

This recording is a tribute to the unique and significant contributions of the composers, performers, and engineers who participated in this project.

I am deeply grateful to Roger Reynolds, Milton Babbitt and Iannis Xenakis for their goodwill and enthusiastic support of this project. Milton Babbitt provided valuable guidance during the recording of *Philomel* and *Phonemena*. Gratitude is also due to G. Ricordi for providing the master tapes of *Poème Electronique* and to Salabert Editions for the tape and permission to print the score for *Mycenae-Alpha*.

*Poème Electronique* and the tape parts of *Philomel* and *Phonemena* have existed upto this time as analog tapes. As part of this project, these pieces were transferred to computer. Analyses were performed on the material; hum and tape noise present in the originals were removed using "Phase-Vocoder" based technology. There has been no bandwidth reduction nor has there been any attempt to remove distortion components produced by the equipment originally used to generate the sounds. After restoration, the material was transferred directly to digital audio tape. These complex tasks were carried out by my colleague Harry Norris, who provided invaluable advise on several technical aspects of this project. Toby Mountain, who recorded and edited *Philomel* and *Phonemena*, also created the CD master. His help throughout the project is sincerely acknowledged.

I am personally indebted to Robert Cogan for contributing the analytic essay on *Poème Electronique*, which was written specially for the booklet accompanying this compact disc. Judith Bettina and Harvey Sollberger, two of the foremost interpreters of New Music, bring their enormous gifts, virtousity and discipline to their performances on this recording. It has been a privilege and honor to work with the performers, composers, and engineers who collaborated on this recording.

Shirish Korde  
Neuma Records

## EDGARD VARESE: POEME ELECTRONIQUE

(The following analytic essay, Varese: *A Sonic Poetics* by Robert Cogan, was written especially for the release of this recording and is printed with the permission of the author.)

*The work progresses in opposing planes and volumes. [1]... simultaneous interplay of unrelated elements that intervene at calculated, but not regular, time lapses. This corresponds to the definition of rhythm in physics and philosophy as "a succession of alternate and opposite of correlative states." [2]*

**E**dgard Varese's *Poeme Electronique*, composed in 1957-58, is widely acknowledged to be one of the first great creations of electronic tape music. *Poeme Electronique*, Varese's last completed work, was created at the Philips Laboratories, Eindhoven, The Netherlands, for the Philips Pavillion at the Brussels World's Fair, May-October 1958. The original consisted of three synchronized tracks, to be played on multiple amplifiers and loudspeakers over diverse "sounds routes." (Jonathan Bernard gives the number of amplifiers as ten, loudspeakers as 150; Varese gives twenty and 425.) Despite the new medium it has the sound and feel of Varese's instrumental music: bells and sirens, quasi-mechanical and percussion timbres, haunting human voices. In it we also find the unique sonic juxtapositions that have electrified, mystified, or antagonized listeners for more than half a century. Repeatedly discussed, Varese's music remains the most elusive of the acknowledged twentieth-century classics. Indeed, it still seems to challenge that category. Why?

Analysis and understanding of Varese's late music has been inhibited less by its novel electronic medium than by the revolutionary oppositional poetics it shares with his earlier music: works progressing in "opposing planes and volumes." How, in an art dominated by a metaphysics of *unity* and by theories of *scalar pitch gradation*, can we understand a music based on successions of "alternate, opposite states?" *Poeme Electronique*, the goal of Varese's entire life's work, is the last, most uncompromising masterpiece of his oppositional poetics.

How can we demonstrate Varese's distinctive properties? Fig. 1 shows the basic layout of "unrelated elements that intervene at calculated time lapses" in the *Poeme*. The whole piece, and each section of it, are dominated by two *opposing, alternating* sonority types. In Part I it is *complex spectral noise bands*, percussion and machine-like sounds, that prevail. The accompanying sound spectrogram, shows their wide, densely-packed *vertical* swaths. Even the bell and siren sounds share the dense, complex spectra of the percussion and noises. Part II, on the other hand, is dominated by simpler *harmonic* (or *quasi-harmonic*) spectra, generated equally by electronic oscillators and by the vowels of human languages and voices. The spectrogram reveals their separate *horizontal* pitch strands. "Opacities and rarefactions," Varese had written earlier, anticipating what spectral analysis reveals. For the reading of spectrograms (sound spectrum analyses) see the author's *New Images of Musical Sounds* (Cambridge: Harvard University Press, 1985). The analysis there of Varese's *Hyperprism* anticipates many of the points made here. The first spectrograms of *Poeme Electronique* were made at the Institute for Electro-Acoustic Music in Sweden (SEM), Stockholm, with the cooperation of Tamas Ungvary. The spectrogram published with this booklet was created on an IBM-PC computer by Harry Norris.

These opposing sonority types are not simply dispersed in isolated contrasting parts. Rather, in Varese's inimitable way they collide and interpenetrate:

*"When new instruments allow me to write music as I conceive it, the movement of sound-masses, of shifting planes, will be clearly perceived in my work. When these sound-masses collide, the phenomena of penetration or repulsion will seem to occur."* [3]

According to Varese, the oppositions occur at "calculated, but not regular, time lapses." *Poeme Electronique*, let us remember, originated in collaboration with the architect, Le Corbusier, designer of the Brussels World's Fair pavillion which was its architectural setting. In his *Modulor* books Le Corbusier redirected architects' attention to earlier proportional theories of Golden Section ratios. See Le Corbusier, *Modulor I and II* (Cambridge: MIT Press). The *Poeme* shows Varese's solidarity with Le Corbusier, for it is at the Golden Sections of each part, and of the whole, that especially vivid

collisions and interpenetrations occur. These points of intersection, approximately one-third and two-thirds through each part (and the whole), are the "calculated, but not regular" Golden Section time spans. (The Golden Section ratio is often identified with the Fibonacci number series: 1, 1, 2, 3, 5, 8, 13, 21, 34..., in which any number is the sum of the two preceding numbers; the ratio is .618.)

So it is that in the percussive, noise-dominated Part I, there appears at both the negative and positive Golden Sections (57" and 95") a pure harmonic spectrum in rising semitones, that constitutes the *Poeme's* simplest pitch and tone-color cell (designated - and + GS in Fig. 1). Similarly, the predominating oscillators and human voices of Part II are penetrated, between 175-335, by an entire minute of densely-packed, colored "percussive" noise. The beginning and end of this region fall at the negative and positive Golden Sections of Part II, while the same region also includes the Golden Section of the whole piece (Fig. 1). In this great Golden Section region, Parts I and II collide. That collision is further echoed and amplified in the brief coda that concludes the entire *Poeme*.

In a similar way, the immediate local sonic interactions are also determined by the principle of sonic opposition. The *Poeme* begins with the prolonged tolling of a *grave* bell-like spectrum (1-16" of the spectrum). What follows the tolling bell? Not a similar sound, but rather a highly contrasting one: an *acute, clipped, percussive noise-band* tapping (16-19"). The tapping is then followed by an *oblique* wash of siren-like sounds, first climbing and then falling through many octaves of audible space - a vivid contrast to the preceding tolling and tapping alike. [4]

Highly contrasting regions of audible space (from the most *grave* to the most *acute*), highly contrasting successions of action (from *sustained* tolling to *clipped* tapping), highly contrasting sizes and types of sound spectrum (from *narrow* to *wide*; and from multiple *harmonic strands* to dense *noise-bands*), as well as highly contrasting types of motion (from *level stasis* to *parabolic free-fall*) are juxtaposed in the initial half-minute of the *Poeme*. Indeed, everywhere in it Varese has imagined opposing, colliding sonic structures. His indelible creative identity is to be found in his utter consistency to this oppositional vision.



In the middle years of the twentieth century, just as Varese was composing the works that culminate in *Poeme Electronique*, a number of outstanding workers in the human sciences – Roman Jakobson in linguistics, Claude Levi-Strauss in anthropology, and Jean Piaget in psychology among them – rediscovered in the principle of oppositions a way of understanding the rich, baffling phenomena of their fields.

What is most distinctive about Varese is the uncompromising clarity with which he grasped the oppositional imperative and laid it at the center of his work. In order to give the greatest scope to this imperative, he yearned for new sounds and new sonic technologies to delineate the diverse, opposing regions of the sonic map. When those technologies materialized, he immediately led the way to a new sonic, structural world. In one creative thrust he liberated sound and the underlying structural poetics of music. After Schoenberg's emancipation of the dissonance, Varese took the next radical, decisive step. We are still just beginning to cope with this open world of sound to which the *Poeme* will always beckon. As always, the timid look away.

Robert Cogan

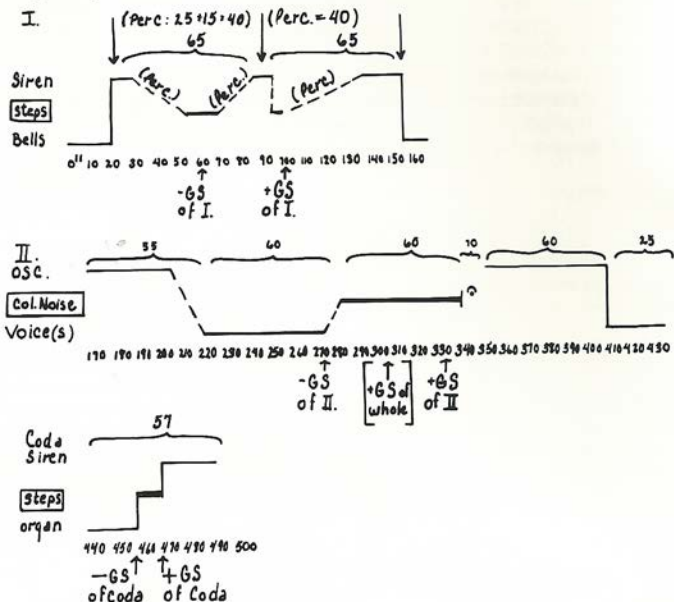
## NOTES

1. From program notes for *Deserts* (emphasis added).
2. From a lecture given at Princeton University, published as "Rhythm, Form and Content" in Schwartz and Childs, *Contemporary Composers on Contemporary Music* (New York: Holt, Rinehart, & Winston, 1967), p. 202 (emphasis added).
3. From a lecture in Santa Fe, 1936, published in Schwartz and Childs as "New Instruments and New Music," p. 196.
4. In this and the following paragraph, opposing sonic qualities are italicized. Linguistics was the first field to formalize the vocabulary of binary oppositions, in tables of opposing distinctive features (for example, *grave/acute*). In *New Images of Musical Sound* I have proposed musical equivalents: it is the members of these opposing pairs that are italicized.

# Note on reading the spectrogram for *Poème Electronique*.

The pitch/time plots of *Poème Electronique* were produced on an IBM-PC/AT. The vertical axis of these plots shows six octaves. The highest frequency shown is 16 KHz; the bottom of the plot is 125 Hz. Each plot shows 60 seconds along the horizontal axis. Amplitude is mapped to grey scale; louder sounds map to darker lines.

Fig.1 The parts of *Poème Electronique*



# MILTON BABBITT - PHONEMENA

Judith Bettina - soprano

Milton Babbitt was born in 1916 in Philadelphia, Pa. He was educated in the public schools of Jackson, Mississippi, and at New York and Princeton Universities. His primary teacher of musical composition was Roger Sessions, with whom he studied privately for three years.

At present, he is William Shubael Conant Professor Emeritus at Princeton University, where his teaching career began in 1938, including three years as a member of the Mathematics faculty, from 1942-5. He also is on the Composition Faculty of the Juilliard School, and was Fromm Foundation Visiting Professor at Harvard University, 1988.

He has been a Visiting Professor at the Rubin Academy at Jerusalem, the University of Wisconsin and Composer-in-Residence at New York University. He has taught, conducted seminars, and lectured at various universities and schools of music in this country and in Austria, Australia, Canada, England, Germany (Darmstadt) and Mexico.

He is a member of the American Academy of Arts and Letters, and a fellow of the American Academy of Arts and Sciences.

His honors include: two New York Music Critics Circle Citations (1949, 1964); National Institute of Arts and Letters Award (1959); Brandeis University Gold Medal (1982); National Music Award (1976); Pulitzer Prize Special Citation (1986-1991); The Gold Medal in Music of the American Academy-Institute of Arts and Letters; The Music Award of the Mississippi Institute of Arts and Letters.

He has received honorary degrees from Middlebury College, New York University, Swathmore College, New England Conservatory, University of Glasgow, and Northwestern University.

His articles have appeared in such periodicals as *Perspectives of New Music*, *Journal of Music Theory*, *Musical Quarterly*, and *The Score*, and in anthologies, including *Perspectives on Contemporary Music Theory*, *Perspectives on Schoenberg and Stravinsky*, *Perspectives in Musicology*, *Contemporary Composers on Contemporary*

*Music, The Orchestral Composer's Point of View, Twentieth Century Views of Music History, Esthetics Contemporary, etc.*

His most recent compositions include: *Concerto for Piano and Orchestra*; *Transfigured Notes* (for the Philadelphia Orchestra), *The Joy of More Sextets* (for violin and piano), *Whirled Series* (for saxophone and piano), *Consortini* (for five players).

The most recent recordings of his music are of *Paraphrases* (by Parnassus, on CRI), *Composition for Guitar* (by David Starobin, on Bridge), *Head of the Bed* (on New World Records), *Groupwise*, An Elizabethan Sextette, and *Time Series* on CRI, *Sextets* and *The Joy of More Sextets* on New World Records, and the *Widow's Lament* on Nonesuch.

*Phonemena* was composed, for soprano and piano, 1969; the version for soprano and synthesized tape was realized in 1975. As the title suggests, the vocal "text" consists of English language phonemes, chosen for such acoustical properties as formant frequencies, envelopes, and durations, and compounded and concatenated in the use of the voice as a structured timbral ensemble within the total musical ensemble which it creates with the synthesized sound.

The two-track version of the tape is a reproduction from the original four-track on the Mark II RCA Synthesizer at the Electronic Music Center of Columbia and Princeton Universities.

Milton Babbitt

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Judith Bettina has appeared as soloist with such orchestras as the Houston Symphony, St. Paul Chamber Orchestra, and San Francisco Symphony. Some of the ensembles she has appeared with include Bach Chamber Soloists, Da Capo Chamber Players, Parnassus, Sequoia String Quartet, Speculum Musicae, and Chamber Music West. Among the composers whose music she has premiered are Milton Babbitt, Richard Karpen, Gian Carlo Menotti, David Olan, Tobias Picker, Mel Powell, David Rakowski, and Charles Wuorinen. Her most recent appearances have included performances at the Library of Congress and the Geneva Music Festival. She has



recorded with New World Records, Music Masters, Harmonia Mundi, Wergo, CRI and Opus One. A native of New York City, Ms. Bettina is a graduate of the Manhattan School of Music and is currently a member of the faculty at Stanford University.

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## **ROGER REYNOLDS - TRANSFIGURED WIND IV**

**Harvey Sollberger - Flute**

**R**oger Reynolds studied music and also science at the University of Michigan, where his composition teachers were Ross Lee Finney and Roberto Gerhard. Since the early 60's, he has been active not only as a composer, but as an organizer, writer and lecturer. He has lived for extended periods of time in France, Italy and Japan, but has made his home in San Diego since 1969. In 1971, he founded the Center for Music Experiment and Related Research at the University of California, San Diego, where he is Professor of Music.

While continuing to compose for a wide range of media - the orchestra, theater, chamber ensembles and solo instrumental as well as vocal music-Reynolds, in the late 70's, began to use large computer systems to transform natural sounds (voices, instruments). His instrumental works include *Coconino*...a shattered landscape (string quartet), *Mistral* (strings, brass, and harpsicord) and *Variation* (piano). *Archipelago* (chamber orchestra and tape) was the first of a series of large-scale pieces involving computer-processed sound. *Transfigured Wind II* (solo flute, orchestra and tape), *The Dream of the Infinite Rooms* (solo cello, orchestra and tape) and *Symphony [Vertigo]* (orchestra and tape) followed.

Reynolds won the 1989 Pulitzer Prize for the string orchestra composition, *Whispers Out Of Time*. He has also been honored by the National Institute of Arts and Letters, the National Endowment for the Arts, by the Library of Congress and the Guggenheim, Rockefeller, Koussevitzky, Suntory and Ford Foundations. Reynolds' music is published by C. F. Peters Corporation and recorded on Nonesuch, Wergo, CRI, Gramavision, Lovely, and Neuma labels. The composer has supplied the following note on *Transfigured Wind IV*.

*Music, The Orchestral Composer's Point of View, Twentieth Century Views of Music History, Esthetics Contemporary, etc.*

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Computers allow us to remake musical materials in heretofore impossible ways, to achieve variation in new and powerful senses. One of the most interesting new opportunities is to record performed musical materials, to retain and make use of that delicious and mysterious *sense* with which a fine performer imbues a musical line. One instance of what I mean might be conveyed by referring to the slow motion imagery that television has made available to the eye. An audience is now able to share, visually, the almost magical grace inherent in the movements of an athlete, a dancer at his/her work. There is a poetic evolution, an inevitability to these slowed-down experiences that can now have a direct parallel in the world of sound. Because of the computer, aspects of our experience that were always there — but to which we had no access — now can form a part of our repeatable aesthetic opportunities.

In composing *Transfigured Wind IV*, I began with a four-part solo for flute. It was recorded *as performed*. That is, all the directional, musical intelligence that the player brought to my phrases was captured and became, along with pitch, duration, and dynamics, a part of the *compositional* materials. Once inside the computer, it underwent a host of transformations before reemerging on a tape.

The four solo flute sections, in the context of an actual performance, function as proposals, each longer and with a new character. To the soloist's proposals, the tape responds with transformations, elaborations of what has been offered. It provides a rather "painterly" montage of the soloist's lines. My aim was to provide unexpected, sometimes otherworldly reflections of and upon the soloist's specifics, elaborations that enlarge the range of the listener's experience of the musical materials. In *Transfigured Wind IV*, the solo flute has some additional passages written to replace ensemble functions in other versions of the work. These episodes are less substantive than the primary solo sections. There is also a lyrical coda.

This work (as its predecessor, *Archipelago*, which was commissioned by IRCAM in Paris) is primarily concerned with the way in which transformations may allow music a more subtle and far-reaching engagement with the complexity of our temporal experience as human beings. We recall, immerse ourselves, and anticipate (past, present, and future). We are sometimes absorbed in specifics, at other times wander in larger, less well-defined worlds of impression. The formal aim in many of my recent works, has been to invite back into music recognizable but not literal repetition



of materials, while at the same time providing a new rationale for the role of "the precursor" ( that which acts as a premonition of musical ideas that have not yet appeared in definitive form).

*Transfigured Wind IV* involved the recasting for a lone instrument and tape of an originally longer work for soloist, orchestra and tape. The process of rewriting also entailed the composition of new materials and the making of a new tape. It was premiered in New York, in 1985, by Robert Aitken who commissioned it.

Gratitude is due to my friend and colleague Harvey Sollberger who was my collaborator in the development of the basic sound materials and whose playing is the basis for the computer-processing on tape. The piece was written at the Computer Audio Research Laboratory at the Center for Music Experiment at UCSD with the assistance of the Systems Development Foundation. My musical assistant in the project was Richard Boulanger.

Roger Reynolds

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**H**arvey Sollberger was born in Cedar Rapids, Iowa in 1938. A graduate of the University of Iowa (B.A.) and Columbia University (M.A.), his major teachers were Jack Beeson and Otto Luening (composition) and Samuel Baron and Betty Mather (flute). Since 1960 the bulk of his professional activity has been centered in New York City where he has been active as a composer, conductor, flutist, teacher, and organizer of concerts. His work in composition has been recognized by an award from the National Institute of Arts and Letters, two Guggenheim Fellowships, and by Commissions from the Koussevitzky Foundation, the Fromm Foundation/Tanglewood, the National Endowment for the Arts, the Walter W. Naumberg Foundation, Music from Japan, Incontridi la Musica Sacra Contemporanea (Rome), and the New York State Council on the Arts. Mr. Sollberger's music has been performed here and abroad by such ensembles as the New York Philharmonic, the San Francisco Symphony and Pierre Boulez' Domaine Musical concerts. As a flutist and conductor he has toured and recorded extensively and has premiered works by Babbitt, Carter, Davidovsky, Martino, Reynolds, and Wuorinen. A founder of the Group for Contemporary Music, he was



(with Charles Wourinen) for twenty-seven years Director of that ensemble. In 1981 he received a special performer's grant from the Fromm Foundation at Harvard University in recognition of "distinguished service in the cause of contemporary music." More recently (1986) he has been Featured Artist at the Interlink Festival in Tokyo. During 1989-1990 he was Composer-in-Residence at the American Academy in Rome (fall) and Composer-in-Residence with the San Francisco Contemporary Music Players (spring). The latter residency, funded by a grant from the National Endowment for the Arts, included the composition of a commissioned work for the San Francisco Contemporary Music Players. Harvey Sollberger has taught at Columbia University and the Manhattan School of Music and is currently Professor of Music at Indiana University.

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## **MILTON BABBITT - PHILOMEL**

***Judith Bettina - Soprano***

**P***hilomel*, for soprano, recorded soprano, and electronically synthesized sound, was composed in 1963, and first performed early the following year by Bethany Bearslee, for whom the work was commissioned by the Ford Foundation. The text, written expressly for this work by the American poet, John Hollander, is a monodramatic realization of the legend of Philomel, founded on the version which appears in Ovid's sixth book of *Metamorphoses*. The tripartite text, reflected in the large divisions of the composition, begins at the point of the tale when Philomel rediscovers her voice, that of a nightingale, and the first section is concerned with the emergence. In the second section, Philomel poses seven successive questions to the "forest", each of which is responded to as an "echo" song, while the final section is an extended "aria" of five strophes with tape interludes, a final affirmation of her vocal survival and renewal.

A few minor deviations from the printed poetic text were made by the composer.

The purely electronic materials, and the mutations, modifications, and combinations of the recorded voice of Bethany Beardslee were created on the RCA Mark II Electronic Sound Synthesizer at the Electronic Music Center of Columbia and Princeton Universities by the composer.

# MILTON BABBITT:

## PHILOMEL

Text by John Hollander  
Text as set by composer

### SECTION ONE

Tape  
(Recorded Soprano)  
(Eeeeeeeeeeeeeeeeeeeeeeee)

Philomel  
Eeeeeeeeeeeeeeeeeeeeeeee!  
Eeeeeeeeeeeeeeeeeeeeeeee!  
Eeeeeeeeeeeeeeeeeeeeeeee!  
I feel

Feel a million trees  
And the heat of trees

Tape  
Not true trees-  
Philomel

Feel a million tears  
Tape  
Not true tears-  
Not true tears-

Philomel  
Is it Tereus I feel?

Tape  
Not Tereus: not a true Tereus-  
Philomel

Feel a million filaments:  
Fear the tearing, the feeling  
Trees, of ephemeral leaves

Trees tear,  
And I bear  
Families of tears-  
I feel a million Philomels

Tape  
Trees filled with mellowing  
Felony fame-

Philomel  
I feel trees in my hair  
And on the ground,  
Honeymelons fouling  
My knees and feet  
Soundlessly in my  
Flight through the forest;  
I flounder in quiet.  
Miles of felted silence  
Unwinding behind me  
Lost, lost in the wooded night.  
Pillowing melody,  
Honey unheard -  
Philomel  
My hooded voice, lost  
Lost, as my first  
Unhoneyed tongue:  
Forced, as my lust  
Unfeathered defense  
Fast-tangled in lust  
Of these woods so dense.  
Emptied, unfeeling and unfilled  
By trees here where no birds have  
trilled-  
Feeling killed  
Philomel stilled  
Her honey unfulfilled  
Tape  
Feeling killed  
Philomel stilled  
Her honey unfulfilled  
Philomel  
What is that sound?  
A voice found?  
Broken, the bound  
Of silence, beyond  
Violence of human sound,  
As if a new self  
Could be founded on sound.  
The trees are astounded!  
What is this humming?

I am becoming  
My own song. . .

### SECTION TWO

Echo Song  
Philomel  
O Thrush in the woods I fly  
among,  
Do you, too, talk with the forest's  
tongue?

Tape  
Stung, stung, stung  
With the sting of becoming  
I sing

Philomel  
O Hawk in the high and widening  
sky,  
What need I finally do to fly,  
And see with your unclouded  
eye?

Tape  
Die, die, die  
Philomel  
Let the day of despairing  
Be done  
O Owl, the wild mirror of the  
night  
What is the force of the forest's  
light?

Tape  
Slight, slight, slight;  
Philomel  
With the slipping-away of  
The sun  
O sable Raven, call me back!  
What color does my torn robe  
lack?

Tape  
Black, black black;

Philomel  
As your blameless and long-  
Dried blood  
O bright Gull, aid me in my  
dream!  
Above the riddled breaker's  
cream  
Tape  
Scream, Scream, scream,  
Philomel  
For the shreds of your being;  
Be shrill  
The world's despair should not be  
heard!  
Fear and terror not be stirred:  
The Gods who made this hubbub  
erred!

Tape  
Bird, bird, bird!  
Philomel  
You are bare of desire:  
Be born  
O green leaves! through your  
rustling lace  
Ahead, I hear my own myth race.

Tape  
Thrace, Thrace, Thrace!  
Philomel  
Pain is unchained,  
There is change!  
in the words of Thrace!

### SECTION THREE

Philomel  
Living, growing, changing, being  
in the hum of always,  
Of pain! The pain of slow change  
blows in our faces  
Like unfelt winds that the

spinning world makes in its  
turning:  
Life and feeling whirl on, below  
the threshold of burning.

I burn in change.  
Far, far I flew  
To this wailing place  
And now I range  
(with tape)  
Thrashing, through  
The woods of Thrace

If pain brush against the rushing  
wings of frightened change,  
Then feeling distills to a burning  
drop, and transformation  
Becomes intolerable. I have been  
defiled and felt my tongue  
Torn out: but more pain reigns in  
these woods I range among.

I ache in change,  
Though once I grew  
At a slower pace.  
And now I range  
(with tape)  
Thrashing, through  
The woods of Thrace.

Pressed into one fell moment, my  
ghastly transformation  
Died like a fading scream; the  
ravisher and the chased  
Turned into one at last; the voice  
Tereus shattered,  
Becomes the tiny voices of night  
that the God has scattered.

I die in change.  
Pain tore in two  
Love's secret face:  
(with tape)  
And now I range  
Thrashing, through  
The woods of Thrace

Love's most hidden tongue  
throbbed in the barbarous  
daylight.  
Then all became pain in one great  
scream of silence, fading  
Finally, as all the voices of feeling  
died in the west  
And pain alone remained with  
remembering in my breast.

I screamed in change.  
Now all I can do  
Is bewail that chase  
(with tape)  
For now I range  
Thrashing, through  
The woods of Thrace.

Pain in the breast and the mind,  
fused into music!  
Change  
Bruising hurt silence even  
further! Now, in this glade.  
Suffering is redeemed in song.  
Feeling takes wing:  
High, high above, beyond the  
forests of horror I sing!

I sing in change  
Now my song will rant  
Till the morning dew  
Dampens its face;  
Now my song will range  
As once it flew  
Thrashing, through  
The woods of Thrace.

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## IANNIS XENAKIS - MYCENAE-ALPHA

Iannis Xenakis was born in Braila, Rumania in 1922 of Greek parentage. In 1947 Xenakis went to France and studied architecture with Le Corbusier. He also studied composition at the Ecole Normale in Paris with Arthur Honegger and Darius Milhaud, and at the conservatory with Olivier Messiaen. In 1958, he assisted Le Corbusier in the construction of the Phillips Pavillion at the Brussels World Fair, where he met Edgar Varese, Le Corbusier's collaborator and the creator of one of the great masterpieces of electro-acoustic music- *Poeme Electronique*, which was created especially for the Phillips Pavillion. Xenakis was inspired by Varese's interest in composition with sound masses and the application of scientific principles to music composition. Xenakis continued his collaboration with Le Corbusier from 1947 to 1958 and later founded the School of Mathematical and Automated Music in Paris in 1966. He has taught there and at Indian University. Xenakis has worked with computers and mathematics including probability, set theory, calculus, and game theory and has produced a large and significant body of works for solo instruments, ensembles, orchestra, chorus, and works for tape, as well as several polytopes: sonic and light installations. His ideas on mathematics and music are published in his book: *Musique Formelles* as well as numerous scholarly articles. His works include *Metastasis* for orchestra, *Pithoprakta* for orchestra, *Strategie*, *Game* for two orchestras, *Akrata* for sixteen winds, *Terretektorh*, and other works for orchestra scattered among the audience (including *Polytope*, and *Nomos Gamma*), *Eonta* for piano and brass, and *ST/4* for string quartet.

*Mycenae-Alpha* was composed in 1978 on the UPIC graphic/computer system at the CEMAMu (Centre d'Etudes de Mathematique et Automatique Musicales) in Paris, France. The work is for mono tape, to be projected onto either two or four sound sources around the audience.

Xenakis' music depends on giving aural life to shapes and patterns of movement, whether invisible, as in a cloud, or invisible, as in the movement of molecules in a gas. Converting these images to sound requires a facility with complex mathematics. In 1976, Xenakis began a way to side-step those complex calculations and developed a drawing board which is attached to a computer which converts images into sound. This

computer music system developed at CEMAMu is called UPIC—L'Unité Polyagogique Informatique de CEMAMu. The UPIC score for Mycenae-Alpha is included with this booklet, reproduced with the kind permission of Salabert Editions.

Mycenae-Alpha received its world premiere in 1978 at the "Polytope of Mycenae" of Xenakis, festival of lights, movement, and music in the surrounding area of the Mycenae Acropolis in Greece.

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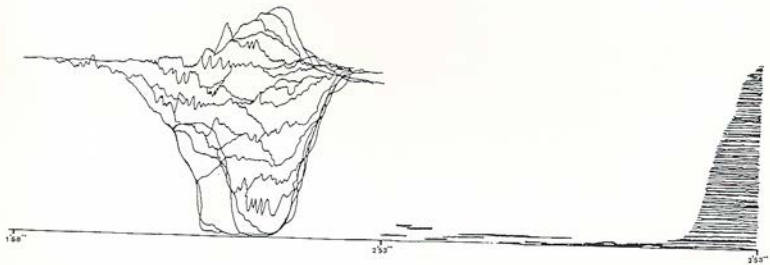
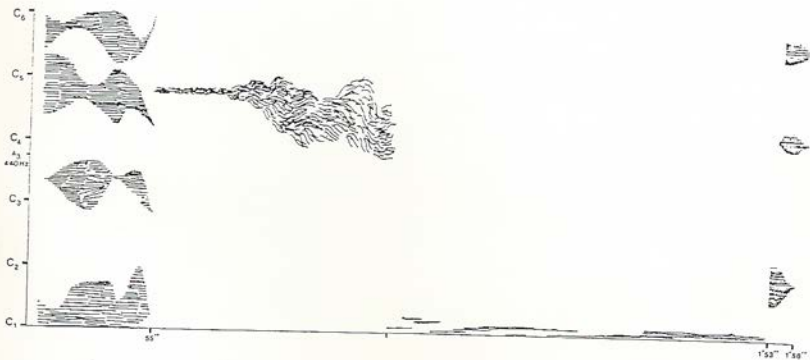
## IANNIS XENAKIS: **Mycenae-Alpha**

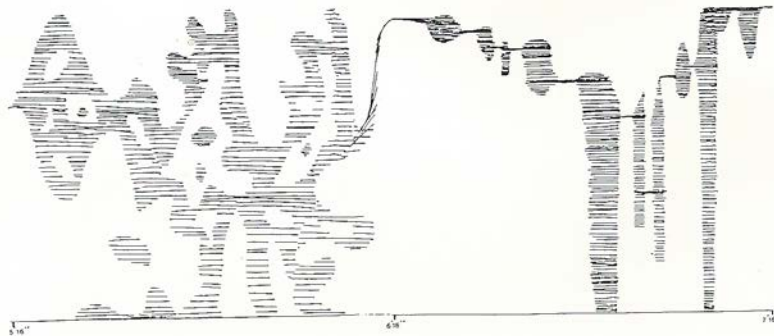
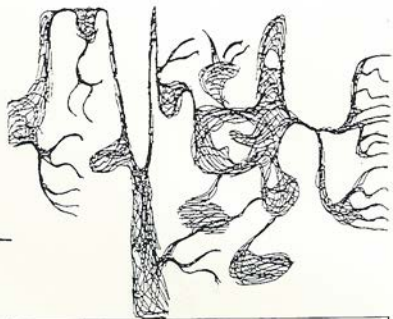
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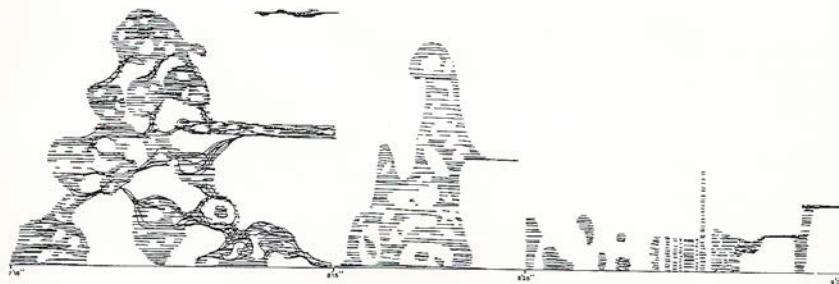
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World premiere in 1978 at the "Polytope of Mycenae" of Xenakis, festival of lights, movement, and music in the surrounding area of the Mycenae Acropolis in Greece. French premiere in 1978 in the "Homage to Messiaen" concert, part of the festival "Cycle Olivier Messiaen" in Paris.









Producer/Artistic Director: SHIRISH KORDE

Supervising Engineer: HARRY NORRIS

Recording Engineer for *Phonemna/Philomel*: TOBY MOUNTAIN

Recording Engineer for *Transfigured Wind IV*: KONRAD STRAUSS

Producer for *Transfigured Wind IV* : DAVID PICKETT

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*Transfigured Wind IV* was recorded at the Musical Arts Center, Indiana University School  
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MILTON BABBITT: *Philomel*, Associated Music Publishers

MILTON BABBITT: *Phonemena*, C. F. Peters Corp.

ROGER REYNOLDS: *Transfigured Wind IV*, C. F. Peters Corp.

IANNIS XENAKIS: *Mycenae-Alpha*, Edition Salabert