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## 2 Creative approaches to dark skies research

A dialogue between two artist-researchers

*Helen McGhie and Natalie Marr*

### Introduction

Though the arts are vital in engaging our imaginations of the night sky and are increasingly featured in the public programming of international dark sky parks (IDSPs), the role and value of arts-based approaches to dark sky research remains underexplored. Our collaborative chapter addresses this through a dialogue in which we, two artist-researchers, share experiences, insights, and challenges from our research, undertaken in partnership with two UK-based IDSP contexts, Kielder Observatory Astronomical Society (KOAS) in Northumberland International Dark Sky Park, England and Galloway Forest Dark Sky Park (GFDSP), Scotland. We introduce our individual projects before situating our work at the intersection between a renewed cultural engagement with dark skies and broader commitments to develop interdisciplinary research into dark skies. While the arts are considered valuable tools for communicating the wonders of the night sky and for facilitating meaningful relationships with dark landscapes, far less attention has been afforded to the value of the artistic process itself, which we will consider here. As artist-researchers working in and with IDSPs over several years, we are uniquely positioned to share the value of creative research partnerships with IDSPs and how they can enable stakeholders to reflect on and contribute to the dark sky experience. We do so through a dialogue that explores synergies between our respective projects—one based in the field of photography, the other in cultural geography—sharing our experiences, insights, and challenges of working with IDSPs as research sites and partners. Reflective in style and concerned with questions of method, site, and practice, our dialogue demonstrates the receptive nature of creative research and how its production can contribute to IDSP activities (for the public and internal stakeholders) to enrich existing public events and offer communities renewed contemplations with the environment. Artist-researchers use creative methods to learn from and respond to places and people; they can enrich cultural narratives around darkness and the night sky, meeting the aspirations and challenges of the increasingly interdisciplinary field of night studies. We close the chapter with a set of critical reflections on our contributions and share propositions to expand our work. These will consider the value of situating artist-researchers in

IDSPs, demonstrate how there is further room for artist-researchers to explore, and suggest future opportunities for opening discussions around this working approach.

### **Arts-based approaches to dark skies**

IDSPs are places that provide public access to pristine dark skies not only through specialist facilities and knowledge but also through recreational and cultural activities that seek to integrate “all that lies above—sights, sounds, hopes . . . into our total lives” (Jafari, 2007, p. 55). IDSP public programmes increasingly feature the input of creative practitioners whose contributions include permanent sculptures (Kielder Art and Architecture, 2023), artist residencies (National Park Service, 2022; King, 2022), and temporary artworks, workshops, and events as part of dark sky festivals (An Lanntair, 2022; Mayo Dark Sky Festival, n.d.). Creative contributions are considered valuable for communicating the universe’s wonders through stunning visuals and expressive media and for deepening public relationships with the night sky through installations that inspire and enchant (Charlier, 2018; Jerram, n.d.). While this is heartening to us as artist-researchers, attention is often given to the public-facing outcomes of artworks rather than the process of artistic production itself, including planning, practice, and reflection.

Our chapter addresses this through a reflective dialogue that draws on direct experience and contemplates the production of research—our thought processes, stakeholder engagements, and site relations. From different perspectives, our projects share a commitment to making work in dialogue with IDSPs, using arts-based methods to cultivate new perspectives of, and relationships with, the night sky and to contribute to the cultural development of dark sky places. Arts-based methods position artworks (paintings, installations, photographs) and creative participation (conversations, workshops, happenings) as generative sites of research and exchange (Candy, 2019; Barrett and Bolt, 2010). Oriented to “the collective creative potential of a given constituency or site” (Kester, 2004, p. 24; see also, Hawkins, 2015), arts-based methods de-centre the artist as primary meaning-maker and facilitate the mutual exploration of ideas and processes to produce new and unexpected findings.

With artist training from the Royal College of Art (London, UK), Helen brings her creative expertise in using “staged” photography (Cotton, 2020, pp. 38–69) to articulate the experiences of astronomers at KOAS. Helen’s research—*Close Encounters: Developing Photographic Outcomes in Collaboration with a Science Communication Organisation in Northumberland International Dark Sky Park*—explores the value of an artist embedded within a small-scale science outreach charity. It uses methods of arts-based research and creative reflective practice to engage with the dark sky community during an extended five-year research residency. Helen learned the personal stories of observers, such as why they observe and what inspires them about dark skies. In response, she created a series of photographic outputs: on-location portraits (of staff, volunteers, and visitors), otherworldly landscapes, still-life photography, and a short film. Images were informed by conversations with the people of KOAS, which she visually interpreted before

later disseminating as artworks in a public museum context and *in situ* at KOAS, during observing sessions and special “arts” events, which included an online exhibition (embedded within the KOAS website), an immersive sound trail, and an outdoor photography exhibition. Creative production and dissemination generated opportunities to engage the community through impromptu chats during observatory events and during structured art experiences led by Helen.

Natalie’s research—*Windows to the Universe: Mapping the Values of the Galloway Forest Dark Sky Park*—explores the sociocultural values of dark skies from the situated perspective of the GF DSP, which was awarded dark sky status by the International Dark-Sky Association in 2009 and is the first of its kind in the UK and Europe. The project maps how the park and its values are variously imagined, experienced, and enacted by stakeholders in the years following international designation. Currently situated in cultural geography and trained in contemporary fine art practice, film-making, and experimental media, Natalie’s research practice is interdisciplinary, composed of qualitative research methods, ethnography, and creative enquiry through long-exposure photography, audio recording, and embodied, participative practice. Interested in how dark sky values emerge *in situ*, her research has increasingly attended to the aesthetic experience of the dark sky park and the various activities and practices that shape it. From public stargazing events and guided tours to informal gatherings of local residents and contingent encounters with other nocturnal inhabitants, the project presents a rich ethnography of the social lives and landscapes of the GF DSP and elaborates an expanded vocabulary of dark sky practice. Conducted during a period in which the GF DSP celebrated its ten-year anniversary, *Windows to the Universe* engages stakeholders in collective reflection, contributing to the park’s future development.

Our respective projects, while different in form and discipline—one a PhD by practice based in the field of photography, the other a PhD by thesis based in cultural geography—involve external partners in the research design and delivery. Such research containers allow us, as artists, to explore the possibilities of arts-based research in dark sky contexts over a sustained period and in conversation with stakeholders. This chapter brings our respective projects into a conversation to share practice, critically reflect on the impact of our work, and identify opportunities for future partnerships between artist-researchers and IDSPs.

## A dialogue

Our process began with a few initial questions shared in an online document, which grew into a more fluid correspondence, as each response prompted a new question. Our dialogue is inspired by discussions we had at *Dark Sky Meeting*, an interdisciplinary conference hosted by Exeter College, Oxford, where we met for the first time in early 2022. This encouraged us to explore the intersections of our work, the value of creative practice under dark skies, and the importance of building stronger connections between researchers and artists in this growing field of study.

Dialogue can be an open-ended and reflective mode of investigation that shifts focus from the fashioning of distinct outputs or findings to the fostering of

participative and site-responsive modes of knowledge production (Kester, 2004, p. 24). As a lively practice of speaking, listening, and responding, it fosters a generative space for exploration and speculation, allowing unexpected questions and solutions to emerge (Edwards, Collins and Goto, 2016). We employ dialogue here as a critical tool to open discussions around the value of creative practice in dark sky contexts, share practice, and identify new trajectories for our work at the intersection of academic research, creative production, and dark sky practice.

**Natalie (N): What were the origins of your project, and what were your initial questions or points of reference?**

*Helen (H):* I have printed my photographs in the darkroom for years; my process involves intuitively selecting images, testing exposures, and considering how my images communicate to the world. For me, darkness is not only a practical necessity for analogue photography, but a productive space to imagine and create stories, where the quiet moments between exposures enable contemplation. Seeking inspiration for darkness in a new context, I applied for a PhD opportunity in partnership with KOAS, located in the second largest IDSP in Europe; the project sought mutual benefit for an artist and the observatory when they worked together. At the start of the project, KOAS mainly used amateur astrophotography for marketing and print sales, or open-source space telescope images in presentations. Artists interested in astronomy practised astrophotography or worked with available astro-images to communicate tensions between “art and science” ask political questions or explore personal narratives. By producing photography, I wished to respond to my experiences of darkness, informed by the dark sky communities and their situated experiences of night (Figures 2.1 and 2.2).

Whilst seeking creative inspiration within darkness, I wanted to explore KOAS as a small-scale astronomy charity, with a community passionate about dark skies, whilst discovering new methods for artists to engage in partnership working. Whilst there is a tradition of creative practitioners undertaking short residencies at local observatories (King, 2022; Rickett, 2014) and at large institutions (ESA, 2023; Arts at CERN, 2023), artists are understood to benefit more than the hosts (Glinkowski and Bamford, 2009), and there is a need to explore if more mutual benefits can be gained for both artists and organisations over a longer term. As IDSPs are in publicly accessible rural areas (if one can drive), protected for “scientific, natural, educational, and/or cultural heritage resources, and/or for public enjoyment” (International Dark-Sky Association, 2018, p. 3), there is the scope for artists to position their creative expertise as an IDSP “resource” whilst finding inspiration under dark skies. At the start of my project, I learned that there was limited access to KOAS staff and space during busy public events;



Figure 2.1 “Wanderer, 16.02.20”, portrait of a KOAS astronomer (2020). Image credit: Helen McGhie.

my early visits could only scratch the surface of possibility. Undertaking an *extended* residency for five years may deepen my relationships with staff, and my understanding of the observatory and Kielder’s darkness, whilst testing different photographic responses. Through my photographic encounters with dark skies (and reflections in the dark-room afterwards), I hoped to develop a new visual language of *being* in an IDSP.

N: My relationship with the GFDSP began during my master’s degree in filmmaking, for which my final project was a short film that explored stargazing, darkness, and grief in conversation with family and friends, and amateur astronomers and dark sky rangers I had met in Galloway. I saw the PhD project advertised and was compelled by its framing of the dark sky park as a generative site for creative, interdisciplinary



Figure 2.2 “Dark Adaptation”, landscape photograph at KOAS (2019). Image credit: Helen McGhie.

research. My research aimed to investigate the cultural and social values of the GFDSP, the phenomenon of stargazing, and the impact of international dark sky designation on the region. I wanted to explore the intangible values of dark skies—what it *feels* like to look at the stars and experience natural darkness, how the dark sky park features in people’s lifeworlds, and what motivates stakeholders to become involved. My approach was informed by cultural geography and environmental humanities literature with a focus on light, darkness, and the night sky as underexplored features of landscape, as well as non-representational approaches that attend to the experiential, sensory, and situated dimensions of environmental relation (Sumartojo and Pink, 2019; Vannini, 2015).

I was also fascinated by the tension between international designation as a narrative “from above” and the actual practice of stewarding a dark sky park “from below”. How were the core values of the international dark sky movement mobilised and enacted by the GFDSP and what other values were emerging or already present? Ada Blair’s (2016) research on the Dark Sky Island of Sark was a key reference. Blair shared stories of community organising and relationships with the stars and darkness which were developing through informal stargazing and nightwalking practices. It presented an account of an IDSP as not just visited but inhabited and practised. Like Blair, I was interested in

what it's like to live and work there. What motivates such an endeavour, and what sustains it? Who is involved, what does it mean to them, and does its meaning change over time?

**H: Was there an existing context for “art” when we arrived at our respective IDSPs, and if so, did it shape our approach?**

*N:* The GFDSP's Recreation Services Manager Keith (my main point of contact) was keen to explore Galloway's dark skies beyond astronomy through social and cultural events that incorporated the arts. The research project was one vehicle through which to do this. My fieldwork began with two events that were already taking place in the dark sky park. The first was the inaugural European Dark Sky Places Conference (EDSP), organised by the Galloway and Southern Ayrshire Biosphere, Forest Enterprise Scotland, and the International Dark-Sky Association, which featured a panel on creative approaches to darkness and light. The second event was *Sanctuary*, a 24-hour experimental arts festival that had been running biannually since 2013 in one of the darkest parts of the park. I took part in both events as a researcher speaking on the conference panel and as an artist commissioned to make a site-specific artwork at the festival. Occupying this dual role of artist and researcher encouraged me to combine research methods throughout my fieldwork (for example, using sensory ethnography in interviews or giving participants my handmade cameras with which to make their own images). It also prompted me to reflect on how specific contexts and communities of practice (a specialist conference vs. a public arts festival) shaped what was possible in the research. At the conference, I presented my research as part of a community of dark sky researchers and practitioners seeking to exchange ideas and develop solutions to the challenges of artificial light pollution. In contrast, at *Sanctuary*, the slow and receptive qualities of the artwork—an installation where visitors could listen to the sounds of the forest at night through sensitive microphones and a bat detector—instilled a sense of my research as emergent, participative, and site-specific.

*H:* KOAS is part of Kielder's Art and Architecture Trail, designed as an architectural installation for visitors to engage with during the day and at night. Considered as a “transgressive observatory” by Peter Sharpe, Kielder's art curator (McGhie, 2020), its unusual design was completed by Charles Barclay Architects in 2008 to look like the deck of a ship emerging from the landscape, reminding visitors of astronomy's relationship with nautical navigation. There was a process of creative “pre-visualisation” during its design phase, where stakeholders imagined its appearance, visitor engagement and relation to artworks nearby, notably James Turrell's Skyspace (Visit Kielder, 2000). Artistic responses were also invited for the launch, where Alec Finlay realised a



poetry installation for the windmill (2008a) and the *One Hundred Year Star Diary* publication (2008b). Despite its artistic grounding, KOAS developed as a science attraction and amateur astrophotography was the main creative practice when I arrived in 2017.

I sought to provoke the practice of photography at KOAS, to test out alternative modes of image-making, of capturing one's *encounters* with and emotions under darkness. Recognising the practice of "pre-visualisation" during KOAS's design (Kielder Observatory, 2021), I considered parallels with the imaginative process of making analogue photographs unaided by a digital preview screen; one pictures light, contrast, and composition in their mind's eye (Adams, 1948), not knowing the results until the film is processed. I initially captured staff portraits using flash bursts to punctuate the camera's inhibited vision at night. When shooting, I couldn't see my subject and they couldn't see me, so our other senses were heightened, and insightful conversations unfolded between us.

### **H: What has it been like to research in an IDSP and with dark sky communities/practitioners?**

*N:* At the time of starting my research in 2016, the IDSP model was still very young. The prospect of researching from the situated perspective of a working IDSP and its stakeholders was both exciting and daunting. When I started fieldwork, I knew that the park did not have a dedicated team or working group but was surprised when I started conducting interviews to find that key stakeholders such as environmental agencies and conservation workers were struggling to connect with the GFDSP as both concept and material landscape. There was a sense that momentum had been lost and uncertainty around how people could get involved in the park's development. This was disheartening to encounter after the excitement of the EDSP conference and *Sanctuary* (Sanctuary, 2021) festival. The dark sky park, both as a concept and material landscape, felt nebulous, something that would prove difficult to "study".

As I got more involved with the GFDSP's stakeholders and landscapes however, its "nebulosity" became less of a concern and more a conceptual and methodological resource. If not in an official capacity, what other ways were people engaging with the dark sky park and how might these activities nurture stakeholder relationships and shape the future of the park? I joined stakeholders, practitioners, and residents on walks and site visits and spoke with them about their personal encounters and associations, often documenting their observations and experiences through sketches (Figure 2.3). Listening to a resident describe the pleasure of walking home from the pub with friends and their conversation being interrupted by a meteor shower attuned me to

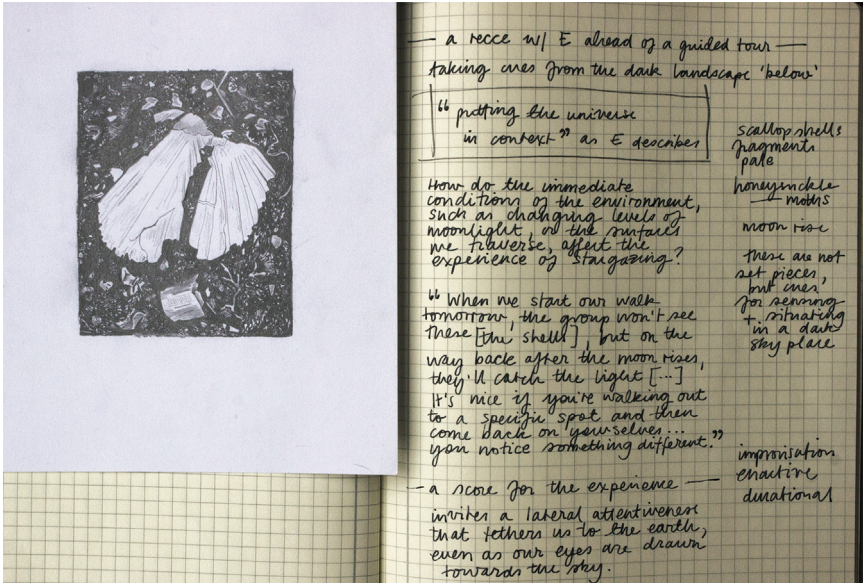


Figure 2.3 Illustration and notes reflecting on-site visit conducted with dark sky ranger ahead of hosting a guided tour. The illustration shows a smashed scallop shell used as surfacing material by Forest Enterprise Scotland, which then becomes an unusual texture in darkness and reflective detail in moonlight. Image credit: Natalie Marr.

the “everynight” experience of the GFDSP. On a site walk with a dark sky ranger to plan an experiential stargazing tour, I learned about how the GFDSP’s practitioners incorporate Galloway’s dark landscape (as well as its skies) in the visitor experience. On multiple site visits to a neolithic cairn across a 24-hour period, a devoted resident (and unofficial caretaker) invited me to explore the site through a series of sensory and conceptual exercises he uses as part of his daily visits (Figure 2.4). Such activities enabled me to map how dark sky values and “stakes” not only belong to conservationists and starry-eyed tourists but also emerge through everynight encounters and informal practices of dark sky engagement.

H: Working in Northumberland’s immersive landscape was transformative, helping me to redefine my creative exploration of photography with the dark sky community. However, there were also moments that provoked both my creative process and KOAS operations, through the sometimes “disruptive” nature of art practices in rural places (Rowe, 2019). For instance, in February 2022, I installed an experimental “sonified image” (photographic data converted to sound) audio trail outdoors, which altered the “feeling” of the place (some visitors



Figure 2.4 35 mm negatives made with a hand-constructed pinhole camera and sketches from visits to Cairn Holy with a local resident (2018). Image credit: Natalie Marr.

said it felt “eerie”), and my conversations with guests altered the event flow. The sound was my attempt to share photography without artificial illumination (regularly used in night-time artworks), so audiences could *imagine* pictures aided by the sound, rather than seeing them.



Figure 2.5 Installation of image “Approach” from *Another Dimension* outdoor exhibition at Kielder Forest, summer 2022. Eleven photographs were installed on the Skyspace Walking Trail towards KOAS. Image credit: Helen McGhie.

One visitor said she felt like an *explorer*, seeking to know what the sound was and said it intensified her experience; others were curious about the process, or recalled science fiction films. There was disruption to my practice too, which became solely focused on making work for KOAS rather than for “art world” audiences (as I had previously), in galleries and art publications. My research-led creative outcomes did not follow trends and were less interesting to art curators.

Seeking to engage Kielder visitors outside of stargazing season, I produced *Another Dimension*—an outdoor photography exhibition installed on the path to KOAS in summer (Kielder Observatory, 2022)—it offered a glimpse into a winter night, for those who happened upon it (Figures 2.5 and 2.6). One image, *Dark Adaptation* (Figure 2.2), pictured KOAS’s car park, illuminated with the red “safe-light” astronomers use to retain nocturnal sight, which may be likened to a photographic darkroom. I organised art walks, with KOAS trustees and volunteers, and co-hosted a public event with Peter Sharpe, who discussed the observatory’s place in Kielder’s Art and Architecture Trail (Figure 2.7). Attendees openly responded to the work; one visitor said that it “took them away from society and brought them serenity and peacefulness”, others said the images were “otherworldly”, and the exhibition made them “think about how each individual has their





Figure 2.6 Installation of image “Wanderer #2, 19.01.2019” from *Another Dimension* outdoor exhibition at Kielder Forest, summer 2022. Eleven photographs were installed on the Skyspace Walking Trail towards KOAS. Image credit: Helen McGhie.

own experience”. Such mediations demonstrated how the artworks conveyed similar thoughts to those that KOAS staff had shared during my earlier photography shoots. I learned that audiences could feel something of the “dark sky” experience out of season, or on nights with poor visibility.

**H: When working in the GFDSP, did you experience disruptions as an artist-researcher? How did this affect your creative practice?**

N: Yes, disruption has been a valuable part of my practice, though not always in the ways I expected. I started fieldwork with a notion of the artist-researcher as “a disruptive force” who, by using alternative methods and modes of engagement, can creatively interrogate and expand “normative practices” (Hawkins, 2015, p. 156; see also, Edwards, Collins and Goto, 2016). There is certainly value in this, but it can also reinforce an imagination of research sites as stable and fixed locations, awaiting the researcher’s interventions (Hyndman, 2001; Rose, 1997). It was as I was walking to or driving between locations at night that I experienced disruptions from the park’s various nocturnal inhabitants in a literal way—flashes of wings and tails across my windscreen, the intrusive spotlights of “lampers” hunting deer and hares, and the

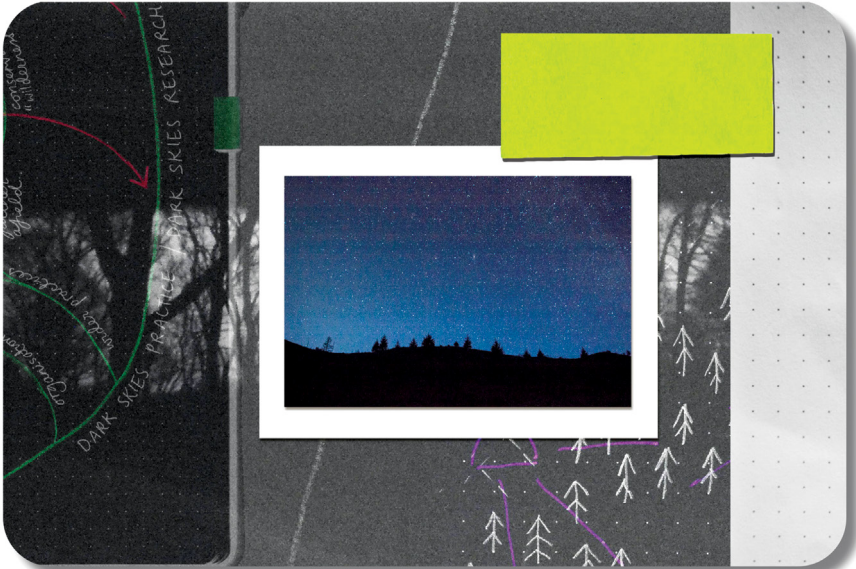


*Figure 2.7* Documentation of the *Art Trail Walking Tour* led by Helen McGhie and Peter Sharpe, Kielder Forest, September 2022. Image credit: David Partington.

subtle but ever-changing variations of light and darkness in the forest as I made long-exposure photographs.

Such encounters opened new spaces of enquiry, shifting what was meaningful in the project and who or what participated in this meaning-making. This helped me to access a different experience of myself





**Stakeholders,**

What stake do you have in research about dark skies?

What would you like researchers to investigate?

What would be helpful to understand about other dark sky places and practitioners?

How do your experience, skills and methods support or perhaps challenge dark sky research?

**Researchers,**

How might the GFDS and other IDSPs be productive of international dark sky knowledge and practice?

How will you address the site? With what frames of reference? What modes of engagement?

What stake do you have in dark sky places and practice?

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*How can we work together or alongside?  
What might a partnership look like?*

Figure 2.8 A “prompt” card (front and back) included in an alternative field guide to the GFDS, made in response to a growing sense of the researcher as a stakeholder, co-involved in the development of the park. Image credit: Natalie Marr.

within the unfolding narrative of the GFDSP's stewardship, by emphasising my capacity as an artist-researcher to be open and responsive to the generative potential of the site (Kester, 2004, p. 24). I explored this further through an evening workshop I facilitated with stakeholders in a wood located in the core zone of the park. The workshop was staged as "an alternative committee meeting", in which we explored Gallo-way's dark skies and landscape through a series of situated and sensory exercises that drew on my research encounters and creative approaches with an emphasis on receptivity and relationality as modes of stakeholder engagement. This included a "call and response" exercise using head torches to interact with one another from different positions in the wood and deep listening exercises (Figure 2.8). Participants also contributed to the workshop "programme": a staff member of Forestry and Land Scotland gave an impromptu talk about a site-specific artwork, and a dark sky ranger led a campfire activity at the end of the night. While the workshop invited participants to engage in unexpected ways with the GFDSP and with each other as dark sky stakeholders, it also opened up my own research engagements, especially my creative practice, which was normally planned and conducted alone. Sharing it in this live group setting encouraged me to think of my research as a form of stakeholding and of myself as a person with stakes, co-involved in the stewardship and development of the GFDSP [Figure 2.8].

**N: As you are nearing the end of your research partnership with KOAS, does it feel useful to think of yourself as holding stakes within dark sky practice and community?**

*H:* Yes, definitely, I am now part of the KOAS community, and in turn, they (and the environment) have shaped my approach to creative practice. My work occupies a "betweenness", crossing the worlds of photography and an IDSP, both of which have been enriched and challenged. I can relate to an astronomer's practice of "averted vision" as a useful metaphor for looking through peripheral sight to see something less luminous; I now look for less apparent contexts (and audiences) to creatively engage with and have invited KOAS to do the same, who have enhanced their public offer through the arts. My relationship with photography has shifted, and my motivations for making work feel more meaningful, especially since they engage with broader public audiences.

I am at the end of this long-term project and can see the contributions I have made to KOAS: expanding the events programme, facilitating conversations that allow reflection on organisational practice, and challenging what photography can be in an IDSP context. There were expectations of "what a KOAS photographer does"; they capture the



night's sky. My creative practice—which reflects on the experiential *through photography*, rather than capturing the stars above—recalls KOAS's original transgressiveness within the landscape, it has shaped how visitors encounter the organisation. Engaging in dialogue with the KOAS community became essential for finding synergies and insights; the spoken *exchanges* between us were central and informed the work at each stage, it is ongoing. As a transformed practitioner, I now seek to apply this practice to new places, to make new connections and gather new knowledges.

## Reflection

Through a reflective dialogue, we have shared how artist-researchers can work in partnership with IDSPs and the mutual benefits that may occur. Helen invited KOAS communities into her creative process through ongoing dialogue, from conversations with the community to artistic planning, dissemination, and reflection on her creative outcomes. Natalie engaged GF DSP stakeholders in collective reflection to map its diverse values, lifeworlds and practices in the years following international designation. Partnership work can disrupt the conventional practices of IDSPs and artists, leading to constructive outcomes. We now close the chapter with a set of critical reflections and propositions for future work.

There is value for IDSPs when working with artist-researchers. The creative process can enhance how existing communities (and new audiences) encounter dark sky places through new imaginative, emotional and sensory experiences that promote “public enjoyment of the night sky and its heritage” (International Dark-Sky Association, 2018 p. 3), whilst enriching narratives around the cultural values of dark skies. Further, our work contributes to the development of international dark sky places by engaging stakeholders in reflection on professional practice and their motivations for protecting the night. We encourage IDSPs to seek partnerships with artist-researchers and to allocate time and resources to build on our work.

There are benefits for artist-researchers who situate themselves in IDSPs. We have been ambitious when co-producing work with dark sky communities, by applying our creative skills to a new environment, beyond the “art world”, whilst also responding to recent calls for interdisciplinary approaches in dark sky research (Kyba *et al.*, 2020). As creative practitioners whose work thrives on inspiration and (quite often) disruption, we have experienced IDSPs as generative contexts through which to develop work. We have experienced transformation in our practices, shifting from “artists” to “artist-researchers” with creative stakes in IDSPs which we frame not just as research contexts or case studies but sites of knowledge production themselves. We encourage future artist-researchers to work on-site to develop new interventions that respond to the intangible matter of darkness. Practice-based PhDs, in particular, may offer excellent opportunities for artists to develop work in and with dark sky places through sustained partnerships.

Our reflective dialogue affirms the value of sharing practice as artist-researchers developing work in a unique research context. We have reflected and elaborated

on one another's independent research, demonstrating to ourselves and others the value of arts-based approaches to dark sky contexts. Through dialogue, we have shown that whilst we started with a similar collaborative setup, our methods and outcomes differed as our explorative work responded to the shifting IDSP seasons, engaged in conversations with stakeholders, and informed public outreach activity. We propose further opportunities for dialogue between artist-researchers, through conferences or workshops that can provide space for those who have worked in dark sky contexts to share and reflect on their experiences, whilst introducing this rich area to those wishing to develop projects with dark sky places. Such conversations would build capacity among artist-researchers, strengthen the case for further creative interventions in IDSPs, and inform dark sky stakeholders on the resources required.

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