

AUDIO Sources - via Discogs.com

Below you will find a permanent record of vinyl recordings mentioned in the IEEE REACH [Electronic Music Inquiry Unit](#) made available via Discogs.com. Discogs does not require a login and provides a discography listing that may be shared with students, however, please note that actual audio files do not exist on Discogs. An additional search is required, for example on YouTube, to find actual audio files. We have provided a few audible sites/links, including some found on YouTube, please note these are subject to change with time and is the reason we provide the Discog.com listing.

1A. Antonio Russolo – “Corale” (1921)

<https://www.discogs.com/Filippo-Tommaso-Marinetti-II-Futurismo/release/2559759>

Unfortunately due to the lack of widespread recording technologies at the time, few recordings of the Italian Futurist movement are extant. This piece by Antonio Russolo, brother to Luigi, is somewhat late in the Futurist movement, but is a good representative of soundscapes produced by the homemade Intonarumori instruments. These instruments were purely mechanical and had no electric component, but were created to produce non-traditional sounds that are described in Luigi Russolo’s “The Art of Noises”. When listening to this piece, think of how modern electric and electronic instruments could generate sounds that would accompany the music.

[Audio Link: https://freelistenonline.com/artist/Antonio%2bRussolo](https://freelistenonline.com/artist/Antonio%2bRussolo)

2A. Clara Rockmore – “Nocturne in C# Minor” (1975)

<https://www.discogs.com/Clara-Rockmore-Nadia-Reiseberg-Clara-Rockmores-Lost-Theremin-Album/release/1655212>

Recorded late in Rockmore’s life, a piece like this would have been typical of her performances during the height of her fame in the 1930s. Many public performances on emerging electronic instruments such as the Theremin, were renditions of classical pieces, such as this one, originally composed by Chopin. The Theremin, which comes in at around fifteen seconds, is accompanied by a piano. This piece highlights how the Theremin sounds and is performed, with its evocative vibrato and almost otherworldly tone. Keep this in mind as you listen to the piece. When a key on a piano is pressed, it always plays the same note, which also holds true for electronic pianos like the Audion Piano at the time. The Theremin has a different approach to sound generation as pitch is controlled by the distance the player’s hand is from a radio antenna. Each subsequent key on a piano represents a half-step on the scale, but a Theremin produces an analog gradient of pitch, making it possible to, intentionally or otherwise, play microtuned notes or unconventional scales. Rockmore’s work is rarely adventurous in this sense, but the potential is there for future composers.

[Audio/Video Link: https://youtu.be/ghWdgcYIcSk](https://youtu.be/ghWdgcYIcSk)

2B. Pierre Schaeffer – “Symphonie pour un homme seul: Intermezzo” (1957)

<https://www.discogs.com/Various-Panorama-Of-Musique-Concrète-No-2/release/405830>

One of the first major Musique concrete pieces utilizing tape composition methods. The nature of tape allows the composer to cut and splice pieces, bend the tape to change pitch, reverse the tape, layer it onto other tapes, etc. When listening to the piece, consider the level of effort and time required to manually manipulate tape this way. Depending on the fidelity of the medium, several inches of tape could correspond with less than a second of sound. As computers were on the horizon at this point and not widely available for sound arrangements in this fashion, composing even brief pieces by tape was extraordinarily time consuming.

[Audio/Video Link https://www.youtube.com/watch?v=38NdUo9NmRU](https://www.youtube.com/watch?v=38NdUo9NmRU)

3A. Max Mathews – “Numerology” (1960)

<https://www.discogs.com/Various-Music-From-Mathematics/release/1411970>

Max Mathews is sometimes referred to as the “father of computer music”. While not the first to compose music on a computer, his work explores the mathematical theoretical side of music and goes beyond renditions of popular songs and classical pieces. When listening to “Numerology”, it feels more like a special effects demo than a deliberate piece. Shifting from one effect to another through its length gives the listener a good idea of what sorts of mathematical functions computers can generate with respect to music. It is recommended this piece be listened to with software capable of displaying a spectrograph as the relatively basic mathematics are visually rather striking and easy to see.

Audio/Video Link: <https://www.youtube.com/watch?v=hVmbthBYFaw>

3B. Kraftwerk – “Trans-Europe Express” (1977) and “The Man Machine” (1978)

<https://www.discogs.com/Kraftwerk-Trans-Europa-Express/master/2877>

<https://www.discogs.com/Kraftwerk-The-ManMachine/master/4010>

Kraftwerk’s late 1970s output is considered by many to be the foundation of modern popular electronic music, and some music critics have considered them as important, if not more so, than the Beatles to the development of late 20th century popular music. As computing technology improves throughout the 1960s and 1970s, Kraftwerk utilized sequencers, synthesizers and drum machines, most often homemade or customized by the band, to create their mechanical, futuristic, robotic pop sound. These records were highly influential to the development of disco, tech-no and hip-hop.

Audio Link: <https://www.youtube.com/watch?v=L7cMCatM-fo>

Audio Link: <https://www.youtube.com/watch?v=XMVokT5e0zs>

3C. Afrika Bambaataa & the Soul Sonic Force – “Planet Rock” (1982)

<https://www.discogs.com/Afrika-Bambaataa-the-Soul-Sonic-Force-Music-By-Planet-Patrol-Planet-Rock/master/19152>

An early Afrofuturistic hip-hop track that recontextualizes the refrain from Kraftwerk’s “Trans-Europe Express” at around 45 seconds in. Technology at the time made it far easier to sample passages of music than the manual manipulation of tape from several decades prior. As such, sampling was a prominent feature of hip-hops development through the 1980s and 1990s. On this track, the incorporation of Kraftwerk’s futuristic sound is a good example of how their influence spread to a wider audience. Audio/Video link: <https://youtu.be/9J3lwZjHenA>

3D. Model 500 – “No UFOs” (1985)

<https://www.discogs.com/Model-500-No-UFOs/master/5405>

An early Detroit techno track, this piece showcases how the lowered cost of music technology reduces the gatekeeping to composing. Juan Atkins began experimenting with synthesizers when he was still in high school, and was able to compose in his bedroom. While “No UFOs” was written when Atkins was in his early 20s, it demonstrates the possibilities for aspiring musicians at the time. Using homemade studios without major label backing, the early techno artists are very “ground-up” and independent, versus composers from the 1960s who were often attached to a television or radio studio like RTF or the BBC.

Audio/Video link: <https://www.youtube.com/watch?v=XtkpjkpD8xQ>