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# Moon Music

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A new chamber opera comes complete with a unique mobile staging concept

The last 16 months have not been a banner time for opera, with most companies being forced to go on hiatus and relying on streamed productions for income. A rare exception is the Handa Opera production of *La Traviata* in Sydney, Australia, seen in last month's issue. Another is *Birds in the Moon*, a new chamber work by Mark Grey that comes complete with a unique built-for-travel production and the innovative use of sound technology.



## CLOSE-UP: OPERA

Grey is known in these pages as a sound designer for opera, especially in collaboration with composer John Adams, but he has many orchestral, choral, and chamber ensemble works to his credit; his *Frankenstein Opera* debuted at Brussels' La Monnaie in 2019. His latest work is based on the eccentric theory, espoused by the 17th-century minister, academic, and Harvard professor Charles Morton, that birds on planet Earth migrate to the moon on an annual basis; as kooky as it sounds, it was one of the earliest posited theories about avian migration. Featuring a libretto by Julia Canosa i Serra, *Birds in the Moon* focuses on a migrant and the fate of her children; it's finely attuned to the ongoing issues of immigration and climate change.

This inaugural production of *Birds in the Moon*, directed by Elkhanah Pulitzer, was designed to fit inside in a shipping container that Grey describes as "a theatrical magic moving box." The production includes production design by Chad Owen, video design by Deborah O'Grady, lighting by David Finn, costumes by Christine Crook, and sound by Grey.

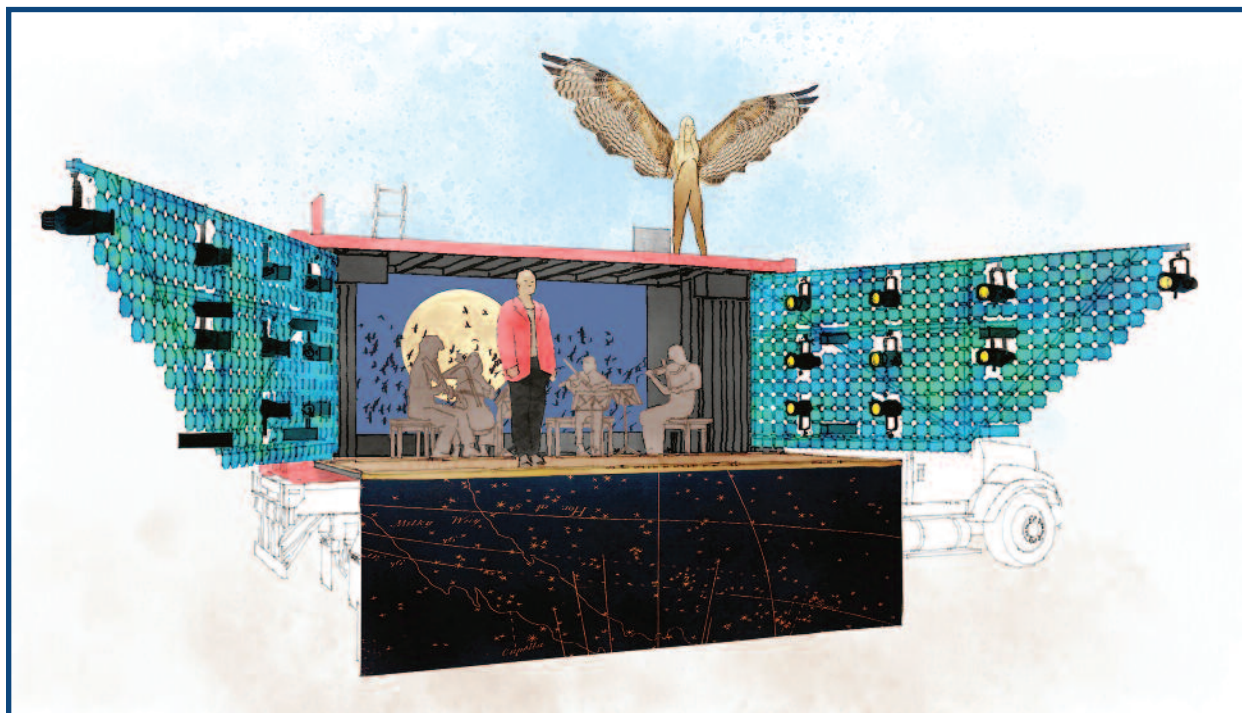
That *Birds in the Moon* could proceed during the pandemic was due to its opera-in-a-container concept, meaning it is designed to be performed outdoors. (In New York, it was presented under the aegis of the New York Philharmonic in May, just as the city's lockdown was easing up. The shipping container, which was built in California, was put on a trailer truck and brought east.) "It was designed pre-COVID," Grey notes. "All of us on the team typically work in very large venues run by very big institutions. The idea was to scale back to a kind of DIY theatre, to focus on something intimate and powerful in its own way.

We developed a traveling venue that could go to remote places—then we caught the wave of COVID."

The container is fitted out with playing spaces, lighting positions, and a video screen consisting of panels manufactured by PRT Optoelectronic Co.; imagery is processed using NovaStar SmartLCT smart screen configuration software. The production consists of a string quartet, a soprano, an actor, and some electronic soundscapes. For the latter, Grey made use of Spacemap Go, the spatial sound design and live mixing software from Meyer Sound. "Spacemap Go was still in Beta when we were working on the production," he says. "It was officially released on the day we opened in New York. The idea was to make this traveling venue self-contained. There's no front-of-house mixing console."

The sound rig comprises two ULTRA-X40 main loudspeakers and two 900-LFC low-frequency control elements mounted on the container/stage, plus eight UP-4slim loudspeakers on the extended wings. The front end consists of two DPA 6061 wireless microphones for the performers, four DPA 4099 microphones for the instruments via preamps, and a vintage stereo reverb unit, all feeding directly into the analog inputs of a GALAXY 816, along with 24 channels for the electronic soundscapes, coming from a Mac Mini via an AVB network connection.

"For the soundscapes," Grey says, "we're using AVB through QLab [which fires the audio cues] and Ableton Live, to take signals from the mics and work into the system. SpaceMap Go allows bidirectional OSC, so we can print and play back from a digital audio workstation. For exam-



The container is fitted out with playing spaces, lighting positions, and a video screen.

Image: Chad Owens

ple, say your source on input one is moving through SpaceMap; you can capture it in a DAW, play with it as a clip and a loop, and play it back.

"We've proven that you can set up a great system without a ton of outputs, and Spacemap Go is key because we can do it all without using a dedicated mixing console," Grey continues. "Each scene in the show has a Spacemap Go mix snapshot with labeling, configuration, and Spacemaps assigned to the channels. We then perform the mix live on an iPad with Spacemap Go. When the Ringmaster is on top of the shipping container, we mix his position using a Spacemap that drives the X40s harder.



"If the actor goes on top of the container," Grey says, [Meyer] SpaceMap Go can redistribute the audio. We can get very clear, transparent signals from the [DPA] 4099s to reinforce the strings in outdoor conditions."



The production is sponsored by Meyer Sound and DPA Microphones. Gear from companies is featured prominently.

When he comes down, we crossfade manually between two Spacemaps to bring the image down and achieve more gain before feedback by bringing up the UP4-slimes and backing off the X40s with a slider." QLab running on a Mac Mini provides audio playback via Milan AVB directly into the Galaxy; it is the show controller that recalls Spacemap Go mix snapshots in the Galaxy 816 and lighting as well as video cues hosted on a second Mac Mini.

"It's pretty interesting," Grey says. "Within the shipping container is an integrated LAN. We have one Rocket M Ubiquiti router access point with a 13dB omnidirectional antenna. Because the production happens outside, we need a robust outdoor router. On that network, we have the Galaxy, the AVB, the ETC Eos lighting controller, and we play back content to the video wall, all done through an essential iPad hitting each of the specific IP recipients. QLab sends control information to playback or cueing commands to the Eos. We have two Mac Minis—one for audio and lighting and one for video—along with the click track,

which is used at specific locations in the music to keep the string quartet and singers connected; we're running video of myself as conductor. We also ticker-tape bar numbers so the performers know where they are; using the ticker tape, I prerecorded myself conducting. It's all controlled by QLab. We don't need a stage manager; two downstage monitors display the conductor feed."

The production is sponsored by Meyer and DPA. Grey says, "One reason that I approached DPA was not only that their mics are far superior. We have the singer and actor walking on the shipping container where SpaceMap is sending their audio; it's important to get specific mics that fit inside the Spacemap ethos. As the actor comes downstage, the dispersion of that mic signal changes in Spacemap to keep the signal-to-noise ratio as low as possible and also deal with feedback issues. If the actor goes on top of the container, SpaceMap can redistribute the audio. We can get very clear, transparent signals from the 4099s to reinforce the strings in outdoor conditions—with trucks going by and, on opening night, motorcycles. We just bump up the audio.

"Because the actor and singer are in the center of the Spacemap, they can hear themselves and the quartet and the multichannel playback very clearly. I went up there and it felt like we were sitting in the middle of the quartet. They could hear themselves. It was uncanny. You worry about all the taboos of putting live mics on onstage with speakers, but it worked very well. The sound image for them, which would be foldback, was equally projected out to the audience. The result was one unified sound." He adds that the version of QLab used features a timeline, which made dropping in video and lighting cues much easier than before.

Having been successfully received in New York, Grey and his team are looking at taking the container to other locations. "We wanted to develop a traveling venue to reach remote locations and to present productions—not just *Birds in the Moon*, but mini-festivals featuring commissioned works and creating community engagement," he says. Thanks to the smart use of technology, the possibility of opera—a format always in need of new friends—reaching wider audiences suddenly looks much more likely. 📶