Steiner博士都设计了为音调分配颜色的方案。在该技术的进一步发展中，装置在钢琴键盘下的激光传感器记录键盘的运动并将测量数据发送到计算机。计算机计算音圈图像和色彩，然后将其实时传送到房间的投影面/墙壁。在这个过程中，一部分音调总是分配到一个基本色，这是由钢琴演奏者在曲子的某个特定阶段选择的，与钢琴的琴键-颜色-声音无关。原理是是俄罗斯音乐理论的发展和Yuri Kholopov教授创作的曲目，该理论将声谱视为现代音乐的开端。如果Debussy和Wagner的音乐只是音调，那么这两种音乐都逐渐成为一种取代音调顺序的声谱。



3 Originally, the Tone-Circle-Images were explored in relation to the motion of the astronomical planetary movements.

最初，音圈图像用于探索关于天文行星运动的运动。

比如，，　Skrjabin的普罗米修斯是建立在普罗米修斯合唱的基础之上的。此后，声谱成为作曲的起点。基色表示和加强了声谱的基本风格，而与各音符相关的色彩描绘了内部运动。音圈图像产生的形象也可以通过颜色来区分，清楚地显现了曲子中元素之间的张力。

钢琴演奏者通过一个类似于教堂风琴一样的混合器来控制大钢琴。这是光琴的运作模式，而随着发光技术的改进，光自身便可以改变颜色。

直到现在，声音、颜色和形式还是分离的。在光琴中，他们组成一种新的大型仪器，触动观众和钢琴演奏者的感官。

这项设计归功于RalfTita博士在Atmani伴随下的多年努力。Ralf　Tita博士吸纳了Atmani的意图和愿景，并且独立地执行了Atmani所支提倡的技术。

将声音视觉化是音流学的主要组成部分。因此，光琴是音流学这项新艺术的完美展，人们沉浸在栩栩如生的音调、声音和颜色重，而同时保持艺术与科学（色彩和音调图像）之间的平衡。

世界首场光琴演奏将于2017年4月26日在中国北京当代艺术博物馆（MOCA）由俄罗斯作曲家和钢琴家Nina　　Aristova出演。她将表演曲目：Atmani的”Manengesang“（灵魂赞歌）中的“EsistNacht“(夜已深)。

在Werstatt-Atmani的副展”光的突破“和Pashmin艺术与北京MOCA共同举办的展览”合作“（2017年4月26日至6月10日）中，光琴将会成为一大亮点。

Atmani, 三月/四月2017

音乐家和艺术家一直对声音和色彩之间的关系感兴趣。在音乐中，我们谈论一个音符的音色或颜色，在绘画中，我们谈论一种颜色的色调或音高。

许多艺术家都在寻找绘画与音乐作品之间的关系。第一个这样做的是Modest Mussorgsky，他以Viktor Hartmann的照片作为基础，创作了作品“在展览上绘画”。在Goethe, Runge, Johannes Itten, Kandinsky 和Jawlensky提出的色彩理论时，许多艺术家都在探究音符、声音和色彩之间的关系。
1911年，Alexander Skrjabin开创了一个新的阶段，他将两个在普罗米修斯中被光“唱出”的“声音”写入乐谱。自1992/93年在莫斯科看到普罗米修斯的乐谱后，作者Atmani就一直在探索如何将音符、声音和色彩在一个设备中连接。

Atmani与工程师和计算机科学家Ralf Tita博士合作，这使他的愿景得以实现。工作的第一步是开发音圈图像，这是音符的数学射影。该方法能将一个音符通过圆圈的形式描绘出来，第二个音符即形成第二个圆圈，但是当两个音符同时出现（间隔）时，就形成一个特定的结构图。

Alexander Skrjabin和Rudolf Steiner博士都设计了为音调分配颜色的方案。在该技术的进一步发展中，装置在钢琴键盘下的激光传感器记录键盘的运动并将测量数据发送到计算机。计算机计算音圈图像和色彩，然后将其实时传送到房间的投影面/墙壁。在这个过程中，一部分音调总是分配到一个基本色，这是由钢琴演奏者在曲子的某个特定阶段选择的，与钢琴的琴键-颜色-声音无关。原理是是俄罗斯音乐理论的发展和Yuri Kholopov教授创作的曲目，该理论将声谱视为现代音乐的开端。如果Debussy和Wagner的音乐只是音调，那么这两种音乐都逐渐成为一种取代音调顺序的声谱。

比如，, Skrjabin的普罗米修斯是建立在普罗米修斯合唱的基础之上的。此后，声谱成为作曲的起点。基色表示和加强了声谱的基本风格，而与各音符相关的色彩描绘了内部运动。音圈图像产生的形象也可以通过颜色来区分，清楚地显现了曲子中元素之间的张力。

钢琴演奏者通过一个类似于教堂风琴一样的混合器来控制大钢琴。这是光琴的运作模式，而随着发光技术的改进，光自身便可以改变颜色。

直到现在，声音、颜色和形式还是分离的。在光琴中，他们组成一种新的大型仪器，触动观众和钢琴演奏者的感官。这项设计归功于RalfTita博士在Atmani伴随下的多年努力。RalfTita博士吸纳了Atmani的意图和愿景，并且独立地执行了Atmani所支提倡的技术。

将声音视觉化是音流学的主要组成部分。因此，光琴是音流学这项新艺术的完美展，人们沉浸在栩栩如生的音调、声音和颜色重，而同时保持艺术与科学（色彩和音调图像）之间的平衡。

世界首场光琴演奏将于2017年4月26日在中国北京当代艺术博物馆（MOCA）由俄罗斯作曲家和钢琴家Nina Aristova出演。她将表演曲目：Atmani的”Manengesang“（灵魂赞歌）中的“EsistNacht“ (夜已深)。

Atmani is an artist, researcher, composer, singer, author and teacher, whose entire life is dedicated to exploring the tension between image and sound in relation to humans. He has studied composition in Moscow at the Tschaikovski Conservatory, has a diploma in Waldorf education and runs various training in Art and Science. Atmani gathers together people in his workshop who work with him and are involved in artistic research. In 2000, he founded the „House of Song“ and is the initiator of the World Cymatics Congress.

Dr. Ralf Tita is an engineer, computer scientist and lecturer. He works in close collaboration with Atmani and organized the first World Cymatics Congress. Research work in the “House of Song”, under the direction of Atmani, led to the successful development of a new mathematical, image forming process the Tone-Circle-Images make the harmonic effects of sound phenomena visible.

Nina Aristova was born in Moscow. She began her musical education with Olga Muchortova, a student of Sergei Rachmaninoff. She graduated with distinction as a concert pianist, composer and conductor at the Moscow Tchaikovsky Conservatory; then she completed postgraduate studies. She received various international prizes and awards.

Atmani是一位艺术家，研究者，作曲家，歌手，作家和老师，他的一生都致力于探索与人类相关的形象和声音之间的紧密联系。 他在莫斯科的柴可夫斯基音乐学院学习作曲，拥有华尔道夫教育学学位，并提供各种艺术和科学培训。Atmani将同事与参与艺术研究者聚集在自己的工作室。 2000年，他创立了“颂之家”，并成为世界音流学大会的发起者。

Ralf Tita博士是一名工程师，计算机科学家和讲师。 他与Atmani合作密切，并组织了第一届世界音流学大会。在Atmani的指导下，“颂之家”成功开发了一种新的数学的“音圈图像”形成过程，使声音现象的谐波效应可见化。

Nina Aristova出生于莫斯科。 她曾与Sergei Rachmaninoff 的学生Olga Muchortova一起学习音乐。 她是一名钢琴演奏家，作曲家和导演，毕业于莫斯科柴科夫斯基音乐学院， 此后，她完成了研究生学习。 她曾获各种国际奖项。