FOLKWAYS RECORDS FSS 37465

# COMPUTER MUSIC FROM THE OUTSIDE IN Featuring Music by Barton McLean, Karl Korte, & Reed Holmes

A narrative exploration, with examples, of how four major computer music works are composed - from the Electronic Music Center, The University of Texas-Austin



# FOLKWAYS RECORDS FSS 37465

# COMPUTER MUSIC FROM THE OUTSIDE IN

Featuring Music by Barton McLean, Karl Korte, & Reed Holmes

# Side 1

Band 1:	Barton McLean, Etunytude	(2:32)
Band 2:	Barton McLean, Etunytude	(5:28)
Band 3:	Barton McLean, The Last Ten Minutes	(2:27)
Band 4:	Barton McLean, The Last Ten Minutes Performance	(11:07)

## Side 2

Band 1: K	Carl Korte, The Whistling Wind	(2:20)
Band 2: K	Karl Korte, The Whistling Wind Performance Elizabeth Manion,	(8:45)
Band 3: F	Mezzo-soprano Reed Holmes, <i>Moire</i> Narration	(2:04)
Band 4: F	Reed Holmes, Moire Performance	(8:00)

RETURN TO ARCHIVE CENTER FOR FOLKLIFE PROGRAMS SMITHSONIAN INSTITUTION SMITHSONIAN INSTITUTION

(P)C 1983 FOLKWAYS RECORDS & SERVICE CORP. 43 W. 61st ST., N.Y.C., 10023 N.Y., U.S.A.

# 

MUSIC FROM THE OUTSIDE IN Featuring Music by Barton McLean, Karl Korte, & Reed Holmes

DESCRIPTIVE NOTES ARE INSIDE POCKET

FOLKWAYS RECORDS FSS 37465

#### FOLKWAYS RECORDS Album No. FSS 37465 © 1983 by Folkways Records & Service Corp., 43 West 61st St., NYC, USA 10023

# COMPUTER MUSIC FROM THE OUTSIDE IN



"Page six, drawn wave-forms on the Fairlight CMI."

As a companion to the recently-produced Folkways recording *Electronic Music from the Oustide In (FXM 36050)*, this disc adopts a similar format. The uniqueness of the "outside in" approach lies in the personal comments made by each composer concerning techniques used in the creation of his composition. Although these comments must out of necessity be quite brief, the listener is nonetheless able to gain rare insights into the creative process itself.

#### **COMPUTER MUSIC TODAY**

Computer music has changed considerably from the early years of the large main-frame computer, input by punch card, and the accompanying hours or days of waiting to hear the result. Recent innovations have produced a healthy technological mix of different approaches to composing music with computers. Some composers use computers to help make the basic musical decisions of composition itself. Others are concerned with additive synthesis, which refers to the building up of complex sounds with simple sine waves. Another new development is with programs that analyze an acoustic sound (from the real world, recorded by a microphone) and then attempt to reassemble it under different conditions. Others use the computer as an adjunct to analog synthesizers or as a control for digital oscillators, filters, etc. Still others have developed sophisticated means of timbrally modulating simple waveforms. It would seem that the only limit to the ways in which the computer can be used for creative musical expression is the imagination of the human mind itself.

Consequently, with the variety of approaches and systems available today, no single recording can pretend to be a comprehensive exploration of computer music. The goal of this disc is to make computer music more accessible and human through the exploration of how three composers have interacted with one particular system-the **Fairlight Computer Music Instrument.** 

#### **THE CMI**

The interaction between composer and the CMI is basically a two-stage process. First, up to eight similar or different sound events can be produced and stored in eight voice modules, each of which is a powerful microprocessor in its own right. This production can take place internally by drawing (with a light pen) up to 32 sine wave harmonics, ' each with its own independent characteristics (envelopes) or the sound event can be produced externally and digitally recorded. Once any acoustic sound (trumpet, human voice, breaking glass, etc.) has been recorded and stored in the computer almost limitless manipulations of that sound are possible. Space limitations prohibit its inclusion here. At any rate, these sounds in turn become a file or "orchestra" with which the composer then creates his composition.

<sup>1</sup>For our purposes here a sine wave is the simplest possible sound. The word comes from the Latin "sine" which means without. In this case meaning without further multiples of itself or without "overtones" or other harmonics. A "harmonic" relationship is a mathematical relationship of 1:1, 2:1, 3:1, etc. A relationship of 1:1 is the first harmonic or fundamental. A

relationship of 2:1 is the second harmonic (first "overtone") and is heard as an octave higher than the fundamental, etc. The relative strengths and weaknesses (amplitudes) of the harmonic content in a sound at different points in time determine our perception of that sound as being that of an oboe or a trumpet or the human voice, etc.

They can be assigned (in any combination of eight) to specific areas of a keyboard and simply played while the composer further controls other parameters (dynamics, attack, decay, length of repeated loop, etc.) with fader controls and/or footpedals. They may be played into a sequencer which will remember all that has been performed and, upon command, replay at virtually any rate of speed, remembering all dynamic, pitch, attack, decay, looping, and other parameters. Additionally, the keyboard can be avoided completely by typing instructions concerning notes, rhythms, gaps, etc. using a system called *Music Composition Language* (MCL). This more closely approximates earlier systems where every aspect of the composition was specified by a letter or number. However, in this respect the MCL is much more streamlined and efficient.

#### **THE MUSIC**

Each work was composed in Studio Three of the Electronic Music Center at the University of Texas-Austin. In addition to the Fairlight CMI, this studio, designed by Barton McLean, contains a powerful array of supporting equipment designed specifically for interface with the Computer Music Instrument.



Barton McLean with the CMI

# ETUNYTUDE

by Barton McLean

Composed in 1982. The title refers to the characteristic aspects of the work—its tunefulness and its etude-like character. Of the four works presented only this one uses sound completely generated internally (and by this token resembles earlier computer music). This is accomplished mainly by drawing sine waves with a light pen on a TV screen designed to act as input to and output from the computer. At times this results in a melody, as in the very first idea you hear. All the pitches in this melody are the result of a number of sine wave harmonics produced in succession. In other instances, more complex harmonics are produced by the interaction of a number of sine wave harmonics simultaneously. Etunytude is characterized by sounds whose harmonic relationships slowly change over a few seconds, producing a beautiful "turning in space" effect that is part harmony, part melody, but intertwined. When this single voice is combined with others, a curious kind of counterpoint emerges-one in which the single "notes" are blurred by the ever-shifting relationships of the changing harmonics. A further enrichment is achieved through the use of external devices such as delay lines and a harmonizer. Compositionally, a few obvious motives appear throughout, and a modified return to the first theme is heard toward the end.

# THE LAST TEN MINUTES

by Barton McLean.

Composed in 1982. This work is an abstract musical analog to the horror and human agony of the last nuclear holocaust. Although there are some fairly graphic sound events in the work, it is not "programmtic" in the true sense. Rather, it has a musical plan which will hopefully draw the listener into its deeper structural aspects, all the more vulnerable to receive the emotional message of anguish.

Unlike Etunytude, The Last Ten Minutes uses externallygenerated sounds digitally sampled by the Fairlight. Typical sound sources are door squeaks, flutes, piano string scrapes, and various human cries. Much use was made of the Fairlight keyboard which transposes the sound to any given pitch level (and slows it down accordingly, as in tape recording). Additionally, the "reverse" mode, which performs the same operation as a tape playing backwards, and the "reflect" mode, which enables the sound to turn back on itself, gave added flexibility to the manipulative possibilities. One interesting means of imparting an "otherworldly" quality to a human cry was in digitally recording it at a sampling rate far below audio quality. This "clipped" the sound to impart a ghastly, poignant character it would not otherwise possess (this is the last human sound in the work, heard also throughout the piece in higher pitch ranges). In short, the challenge in a work such as this is to use the powerful tools of the Fairlight to disguise the obvious sources of the sounds, still leaving their original quality in the listener's subconscious.



Karl Korte in Studio 3

#### THE WHISTLING WIND

by Karl Korte

Composed in 1982. The text for *The Whistling Wind* is by Wang Xiaoni who is a university student from northeast China. Elizabeth Mannion found the poem in a magazine entitled *Chinese Literature* which she discovered on a recent concert tour that took her to Hong Kong. The composer had wanted to compose a work for her for some time and Wang Xiaoni's poem became the perfect vehicle. The editors of *Chinese Literature* were notified of Korte's setting of the poem and a tape recording was sent. This resulted in a broadcast of the work on Radio Peking in the fall of 1982.

The composition itself was created almost exclusively from the digitally recorded sound of Ms. Mannion's voice and two crotales (small tuned cymbals).

## Wang Xiaoni

# **The Whistling Wind**

HE wind whistles overhead,
Sometimes loud, sometimes low,
Rather melancholy,
Rather foreboding.
—An old man
Totters past me,
His hand tighly pressed
On his thick, cotton-padded cap,
While the wind whistles...

The wind beats against my ears, Sometimes strong, sometimes weak, Rather solemn, Rather wild.

—A little child

Runs past me, laughing merrily, A handful of coloured paper scraps Dancing in the air, While the wind whistles...

Suddenly, I feel full of joy, —My black hair, Ruffled, is singing with the wind.



Reed Holmes in his studio at The University of Texas-San Antonio

#### MOIRE

by Reed Holmes

Composed in 1981. Moire is a pattern-pulse composition whose structure is derived from the definition of the moire effect superimposing a repetitive design on the same or different design to produce a pattern distinct from its components. A single rhythmic pattern is used as the basis of the piece, while compositional growth is achieved by rhythmic and timbral processes. Three main types of rhythmic techniques are used: 1) An accented pulse is used to shift the downbeat of the rhythmic pattern, 2) a rhythmic pattern is divided among several instruments, and 3) the shape or envelope of a sound is changed so that new patterns emerge. At Moire's rapid tempo, these changes would be difficult to perform on traditional instruments; however, the CMI's accuracy allows rhythmic changes to be executed precisely on a particular division of the beat. All aspects of the sounds as well as their combination and succession were programmed on an alphanumeric keyboard. Moire has been presented as a dance piece at the Electronic Music Plus (Knoxville), New Music Festival (Memphis), and the National ASUC Conference (Baton Rouge).

# THE COMPOSERS AND PERFORMER ON THIS ALBUM

Barton McLean (1938) studied with Henry Cowell and Thomas Beversdorf, among others. He is perhaps most noted for his extensive output of recordings and his touring with his wife Priscilla as The McLean Mix, a duo performing their electronic music. He is designer and currently co-director of the Electronic Music Center at the University of Texas-Austin. His recent music, much but not all of which is electronic, is characterized by wide emotional contrasts and dramatic episodes, stemming from his belief that music must above all emanate from the human spirit and must retain this connection despite the overlay of abstract theoretical systems. In both his recent non-electronic and electronic music, the ideas are often gestural and/or textural in nature. Of The Last Ten Minutes, Robert Speer of the News and Review (California) recently wrote,"...it was 12 minutes of the most harrowing, exhausting sound I have ever heard. Words could never begin to describe it, just as words could never describe the horror it suggested. Let me say only that, in addition to fostering my resolve to oppose nuclear madness, it proved to me once and for all that there are things electronic music can do that traditional music is incapable of approaching."

Karl Korte was born in Ossining, New York, and spent most of his early years in Englewood, New Jersey. His first musical influences came from his father, a sculptor born and trained in Germany, who had a love of classical music and considerable knowledge of it. Although the young Korte's initial activity as a musician was mainly as a trumpet player in jazz and popular music, he later played in the First Army Band for several years and then attended the Juilliard School of Music, where he studied with Peter Mennin, William Bergsma, and Vincent Persichetti. Other composition teachers included Goffredo Petrassi, Otto Luening, and Aaron Copland. Over the years his music has attracted both national and international attention through publication, performance, recordings, and a number of significant prizes and awards: a Fulbright Grant to Italy, a George Gershwin Memorial Award, two Guggenheim Fellowships, two Young Composer Grants from The Ford Foundation, Fellowship/Grants from the National Endowment for the Arts, a gold medal from the Belgian Government in the 1969 International Queen Elizabeth Competition, and first prize in the 1979 Missouri Contemporary Music Competition. Korte has taught at the Emma Willard School, Arizona State University, The State University of New York at Binghamton, and The University of Texas at Austin, where he is currently Professor of Composition and Co-Director of the Electronic Music Center.

Reed Holmes (b. 1952) studied at the University of Tennessee and the University of Texas at Austin. His principal teachers were David Van Vactor, Allen Johnson, Kenneth Jacobs, and Barton McLean. His compositions have been selected for performance at such events as the Bowling Green New Music Festival, International Computer Music Conference, Electronic Music Plus, ASUC Conferences, and the Memphis State New Music Festival. He has received awards from the Percussive Arts Society and the Luigi Russolo International Competition in Electroacoustic Music. A primary aim of his recent compositions is to blur the distinctions between the computer/electronic medium and the traditional medium of acoustical instruments. In addition, the composer tries to achieve lyrical and expressive qualities which are not usually associated with computer and electronic sound synthesis. Currently, he teaches theory and composition at The University of Texas at San Antonio and is Director of the Electronic Music Studio.



Elizabeth Mannion

**Elizabeth Mannion** holds the Doty Distinguished Professorship at the University of Texas at Austin and serves on the music faculties of the Aspen Music Festival and Choral Institute. Ms. Mannion graduated from the University of Washington (Seattle) and the Cornish School. She continued her studies in New York City and was awarded a Fulbright Scholarship to study in Cologne, which led to a contract with the Bonn Opera. She has won numerous awards for her performances including the National Federation of Music Clubs Young Artist Award, which led to a command performance at the Kennedy White House. Ms. Mannion has performed with such major symphony orchestras as the NBC, Atlanta, Minneapolis, New Orleans, Indianapolis, Detroit, Pittsburgh, Baltimore, and Boston, as well as opera companies in New York, Chicago, and Bonn. She has served on the music faculties at the University of Michigan, Indiana University, and Florida State University.

## OTHER ELECTRONIC MUSIC DISCS BY EMC COMPOSERS

McLean: Electro-Surrealistic Landscapes. Opus One Recordings, Box 604, Greenville, Maine, 04441. Four works by Priscilla and Barton McLean selected from their McLean Mix tours.

**Electronic Music from the Outside In FXM 36050.** Folkways Recordings. 43 W. 61st St., New York, N.Y., 10023. The companion to this album. 2-record set. Works by B. McLean, P. McLean, Hanlon, Holmes.

**Music of a Timeless Earth.** Folkways FTS 33870. Electronic and acoustic music with world music influences and idioms. Music by B. McLean, Schieve, Gruber, and Menger.

Second Childhood by Kevin Hanlon. Advance Recordings. Available from CRI. Music for toy ensemble.

Around the Waves by Reed Holmes. Advance FGR 28s. Available from CRI.

**The Extended Saxophone.** CRI SD 431. Four innovative works for saxophone and electronics. Works by B. McLean (2), Korte, Hanlon. Available from Composers Recordings Inc., 170 W. 74th St., New York, N.Y., 10023.

McLean: Electro-Symphonic Landscapes. Folkways FTS 33450. Two large works by P. McLean and B. McLean respectively.

**Dimensions II for Piano and Tape** by Barton McLean. CRI SD 407. With other works. David Burge, Pianist.

**Dimensions I for Violin and Tape** by Barton McLean. Advance FGR 25-S. Available from CRI.

American Contemporary Electronic Music. CRI SD 335. Two large works by P. McLean and B. McLean respectively.

**Barton McLean.** Orion ORS 75192. Three works by Barton McLean.

**Remembrances** for Flute and Tape by Karl Korte. Samuel Baron, flute. Nonesuch 71289.

Note: Most of these recordings available from New Music Distribution Service, 500 Broadway, New York, N.Y., 10012.

#### ACKNOWLEDGEMENTS

Funding for this album was made possible with grants from Fairlight Instruments USA, The University of Texas-Austin, and The University of Texas-San Antonio. This album produced and directed by Barton McLean. Photos by Karl Korte.

"The Whistling Wind" mastered at the University of Texas at Austin Media Services. Mixing Engineer: Bill Conner.

Album cover photo "The CMI merge function", by Karl Korte.

LITHO IN U.S.A.