

Title: "Stars"
Medium: Interactive sound installation
Date: 2002
Dimensions: 18" x 18" x 40"
View RealPlayer video online:
http://www.viewingspace.com/ucla_mfa/ucla_pages/stars.htm

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Concept

"Stars" is an interactive sound installation that transforms astronomical data, in the form of full hemisphere maps of the night sky at midnight printed on to 12" vinyl LPs, into unique yet repetitive tonal patterns. This unlikely rendition of the "Music of the Spheres" is a synthesis suggestive of both radio astronomy recordings and the nostalgic experience of listening to music on a worn vinyl LP. The strange, yet somehow familiar, music mediates the relationship of the astronomical data to the history of its production through the content of the LPs, encodes a specific time in each stellar maps (latitude, longitude at midnight), and evokes the cosmological nature of time.

Each LP represents one of several women members of the Harvard College Observatory, collectively known as "The Harvard Computers." Working between 1886 and the 1940's, this little known group of women astronomers is responsible for the development of schema for indexing and classifying stars by their spectra and for generating voluminous catalogs of stellar data. Their work forms the basis for the majority of the stellar maps in use today, and is the foundation for the maps used to generate the LP disks for the installation. The disks represent some of the more famous women astronomers of the 19th and 20th Century, Annie Jump Cannon, Williamina Fleming, Margaret Harwood, and Antonia Maury who were part of the group. The absence of disks for the other members of the group is reflective of the then prevailing social attitudes towards women in science which resulted in many of them falling away into obscurity despite the significance of their contribution. This historical referent is only subtly visually evident. It is coded in the label for each LP, which consists of an emblematic stellar spectrum, the name of one of the women, their date of birth, or death, and the location, expressed as latitude and longitude. It is also encoded in the sound compositions, which seem whimsical and nostalgic, yet are the transcoding of the lives of these women through the data they generated in to their own unique sound.

Description

One of several 12" vinyl disks, reminiscent of an old LP, containing the images of stars in the night sky, is placed upon a slowly rotating turntable platter. As the sensor arm reads the unique dot pattern on the disk surface, it is simultaneously transformed in to a sound composition. The moveable sensor arm allows for disks to be interchanged. The dot patterns on each disk are generated from astronomical map data showing the position and relative luminance of stars. They correspond to the full hemisphere night sky for a specific date, latitude, and longitude, at midnight. The dates and locations used to create the disks represent the birth or death of several of the women members of the Harvard College Observatory, collectively known as "The Harvard Computers." The luminance of each star



Technical

The "Stars" installation comprises a slowly rotating turntable, a movable sensor arm, an EZI/O interface board, a Macintosh computer and two speakers. One of a number of 12" vinyl disks can be placed onto the platter, and the sensing arm, which is held 1/8th of an inch above, reads the unique pattern of white dots. The sensing arm itself consists of an aligned array of eight LED-Phototransistor pairs. Each pair measures the amount of incident light on the phototransistor, as reflected by the dots on the disk moving underneath. The output of each circuit is represented as a varying voltage, which is fed into the EZI/O's analogue to digital converter. The EZI/O is connected to the Macintosh via a simple serial connection, allowing the computer to process the sensors' readings as 8-bit values. These values are used to generate sound. Processing is achieved using the Lingo programming language in Macromedia Director v. 8.5.

Space and Equipment

Equipment:

Rotating turntable/sensors and housing, L18" X W19" X H40

EZI/O interface board

Two speakers

Macintosh G3 or G4 computer, minimum 266 MHZ,

Director v. 8.5

Powercables

Vinyl disks - several

1 - multiple power outlet, extension cords

Space:

Floor space: L18" X W19" X H40

Lighting:

Lighting conditions: medium to dim ambient/indirect light