



## Recently Discovered Recording of French Singer May Be World's Oldest

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SAN FRANCISCO —

At first listen, the grainy high-pitched warble coming from the speakers may not sound like much.

But scientists say a recently discovered French recording from 1860 is the oldest known recorded human voice.

The 10-second clip of a woman singing the song "Au Clair de la Lune" taken from a so-called phonautogram was recently discovered by Grammy-winning audio historian David Giovannoni.

The recording predates Thomas Edison's "Mary had a little lamb" — previously credited as the oldest recorded voice — by 17 years.

• [Click here to listen to 'Au Clair de la Lune' and other early phonautograms.](#)

The sound waves were captured using a phonautograph, a device created by a Parisian inventor, Edouard-Leon Scott de Martinville, that captured a visual record of sound.

The phonautograph etched sound waves into paper covered in soot created by a burning oil lamp. Lines were etched into the soot by a needle moved by a diaphragm on the device that responded to sound.

Giovannoni and his research partner, Patrick Feaster, began looking for phonautograms last year. In December they discovered two of Scott's — from 1857 and 1859 — while searching the French patent office.

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Using high-resolution optical scanning equipment, Giovannoni collected images of the phonautograms and returned to the United States.

"We took those images back to Lawrence Berkeley National Laboratory and found that [Scott's] technique wasn't very developed," Giovannoni said. "There were squiggles on paper, but it was not recording sound."

Giovannoni asked the French Academy of Sciences to send digital scans of more of Scott's papers, which arrived on March 1.

"When I opened up the file I nearly fell off my chair," he said. "We had beautifully recorded and preserved phonautograms, many of which had dates on them."

While Giovannoni was excited by the images, they still needed to be translated into something audible.

Creating sound from lines scrawled on sooty paper was a job for Lawrence Berkeley lab scientists Carl Haber and Earl Cornell. Haber and Cornell had previously created sound from phonautograms that Edison had created in 1878 of train sounds.

The scientists used high-tech optical imaging and a "virtual stylus" to read the lines recorded on Scott's sooty paper. They immediately got sound, but because the phonautograph recordings were made using a hand-cranked device, the speed varied, changing the singer's pitch.

"If someone's singing at middle C and the crank speeds up and slows down, the waves change shape and are shifting," said Cornell. "We had a tuning fork side by side with the recording, so you can correct the sound and

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speed variations."

On March 3, Haber and Cornell sent audio back to Giovannoni. The recording was further fine-tuned to help bring the voice out from behind the static.

"When I first heard the recording as you hear it ... it was magical, so ethereal," Giovannoni said. "The fact is it's recorded in smoke. The voice is coming out from behind this screen of aural smoke."

Though Scott never intended for anyone to listen to his phonautograms, the result of this work will be played Friday at the annual conference of the Association for Recorded Sound Collections at Stanford University.

Now that the technology exists to mine sound from century-old scratchings, Giovannoni said, more ghostly voices from the past could be on the way.

"We hope we have more to listen to soon," he said.

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