

Where Art and Astronomy Meet:

Thoughts on an Artist Residency at NOAO May 2012

Jane Grisewood & Judy Goldhill

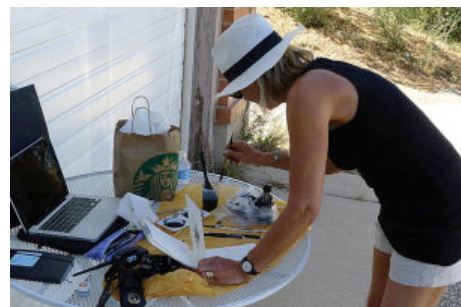
Like most artists, we are engaged in the questions surrounding who we are and why we are here, and how to express these concerns through individual and collaborative practice. We are London based, working across different media, exhibiting both in the UK and internationally. For some time, we had been independently interested in the art-science connection in our work, in particular, astronomy and astrophysics and the realm beyond our own planet. In order to realize and develop the relationship, we explored the possibility of an artist residency at an observatory. After much discussion, it was clear to both of us that such a pre-eminent research, development, and educational center as the National Optical Astronomy Observatory (NOAO) would be the perfect environment to provide an opportunity to facilitate our aims, alongside offering a wealth of resources that would trigger ideas and actions. Communications with enthusiastic NOAO staff led to meeting the new director of Kitt Peak National Observatory, Timothy Beers, and the head of program for Education and Public Outreach, Steve Pompea, in Tucson, in October 2011. Proposals and discussions followed, and at the end of April this year, we arrived back in Tucson to take up the first artist residency working at the headquarters of NOAO on the University of Arizona campus and at Kitt Peak in the spectacular mountains in the Shuk Toak District of the Tohono O'odham Nation some 55 miles southwest of Tucson.



Jane Grisewood: "Seeing" in the Dark

Observing the night sky from the inner sanctum of the great domes and telescopes (27 in all) protruding from the vegetation at the Kitt Peak National Observatory was breathtaking—stillness and silence in the darkness interspersed with the whirring sounds of devices opening and rotating. Through the powerful telescopes and complex technology, I could see images of unimaginably distant objects billions of light years away, and I was seeing into the past. It was like being in a time machine, displacing me from my earth-bound temporality. I was able to experience first-hand remote galaxies and exostars, planets and super moons, asteroids and sunspots—entropic, and always changing in cycles, phases, rotations, and eclipses.

The complexities of the temporal dimension and liminality of space, the fact that everything is in flux, was the catalyst behind the residency at NOAO, and it has been an exhilarating and transformative experience revealing opportunities for new thoughts and applications to inspire my art practice. I spent many years in book publishing before returning to university to study fine art, culminating in a practice-based PhD, titled "Marking Time," in 2010 at Central Saint Martins, University of the Arts London. My practice is concerned with time, memory, and movement and includes durational work extending to performance, installation, and video, as well as works on paper. I'm interested in investigating in-between transient spaces, recording through drawings, notes, and photographs interventions that capture a moment in time whilst simultaneously tracing its passing. I work across media, but throughout, drawing is key—drawing in



(Top) Journals, sketchbooks, notes, drawings, and photographs—a record of Jane's time at Kitt Peak and NOAO headquarters (image credit: Jane Grisewood); (bottom left) outside the home of John Glaspey/Katy Garmany, Jane draws globular clusters and spectra from previous nights' observations at the WIYN 3.5-m and Mayall 4-m telescopes (image credit: Jane Grisewood); (bottom right) Jane recording on Kitt Peak, drawing with graphite, and creating video with a camera strapped to her body (image credit: Judy Goldhill).

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"Spectrum Study 1," 16"x 23", oil on paper. A drawing of an echelle spectrum observed at the Mayall 4-m telescope (image credit: Jane Grisewood).

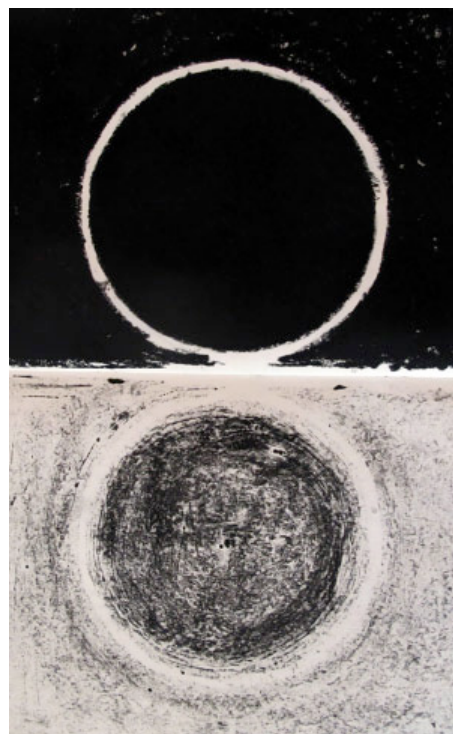
its broadest sense—drawing as a verb, as process, operating through the line.

The phenomenal encounters at Kitt Peak were intensified further by "observing the observers" and the subsequent instructive conversations that occurred throughout the residency. It was a privilege to be in the control rooms with the astronomers and telescope operators who shared their knowledge and time while working through the night, in the dark, searching for data. The spectra from distant stars appeared on the monitors as minimal lines that translated into a wealth of information, from size and temperature to composition and properties that could one day determine intelligent life elsewhere. The learning curve was steep, and within days I had been animatedly briefed on wavelengths and spectrographs, absorption lines and emission lines. The line has been a consistent theme in my work as a means of recording time and movement through a repetitive drawing process. I was absorbed in the various manifestations of the spectra, and puzzling over how to render them as drawings, paintings, and/or installations that would convey their significance. With high definition, 3-dimensional, and manipulated images everywhere, it is the simplicity of the minimal black and white marks that catches my attention—like fingerprints, or DNA—where the invisible can be made visible.

My work is predominantly black (and white), with color seeping into only a few specific

photographic projects—black paint, black pigment, black objects, charcoal lines on black paper—all making the night environment ideal for my ongoing investigation into darkness, blackness, and the depth of black in a scientific context. Ideas for art works ran riot when I was shown an intense black material developed to absorb optimum light, which was the "blackest black" I had ever seen. Defined by its absence of light, black paradoxically enables us to see light. The light from celestial objects and the information we glean from the telescopes would not be possible without the blackness of night. I became increasingly conscious during the residency of the significance and implications of "seeing" in the dark, and it became an apt metaphor for my experience at NOAO. Every night, without light, I would draw the moon in graphite on black paper and take still and moving images of what appeared to be black sky, which on closer examination revealed traces of starlight.

An added highlight during the time in the downtown headquarters was the collaboration extending to a wider drawing field. Scientists and engineers drew in my notebooks as a way of answering my queries on subjects from stellar evolution and symbiotic stars to dark energy and black holes. The teaching aspects of my practice extend to drawing in other disciplines, outside the fine art context, where it can be used to inform and describe as a means of communication. This was a valuable contribution to my work, defining not what drawing is, but



"Eclipse Study," 23" x 16", oil on paper (image credit: Judy Goldhill).

what it can do or be. I'm hoping to develop the project further and continue this collaboration.

The residency has been provocative in pushing my thought processes into another dimension and in enabling an ongoing dialogue between art and astronomy with NOAO through the generous and enthusiastic response from everyone. Through a variety of media, I'll be extracting from the hundreds of drawings and photographs that filled my notebooks to make a new body of work that might reflect this awe-inspiring cosmological temporality. A temporality where things are continually shifting: expanding and imploding, repelling and attracting, appearing and disappearing.
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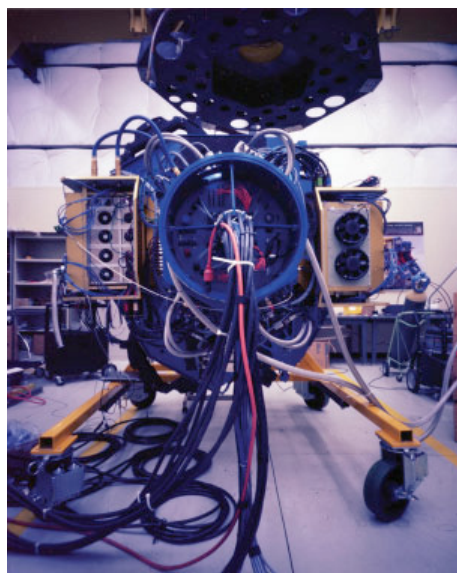
Judy Goldhill: Imaging Light

Whilst I was transferring planes at Dallas International Airport, my luggage was pulled apart by security personnel. I had a total of five cameras: a pinhole with a 5 x 4 film back, medium format and panoramic analogue cameras, and two digital single-lens reflex cameras with accompanying lenses, encased in a secure black box. My entry to the US was somewhat guarded, but on explaining about my upcoming artist residency on which I was about to embark, the

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(Top) Detrick Branson (NSO) at the McMath-Pierce Solar Telescope (image credit: Judy Goldhill); (bottom left) photograph of ODI using a pinhole camera (image credit: Judy Goldhill); (bottom right) Judy photographing the computer room at NOAO headquarters (image credit: Jane Grisewood).

guards were so enthusiastic. "How cool, can we carry these bags for you?" I wish they had, they were very heavy.

I have been a portrait photographer all my life, having learned photography at art school as part of my undergraduate sculpture degree. Several years ago, I returned to art school to complete an MA in Fine Art at Central Saint Martins, using photography as the basis of my

work. As a result, I have not only turned to landscape but also to the poetics of technology embedded in the land, so that prior to my residency at NOAO, I had been photographing nuclear power stations in the UK. This resulted in an exhibition in London earlier this year.

I have been harboring hopes that I could come to grips with the depiction of landscape in relation to the cosmos. This has been a develop-

ing topic for me over the last few years while I have been photographing volcanoes, the Suffolk coast, and The Holy Land. All the while I have felt challenged to explore the energy and movement of landscape in relation to the skies and the changing, shifting patterns of the Earth. To be present in the landscape, to listen and observe, to react to the syntax of place has gained a place in my art. Part of what I aspired to in Arizona was to find ways of representing the granite mountain in relation to seeping arcs of sun, moon, and stars topped by that sky-pyramid of blue light: the whole a daily drama acted out on the sky-island of Kitt Peak.

For some time I have been trying to articulate the capture of movement from stillness, and of making the invisible visible. This theme slowly began to represent itself to me whilst taking pictures on Kitt Peak. I was attracted to movement, a definite rhythm in the embrace of sky, land, and domes, echoing the knowledge that everything in the universe has some rotation. I swiftly realized that I had neither the skills nor technological patience to be an astro-photographer, nor was I going to be able to capture anything of the night sky, despite being in the presence of these magnificent telescopes, the result of which was purely data.

Experiencing the nightly observations in the telescopes, the mechanical parts in action, the whirling of the telescopes, the screeching of the domes as they moved like prehistoric creatures was extraordinary. My challenge was to translate this cycle photographically, to convey something of the telescoping of time, time variability. Using photographic processes, I wanted to utilize the parallels with astronomy and photography, from the initial glass plates that were used in astronomy, to the current CCDs, equivalent to the tiny CCD in my digital camera. I was experimenting with a pinhole camera while photographing both the WIYN One Degree Imager (ODI) and the computer room at NOAO, the reception point for all the data acquired on Kitt Peak. The pinhole, an early, primitive photographic device, staring long and hard at the behemoths of current technological expertise, grappling with light from distant galaxies, stars, moon, sun, and the office illumination, whilst simultaneously pushing the boundaries of darkness, before the pixilation and noise of the digital camera takes over.


Concurrently, I photographed staff in the corridors at NOAO. This has resulted in what I hope will be a rich portfolio of images, taken

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on long exposures from the corridor peering into the subtle diversity of offices, dimly lit by the glow of computer, green neon strips against the harsh sunlight. I also interviewed those staff to gain an understanding of their contribution within NOAO. The time and generosity of experience shown to me by all I came across was quite unrivaled, whilst at the same time, I learned so much from each of their experiences and specialties. I was struck, coming from the UK, how deprived we are of the night sky, and how looking up barely figures in our lives, and how the enthusiasm and love of the subject is so overwhelming that it is passed down, predominantly from father to son, a baton to discover more of the deep dark space. When collated and complete, the set will be published in magazine form.

I found that this residency has offered me a chance to renew and continue my theme of photographing plant and technological equipment that generates the unseen in our lives, in terms of energy and thought. I have returned with more ideas and photographs than I could have ever dreamed of, material and data to inform my work and challenge existing ideas.

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Judy photographing in the mirror workshop at the NOAO (image credit: Jane Grisewood).

Kitt Peak Visitor Center Activities Highlight Once-in-a-Lifetime Events

Rich Fedele

This spring was a busy one for the Kitt Peak Visitor Center. With the annular solar eclipse in May and the Venus transit in June, guests from all over the United States flocked to Kitt Peak to participate in educational offerings.

For the first time ever, we conducted the Great Eclipse Road Show, which was a three-day, motor-coach travel program to northern Arizona to view this wonderful celestial event. The event sold out months in advance, and the trek northward included stops at Lowell Observatory, Meteor Crater (Figure 1), and the final destination of Canyon de Chelly on the Navajo Reservation where the observation took place. Forty-nine lucky guests got to experience the event, perfect weather, and a location that was hard to beat. Rest assured, everyone left with this event implanted in their memories. The trip was organized by Public Outreach Program Coordinator Robert Martino who was assisted by Emily Berkston and docent Vance Tanner. Comments from some of the participants included:

“The whole experience was absolutely outstanding. The organization and fluidity was incredible; one of the best weekends I’ve ever spent.”

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Figure 1: Participants and tour guide of the Great Eclipse Road Show in Meteor Crater. (Image credit: Robert Martino, NOAO/AURA/NSF.)