

LIGHTSCAPE RECORDINGS

Ars Magna Lucis et Umbrae:  
Of Projection, Illusion and Allusion

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## Exploring Lightscares

When looking for light, I have to begin in darkness. I find that at night, the subtle glow of my alarm clock is bright enough to illuminate everything well enough for me to be able to orient myself in the bedroom. The dark and dim allow for the faintest glow to shine even stronger and our eyes, our perceptual system, can easily adapt to the circumstances and we can see, nevertheless.

I am looking for methods to control light to achieve degrees of lightness or darkness, and tints of colours, to stimulate awareness and to prompt the senses.

“Control over light, and its mediations through visual technologies, matters because it alters the constitutive grounds of sensing, knowing, and relating to one another and to the world. The genealogy of visual technologies traces a historical dialectic between the urge to control, even to fascistic excess, and the constant reemergence of entropy in the interstices of devices designed to curtail and command the excess of light.”

Sean Cubitt, *The Practice of Light: A Genealogy of Visual Technologies from Prints to Pixels* (Cambridge, MA: MIT Press, 2014).

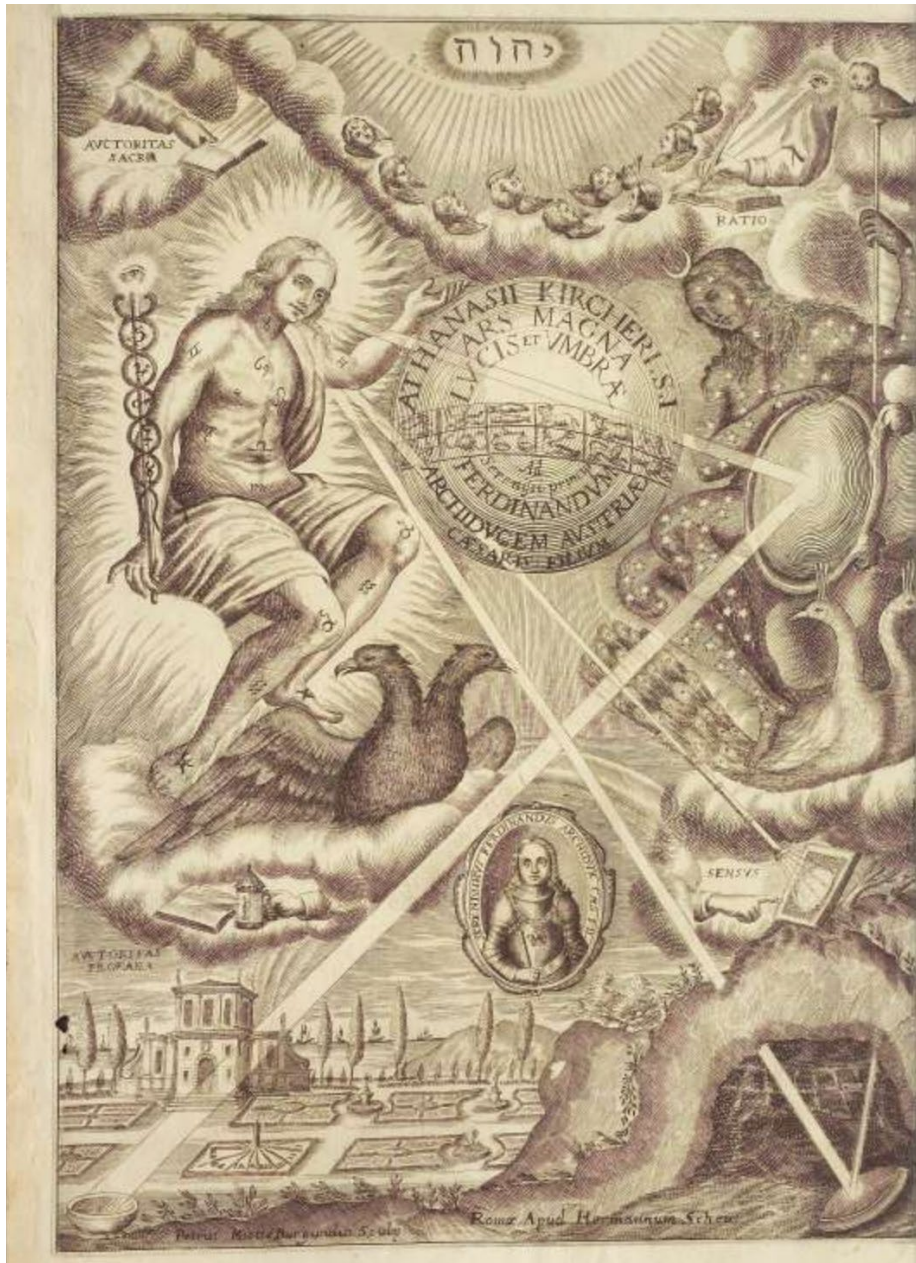
# Ars Magna Lucis et Umbrae, The Great Art of Light and Shadow: Of Projection, Illusion and Allusion

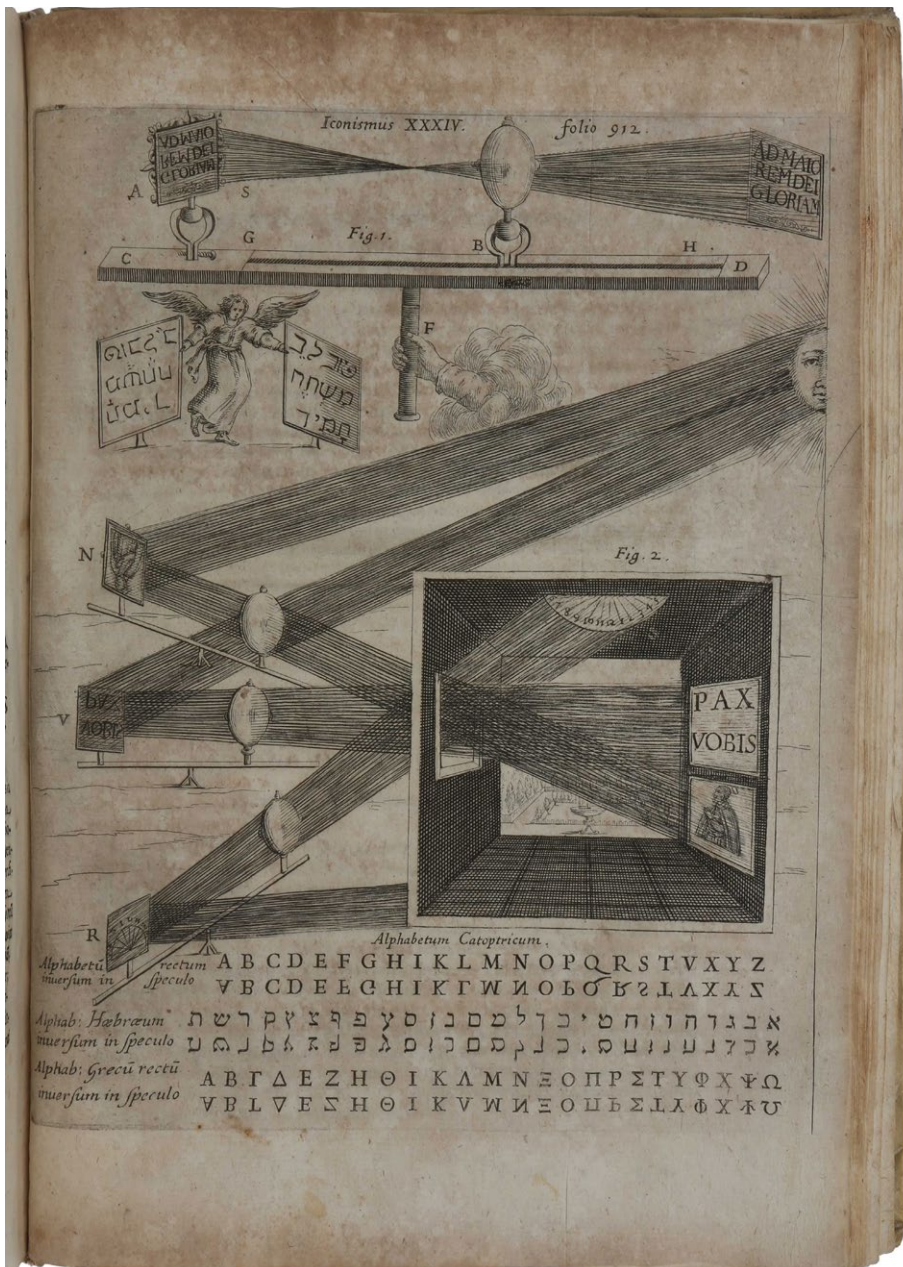
In 1646 the German Jesuit scholar Athanasius Kircher (1602-80) published the first edition of his book *Ars Magna Lucis et Umbrae*, an extensive work that deals with all kinds of knowledge related to light and shadow, optics, illumination and projection of images. In 1671 a second edition was published that also contained a description of a magic lantern. The book is divided in ten parts. The first chapters are rather theoretical and consider the nature of light, colour and shadow, the sun, moon and the planets. In the other parts, he also describes several of his technical inventions and instruments, amongst the magic lantern and a steganographic mirror. <sup>1</sup>

Kircher's magna opus is deeply embedded in Christian mysticism of the early Enlightenment when philosophical and mathematical pursuits were linked with theology and metaphysics. In Christian tradition light metaphors are abundant. Kircher believes that God is the source of divine light (lux) which is not directly visible. Kircher shows that the emanation of light from its divine source to the world needs the assistance of instruments, mirrors and lenses to then be made visible through various reflections and refractions – as visualized on the *Ars Magna's* frontispiece.

Left: Frontispiece of Kircher's (1671) *Ars Magna*, engraved by Petrus Miotte of Burgundy. Athanasius Kircher, *Ars magna lucis et umbrae*. (Amsterdam: Janssonius van Waesberge, 1671), <http://diglib.hab.de/drucke/94-2-quod-2f/start.htm?image=00008>.

Next page:  
Kircher's engraving of the art of mirror writing (or projecting) "Catroptic Steganography" on page 792 in *Ars magna lucis et umbrae*. (913 in the 1646 edition) <http://diglib.hab.de/drucke/94-2-quod-2f/start.htm?image=01031>.





Kircher's spectacle mirror inventions are entertaining, but also imply moral tests, states Vermeir, and they test layers of perception of different realities. "Every reflection is another step that is removing us from the original light," he writes.<sup>2</sup> On the one hand, the technical inventions make it possible to perceive the (divine and corporeal) light, but on the other hand, these contraptions make us more and more removed and in consequence make it more difficult to obtain a sense of place and time.

Similarly, Cubitt argues that even today the "control over light, and its mediations through visual technologies, matters because it alters the constitutive grounds of sensing, knowing, and relating to one another and to the world."<sup>3</sup>

In Kircher's instruments the corporeal light, the visible symbol of divine light is staged – made to perform through the technical contraptions – as in the camera obscura or in his steganographic mirror. The steganographic mirror is a primitive projection system with a focusing lens and mirrors to project text or pictures that are painted on the mirrors by reflecting sunlight. Those projections enter a darkened space and are mostly intended for long distance communication of meaningful messages. Although, Kircher also suggested to use live flies and shadow puppets placed on the mirrors to project other dramatic performances.<sup>4</sup> Kircher describes this performative tool as a "Catoptric Steganography", and "if we are to believe that the magic lantern anticipated the slide-show, Kircher's Catoptric Steganography was the early modern version of the PowerPoint presentation," details Gorman this early projector.

This new technology of projection devices, such as the steganophic mirror as well as the magic lantern, caused astonishment to the audience as their projections created strange apparitions that were also considered as devilish. They embodied different notions of 'illusion' as seen in the early seventeenth century. "As a technical wonder, it could be seen as a trick, an allusion or an illusion (a real illusio as a rhetorical figure)," writes Vermeir and elaborates further: "The illusion (il-ludere) is elusive (e-ludere) but also allusive (al-ludere) and points to a hidden meaning and a higher reality."<sup>5</sup> These illusory projections were considered devilish for their effect or sometimes also defined as magic that "is marvelous and goes beyond the sense and comprehension of the common man", explains Gorman further.<sup>6</sup>

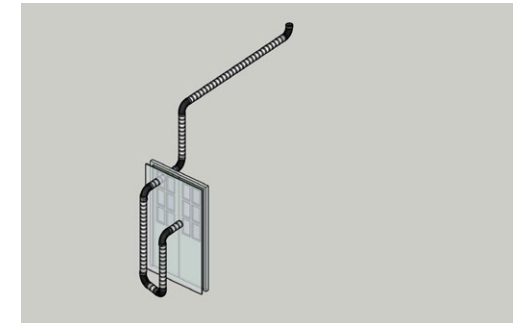
#### Transfer

Understanding the nature of light was one of the central ideas of philosophy and science in the Enlightenment that was also entwined with religious beliefs. Likewise, this magical notion of allusion in Kircher's projection work, Vermeir sees deeply embedded



into the tradition of Jesuit reading. He explains that the Jesuit reading was not only to collect information, but that the Jesuits were looking for aesthetic pleasure. “Their reading had a different rhythm. They searched for anchor points for concentration and meditation. Their reading of texts and images was meant to stimulate the senses, memory and the imagination, in order to prepare for a particular meditative practice,” he writes.<sup>7</sup>

In my research, a projection doesn’t denote to this seventeenth century idea of devilish allusion nor do I express metaphysical phenomenona, but I align my research with the technological development of early projectors such as the Catoptric Steganography or the magic lantern by Athanasius Kircher. A projector is an optical device that can project a still or moving image onto a surface. I use several kinds of projectors in my work, the periscope and overhead projectors. My intention is likewise inspired by Kircher’s Jesuit contextual motivation for seeking knowledge: to stimulate the senses, to create memory, imagination and allusion.



Left: PVC pipe structure on Kaitak campus

Right: Sketch for the periscope design

<sup>1</sup> Koen Vermeir, “Athanasius Kircher’s Magical Instruments: An Essay on ‘Science’, ‘Religion’ and Applied Metaphysics,” *Studies in History and Philosophy of Science Part A* 38, no. 2 (2007): 363–400, <https://doi.org/https://doi.org/10.1016/j.shpsa.2007.03.008>.

<sup>2</sup> Vermeir, 387.

<sup>3</sup> Sean Cubitt, *The Practice of Light: A Genealogy of Visual Technologies from Prints to Pixels* (Cambridge, MA: The MIT Press, 2014), 3.

<sup>4</sup> Michael John Gorman, “Projecting Nature in Early-Modern Europe,” in *Inside the Camera Obscura*, ed. Wolfgang Lefèvre (Berlin: Max-Planck-Institut für Wissenschaftsgeschichte, 2007), 44.

<sup>5</sup> Koen Vermeir, “The Magic of the Magic Lantern (1660–1700): On Analogical Demonstration and the Visualization of the Invisible,” *British Society for History and Science* 38, no. 2 (2005): 154, <https://doi.org/doi:10.1017/S0007087405006709>.

<sup>6</sup> Gorman, “Projecting Nature in Early-Modern Europe.”

<sup>7</sup> Vermeir, “Athanasius Kircher’s Magical Instruments: An Essay on ‘Science’, ‘Religion’ and Applied Metaphysics,” 391.



## Apparatus for Enlightenment 2021

PVC pipe, mirror, magnifying lens, light

### Periscope

A periscope is an optical instrument to observe over, around or through an object or obstacle that prevents a direct line of sight from the observer's current position.<sup>8</sup> Apart from allowing observation it also channels rays of light through its structure. It can connect the outside with the inside.

For my research I experiment with different kinds of projections to create light effects. I built a periscope-like structure in the work *Apparatus for Enlightenment* that brings in (day) light from outside into the gallery space. It creates a subtle glow of light and colour that is projected onto the white wall. The periscope is placed in the darkened area of the exhibition just before entering the large space with the main light installation. This darkened area with only minimal light additions – mainly the light spillage from the other area – is meant to foster a visual cleansing process between the vibrant and bright exhibition of pre-existing work and the newly created colour-sensitive *Lightscape Sequence*. The darkened area intends to balance out the senses and the vague glow of projected outside light is meant to calibrate the visual system.

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<sup>8</sup> Bruce H. Walker, *Optical Design for Visual Systems* (Bellingham: SPIE Press, 2000).

This documentation of the artwork and the artwork *Apparatus for Enlightenment* is submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

On Lightscares:  
Exploring the Aesthetics and  
Narrativities of Light and Colour  
in Contemporary Hong Kong

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