

PHOTOGRAPHY

Force of nature

Stefan Michalowski and Georgia Smith thrill to artist Berenice Abbott's 'portraits' of physical forces.

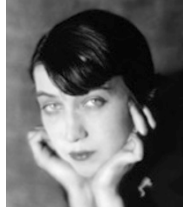
When the Soviet Union launched Sputnik in 1957, the United States was shocked: its rival was taking the lead in science. A group of physicists at the Massachusetts Institute of Technology (MIT) in Cambridge had been pushing for a dramatic upgrade in science education; Sputnik vindicated their efforts. It also prompted a telephone call from a certain Miss Abbott, who said that she had been working on science photography for nearly 20 years. She wanted to add specially created photos to one of the group's projects: a high-school physics textbook encouraging a creative, experiment-based approach in the classroom.

In bringing Berenice Abbott on board, the MIT group unwittingly hired one of the twentieth century's great photographers — who at the time was nearly forgotten, out of fashion and unsure of her next job.

More than 120 of Abbott's photos have gone on display at the Jeu de Paume gallery in Paris, including about two dozen science shots capturing the motion of waves, solid objects and electric currents in striking modernist compositions. (The MIT Museum will

mount its own Abbott exhibition, *Photography and Science: An Essential Unity*, in May.)

Abbott came to photography almost by accident. She had left university for New York in 1918; in 1921, she went to Paris to become a sculptor. Surrealist artist Man Ray hired her as his darkroom assistant and she took to photography instantly, creating iconic portraits of the avant-garde, from James Joyce to Jean Cocteau. She moved back to New York in 1929, eager to document the changing city. In these photographs, her documentary style came into its own. A night shot looking into a forest of brightly lit Manhattan skyscrapers is magnetic; a restaurant window crammed with prices still fascinates. The density of detail — architectural, textural, geometric or social — is striking, and forms a link to the later science photos.



Berenice Abbott (1898–1991), Photographs
Jeu de Paume, Paris.
Until 29 April 2012.

MAN RAY TRUST/AD/AGP



BERENICE ABBOTT/COMMERCE GRAPHICS

Berenice Abbott's photographs portrayed physical phenomena such as wave interference patterns.

Abbott scoffed at the "arty prettiness" of prominent photographers such as Alfred Stieglitz and Edward Steichen. They rejected her stated ethos of "acute and faithful presentation of what has actually existed in the external world at a particular time and place".

Next, Abbott seized on science. "There needs to be a friendly interpreter between science and the layman," she wrote. But funders weren't interested. Steichen's refusal to exhibit her early science photos at New York's Museum of Modern Art killed a potential publishing deal. Abbott studied physics, chemistry and engineering on her own, inventing new techniques and equipment to make her pictures. A stint as photography editor of *Science Illustrated* helped to pay the bills, but Sputnik gave Abbott her big break.

At the Jeu de Paume, one room is filled with her science images. They look abstract, showcasing the geometric lights and darks of high modernism. But when Abbott sets waves in motion in a tray to document interference patterns, or sprinkles iron filings around current-carrying wires, her images reveal the actual forces at play. The finely detailed, composed beauty mesmerises. "We have all seen pretty enough designs abstracted more or less from scientific subjects, but this is mere byplay. This should not be confused with an accurate portrait of scientific phenomena," Abbott wrote.

Abbott was an inspired choice as a textbook illustrator. One of her best-known works — the strobe-lit arcs of a bouncing golf ball — shows why. An astute student with a ruler could use this elegant image to verify the constant sum of kinetic and potential energies in each arc, and investigating the mysterious disappearance of almost half the kinetic energy of the ball at each bounce would lead to deeper insights. A line drawing wouldn't inspire such investigation, because it could be assumed to be drawn to give the right answer.

In the textbook, Abbott's images are necessarily small and sometimes murky. This exhibition shows off their beauty, but Abbott as "friendly interpreter" of science might cringe at the absence of explanatory text.

Abbott's three years at MIT were exciting but difficult. She was nearly 60, a plain-spoken artist who lived with another woman, working with world-famous male scientists. She said later that the chauvinistic behaviour of some colleagues had been hard to take. That is easy to believe: as of this writing, the MIT library website attributes the bouncing golf ball photo to one of her male colleagues. ■

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