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LAB

Fostering Science Relationships Through Film

Results from Community Screenings of OBSERVER

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Fostering Science Relationships Through Film

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Fostering Science Relationships Through Film

EXECUTIVE SUMMARY

In 2025, Science Communication Lab (SCL) released the feature documentary film Observer through a series of more than 75 screenings hosted with community and educator organizations across the US. Each event combined the film with hands-on observation activities. We used a research-practice partnership between the filmmakers and science communication and engagement researchers to create the film and understand how it might go on to live in the world, with what impacts.

This report summarizes viewers' experiences with the film – rich insights that viewers shared related to: what stood out in the film, what relationships they developed with film characters, how the film and related observation activities affected their views of science, and what the film made them want to do or what they did do with inspiration and ideas from the screenings.

The film, engagement campaign, and research was funded by the Gordon and Betty Moore Foundation.

GOALS: connect through observation and science as human endeavors

Our goals with the film were to create an experience that would allow people to connect more deeply with science and scientists, and to see themselves as able to do science or be engaged with science. With our research-practice partnership, we wanted to understand how people relate to science and scientists and form the foundations of trust, identification, and shared values. By centering the film on observation and portraying a variety of characters, we also hoped audiences would want to engage in observation themselves, providing a longer-term impact of the film on how people experience the world around them and science's role in understanding it.

To do this, we portrayed science as a deeply human, creative, and collaborative endeavor (or the nature of science as a human endeavor). We created events that furthered that message while offering opportunities for people to gather and connect. We were also interested in whether the film and events could engage with people who might be less connected to science in their lives. We held events across 32 states and at science museums, national and local parks and gardens, art centers, local theaters, a high school, and a retirement center, among others. Through primarily open-ended questions, we then asked viewers at approximately 20 of these events to share their thoughts on the film and experience.

IMPACTS: more human connections to observation and science

People were highly engaged in and active interpreters of the film – finding meaning in diverse aspects spanning its form, content and the screening experience. **Viewers overwhelmingly identified with at least one of the many characters in the film.** 92% of public respondents and 96% of educators found personal resonance with at least one character. They often cited shared mindsets, approaches, and priorities – deeper characteristics and experiences that appear through the brief but meaningful time they spent with characters in the film.

Viewers also shared that the film **shifted how they think of science and scientists.** 57% of public viewers and 50% of educators reported a change. Responses indicate that the film successfully conveyed the nature of science. That science depends on observation, collaboration, creativity, and the many people who do it and places where it occurs. Viewers also saw the scientist characters as grounded, passionate, and relatable. These impacts were likely for viewers less connected to science. **Those who said it didn't change their views overwhelmingly reported that they were already well familiar with science and scientists and held (positive) views in line with the nature of science.**

Most educators – 97% of respondents who attended a screening at the National Science Teaching Association's annual conference – **said they would use the film in their classroom.** They shared that this was largely because of its emotional impacts and how it portrayed the nature of science and observation as an innate human ability – and therefore observation and science as something anyone can meaningfully do.

IMPACTS: more human connections to observation and science, **and inspiration to act**

People overwhelmingly **left the film wanting to do something**, and those who responded to surveys days and months later reported that they continued to think and act differently as a result of the film and screening events. Of public screening attendees, 94% shared at least one thing the film made them want to do, and of those, 60% shared multiple actions. The most common was wanting to shift how they observe - to create intentional observation time or practices, pay attention more often, slow down to do so, and use more of their senses. Many were inspired to use tools and methods that appear in the film and in the Observer activity kits that many screening attendees received, pair intentional observation with activities they already enjoy, seek out new ways to keep learning, and rekindle old interests or feel empowered to try something new. Many responses included wanting to share the film, activities, and insights with others including children in their lives, colleagues, and friends. Participants in the more intensive daylong screening and activity events reported new connections with others in their communities that they hadn't known before, and who they planned to stay in touch with.

EXECUTIVE SUMMARY



“What stood out to me was the humanity. Humans being, humans seeing, humans doing, humans adapting, humans being human. That touches me in a way nothing else ever could and it never let go of me throughout the entire film.”

– OBSERVER viewer
The Sidewalk Theater, Birmingham, AL

“‘To be an expert you must muck around like a novice.’ This is a concept that I think is really hard for people in our culture to grasp, yet after watching this film I experienced so many people observing and engaging with the garden in a way I hadn’t seen before. I think this message resonated with the audience as it did myself.”

– OBSERVER viewer
Norfolk Botanical Gardens, Norfolk, VA

“The film has encouraged me to think of myself as one observer among many others -- that we each observe in our own way and asking, ‘What do you see here?’ is a good way to get to know one another!”

– OBSERVER DAY participant

CONCLUSION: nature of science learning and relationship-building

1

The motivation for the creation of the film – to portray the nature of science – seems to have come through and shaped viewers' understandings of science and scientists to be more aligned with realistic, and typically more welcoming, views of science. This seems to have been especially impactful for viewers less connected to science, and for making the film one that educators plan to use to engage their students in personally meaningful science learning.

Relatedly, the many characters, their diversity of experience, how they come across as grounded, feeling, and engaged people, and their relationships to each other supported both greater understanding of science as a human endeavor and opportunities for viewers to find meaningful aspects of themselves throughout the film.

2

The film's topic of observation and how it conveys it, through the many characters and how their diverse approaches are connected, supports nature of science learning and opportunities to identify. It portrays observation as inherently human, doable, and meaningful across people, approaches, and places. That theme and how viewers received it also seemed to overwhelmingly prompt viewers to new actions, particularly building in intentional observation and exploration, and often doing so with others. The activities present at the events and in the kits were valuable for further highlighting these possibilities and encouraging viewers to immediately start to put them into practice.

3

The community-based distribution helped us explore how film can be a connective tool, and how it might live in different local communities. There seems to be an appetite for and great potential to continue exploring how film can create space for people to gather, discuss, learn, act, and just be together.

Film as a medium for new connections: gatherings, stories, and perceptions of people and places far and near

In 2025, Science Communication Lab (SCL) released the feature documentary film Observer through a series of screenings hosted with community and educator organizations across the US. This report summarizes rich insights that viewers shared on: what stood out in the film, what relationships they developed with film characters, how the film and related observation activities affected their views of science, and what the film made them want to do, or what they did do with inspiration and ideas from the screenings.

Observer explores the power of observation through following different observers – scientists, artists, a hunter, and local guides – in locations around the world, from icy Greenland and rural Minnesota to urban Seoul to the Atacama desert in Chile. The film is organized into eight titled chapters, each taking place in a different location with a different set of observers. Each character observes in a different way, based on their experiences. The director provides interstitial voice-overs between the chapters, reading from his "observation journal" to share ideas or questions that connect the previous and upcoming chapter, over footage of the forest and creek in his backyard in rural Maine as seasons change from interstitial to interstitial. Red square frames appear throughout the film, structuring where people observe and providing an additional visual and conceptual connection across the chapters.

One of our goals in making Observer was to portray the human dimensions of science, or the "nature of science" and how it works: how it depends on observation, is tentative, collaborative, creative, subjective, and connected to the people who do it and places where they do it. The film especially focuses on the diversity of people and places that science connects to and how the deeply human abilities of observation are at its core. We hoped people watching would feel motivated to observe the world differently – more intentionally, with new approaches, more frequently – and would see science as something they could do, shape, or otherwise be connected to. This report describes how viewers experienced the film, largely through open-ended questions asking for their own words, and where it seemed to be successful.

Community-based screenings across the US

We organized more than 75 screenings in 2025 with a variety of venues and people. This includes hundreds of educators at the National Science Teaching Association annual conference (NSTA), star-gazers at Bryce Canyon National Park, families visiting the Denver Museum of Science and Nature or the Frick Environmental Center in Pittsburgh, researchers and students at Stanford University in Palo Alto, California or Bemidji State University in Minnesota, and at local cinemas in New Orleans, Boise, Birmingham, and Iowa City, to list a few.

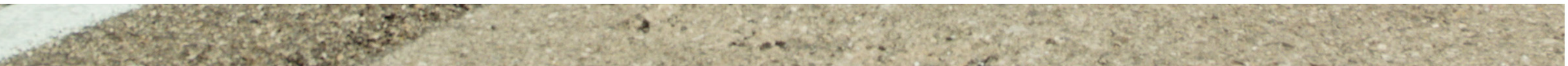
Each screening was an opportunity to play with observing through different activities surrounding the film. Viewers received an "Observer Kit" containing a handmade red square frame, a Foldscope, a paint kit, and an activity book with observation games, among other observation tools. Five of the screenings were daylong events, where the film team worked with local organizations to invite a small group of 20 people from the local community for a screening, discussion, and observation activities. The daylongs were in New York City, the director's hometown in Camden, ME, close to the SCL offices in San Francisco, CA, on a farm near Monroe, WI, and with an impromptu gathering in Cambridge, MA.

To learn about viewers' experiences with the film and the screenings, we asked viewers at a subset of these events to share through:

- Qualitative, online, post-event surveys to attendees of the five daylong events, sent 3-4 days after by a member of the film team who attended – the daylongs. (More information on the sample is in Table A2, page 58)

- Online, qualitative and quantitative, post-film survey that viewers at 11 of the screenings (when hosting venues wanted to offer the survey) took immediately after watching the film, fielded with help from the hosting organizations, as well as an post-film survey adapted for educators at the NSTA screening – the public and NSTA screenings, respectively. (Tables A1, page 57, and A2)

- A QR code in the Observer Kit for kit users to take the same post-film survey (for viewers who didn't already do so at their screening) with added questions about the kit activities – the kit survey. (Table A2)



We wanted to reach geographically diverse audiences and were curious if screenings would attract people beyond those already well-connected to or highly interested in science and science films. We sought a variety of community organizations and venues to host, including nature preserves and gardens, cinemas, art centers, and a retirement center, and adjusted our surveying approach based on viewers' responses and organizer feedback from each previous event to increase response rates and quality. We have demographic information for respondents who attended one of the 11 public screenings at which we collected surveys (see Table A1).

This report focuses primarily on responses of viewers at the 11 public screenings. We describe themes from all of those responses together (N = 274), rather than by location, because of the small number of viewers and responses at some of the events. We also include information on how educators said they would like to use the film (from the NSTA screening), how people reported using the kit (from the kit survey and daylongs), and impacts of the daylongs that focused even more on relationship-building among attendees and beyond.

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WHAT STOOD OUT TO VIEWERS

Viewers were active interpreters, with rich and varied experiences with Observer.

Film offers many ways for someone to immerse themselves in a story or world and interpret large amounts of information often relatively seamlessly. This includes through the multiple and complementary visual and audio streams, including the particularly emotional effects of music, through the passage of time getting to know characters and places, and through "empty space" – or less pre-digested information – that allows people to more actively interpret a scene.

The first question we asked respondents was what stood out to them in the film. This question wasn't originally in our survey, but when we tested with a viewer outside of the project team, they said that was what they most wanted to share right after watching the film. The openness of the question revealed rich and surprisingly diverse ways that people experienced the film, and reminded us of many of the features of film in general and of Observer in particular, beyond our research focus on the characters and the film topic.

The most prevalent theme was people reflecting on observation and how different people see the world so differently, depending on their training and other prior experience – and the implications of that for understanding the world. A viewer in Birmingham, AL captured what many others shared: [What stood out was t]he multitude of perspectives on the natural world. Everyone could be presented the same thing and have unlimited thoughts of what was observed." A viewer in Denver, CO, similarly wrote:

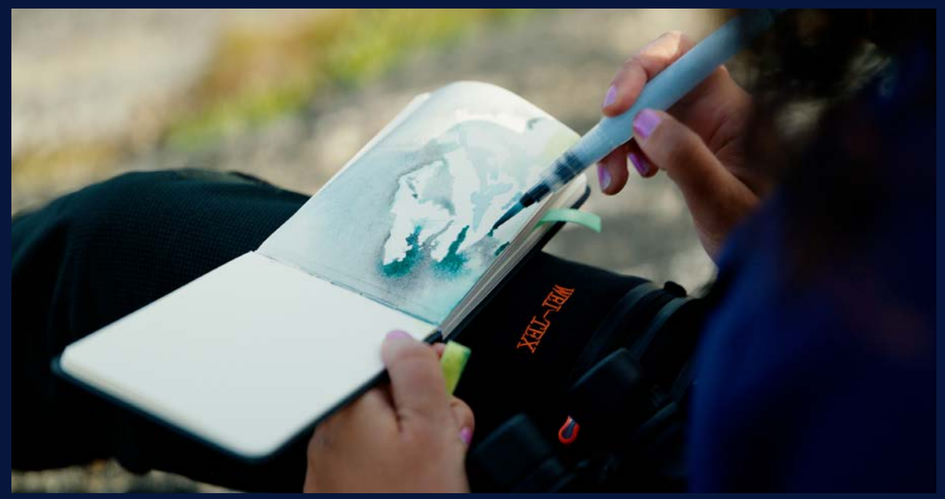
> **"I was struck by how your background/chosen profession "colors" what and how you see things; and how can you possibly know all the various ways of seeing something? It seems it has to be a group effort!"**

WHAT STOOD OUT TO VIEWERS

Viewers were active interpreters, with rich and varied experiences with Observer.

Next most common was the film made them want to observe differently. “It made me think of when I spend time in my garden how I should take an extra moment to see past what I’m looking for and see what else is there,” shared a viewer in Atlanta, GA. Another in Palo Alto, CA shared, “It really made me want to go out and observe more. In nature, in my daily life, and in the city. I also really appreciated that the film included observation in a way that isn’t just sight. Listening, smelling, feeling are also all ways of observing so I really enjoyed watching the part about the listening to birds.”

Many named particular characters or qualities the characters seemed to share.



“I loved how candid and authentic all of the participants were, including those that were found along the way.”
– Viewer in Denver

“Each person/observer was at peace and in tune with their surroundings. They were part of the observation as the physicist stated. I wanted to be there.”
– Viewer in Toms River, NJ

WHAT STOOD OUT TO VIEWERS

Viewers were active interpreters, with rich and varied experiences with Observer.

Many also pointed to the visuals and music of the film, especially the cinematography and colors. This included many mentions of the red square as a striking and effective connecting thread and observation tool. Some shared particular scenes notable for these aspects of visuals, music, and observations or experiences that the characters shared. A viewer in New Orleans, LA, said what stood out was, “[t]he moment where the screen is blacked out and you just hear the bird calls was so beautiful and powerful. I used to think of bird calls as part of the backdrop of a larger scene but when that’s all you are experiencing it’s so breathtaking and captivating. I was overwhelmed by it in a good way.”

Evident in these examples are two other prominent themes. One is that watching the film was often an emotional experience. Many reported that they felt calm, peaceful, joyous, or in awe – along with less commonly named emotions such as surprise or melancholy – or were struck by the characters appearing to feel such emotions. One viewer in Birmingham wrote, “It was beautiful, I felt happy. I was brought to tears twice. The man in Minnesota and the two blind men listening to music and the birds, specifically. Really glad I watched it.” Another in Palo Alto shared, “It was a spiritual experience reminding me how much wonder and joy we miss in the day to day, and reminds me to be mindful.”



WHAT STOOD OUT TO VIEWERS

Viewers were active interpreters, with rich and varied experiences with Observer.

The other common theme in what stood out is personal resonance with one's own identity and history. Several said that the film reminded them of how they used to be as children or other times in their lives. "It transported me back to my own childhood laying in the woods barefoot in the Catskills. It made me want to go outside and look at a small section of life close up. I loved how much it made me laugh also," said a viewer in Denver. A viewer in Norfolk, VA, shared: "It was very meditative. I felt reflective and my mind became quiet yet active. It reminded me of the quiet curiosity I felt as a child." One viewer in Palo Alto, who was a scientist, shared that she appreciated seeing the scientist characters in similarly emotional, personal, and childlike experiences: "People often picture scientists as clean labcoat people in a fancy lab doing very high level things. I enjoyed so much seeing spontaneous "kid like" reactions and hopes and stars in eyes of scientists here. I particularly enjoyed as I am a scientist and it is hard to explain to people. Here it is shown in a pure way."

We find similar responses to our later question on how the film impacted viewers' perspectives of scientists and science, suggesting that the film seemed to humanize scientists for scientist and non-scientist viewers alike (see: **Viewers saw science and scientists**).



Most viewers felt personal connections with characters.

We then asked respondents if they identified with any characters. Character identification refers to when people enter the experience of a character and find similarities between the character and themselves, sometimes imagining themselves being or behaving like the character. Identification can enable viewers to gain new perceptions or understandings of themselves, others, and the world. Identification with scientists in particular seems to be important for feeling self-efficacy and connection related to science.

Viewers overwhelmingly reported that they did identify with at least one character. Among public screening respondents, 92% (N=267) reported that they identified with a character (Figure 1) and 96% of NSTA respondents (N = 97) reported the same.

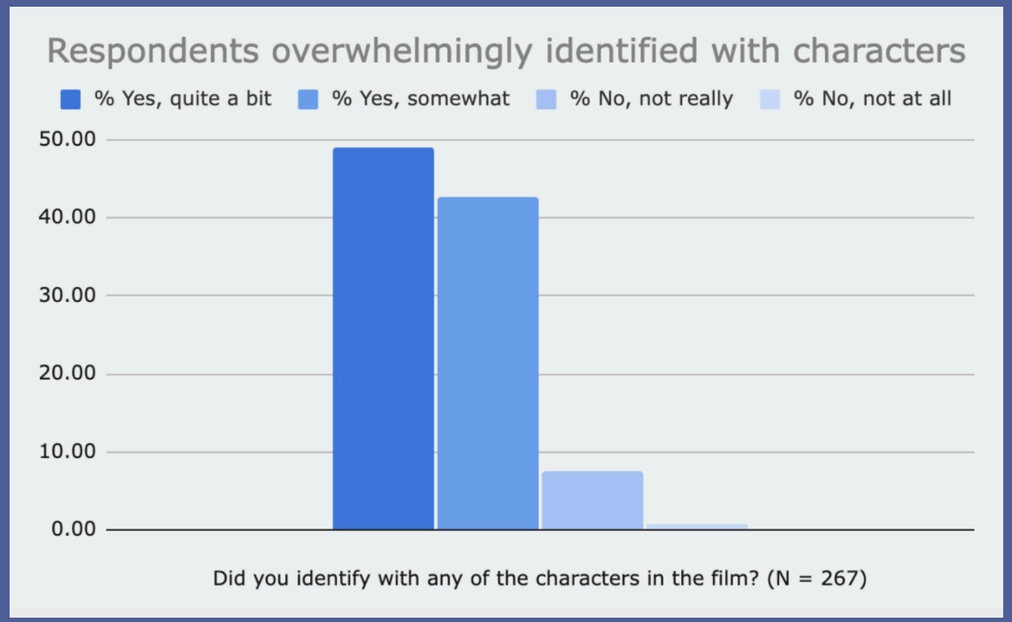


Figure 1: Viewers' responses to close-ended items on whether they identified with any Observer characters. (Public screening attendees).

Most viewers felt personal connections with characters.

We thought that the many different characters in Observer would provide more opportunities to find someone they identified with. Viewers' responses, however, typically shared that they found personal resonance with multiple characters. In the public screening surveys, the open-end descriptions viewers gave of who they identified with and why show, however, that most viewers indicated multiple characters who they found resonance with. In the public screening surveys, a plurality of responses (56, or 24%) shared that they found something they identified with in everyone (Figure 2).

Of specific characters, each main character was frequently mentioned (Figure 2), and each typically for distinct reasons that matched their particular style and way they appeared in the film.



Dallas Hudson – "the man who never leaves" – who has walked the woods around his house in Minnesota collecting data for 28 years as a phenologist, was a favorite with 43 responses (or 18%) for his humility, care/dedication, and observations in his own backyard.

Aimee Nezhukumatathil, a poet from Mississippi who visited Greenland in her chapter, similarly had 40 responses (17% of responses) naming her as a favorite, particularly for the quality of her voiced observations and realizations, her meta-perspectives on being an observer as a foreigner in Greenland, and her artistic approaches.

David Haskell, a naturalist who visits Sicily in chapter 1, was another favorite with 30 responses (13%), for his humor, his appreciation of aesthetics and attention to multi-sensory detail, and how he made his observations and observing in general accessible.

Jessica Oreck was also named in 30 responses, for her work as an artist collecting and creating exhibits from small, often missed "treasures" that she finds on her walks. People related to this through their childhood memories as well as adulthood practices and through both literal and metaphorical interpretations of how she notices, appreciates, and shares discarded or seemingly ordinary things.



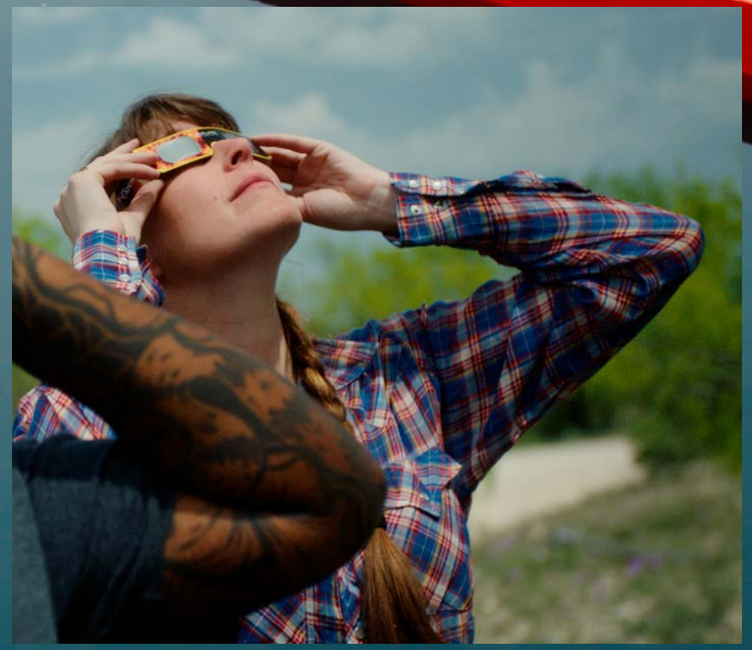
Dallas



Aimee



David



Jessica

Most viewers felt personal connections with characters.

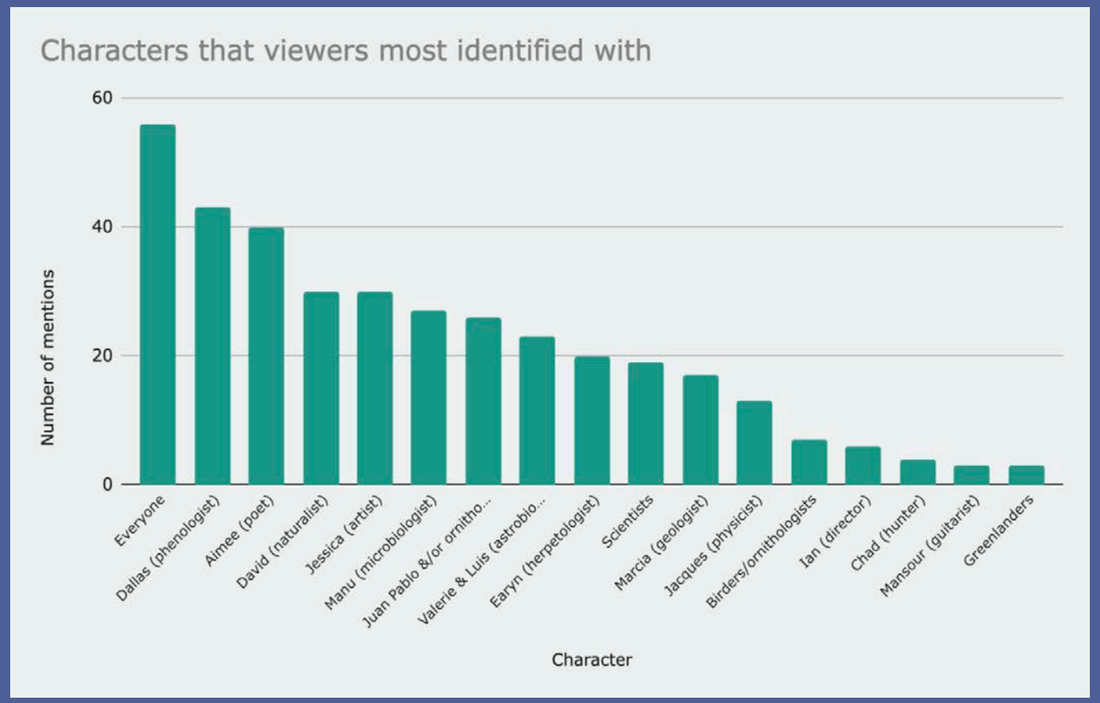


Figure 2: Characters named in viewers' responses to who they identified with and why. Categories are not exclusive, and many respondents named multiple characters. The "scientists" category captures when viewers said "scientist[s]" to describe who they identified with (e.g., "The scientists and how they saw life and knowledge, they could see such a big picture of the world we exist in"). "Everyone" encompasses when viewers said they identified with all or every one of the characters. Juan Pablo and the other birders, including the ornithologists in his chapter, are included in one category because most responses referred to the "birders" without distinguishing characters by name or otherwise. Similarly, Valeria and Luis, a married couple who are both astrobiologists, were often referred to together, usually as "the couple." Their category includes those mentions as well as the few mentions of Valeria alone.

Most viewers felt personal connections with characters.

Some often overlapping themes appeared in people's reasons why they identified with characters. Typically, it was resonance with deeper characteristics – those that only appear over time – that viewers shared. This included:

Sharing a mindset, motivation, or emotional experience: Most common was viewers resonating with the approach characters took and experiences they had while observing. A viewer in Birmingham shared: "They're all just so passionate in their work and crafts and I am, too, especially in medicine. You can just tell they're always searching and I feel that on the deepest pith of my soul." Another in Atlanta wrote: "I identified with the poet the most. I felt like she was surprised by just how much she observed in Greenland, and how not only did she observe landscapes but how the landscapes, people, and community interact. I've been thinking a lot about this in my city, Atlanta, and how much the interaction between community and landscape matters here. That's a good reason why I am here at this screening today."

Sharing an activity, such as a hobby or interest was the next most common reason. As a viewer in Denver wrote, "I identified with several people but the one who stood out the most was the woman who collected tiny things. When I was younger I did that constantly and my parents would joke that I was like a crow collecting little shiny things. To this day I still catch myself walking around looking down instead of in front of me." A viewer in Palo Alto shared, "The person who catalogued everything in his neighborhood - I felt similarly when I started making Terrariums for my home. I paid attention to the little things."

Sharing a vocation, such as the same profession, (e.g., artist or scientist) or work in the same academic/scientific field, also appeared frequently in responses. Many of the viewers who were scientists or studying science stated that they identified with a character who was in their field, or with the scientist characters overall. A viewer in Palo Alto wrote, "I'm trained as a cell biologist so the academics resonated. It was so great to see them as real people. I think I found moments of connection with each person. and I think that's the beautiful part of the film." Vocation was also important for non-scientist viewers and characters. One in College Park, MD wrote that they identified with "The phenologist, having worked in phenology and understanding the endless need for data that is plentiful yet scarce." And viewers found commonalities based on profession even if the characters' professions were different from their own.

Most viewers felt personal connections with characters.

Less common but present were themes of **sharing a social connection**, such as a character sharing a similar social identity besides vocation, or reminding a viewer of someone close to them. One young viewer in Birmingham said: “As a person of Mexican descent, I identified the most with the Mexican biologists. It is rare to see our people on a screen showing their intelligence and expressing curiosity. It was refreshing to see as well as inspiring that I could be that one day.” Another in Denver shared, “I am married to a field scientist and the whole film was like being with her daily.”

People also shared that characters took **similar sensory approaches** to their own, such as Juan Pablo, the birder and recordist who relies heavily on sound in his work. One viewer in Toms River, NJ, shared that she thought the sensory focus was valuable: “I identified with the poet and appreciated her ways of observing that were less scientific and more sensory if that makes sense. Her segment made me feel like all of our observations are important.”

It was rare that people didn’t identify with any character. Twenty one viewers shared why they didn’t identify with anyone. Of those, almost all shared barriers due to the characters’ expertise and/or their intensity of focus in their particular areas. In some cases this was specific to characters’ relationships to science. A viewer in Toms River said: “I never really studied science that deeply to fully connect with them; however, [I] was impressed with their knowledge and passion for their craft.” Most, however, talked about the characters’ professions and dedication more generally.

One viewer in Norfolk, VA, said, “They all seemed unusual, driven about nature in their own way. I tend to just enjoy nature and enjoy observing.” Another in Atlanta said, “I think they were very dedicated to a specific field and it seemed that it was a big part of who they were. I don’t think I have that quality.” One in Denver wrote, “[I’m n] either a scientist, poet, artist or philosopher- I rarely have time for quiet moments.” Some also shared that they hadn’t spent as much time in nature as the characters did, or that the activities the characters did or information they shared was new to them.

Most viewers felt personal connections with characters.

Not identifying didn't mean feeling disconnected from the film, however. As a viewer in Birmingham shared, "The beautiful thing about this film is we saw people from all different walks of life. I personally just did not see anybody who walked the same path that I have, although that's not a bad thing." Most viewers' responses to the other questions, such as what stood out to them, indicate they felt engaged with much of the film. Almost all viewers who said they didn't identify with a character also said that the film changed their perceptions of science and/or scientists. Their responses indicate this was in positive directions aligned with science as a human endeavor, particularly regarding how many different kinds of scientists contribute to it in many different settings. As the viewer from Atlanta quoted above shared,

"I think it reminded me that science isn't only in labs. And that nature is amazing."



VIEWERS SAW “THE NATURE OF SCIENCE”

Science and scientists as creative, diverse, interconnected, grounded, reliant on observation, and human

A core goal for this film was to humanize science, especially by portraying it in ways more aligned with the “nature of science.” In the US, portrayals of science in media and education often rely on somewhat mythical views of science that are not only inaccurate for how science operates as a human endeavor, but also can be alienating. Science as absolute, universal, detached, or emotionless are some common tropes, and scientists similarly as hyper-rational, exceptional geniuses, or socially distant or cold. Research on the nature of science, instead finds that science, in addition to depending on observation, is tentative, collaborative, creative, subjective, and inseparable from its settings in particular environments, societies, and cultures.

In Observer, we focus on the diversity of people and places that science connects to (collaborative, connected), how the deeply human abilities of observation are at its core, and how what one sees depends on one’s experiences and approaches (creative, subjective). Some of the characters in Observer also highlight the tentative nature of science, usually through describing how one is constantly learning and can only ever observe a small portion of what is occuring. Research suggests that conveying the nature of science in media and education can also help people from diverse backgrounds feel more connected to and able to contribute to science.

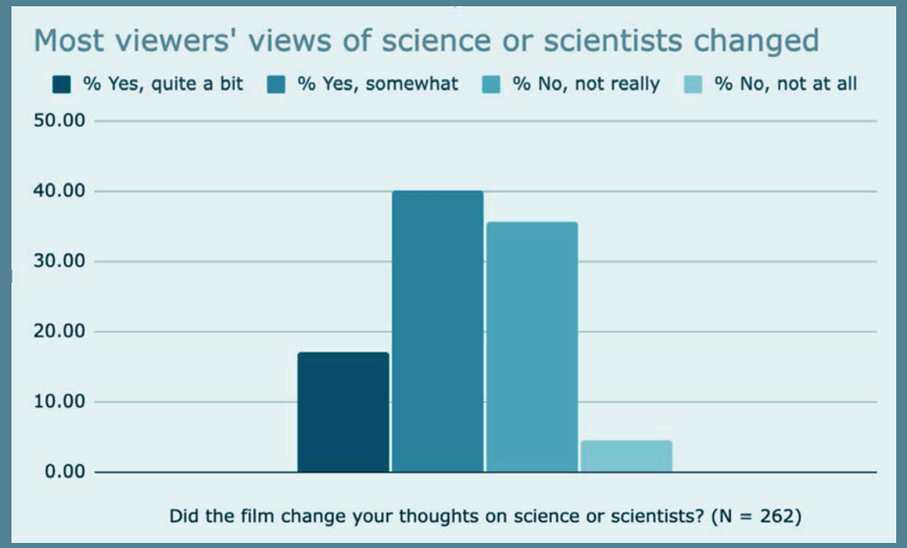


Figure 3: Viewers frequently shared that Observer influenced their thoughts about science and/or scientists. (Public screening respondents). Open ended responses indicate that these changes were aligned with features of the nature of science.

VIEWERS SAW “THE NATURE OF SCIENCE”

Science and scientists as creative, diverse, interconnected, grounded, reliant on observation, and human

Based on viewers’ responses, the film seems to have been successful in conveying aspects of the nature of science. Among public screening respondents, 57% said the film changed their thoughts on science and/or scientists (N = 262), and 50% of NSTA educator respondents (N = 94) said the same (Figure 3). Viewers who said that the film changed their perceptions shared reasons that usually touched on themes that align with aspects of the nature of science:

- **More humanized, approachable portrayals of scientists.** Many responses shared that the film made them see scientists as more relatable, grounded, humble or vulnerable, humorous, and emotion-filled (particularly with passion, joy, and care) – countering scientist stereotypes. As a viewer in Toms River wrote: “I didn’t think they’d be this down to earth, I thought they’d be stressed and focused on work.” Scientist characters’ expressions of emotion seemed particularly important, as did characters’ overall communication approaches. A viewer in Denver shared: “I like that the first man was open about his fear of appearing foolish, relatable and unexpected from an expert.” Another viewer in College Park shared: “I honestly think that I thought that the scientists would be more stale, or unable to discuss things that made sense to the average viewer. It was nice to see that these people just genuinely love nature and the earth and that’s why they are doing what they do.”

- **Emphasizing inclusivity and interconnectedness in who does science and where.** Another common theme was surprise and realizations concerning how science involves so many different types of people, expertise, approaches, and places. As one viewer in Toms River wrote, “Science is all around us and I don’t usually think of that in such a broad way.” One young viewer in Birmingham shared, “I learned there were more aspects to science than just biology and chemistry. It exposed me to ideas behind what science meant that I hadn’t previously thought about.” Another in Denver wrote about realizing the distinctions and connections between fields: “It was interesting to see that scientists have multiple perspectives with their focus on their expertise yet they are all interconnected.” A Palo Alto viewer wrote about recognizing connections through observation as a human ability: “[It m]ade me believe that observation and curiosity are intrinsic to human nature regardless of titles we assign ourselves.”

VIEWERS SAW “THE NATURE OF SCIENCE”

Science and scientists as creative, diverse, interconnected, grounded, reliant on observation, and human

- **Portraying core methods and values.** Many responses related to realizations of how science progresses through often slow, dedicated observation and continual learning. The character Dallas Hudson, who has walked his land recording observations for the past 28 years, particularly seemed to embody this for viewers, as did his statement that “we are forever learning.” A viewer in Birmingham shared, “I have such respect for the details now. I always thought scientists searched for the bigger picture but I can see the bigger picture in the details for sure.” Some responses here related to realizations related to observation itself, as well. A viewer in Atlanta shared: “It reinforced the idea that the act of observation affects what we observe, that stillness and moving slowly reveal things we may otherwise miss, and that we observe best when we employ all of our senses.”

- **Conveying imagination and creativity.** A final major theme was viewers expressing insights related to science’s relationship to creativity, as well as how that connected it to other areas of human experience, including art, stories, philosophy, and spirituality. A viewer in Denver wrote, “I know a few [scientists] already, so I already had an idea, but as an art teacher and artist I think really seeing the overlap between art and science was so fascinating (and almost reassuring to a lot of my beliefs about art).” “The creativity and imagination of these scientists was essential to their work. Realizing curiosity is always the starting point,” shared another in Atlanta.

VIEWERS SAW "THE NATURE OF SCIENCE"

Science and scientists as creative, diverse, interconnected, grounded, reliant on observation, and human

That these impacts occurred among an on-average highly educated sample that also typically reported knowing a scientist or being a scientist themselves is striking. Those who said the film did not change their thoughts related to science or scientists all stated that it aligned with their experiences with science, in positive ways and/or ways consistent with the nature of science. Many of these viewers shared that they are scientists or otherwise work closely with science and scientists as a communicator or educator, and found that the film content aligned with their perceptions of science. As a viewer in St. Louis, MO, shared: "I am a science educator and this has been my experience with individuals in the science fields.

The very act of doing science is centered around observation. It is a beautiful and critical component to good science." Similarly, others said they already held views of science that aligned with the importance of observation or creativity in science as a human endeavor, and that the film reinforced these views. A viewer in Plymouth, NH, wrote: "I have spent a lot of time talking with scientists about the importance of art and observation to their work." "I've always seen art and science as complementary and this film showed that in a new way I'd love to share with others," shared another in Denver. Finally, a viewer in Atlanta, highlighting the tentativeness of science, shared, →

"I've always understood science as a place where there was no end to learning and I think this movie just solidified that."

VIEWERS LESS CONNECTED TO SCIENCE WERE MORE LIKELY TO CHANGE THEIR THOUGHTS ON SCIENCE AND SCIENTISTS; those more connected identified more often with characters

We were interested in viewers' pre-existing science connections and how those related to their experiences with Observer, so we asked them to share in the surveys their proximity to science. This we measured by asking them to select all the options that applied to them from a multiple choice set asking if they considered themselves a scientist, worked in science or a science-related job, knew a scientist or were close to someone who works in science or a science-related job, were currently taking a science class or majoring/had majored in a science field, and/or considered science to be an important part of their life. Those who selected "none of the above" to those options we considered to have lower science proximity.

We found that those more proximate to science were significantly more likely to identify with a character, but less likely to say that the film influenced their thoughts about science or scientist (Figure 4).

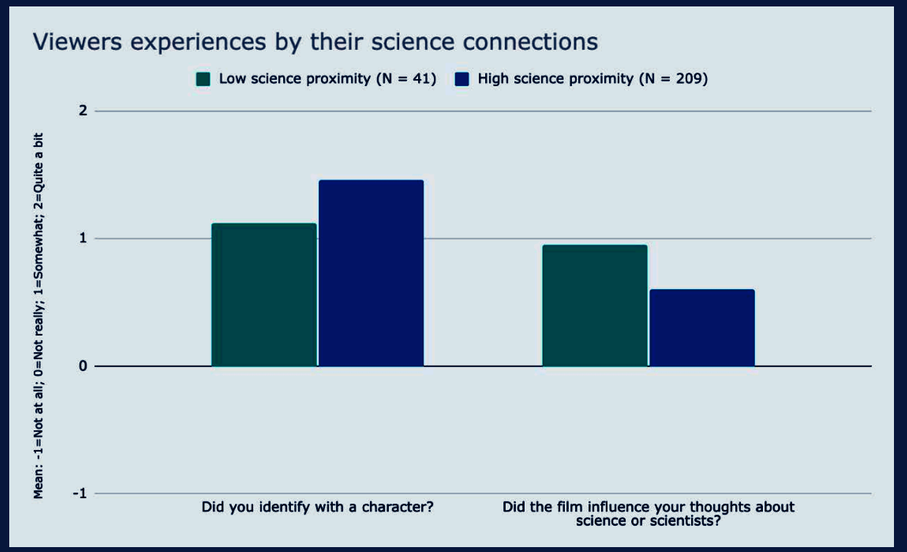


Figure 4: Viewers' responses to close-ended items on whether the film changed their thoughts on science and/or scientists, by viewer science proximity (Public screening attendees). Results are significantly different (Welch's t-test; identify: t(50.4) = 2.6, p = .011; influence: t(56.9) = -2.4, p = 0.019").

VIEWERS LESS CONNECTED TO SCIENCE WERE MORE LIKELY TO CHANGE THEIR THOUGHTS ON SCIENCE AND SCIENTISTS; those more connected identified more often with characters

People in both groups overwhelmingly said that they did identify with a character, with the difference between the groups appearing in the strength of identification (trending more towards “Yes, somewhat” for those with lower science proximity compared to more towards “Yes, quite a bit” for those with higher proximity). A similar pattern, reversed, appears for whether the film influenced viewers’ thoughts on science and scientists (trending more toward “Yes, somewhat” for lower science proximity versus more toward “No, not really” for higher proximity).

These results, combined with viewers’ responses to the open-ended questions, suggest that while prior science connections were meaningful for identifying with characters, most viewers identified with a character and particularly the non-scientist characters, as discussed above and illustrated in Figure 2. They also suggest that Observer was most successful in creating more humanized perceptions of science, in line with nature of science concepts, among viewers with fewer personal connections to science and therefore who have had potentially fewer opportunities to develop such perceptions of science.

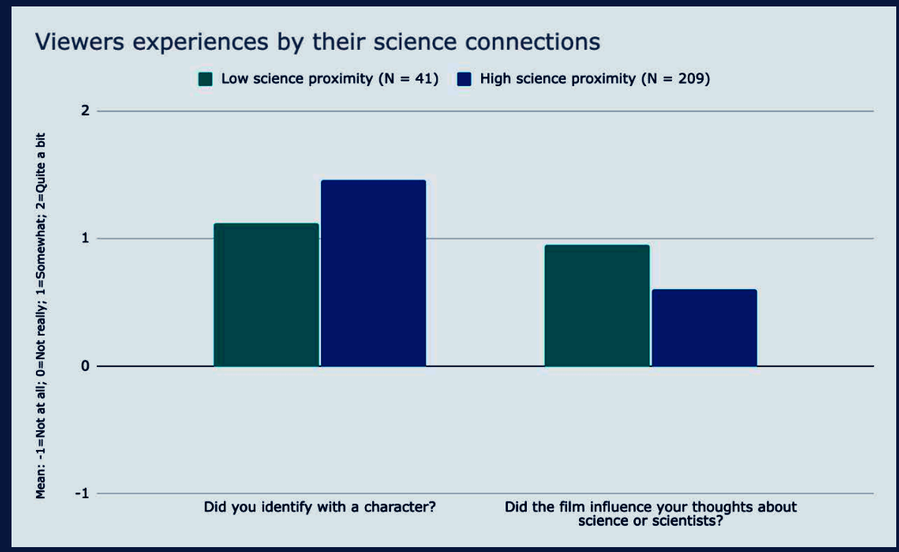


Figure 4: Viewers’ responses to close-ended items on whether the film changed their thoughts on science and/or scientists, by viewer science proximity (Public screening attendees). Results are significantly different (Welch’s t-test; identify: t(50.4) = 2.6, p = .011; influence: t(56.9) = -2.4, p = 0.019”).



Observer overwhelmingly inspired viewers to do something – with the film, observation, and others.

In addition to new relationships with science and new or reinforced perceptions of the nature of science as a human endeavor, we wondered if Observer would make people want to observe differently – more intentionally, and in new ways or places. We also wondered if it would influence any real-world social relationships, beyond parasocial relationships with the characters. We examined these questions through several approaches. We asked viewers at the public screenings if the film made them want to do anything. We asked people who took the kit survey if they continued to think about the film, observe differently, or had used the kit and its activities since receiving it. We asked educator viewers at the NSTA screening how they might envision using the film or parts of it in their teaching. And we asked participants of the daylong events if they continued to think about the film, had done activities based on it, or had built any connections with others at the daylong events that they planned to follow up on.



Viewers inspired to change how they observe, and share the experiences with others

Of the public screenings, 94% of respondents shared at least one thing that the film made them want to do. Of those, 60% shared multiple actions. The most common theme was wanting to shift one's observation practice - to create intentional observation time or practices, pay attention more often, slow down to do so, and to use more of their senses beyond sight. As a viewer in Atlanta wrote, "[I want to c]lose my eyes and listen and also touch as a formal method of interacting and observing." Another in College Park shared, "It made me want to spend time quietly so I can see more of what's around me. It made me realize how much I miss." People shared that it made them want to travel to observe new places, but also that it made them want to pay attention close to home, and in their daily experiences. The film, "resurfaced the wish to travel to anywhere in the world," wrote a viewer in Palo Alto. "Putting a red square or looking where to place your frame is a very interesting way to see the world." While another in Palo Alto shared, "I want to go home to my apartment and look very closely at all my plants to see who I can see!"

Many shared that they wanted to structure their observations with tools they gained through the Observer Kit or that appear in the film. The red frame was popular. Viewers wanted to use and share it in different ways. One in Denver said "[The film made me feel like d]oing more intentional observations with my kid. Taking a red square with us on hikes."

The Foldscope and using it or other microscopes to see small, often missed parts of the world in new ways was also popular. "Yes, I want to get out my old microscope. And wade in the mud for what Mother Nature will share with me!" shared a viewer in Denver. "Yeah, making slides from every bit of muck and dirty water I see, and then looking at it through a microscope! Starting today, with the Foldscope you gave me," shared another in Denver.

> **"I want to do an art piece incorporating the red square in which I pay attention to all five senses, and use every bit of science background I have and then share with my colleagues."**
>
> – OBSERVER viewer in Denver


OBSERVER
KIT

Viewers inspired to change how they observe, and share the experiences with others

Pairing observation with hobbies and activities was a common, related theme. Photography, journaling, hiking, gardening, and creating art were often mentioned. As one viewer in College Park wrote, the film inspired them to want to be "watching more films about nature. Also my friend and I want to go on a hike with our observer kits and do some of the games. It also made me want to try drawing things I see in nature as a practice of observing." "Man it made me want to film the world around me and grow in that craft," wrote another in College Park.

Interest in documenting one's observations, through visual or written recording appeared often. As a viewer in Norfolk shared, "No question, this film has charged me to create my own 'viewer's portal.' I did love the data collector [Dallas Hudson]. I am trying to become more conscious about field notes and I believe having a daily observational system would be interesting to review as I continue to live my own life."
Some shared that the film inspired them to seek out ways to keep learning – in general or about specific topics of interest. "The film encouraged me to go ahead and chase things that make me excited, things I want to learn more about," wrote a viewer in Plymouth. Another in College Park shared, "Sharing the film, for sure. And I'm 64 (with degrees in theology and library science), but now I'm thinking of going back to school!"

These examples also highlight a related common theme, which was that the film rekindled interest in an area or practice meaningful to viewers, or otherwise gave permission to try new things or pursue things they care about. "I love spiders. I wish I'd been an arachnologist, so... Maybe I'll take pictures of spiders I see. There's no rules, actually," wrote a viewer in Denver.

> **"I'd like to inculcate the habit of observation to my grandchildren like I used to when I was a kid. I somehow lost that as I got older. I'd like to be curious again and experience that exploration with my grandchildren."**
>
> – OBSERVER viewer in College Park, MD

Viewers inspired to change how they observe, and share the experiences with others

Finally, as many of the responses above also illustrate, a quarter of viewers (59 viewers) shared activities that they want to do with others: sharing the film, activities, practices, and observations. This included grandchildren, their own children (young or adult), nieces and nephews, students, colleagues, and friends. A viewer in St. Louis wrote, “I attended this film with a group from my work. I’m exceptionally excited to share the Observer Kit with other employees who didn’t attend. I think this could be a great exercise for all people but especially my coworkers since we focus on creative aspects. Understanding and portraying many perspectives is key to understanding people.” Eighteen viewers shared that they would like to share the film in particular with others, usually alongside other activities. Often, many ideas for action were mixed together. As one viewer in Norfolk shared:

> “
>
> **I was inspired to open myself up to ways of observing that are new to me. This means not isolating myself to only what I can see. I want to grow in willingness to see what others see without letting myself shut down by being competitive or self-deprecating. There’s infinite room for new perspectives, and they can be found with other people. I’d love to see other films. I’d love to get out with the observation kit, grab a friend or grab a grandkid, and see! I also want to incorporate new ways of seeing into my art.**



The daylong events sparked similar impacts, with emphasis on new relationships.

The daylong events sparked similar impacts, with emphasis on new relationships.

Several days after each of the five daylong events, we asked participants to share some of their thoughts on the film, the event, and impacts they noticed. Of approximately 100 attendees, 44 shared responses. Almost all shared that they continued to think about the film. “I have thought about it every day!” shared an attendee in New York. “I have thought about the importance of slowing down and really looking around. I’ve been thinking about how I can get my children to engage with these concepts.” Many shared that it prompted them to change how they observe. “My daily observations have become both broader and narrower,” wrote another in New York. “[I’m m]ore open to ‘seeing’ things with several senses and varied perspectives.” Several mentioned the red frame in particular as shaping their observations. “I see that red frame a lot of places in my mind’s eye,” shared a viewer in San Francisco. “I keep imagining that red square around things I am noticing,” another in Monroe, WI wrote. “And this morning during my run I tried to separate the bird songs I was hearing in my head ‘like slicing bread’” – an approach shared by one of the film characters.

Respondents shared that they had already or were planning to share the film with others. Almost all – 98% – wrote that they had talked to others about the film since the event. “I tell everyone I talk to about it and let them know I’m going to figure out a way for them to see it,” wrote an attendee in Cambridge, MA. As another in Camden, ME shared: →

> “
>
> **I’ve talked about the film to a few friends and described how it’s made me much more conscious of the ways I observe. I’ve been thinking about [the character] Pienaar’s talking about how there is a relationship between the perceived and the perceiver as a way of understanding that we are not so separate from the things around us, or maybe even the things happening on the other side of the world. Most of all, I’ve been reveling in the budding Spring here in Maine and taking more time to notice every new leaf and sign of change.**

The daylong events sparked similar impacts, with emphasis on new relationships.

Several mentioned they shared it through their professional and work networks. “I have been talking about Observer with peers and colleagues,” wrote an attendee in San Francisco. “I shared information about it with the board of my nonprofit and discussed it at a homeschooling conference that I recently attended as a keynote speaker.” Another in Cambridge wrote, “I immediately recommended that Mass Audubon have all their staff watch it as an activity, and they are doing that with a license.”

Many also continued to use and share the kits. “I’ve done some of the activities with my kids,” wrote an attendee in San Francisco. “They really are ageless.” “I love the games,” wrote another in Cambridge:

> “I’ll be bringing them up to a family reunion next week and I’m looking forward to sharing with my siblings and the kids (young adults at this point). I will also share them with the group of Tree Spotters who record observations of trees at the Arnold Arboretum. . . I’m hoping that the Arboretum will be able to screen the film so the Tree Spotters can see it, as well as the general public.”

The events also tended to make participants feel grateful for and interested in finding additional ways to create relationships in their communities, especially across people of diverse viewpoints. When asked if they’d continued to think about the film or event, an attendee in Monroe wrote, “Yes! I’ve thought more about community and its importance in our lives as well as generally taking in the things and experiences around me with more intention than before.” Another in Maine, when asked if they’d developed new ideas, connections, or questions from the film or event, similarly shared that they’d created, “Connections with people in my community yes. The event allowed for conversations about how to be more present in our place which created connections. Questions, maybe in how to create spaces and events like this more regularly. Ideas, maybe not new but definitely a reset in ideas.”

The daylong events sparked similar impacts, with emphasis on new relationships.

Several pointed to the value of the activities and discussion paired with the film as a unique combination for perspective shifting and relationship building. An attendee in San Francisco shared, “I have been thinking about facilitated Observer events. It makes such a difference not just to see a movie or have a discussion but then to go out and do something with it.” Another in Cambridge wrote:

“I came into this experience with a lot of ideas about how people look at the world around us. I have taught this to students in landscape architecture. I am married to a scientist. Still, I learned so much by the selected pairs, the way the journeys were curated, what made it into the film, and the experience I had seeing the film and observing together with the participants. The film, discussion, and games reminded me how important it is to be an observer with others, inside and outside of our professions.”

When we asked if they planned to follow up with anyone they had met at the event, 53% said yes and 35% said maybe.

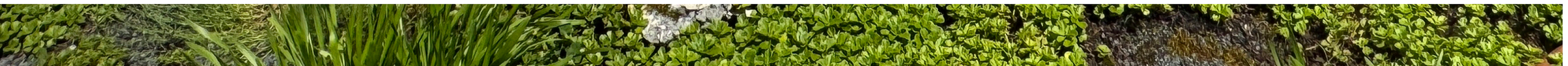

#observerfilm

VIEWERS REPORT LASTING IMPACTS MONTHS LATER:
Experiences, activities, observations

While compiling this report in February 2026, we also launched two short surveys for 1) attendees of the daylong events and 2) and attendees of the public screenings to see if they reported any continuation of changes in their observations and activities motivated by the film months later (from up to 10 months later for the earliest screenings at the beginning of April 2025 to four months later for the latest screenings at the end of September 2025). At time of writing, 15 viewers from the daylongs and 20 from the public screenings responded (N = 35). While a small number, their responses indicate that the film is having a longer lasting impact on viewers.

Almost all who responded said that the film had a longer lasting impact (N = 32) and most reported that they had done something new or differently since watching the film as a result (N = 24). Respondents from the public screenings shared that they frequently think back to ideas from the film - particularly ideas related to humility, diversity of perspective, and influence from observing. “I’m constantly thinking about, as we learn more, we are truly shown how little we know,” wrote one respondent. “The idea that purposefully focusing on small pieces can illuminate entirely new worlds comes to my mind occasionally,” wrote another. Others shared that influential take-aways included recognizing one’s own roles in observing, and the realities of different perspectives. “As an observer, we influence that which we are observing,” as one wrote, and as another shared, “heightened awareness that others see a scene differently than I do.” One wrote that, “It has changed my mind set. Challenged me to open a new dimension of thinking. . . I find myself trying to observe life with multiple different perspectives.”

Respondents shared that they did new activities or observed differently or with greater frequency since having seen the film. “I have continuously kept phenology records,” wrote one – referencing one of the character’s practices of keeping daily records of species in his surroundings. This included building different observation practices into their daily lives, as one viewer shared that they now are, “Walking without headphones so I can focus more on what’s around me.” Some referenced tools they use to observe now, or help others do so: “I have more regularly utilized binoculars and a magnifying glass,” wrote one. “I ordered more Foldscopes to use as educational materials when I do outreach for my job!” shared another.



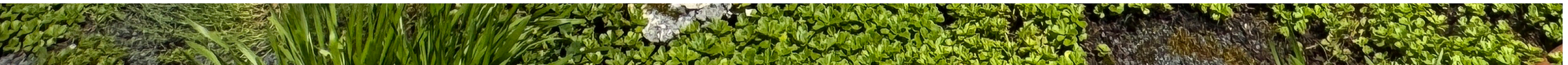
VIEWERS REPORT LASTING IMPACTS MONTHS LATER:
Experiences, activities, observations

For many respondents, changes in observation activities included through sharing the film, kit, or observation techniques with others. One viewer wrote that since watching the film they notice they are more often “Spending time observing with my granddaughter.” “I shared the observer kit with my cousin’s children and friends from church and a community farm in town,” wrote another. “[I] continued to connect with my family over the red square,” one shared. Similarly, one viewer shared how they and their family would “Make up different types of observation games using the box..some times looking for bugs other times. We all take turns. You should contact a game maker and try to sell them the idea.” Finally, similar to what we’ve heard from educators and others who are developing ways to use the film in their classrooms and organizations, one viewer from Idaho wrote that they, “incorporated [the] film into our new Cohort for Idaho Master Naturalists, Sagebrush-steppe Chapter. We also use a sound map activity to coincide with the final chapter on observing sound.” At the time they wrote in, they were looking into making red squares for the next cohort of students.

Responses from the daylong participants reflected the same themes of changes to their thoughts, awareness, and observation practices, and, overwhelmingly, sharing these experiences with others. As one shared:

The film has made me rethink the idea that I need/want to go far away from home to see amazing things. Each night, after dinner, I walk with my neighbors. We observe along the same route together. I’ve shared my kit with my neighbors and we observe together using the tools in the kit. Personally, I love the attention we attract and hope we’re inspiring others.

Another wrote, ”The film has encouraged me to think of myself as one observer among many others - that we each observe in our own way and asking, “What do you see here?” is a good way to get to know one another!”



CONCLUSION: OPPORTUNITIES FOR ACCURATE, CONNECTION-FORMING SCIENCE STORIES

Based on viewers' experiences with Observer and the 2025 community screenings, several features of the film and its distribution seem particularly valuable for generating more meaningful relationships within and beyond science in local communities.

The motivation driving the creation of the film – to portray the nature of science throughout – seems to have come through and with success in shaping viewers' understandings of science and scientists to be more aligned with realistic, and typically more welcoming, views of science. This seems to have been especially impactful for viewers less connected to science already, and for making the film one that educators plan to use to engage their students in personally meaningful science learning. The chapter format also seems valuable for educators and others to be able to adapt the film for different contexts – enabling ways to modularize it or focus on a chapter best matched with a particular setting and goals.

Relatedly, the many characters, their diversity of experience, how they come across as grounded, feeling, and engaged people, and their relationships to each other seem to offer both greater understanding of science as a human endeavor and opportunities for viewers to find meaningful aspects of themselves throughout the film.

The film's topic of observation and how it conveys it, through the many characters and how their diverse approaches are connected, supports nature of science learning and opportunities to identify. It portrays observation as inherently human, doable, and meaningful across people, approaches, and places. Importantly, that theme and how viewers received it also seemed to overwhelmingly prompt viewers to new actions, particular building in intentional observation and exploration, and often doing so with others. The activities present at the events and in the kits were valuable for further highlighting these possibilities and encouraging viewers to immediately start to put them into practice, which many did.

Finally, our interest in how the film might be a connective tool, and how it might live in different local communities, meant we focused on community-based distribution and tried to reach many different types of organizations and locations across the US. While our sample is not representative of the US, it is demographically diverse, and we frequently heard from viewers how they found the events unique, community-building, and desired. There seems to be great appetite for and potential to continue exploring how film can create space for people to gather, discuss, learn, act, and just be together. How can we make films and other media that enable such connections? We hope this work will help others continue to explore how more people can have the chance to make, shape, and participate in events that enable new and meaningful relationships, perceptions, and activities in their local communities – through art, science, and other human experiences.



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Appendix

Who are respondents?

Table A1 lists descriptives for the 11 public screenings.

Table A2 lists respondent information for the NSTA, kit, and daylongs surveys. The public screenings that included data collection were not random (only some venues volunteered to include the survey; some worried about time, staffing, or how it would flow with the event) and not everyone who was offered the survey completed it (after no complete responses at a small event in rural Pasadena, TX, we learned that the opening study information sheet deterred people and made changes to improve the experience). These results, therefore, should not be treated as representative for each individual screening or for who saw the film overall.

Table A1. Event information and viewer descriptives for the 11 public film screenings at which we fielded surveys.

Venue	**Univ. of MD College of Agri-culture & Natural Resources**	**Trees Atlanta**	**MO Botanical Garden (for adult edu. staff)**	**Stanford University**	**The Broad Theater**	**Dark Ranger Telescope Tours**	**Museum of Nature and Science**	**Norfolk Botanical Garden**	**Museum of the White Mountains**	**The Sidewalk Theater**	**Toms River High School North**
Location	College Park, MD	Atlanta, GA	St. Louis, MO	Palo Alto, CA	New Orleans, LA	Bryce Canyon Nat'l Park, UT	Denver, CO	Norfolk, VA	Plymouth, NH	Birmingham AL	Toms River, NJ
Date (2025)	April 16	April 26	April 28	May 1	May 11	May 11	May 22	May 31	June 7	Sept. 23	Sept. 2
Responses	N = 47	N = 20	N = 6	N = 29	N = 10	N = 3	N = 79	N = 13	N = 13	N = 17	N = 37
Attendee N (approx.)	52 attendees	25 attendees	20 attendees	70 attendees	50 attendees	17 attendees	160 attendees	50 attendees	19 attendees	17 attendees	43 attendees
Response % (approx.)	90% resp. rate	80% resp. rate	30% resp. rate	40% resp. rate	20% resp. rate	18% resp. rate	50% resp. rate	25% resp. rate	68% resp. rate	100% resp. rate	85% resp. rate
Age (avg.)	45 yrs	52 yrs	52 yrs	38 yrs	50 yrs	64 yrs	54 yrs	63 yrs	38 yrs	24 yrs	51 yrs
Gender	33% male	31% male	40% male	36% male	11% male	100% male	33% male	31% male	17% male	25% male	25% male
Ethnicity	64% White	70% White	83% White	38% White	90% White	67% White	75% White	92% White	77% White	59% White	73% White
Education	81% Bachelors+	88% Bachelors+	100% Bachelors+	100% Bachelors+	100% Bachelors+	100% Bachelors+	86% Bachelors+	69% Bachelors+	77% Bachelors+	47% Bachelors+	78% Bachelors+
SES/class (avg.; 1-5)	3.5 (middle/ upper-mid.)	3.5 (middle/ upper-mid.)	3.0 (middle)	3.4 (middle/ upper-mid.)	3.1 (middle)	3.3 (middle)	3.6 (middle/ upper-mid)	3.1 (middle)	3.0 (middle)	2.5 (lower-mid./ middle)	3.2 (middle)
Identify as working class	48% working class	29% working class	60% working class	35% working class	25% working class	67% working class	47% working class	40% working class	67% working class	75% working class	78% working class
Political ideology (avg; 1-7)	2.4 (liberal)	2.5 (liberal)	2.8 (lean liberal)	2.2 (liberal)	1.2 (very liberal)	3.8 (moderate)	2.4 (liberal)	2.5 (lean liberal)	1.7 (liberal)	2.8 (lean liberal)	3.5 (moderate)
Religiosity (avg.; 0-10)	2.9 (low)	3.7 (mod. low)	1.0 (very low)	2.6 (low)	1.3 (low)	4.5 (moderate)	2.8 (low)	6.1 (moderate)	1.0 (very low)	6.7 (mod. high)	4.8 (moderate)
*Low science proximity**	4% low prox.	10% low prox.	0% low prox.	4% low prox.	20% low prox.	0% low prox.	1% low prox.	23% low prox.	8% low prox.	6% low prox.	35% low prox.

*Low science proximity represents people who selected "none of the above" from a menu of options asking if they consider themselves a scientist, work in science-related jobs, know a scientist or someone who works in a science-related job, majored in a science field, or consider science to be an important part of their life. In a nationally representative sample we collected for a separate study on Observer, we found that ~45% of respondents selected "none of the above" from the same list. In that same national sample (N = 1194), respondents were on average 47 years old, 49% were male, 72% were White, 34% had a bachelor's degree or higher, average socioeconomic class was 2.6 (lower middle to middle class), 59% identified as working class, average political ideology was 3.9 (moderate), and average religiosity was 3.8 (moderate low).

Table A2: Event and viewer descriptives for NSTA, Kit, and Daylongs surveys.

Event/survey	**NSTA Annual Conference**	**Kit surveys**	**Daylongs**
Date(s) (2025) & locations	March 27	Rolling response dates. Respondents attended screenings in: Bemidji, MN (N = 3), Boise, ID (6), Hartford, CT (5), Las Vegas, NV (6), New Orleans, LA (1), Norfolk, VA (5), Pasadena, TX (7), Pittsburg, PA (2), & Quechee, VT (2)	NY, NY - April 5 Camden, ME - April 12 San Francisco, CA - May 2 Green County (Monroe), WI - June 7 Cambridge, MA - June 23
N & response rates	N = 97 Attendees (approx.) = 700 Response rate ≅ 14%	N = 37 Number of kits distributed = ## Response rate unknown but low.	Ns: NY = 9; ME = 7; SF = 11; WI = 5; MA = 12 Attendees (approx.) = 20-25/event Response rates ≅ 25-50%
Viewer descriptives	Educators working in: University (15%), high (40%), middle (27%), or elementary (15%) schools Public (46%) or private schools (14%) Urban (28%), suburban (25%), or rural (12%) settings and/or in informal education (10%) or other educational settings (13%) Teaching: life sciences (66%), earth and space sciences (49%), physical sciences (49%), engineering and technology (29%), or other topics (25%)	56 years old, avg. 53% male 78% White 79% Bachelor's degree+ Middle class (avg. 3; 1-5 scale) 46% identify as working class Lean liberal (2.9; 1-7 scale) Moderate religiosity (4.5; 0-10 scale) 11% low science proximity	Local people working in a range of professions including: educators, journalists, photographers, artists, researchers, filmmakers, actors, lawyers, musicians, carpenters, engineers, therapists, county officials, and farmers.

How we conducted the research

We used post-film surveys, which viewers could reply to either immediately after watching the film (the approach at NSTA screening and the 11 public screenings with the survey included), anytime after the event as they used their Observer kit (the kit survey), or four to five days after the event in the case of the daylongs. We also sent a short survey in February 2026 to participants of the daylongs and of all the public screenings (not just the 11 at which participants took the immediate post-film survey.

What we asked people to share

We asked close- and open-ended questions, with questions varying by event. Open-ended responses, especially in the high numbers we had for this project, require much much more time to analyze. They provide great richness, however, and can help indicate areas we didn't anticipate, providing greater potential for capturing the reality of people's experiences, in their own words. For that reason, with this research we relied primarily on open-ended questions. The close-ended questions we included to have some easily quantifiable counts of whether people said "yes" or "no" to a question such as whether they identified with a character, and to use "yes/no" branching to sort respondents into an appropriately worded open-ended question prompting them to explain their close-ended response (e.g., "Who did you identify with, and why?" or "Why do you think you didn't identify with anyone in the film?").

The questions included in this report are:

Stood out: What stood out to you the most about the film Observer? For example, you could share your overall impressions, a particular moment, or anything you noticed or felt. [Open-ended, written response]. This question appeared on the public screening surveys, the kit surveys, and the NSTA survey.

Character identification: Did you identify with any of the people in the film? [4-point scale; 1 = Yes, quite a bit; 2 = Yes, somewhat; 3 = No, not really; 4 = No, not at all"].

If Yes, quite a bit or Yes, somewhat: Who did you identify with, and why? If there were multiple people you identified with, please describe briefly why for each one. [Open-ended, written response].

If No, not really or No, not at all: Why do you think you didn't identify with anyone in the film? [Open-ended, written response].

Appeared on the public screening survey, the kit survey, and the NSTA survey.

Science influence: Did the film change your thoughts about science or scientists? [4-point scale; 1 = Yes, quite a bit; 2 = Yes, somewhat; 3 = No, not really; 4 = No, not at all"].

If Yes, quite a bit or Yes, somewhat: How were your thoughts about science or scientists changed? Or how did the film contribute to that? [Open-ended, written response].

If No, not really or No, not at all: Why do you think it didn't change your thoughts about science or scientists? [Open-ended, written response].

Appeared, in some form (with wording changes as we iterated on the question to better align with how respondents seemed to be interpreting it), on the public screening survey, the kit survey, the NSTA survey, and four of the daylongs' surveys (not the NY daylong).

Observation influence: Do you think the film Observer influenced how you observe or how you think about observation? [4-point scale; 1 = Yes, quite a bit; 2 = Yes, somewhat; 3 = No, not really; 4 = No, not at all"].

If Yes, quite a bit or Yes, somewhat: Why do you think it influenced how you observed or think about observation? [Open-ended, written response].

If No, not really or No, not at all: Why do you think it didn't influence how you observe or think about observation? [Open-ended, written response].

Appeared on the kit survey.

Actions motivated: Did any part of the film make you feel like doing anything? E.g., trying a particular activity, developing a new habit, practicing observation, talking to others, sharing the film, watching other films? If yes, please describe briefly below. [Open-ended, written response]. This question appeared on the public screening survey and the kit survey.

Teaching use: Can you envision using this film or parts of it as a teaching tool? [4-point scale; 1 = Yes, quite a bit; 2 = Yes, somewhat; 3 = No, not really; 4 = No, not at all"].

If Yes, quite a bit or Yes, somewhat: How might you use the film? What do you think it would offer? [Open-ended, written response].

If No, not really or No, not at all: What are some of the reasons why you don't think you'd use the film? [Open-ended, written response].

Appeared on the NSTA survey.

Kit use: Have you used the Observer kit since you received it? [4-point scale; 1 = Yes, quite a bit; 2 = Yes, somewhat; 3 = No, not really; 4 = No, not at all"].

If Yes, quite a bit or Yes, somewhat:
How have you used the Observer kit? Please describe briefly some examples. [Open-ended, written response].

Kit surprise or interest: Has anything you observed as you used the kit surprised you? Or been especially interesting? If yes, please describe or share another experience or feeling you had while using the kit.
If No, not really or No, not at all: If you haven't used the kit yet, please describe briefly how you plan to use it, if at all, in the future. [Open-ended, written response].

Appeared on the kit survey.

How we analyzed people's responses

For the close-ended responses, we cleaned the datasets and ran basic frequencies and analyses using the free, open-source statistical analysis software JASP. For the comparison of the impacts of viewers' science proximity on their responses to whether they identified with characters and whether their thoughts on science and/or scientists changed, we ran independent T-tests, using Welch's T-test, which is more robust to differences in sample sizes.

For the open-ended responses, we used human coding supplemented by the Google large language model Gemini, model 3. For all open-ends, we read through the responses and identified prominent themes as well as themes we wanted to explore based on our research interests. We then provided the prompt and set of responses to Gemini, briefly described our research interests, and asked it to identify and describe themes present. In all cases, the codes it provided were aligned with what we had suggested, so we interpreted the results as additional evidence that the themes we found were in fact present and prominent. We asked Gemini to refine the codes until their organization and descriptions matched what we had identified as prominent and important. We then asked it to provide rough estimates of the prevalence of responses that contained each theme, treating them as not mutually exclusive, and to identify example quotes for each. In cases in the report where we use language like "most common" to describe prevalence of a theme in responses, we are relying in part on the prevalence estimates from Gemini. In any cases where we give a precise number (e.g., "a quarter of responses. . .") those counts or percentages are based on our hand counts and not Gemini's estimates. The example quotes Gemini provided we used primarily for our own understanding of how Gemini was coding. In cases when we wanted to include them in the report, we looked up the exact quote in the dataset, rather than relying on Gemini to provide accurate quotes.

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