

MANAGING MOHOLY

LÁSZLÓ MOHOLY-NAGY'S PHOTOGRAMS IN THE COLLECTIONS OF
THE ART INSTITUTE OF CHICAGO AND GEORGE EASTMAN HOUSE

By

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in partial fulfilment of the
requirements for the degree of
Master of Arts

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Managing Moholy
László Moholy-Nagy's Photograms in the Collections of
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Photographic Preservation and Collections Management
Ryerson University and George Eastman House

The Art Institute of Chicago (AIC) and George Eastman House International Museum of Photography and Film (GEH) have acquired substantial collections of László Moholy-Nagy's work, spanning his entire career. Using four photograms by Moholy-Nagy, two from each institution, as representative examples, this thesis examines how the AIC and GEH have dealt with his work through an examination of the acquisition, exhibition, publication, preservation, and conservation of his photographs. The unique nature of Moholy-Nagy's photograms, coupled with the myriad experimental techniques he employed in their production, has necessitated that the AIC and GEH establish policies and procedures for the care and long-term preservation of photographic objects of this nature, through the development and implementation of exhibition and loan standards as well as highly monitored storage conditions. This thesis includes an overview of the museums, a detailed analysis of each photogram, and a discussion of the collections management concerns these objects raise.

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To my parents for their never-ending love and support,
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Introduction

Although they may not have been produced with the intent of being placed within the venerable walls of a museum's photographic collection, the photograms produced by László Moholy-Nagy (American, born Hungary, 1895–1946) have come to be regarded as pre-eminent examples of the manipulation and organization of light. Through various printing and toning techniques, the use of different paper bases, and experimentation with different kinds of light modulators, Moholy-Nagy gradually developed a sophisticated understanding of the use and capabilities of the reactions of silver salts to both natural and artificial light. For Moholy-Nagy, photograms are, at their most basic level, "...direct light diagrams recording the actions of light over a period of time, that is, the motion of light in space."¹ This interest in the properties and qualities of light provided the focus and central pre-occupation of his work not only in photography but also in all of the other media in which he worked.

The Art Institute of Chicago (AIC) and George Eastman House International Museum of Photography and Film (GEH) have substantial collections of Moholy-Nagy's work, spanning his entire career. Using four photograms by Moholy-Nagy, two from each institution, as representative examples, this thesis examines how the AIC and GEH have dealt with his work by studying and comparing the process of the acquisition, exhibition, publication, preservation, and conservation of his photographs at both of these museums. The nature of Moholy-Nagy's photograms has afforded each museum the opportunity to establish a programme for the preservation, storage, and use of photographically based images that are, in the case of Moholy-Nagy's photograms, unique, experimental, and in many cases chemically unstable. These photograms must be preserved and also made available to researchers and the general public; these sometimes conflicting demands raise many issues of concern for these museums. In turn, the practices and policies that have been developed by these institutions for these images can be applied to similar objects

produced by other photographers that are held within these and other museum collections.

The first chapter provides an historical overview of the AIC and GEH, briefly summarizing the evolution and cultural purposes of the institutions, their photography collections, and their storage and research facilities, in order to establish a context for the works by Moholy-Nagy in their collections. The following chapters address Moholy-Nagy's photograms. The second chapter provides an overview of his involvement with photograms while the third and fourth chapters contain a detailed analysis of four of his photograms, describing their creation, provenance, and histories within the two institutions, with particular attention to their housing, exhibition, and publication histories. The final chapter contains my reflections on the collections management issues and concerns raised by the comprehensive study of these objects. Finally, there are appendices that contain the complete cataloguing records of the four photograms as well as illustrations to support this thesis.

Overview of the Institutions

The Art Institute of Chicago (AIC)
Chicago, Illinois

Museum and Photography Department History

Founded as the Chicago Academy of Design in 1866 and renamed the Chicago Academy of Fine Arts in 1879, when its Michigan Avenue doors opened in 1893, it was as The Art Institute of Chicago (AIC), which it had been renamed in 1882.¹ A commitment to both the exhibition and education of the arts has been intrinsic to the museum from its beginning to the present. The current mission statement of the institution states that the AIC is dedicated to not only “form, conserve, research, publish, and exhibit a permanent collection of objects of art” but to also “establish and conduct comprehensive programmes of education” (see Appendix 1a). This dual function of the institution, as both a museum and as an art school, has allowed it to increase its collections of new works while maintaining collections that provide students with the opportunity to learn the history and importance of art in society. Accordingly, the AIC is today the largest and oldest joint art museum and art school in the Midwest, United States.

Since its modest beginnings at the end of the nineteenth century, the collections of the AIC have grown exponentially, through both donations and purchases, to currently include fifteen departments, each dedicated to the acquisition and exhibition of a variety of materials and genres.² The Photography Department, initially part of the Prints and Drawings Department, began collecting photographs in 1949 with the acquisition of a group of Alfred Stieglitz photographs selected and donated by his executor Georgia O’Keeffe. In 1951, the first-floor galleries, where the AIC bookstore is currently located, were dedicated to the exhibition of photography, and from 1951 to 1957 the majority of the photographic acquisitions and exhibitions were organized by Peter Pollack and funded by the Publicity Department. It was not until 1959 that that acquisition and exhibition of photographs was given a formal budget and Hugh Edwards was appointed the first Curator of Photography.

Later, in 1974 the Photography Department was officially separated from the Prints and Drawings Department.³

The creation of the Photography Department was followed by an acquisition that was to situate the AIC among the major photographic collections in the United States—the Julien Levy collection of 224 photographs. Acquired from 1975 to 1979 directly from Julien and Jean Levy through a combination of gifts and a purchase facilitated by the Special Photography Acquisition Fund, this is a collection of early twentieth century European photographs. At the forefront of this collection is a group of thirteen photographs by László Moholy-Nagy, whom Levy met during a trip to Berlin in the summer of 1930.⁴ In 1997, the AIC began actively collecting the archive of Irving Penn, and to date this is the only photographer's archive the AIC collects. The continued acquisition of the Penn archive further situates the AIC Photography Department among the major collectors of contemporary photography. Today, the AIC Photography Department houses a collection of over 17,500 photographic objects.⁵

Photography Department Facilities

When photography was first collected at the AIC it was stored in the Prints and Drawings vault, and thereby, the storage and handling of photographs has followed the traditions and conventions of storing works on paper. In 1981, the Photography Department was renovated and relocated to its current locale. The Mary L. and Leigh B. Block Photography Study Room, which also houses the photography vault (see Appendix 2a), is located on the lower level of the museum, immediately adjacent to the permanent photographic galleries. Chief Curator David Travis, in collaboration with Conservator Doug Severson, designed the current research and storage facilities, which were developed with the preservation, conservation, and access to the photographs at the forethought of planning.⁶

Open by appointment to both individual researchers and groups, the Photography

Study Room provides an ideal environment for the viewing of photographs having both research tables and a large double-tiered print rail. The Study Room maintains artist files that are kept separately from the records of the rest of the museum. These artist files are continually updated with information about new photographers as well as previously existing parts of the photographic collection. Additionally, there is a card catalogue of the photography collection, the maintenance of which has lapsed in recent years largely due to the implementation of the in-house database system, CITI. All of these resources are available to researchers at the AIC.⁷

When they were first implemented in 1981, the new photographic storage facilities made the AIC the first institution in the United States to have a cold storage vault designated for "fine art" purposes.⁸ The vault is divided into two sections: the "cooler," which is maintained at sixty degrees Fahrenheit (sixteen degrees Celsius) and 40 percent relative humidity, and the "freezer," which is maintained at forty degrees Fahrenheit (four degrees Celsius) and 40 percent relative humidity. The "cooler" vault contains all historic processes and black and white photographic materials. All colour photographs and digital materials are stored in the "freezer" vault, which requires a twenty-four hour acclimatization period before requested objects may be viewed. The entirety of the Photography Department, including the vaults, study room, offices, and conservation laboratory, provides a continuously controlled environment for the photographs.⁹

Within the vaults, the photography collection is arranged alphabetically by artist's last name, with the exception of the Alfred Stieglitz collection, the Julien Levy collection, and the Irving Penn archive, which are stored separately. All photographs stored are matted and stored in Solander boxes, each containing approximately eight to fifteen prints. Unframed photographs, larger than 20 by 24 inches (50.7 by 61 centimeters), are matted and stored in flat file drawers; larger framed photographs are stored vertically in the AIC's "closet storage" system. Due to storage restrictions, the Photography Department has recently approved the storage of photographs in a Mylar sleeve supported by a piece of two-

ply mat board. Additionally, the AIC is considering the possibility of off-site storage to house less requested parts of the collection.¹⁰

George Eastman House International Museum of Photography and Film (GEH)
Rochester, New York

Museum and Photography Department History

Chartered in 1947 as the George Eastman House Museum of Photography, by 1949 George Eastman's house had been transformed from one man's home and gardens into a museum dedicated to not only the art and technology of photography and film, but also to serving as a memorial to the life and legacy of George Eastman. Undergoing several name changes, the museum was formally renamed George Eastman House International Museum of Photography and Film (GEH) in 1992.¹¹ Since its inception GEH has been mandated to "collect and preserve objects that are of significance to photography, motion pictures, and the life of George Eastman" (see Appendix 1b). GEH is the world's oldest museum specifically dedicated to photography and one of the oldest film archives.¹²

The development of the photography collection began in 1948 when Beaumont Newhall was hired as the first photographic curator of GEH. Newhall established the acquisition policies and focused the collections, which have grown to today include five departments: Photography, Motion Pictures, Technology, the Library, and the Eastman Legacy. The comprehensiveness of its photography and film collections, from the earliest inventions to the most modern advances of these mediums, has come to be the hallmark of GEH. The cornerstone of GEH's Photography Department is the Gabriel Cromer collection of 5,000 nineteenth century French photographs, as well as various photographic books and technological apparatuses, which was acquired from Kodak in 1949. Later acquisitions allowed GEH to develop into one of the pre-eminent photographic collections in the world. In 1951, GEH received Alden Scott Boyer's extensive collection of approximately 13,500 photographs by nineteenth century British and American photographers, and to cite another

significant acquisition, in 1977 GEH acquired what has come to be known as the Siple/3M archive (Louis Walton Siple's collection of approximately 70,000 American photographs and photographic reproductions). At GEH today, the Photography Department alone heralds a collection of over 400,000 photographic objects.¹³

Photography Department Facilities

Due to the rapidly increasing size of its collections, GEH underwent a renovation and expansion of its facilities during the 1980s. Prior to construction, the storage, research, and exhibition spaces were located within the mansion, leaving little space for maintaining the integrity of the original functions of the rooms when George Eastman was alive. Completed in 1989, the new archive building, located directly behind the house, provided new and larger exhibition galleries, vault storage, and research facilities, which permitted the rooms of the mansion to be restored as a historical site.

Designed in part by GEH Chief Archivist David Wooters and Assistant Archivist Joe Struble, the new research and storage spaces were built specifically for the study and preservation of photographic objects. Located in the basement of the new building, the Gannett Foundation Photographic Study Center contains staff offices, researcher tables, a print rail, and provides access to the photography vault (see Appendix 2b). Maintained at sixty-five degrees Fahrenheit (eighteen degrees Celsius) and 40 percent relative humidity, the vault houses virtually the entire photographic collection; additional vaults, both on and off-site house the motion picture, technology, library, and legacy collections. Although GEH does not have a cold storage vault system for photographs, there is a freezer located in a room adjacent to the vault, the purchase of which was made possible by the generosity of photographer and board member John Pfahl to the museum. This freezer contains a limited number of colour photographic materials; by and large these are duplicate preservation prints of work stored in the main vault. Due to continuing concerns surrounding the preservation of colour photographic materials, GEH is considering the possibilities of off-site

cold storage.¹⁴

The objects in the vault are stored in a variety of ways: photographs that have been exhibited are housed in window mats, while those that have not been exhibited are stored in a Mylar sleeve that is supported by a piece of four-ply mat board; albums, cased images, and panoramas are stored, when applicable, in standardized Solander boxes. For larger works specialized housings are developed on a case-by-case basis. The arrangement and storage of the objects in the vault is a reflection of the use and requests made upon the collection. The main holdings of the collection, that encompass the history of the medium, are stored alphabetically by photographers' last name. In some instances works are stored separately based upon their processes, notably albums, stereograph cards, cased images, photomechanical works, and early colour processes. Additionally, select parts of the collection are organized by subject matter, which is often ethnographically driven.¹⁵

Within the archive there is a card catalogue of objects in the collection and a series of exhibition files. Outside the curatorial offices a series of artist files are maintained for major components of the collection and for artists whose work is currently being researched by GEH staff. The registrar's office maintains provenance files for the objects in the collection, which includes information about the individuals and companies previously associated with the works now held by the museum. Although much of the information in these files has lapsed in recent years, they still serve as essential sources of information about the photography collection, exhibitions and publications, and the history of the institution. Much of this institutional and collection information can now be found in The Museum System (TMS) database, which GEH began using in 2003 after migrating from their in-house database system, Adabas. The migration to TMS was spurred by a need for a database that could be shared by all of the departments in the museum, as well as the creation of the George Eastman House/International Center of Photography (GEH/ICP) Alliance, which necessitated a database that could be used easily by both institutions.¹⁶

Moholy-Nagy's Works In the Collections

Although he never worked at either the AIC or GEH, László Moholy-Nagy's connections to these museums and his influence on each of their photographic collections are significant. Moholy-Nagy built numerous relationships during his lifetime that later served as the basis and rationale for museums acquiring his works. Interestingly, approximately one third of both the AIC's and GEH's collections of work by Moholy-Nagy are his photograms. In addition to these photograms, both the AIC and GEH have collected photographic and non-photographic works by Moholy-Nagy; the AIC has collected camera-generated photographs and paintings, and GEH has collected camera-generated photographs, photomontages, drawings, and 35mm films (see Appendix 3a–3b and Appendix 10). Thus, both the AIC and GEH strive to represent Moholy-Nagy as not only a photographer, but also as an artist whom employed multiple mediums in the exploration of light, and this is the context in which his photograms need to be viewed.

Spending the last years of his life in Chicago, Moholy-Nagy's influence on young photographers, the continuation of his own photographic experiments, and the establishment of the Institute of Design, make him an important figure whose works should be collected by the local museums and educational institutions. As a result, all of the photographs by Moholy-Nagy that the AIC has acquired have strong provenances: from Levy acquiring the photographs from Moholy-Nagy himself, to a large photogram given to the AIC by George Barford, who was given the work by Moholy-Nagy as a birthday present when they collaborated on photogram experiments at the Institute of Design in Chicago, Illinois.¹⁷

Similarly at GEH, Newhall's long-standing friendship with Moholy-Nagy benefited the museum in 1956 when Sibyl Moholy-Nagy approached him about purchasing a selection of works by her late husband. As Newhall noted: "I am touched by Mrs. Moholy's letter, in which she states that she is offering them [...] because of the encouragement and help which I gave her husband."¹⁸ Through subsequent acquisitions GEH increased its collection

of works by Moholy-Nagy to include not only his camera-generated photographs, but also his photograms, photoplastics, drawings, and 35mm films, of which the latter are housed by the Motion Picture Department.

László Moholy-Nagy and his Photogram Experiments

First explored through painting, light quickly became the central focus and pre-occupation of Moholy-Nagy's artistic career. As a young Hungarian artist Moholy-Nagy adopted Russian Constructivist ideals for the production and orientation of forms upon a surface, initially on a painter's canvas and later on a photographer's paper. Frustrated by the limitations of pigment on canvas to record "the reality of direct light effects,"¹ Moholy-Nagy began to use light directly to create forms and textures, a concept he never abandoned. Not surprisingly, in all areas of his work, from painting and photography to sculpture and teaching, Moholy-Nagy was determined to manipulate and explore what light was capable of achieving: "...my work since those days has been only a paraphrase of the original problem, light. I became interested in painting-with-light, not on the surface of canvas, but directly in space."² Using light he explored and manipulated the concepts of transparency and texture.

Ultimately, it was in the photogram that Moholy-Nagy found a means to work most directly with light. By placing various objects between the sensitized surface of the photographic paper and the light source, whether it was the sun, a darkroom's enlarger, or hand-held lights, he was able to control the intensity with which the paper absorbed the available light. The photogram is a unique photographic object, having no negative of the image before it was printed on the paper; the image on the paper is a singular record of the experimental moment to record light. For Moholy-Nagy the photogram became the key to understanding the fundamental principles of photography, and through the photogram he was able to combine his Constructivist desire to create art through mechanical and technological means, while simultaneously continuing his exploration of light.

Moholy-Nagy began experimenting with the photogram in the summer of 1922. Working closely with his first wife Lucia (née Schulz) Moholy, these early photograms are objects used to investigate the possibilities of combining various photographic papers and

light conditions. For Moholy-Nagy the photogram was a collaborative effort to combine the shadows of solid objects with those of transparent and translucent items. In order to create a broader range of textural effects on the photographic surface, he would combine objects with various light effects, which included the use of liquids, lenses, mirrors, crystals, and multiple light sources, to produce photograms.³ In his 1923 essay, "Light, A Medium of Plastic Expression," for *Broom* magazine, Moholy-Nagy described his experiments with light passing through a variety of mediums, which included "fluids like water, oil, acids, and crystal, metal, glass, tissue, etc.," to observe their changes to the light, which were then recorded in his photograms.⁴

The production of the photogram was not only about the manipulation of light, but also the investigation of the surface of the photographic paper. The use of various paper bases, sizes, and toners provided Moholy-Nagy with a further means to experiment with recording light to create a photogram. Moholy-Nagy's earliest photograms were produced on brown toned printing-out-paper that was developed in the daylight. Often referred to as daylight paper by Moholy-Nagy and by Lucia, this paper base offered him the opportunity to observe the development of the image upon the paper: "If one puts an object on sensitized paper and exposes it to the sun or to diffused daylight, within a short time one can observe the formation of the contours of the object and its shadow in bright layers on a dark ground."⁵ Printing-out-paper allowed Moholy-Nagy to work slowly to explore the recording properties of the photographic paper. The ability to observe the process of the development gave Moholy-Nagy the advantage of being able to fully manipulate and guide the creation of the image as it appeared before him.

Moholy-Nagy first began using developed-out-papers to produce photograms in 1926, when he and Lucia moved with the Bauhaus from Weimar to Dessau, and they finally had access to a fully-equipped darkroom.⁶ While the use of developed-out-papers allowed him to more fully manipulate and modulate light sources, as well as the objects placed upon the sensitized surface of the paper, it did not allow him to observe the direct creation of the

image as had been the case with printed-out-papers. Rather, Moholy-Nagy was forced to wait through the development process to view the result of his efforts. Yet, the darkroom did have its advantages: "By using multiple light sources, sometimes moved by hand around the arranged objects, and often exposing paper more than once, he built up a range of light tones and textures far removed from the simple formality of the outline."⁷ The use of multiple light sources, various angles, and multiple exposures gave Moholy-Nagy greater control over the final product. Additionally, the creation of photograms in the darkroom, coupled with the greater resources to his disposal through his work at the Bauhaus, Moholy-Nagy was able to produce photograms on larger sheets of photographic paper.

Prior to the move to Dessau in 1926, Moholy-Nagy and Lucia had worked on carte-postales and smaller-sized papers, a practice they continued through the 1920s. As Lucia later recalled: "trying to keep the expenses down, we limited ourselves to sizes up to 13 by 18 cm during the initial period and never exceeded the 18 by 24 cm format."⁸ The size limitation and the need to reduce expenses from their experimental endeavors led them to use printing-out-paper, which was cheaper and still readily available in contrast to the newer and more expensive developed-out-papers.

Throughout their experiments of the 1920s they continued to use relatively small paper sizes, on both printing-out and developed-out papers. Yet, the small paper size did not limit Moholy-Nagy in his explorations. Although the original photogram is a unique image, Moholy-Nagy often copied these works directly to create a reversed image; "Moholy used this technique often to study its effects on texture and composition."⁹ In order to achieve this effect, Moholy-Nagy would contact print the original photogram by placing it in registration with a second unexposed sheet of photographic paper. He would then shine a light through both papers; thus, transferring the image of the original negative photogram to the new copy photogram that is a positive image. In addition to creating versions of the original photogram by contact printing, Moholy-Nagy would create enlargements from the original; however, this was not feasible until at least 1926, when he and Lucia had a fully-

functional darkroom at their disposal. Lucia has recounted that she would photograph, through the use of a traditional film and camera combination, the photograms that she and Moholy-Nagy had created. From these negatives, duplicate images and enlargements were printed. However, Lucia always stressed that the original photogram retains its integrity as the unique object and the subsequent copies are, simply that, copies: "The original photograms continued to be unique when I subsequently reproduced them by conventional means, via the camera."¹⁰ Just as photographic reproductions of paintings or sculptures, Lucia's negatives did not diminish the claim of the original photogram to being the unique and valued object.

Moholy-Nagy's photogram experiments in the late 1930s through the 1940s, most often produced in the darkroom on developed-out-paper, were much larger than the earlier experiments of the 1920s and early 1930s. During this time, Moholy-Nagy still emphasized the importance of first creating photograms on printing-out-paper before moving into the darkroom. At the School of Design (later the Institute of Design) in Chicago, Illinois, where he began teaching in 1939, the photogram on printing-out-paper became fundamental to the instruction of the students: "This paper darkens when exposed to daylight and permits the student to watch the entire photographic process in its most elementary form. This is often his first conscious approach to the subtle gradation scale of light to dark which this medium offers."¹¹ Later, the creation of photograms on developed-out-paper could be used to build upon the understanding of light from observing the development of the image in the daylight. Therefore, his students followed a similar investigation of photography as Moholy-Nagy had undergone himself in the 1920s. An extension of controlling the light striking the photographic surface, Moholy-Nagy developed what he called "light modulators" and used them in the production of his photograms. Essentially, a light modulator is any object that changes the way in which rays of light strike an object and are then reflected. In his teaching, Moholy-Nagy instructed students to create "...light modulators out of paper or other materials which can be bent or molded or cut to produce the various shapes, textures,

etc.," and which can then be used to produce photogram experiments.¹² By combining the light modulator with various lighting situations numerous compositions by light became possible. In a review of Moholy-Nagy's achievements, Beaumont Newhall summarized his preoccupation with the photogram and with light:

Moholy reveled in the photogram, cameraless photography. Objects laid on sensitive paper modulate the light, creating patterns of black-gray-white. The photogram maker's problem has nothing to do with interpreting the world, but rather with the formation of abstractions. Objects are chosen for their light-modulating characteristic: their reality and significance disappear. The logical end point of the photogram is the reduction of photography to the light-recording property of silver salts.¹³

Moholy-Nagy's larger-formatted photograms contain more abstracted imagery than his smaller works of the 1920s. In his later photograms he moved away from his Constructivist roots to include fewer recognizable geometric forms. Additionally, these photograms exhibit signs of being produced using multiple light sources, mirrors, suspended objects, as well as multiple exposures and various toners to achieve subtly differentiated surface affects. Light created the forms, and the varying means of modulated light, through deflections, reflections, and obstructions, created different textures.

The Early Photograms

Created in the early 1920s while living in Berlin, these photograms—*Untitled (Photogram)*, 1922 in the collection of the Art Institute of Chicago and the positive and negative images *Untitled (Photogram)*, 1926 in the collection of George Eastman House—demonstrate Moholy-Nagy's burgeoning understanding of light, both its manipulation and registration upon the surface of photographic papers. Additionally, these photograms are not only the visual record of the experimentation used in their creation, but are also a record of the often uncharted life of art works as they travel from a private collection or gallery to a museum.

Untitled (Photogram), 1922 (AIC)

Untitled (Photogram), 1922 (see Appendix 4) entered the collection of the AIC in 1979 as part of a purchase by the Special Photography Acquisition Fund of the Julien and Jean Levy collection. While visiting Berlin in the summer of 1930, Levy purchased this photogram from Moholy-Nagy; the verso inscription in Moholy-Nagy's own hand reading, "für Levy, Moholy-Nagy, 1922," is evidence that documents both its very early date of production and Levy's acquisition of it.¹

Created in 1922 when Moholy-Nagy was just beginning to experiment with light on photographic materials, *Untitled (Photogram)* is one of the earliest documented examples of his attempts to use light itself in the development of imagery upon a surface. Typical of his early photograms, it has been created on printing-out-paper; the warm brown tones of the image are characteristic of this paper. Its early date and being produced on photographic postcard stock increases the rarity of this image, the small size of which invites the viewer to a close, intimate experience. Comprised of similar structural components that can be found in his other postcard photograms from 1922, Moholy-Nagy's *Untitled (Photogram)* depicts geometric forms that undulate between light and dark areas. The juxtaposition of

rectangular, linear forms with circular shapes continually moves the eye of the viewer around the composition without letting it settle upon a single area. The transparency of the perpendicular strips and circular forms, arranged at angles within the composition dematerializes the perceived sense of space. Just as in a Constructivist painting, this photogram simultaneously divides and unifies the space while creating subtle tonal variations that are reminiscent of the layering of paint upon a canvas: "...Moholy's photographs are using and at the same time testing Constructivist theories of perception and composition as applied to reality."² Thus, through building layers of light an image is created that contains both abstracted forms and a surface texture, or facture, created by layering light upon a photographic surface, rather than interpreting the light by layering paint upon a canvas.

This photogram is in a very stable condition, which the AIC's conservator of photography, Doug Severson, believes is the result of the image having been toned during its production. The addition of a toner to the surface of a photograph replaces much of the remaining silver in the paper with a more stable chemical; unfortunately, the specific toner Moholy-Nagy applied to *Untitled (Photogram)*, 1922 is unknown, which complicates the identification of specific deteriorations to the photogram that are potentially related to the chemicals in the toner.³ In order to ensure the longevity of this photographic object it is stored in the AIC's "cooler" vault where it is housed in a Solander box. The photogram's primary housing is a modified window mat construction, where three pieces of mat board have created a reverse sink mat in order that the object is simultaneously supported and entirely visible through the window opening.⁴

Since its acquisition, this photogram has been included in three major exhibitions, a testament to its importance to both the AIC and its place in the history of photography. These exhibitions include: "The Julien Levy Collection: Starting with Atget," which was first shown at the AIC in 1976, and was seen at two further venues through 1977; "Moholy-Nagy: Photography and Film in Weimar Germany," originally shown at the Wellesley College

Museum in Wellesley, Massachusetts in 1985, and then traveled to two other venues through 1986; and "On the Art of Fixing a Shadow: 150 Years of Photography," initially shown at the National Gallery of Art in Washington, D. C. in 1989 and two subsequent venues through 1990.⁵ While this photogram was not in the collection of the AIC during the 1976 to 1977 Levy collection exhibition, it was on extended loan and plans were underway for its acquisition.⁶

During this same time period, the image was reproduced in the two catalogues accompanying the exhibitions and one publication. It was included in the catalogues: *Moholy-Nagy: Photography and Film in Weimar Germany*,⁷ and in *On the Art of Fixing a Shadow: 150 Years of Photography*.⁸ In addition to these catalogues, the image of *Untitled (Photogram)*, 1922 was reproduced for the first time in Andreas Haus' 1978 book *Moholy-Nagy: Fotos und Fotogramme*. This publication introduced a broader audience to rarely seen photographic objects created by Moholy-Nagy, which greatly fueled the ensuing popularity of his works, particularly photograms. Yet, the reproduction is not entirely faithful to the original image, which is depicted as a halftone reproduction and much larger than its actual size.⁹ Thus, the subtle brown tones and the intimacy of the photogram is lost upon viewers who have not had the benefit of viewing the original object.

Untitled (Photogram), 1926 (GEH)

The positive and negative images, both entitled: *Untitled (Photogram)*, 1926, entered the GEH collection as part of a larger purchase of Moholy-Nagy's works in 1956.¹⁰ Newhall worked on behalf of GEH to purchase this collection, which includes camera-generated photographs, photograms, photoplastics, and 35mm nitrate based films, from Sibyl Moholy-Nagy. Initially, these works were catalogued according to Newhall's card cataloguing system, which was used from the 1950s through the 1970s. In 1981, GEH renumbered all of the works in the collection that still retained old accession numbers, including these objects by Moholy-Nagy, and in 1989 these works were fully cataloged in

the Adabase database system.¹¹

As a broadening of his early photogram experiments, Moholy-Nagy created this related pair of photograms after he and Lucia moved to Dessau, Germany in 1926 to continue teaching at the Bauhaus. At this time they did continue to create photograms on printing-out-paper, but access to a fully-functional darkroom allowed them to experiment with light in new ways to produce these photograms, both of which are developed-out-prints, produced using the electric light of an enlarger.¹² The negative image (see Appendix 5a–5b), with its strong black background was created first and the second positive image (see Appendix 6a–6b) was subsequently produced by contact printing the first photogram with a sheet of photographic paper to produce a positive image. Of the two photograms, the first negative image with its black background is a stronger, more abstract image that fully emphasizes the void of the unknown and the objects that unwittingly float there. Additionally, Moholy-Nagy's graphite inscription on the verso of both of these photograms: "neben einander," which translates as "next to one another," indicates that Moholy-Nagy intended these photograms to be viewed together, in order that their visual differences might play against one another.

While still maintaining a link to abstract geometric objects, the imagery in these photograms is beginning to move away from Moholy-Nagy's ties to Constructivist aesthetics, which can be seen in his earliest photograms from 1922, to more fully explore the possibilities of light passing through objects that are suspended between the light source and the surface of the paper. The twisting form that floats in the middle of the composition undulates between the imagined foreground plane of the image and the receding background. The circular form at the bottom of the image grounds the viewer with its pure tonal qualities (almost completely black or white) and refers the viewer back to the ethereal object hovering above. Similar to the later photograms Moholy-Nagy produced and used in his teaching at the Institute of Design in Chicago, the floating form was most likely created through the use of either a light modulator or a construction by one of his students, which

would have been suspended by wires between the light and the photographic paper.¹³

Recent research has aided in clarifying the date of these images. Originally dated by GEH as "circa 1922," the knowledge that Moholy-Nagy did not work with developed-out-papers until he and Lucia moved to Dessau in 1926 refutes this date.¹⁴ Additionally, the same positive and negative images were included in the 1995 exhibition and illustrated in the accompanying catalogue—*László Moholy-Nagy: Compositions Lumineuses 1922–1943; Photogrammes des collection du Musée national d'art moderne—Centre de création industrielle, Centre Georges Pompidou, Paris, et du Museum Folkwang, Essen*. Now in the collection of the Museum Folkwang in Essen, Germany, these are smaller photograms (negative image: 8.3 x 6.2 centimeters and positive image: 8.2 x 6.2 centimeters) and have been dated to 1926, by ink inscriptions, in Lucia Moholy's hand, on the versos.¹⁵ Given that Lucia stated they never worked larger than 18 by 24 centimeters in the 1920's in an attempt to reduce costs, it is likely that these smaller photograms at the Museum Folkwang are the original photograms and those held by GEH are copies Moholy-Nagy later produced. Lucia often photographed the photograms they produced, from which Moholy-Nagy took the negatives and produced enlarged copies of the original images.¹⁶ Thus, while the photograms at GEH are original works by Moholy-Nagy, they are most likely later enlargements.

Both of these photograms are presently housed in individual window mats, where paper corners have been used to secure the prints. Concern for the continued security and preservation of these photograms has given GEH Conservator Jiuan-jiuan Chen reason to be troubled by their current housing conditions. Ultimately, Chen would like to have these photograms removed from their current housings and placed into sink mats, where there would be no paper corners or hinges directly applying pressure to the surface of the objects. Overall these two photograms are in fair condition with some graying of the highlights, slight silver mirroring of the dark areas, and minor abrasion to their surfaces and edges.¹⁷

Although never shown at GEH itself, these photograms have been included in three

exhibitions, and reproduced in the accompanying catalogues, as well as in one publication. The only exhibition in which the AIC's 1922 postcard photogram was displayed along side these photograms from GEH was the 1985 to 1986 exhibition "Moholy-Nagy: Photography and Film in Weimar Germany," which was first shown at the Wellesley College Museum in Wellesley, Massachusetts and subsequently traveled to another two venues. The other two exhibitions are: "The Art of Photography: 1839–1989," originally shown at the Museum of Fine Art in Houston, Texas in 1989, and subsequently seen at two further venues through 1990, and "László Moholy-Nagy," initially shown at the Institut Valencià d'Art Modern (IVAM) Centre Julio González in Valencia, Spain in 1991 and traveled to two additional venues during the same year.¹⁸

These photograms were reproduced in the exhibition catalogues: *Moholy-Nagy: Photography and Film in Weimar Germany*,¹⁹ *The Art of Photography: 1839–1989*,²⁰ and in *László Moholy-Nagy*.²¹ Yet, none of these publications reproduced the full objects. In these instances the images were cropped at the edges, going so far as to remove the signature stamp on the recto of the positive photogram. The neglect to include the signature stamp is presumably the result of the same reproduction prints of the photograms being used for these publications, which thereby misrepresents the photographic objects. Yet, there have been two occasions where the signature stamp was included in the reproduction: Andreas Haus' 1978 book *Moholy-Nagy: Fotos und Fotogramme*, and in 1999 as part of GEH's submission to the Art Museum Image Consortium (AMICO) online catalogue of works held by museums. In Haus' book, the photograms have been fully reproduced as halftone, yet the catalogue information does not date the images.²² In contrast, AMICO dates these photograms to circa 1922 in addition to fully reproducing their images. Although AMICO is no longer operational, these photograms from GEH, along with several other works from the photography collection, are available to view and study through the Catalog of Art Museum Images Online (CAMIO) that is operated by the Research Libraries Group (RLG).²³

The Late Photograms

Moholy-Nagy's later experiments with the photogram clearly exhibit his continued passion for exploring the problem of light and how to record its ephemeral nature. Having moved away from easily recognizable geometric forms, these late photograms are devoid of an identifiable subject or object used to diffract the light as it came into contact with the photographic paper. Additionally, Moholy-Nagy by-and-large abandoned the smaller sized photograms of the 1920's in favor of larger formatted sheets of photographic paper that provided him with a greater surface area to experiment upon. Produced while he was living in Chicago and teaching at the Institute of Design, these photograms—*Untitled (Photogram)*, 1939–1940 in the collection of the Art Institute of Chicago and *Photogram (Toned)*, 1939 in the collection of George Eastman House—demonstrate Moholy-Nagy's mature, yet full of child-like curiosity, response to the qualities of light. These photograms exhibit similar characteristics to the photograms produced by his students at the Institute of Design; Moholy-Nagy often used this technique in his introductory photography courses, which often led to collaborative efforts with both colleagues and students.

Untitled (Photogram), 1939–1940 (AIC)

Untitled (Photogram), 1939–1940 (see Appendix 8) was donated to the AIC by George and Ruth Barford in 1968. Upon entering the AIC, this photogram was accessioned, catalogued, and stored by the Prints and Drawings Department until the creation of the Photography Department in 1974.¹ While teaching from February 1939 to June 1940 at the Institute of Design in Chicago, Illinois, George Barford met and collaborated with Moholy-Nagy on numerous photogram experiments; however, there is no evidence to show that they collaborated on this particular image. Barford received this photogram as a birthday present from Moholy-Nagy. The handwritten impression on the recto of the photogram "To Barford Moholy-Nagy" was an annotation Moholy-Nagy rarely inscribed to the front of an

image, more often inscribing the back of the work.²

Untitled (Photogram), which the AIC has dated to circa 1940, was most likely created during the span of time when Moholy-Nagy and Barford were acquainted, 1939 to 1940, since it is consistent in size and tonal qualities as other photograms produced during these years. The striking contrast between the light and dark areas suggests the use of an intense lighting source, and the placement of objects between the paper and the light source would have caused the photographic paper to absorb the light at different rates of intensity. The fluidity of the forms suggests multiple light sources coupled with the use of either fabric or paper forms used as light modulators. Additionally, the lines spiraling from the right side towards the centre of the image are reminiscent of a wire structure that was either laid upon or suspended above the photographic paper.

Exhibiting some silver mirroring and minor tears along the edges, *Untitled (Photogram)*, 1939–1940, is on the whole a stable photographic object, the only additional conservation concern being the recto graphite inscription. For its protection, *Untitled (Photogram)*, 1939–1940 is housed in the “cooler” vault of the AIC, where it is stored in a Solander box, with a window mat as its primary housing. Within the window mat, the photogram is dry mounted to the backing four-ply mat board and a sheet of glassine interleaving protects the photogram’s surface.³

Untitled (Photogram), 1939–1940 has been included in two exhibitions, on both occasions the AIC was one of the venues, and it was reproduced in the accompanying catalogues. This photogram was first seen in the exhibition: “Moholy-Nagy: Photography and Film in Weimar Germany,” which traveled for a year from 1985 through 1986.⁴ Almost two decades later it was included in the AIC exhibition “Taken by Design: Photographs from the Institute of Design, 1937–1971,” which was originally exhibited at the AIC in 2002 and traveled to two further venues through early 2003. In the accompanying catalogue: *Taken by Design: Photographs from the Institute of Design, 1937–1971*, the halftone reproduction of the photogram, while representing the image, is not faithful to the integrity of the subtle

golden brown tones in the object itself.⁵

Photogram (Toned), 1939 (GEH)

Exhibiting similar tonal qualities as the AIC's *Untitled (Photogram)*, 1939–1940, this photogram is a prime example of the experimentation and abstraction of forms in Moholy-Nagy's later photograms. *Photogram (Toned)*, 1939 (see Appendix 7a–7b) has survived as a unique photogram of abstract forms and multiple tones on developed-out-paper. Purchased by Beaumont Newhall from Sibyl Moholy-Nagy in 1956, along with the rest of a collection of works by her late husband, this photogram strengthens GEH's collection of works from Moholy-Nagy's Chicago period.⁶ The imagery of this large abstract photogram appears to be the result of multiple light sources shone upon the paper from various angles and using various paper and fabric items to change the light as it came into contact with the surface. Numerous sweeping "v" shapes, moving from the corners of the photogram towards the centre, keeps the eye of the viewer within the frame of the print, while never allowing it to rest in a single area. The pronounced three-dimensionality of the image is a result of the layering of light and shadows that work together to create the appearance of depth and texture. Select areas of the photogram do suggest the use of wire or metallic forms to manipulate the light. The broad white areas were possibly masked out to prevent light from striking the paper surface; visible brush strokes across the surface of the photogram suggest the addition of a substance, possibly the toner, to the surface. Additionally, the subtle surface texture indicates that some form of translucent paper or tissue was placed over the photogram while it was exposed to the light.

Although *Photogram (Toned)*, 1939 was toned, it is now exhibiting signs of severe deterioration; however, it is unclear whether this is due to past handling and storage conditions or is a result of the object's production. It is most likely a combination of these two situations. The photogram is displaying brown and cream tones, most likely from the toner used, rather than the more traditional blacks, whites, and grays of untuned gelatin

silver photographs. There are several unexplained tones throughout the photogram, which may or may not be related to the production of the work. The photogram is yellowing overall, which is separate from the yellow colour at the edges of the print. This yellow colour at the edges of the photogram is residual paint. At some point, this photogram was mounted to a backing board and a yellow paint was applied to the edges, the residue of this paint is the remaining evidence of the previous housing of this object. Silver mirroring can be found in the majority of the dark areas, yet there is a chemical component within the surface of the paper that is preventing the silver mirroring from migrating to all of the dark areas. The object is extremely fragile and the unknown chemical composition of the photogram increases its sensitivity to light exposure. The corners of the photogram are weak, showing cracks in the emulsion as well as areas where the paper base, as well as the emulsion layer, have been torn away from the entire object. The pattern of the cracking coming from the corners illustrates that the handling of the object has increased the overall pattern of the emulsion cracking. Additional cracks across the photogram's surface are due the lack of moisture (relative humidity) at some point during its storage, which restricted the print from laying flat, and therefore, the gelatin emulsion was subjected to shrinking and cracking across its surface.⁷

Unfortunately, the current housing of *Photogram (Toned)*, 1939 is doing little to protect the fragility of the print. Stored in a Solander box with other photograms by Moholy-Nagy this photogram's primary housing is a piece of four-ply mat board used to support the object that is covered by a Mylar sleeve. While this method of housing protects the surface of the photogram, it also has the potential to cause further harm to an already unstable object. GEH Conservator Chen would like to see this photogram removed from its current housing and placed in a sink mat, which would support the object without causing further damage to its unstable paper base and emulsion. Furthermore, Chen wants the print stabilized, including the consolidation of the creased areas and mending the tears at the edges.⁸

Due in large part to the fragility of *Photogram (Toned)*, 1939 there are no records of it having been loaned or exhibited by GEH. GEH Conservator Chen has indicated that she would be willing to have this unique object in an exhibition as long as it was only shown in-house where it could be closely monitored. The photogram is too fragile to be loaned and travel to an outside venue.⁹ Although *Photogram (Toned)*, 1939 has not been in any exhibitions, it was reproduced as part of GEH's 1999 contribution to the Art Museum Image Consortium (AMICO), now CAMIO.¹⁰

Collections Use and Practices

The Art Institute of Chicago and George Eastman House alike have developed and implemented a series of regulations for the preservation of these unique photographic objects. While both museums make their collections readily available to researchers and for inclusion in temporary exhibitions both within and outside their institutions, the conservators at the AIC and at GEH have noted that these photograms are unique photographic objects that must be protected during their storage and exhibition. The origin of these photograms, including Moholy-Nagy's experimental processes and their provenances, has greatly increased their stature as historically significant cultural objects. These are examples of early twentieth century work that explored the intrinsic qualities, characteristics, and capabilities of the photographic medium. Moholy-Nagy's photograms stripped photography of its camera and negatives to (re)discover the latent capabilities of the medium that William Henry Fox Talbot had experimented with in 1839—to record the imagery that results from a chemically sensitized surface being subjected to light.

At the AIC, both Chief Curator David Travis and Conservator Doug Severson are acutely aware of the need to preserve Moholy-Nagy's photograms for the future, as seen in their collaboration on the design of the AIC's photographic workspace and vaults and the policies and procedures they have developed for the storage, handling, and exhibition of photographs under their care. Part of this preservation strategy is limiting the access to the collection storage vaults to only the AIC Photography Department staff members; volunteers, interns, and visiting researchers are not permitted regular access. Thus, access to the storage vault and the handling of the photographic collection is limited to a select group of individuals.¹

Yet, Severson's paramount concern for the collection is not with the people handling the works, but rather, with the atmospheric conditions in which these objects must reside, and the continuous monitoring of these facilities. While in storage, the museum is most

easily able to control the environment of their objects; the greater challenge comes from the maintenance of these temperature and relative humidity levels without impeding the regular use of the objects in class demonstrations and by researchers in the study room and their inclusion in temporary exhibitions both within and outside the AIC. Specifically, Severson has noted the necessity to regulate the temperature and relative humidity, more than the amount of light exposure, for Moholy-Nagy's photograms while in storage and on exhibition. Care and concern for these photograms is especially vital during periods of transition from the vault to the walls of gallery, be it at the AIC or another museum. As a result of the AIC's diligence in maintaining the conditions that these photograms are subjected to, they are today overall stable photographic objects. Severson has noted that their current storage, including the primary mat window housings, are in accordance with his requirements for this type of unique photographic object, and given that they are currently showing no signs of increased deterioration he would do nothing to alter the AIC's means of storing Moholy-Nagy's photograms.²

The explicit guidelines that must be adhered to for the use of collection materials in both exhibitions and publications are paramount to the AIC's preservation actions. The AIC is open to loaning the photograms in their collection by Moholy-Nagy, and while there are no specific restrictions governing the loan of these photograms or similar materials from the early twentieth century, the requesting institutions are required to submit to the loan conditions as delineated by the AIC. All venues are required to provide information about their environmental conditions during the transit, storage, and display of all loaned works, which meet the criteria of the AIC. In addition, venues must also adhere to the amount and intensity of light that the objects may be exposed to, the inclusion of security measures for both vaults and galleries, the methods by which the works must be secured to the walls, and the maintenance and control of the temperature and relative humidity levels within a prescribed range. For illustrations in publications, institutions are required to include the credit line as required by the AIC and to adhere to the reproduction policies regarding the

use of any object in publications and/or publicity materials. Any reproductions requested for these purposes will be furnished by the AIC.³ All loans of Moholy-Nagy's photograms have followed these regulations when they have been exhibited at other institutions and when reproduced in accompanying exhibition catalogues.

Similarly, GEH is equally concerned with preserving their photographic collections through the continued maintenance and monitoring of its research and vault facilities, the regulation of the length of time individual objects are exhibited, and the implementation of a strict conservation policy, particularly for heavily requested and used items from the collection. The new photographic vault and the limited staff access to the collection, serve to immediately protect the works from over handling and unnecessary usage. Maintaining stricter vault access than the AIC, GEH limits vault access to the curators and archivists. Other staff members, as well as researchers, who want to view and/or work with objects from the collection, must request the items in advance from the archivists, David Wooters and Joe Struble, one of whom will bring them from the vault to the study room to be viewed.⁴

GEH Conservator Jluan-jluan Chen is foremost concerned with the handling of the photographs at GEH. While access to the objects in the collection is intrinsic to the mission statement of GEH, the viewing, for example, of both the recto and the verso of a print, increases the photograph's chances for damage, for each time a photograph is removed from its housing the potential for damage increases. Chen noted this concern with the positive and negative photograms *Untitled (Photogram)*, 1926, both of which now display signs of having been removed from their housing for their versos to be viewed (the linen tape and paper corners have been cut and then re-adhered). It is Chen's position that the authority to remove these photograms, albeit any object in the collection, from its housing should be made and carried out by the conservator.⁵ Without regulating the means by which objects may be removed from their housings, particularly where those housings are meant to be permanent, the opportunities to damage the edges and corners of the prints increases

exponentially.

While there are no regulations specifically outlined for photograms, or similar photographic objects, GEH does carefully review each instance that a photograph is requested for inclusion in an exhibition or reproduced in a publication. In line with its mission to preserve photographs for perpetuity, certain objects in the GEH photography collection are restricted in use as denoted by the label placed on the verso of the object's housing: "Due to conservation concerns it has been determined that this image should no longer be loaned or exhibited." Although this policy has been established, Chen has also stated that it is not strictly adhered to and functions more as a deterrent to prevent the over-use and over-exposure of fragile objects in the collection. While there are objects in the collection, some photograms in particular, that Chen would not permit to be exhibited at venues outside of GEH, she would be willing to have them shown at GEH, where they could be monitored on a daily basis. Yet, Chen did note, it would be a rare occasion to have these fragile objects shown, even in-house.⁶

Photogram (Toned), 1939 is one such object now deemed unfit for exhibition purposes, and it has had a restriction label since 1997. This photogram, which Chen would like to have rehoused in a sink mat to further reduce the potential for surface damage, is undergoing a myriad of deteriorations. It is currently unclear as to whether these conditions are the result of its production, its subsequent handling, or a combination of the two. Therefore, Chen wants to complete a technical analysis of this object to determine the base of the paper and what the chemical components are residing in or on the surface of the photogram.⁷ Given sufficient time and funding, Chen would rehouse and analyze all of the Moholy-Nagy photograms. However, a project of this breadth is not possible; thus, Chen will review only those objects that are visually exhibiting the greatest conservation concerns. Thereby, Chen will be able to make recommendations for the housing and preservation of not only Moholy-Nagy's photograms, but also photograms by other photographers that are in the collection.

Conclusion

László Moholy-Nagy's life-long obsession with recording light unwittingly led him to become one of the pre-eminent photographic artists of the twentieth century. However, the proclivity of his works towards the experimental has led to increased concerns for their preservation, particularly the varied nature of his numerous photograms. Through detailed exhibition and loan standards, reproduction rights, and highly monitored storage conditions, The Art Institute of Chicago and George Eastman House International Museum of Photography and Film have undertaken and pursued the care of their significant collections of Moholy-Nagy's works. While both the AIC and GEH have acquired these works through varying means and from a number of prior owners, their stewardship has followed similar patterns to ensure these objects are available for researchers and the public now and are preserved for the future. The unique nature of Moholy-Nagy's photograms, coupled with the myriad experimental techniques he employed in their production, has allowed the AIC and GEH to establish programmes for the preservation of photographic objects of this nature.

Appendix 1a

The Art Institute of Chicago Mission Statement

The purposes for which the Art Institute of Chicago is formed are: to found, build, maintain, and operate museums, schools, libraries of art, and theaters; to provide support facilities in connection therewith; to conduct appropriate activities conducive to the artistic development of the region; and to conduct and participate in appropriate activities of national and international significance;

To form, conserve, research, publish, and exhibit a permanent collection of objects of art of all kinds; to present temporary exhibitions that include loaned objects of art of all kinds; and to cultivate and extend the arts by appropriate means;

To establish and conduct comprehensive programmes of education, including presentation of visual artists, teachers of art, and designers; to provide educational services to written, spoken, and media formats;

To provide lectures, instruction, and entertainment, including dramatic, film, and musical performances of all kinds, which complement and further the general purposes of the institute;

To receive in trust property of all kinds and to exercise all necessary powers as trustee for such trust estates whose objects are related to the furtherance of the general purposes of the institute or for the establishment or maintenance of works of art.

<<http://www.artic.edu/aic/aboutus/mission.html>>

Appendix 1b

George Eastman House Mission Statement

George Eastman House, an independent nonprofit museum, is an educational institution that tells the story of photography and motion pictures—media that have changed and continue to change our perception of the world. We:

- Collect and preserve objects that are of significance to photography, motion pictures, and the life of George Eastman.
- Build information resources to provide the means for both scholarly research and recreational inquiry.
- Keep and care for images, literature, and technology to tell the story of photography and the motion picture in history and in culture.
- Care of George Eastman's house, gardens, and archives, maintaining them for public enjoyment and as a memorial to his contribution to our lives and our times.

We do these things to inspire discovery and learning—supporting the education of a regional, national, and international audience.

<http://www.eastmanhouse.org/inc/the_museum/mission.php>

Appendix 2a

The Art Institute of Chicago
Mary L. and Leigh B. Block Photography Study Room



Figure 1

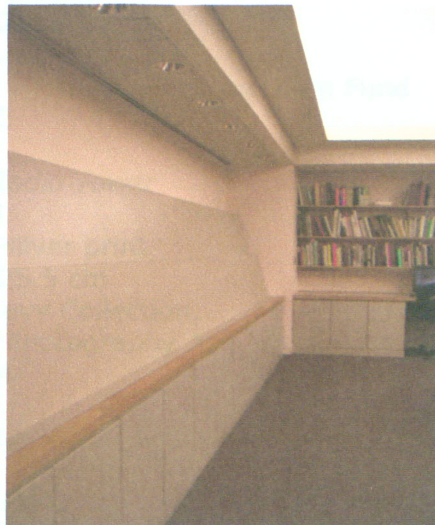


Figure 2

Appendix 2b

George Eastman House International Museum of Photography and Film
Gannett Foundation Photographic Study Center



Figure 3



Figure 4

Appendix 3a

Moholy-Nagy's Works in the Collection of The Art Institute of Chicago

Untitled (Photogram)

c. 1940
gelatin silver photogram
50.0 x 40.0 cm
Gift of George and Ruth Barford
1968.264

Untitled (Photogram)

1927
gelatin silver photogram
17.8 x 23.9 cm
Julien Levy Collection, Gift of Jean and Julien
Levy
1975.1142

Negative Portrait

n. d.
gelatin silver print
29.9 x 23.9 cm
Julien Levy Collection, Gift of Jean and Julien
Levy
1978.1089

Oskar Schlemmer, Ascona

1926
gelatin silver print
29.2 x 21.2 cm
Julien Levy Collection, Gift of Jean and Julien
Levy
1978.1090

Untitled (Photogram)

1922
gelatin silver photogram on postcard stock
13.9 x 8.9 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.81

Negative Cat

c. 1926
gelatin silver print
28.4 x 23.0 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.82

Untitled

1927
gelatin silver print
29.5 x 21.6 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.83

Berlin Radio Tower

c. 1928
gelatin silver print
36.0 x 25.5 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.84

View from Port Tranbordeur, Marseille

1929
gelatin silver print
29.5 x 22.1 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.85

Untitled

n. d.
gelatin silver print
23.6 x 26.3 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.86

Untitled

n. d.
gelatin silver print
35.5 x 25.8 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.87

Untitled

c. 1929
gelatin silver print
29.5 x 22.4 cm
Julien Levy Collection,
Special Photography Acquisition Fund
1979.88

Ellen Frank

1930

gelatin silver print

17.6 x 23.8 cm

Julien Levy Collection,

Special Photography Acquisition Fund

1979.89

Lucia Moholy on a Balcony, Ascona

c. 1926

gelatin silver print

34.8 x 25.0 cm

Julien Levy Collection,

Special Photography Acquisition Fund

1979.90

Untitled (Photogram)

n. d.

gelatin silver photogram

36.0 x 28.0 cm

Gift of Sally Petrilli

1985.919

Untitled (Photogram)

n. d.

gelatin silver photogram

41.0 x 50.2 cm

Gift of Sally Petrilli

1985.92

Untitled (Photogram)

c. 1923–1925

gelatin silver photogram

24.1 x 17.9 cm

Mary L. and Leigh B. Block Collection

1994.652

Appendix 3b

Moholy-Nagy's Works in the Collection of George Eastman House

Study with Pins and Ribbons

1937–1938

colour assembly process (Vivex)

34.9 x 26.5 cm

Gift of Walter Clark

1978:1421:0007

Laboratory

1938

gelatin silver print

27.1 x 34.7 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0001

Goerz

1925

gelatin silver photogram

30.0 x 22.4 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0002

Two Nudes

c. 1925

gelatin silver photogram

27.4 x 36.7 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0003

Photogram

1922

gelatin silver photogram

37.2 x 27.3 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0004

Ascona Yard, 1926

1926

gelatin silver print

50.2 x 40.0 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0005

Chairs at Margate, 1935

1935

gelatin silver print

36.9 x 29.5 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0006

Bauhaus Balconies, 1926

1926

gelatin silver print

49.5 x 39.3 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0007

Photogram

c. 1940

gelatin silver photogram

40.5 x 50.4 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0008

Superimposition

c. 1935

gelatin silver photogram

50.3 x 40.4 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0009

Dolls, 1926

1926

gelatin silver print

48.6 x 38.4 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0010

Eifersucht

1927

photoplastic with photographs,

photomechanical reproductions and drawings

63.8 x 56.1 cm

Museum Purchase,

ex-collection Sibyl Moholy-Nagy

1981:2163:0011

Photogram 41—Lightning Rod
c. 1924
gelatin silver photogram
50.4 x 40.4 cm
Museum Purchase,
Ex-collection Sibyl Moholy-Nagy
1981:2163:0012

Photogram, 1939
1939
gelatin silver photogram
48.7 x 59.4 cm
Museum Purchase,
Ex-collection Sibyl Moholy-Nagy
1981:2163:0013

Photogram
c. 1924
gelatin silver photogram
40.0 x 47.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0014

Photogram
c. 1940
gelatin silver photogram
50.1 x 39.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0015

Photogram
1939
gelatin silver photogram
39.5 x 30.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0016

Photogram, 1925
1925
gelatin silver photogram
29.8 x 39.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0017

Photogram
c. 1925
gelatin silver photogram
26.0 x 23.1 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0018

Photogram
c. 1925
gelatin silver photogram
26.1 x 23.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0019

Selbstbild
1925
gelatin silver photogram
37.3 x 27.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0020

Photogram
c. 1922
gelatin silver photogram
39.4 x 30.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0021

Self-Portrait, Berlin
1925
gelatin silver photogram
39.6 x 29.5 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0022

Photogram
c. 1922
gelatin silver photogram
38.4 x 28.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0023

Photogram, double portrait
c. 1923
gelatin silver photogram
31.6 x 27.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0024

Photogram
c. 1922
gelatin silver photogram
38.6 x 29.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0025

Goerz
1925
gelatin silver photogram
30.2 x 22.5 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0026

Fotogramm
1926
gelatin silver photogram
23.8 x 17.7 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0027

Marseille, Pont Transbordeur
1929
gelatin silver print
48.9 x 38.9 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0028

Maria Werefkin, Ascona
(negative print)
1929
gelatin silver print
37.5 x 27.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0029

Moholy-Nagy with Camera
1926
gelatin silver print
22.6 x 18.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0030

Rinnstein
1925
gelatin silver print
28.9 x 29.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0031

Portrait of a Child
(negative print)
1928
gelatin silver print
37.6 x 27.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0032

Fishbones, Norway
1930
gelatin silver print
37.9 x 28.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0033

Stage set "Tales of Hoffman," State Opera, Berlin, 1929
1929
gelatin silver print
21.8 x 38.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0034

Stage set "Madam Butterfly," State Opera, Berlin, 1929
1929
gelatin silver print
28.5 x 38.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0035

Two Nudes, positive
1925
gelatin silver print
27.2 x 36.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0037

Stairway in the Bexhill Seaside Pavillion
1936
gelatin silver print
50.5 x 40.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0038

Street Paving (Straßenpflasterung)
1929
gelatin silver print
35.4 x 25.7 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0039

Two Nudes, negative
1925
gelatin silver print
27.2 x 37.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0040

Brighton Roof Tops, 1936
1936
gelatin silver print
49.4 x 39.7 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0041

Ellen Frank, 1929
1929
gelatin silver print
37.0 x 27.7 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0042

Marseilles, Port View [Old Harbour]
1929
gelatin silver print
48.7 x 37.9 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0043

Reinforced concrete plane, Ascona, 1928
1928
gelatin silver print
49.7 x 40.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0044

View from the Pont Transbordeau, Marseille—Iron Column
1929
gelatin silver print
49.9 x 40.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0045

Sailing
1926
gelatin silver print
47.2 x 27.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0046

Shadow effects for the opera "Madam Butterfly," State Opera, Berlin, 1931
1931
gelatin silver print
58.1 x 78.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0047

Through the Fence, 1927
1927
gelatin silver print
49.8 x 39.9 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0048

Massenpsychose
1927
photoplastic
64.2 x 49.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0049

Leda and the Swan
1925
photoplastic
65.0 x 47.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0050

Das Weltgebäude
1927
photoplastic
64.9 x 49.2 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0051

Sculpture, Plexiglas, 1945
1945
gelatin silver print
18.4 x 24.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0055

Special effects for the H. G. Wells—A. Korda film, "Things to Come"
1936
gelatin silver print
18.6 x 23.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0056

Plexiglas Sculpture, "Inverted Curve"
1946
gelatin silver print
19.0 x 24.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0058

Plexiglas mobile sculpture in repose and in motion, 1943
1943
gelatin silver prints (2)
11.2 x 16.7 and 11.5 x 16.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0059

Kinetic Sculpture Moving
c. 1933
gelatin silver print
24.2 x 17.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0060

A 17, 1923
1923
gelatin silver print
20.2 x 24.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0061

Light Modulator "Rh 1937"
1937
gelatin silver print
19.4 x 24.3 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0062

Special effect for the H. G. Wells— Korda film, "Things to Come"
1936
gelatin silver print
18.5 x 23.6 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0063

Light Painting on Hinged Celluloid (position 1)
1936
gelatin silver print
19.1 x 24.0 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0064

*Light-Space Modulator, invented by
Moholy-Nagy*

c. 1925
gelatin silver print
27.3 x 20.8 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0065

La Sarras Castle

1928
gelatin silver print
49.2 x 39.5 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0068

On a Finnish Trawler, Superimposition

1931
gelatin silver print
49.0 x 37.9 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0069

Self-Portrait, 1925

1925
gelatin silver photogram
37.0 x 27.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0070

Photogram (Toned), 1939

1939
gelatin silver photogram
37.0 x 27.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0071

Photogram

1939
gelatin silver photogram
48.7 x 58.4 cm
Museum Purchase,
ex-collection Sibyl Moholy-Nagy
1981:2163:0072

Spring, Berlin

1928
gelatin silver print
48.0 x 38.0 cm
Gift of Katherine Kuh
1981:2164:0001

*Rue Cannebiere, Marseille—View through the
Balcony Grille*

1928
gelatin silver print
24.9 x 17.5 cm
Gift of Katherine Kuh
1981:2164:0002

Photogram, 1929

1929
gelatin silver photogram
44.0 x 55.5 cm
1981:2165:0019

Male Figure

1918
crayon drawing
64.8 x 49.0 cm
1981:2166:0001

Photogram

c. 1925
photomechanical reproduction for the book
Malerie, Fotografie, Film
1990:0693:0001

Mein Name Ist Hase

1927
photoplastic
20.8 x 16.0 cm
Gift of Warren and Margot Coville
1998:0883:0001

Appendix 4

László Moholy-Nagy
American, born Hungary
1895–1946

Untitled (Photogram)

1922

Gelatin silver photogram on postcard stock

13.9 x 8.9 cm (image and sheet)

Verso: Inscribed in Moholy-Nagy's hand c., *für Levy*; signed and dated in Moholy-Nagy's hand c., *Moholy=Nagy / 1922*; stamped in black ink r.c., *carte-postale*; Levy Gallery Stamp "B" in black ink c.

The Art Institute of Chicago

Julien Levy Collection, Special Photography Acquisitions Fund

1979.81

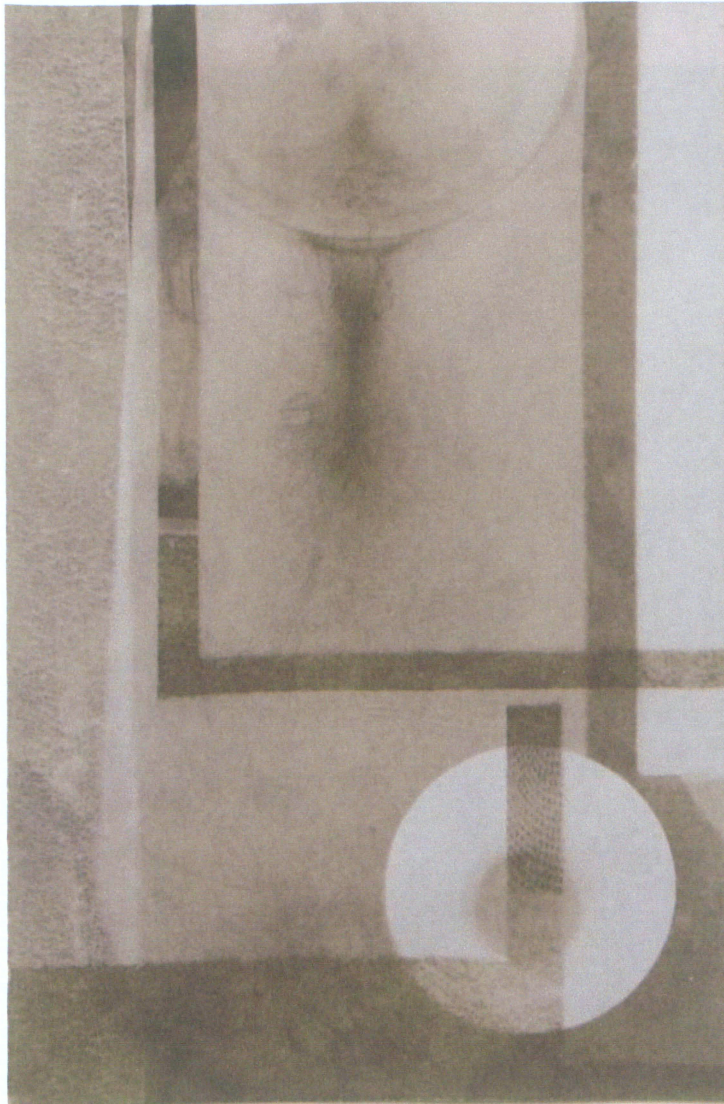


Figure 5
Recto
(Verso Image Unavailable)

Appendix 5a

László Moholy-Nagy
American, born Hungary
1895–1946

Untitled (Photogram)

1926

Gelatin silver photogram, negative image

38.6 x 29.6 cm (image and sheet)

Verso: Inscribed in Moholy-Nagy's hand in graphite u.c., *oben*; inscribed in Moholy-Nagy's hand in graphite c., *neben einander*; inscribed in unknown hand in ink c., *GEH-5*; inscribed in unknown hand in graphite c., *ACC4685*; inscribed in unknown hand in graphite along bottom edge, *81:2163:0025 / ACC4685 / M698-B / GEH 8103 / GEH NEG#8103*

George Eastman House
Museum purchase, ex-collection Sibyl Moholy-Nagy
1981:2163:0025

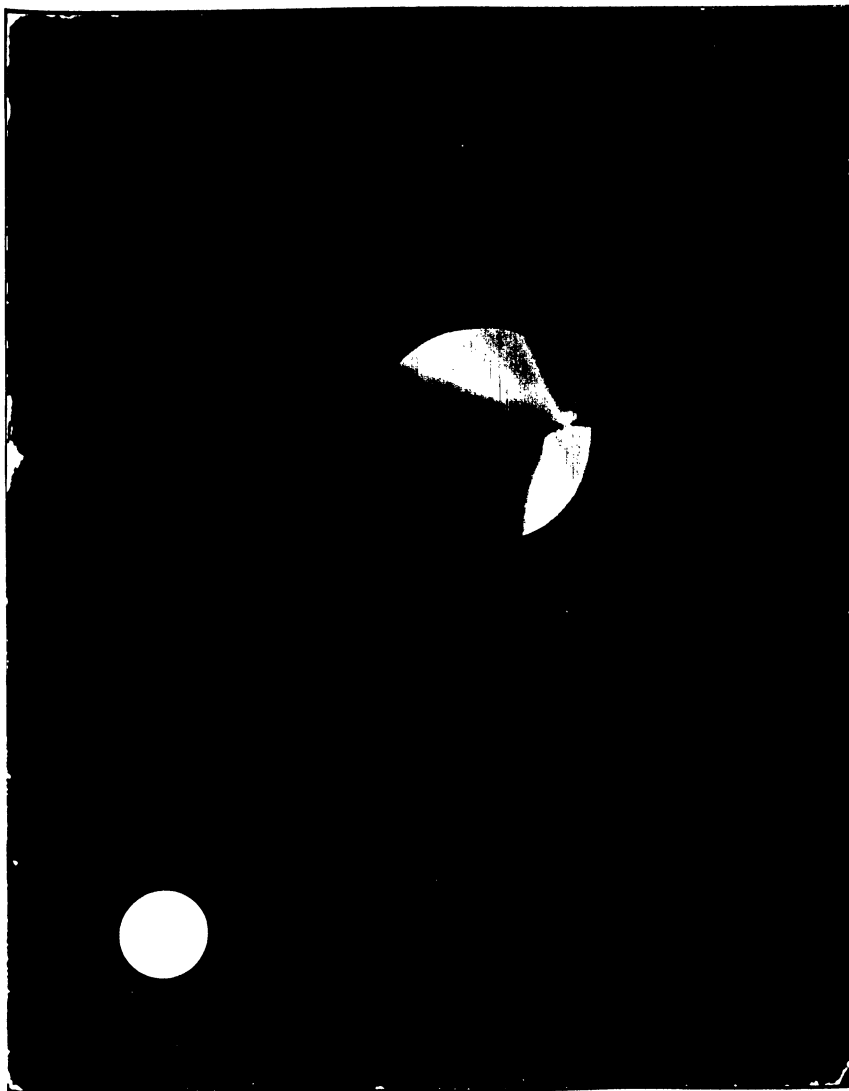


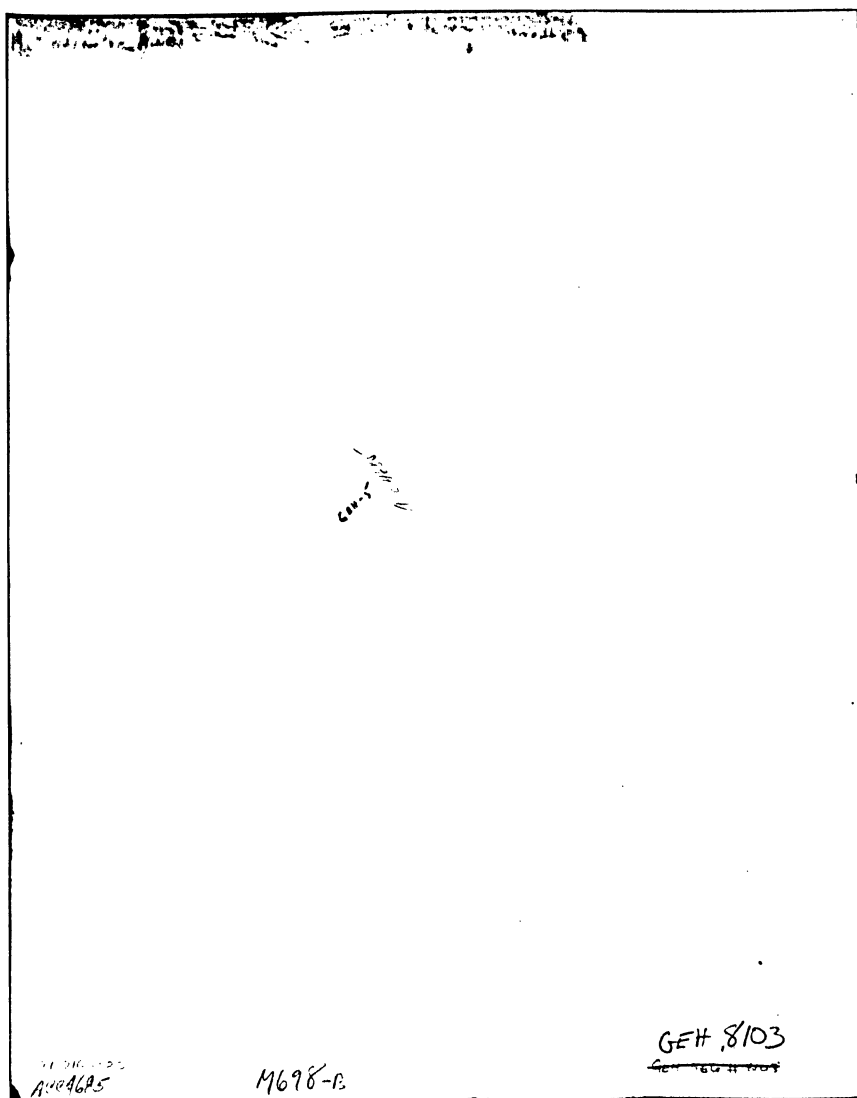
Figure 6
Recto

Appendix 5b

Untitled (Photogram), 1926

Negative image

Figure 7
Verso



Appendix 6a

László Moholy-Nagy
American, born Hungary
1895–1946

Untitled (Photogram)

1926

Gelatin silver photogram, positive image

38.4 x 28.6 cm (image and sheet)

Recto: Stamped l.r.c., L. Moholy=Nagy

Verso: Inscribed in Moholy-Nagy's hand in graphite u.c., *oben*; inscribed in Moholy-Nagy's hand in graphite c., *neben einander*; inscribed in unknown hand in ink c., *GEH-4*; inscribed in unknown hand in graphite c., *ACC4684*; inscribed in unknown hand in graphite along bottom edge, *81:2163:0023 / M698-B / GEH NEG # 8047*

George Eastman House
Museum purchase, ex-collection Sibyl Moholy-Nagy
1981:2163:0023

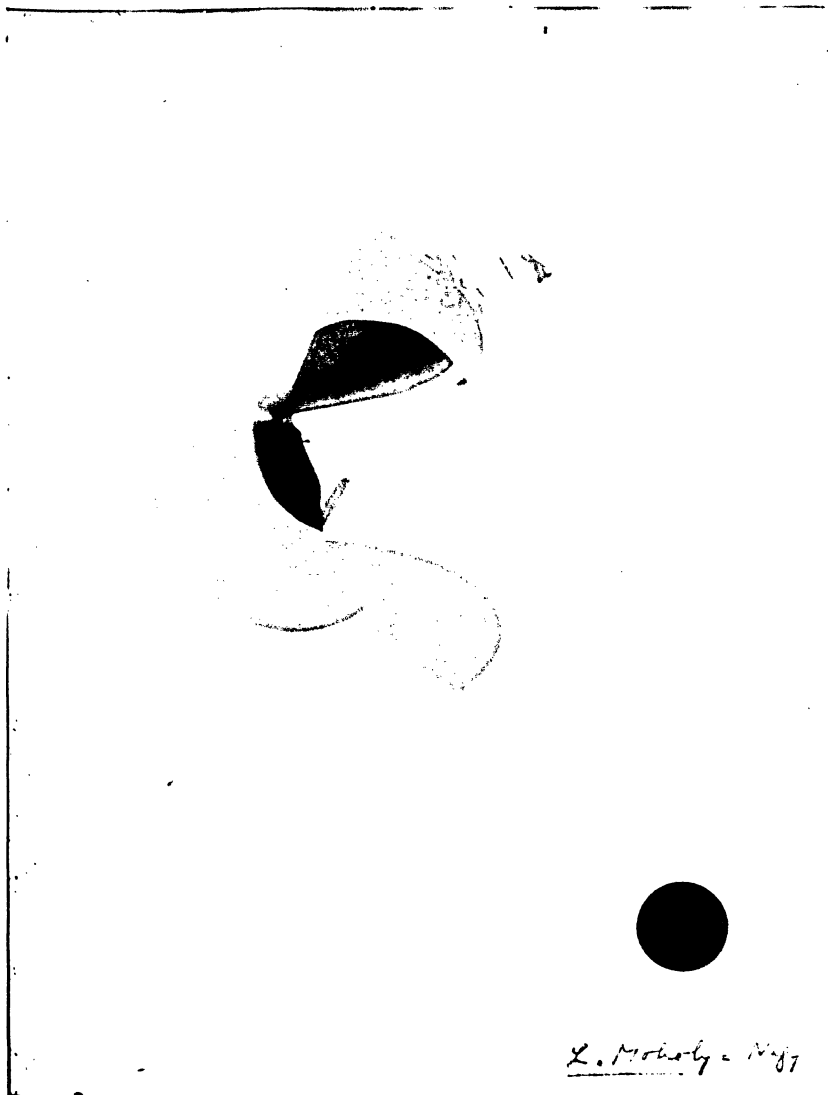


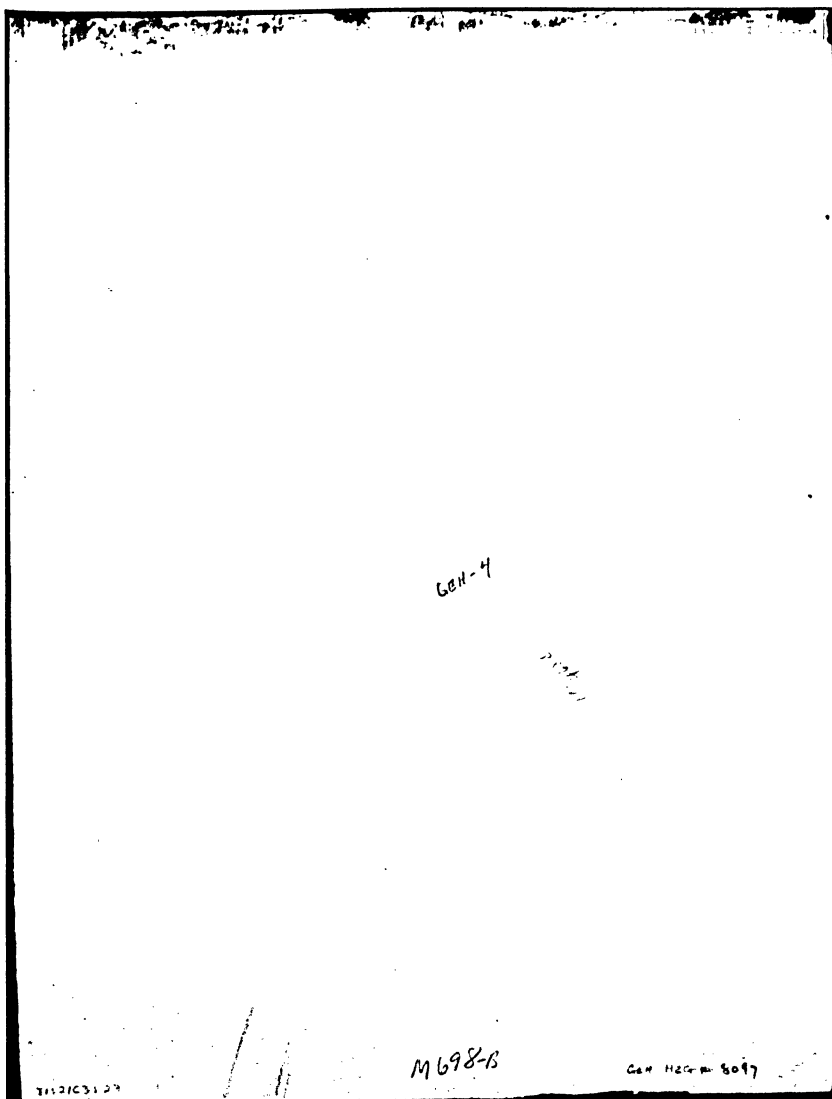
Figure 8
Recto

Appendix 6b

Untitled (Photogram), 1926

Positive image

Figure 9
Verso



Appendix 7a

László Moholy-Nagy
American, born Hungary
1895–1946

Photogram (Toned)

1939

Gelatin silver photogram, toned
50.0 x 40.0 cm (image and sheet)

Verso: Inscribed in Moholy-Nagy's hand in ink l.r., *Photogram (toned) 1939*; signed in ink l.r., *L. Moholy=Nagy*; inscribed in Moholy-Nagy's hand in graphite l.r., *L. Moholy=Nagy*; inscribed in unknown hand l.c., 22 x 28; inscribed in unknown hand in graphite u.r., ACC4685; inscribed in unknown hand in graphite along bottom edge, 81:2163:0071 / M698 / GEH 8079

George Eastman House
Museum purchase, ex-collection Sibyl Moholy-Nagy
1981:2163:0071



Figure 10
Recto

Appendix 7b

Photogram (Toned), 1939

Figure 11
Verso

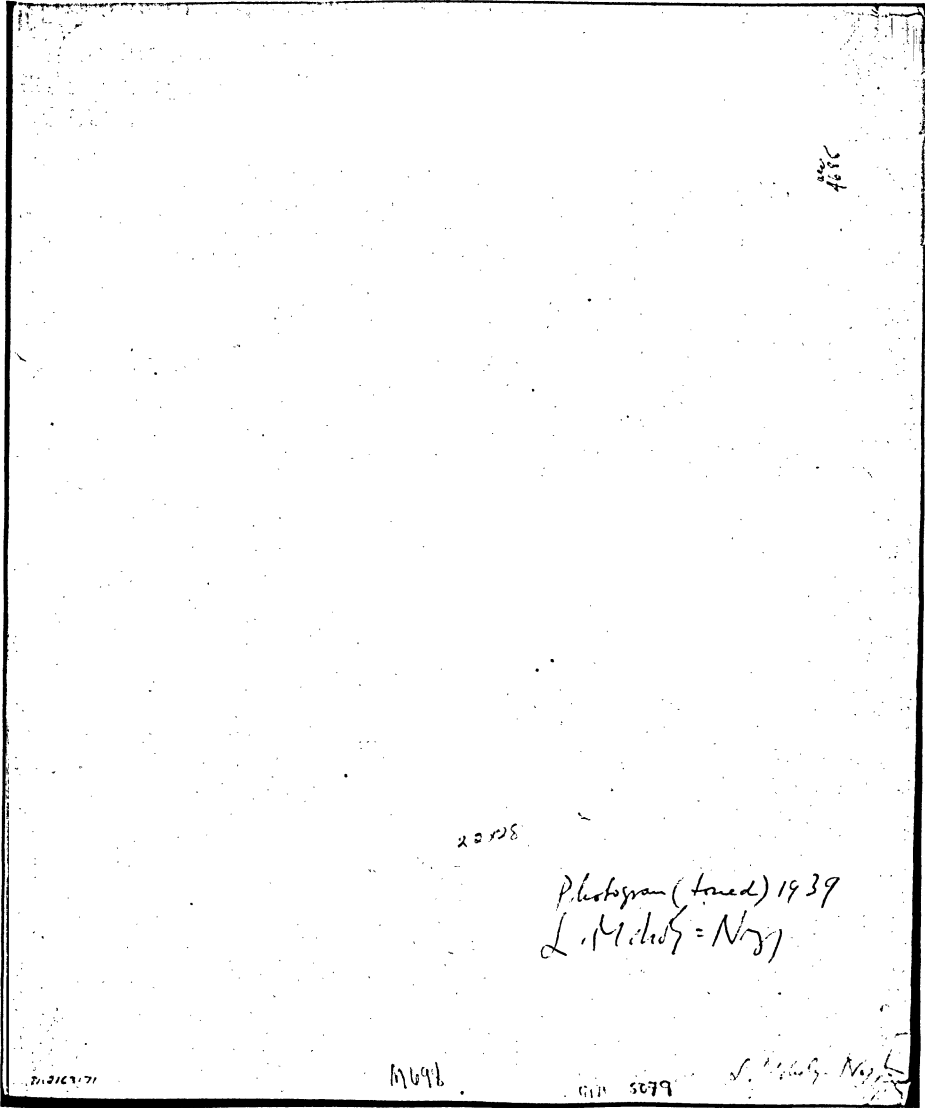


Figure 11
Verso

Appendix 8

László Moholy-Nagy
American, born Hungary
1895–1946

Untitled (Photogram)

1939–1940

Gelatin silver photogram

50.0 x 40.0 cm (image)

Recto: Inscribed in Moholy-Nagy's hand in graphite *I.r.c., To Barford Moholy-Nagy*

Verso: Inscribed in unknown hand in graphite, *Given to George Barford by the artist*

Note: Print mounted to a backing board

The Art Institute of Chicago
Gift of George and Ruth Barford
1968.264



Figure 12
Recto

(Verso Image
Unavailable)

Appendix 9a

George Eastman House Conservation Examination

Photogram (Toned), 1939

Entire Object Under Ambient Light



Figure 13

Entire Object Under UVB Light



Figure 14

Appendix 9b

George Eastman House Conservation Examination

Photogram (Toned), 1939

Detail Image 1a Under Ambient Light (centre left)



Figure 15

Detail Image 1b Under UVC Light (centre left)



Figure 16

Appendix 9c

George Eastman House Conservation Examination

Photogram (Toned), 1939

Microscopic Examination

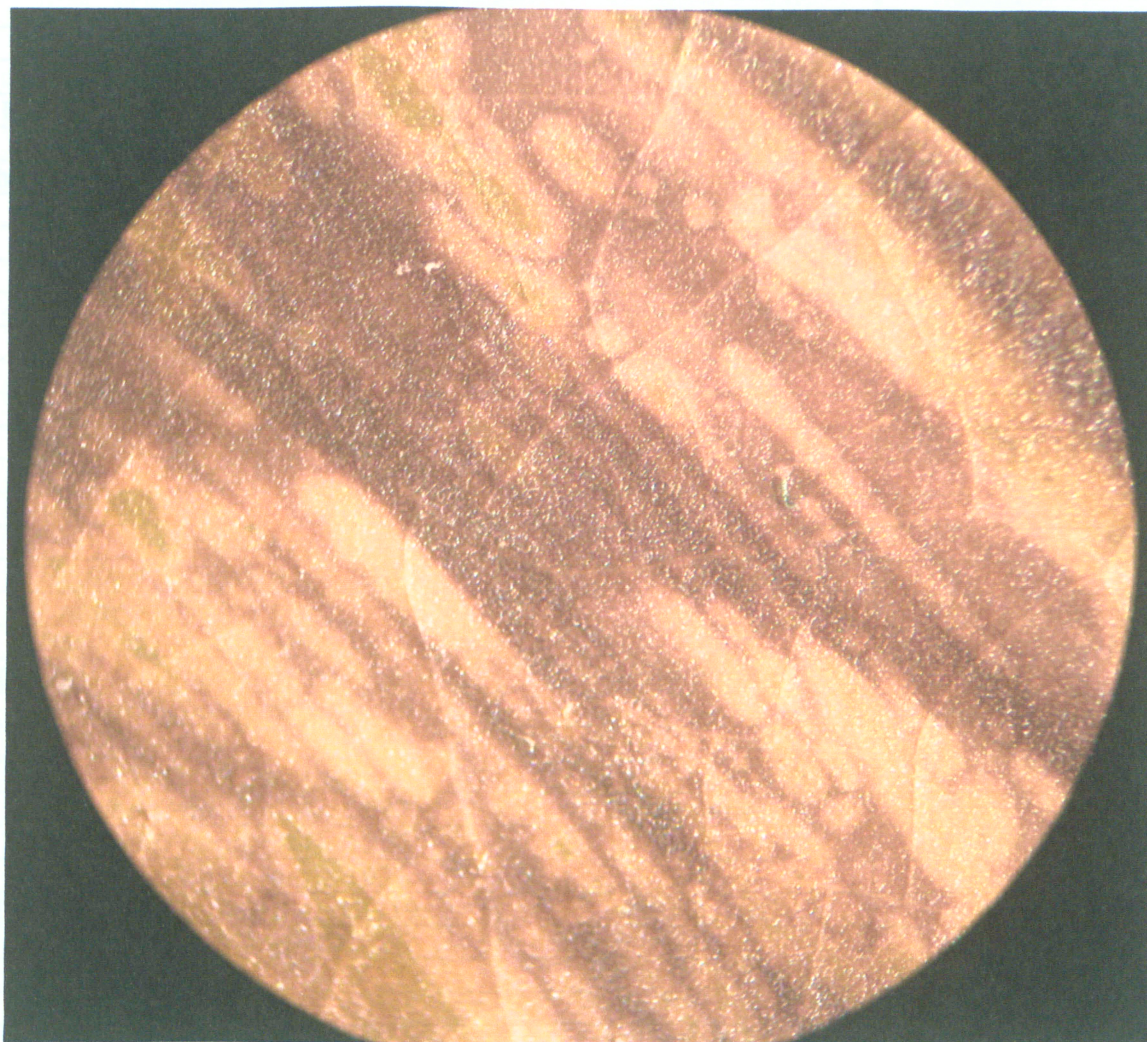


Figure 17

Appendix 10

Quick Reference Chart

	The Art Institute of Chicago	George Eastman House
Museum Opened	1893	1949
Began Collecting Photographs	1949	1949
Photography Department Created	1974	1949
Photography Department		
Photograph Holdings	over 17,500 objects	over 400,000 objects
Moholy-Nagy: Total Holdings	17 photographs	71 photographs
Moholy-Nagy: Photograms	6 photograms	26 photograms
Vault Conditions		
"Cooler"	60°F (16°C) / 40% RH	65°F (18°C) / 40% RH
"Freezer"	40°F (4°C) / 40% RH	—
Provenance		
<i>Untitled (Photogram)</i> , 1922	Julien Levy	—
<i>Untitled (Photogram)</i> , 1926	—	Sibyl Moholy-Nagy
<i>Untitled (Photogram)</i> , 1926	—	Sibyl Moholy-Nagy
<i>Untitled (Photogram)</i> , 1939–1940	George Barford	—
<i>Untitled (Photogram)</i> , 1939	—	Sibyl Moholy-Nagy
Primary Housing		
<i>Untitled (Photogram)</i> , 1922	window mat	—
<i>Untitled (Photogram)</i> , 1926	—	window mat
<i>Untitled (Photogram)</i> , 1926	—	window mat
<i>Untitled (Photogram)</i> , 1939–1940	window mat	—
<i>Untitled (Photogram)</i> , 1939	—	Mylar sleeve
Exhibitions		
<i>Untitled (Photogram)</i> , 1922	3	—
<i>Untitled (Photogram)</i> , 1926	—	3
<i>Untitled (Photogram)</i> , 1926	—	3
<i>Untitled (Photogram)</i> , 1939–1940	2	—
<i>Untitled (Photogram)</i> , 1939	—	0
Publications		
<i>Untitled (Photogram)</i> , 1922	4	—
<i>Untitled (Photogram)</i> , 1926	—	5
<i>Untitled (Photogram)</i> , 1926	—	5
<i>Untitled (Photogram)</i> , 1939–1940	2	—
<i>Untitled (Photogram)</i> , 1939	—	1

Notes

Introduction

1. László Moholy-Nagy, "Space-Time and the Photographer," *American Annual of Photography* 57 (1942). Reprinted in Richard Kostelanetz, ed., *Moholy-Nagy*, (New York: Praeger Publishers, 1970), 61.

Overview of the Institutions

1. James N. Wood, *The Art Institute of Chicago: The Essential Guide (Revised Edition)*, (Chicago: The Art Institute of Chicago, 2003), 7; and "Institutional Archives—Introduction," *The Art Institute of Chicago*, <<http://www.artic.edu/aic/libraries/musarchives/>>, (12 April 2006).
2. The Art Institute of Chicago Departments: African, American, Amerindian, Ancient, Architecture, Arms and Armor, Asian, Contemporary, European Decorative Arts, European Painting and Sculpture, Modern, Photography, Prints and Drawings, Textiles, and the Thorne Miniature Room.
The Art Institute of Chicago, <<http://www.artic.edu/aic/collections/index.php>>, (12 April 2006).
3. Wood, *Art Institute of Chicago*, 7; and Newell Smith, "Re: Moholy-Nagy Thesis Query," 19 April 2006, personal e-mail (19 April 2006).
4. "Mr. Levy's visit to Berlin: More likely to have been 1930; not 1931."
Lucia Moholy to David Travis, 28 October 1976. Moholy-Nagy Artist File, The Art Institute of Chicago.

The first part of the Levy collection entered the Photography Collection in 1975; later parts, which were on extended loan to the AIC, were acquired in 1978–1979. David Travis, Interview by the author. The Art Institute of Chicago, Chicago, Illinois, 22 February 2006; and "Institutional Archives," *The Art Institute of Chicago*, 21 February 2006.
5. The acquisition of the Irving Penn Archive began after the 1997 exhibition, "Irving Penn: A Career in Photography," organized by Colin Westerbeck.
Newell Smith, Interview by the author. The Art Institute of Chicago, Chicago, Illinois, 21 February 2006; and Smith, "Re: Moholy-Nagy Thesis Query," personal e-mail.
6. Doug Severson, Interview by the author. The Art Institute of Chicago, Chicago, Illinois, 21 February 2006; and Travis, Interview by the author.
7. The CITI database is capable of containing images, when available. The AIC is researching the possibility of migrating to a database, such as The Museum System (TMS).
Smith, Interview by the author.
8. The National Aeronautics and Space Administration (NASA) and the Kennedy Library had previously utilized cold storage vaults; however, their vaults were categorized for "archival" and not "fine art" purposes.
Smith, "Re: Moholy-Nagy Thesis Query," personal e-mail.

9. Boasting one of the best track records among museums for the sustained maintenance of temperature and relative humidity levels, the Photography Department at the AIC is monitored by three hygrothermographs. Located outside the entrance to the vaults, these hygrothermographs monitor and record the temperature and relative humidity levels inside both vaults, as well as the Study Room.
Smith, Interview by the author.
10. Ibid.
11. In 1992, George Eastman House conducted a survey of museum professionals to arrive at a name for the institution that reflected its collections, historic significance, and the public's perception of the aims of the museum.
Anthony Bannon, *A Collective Endeavor: The First Fifty Years at George Eastman House*, (Rochester, New York: George Eastman House, 1999), 13, 19, and 134.
12. "History of George Eastman House International Museum of Photography and Film," *George Eastman House*, <http://www.eastmanhouse.org/inc/the_museum/history.php>, (12 April 2006).
13. Struble, Interview by the author. George Eastman House, Rochester, New York, 12 April 2006; and Therese Mulligan and David Wooters, eds., *1000 Photo Icons: George Eastman House*, (Köln: Taschen, 2002), 21–23 and 26–27.
14. George Eastman House would like to use off-site cold storage for oversized and seldom requested objects, as well as the preservation duplicate prints that are provided by some photographers.
Struble, Interview by the author; and David Wooters, "Re: Help with my Thesis," 14 April 2006, personal e-mail (14 April 2006).
15. Struble, Interview by the author.
16. GEH began migrating from Adabas to The Museum System (TMS) prior to September 2001 and went live with the new database in June 2003.
Struble, Interview by the author; and Wooters, "Re: Help with my Thesis," personal e-mail.
17. Smith, "Re: Moholy-Nagy Thesis Query," personal e-mail; and Travis, Interview by the author.
18. In 1956, Newhall wrote concerning his activities while at the Museum of Modern Art in New York City: "(Back in 1940 I purchased a small group of his things which were the first to enter a museum.)"
Beaumont Newhall to Donald McMaster, 2 July 1956. Moholy-Nagy provenance file, George Eastman House.

László Moholy-Nagy and his Photogram Experiments

1. László Moholy-Nagy, *Von Material zu Architektur*, Bauhausbücher 14, (Munich: Albert Langen Verlag, 1929), Translated by Daphne M. Hoffmann as *The New Vision 1928: Fundamentals of Bauhaus Design, Painting, Sculpture, and Architecture with Abstract of an Artist*, (London: Dover Publications, 2004), 227.

2. Ibid., 219.
3. László Moholy-Nagy, "Letter to Beaumont Newhall," (7 April 1937). Reprinted in Kostelanetz, ed., *Moholy-Nagy*, 57.
4. Christopher Mahoney, "László Moholy-Nagy and the Photogram," in *Photograms by László Moholy-Nagy: From the Collection of Eugene and Dorothy Prakapas*, (New York: Sotheby's, 27 April 2005), 19; and László Moholy-Nagy, "Light: A Medium of Plastic Expression," *Broom: An International Magazine of the Arts*, vol. 4, no. 4 (March 1923): 283–284.
5. Mahoney, "László Moholy-Nagy and the Photogram," in *Photograms by László Moholy-Nagy: From the Collection of Eugene and Dorothy Prakapas*, 18; and László Moholy-Nagy, "Fotographie ist Lichtgestaltung," *Bauhaus 2* (1928): 2–8. Translated as "Photography is Manipulation of Light." In *Moholy-Nagy: Photographs and Photograms*, Andreas Haus, ed. (New York: Pantheon, 1980): 47–50.
6. "We did not possess a proper laboratory until 1926, when we moved into one of the dwelling houses at Dessau placed at the disposal of the Masters. The darkroom [...] also served us for experimental endeavor."
Lucia Moholy, *Marginalien zu Moholy-Nagy: Dokumentarische Ungereimtheiten / Moholy-Nagy, Marginal Notes: Documentary Absurdities*, (Krefeld: Scherpe Verlag, 1972), 61.
7. Judy Annear, *World Without End: Photography and the 20th Century*, (Sydney: Art Gallery of New South Wales, 2000), 163.
8. Moholy, *Marginalien zu Moholy-Nagy*, 62.
9. While in the Hungarian army during World War I, Moholy-Nagy honed his artistic skills by sketching on the backs of postcards. The small format of the postcard and its wide availability made it a natural step for him when first creating photograms. See Hattula Moholy-Nagy, "László Moholy-Nagy: Notes on a Life in Motion," *László Moholy-Nagy: A Life in Motion, Paintings, Sculpture, Drawings and Photography*, (London: Annely Juda Fine Art, 2004).
10. Moholy, *Marginalien zu Moholy-Nagy*, 62.
11. László Moholy-Nagy, "Work from the Preliminary Course, 1937–1938," Institute of Design Archive, University of Illinois, Chicago, unpaginated.
12. László Moholy-Nagy, "Make a Light Modulator," *Modern Photography*, vol. 2, no. 7 (March 1940), 41.
13. Beaumont Newhall, "Review of Moholy's Achievement," *Photo Notes* (March 1948) Reprinted in Kostelanetz, ed., *Moholy-Nagy*, 71.

The Early Photograms

1. Travis, personal interview; and David Travis, *Photographs from the Julien Levy Collection: Starting with Atget*, (Chicago, The Art Institute of Chicago, 1976), 55–56 and 84.

2. Andreas Haus, *Moholy-Nagy: Fotos und Fotogramme*, (Munich: Schirmer-Mosel, 1978), Translated by Frederick Samson as *Moholy-Nagy: Photographs and Photograms*, (New York: Pantheon, 1980), 8.
3. The postcard base does not affect the stability of the gelatin silver image differently than the base of other photographic papers.
Severson, Interview by the author.
4. A piece of paper is affixed to the bottom piece of mat board with linen tape and the object is hinge mounted to this paper. The top two pieces of mat board, both of which have the window cut in them, are affixed to one another and create a reverse sink mat. This three-part system provides additional support to the photogram and its postcard base, which is thicker than a single piece of photographic paper. To protect the surface from abrasions a piece of glassine interleaving covers the photogram.
5. "The Julien Levy Collection: Starting with Atget," curated by David Travis, traveled from 1976 through 1997, was first shown at the AIC, as well as at the International Center of Photography in New York City and the Museum of Arts and Sciences in Peoria, Illinois.

"Moholy-Nagy: Photography and Film in Weimar Germany," curated by Eleanor M. Hight, traveled from 1985 to 1986 and was shown at the Wellesley College Museum in Wellesley, Massachusetts, the AIC, and the Museum of Fine Art in Houston, Texas.

"On the Art of Fixing a Shadow: 150 Years of Photography," co-curated by Sarah Greenough, Joel Snyder, David Travis, and Colin Westerbeck, traveled from 1989 through 1990 and was seen at the National Gallery of Art in Washington, D. C., the Art Institute of Chicago, and the Los Angeles County Museum of Art.
6. *Untitled (Photogram)*, 1922 is catalogue entry number 94 but was not reproduced. Travis, *Photographs from the Julien Levy Collection*, 84; Travis, personal interview.
7. *Untitled (Photogram)*, 1922 is catalogue entry number 1, is illustrated as a halftone reproduction, and is approximately double the size of the original object.
Eleanor M. Hight, Andrea Kaliski Miller and Nancy Nugent, *Moholy-Nagy: Photography and Film in Weimar Germany*, (Cambridge, Massachusetts: The MIT Press, 1995), 17 and 48.
8. *Untitled (Photogram)*, 1922 is catalogued and is illustrated as a halftone reproduction. Sarah Greenough, Joel Snyder, David Travis and Colin Westerbeck, *On the Art of Fixing a Shadow: One Hundred and Fifty Years of Photography*, (Washington, D.C.: National Gallery of Art, 1989), 274 and 476.
9. *Untitled (Photogram)*, 1922 is catalogue entry number 111, is illustrated as a halftone reproduction, and is approximately double the size of the original object.
Haus, *Fotos und Fotogramme*, 17, 74, and 111.
10. Newhall to McMaster, 2 July 1956. Moholy-Nagy provenance file.
11. Over the years, GEH employed several accessioning systems, and the "ACC" numbers on the versos of these photograms are their old accession numbers. The current accession numbers that begin with 1981 are from the year that GEH renumbered all of the works that still had old numbers. Newhall's card catalog system is still available today in the Study Center.

12. Moholy, *Marginalien zu Moholy-Nagy*, 61.

13. *Photograms by László Moholy-Nagy: From the Collection of Eugene and Dorothy Prakapas*, 30.

14. Moholy, *Marginalien zu Moholy-Nagy*, 61.

15. Catalogue numbers 45 and 46 are illustrations of the same image, but not the same object, as the positive and negative *Untitled (Photogram)*, 1926.

László Moholy-Nagy: Compositions Lumineuses 1922–1943; Photogrammes de collection du Musée national d'art moderne—Centre de création industrielle, Centre Georges Pompidou, Paris, et du Museum Folkwang, Essen. 140.

16. "...trying to keep the expenses down, we limited ourselves to sizes up to 13 by 18 cm during that initial period and never exceeded the 18 by 24 cm format. [...] It follows from all this that the large formats could only have been achieved by an enlarging process through intermediate camera negatives."

Moholy, *Marginalien zu Moholy-Nagy*, 62–63.

17. In these housings the photograms are secured to the supporting piece of mat board by paper corners that are affixed using linen tape. A piece of glassine interleaving protects their surfaces from abrasions. Changing the housing to a sink mat would permit the entire object to be viewed and not restrict the natural materials in the gelatin base. Chen also wants the glassine interleaving replaced by a piece of thin Japanese tissue paper to protect from abrasions or the glassine becoming adhered to the surfaces.

Chen is concerned with the light fastness of these photograms due to the general "gray" of the white areas. The cause of the graying of the images and the fogged appearance is indeterminate, but could be the build-up of surface dirt or chemical changes in the print, possibly due to incomplete fixing of the photograms. The signature stamp on the recto of the positive photogram poses additional conservation requiring an analysis of the chemical composition of the ink. The negative image reveals silver mirroring at the edges, a sign of an unstable print and is a result of past storage conditions, which provided an environment that made the silver particles mobile enough to travel to the surface. The edges are badly abraded and there are numerous scratches and dings across its surface. The emulsion at the edges is not stable and is peeling away from the paper base; furthermore, damage to the edges and corners are evidence of a weak emulsion.

Jiuan-jiuan Chen, Interview by the author. George Eastman House, Rochester, New York, 16 February 2006.

18. "Moholy-Nagy: Photography and Film in Weimar Germany," curated by Eleanor M. Hight, traveled from 1985 to 1986 and was shown at the Wellesley College Museum in Wellesley, Massachusetts, the AIC, and the Museum of Fine Art in Houston, Texas.

"The Art of Photography: 1839–1989" traveled from 1989 through 1990 and was shown at the Museum of Fine Art in Houston, Texas, as well as the Royal Academy of Art in London, England, the Australian National Gallery in Canberra, New South Wales, and the Sezon Museum of Art in Tokyo, Japan.

"László Moholy-Nagy" traveled through 1991 and was first shown at the Institut Valencià d'Art Modern (IVAM) Centre Julio González in Valencia, Spain, as well as at

the Museum Fredericianum in Kassel, Germany and the Musée Cantini in Marseille, France.

19. *Untitled (Photogram)*, 1926, both the positive and negative photograms, are catalogue entry number 58, are illustrated as halftone reproductions, no date is given, and both photograms have been cropped.

Hight, Kaliski Miller and Nugent, *Photography and Film in Weimar Germany*, 58.

20. *Untitled (Photogram)*, 1926, both the positive and negative photograms, are catalogue entry number 237, are illustrated as halftone reproductions, dated to "after 1922," and both photograms have been cropped.

Mike Weaver, ed., *The Art of Photography: 1839–1989*, (New Haven: Yale University Press, 1989), 237 and 462.

21. *Untitled (Photogram)*, 1926, both the positive and negative photograms, are illustrated as halftone reproduction; both photograms have been cropped.

László Moholy-Nagy, (Valencia: Institut Valencià d'Art Modern Centre Julio González, 1991), 360.

22. *Untitled (Photogram)*, 1926, both the positive and negative photograms, are catalogue entry number 133 and illustrated as halftone reproductions; no date is given, but the full image of both photograms is reproduced.

Haus, *Fotos und Fotogramme*, 76 and 134.

23. "AMICO—Art Museum Image Consortium," <<http://www.amico.org>>, (12 April 2006); and "CAMIO—Catalog of Art Museum Images Online," <<http://camio.rlg.org>>, (12 April 2006).

The Late Photograms

1. Travis, Interview by the author.

2. Hattula Moholy-Nagy, "Re: Ryerson/GEH Graduate Student Inquiry," 19 April 2006, personal e-mail (20April 2006); and Alain Findeli, *Le Bauhaus de Chicago: L'œuvre pédagogique de László Moholy-Nagy*, (Sillery, Quebec: Éditions du Septentrion, 1995), Appendix 1.

3. All of the corners are worn, the edges are all exhibiting signs of emulsion loss, there is silver mirroring along the edges and dark areas of the photogram, and there are small tears at the edges through both the emulsion and paper base. Additionally, the recto graphite inscription is a concern because it is imbedded in the object's surface. Severson, Interview by the author.

4. "Moholy-Nagy: Photography and Film in Weimar Germany," curated by Eleanor M. Hight, traveled from 1985 to 1986 and was shown at the Wellesley College Museum in Wellesley, Massachusetts, the AIC, and the Museum of Fine Art in Houston, Texas. Reproduced as a halftone in the accompanying publication: *Moholy-Nagy: Photography and Film in Weimar Germany, Untitled (Photogram)*, 1939–1940 is catalogue entry number 21, where no date is given, but the provenance of George Barford is acknowledged.

Hight, Kaliski Miller and Nugent, *Photography and Film in Weimar Germany*, 61

5. "Taken by Design: Photographs from the Institute of Design, 1937–1971" was co-

curated by David Travis and Elizabeth Siegel and traveled for a full year from March 2, 2002 to March 2, 2003. First shown at the AIC, this exhibition subsequently traveled to the San Francisco Museum of Modern Art and to the Philadelphia Museum of Art. The accompanying publication: *Taken by Design: Photographs from the Institute of Design, 1937–1971*, was edited by Travis and Siegel and includes essays by Keith F. Davis, Lloyd C. Engelbrecht, John Grimes, Elizabeth Siegel, and Larry Viskochil. *Untitled (Photogram)*, 1939–1940 is catalogue entry number 131 and is a halftone reproduction in plate number 1.

David Travis and Elizabeth Siegel, eds., *Taken by Design: Photographs from the Institute of Design, 1937–1971*, (Chicago: The Art Institute of Chicago in association with The University of Chicago Press, 2002), 34, 257 and 272.

6. Newhall to McMaster, 2 July 1956, Moholy-Nagy provenance file.
7. Chen, Interview by the author. George Eastman House, Rochester, New York, 16 February 2006.
8. The hard Mylar surface can potentially abrade the print surface and create a static build-up, which can lead to the emulsion separating from the paper base. A sink mat housing permits the entire object to be viewed while supporting the object without pressure to any of the corners. Chen wants to have the photogram stabilized, including the consolidation of creases and mending tears on the verso using a thin Japanese tissue and wheat start paste. Stabilization measures made on the verso of the object strengthen the print, whereas repairs performed on the recto can potentially cause more damage.
Ibid.
9. Ibid.
10. "AMICO" <<http://www.amico.org>>, (12 April 2006), and "CAMIO" <<http://camio.rlg.org>>, (12 April 2006).

Collections Use and Practices

1. AIC Photography Department staff with vault access: Chief Curator David Travis, Assistant Curators Elizabeth Siegel and Kate Bussard, Collections Manager Newell Smith, Conservator Doug Severson, Preparator Jim Iska, and Assistant to the Curator Lisa D'Acquisito.
Smith, "Re: Moholy-Nagy Thesis Query," personal e-mail.
2. Severson, Interview by the author, and Travis, Interview by the author.
3. Severson, Interview by the author.
4. GEH Photography Department staff with vault access: Curator of Photographs Alison Nordström, Assistant Curator Sean Corcoran, Chief Archivist David Wooters, and Assistant Archivist Joe Struble.
Struble, Interview by the author.
5. Chen, Interview by the author, 16 February 2006.
6. Ibid.

7. On March 20, 2006 Chen began the analysis of *Photogram (Toned)*, 1939; the first steps were to view its surface under raking light, ultraviolet light (UV), and through a microscope (see Appendix 8a–8c). Raking light further revealed the surface cracking, which Chen wants to have fully documented, and also showed signs of bronzing in the dark areas, an indication of over-exposure. UV light revealed that the photogram is a developed-out-print, as witnessed by its fluorescing. UVC light, a high-energy short wave light, determined that the orange/bronze areas are a different material that has been applied to the surface, and shinier areas of the surface indicate the application of additional chemistry or pigment. Microscopic examination supported the UV light assessment of multiple, applied layers on the surface; however, further analytical tests will be required to fully determine the pigments and/or chemicals used.

Chen, Interview by the author, 20 March 2006.

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