Color panoramic pinhole photography

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Thesis Report

Color Panoramic Pinhole Photography

Submitted by
Richard J. Stanley
May 31, 1974

John Pfahl

Charles A. Arnold, Jr.

Edward E. Miller
"luck... is one of the cardinal creative forces in the universe, one which a photographer has unique equipment for collaborating with."

James Agee
THESIS PROPOSAL

for
The Master of Fine Arts Degree

College of Graphic Arts and Photography
School of Photographic Arts and Sciences

ROCHESTER INSTITUTE OF TECHNOLOGY

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TITLE: Color Panoramic Pinhole Photography

PURPOSE: To investigate the potential of a home-made panoramic pinhole camera used as a tool of color photography.

SUBMITTED
BY: Richard J. Stanley

January 18, 1974

THESIS BOARD:

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SCOPE AND BACKGROUND OF THE THESIS:

The Panoramic Image

The panoramic photograph has held the fascination of generations. Some of the earliest daguerreotypes were panoramas of Paris and other European cities. Later, the "banquet camera" was widely used as a tool to record assemblies at social functions, as well as to aid the pictorial photographer. All of the above, in addition to the work of contemporaries such as Joseph Sudek, were photographs incorporating the accurate recording of figures and objects on the horizontal plane. Recently, perhaps in response to the vertical emphasis of modern cities, photographers such as Eric Renner* have aligned panoramic cameras along the vertical axis. In all instances the image's beauty seems to be its propensity to record a plethora of objects which spice the mind's sense of the camera's purview at a certain time and place. It is this capability which fascinates me, especially the elegance with which man and his context may be photographed.

The Pinhole Image

The pinhole camera represents to me one of the most rudimentary forms of photographic image making in that subject and record confront each other directly with mere air between them; no lenses are employed. A kind of direct transferral of electro-magnetic energy occurs in the same manner as in the centuries-old camera obscura and the resultant "sun prints." The images have a primitive beauty incorporating rings of distortion and indistinct edges. Despite the above aberrations the images can be quite sharp and have a wide-angle quality suitable for recording a broad context.

The Color Image

The color aspect of the thesis would reflect my current infatuation with color photography generally---and particularly the "straight print." If photography is a method to record and to express human experience, then "straight" color photography seems to me one step beyond black and white.

photography toward the quality of verisimilitude I admire. With this beautiful quality of verisimilitude comes an additional problem, i.e. aesthetically pleasing color harmony. The challenge then of color photography as I intend to use it is to record circumstances of my life as closely as possible while retaining both visual and chromatic harmony and elegance.

Combining Panoramic, Pinhole, and Color Photography

The scope of the thesis is to produce pinhole-made photographic images which are panoramic in nature and in color. I have already produced images which incorporate the qualities above, except that they are in black & white, not color. To my knowledge color has never been attempted. The camera used was home-made, utilized six pinholes and 5" X 17" film. Because of the construction (see diagrams), the six images dissolve and juggle themselves, creating a new visual space which seemingly lies along a continuous, but false, axis while at the same time retaining localized visual fidelity. This combination of montage and "straight" reproduction is the camera's unique metaphor.

There are several ways in which these images could be produced. The most obvious way is to record a somewhat literal 360° panorama, either along a horizontal or vertical axis. Another method I have tried is to compose a shot and then expose one pinhole at a time while changing the composition of the scene before the next pinhole is rotated into position. In this manner one may combine repeated and changing imagery (e.g. a panorama incorporating a horizon with several setting suns while the foreground subject changes position in each shot).

Although I prefer the more traditional panoramic shots because of their greater sense of verisimilitude, any combination of the above described approaches could be attempted.

Because color pinhole work is a relatively uninvestigated area, some fascinating phenomena might occur, i.e. spectral distortions. These aberrations have occurred in the black and white images as streaks of light grey. In color they could be of a more chromatic nature. In any event the color would seem to underscore a sense of believability in the montages, which blend what is into what could be.
Procedures:

The photographs could be made almost anywhere there is ample light. What I would like to photograph, however, is as mentioned above, man and his context, or the vestiges thereof. As long exposures are de rigeur with this camera, bright, warm seasons lend themselves best to outdoor work and minimal exposures. The spring would be a good season in which to photograph and the West, known for its dry, sunny climate, would be an excellent location. I may, therefore, take many of the photographs on a cross-country trip thereby maximizing use of fine weather and capturing the flavor of the man-made environment of contemporary highways. Of all of man's environments, the car-oriented aspects fascinate me most. This camera could be an invaluable tool of documentary photography. A trip from coast to coast affords numerous opportunities to record unusual man-made environments adjacent to highway commercial areas.

Upon my return the prints, which could have been achieved via any or all of the following means: direct color paper positives, color paper negatives, or by the traditional color negative film, paper print means, could be prepared and assembled into a show of nine to fifteen color prints. An album could be an alternative display method. The report could include the necessary technical, aesthetic, and personal background of the prints.
FIGURE 2
In November 1972 I met Eric Penner at his home near Alfred, New York. I had never heard of the man, nor did I know his work. He began to pull boxes and rolls of prints and negatives from crannies of his free-form expanded steel house. The prints, which he casually unfurled from thick rolls, literally stunned me—they were such elegant lies. The image manipulation seemed to straddle the clas-
ically rendered world of sharp focus and contact printing and the realm of what might be termed loosely "interpretive" photography, i.e. images in an extraordinary context which connotes other images or relationships. In any event I had to know how these aesthetically arresting images were produced. A brief explanation ensued. Renner brought out his black eight-inch camera which resembled nothing I'd seen before. Actually he had two models: a
one shot affair which required a jaunt to the darkroom for unloading and reloading, and a similar camera which was fitted with supply and take-up spools for 100 feet of eight-inch black and white film. The latter was built for a trip he and his wife took to Mexico, a land of bright light and few darkrooms. He calculated how many turns were necessary for an unexposed portion of film to be moved into position.

The basic principle involved placing six pinholes of proper size and shape
around a film-faced inner cone (see diagram in their proposal). Because of the extremely small aperture, exposures were long, so long that a simple slide in front of each pinhole sufficed as a shutter. In addition to the above cameras, Kenner had several "experimental models" such as a kind of sheet film holder fitted with numerous pinholes arranged in a diamond-shaped grid. The effect was akin to a "fly's-eye view"—many small images in a grid, and not at all like the con-
famous panorama of the round cameras. I wondered what a doughnut camera would produce.

As I examined his file of contact prints I kept returning to a vertical panorama of a public building. I had never imagined the wide-screen image on its end, particularly as a 360° view; front, back, above, below, all neatly arranged before me to grasp at once, but not as in life—a lie beautifully told. I was beguiled, and I had to have that shot. Would he sell it? "No, here you can
have it," was his reply.

What a coup. I could not believe he gave me such a jewel.

After I lived with the print for a few days, I found I was more and more intrigued with the possibility of making my own images in a like manner. The possibility posed its own predicament as well. Would I be aping merely, or worse stealing another man's idea. I decided this type of camera was simply that—a tool of photography, and not the inspiration or essence of the images it could
produce. That evening I
saw up plans for my
pinhole camera.

After some investiga-
tion I found a supply of
five inch aerial film at
school — in the deep freeze.
Five inch film seemed ade-
quate, as I had contact-
printed five by seven inch
photos the summer before;
I did not find that size
too small for comfortable
viewing. The school photo-
shop could process five-inch
film with the addition of
a leader sheet.

On paper my camera
was ten inches in diameter
with a central core five
inches in diameter. Film
size would then be five inches by sixteen inches. The six pinholes were placed every 60° around the perimeter. The focal distance was two and one half inches. After consulting John Carson of Photo Science, pinholes of 350 microns or f 285 were installed in proper positions; 350 microns is the optimum size at this film-to-pin- hole distance for best definition. The pinholes were made by me from .002 inch brass shim stock. A dimple was beat into the brass with
a dull center punch. Into this depression I beat another dimple with a dull needle. The brass was rubbed over an extremely fine honing stone until a minute hole wore through. The hole was checked under a microscope for the correct size and shape; pinholes which were blurred or unevenly formed were discarded. A set of six matched pinholes was made in this manner.

Unlike Rennier, who used mat board, I made my camera from a heavy aluminum offset plate. I chose this material for its weather
resistance, strength, light weight, and elegant finish. Nat board formed subsurface bracing. Much glueing and taping assured light tightness. The core and lid formed one part of the camera; the "drum" part, which held the pinholes and slides formed the other. Tripod mounts were fitted to the top and bottom for maximum versatility. Although the black velvet lining assured a snug fit, brass hasps and wingnuts and bolts added extra security against the camera's falling apart. After two and one half evenings of relatively
easy, but careful work
my camera was finished
at a cost of less than
seven dollars. ($4.50 was for
a yard of black velvet.)

After several trials
with the fine inch aerial
f/4 vs. x, ASA 125, I was
able to get negatives of
ample density and extreme
sharpness. The incubus of
the project, which I under-
took on my own time, was
the printing. Some nega-
tives resembled Kodalith
at one end, yet were flat
at the other. Densities
varied wildly. I found
Polycontrast paper (16" x 20"


quarted) with muchilter juggling during a single exposure and concomitant dodging and being to be de
mijeur. One print re-
quired five seconds’ ex-
posure in one corner and
over five minutes’ exposure
in another. Total exposure
times often exceeded five
minutes. To produce three
good prints in an afternoon
was doing quite well. Many
negatives were discarded
because of technical problems,
in short, the black and
white process was difficult
for me to control. Consequently
I was able to produce few
Satisfying black and white prints during the 1972-73 school year.

During that year however Howard Kaplan, a fellow MFA student, also began working with pinholes (he suggested I contact John Carson). I gave Howie one of my pinholes for his 4" x 5" view camera. He tried several shots with a Polaroid back loaded with 4" x 5" Polacolor film. The shots were mostly self-portraits taken outdoors, and had a fish-eye effect and richly saturated color. Those photos stuck in my mind for months.
After I learned to paint in color during the spring and fall of 1973 I began to think again of using my pinhole camera. By this time I was shooting exclusively in color, and I thought that I could complement my 35 mm work by using the medium in this fashion. The challenge of using pinholes and color materials excited me, especially as Howie's photos were the only ones I knew. I wanted to see what my few early efforts would look like in color—especially intriguing were the sun streaks I noted in some of the black
and white points. Could they be rainbow-like in color? I had to know. At Charlie Arnold's suggestion I experimented with 120 size film wrapped twice around the cone. Both attempts with High Speed Ektachrome worked well.

At this time I decided I would need a large block of time to devote to such a project. I began to think about the project as my M.F.A. Thesis. After the proposal was accepted in January I proceeded in earnest. With the help of William Shoemaker, I acquired 100 feet of Aerochrome film. Kodak
assumed me that the film could be processed successfully to a negative in C-22. (The film once was marketed as a negative film.) With the co-operation of the Photo Management staff at RIT, particularly Cliff Swan, I was able to do all processing at school. After several trials with Unicolor paper I switched to Ektacolor RC 37 paper because of its color brilliance and shorter processing time. I made all contact prints using a drum processor.

The printing presented
few problems except that I had Newton rings and glass
impurity problems with
the RC paper. The effect
was light speckles in a
random, but repeating pat-
tern. I solved the problem
by dusting the negatives with
corn starch and rotating
the contact frame during ex-
posure.

I did indeed find color
printing to be easier than
black and white. I am far
more pleased with color as a
medium than black and white.
The color saturation is
deep, and the predicted
spectral effects when shooting
into the sun fascinate me. Exposure control is no problem — dodging and burning are almost wholly unnecessary. I concluded early that color is the way to use this camera. To use this camera as I have done is a joy in every way.
The following notes are my personal reactions to the photographs. Some technical information is included as well.
1. "The Red Robe" - The photo was taken in my bathroom in Riverkennell (Campus Apartments). This shot and ones similar have been attempted by me on three occasions: the first, using black and white film; the second, using 120 film (High Speed Ektachrome); and the third, the five-inch Ektachrome aerial film processed to a negative. This print is the third attempt. In all instances exposures were one hour. The results were uniformly satisfactory. By this method I was able to accustom myself to the respective sensitivities.
of the films. They seem to be equivalent.

To me the bathroom is a supremely American place. This particular one is quite comfortable as well as visually "loaded." The close proximity of objects is ideal for a literal 360° shot. The camera may be seen reflected in the mirror. The note is my estranged lover— roommate Paula's—a red, lifeless, figure shape, suspended.

2. "April in Rochester" is a synthesised panorama, i.e. I moved the camera around to several locations, here the 121T parking lot.
The subject, snow, is not unknown in Rochester in April. The despicable climate is one from which I constantly seek refuge, hence my stance. The arrows point away from this spot which, despite the respect I have for RIT, is where I want to be.

3. "Mt. Hope - Henrietta" is a synthesis of Victorian architecture and the swamp-field of RIT.

4. "Oatka" is a record of an afternoon spent with Chip De Matteo and Annie Federici. We "found" the beautiful,
but abandoned house by the railroad ... we had to stop and explore.

5. "I-81" near Hazleton, Pa. is a cleft cut through the Pa. mountains. I have been fascinated for years by the striations, but was never able to capture the ambiance using a conventional camera having a single aspect. Here the sense of 360° circumscpection is well used. My Bricks lends a note of scale which underscores the evidence of man's immense potential to alter nature.
6. My home town is "Shillington, Pa.", the sort of town after which model train yard towns are patterned (or is that vice versa?). The town's center is a five-way intersection which the Town Hall, Funeral Home, bank, and drugstore face. The well-scrubbed façades hide the ubiquitous Pa. Dutch scepticism and provinciality. No chances are taken in Shillington, and outsiders are not trusted. The uninitiated should beware.

7. "Owego, New York" is a synthesized vertical panorama.

8. "Henny" Reichman is an old
and loved friend from under-
graduate school. Somewhat
the dilettante child of the
earthy, he sees cross currents
around him and no direct
routes. After a day of walking
and kite flying at Mendon
Ponds I took this picture.

9. "Corvis Hill" is one of the
few promontories in the
area—and one of the few
places to catch a good shot
of Rochester slipping into
night.

10. "Inside-Outside at Highland
Park" is an attempt to
unite the plants of the green-
house and the spring-bush
park.
11. "The Spring Garden" is full of azaleas in full bloom on May 4th in Shillington.

12. On another occasion at Mendon Ponds I photographed Kent Cooper and Jean Kissing, two of my best friends at RIT. (Alternate title: "Adam and Eve in sneakers plus one Coke can.")

13. Early in May while cruising around the Oleg Valley at home I met two girls, "The Disciples of Christ." We talked about religion and the Bible for over an hour (I am an atheist). They lack an in-depth understanding of their psychologic roots.
and believe they have found a panacea for their ills in the life of Christ. I wish them well, but believe their philosophies will have brutal intrusions, as the high tension wires encroach upon the apple blossom world.

14. "Carnival" was taken at a firemen's convention at home. The rides had some of the finest illuminated superstructures I've seen anywhere.

15. "Fun with the Dinks" was taken at East Avon, N.Y. Kent and I indulged in some of the perquisites of being young.
cruised around rural Monroe County in an eleven-year-old Plymouth convertible with expired Wisconsin tags, an ancient Indiana inspection sticker—and a few joints.

16. My 1957 Buick requires a "Lube Job" every 1,000 miles. I wanted to record this well-known event.

17.-18. "Car Show I and II"—Both were taken at the annual Shillington Car Show. I have a keen interest in cars, especially of the late '40's and '50's. I wanted to capture aspects of my
favorite cars: my '57 Buick, a '53 Chevy, which I once drove, a '36 Ford which my father once owned,...

The shadows particularly fascinated me that day.

19. "Mr. Garber's Junkyard" is one of the most visually stimulating two acres around home—a great place to photograph....

20. "Junkyard Apotheosis" Junkyards are 20th Century Asopolises—relatively instant and only the husks of a once flourishing civilization.

21. "Poem for Old Dutschland"
in a reflection upon my boyhood roots — the vestiges of an old, rural, German culture whose surviving monuments are these. I also intended to employ the cliché "Pennsylvania Dutch" images in a protean syntax. This image presents an irony as well — the talents fostered in my youth in Berks County (and Rochester) now compel me to leave my home. The image is a farewell.
Appendix I: Original Proposal
While doing this thesis, especially drafting the proposal, I assessed the roots of my inspiration. The following, although quite incomplete, is a list of influences which my acquaint the reader with my aesthetic sensibilities. They are in no particular order.

Eugene Atget
Garry Winogrand
Jacques-Henri Lartigue
Joseph Sudek
Thomas Cañadas
Ingmar Bergman
Wallace Stevens
James Rosenquist
Claes Oldenburg
Ben Shawn
Ralph Goings
Peter Bogdanovitch
J. S. Bach
Edward Ruscha
Lucas Samaras
John Updike
Appendix III:
In addition to my thesis board, whose advice and encouragement has been vital to the direction and success of this project, I thank the many persons whose patience and aid deserve special note. Among them are:

Jorma Caristo, RIT
John Carson, RIT
Bob Keogh, Alfred, N. Y.
Fred King, Eastman Kodak Co.
Eric Penner, Alfred, N. Y.
William Shoemaker, RIT
Cliff Swan, RIT
Appendix IV: Slides
1. "The Red Rose"
2. "April in Rochester"
3. "Mt. Hope - Henrietta"
4. "Oatka"
5. "I- 81"
6. "Shillington, Pa."
7. "Owego, N. Y."
8. "Kerny"
9. "Cobb's Hill"
10. "Inside - Outside Highland Park"
11. "The Spring Garden"
12. "Kent and Jean"
13. "The Disciples of Christ"
14. "Carnival"
15. "Fun with the Dinkle"
16. "Lube Job"
17. "Car Show I"
18. "Car Show II"
19. "Mr. Garber's Junkyard"
Appendix II:
The Poster
. richard stanley . new panoramas.

rochester institute of technology . m.f.a. gallery . gannett building . may 28 ~ june 1, 1974.