

# ARTIST'S ACKNOWLEDGEMENTS

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The SPACES World Artists Program (SWAP) offers residencies to international, national, and local artists who explore and experiment. SWAP supports artists in the creation and presentation of new work, while facilitating opportunities for collaboration with artists and audiences in Northeast Ohio. Heidi Neilson is SPACES' 65th Artist-in-Residence.

## SPONSORS

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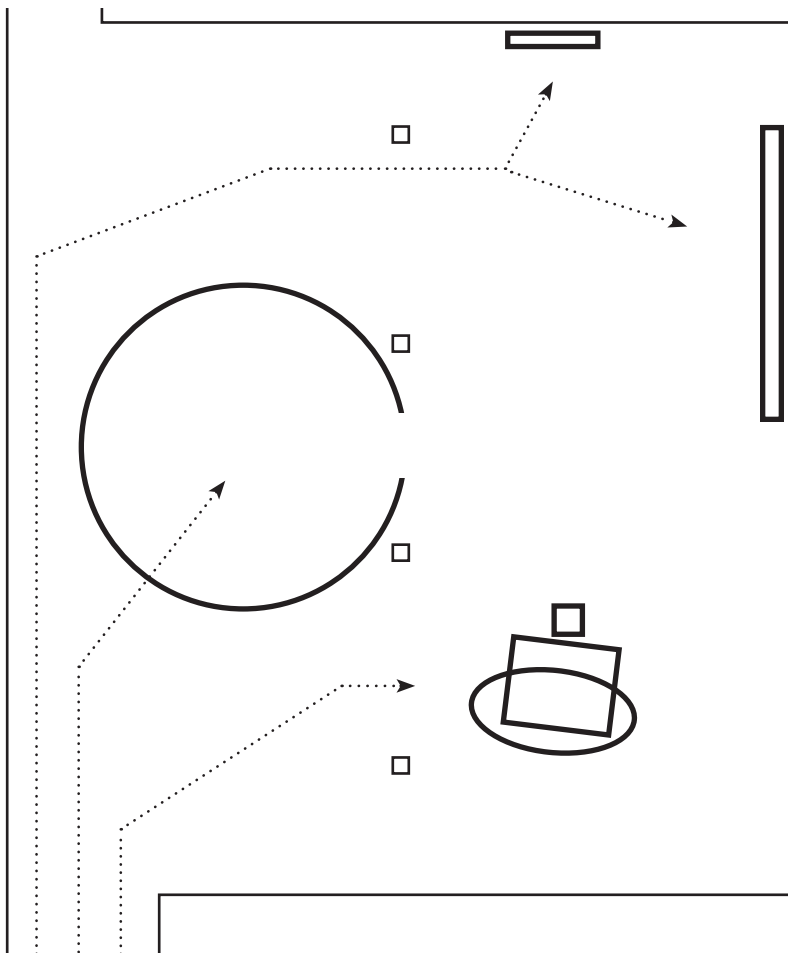
If you would like to contribute to SPACES, call: 216.621.2314

Large print available at the front desk.  SPACES © 2017



**Heidi Neilson**  
(Queens, NY)

Ground Station—Cleveland  
November 17, 2017 - January 12, 2018



- *Go GOES Radiotelescope, 2017*  
Satellite dish and support structures, electronics, software, portable viewport, chair
- *Sonic Planetarium, 2017*  
Sound installation with 9 speakers, cardboard, rivets, software, databases, website
- *Collective-action Motion Study of Anik-E1, 2017*  
Animation (loop), ~ 700 hand-colored animation frames by over 100 participating artists

## ARTIST BIO

Heidi Neilson is an interdisciplinary artist who gives visual and sensible form to the connections between people on the ground and above-ground conditions and infrastructure. Her recent work includes the *Menu for Mars Supper Club*, a series of dinners envisioning Martian cuisine; *SP Weather Station*, where weather data-gathering instruments serve as a hub for various activities addressing earth's atmosphere; *Long Island City Sundial*, which characterizes the shadow of a lone skyscraper as a giant neighborhood-wide sundial; and *Ground Station*, a project documenting outer space art-research with regard to radio transmissions.

Her often collaborative and publishing-based work has been presented at The Drawing Center, the International Print Center New York, the Islip Art Museum, the Queens Museum of Art, the Bronx Museum of Art, and published in *The Blue Notebook*, *Elephant Magazine*, and *Hayden's Ferry Review*, among many others. Her work is included in over 60 museum and university collections. Neilson's activities have received support from organizations for presentations, production, publication, residencies, and travel, including the Art Matters Foundation, the Bronx Museum of the Arts, the Center for Book Arts, the College Book Art Association, Elsewhere, Flux Factory, I-Park, the Kala Art Institute, the Klondike Institute of Art and Culture, the Lower Manhattan Cultural Council, the Lower East Side Printshop, New York City Department of Cultural Affairs, New York Foundation for the Arts, Oregon College of Art and Craft, Provisions Library, the Puffin Foundation, Queens Council on the Arts, Visual Studies Workshop, Wave Farm, and Women's Studio Workshop.

Born in Oregon, Neilson received a BA in biology from Reed College and an MFA in painting from Pratt Institute, and lives and works in New York.

[heidineilson.com](http://heidineilson.com)

# COLLECTIVE-ACTION MOTION STUDY OF ANIK-E1

Geostationary satellites orbit the earth at the same rate that the earth turns, so that from our point of view they remain in the same spot in the sky. The black and white frames of this animation are identical images which were individually altered by over 100 artist participants to create the sense of motion of this satellite.

The satellite depicted is Anik-E1, a Canadian satellite launched in the fall of 1991 which was important for communications coverage, especially in Northern Canada. The naming of the satellite series was determined by a national contest; in Inuktitut, Anik means “little brother.” In 1996 Anik-E1 suffered power losses due to damage to a solar panel and is now considered derelict; it remains in geostationary orbit roughly over Somalia and the Arabian Sea.

Participating artists:

Marit Alanen	Elizabeth	Marta King	Anita Schricker
Paula Albarran	Bruce Edwards	Alison Kobeyashi	Lawton Sharp
Alma	Lin Edwards	A. Lin	Lisa Shields
Karl Anderson	Faith	Che Kuzov-	Sarah Shirley
Becca	Kim Fisher	Tsong	Cyrus Smith
Patrick Barabe	Henry Fuller	Fleur Martin	Nà Cayla Smith
Brian Bell	Kara Glazer	Duncan May	Lena Sonnen
Eddie Bell	David Gleason	Elena May	Henry Starinsky
Sandy Boles	Jesse Gleason	Finn McAllister	Matilda Starinsky
Casey Brandt	Denee Gleason	Jason McFarlin	Annelise Stencil
Crystal Brandt	Kyra Gleason	Justin McFarlin	Lucrecia Suárez
Quinn Brandt	Cody Gleason	Frank Motley	Tania
Calvin Brett	Sandy Graff	Louise Neilson	Lynn Truncale
Tom Brock	Mark Grabow	Hương Ngô	Edie Tsong
Kōlé Robinson	Katie Grew	Jack Noble	Christina Turner
Brooks	Roni Gross	Scout Noble	Grace V.A.
Krystle Brown	Hunter	William Noble	Laila Voss
Shu Qing Cai	Jackson	Ella O'Connor	Jenna Wakefiled
Natalie Campbell	Heidi Johnson	Annalise O'Mary	Mary Wescott
Gabo Campos-	Taryn L.	Angelica Pozo	William
Suárez	Alice Larson	John Ranally	Suzie Wilson
Jennie Carlisle	Choi Kit Li	Noreen Ranally	Clara Wood
Carissa Carman	Lia	Tom Reihart	Harper Wood
Catherine	Mary Lin	Eric Rippert	Linda Wood
Christian	Lisa	Ru Russell	Gürkan Yardimici
Cynthia Chiplis	Tamara Lischka	Sally Russell	Patricia Zarate
Jeff Chiplis	Mun Liu	Maya Russell	Art Adventures
Niina Cochran	Heather Kapplow	August Russell	Student group
Erica Curry	Kasia	Alex Russell	summer camp
David Day	Felix Kelly	Huynh Sat	at Oregon
Amrita Deo	Michael Kelly	Ellen Sayers	College of Art
Alice Donohoe	Silas Kelly	Will Scibil	and Craft
Elliotte Donohoe	Christopher	Kate Sclavi	
	Kennedy		

# GROUND STATION—CLEVELAND

Heidi Neilson uses the ground station—a terrestrial radio station designed for extra-planetary radiocommunication with spacecraft—as a starting point for artistic research into outer space. She's interested in how off-planet spaces are experienced and understood while grounded here on Earth.

In this exhibition and throughout much of her work, she reveals the significance of human-made objects that appear in the atmosphere, in orbit, on the moon, and on planets. She seeks to address the ways in which these objects define the place and context of the moment in which they were created. Not only do they represent our cultural development to this point, but also our technological progress and material use.

Neilson uses a diversity of materials and techniques in her work, including publicly available NASA and other documents, books, audio and video recordings, and events. To witness the space environment directly, she adopts ham radio methods—building antennas from readily available materials and software—to receive transmissions from satellites. She creates works which position the individual in relation to things in space. *Ground Station—Cleveland* emphasizes our relationship with land and place, as it extends into Earth's orbit.

# GO GOES RADIOTELESCOPE

*Go GOES Radiotelescope* is a portable station for receiving images and weather information from NOAA geostationary spacecraft.

By sitting in the chair and looking through the viewport of the radiotelescope, you are aligned with the geostationary satellite located 22,236 miles away. You are looking directly at the spacecraft which is looking back down at you on Earth. Through the viewport you will see data transmissions in the form of images and graphics collected by GOES-13, when the *Go GOES Radiotelescope* was positioned at the outdoor studio of sculptor John Ranally, on Lorain Avenue in Ohio City, Cleveland, between October 31 and November 12, 2017. The radiotelescope received satellite transmissions using Neilson's custom-built system that decodes, demodulates, and configures the transmissions into images via open-source software developed by the Open Satellite Project.

These are some of the last transmissions from GOES-13, which has served as GOES-EAST since 2010, providing weather images and information used widely in weather reporting and forecasting. GOES-16 will replace GOES-13 as GOES-EAST in December 2017 and GOES-13 will be moved to a storage location in geostationary orbit, and eventually a bit further out, into 'graveyard orbit'.

*Go GOES Radiotelescope* was created specifically to determine the relative position of gallery visitors in Cleveland to GOES-13 at a specific moment in time. Neilson is planning future events where members of the public can view the satellite transmissions, translated into images, in real time.

# SONIC PLANETARIUM

Since we can't see all of the satellites orbiting Earth, *Sonic Planetarium* is an ongoing effort to answer the question: what if we could hear them?

*Sonic Planetarium* is a real-time spatial sound model of objects orbiting Earth. When a particular satellite rises above the horizon in Cleveland, a recorded audio file plays within the *Sonic Planetarium* matched in direction to the satellite. The sound is passed from speaker to speaker in the dome array as the satellite passes overhead. The audio files used are radio transmissions of that satellite that were recorded by the artist and crowd-sourced from ham radio operators.

Most of the satellites heard in *Sonic Planetarium* are Low Earth Orbit, which is fairly close to Earth's surface, between about 100 miles and 1,200 miles away. If the *Sonic Planetarium* dome were the size of Earth, the two reflective tape lines on the floor indicate low Earth orbit. In the same scale, someone sitting at the front desk of SPACES would be roughly positioned in geosynchronous orbit, like the satellites Anik-E1 and GOES-13.

*Sonic Planetarium* is a growing model. As of November 17th, about 200 satellites are represented as sound in *Sonic Planetarium*. Since there are far more functioning and non-functioning satellites and tracked pieces of debris in Earth's orbit, numbering in the thousands, *Sonic Planetarium* invites the public to contribute audio representing these orbiting objects.

To help create a complete sound model of Earth's orbit, go to [sonicplanetarium.net/participate](http://sonicplanetarium.net/participate) and contribute your audio files.