

Curatorial > INTERRUPTIONS

This section proposes a line of programmes devoted to exploring the complex map of sound art from different points of view organised in curatorial series.

With **INTERRUPTIONS** we make the most of the vast musical knowledge of the artists and curators involved in the **Ràdio Web MACBA** project, to create a series of 'breaks' or 'interruptions' in our Curatorial programming. The works presented in this program were selected from an international open call for submissions in early 2017. They were included in David Goren's 'Shortwave Shindig' at the 2017 Shortwave Listener's Fest, and broadcast worldwide on shortwave via WRMI (Radio Miami International) and Wave Farm's WGXC 90.7-FM in the Upper Hudson Valley, New York.

Curated and produced by Wave Farm, in collaboration with David Goren.

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The Shortwave Shindig is a live immersion into the wavering, noisy sounds of the shortwave radio spectrum. Live performances, presentations and extended, multi-layered audio mixes combine real time and archival shortwave sounds, taking the listener on a guided tour through the atmospheric neighborhoods where shortwave stations cluster. Reels of archival audio and a bank of receivers are on hand for tuning-in to the distant, elusive sounds of the shortwave bands. www.shortwaveology.net/shortwave-shindig/

The Winter Shortwave Listener's Fest is a conference of radio hobbyists of all stripes who listen to frequencies from "DC to daylight." Every year scores of hobbyists descend on the Philadelphia, Pennsylvania suburbs for a weekend of camaraderie and talking radio. The Fest is sponsored by NASWA, the North American Shortwave Association, but it covers much more than just shortwave. Additional topics include Medium wave (AM), VHF scanning, satellite TV, and pirate broadcasting. www.swlfest.com/

Wave Farm is a non-profit arts organization driven by experimentation with broadcast media and the airwaves. Wave Farm programs—Transmission Arts, WGXC-FM, and Media Arts Grants—provide access to transmission technologies and support artists and organizations that engage with media as an art form. Wave Farm's WGXC 90.7-FM is a creative community radio station. Hands-on access and participation activate WGXC as a public platform for information, experimentation, and engagement. Over 100 volunteer programmers produce shows, and WGXC commits over 60 hours a week to transmission art and experimental sound. wavefarm.org/

INTERRUPTIONS #21

Short Waves / Long Distances

Curated by Wave Farm, **INTERRUPTIONS #21** presents an international look at works that explore the sonics of the shortwave radio spectrum (2-30 MHz), and the experience of long distance listening, featuring works by 15 artists who originate from Canada, Italy, New Zealand, Poland, Scotland, Spain, and the United States.

01 The Short Waves Go Long. By David Goren

www.shortwaveology.net/

1. the short waves go long
skipping off the atmosphere
like stones on a pond

Everyday in our walk through the world, we wade into an imperceptible sea of shortwave radio signals beaming in from thousands of miles away. Bouncing between earth and sky, this massive flow of signal pulsates in constant variation. Its electromagnetic essence infinitesimally tickles our nervous systems with tones, beeps, drones and whispers.

An intermediary device, a radio, is necessary to be able to decode the information carried by the signals. A shortwave radio is an agglomeration of wired circuits, knobs, and dials attuned to divining content on the frequencies between 2 and 30 megahertz.

The receiver can be as elemental as a hunk of crystal and a metal coil, or complex as a software defined receiver (SDR) with a spectrum analyzer. A metal rod, a long run of wire or a loop on a rotor, capture the signals from the air. They siphon into the radio to be decanted, then manipulated by buttons, switches and dials.

2. 'Ezekiel saw the wheel;
Way up in the middle of the air.
Now Ezekiel saw the wheel in a wheel,
Way in the middle of the air.'

Like Ezekiel's wheel, propagation, the dissemination of radio signals, happens 'way up in the middle of the air' (at the ionosphere to be exact.) There are indeed wheels within propagational wheels. Reception can vary greatly from day to day, even minute to minute depending on a number of factors including the rotation of the earth and the number of spots on old Sol, our sun. Listeners are often preoccupied with 'what condition the conditions are in', tracking which portions of the shortwave bands are open or closed to various sectors of the world.

The shortwave spectrum has been used for global long distance broadcasting for almost 100 years. Prior to that, signals waiting to be detected by the invention of radio would mainly have consisted of emanations from the planet Jupiter and the noises of cosmic radiation – remnants of that primordial broadcast: the Big Bang.

3. freedom oppression borderline obsessions
uncommonisms indigenous schisms
propagational rhythms

In the early days of broadcasting, the spectrum above 1.5 kilohertz (also called 200 meters—the length of a transmitted signal's waveform at that frequency) was considered useless for long distance communication by government allocators. These 'short waves' were abandoned to amateur radio operators (hams) for



experimentation. But the relatively short wavelengths of signals on 200 meters and lower enabled signals to skip off the electrically charged ionosphere and travel thousands of miles. By 1921, hams had informally established transatlantic communications, and Guglielmo Marconi followed with his own experiments that led to the commercial application of high-speed long distance telegraphy.

Over the decades an invisible, but audible counterpart to the physical world developed in the atmosphere. Countries set up their own official external voices: shortwave stations transmitting the official view from home to both friends and enemies abroad. Interval Signals, repeating snippets of national anthems, folk tunes, or native bird calls, often precede these broadcasts for several minutes. They plant an aural flag to claim the frequency and provide an aid for tuning.

Stations known as clandestines are run by opposition groups in exile, targeting a country's regime from without. Shortwave's signal attribute and remaining strength is its ability to transgress borders. During the cold war, shortwave based media from the West including *The Voice of America*, sent news, information and cultural programs into totalitarian countries where the freedom of the press was limited or non-existent. Returning the favor, Radio Moscow's North America service broadcast its own take on world events, reflecting coverage of Civil Rights and Vietnam War unrest back to the United States.

Sovereignty could be established in the air as well as on the ground. When the Prague spring was crushed by Soviet troops, Radio Prague went rogue for a short time broadcasting: 'This is Radio Prague, Czechoslovakia, the legitimate voice of Czechoslovakia', as a jamming station whined in the background. When rebel forces overturned a government by coup, they would follow this time honored rule: 'First, take over the radio stations.'

4. the free and the unfree people borne on land and sea listen together

Listening to shortwave radio is a communal experience: people all over the world sit alone in the dark as the signals start to fade in. Yet, they are united, listening together to the sounds of faraway. Avid shortwave listeners divide into two main groups. The program listeners seek information from a particular country or region. They tend to prefer signals that are of a quality known as 'armchair', strong enough to listen to without leaving the comfort of their La-Z-Boy.

Then there are the DX'ers, named after the Morse code abbreviation for 'distance'. They put their hands on the radio, digging for stations that are not necessarily targeting them, hoping to log as many as they can. DX'ers crave the elusive, low-power signals of domestic broadcasters in Asia, Latin America and the Pacific Rim, reaching to far-flung and unwired regions. This listening experience can feel like you're hanging on to the signal by the skin of your eardrums, making an almost mystical connection via slender electric thread to the remote communities of the world. The deeply entranced will track these sounds into the noise floor where they disappear into what could be called 'imagination level', a sort of extra-sensory reception. Perhaps there's a relation to the belief in the early days of radio that one could tune into the voices of the dead.

Once you're this deep into shortwave listening, the ear becomes specially attuned to shortwave's peculiarly noisy and addictive soundscape. The shortwave radio becomes a portal to an always-on synthesizer capable of manipulating a changing and unpredictable soundscape through the means of dial and switch.

This instrumental ability holds particular appeal to musicians and sound artists. Composers such as Karlheinz Stockhausen, and William Basinski and many others have made serious signature works using shortwave sounds, often filtered through outboard devices. These sounds have also entered into the pop realm via the music of Kraftwerk, Peter Gabriel, Wilco, and beyond, into an almost countless array of works inspired by the low-fi sounds, echoes and phase distortions that come from a shortwave radio.



5. yesterday's breakthrough moves deeper into shadow a short wave goodbye

Shortwave approaches its centennial on the slope of a long fadeout. Newer forms of communication, satellites and the internet among them, have co-opted much of shortwave's long distance panache. Many longtime government broadcasters, have switched off their transmitters to save money. Shortwave domestic broadcasters are down to a handful, just a bad tube on an ancient transmitter away from going dark forever. Religious broadcasters continue to hang on. Their fervor leads them to focus more on the potential of reaching the unsaved heathens of the world, rather than the specifics of how many are actually listening. And of course, the shortwave spectrum is uniquely suited to contemplating the mysteries of the eternal, mingling as it does with the still lingering sonic echoes of the moments of creation.

David Goren is a radio producer, and audio archivist whose work blurs the line between audio documentary and sound art. Grounded in intensive monitoring of global broadcast culture, he examines its ability to create and support community over long distances. David has created programming for NPR's *Lost and Found Sound* series, *On the Media*, *Afropop Worldwide*, and *Jazz at Lincoln Center*, as well as audio-based installations for *Proteus Gowanus* and the *Ethnographic Terminalia Collective*. In 2003, he founded the *Shortwave Shindig*, a multi-hour live mix incorporating spoken word, musical performance, radio tuning, and archival sound. He is also one half of the shortwave radio jam band, *The Propagations*, with Ned Sublette.



02 Making the Archipelago Sound. By Andrew Moon

'Long distance telecables link sound to mixing facilities... I record, edit, and extract EPISODES of these "live" situations – what we witnessed... These become a critical part of the "story", and hopefully, provoke new desire to claim its energy' Maryanne Amacher¹

An array of thin plastic tubes extends out along the topsoil, feeding vibrations from the earth into a central concrete box. In the box, a barometer is idle, calibrated to flicker at magnitudes too faint for the human eye and too infra for the human ear. We are told these sensors do the listening and not us; it happens there, in the tubes and in the concrete box. "I don't listen to anything, it does." But nothing was listening. Ants had eaten the sensors. The state-run infrasound research facility atop a papaya farm in West Java was out of service for a month.



A short walk from the array we inspect a bunker made of stone. It's built into the hillside facing south toward the ocean, unmarked and barely visible in the undergrowth. The facility's maintenance staff are unsure about the bunker's provenance. There's a brief reference to the Japanese occupation in the 1940s. "It's the Japanese bunker." Smokey pokes her head in and observes a clearing. "It's a lookout." I poke my head in too. The bunker provides shelter from the ocean wind that barrels around the point, meeting us on the hillside half a mile from the shore.

In the facility's office, desk chairs are piled up in one corner. A local scientist sends climate recordings to head office via text. Outside, farmers sit under trees eating lunch. The French engineer overseeing the array consults his archive—images of infrasonic events from across the archipelago and beyond. He points to peaks in red and green. "I don't know what's what. This location doesn't detect clear infrasound." He tells us the next image is a possible nuclear test, "but the wind is too strong and we are right by the power plant—there's too much noise." The object of attention was also a distraction.

I'm on a train in Jakarta with Smokey, on our way to the facility in West Java. We are with the French engineer who would later encounter those ants. The engineer's laptop is open. He tells us we are about to see infrasound detected at the array. There's an error. The software won't compute data to image. Smokey turns on a handheld device that converts electromagnetic energy into sound. The engineer intervenes and starts twisting its dials. The screech of the device makes audible the electricity all around us on the train. Pressed against his skin the pitch increases. We wait for software to return an image of distant unheard sound.



What is implicit in this search for distant unheard sounds? It is worth asking: are these sounds traveling from a source to the array in West Java? What if sound doesn't travel but waves do? Then, sound would be proximate rather than distant. Sound may have duration and persistence, as one happening of a larger, more inclusive phenomenon, but it wouldn't travel.² If moving and traveling sound is a metaphor that substitutes a present state—as metaphors do—for a “provisional reality”, then what terms place these activities, materials, contingencies, and desires to make and listen to distant sound in Indonesia on a more present and equal footing?³

As a correspondence of two or more things with each other, analogy uncovers shared affinities without departing from the here and now.⁴ Ants eat sensors. The facility where sensors sprawl is windswept and colonial. Foreign protocol augments sensors and facility to make data. The interface, a sound-image, overflows with distraction, marking what's really there. In this way, some anthropologists have emphasized (and returned to) a signal-oriented approach to sound. This approach concerns less with interpreting the experience of listening as inquiry's starting point, and more with the transmutation of signal across media and the valence of “noise” produced along the way.⁵ A lively example of this work is by the Australian transmission artist Joyce Hinterding who after sonifying the ambient electricity in her home, queried that if rivers are harnessed to mill grain for bread then shouldn't TV antennas be used to make toast!⁶

In the encounter with and curation of transductive environments and atmospheric energy, transmission art provides an adroit and curious set of methods to observe and trace these constitutive and analogic materialities. This work in the arts opens to conceptions of communication, environment, relation, and perception anew, without the convention to replace one register of language for another. This we can learn from the artworks that follow, and perhaps while reading along with anthropological inquiries of science, signal, and noise, and efforts to make the archipelago sound in Indonesia.

Andrew Moon is a Ph.D. student in anthropology at the New School for Social Research in NYC. He is developing an ethnography of archival, collecting, and transmission practices in the arts and environmental sciences in Indonesia, with a particular interest in sound.

Notes:

¹ Maryanne Amacher Archives. *Broadcast Transmission* (New York: The Kitchen, Blank Forms, 2016).

² For discussion on the implications of movement for a theory of sound see Casey O'Callaghan. *Sounds a Philosophical Theory* (Oxford: Oxford University Press, 2010), 26-28; 57-69 and related comments in Stefan Helmreich. “Transduction” in *Keywords in Sound*. David Novak and Matt Sakakeeny eds. (Durham: Duke University Press, 2016), 229. For a more sustained critique of the soundwave as metaphor see Tara Rogers. “Toward a Feminist Epistemology of Sound: Reconfiguring Waves in Audio-Technical Discourse” in *Engaging the World—Thinking After Irigaray*. Mary Rawlinson ed. (Albany: SUNY Press, 2016). On inclusivity see “Waves and Signs: Low-Frequency Vibration a Conference, Workshop and Dance Party” at MIT Visual Arts (2009): <http://act.mit.edu/academic-program/iap/2009-waves-and-signs/> and Michele Friedner and Stefan Helmreich. “Sound Studies Meets Deaf Studies” in *Senses and Society* vol. 7 no. 1 (2012), 72-86.

³ Kaja Silverman. *Flesh of My Flesh* (Stanford: Stanford University Press, 2009), 173.

⁴ Silverman (2009), 40; Dominic Pettman. *Sonic Intimacy. Voice, Species, Technics (or, How to Listen to the World)* (Stanford: Stanford University Press, 2019), 7.

⁵ For foundational studies on signal and noise in anthropology see Gregory Bateson. *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology* (Chicago: University of Chicago Press, 1972). Recent scholarship includes Sophia Roosth. “Screaming Yeast: Sonocytology, Cytoplasmic Milieus, and Cellular Subjectivities” in *Critical Inquiry* 35(2) (2009) and Stefan Helmreich. *Alien Ocean. Anthropological Voyages in Microbial Seas* (Berkeley: University of California Press, 2009).

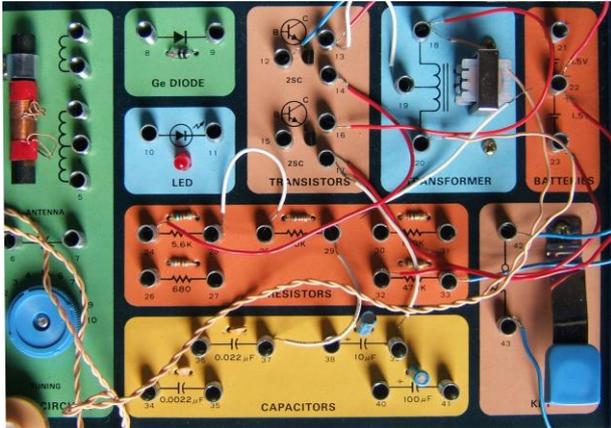
⁶ Douglas Kahn. “Joyce Hinterding: Drawing Energy” in *Earth Sound Earth Signal* (Berkeley: University of California Press, 2013), 241.

02. About the artists and works

Patrick Harrop, 'ondes simultanee et pertuber' (05:24 min)

www.ocular-witness.com

Writes Harrop, ‘I have been long fascinated with the vast aural complexity of short wave radio. More than the figurative and narrative content, the white noise of an infinity of pulses and waves that can be uncovered with the most minimal of sonic perturbations. ‘ondes simultanee et pertuber’ is one of many short works,



[Mark Vernon]

which are essentially 'self-generated' by composing a scenario of minuscule and minor frequency modulations. The sound, on its own terms is so deep and so profoundly full that the slightest gesture reveals a radically different expression. In this sense, shortwave radio is closer to the haptic virtuosity of an acoustical instrument than a digital one.'

Patrick Harrop is an, electronic artist, sound artist, a licensed architect, and a professor of architecture at Laurentian University | Université Laurentienne in Sudbury, Canada. Harrop's artistic practice is a research / creation based exploration of perceptual and dynamic phenomenon, informed and influenced by the philosophy of technology, the history of architecture and the early modern history of technology. His research specialty is in emerging technology and design with a particular emphasis in electromechanical hacking, digital fabrication and open-source maker culture. Harrop's artistic work has been shown in Montreal, Busan, Budapest, Shanghai, Berlin, London, Vancouver and Winnipeg.

Ed Osborn 'Caller' (05:23 min)

www.roving.net

Writes Osborn, 'This work from is made from a shortwave recording of a song performed with voice and gamelan. The recording is processed and transformed to build a bed of sound from the vocal and instrumental melodies found in the recording.'

Ed Osborn works with many forms of electronic media including installation, video, sound, and performance. He has received grants from the Guggenheim Foundation, the Creative Work Fund, and Arts International and been awarded residencies from the DAAD Artists-in-Berlin Program, the Banff Centre, STEIM (Amsterdam), and EMPAC (Troy, NY). He has presented his work at SFMOMA (San Francisco, CA), the singuhr-hörgalerie (Berlin, Germany), Artspace (Sydney, Australia), ZKM (Karlsruhe, Germany), Kiasma (Helsinki, Finland), and MassMOCA (North Adams, MA). He is Associate Professor in the Visual Arts Department at Brown University (Providence, RI).

Javier Suarez Quiros 'Modulation I' (07:31 min)

arcadeviento.com

Writes Quiros, 'This work reflects on modulation as a long-distance information transmission mechanism. Whether digital or analog, modulation builds a rich relational structure between different signals, beyond the physical staff. The signals used in 'Modulation I' come from PSK31 QSO on 20 meters band, radar transmissions on 6 MHz, RTTY activity on 14085 MHz and shortwave broadcast on 19 meters band.' Quiros employs digital sound processing to expand the acoustics possibilities of his sources and to construct a sonic reinterpretation of the radio wave spectrum.

Javier Suarez Quiros is Associate Professor at Oviedo University (Spain) in Computer Graphics. He is a Ham radio amateur with call sign EB1CAR since 1984. His research goals are related with urban soundscapes and new methodologies to improve acoustics in large cities. Javier has served as the conductor of LOrk@EPI (Oviedo University Laptop Orchestra) since 2015.

Mark Vernon, 'St Columb Major – transmission received' (08:38 min)

www.meagreresource.com

Writes Vernon, 'This work is composed entirely from a 20-minute shortwave radio scan recorded in the village of St. Columb Major in Cornwall, England at 1 pm on the September 16, 2011. The radio was a 1970s Grundig Yachtboy 210, which for an old wireless has quite an amazing bass response. Even so, you can hear the speaker rattle during some of the low frequency pulses. During the recording the microphone was moved around in front of the speaker to create a more dynamic stereo effect. The most unusual and otherworldly sound incidents were picked out, processed and layered over an 8-minute section of the scan. The piece resolves with an abrupt switch back to banal FM radio, rudely snapping the listener out of their reverie.'

Mark Vernon is a Glasgow-based artist operating on the fringes of sound art, music and broadcasting. His productions for national and international stations range from documentaries and radio plays to experimental audio collage and soundscapes. He has been produced numerous UK radio art projects including Radiophrenia, Hair Waves, and Radio Tuesday.

William Basinski, 'Fringe Area' (07:15 min)

www.mmlxii.com/home/home.html

'Fringe Area' is an analogue tape loop and shortwave radio piece from Basinski's album *Shortwavemusic* created in 1982 in Brooklyn, NY.



[William Basinski]

William Basinski is a classically trained musician and composer who has been working in experimental media for over 30 years in NYC and most recently, California. Employing obsolete technology and analogue tape loops, his haunting and melancholy soundscapes explore the temporal nature of life and resound with the reverberations of memory and the mystery of time. Basinski's epic 4-disc masterwork, *The Disintegration Loops*, received international critical acclaim and was chosen as one of the top 50 albums of 2004 by Pitchfork Media. Art Forum selected *The River*, his transcendental 2-disc shortwave music experiment on Raster-Noton.de, Germany as one of the top ten albums of 2003. His concerts and installations and films made in collaboration with artist-filmmaker, James Elaine have been presented internationally, most recently at The Venice Biennale of Music, Venice, Italy, Happy New Ears Festival, Belgium, FOCUS ONE Festival, Poland, Filosofia Festival, Carpi, Italy, and Cite de la Musique, Paris, among others. Basinski's latest albums, 92982 and Vivian & Ondine were released in 2009 on 2062/USA and distributed internationally. The Wire magazine selected 92982 as one of the top 50 releases of 2009. Basinski's works are distributed in Europe by Die Stadt Musik, in the U.K. by Cargo Records, in Japan by P*dis Distribution and in the United States by Forced Exposure. Digital distribution through CargoRecords.uk.co.

Nicholas Knouf, 'Let's absorb the waves as we hold on for dear life' (04:36 min)
zeitkunst.org

Writes Knouf, 'I turn on the radio. I hear a voice, a Voice of this Country, broadcast to the world. It's propaganda, I know. But it's still a voice that projects outward, rather than the insidious inwardness that pervades the world and causes all our voices to be diminished through interference. There are the voices of machines, secrets out in the open, alien warbling meant not for human ears. The voice returns: present, but distorted; always repeating, always different.'

Nicholas Knouf is a media scholar and artist whose work resides in the spaces between signal and noise. An assistant professor of Cinema and Media Studies at Wellesley College, he is the author of *How Noise Matters to Finance* (University of Minnesota Press, 2016) and has published articles about radio, surveillance, papermaking, feminism, and face perception. He is currently working on a project that explores an *extraterrestrial media studies* and traces various attempts to communicate with aliens. His artworks have been shown nationally and internationally and examine the intersection of electronics and paper, the NSA, academic publishing, and non-speech forms of communication.

Edward Ruchalski, 'Oracle' (03:28 min)

Writes Ruchalski, 'This work was created by using source material from various stations via KiwiSDR. I was interested in all the noise (pulses, beeps, tones) that can be heard when searching for a station to listen to. I wanted to put some of these byproducts, or nuisances, in dialog with each other to create a musical order.'

Edward Ruchalski has been commissioned by the Bang on a Can All-Stars, Helen Boatwright, Della Holtzapple, Syracuse's Society for New Music, and dG Studios, among others. He has composed work for the Buffalo Guitar Quartet, Detroit Chamber Winds and Strings, Robert Black, Stephen Porter, and Shiau-uen Ding. Ruchalski's compositions have been performed at Lincoln Center, Mass MOCA, Miller Theatre, the Festival of Miami, Harvard University, Kirk in the Hills in Detroit, Symphony Space, the Everson Museum of Art, and elsewhere. Ruchalski's new composition 'For Carrie Mae Weems' has been performed as part of MacArthur Genius Fellow Carrie Mae Weems' new production, *Grace Notes: Reflections for Now, a gift for Barack and Michelle Obama*, at Yale University. As a soloist, Ruchalski has performed his ambient laptop works at The Quiet Village Festival in New Paltz and during the National Water Dance in Syracuse. He is an artist-in-residence at the Stone Quarry Hill Art Park in Cazenovia, NY. Previous publications include essays on Paul Simon and Nick Lowe in the journal, *Stone Canoe*, as well as, digital releases by taàlem and ink&coda. Ruchalski has also been the recipient of two Artist Grants from Syracuse's Cultural Resources Council and to date, he has nine studio recordings available, including: *WaterTrain* (Humbag, Norway); *Dark Night* (Afe, Italy); and *Refined Localities* (taàlem, France). Edward Ruchalski is the Director of Music at Le Moyne College, where he teaches various course in music, including theory and history, and advises the Music Minor. He is currently the Vice President on the executive board for the Society for New Music. For the past 13 years, Ruchalski has taught private lessons in guitar and composition at his home studio in Syracuse, N.Y.

Sally Ann McIntyre, 'a lagoon, considered against its archival image' (07:57 min)
radiocgeste.blogspot.com/

Writes McIntyre, 'During a six-week artist residency on Kapiti Island, a nature reserve on the coast of New Zealand, I explored radio transmission and reception as a way of reading the materiality of environmental signal, via mediums such as VLF receivers and mini FM. On May 9th, 2012, I took a multi-band radio receiver once used as a maritime communication device into three very different environments, and recorded this device tuning in to signals on the shortwave band on the shores of a lagoon, in a grassy field, and at the site of a demolished lighthouse on the shoreline. With the 2012 Transit of Venus almost upon us, I



[Sally Ann McIntyre]

couldn't help but reflect on the possibility of tuning into the electromagnetic emissions of planetary events, and also the ways in which astronomical way-finding and scientific practice were crucial parts of the histories of these islands, with the sighting of Aotearoa/New Zealand by Captain James Cook's crew aboard the Endeavour as a side-effect of their mission to observe the 1769 Transit of Venus. This is the first of the three pieces made from these three recordings, released as part of the album *three inclements (the ocean does not mean to be listened to)* by Radio Cegeste, released on Consumer Waste.

Sally Ann McIntyre (aka Radio Cegeste) is a Hobart-born, Dunedin-based writer, broadcaster, radio and sound artist whose work traces buried sonic narratives through the labyrinths of archives, focuses on the gaps and silences in soundscapes, and the disorder within the ordering systems of collecting practices, amplifying the noise that attends the signal of transmitted historical knowledge.

Radio Cegeste is McIntyre's transmission art project, an open framework for a series of experiments in radiophonic locality, which operate as the irregular programming of a nomadic micro-radio station. radio cegeste's programmes are created as site-responsive events for particular situations and spaces, via the broadcast source of a very simple handmade, low powered Mini-FM transmitter, in conjunction with an array of radio receivers, and function within an expanded concept of radio as an artistic medium and a performance art, drawing on phonographic, documentary, and broadcast-journalistic concepts and traditions, while looking toward the 'expanded instrument' potential of radiophonic materiality.

Stephen Bradley, 'The Perfect Storm' (09:20 min)

urbantells.net/

Writes Bradley, "This work accesses virtual shortwave radio transmissions broadcast on the World Wide Web. Before composing TPS, I explored a number of supplied listening resources, including KiwiSDR, a software-defined radio (SDR) receiver at numerous radio receivers from around the world. I selected what appeared to be the strongest or weakest signals and jumped channels randomly. By lengthening the selection area, I could listen to a narrowly focused frequency that increased the radio noise.

Once a receiver is selected at the top of the browser window, the page begins to scroll down, revealing a digitally bright-colored waterfall, strands of blue, yellow, yellow-orange and exposing an interactive visual representation of the numerous radio transmissions in real time. This process introduced the possibility of performing the SDR as a musical instrument, rather than listening in a linear fashion. It is possible to interact with a large swath of frequencies based on visual color information, clicking and selecting frequencies, besides what is heard on a particular channel. At the same time I was listening and sampling the various shortwave transmissions, I recorded the sounds from a leaky window during a stormy day with 40 mph plus wind gusts.

The final composition of TPS is made up of shortwave transmissions disrupted or blown around by gusts of energy from a disclosed location. Physical and virtual acoustic spaces collide and clash, demanding the listener's attention, inevitably overcome by the perfect storm of distant distractions.'

Stephen Bradley is an inter-media and trans-disciplinary artist whose primary practice maps and traces our relationship to place through ambient sound recordings, landscape photography and documented stories juxtaposed with artifacts discarded or lost in the landscape. Bradley is currently artist-in-residence at the Chesapeake Arts Center's newly established makerspace adjacent to this community and where he collaborates with stakeholders engaged with civic projects that strive to create and celebrate place.

Bradley has received solo commissions, awards and fellowships from the National Endowment for the Arts; Maryland State Arts Council, Sonic Circuits VII: Walker Art Center; Inter-Society for the Electronic Arts (ISEA); Museum of Contemporary Art Kiasma, Helsinki; Blauschimmel Atelier, Oldenberg, Germany; Bienal de Arte Contemporaneo de Sevilla, Biacs3, Spain; Wave Hill, Bronx; and Hull Time-Based Arts, UK. His sound performances, media installations, and site-specific art works have been exhibited and presented nationally and internationally venues such as the Sandao Gallery, Xiamen University and VArts Center, Shanghai, China; radioCona FM, Ljubljana, Solvenia; InterAizoni Festival, Sardinia, Italy; Kunstradio ORF1, Vienna, Austria; (((NOMUSIC))), Strasbourg, France; 2006 Soundscape, Zürich, Switzerland; Transmission 003.3: Sound Art Festival, Chicago; Smithsonian Institute, Washington, D.C.; Visual Arts Museum/SVA, Pulse Art, and Ricco Maresca Gallery, NYC; Megapolis Sound Art Festival; Red Room, the Vine, Contemporary Museum; the Baltimore Museum of Art and Maryland Art Place. Bradley teaches at UMBC in the department of visual arts, Baltimore, Maryland.



[Jeff Gburek]

Pietro Bonanno, 'Over the Horizon' (08:59 min)

Writes Bonanno, 'This is an electronic composition based on sampling, treatment and interaction of multiple sound sources recorded among shortwave frequencies between 2 and 30 MHz. The idea behind the composition is to create a dialogue between technical frequencies (OTHR, R2DBI and CODAR) and broadcasting (BSKSA Holy Quran, Radio Saudi) to investigate the distance from a geographical and cultural point of view. So Ocean Radars and the voice of the Arab Singer serve as imaginary circumference of a center in which is placed the listener, from anywhere in the world he comes from. The materials—recorded by WebSDR dell'Univesrità of Twente (NL)—were treated with CSound through techniques related to the modulations used in the radio (AM) and granulation. The constant rate of the OTHR is the primary component in the broader rhythm of the composition, hence the title.'

Pietro Bonanno was born in Palermo, Italy where he graduated in piano with the highest marks in the class of Maestro Renato Giarrizzo and where received a MA with honors and honorable mention in Electronic Music in the class of Maestro Giuseppe Rapisarda and Maestro Emanuele Casale. Bonanno furthered his classical and composing studies with Mauro Castellano, Giovanni Damiani, Federico Incardona, playing in Giovanni Sollima Band and teaching Piano and Theory in the local ISME district (Centro Musicale Palermo). Since 2002 he has focused on electroacoustic composition in soundscape studies, with a simultaneous interest in the ecological and the multimedia. In 2013, Bonanno founded with Fabio R. Lattuca the VacuaMoenia association, with the intent of study abandoned Sicilian soundscape, through which he participated at FKL Hearing the Pot symposium (Oberhausen DE, 2013), Nuit Blanche 2014 (Paris FR, 2014), SAE Meeting (University of Kent, UK), Klingt Gut Symposium 2016 (Hamburg, DE), and Sonorities 2016 (Belfast, UK). The work '23pg12r12' was included in the recent *Sound at Work* release for Temporeale (Firenze, IT).

Linda Dusman & Alan Wonneberger, 'Strange Sonars' (10:00 min)

lindadusman.com/
music.umbc.edu/faculty-and-staff/wonneberger/

Write Dusman and Wonneberger, 'This is a collaborative work designed to incorporate into its sonic palette during broadcast the natural sounds and characteristics of shortwave transmission. As sonar is used underwater to detect potential dangers, "Strange Sonars" pulses slowly through the air of organ pipes against a sonic backdrop of presidential oaths of office—voices of men granted via democratic elections extraordinary potential for good or evil. Mixed especially for shortwave using a single cone speaker, these presidential voices initially are reminiscent of a de-tuned shortwave sideband, bending in and out of the organ "sonar" blasts as a warning of potentially dangerous political waters.'

Linda Dusman's compositions and sonic art explore the richness of contemporary life, from the personal to the political. Her recently released solo CD *I need no words* contains sonic reflections on a variety of texts, from Joan Retallack to Emily Dickinson. Recent works include "Interiors" for solo piano, and "Subterranea" for percussion quartet. Her music has been awarded by the International Alliance for Women in Music, the State of Maryland (in both the Music: Composition and the Visual Arts: Media categories), and the Mid-Atlantic Arts Foundation, among others. Her compositions are published by I Resound Press, and are recorded on the NEUMA, Capstone, and New Albany labels. As a frequent contributor to the literature on contemporary music and performance, Dr. Dusman's articles have appeared in the journals *Link*, *Perspectives of New Music*, and *Interface*, as well as a number of anthologies. She was a founding editor of the journal *Women and Music: A Journal of Gender and Culture*, and is as an associate editor for *Perspectives of New Music*. Recently, she founded I Resound Press, a digital archive for music by women composers. Dr. Dusman is a Professor of Music at the University of Maryland, Baltimore County (UMBC), and serves as Chair of the Music Department there. Prior to her tenure at UMBC, she held the Jeppson Chair in Music at Clark University in Massachusetts.

Alan Wonneberger has been active in the music industry for over 30 years as a musician, composer, recording producer/engineer and teacher. He has engineered and produced thousands of audio and video recordings, including hundreds of commercial releases, on labels such as Naxos, New World, Capstone, Albany, Innova, Soul Note, Sea Breeze and many others. His work as a producer of the *Stories with Music* series of recordings with the London Philharmonic Orchestra has received widespread critical acclaim and has received dozens of national awards. The thirteenth CD of the series, which features the music of Tchaikovsky, was released last year. His work as a composer and percussionist has received widespread international airplay, and his recordings are regularly featured on NPR station WETA's *Front Row Washington*. Mr. Wonneberger as Director of Recording and Music Technology is a senior lecturer on the Music faculty at the University of Maryland, Baltimore County. He is a member of the AES, NARAS and BMI.

Jeff Gburek, 'Three Steppes Forward Two Steppes Back' (08:56 min)

www.futurevessel.com/orphansound/

Writes Gburek, 'My most recent research and practice have involved using the



[Amanda Dawn Christie]

Theremin in unique ways to calibrate the shortwave radio reception, scramble and coupling the Theremin with walkie-talkie feedback systems. I like to think of these elements as ways to study electro-magnetic polarity, transmission and receptions, with the amusing by-product of original and unpredictable sounds in a microcosm of satellites.'

Walker, listener, seer, learning to read between the lines of the spectra, **Jeff Gburek**, breathes, plays and builds musical instruments, from natural elements, creates new electronic circuits and arranges new constellations of pre-fabricated devices (such as shortwave radios, guitars, mixing boards, tape machines, laptops), draws, paints, cooks curries, assembles rocks and feather into animistic theatric scenes, record sound environments, writes, teaches; all of this more or less while based for the last few years in Poznan, the fourth largest city in Poland.

For 10 years, Jeff Gburek provided live sound for the dance theater (butoh) company known as Djalma Primordial Science, in which capacity he traveled to Japan, Indonesia and widely in Western Europe and the United States of America, and Mexico. He earned scholarships and residencies as solo artist in Darmstadt, Amsterdam's STEIM, Denmark (Odin Teatret), Le Bains Collective in Bruxelles and has performed at Les Instants Chavires & Les Voutes (Paris), Ausland, Kule & Exploratorium (Berlin), Museum of Contemporary Art, Strasbourg, Nantes & Alchemia (Krakow), MOZG, Plan B (Warsaw), Lasnia (Gdansk), Museum of Contemporary Art, Torun and in Bilbao, Spain at the Contemporary Art Museum... Jeff Gburek also performed as soloist and in ad hoc groups at the Ad Libitem Festival (Warsaw), FRIV & FRIV MOVE (Poznan), Experyment Festival (Zbaszyn, Poland). With the dance theater project Djalma Primordial Science, Jeff Gburek performed at festivals in Potsdam, Germany, Postfurhamt, Hau Drei, 48 Stunden, Karmanoia Theater (Berlin), Odin Teatret (Hostelbro, Denmark), two places in Amsterdam he can't remember the names of and in Rodez, France and the chapel of the asylum where Antonin Artaud lived during the Second World War.

Jed Miner, 'Argent Discovery' (10:00 min)

<http://jedminer.com>

Writes Miner, 'This work is composed with sampled shortwave recordings performed on an Akai S5000 with an Elektron Analog Keys used as a controller and providing additional tones, filtering and effects. Music made with radio sounds is always a snapshot of a particular time and moment. It has Cagean undertones tempered with new sonification methods. Some of my earliest audio experiments involved circuit bending an AM/FM transistor radio, the exposed circuit solder points were accessible when you removed the back panel to change the battery. Squelches and other hysterical wails could be easily produced, especially if you slightly wet your fingers as you short-circuited the audio manually by touch. Radio as a medium was available to me through a radio show on WFMU by John Schnall in the early 90s called the "Telephone Jam" where listeners could call in and play music collaboratively (or not). Later, I was given a nice digital rack delay by Paul Geluso and experimented with running shortwave radio sounds from a portable Grundig receiver while manipulating the delay time. During this early experimental period with radio I also used a Fisher Price "creative music maker" radio microphone to generate sounds recorded to cassette. After that period I used a combination of a Kaoss pad and Boomerang loop pedal to effect loops often with shortwave sounds. A favorite would be to slow down the loops to hear more overtones and introduce new ones through the resampling process and distortion. Recently, I was working with the op-1 keyboard, which allows you to sample directly from the FM radio with an antenna attachment. With all of the new options for control voltage manipulation of shortwave in modular I am planning to look into the RF Nomad as a wonderful composition/sound design tool.'

Jed Miner is currently pursuing an MFA in Interdisciplinary Documentary Media Practices at the University of Colorado, Boulder. Miner's work involves DIY electronics, collage, traditional fine art, performance and experimental writing. He has performed sporadically since the late 1980's and continues to seek new ways of exploring found materials into his varied art practices. His recent work is found at archiveofmemory.com.

Amanda Dawn Christie, 'Spectres of Shortwave: Falling Towers' (excerpt) (06:01 min)

www.amandadawnchristie.ca/

Writes Christie, 'This work is both a film and an electroacoustic audio documentary about the Radio Canada International Shortwave Radio Towers that transmitted from 1944 to 2012 and were demolished in 2014. The soundtrack to the film was designed so that it could stand alone as an audio work. Two years before the demolition of the RCI radio towers, home made contact microphones (both piezo disks and piezo film) were placed on the towers, halyards, and



[David Goren]

vertical stays of the transmission site. A library of recordings was made of the vibrations of the 400 foot tall radio towers in the high marsh winds. Field recordings were also made during the demolition as each of the towers fell and crashed to the ground in the midst of heavy machinery and cold winter winds. In this excerpt, you hear the “voices” (contact mic recordings) of each of the towers. As each tower falls and crashes to the ground, its “voice” (contact mic recording) is first briefly amplified in a final breath, before it is removed from the mix altogether.’

Amanda Dawn Christie is an interdisciplinary artist working in film, video, performance, photography, and electroacoustic sound design. She has exhibited and performed in art galleries across Canada, and her films have screened internationally from Cannes to Korea to San Francisco and beyond. She was the 2014 Atlantic finalist for the National Media Art prize, and recently had a 10 year retrospective exhibition of her work curated by Mireille Bourgeois, at the Galerie d’art Louise et Reuben Cohen. Since 1997, she has been serving on various boards, teaching workshops, publishing articles, and serving on juries across Canada. She completed her MFA at the SFU School for the Contemporary Arts in Vancouver, before moving to Amsterdam. Upon her return to Canada she worked at the Faucet Media Arts Centre & Struts Gallery. She later worked as the director of the Galerie Sans Nom and the RE:FLUX festival of music. She left the GSN last year to work full time as an artist with the support of a new media creation grant from the Canada Council for the Arts. Concepts and themes explored in her work focus primarily on the relationship between the human body and analogue technology in a digital age.

Lee Rosevere ‘Elegy for RCI’ (01:49 min)

Writes Rosevere, ‘This work is a short piece intended to emulate the type of radio IDs or stings that might be played on shortwave radio stations. It was written in memory of RCI, and features samples from Amanda Dawn Christie’s documentary *Spectres of Shortwave*.’

Lee Rosevere is self-taught composer. His music has been heard in short films, documentaries, podcasts (NPR’s Planet Money, Invisibilia, Why Oh Why, ABC Radio, BBC, CBC) and he recently completed writing his first original score for a Norwegian documentary, *No Time To Lose (Ingen tid a miste)*. He has won awards for sound design and creative use of sound (New York Awards, RTDNA, CAJ, Websters) and his music is available for free download at the Free Music Archive and Bandcamp.

04. Playlist

- 00:00** Patrick Harrop, ‘ondes simultanee et pertuber’ (05:24 min)
- 05:24** Ed Osborn, ‘Caller’ (05:23 min)
- 10:47** Javier Suarez Quiros, ‘Modulation I’ (07:31 min)
- 18:18** Mark Vernon, ‘St Columb Major – transmission received’ (08:38 min)
- 26:56** William Basinski, ‘Fringe Area’ (07:15 min)
- 34:11** Nicholas Knouf, “Let’s absorb the waves as we hold on for dear life” (04:36 min)
- 38:47** Edward Ruchalski, ‘Oracle’ (03:28 min)
- 42:15** Sally Ann McIntyre, ‘a lagoon, considered against its archival image’ (07:57 min)
- 50:12** Stephen Bradley, ‘The Perfect Storm’ (09:20 min)
- 59:32** Pietro Bonanno, ‘Over the Horizon’ (08:59 min)
- 01:08:31** Linda Dusman & Alan Wonneberger, ‘Strange Sonars’ (10:00 min)
- 01:18:31** Jeff Gburek, ‘Three Steppes Forward Two Steppes Back’ (08:56 min)
- 01:27:27** Jed Miner, ‘Argent Discovery’ (10:00 min)
- 01:37:27** Amanda Dawn Christie, ‘Spectres of Shortwave: Falling Towers (excerpt)’ (06:01 min)
- 01:43:28** Lee Rosevere, ‘Elegy for RCI’ (01:49 min)

03. Notes

This program is also available as a sound works only compilation, excluding the audio introductions, which can be downloaded here:

<https://rwm.macba.cat/en/curatorial/interruptions/21-interruptions-wave-farm-soundworks-only/capsula>



[Patrick Harrop]

04. Acknowledgements

Andrew Moon would like to thank to Hugh Raffles and Liliana Gil for their comments.

Many thanks to all the featured artists, essayists and Galen Joseph-Hunter and Tom Roe for bringing this project to our table and their generosity and eternal patience.

05. Copyright note

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