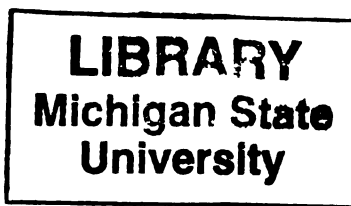


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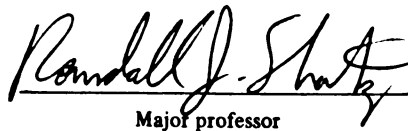
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PROPERTIES OF CULTIVATED AND FORESTED SOILS,
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**MICROCLIMATE AND ITS EFFECT ON THERMO-HYDROLOGIC
PROPERTIES OF CULTIVATED AND FORESTED SOILS,
SAGINAW COUNTY, MICHIGAN**

By

Daniel Michael Tomczak

A THESIS

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

MASTER OF SCIENCE

Department of Geological Sciences

2000

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ABSTRACT

MICROCLIMATE AND ITS EFFECT ON THERMO-HYDROLOGIC PROPERTIES OF CULTIVATED AND FORESTED SOILS, SAGINAW COUNTY, MICHIGAN

By

Daniel Michael Tomczak

Hydrological and microclimatic conditions of sites on clay-rich soils were determined in natural (forested) versus cultivated settings of Saginaw County, Michigan, between the winter of 1996 and spring of 1997. Microclimate conditions differed markedly between the forest and cultivated sites. Soils at the cultivated sites froze to depths >20 cm, while the forested soils, insulated by vegetation and canopy cover, did not freeze even to 5 cm.

Three distinct pedothermic periods, or periods of time where soil temperatures change distinctly and have different amounts of variability, were determined. These periods included the Late Fall, Winter, and Spring. Decreasing soil temperatures with low daily variability characterized the Late Fall period. During the Winter period, the soils maintained near steady-state temperatures while under snow cover. Removal of snowpack from the soils marked the end of the Winter period and the start of the Spring period. Soil temperatures during the Spring period were characterized as being more variable and fluctuated more with increasing daily air temperatures.

Saturated hydraulic conductivity of the soils at both cultivated sites increased from the fall of 1996 to the spring of 1997. Increases in conductivity were as much as six times greater in the spring than in the fall, perhaps due to the breakup of the soil matrix

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by deep concrete frost and ice lenses, which were observed at cultivated sites. For the forested sites, large increases in the hydraulic conductivity from the fall to spring also occurred, despite the fact that deep (>5 cm) freeze-thaw conditions did not exist throughout the winter.

This research can be used to address the impact of land use change on natural freeze-thaw processes of soils, in addition to providing important baseline data for hydrologic forecasters and basin-scale runoff models.

To my wife Deborah

*The completion of this thesis could not have been possible
without her support, patience, love, and understanding.*

*Next time, though, we need to wear bright orange
while working in the state game area.*

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ACKNOWLEDGMENTS

"In the struggle between the stone and the water, in time, the water wins."

Chinese proverb

I would first like to thank my wife Deborah for all of her love and patience, especially while I sacrificed weekends to finish revisions on my thesis rather than taking trips with her to the mountains or the beach. Don't worry, Deb, two masters are enough for me.

I also need to thank my advisor, Professor Randy Schaetzl, for his guidance, assistance and patience with my project. Having to complete a thesis "across the miles" is not easy, and it did take me a "little longer" than I was hoping, but I do appreciate all that he did in helping me finish.

Finally, I would also like to thank my parents, family and friends for their love and support when I decided to go back to school to further my education.

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CHAPTER I

INTRODUCTION

Microclimate refers to the climate and its characteristics within a small area.

Parameters such as temperature, moisture, and solar radiation are all aspects of microclimate. Many studies have reported on how agricultural and silvicultural practices can be influenced by microclimate (Sharratt et al., 1992; Chen et al., 1993; Carlson and Groot, 1997). Microclimatic conditions are important when evaluating the physical properties of soils. Drainage assessment, erosion, ground water recharge, forest and crop regeneration, watershed management, and soil genesis can all be influenced by the interactions of atmospheric microclimate and soil hydrology. Additional study on the correlation of these soil characteristics will therefore enhance decision making on land use and best management practices.

Movement of water through soil is influenced by the various physical properties of that soil. Soil temperature and freezing are examples of physical properties that can influence water flow through a soil matrix. Tree and plant growth, biological activity in the soil, organic matter decomposition, and water movement are all influenced by soil temperature (Post and Dreibelbis, 1942; Franzmeier et al., 1983; Carlson and Groot, 1997). Soils in the northern half of the United States can experience repeated freezing and thawing during the winter (Hershfield, 1979; Isard and Schaetzl, 1998). Freeze-thaw cycles for soils are generally defined as the fluctuation of temperature across the 0°C isotherm during a 24 hour period (Schmidlin et al., 1987). Fluctuations of temperature

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across the freezing point indirectly affect the development of soils and trees (Schmidlin et al., 1987) as well as the movement of water into and through soil (Chamberlain et al., 1990).

Repeated freezing and thawing of a soil can affect its structure and therefore the movement of water through it. Freezing and thawing function as a mechanical weathering process, acting upon the structure of soil (Post and Dreibelbis, 1942; Konrad, 1989). Changes in soil structure may result in changes in hydraulic conductivity (Benoit, 1973; Konrad, 1989). The effects of freezing and thawing on the soil environment are so important as to be addressed in studies on surface runoff (Johnsson and Lundin, 1991; Stein et al., 1994), soil genesis (Schaetzel, 1990; Schaetzel and Isard, 1991) and soil engineering (Chamberlain and Gow, 1979; Konrad, 1989; Benson et al., 1995), as well as in agricultural applications (Post and Dreibelbis, 1942; Benoit, 1973; Zuzel and Pikul, 1987). Since change in soil structure will cause some change in water flow, it is important to correlate structural changes when evaluating the hydrological behavior of soil.

Assessing the drainage characteristics of a watershed requires an understanding of the hydrological properties of the soils within the watershed. Transport of storm water and snow melt out of a watershed is dependent upon the hydrological behavior of the soils (Stein et al., 1994). Soil hydrology is therefore important when evaluating the flood hazards for a particular drainage basin (Horton, 1945; Gerrard, 1981). In addition, land use practices within a watershed, such as clearing the forests for agricultural purposes or other site development, can significantly alter the physical properties of soils (Franzmeier et al., 1983; Chen et al., 1993). Identifying how specific properties of soils can influence

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the movement and transport of water through a watershed can lead to better management practices.

This project monitored and collected data at sites on clay-rich soils in Saginaw County, Michigan, over the 1996-97 winter season. These soils are wet and therefore have limited drainage capabilities, and yet are widely used for agriculture. Specifically, this study investigated the relationships among soil and air temperatures, soil moisture, snow depth, and frost type, with the hydrological properties of soils in both forest and cultivated settings. Changes in the hydrological properties of the clayey soils were determined by measuring their field-saturated hydraulic conductivity before and after the 1996-97 cold season. In summary, the goal of this project was to provide general information on the effects of different land use practices on microclimate and hydrological properties of soils within a low-relief, clayey watershed.

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CHAPTER II

BACKGROUND

Microclimate

Climate can have significant effects on the properties of soils. More specifically, temperature and moisture are important to the physical, chemical, and biological processes that occur in soil. Moisture influences the weathering and leaching conditions within soil, while temperature influences the rate at which processes occur (Birkeland, 1984). Studies on freeze-thaw activity (Chamberlain and Gow, 1979; Konrad, 1989), frost depth and ice lens formation (Pierce et al., 1958; Kay et al., 1985), forest regeneration (Chen et al., 1993; Carlson and Groot, 1997), soil development (Birkeland, 1984; Schaetzl, 1990) and drainage capabilities (Johnsson and Lundin, 1991; Stein et al., 1994) have addressed how temperature and moisture can influence and control properties of soils.

Soil temperatures can be influenced by many different properties. The rate at which heat is exchanged at the soil surface controls changes in soil temperatures (Oliver et al., 1987). Air temperatures, vegetation cover, and snow cover can influence the rate at which soil heat is exchanged (Oliver et al., 1987; Johnsson and Lundin, 1991). In cold regions, low air temperatures in the winter can cause significant heat losses from the soils, thereby contributing to lowering soil temperatures (Johnsson and Lundin, 1991). However, snow and vegetation cover insulate the soils from the cold air temperatures by

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limiting the amount of heat loss from the soil surface (Pierce et al., 1958; Johnsson and Lundin, 1991).

Changes in soil temperatures are important for estimating evaporation rates, decomposition and mineral weathering rates, freeze-thaw processes, and frost development within soils (Birkeland, 1984; Stein et al., 1994). Temperatures also influence the movement of moisture through the soil matrix (Burt and Williams, 1976). In cold regions, frost development can lower the permeability of soils and result in surface runoff and erosion during periods of snowmelt or rainfall (Pierce et al., 1958). In addition, freeze-thaw processes can alter soil water chemistry by both increasing and decreasing the exchangeable K^+ concentrations in soils and clay minerals (Honeycutt, 1995).

Moisture is another factor of climate that can influence properties of soil. Moisture is important in soil development, plant growth, frost and ice lens formation, and ground water recharge (Birkeland, 1984; Buttle, 1989; Radke and Berry, 1998). In the development of soils, the amount of moisture present will influence mineral weathering, decomposition of organic matter, and the translocation of colloids and ions (Birkeland, 1984). In cold regions, freezing soil conditions generally cause moisture to move upward towards the freezing front and form ice lens structures (Radke and Berry, 1998). Ice lens structures are therefore more prevalent in cold wet soils than in cold dry soils. In the spring, frozen surface soils may become saturated due to snow melt and rainfall (Roberge and Plamondon, 1987), thereby limiting infiltration and resulting in surface runoff or ponding.

Changes in Physical Properties of Soils

Freeze-thaw processes can cause physical changes within the soil matrix; one example is the formation of ice lenses (Chamberlain and Gow, 1979; Konrad, 1989). Water in highly saturated soils can become trapped in the pores and expand as it freezes (Konrad, 1989; Chamberlain et al., 1990). Expansion caused by the phase change of water produces pressure which can heave the soil (Konrad, 1989) and creates additional pore space for unfrozen water to penetrate (Chamberlain and Gow, 1979). As unfrozen water freezes onto the pore ice, large crystalline ice structures begin to form. Over time, these ice structures may grow into ice lenses. The development of ice lenses can cause additional expansion and flocculation within the soil matrix (Kay et al., 1985).

Shrinkage crack formation is another example of a structural change resulting from freeze-thaw activity. This mechanical process is experienced most often in clayey soils (Konrad, 1989). As the phase change of soil water occurs during freezing, large negative pore water pressures develop to create vertical shrinkage cracks (Chamberlain et al., 1990). The degree to which vertical shrinkage cracks develop is dependent upon the soil texture (Chamberlain and Gow, 1979; Kay et al., 1985). Formation of shrinkage cracks in clayey and silty soils is more common than in sandy soils since clays and silts maintain a higher degree of saturation during the winter (Penner, 1968; Konrad, 1989). Shrinkage cracks create additional pore space within the soil matrix for water to move. The lowered flow resistance for water along the cracks increases the soil's permeability (Chamberlain and Gow, 1979; Konrad, 1989). Therefore, shrinkage cracks can dramatically affect the natural drainage of soils during spring thaw.

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Freezing and thawing can also influence the bulk density of soil. Soil bulk density is defined as the ratio of the mass of dry solids (excluding the >2 mm fraction) to the bulk volume of the soil (Blake, 1986). The formation of ice lenses under freezing conditions causes the deformation of the soil matrix (Kay et al., 1985) and an increase in the soil pore space (Krumbach and White, 1964). Increasing the pore space within a given volume of soil reduces the amount of solids within the same volume and therefore decreases the bulk density. Changes in bulk density inversely correlate to changes in pore volume and therefore affect soil permeability (Krumbach and White, 1964; Kay et al., 1985). Fall plowing (Kay et al., 1985) and vegetation cover (Krumbach and White, 1964) can influence the extent to which bulk densities change during winter.

Bulk densities in soils can also change as a result of spring thaw. As the soil thaws and ice lenses melt, reconsolidation occurs by the rearrangement of soil particles. Depending upon the extent of reconsolidation, soil bulk density values after spring thaw relative to the density values prior to freezing may vary (Chamberlain and Gow, 1979; Kay et al., 1985). Under zero-till conditions, soil bulk densities after thawing may return to values similar to the values prior to freezing (Kay et al., 1985). In the same study, Kay et al. (1985) found that bulk density values for plowed soils were lower after spring thaw than before freezing and plowing. Seasonal changes in the bulk densities of soils may help in understanding the behavior of perched zones of saturation (Nolan, 1995), and soil hydraulic conductivities in general.

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Frost Type

Frost type may also influence the hydrological behavior of soils. Soil frost can develop in various structural forms, such as concrete, porous granular, honeycomb, and stalactite (Post and Dreibelbis, 1942; Trimble et al., 1958). The formation of these structures is dependent upon depth of frost penetration in the soil, soil moisture content, and vegetation cover (Post and Dreibelbis, 1942). Frost structures correlate to the degree of pore development within the frozen soil.

Concrete frost produces more dense and impermeable soil layers (Krumbach and White, 1964; Schaetzl, 1990) whereas honeycomb, granular, and stalactite frost types produce porous structures which more easily permit water and vapor movement through the soil (Post and Dreibelbis, 1942). The effect of frost structures on saturated flow in soils is an important factor during spring snowmelt and pedogenesis, in that it can influence the extent of surface runoff, infiltration, and the internal drainage of snowmelt waters (Benoit and Bornstein, 1970; Schaetzl, 1990; Stein et al., 1994).

Hydrological Properties of Soils

Hydraulic properties of soils are largely dependent upon the structural conditions within the soil matrix. If the soil structure changes as a result of freeze-thaw action, erodability and drainage capabilities within the soil can be affected (Benoit, 1973). Soil stability is defined as the measure of a soil's resistance to physical breakdown (Edwards,

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1991). Physical properties such as water content, organic matter content, and soil texture can affect the stability of a soil (Benoit, 1973; Kay et al., 1985; Lehrsch et al., 1991).

Under freezing conditions, water content generally is inversely proportional to soil stability. As the water content in soil increases, formation of dense ice structures can cause a breakdown of the soil matrix (Bullock et al., 1988; Lehrsch et al., 1991). Organic matter content provides elasticity and stability to soils, thereby enabling soils to withstand the mechanical action and expansion pressures caused by freezing (Lehrsch et al., 1991). Textural effects on soil stability can be evaluated in terms of clay content. Soil stability is directly proportional to clay content since larger amounts of clay create more or stronger bridges between soil particles (Penner, 1968; Konrad, 1989; Lehrsch et al., 1991).

Changes in hydraulic conductivity over a winter season have important implications when evaluating potential surface runoff during the spring thaw. Soil frost can inhibit infiltration of snowmelt waters in early spring thereby forcing the water to pond on, or flow across, the surface of the frozen soil (Stein et al., 1994). Water movement across the surface may cause soil erosion and potential flood hazards (Zuzel and Pikul, 1987; Johnsson and Lundin, 1991). Groundwater recharge in the spring is partly dependent upon the amount of snowmelt water which is able to infiltrate through the vadose zone (Buttle, 1989; Bedient and Huber, 1992; Isard and Schaetzl, 1998). Seasonal changes in hydraulic conductivity also have an impact on land drainage (Nyberg and Fahey, 1988; Stein et al., 1994).

Understanding the hydrological properties of soils is important to the management of watersheds. Infiltration capacities of soils affect the extent of overland flow in the

transport of storm water or snow melt to drainage channels (Horton, 1945; Gerrard, 1981; Stein et al., 1994). Surface slope, frost, textural features of the soils, hydraulic conductivity, and vegetation cover can influence the movement of water across a landscape (Gerrard, 1981; Pikul Jr. et al., 1986). Understanding how these properties contribute to the overall drainage of a basin is therefore critical for both erosion control and watershed management.

Pedogenic Processes

Water movement and climate are important factors in pedogenesis (Schaeztl, 1990). Infiltration influences the amount of translocation of colloids and mobile complexes from the eluvial to lower horizons. Climate can control organic matter decomposition, clay content and mineralogy, mineral weathering rates, and the extent of redness in soils (Birkeland, 1984). Gleying and translocation of clay minerals from eluvial zones is more prominent under slow percolation rates (Davies, 1971) Gleying is also common in soils where a fluctuating water table creates a zone of saturation in what is usually unsaturated media (Franzmeier et al., 1983).

In addition to pedogenic processes, the movement of water can contribute to soil particle transport. As the soil thaws, drainage waters may wash away the smaller soil particles formed by the breakdown process of freeze-thaw. Some of smaller soil particles can also become trapped in pore spaces. This blocking in the pore spaces inhibits further soil water movement, thereby altering the hydraulic characteristics of the soil. Runoff

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can also wash away soil particles at the surface and expose lower particles to wind erosion.

Influence of Land Use

Land use is also an important factor when addressing changes in the hydrological behavior of soils. Changes in soil structure and hydraulic conductivity over a winter season can vary depending on the tillage treatments applied to soils in the fall (Kay et al., 1985; Benoit et al., 1986; Pikul Jr. et al., 1986). In addition, clearing the land for cultivation purposes exposes the soils to a harsher winter climate as well as altering their drainage characteristics. Hydraulic characteristics of forest soils may differ from cultivated soils because of different vegetation cover, the extent of macropores created by root channels, and larger amounts of rocks mixed in with the soil (Aubertin, 1971; Nyberg and Fahey, 1988; Stein et al., 1994). Freezing temperatures can have varying effects on water movement through soils, depending upon the use of the soil or how much the soil has been disturbed. Understanding the effects of land use on the hydraulic characteristics of soils can lead to better decisions, in addition to illustrating some of the changes in soil properties that have occurred due to human activities.

Design of adequate drainage in both urban and rural settings requires an understanding of soil hydraulic characteristics. Changes in hydraulic conductivity due to freeze-thaw activity may increase drainage problems on wet soils (Benoit and Bornstein, 1970). Constructing artificial drainage systems, such as tilings and ditches, can aid in the removal of water from poorly drained, cultivated soils. Pipe systems and open drains can be constructed to provide necessary drainage to watersheds with building sites (Bedient

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and Huber, 1992). Understanding soil hydraulic properties as they apply to drainage system design is therefore necessary for proper land use and better management practices.

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CHAPTER III

SITE DESCRIPTIONS

The study areas are located in Saginaw County in east-central Michigan. Figure 1 is a county map of Michigan highlighting the location of Saginaw County. Some soils within this county were studied due to their clayey textures as well as the climatic conditions favorable for freeze-thaw activity (Isard and Schaetzl, 1998). Landscapes within the county have low relief (Iaquinta, 1994). Adequate drainage is important for this county considering approximately one-sixth of all drainage water for lower Michigan collects and passes through Saginaw County (Iaquinta, 1994).

Landscapes and soils in Michigan have primarily developed from glaciofluvial and glaciolacustrine deposits. With deglaciation and the retreat of the ice sheets from the Midwest region approximately 11,000 years ago, many depositional features were left to develop into soil-landscape associations. Glaciolacustrine plains are common depositional features which formed beneath large glacial lakes (Dawson, 1992; Iaquinta, 1994). Glaciolacustrine plains are flat terrains developed by the infilling of depressions on a lake floor with fine-textured lake sediment and leveled by wave action from the proglacial lake. Around the Midwest region, lake plains present in east-central Michigan (Saginaw Bay lowlands) and northwest Ohio were formed by the proglacial lakes of Lake Saginaw and Lake Whittlesey, respectively (Dawson, 1992). Once glacial lake waters receded off of these plains, weathering and pedogenic processes began to develop the soils and landscapes into what are present today.

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Figure 1. County map of Michigan with the silhouette highlight of Saginaw County.

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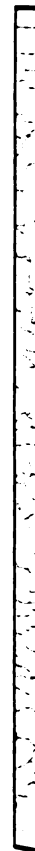
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Understanding the drainage properties of soils within a watershed is of particular importance in Saginaw County. Since the terrain of the county was formed on a glacial lake plain, the area is very flat with slopes of only 0 to 4% for most of the county (Iaquinta, 1994). In addition, all of the drainage water of the Saginaw River Basin, an area covering more than 15,500 square kilometers, collects on a low plain in the central part of the county (Iaquinta, 1994). The outlet to this drainage basin is through the Saginaw River, which has a very subtle gradient of approximately 1.6 cm per kilometer. All of these conditions result in very slow drainage and areas of periodic flooding within the county.

The sites selected for this study are mapped as the Parkhill and as a complex of the Zilwaukee-Misteguay soil series (Iaquinta, 1994). As indicated on the Saginaw County soil survey, both Parkhill and Zilwaukee-Misteguay complex mapping units are abundant throughout Saginaw County (Iaquinta, 1994). Two locations within each mapping unit were selected for study. One site is located in a cultivated field; the other is located at a nearby non-cultivated (forested) site. Non-cultivated sites in this county are generally wooded. The cultivated sites that I studied are located on fields where no-till agriculture is currently being practiced; a small area on each field was set aside to conduct the sampling and data collection. Figure 2 provides the approximate locations of the forested and cultivated Parkhill and Zilwaukee-Misteguay study sites within Saginaw County.

Selection of the two soil series used for this study was based upon their textures. Parkhill soils have loam surface horizons while soils of the Zilwaukee-Misteguay complex have silty clay surfaces. Variation in clay content (texture) between the series is



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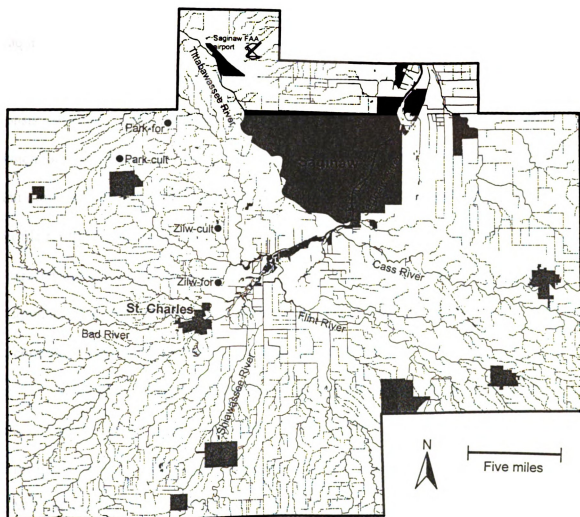


Figure 2. Map of Saginaw County, Michigan, with the approximate locations of the forested and cultivated study sites.

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an important factor when examining the effects of freeze-thaw activity on soils. Typical clay contents for the Parkhill soils range from 10 to 35 percent with depth, while soils of the Zilwaukee-Misteguay complex contain from 35 to 60 percent clay varying with depth (Iaquinta, 1994).

The Parkhill series (fine-loamy, mixed, nonacid, mesic Mollic Haplaquepts) consists of poorly drained and very poorly drained, moderately slowly permeable soils which formed in loamy glacial till (Iaquinta, 1994). Parkhill soils are found on till plains and former glacial lake bottoms, with slopes ranging from 0 to 2 percent. A common profile for this series consists of loam Ap, Bg, and Cg horizons. Parkhill soils are characterized as having a high potential for frost action based upon their soil texture (Iaquinta, 1994). An apparent water table depth at the surface to 30 cm below the surface is common during November through May (Iaquinta, 1994).

The Parkhill research sites are located in the northwest corner of Saginaw County. The non-cultivated site (NW¹/₄, NE¹/₄, SE¹/₄, Sec. 1, T12N, R2E) is approximately 10 acres in size and is forested by various species of maple and oak. The cultivated site (SW¹/₄, SE¹/₄, NE¹/₄, Sec. 15, T12N, R2E) yields corn as the main crop. Distance between the cultivated and forested sites is approximately 6.5 kilometers.

The Zilwaukee (fine, mixed (calcareous), mesic Typic Haplaquolls) and Misteguay (fine, mixed (calcareous), mesic Aeric Haplaquepts) research sites are located in Zilwaukee-Misteguay mapping unit complexes. This complex generally consists of poorly drained, slowly permeable soils which formed in clayey or silty alluvial material (Iaquinta, 1994). These soils are found on floodplains and glaciolacustrine plains with slopes ranging from 0 to 2 percent. A typical profile of this complex consists of silty clay

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A, Bg and Bw, and C horizons. Soils of the Zilwaukee-Misteguay complex are characterized as having a high potential for frost action based upon their soil texture (Iaquinta, 1994). An apparent water table depth at the surface to 30 cm below the surface is common from October through May (Iaquinta, 1994).

The forested Zilwaukee-Misteguay site is located near the northwest corner of the Shiawassee River State Game Area (SW¹/₄, SW¹/₄, NE¹/₄, Sec. 28, T10N, R3E) and has various species of maple and oak trees for vegetation cover. The cultivated site of the same complex is located at the Michigan State University, Saginaw Valley Beet and Bean Research Farm (NE¹/₄, NE¹/₄, NE¹/₄, Sec. 9, T11N, R3E) and yields dry beans and sugar beets as the main crops. Distance between the cultivated and forested sites is approximately 6.5 kilometers.

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CHAPTER IV

METHODOLOGY

Saturated Hydraulic Conductivity

Water movement within soil is often determined by measuring field-saturated hydraulic conductivity (K_{sat}). For this study, measurements of saturated hydraulic conductivity were made in situ using a velocity permeameter (Kanwar et al., 1989; Rose and Merva, 1990; Mohanty et al., 1994). The velocity permeameter applies the Darcy equation in determining the saturated flow through a porous media:

$$v = K_{sat} * h/s$$

Differentiating this equation with respect to h and rearranging produces:

$$K_{sat} = s * dv/dh$$

Field-saturated hydraulic conductivity, K_{sat} , is calculated from the change in velocity of water flow, dv , the change in head causing flow, dh , and the thickness of soil in a sampling cup through which the water flows, s .

The velocity permeameter consists of a sampling cup and a small diameter tube used to measure change in head. After the sampling cup is driven into a soil horizon, the thickness of soil in the cup is determined. Both the head tube on the permeameter and the sampling cup are filled with water. The change in flow velocity of water within the soil sample with respect to the change in head can be determined by timing the fall of water in the head tube through successive readings. Flow velocity through the soil core is

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magnified by the drop of water in the head tube due to a smaller diameter on the head tube (Rose and Merva, 1990). Timing the fall in head is done through the use of a hand-held calculator equipped with a timing device. The calculator is also programmed to store the successive increments of time and process the data for determining dv/dh and finally K_{sat} (Rose and Merva, 1990).

Field-saturated hydraulic conductivity measurements were collected twice; once in the fall of 1996 (November) and again in the spring of 1997 (May). Measurements from each of the four sites were collected at the depth range of 20-25 cm. This range was necessary to account for the 5 cm thickness of the sampling cup. Saturated hydraulic conductivity was measured at this depth in order to address the significance of frost on soil hydrological properties. Since frost can reach depths of 30 cm or more in similar soils (Krumbach and White, 1964), measurements at 20-25 cm can be used to determine if frost in the 0-25 cm zone affects the hydraulic conductivity at 25 cm.

Since the sample size from which the field-saturated hydraulic conductivity is measured was limited to the size of the sampling cup, three separate tests were conducted at each site (Rose and Merva, 1990). Collecting three measurements was done in order to address spatial variation, particularly with heterogeneity and preferential flow, within the soil matrix. The three cores were aligned in a triangular configuration, each no more than three meters from the other two. The measured values of conductivity were averaged in order to determine the in situ saturated hydraulic conductivity for that specific horizon.

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Soil and Air Temperatures

Soil temperatures from each site were also collected over the winter. Monitoring temperatures at two depths (5-10 cm and 20-25 cm) provided information on depth of frost penetration as well as the occurrence of freeze-thaw cycles relative to depth (Isard and Schaetzl, 1995). Soil temperatures were collected using a StowAway™Tidbit™-XT (Onset Computer Corporation, Pocasset, MA) automated temperature logger with an external thermocouple sensor (standard temperature range of -20 to +70°C; accuracy of $\pm 0.4^\circ\text{C}$ at +20°C). A small pit was excavated at each site and the external sensor from each logger was inserted into the soil horizontally at the respective depth within the pit. Each pit was then refilled. The temperature logger was placed in the soil in the fall (November) and left over the winter, and was set to record the temperature every 72 minutes (20 readings/day). In the spring (June), the loggers were removed and the temperature data were downloaded to a computer for display and analysis.

Air temperatures were also collected from each site using an Optic StowAway™Temp (Onset Computer Corporation, Pocasset, MA) waterproof temperature logger (standard temperature range of -39 to +75°C; accuracy of ± 0.5 to 1.0°C). A temperature logger was positioned near the soil temperature probes at each site, either in a nearby tree or power line pole, at approximately 1 to 2 meters above the ground surface. Each logger was housed within a one gallon plastic milk jug which had the base removed and a hole in the side to allow for free air flow around the instrument. This configuration was also used to shade the instrument from direct solar radiation and designed to resemble a scaled

down standard meteorological shelter. Each temperature logger was set to record the temperature every 72 minutes (20 readings/day). Air temperatures from each site were then correlated with soil temperatures.

Soil Moisture

Soil moisture readings were only collected approximately once per month, starting at the time of the fall sampling (November) and ending at the time of the spring sampling (May). These measurements were collected at depths of 5-10 cm and 20-25 cm near the locations of the soil temperature loggers. Three measurements were collected from each soil depth and an average determined. Measurements collected at the two depths were correlated to freeze-thaw action in the soils as well as changes in hydraulic conductivity. Measuring soil moisture was done using a ThetaProbe (Delta-T Devices LTD, Cambridge, England) soil moisture sensor (accuracy of $\pm 0.05 \text{ m}^3\text{m}^{-3}$). The ThetaProbe measures the apparent dielectric constant of a soil and converts to the volumetric moisture content (Θ) through a linear correlation (Roth et al., 1992; Whalley, 1993). The probes were inserted vertically into the soil to instantaneously determine moisture content in terms of percent by volume (Θ).

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Soil Bulk Density

Soil sampling for bulk density determination was conducted in the fall (November) and again in the spring (May). Bulk density samples were collected in triplicate from each of the two sampling depths (5-10 and 20-25 cm) using the core method (Soil Survey Laboratory Staff, 1992). An average for the bulk density values from each depth was then determined.

Snowfall and Snow Accumulation Data

Climatological data from the Saginaw FAA Airport and St. Charles, Michigan, stations were provided by the Michigan Department of Agriculture Climatology Program at the Michigan State University Office of Climatology. Data collected at the Saginaw FAA Airport and St. Charles were compared to microclimatological data collected on-site, so that regional predictions of soil frost could be made using the former. Data on snowfall and snow accumulation during the period from November, 1996, through April, 1997, were obtained from National Oceanic and Atmospheric Administration publications (NOAA, 1996-97). Snow cover serves as an insulating barrier to the underlying soil (Post and Dreibelbis, 1942; Johnsson and Lundin, 1991; Isard and Schaetzl, 1995). Snow depth can therefore limit the depth of soil freezing. These data were examined in light of the air temperatures and soil frost data.

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Soil Morphology

Selected physical and morphological properties of the soils from each site were determined in the summer of 1997 (August), when a soil pit was excavated at each site. Morphological properties, including color, structure, and consistence, within each soil profile were described according to standard methods (Soil Survey Staff, 1975). Textural analysis of each horizon-based sample was determined by particle size distribution using the pipette method (Soil Survey Laboratory Staff, 1992).

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CHAPTER V

RESULTS AND DISCUSSION

Review of Land Uses

The study sites were located on two soil series representative of lowlands in Saginaw County, Michigan. All four sites were located within the Shiawassee River watershed, a tributary to the Saginaw River. Figure 2 displays the locations of the four study sites relative to the hydrologic features within Saginaw County. The Parkhill series is a loam-textured soil, while the Zilwaukee-Misteguay complex contains soils with silty clay textures. The slope at all four sites was essentially flat, which adds to the problem of poor drainage.

Both a forested and a cultivated site were studied within each soil type to address the effects of land use on microclimate and hydrological properties of the soils. The cultivated site of the Parkhill soil yielded corn as the main crop, while the cover of the forested site was in various species of maple and oak. The cultivated site of the Zilwaukee-Misteguay complex yielded dry beans, sugar beets, and corn as the main crops, while the forested site was covered by various species of maple and oak. Drain tiles (perforated plastic tubes) are installed at both cultivated sites to assist in soil drainage.

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Textural Data

Data on soil texture, as determined by particle size analysis, are presented in Table 1. Figures 3 to 6 plot clay, silt, and sand content data from each site as particle size separates (cumulative percentage) versus depth. Each point on the y-axis of the graph indicates the midpoint within a specific soil horizon.

Soils of the Zilwaukee-Misteguay complex usually have a silty clay texture (Iaquinta, 1994). High silt and clay, and low sand, contents were found in both the cultivated and forested soils (Fig. 3 and 4). The textures of the cultivated Zilwaukee-Misteguay pedon are generally homogeneous throughout the profile. Clay, sand, and silt contents only vary slightly with depth, ranging from 44.1 to 46.1%, 3.5 to 5.8%, and 49.2 to 51.0%, respectively. This homogeneity in the soil texture could be attributed to the uniformity of the lacustrine parent materials, including glacial lake silts and clays. The forested Zilwaukee pedon has more notable variations in the texture with depth. Clay content within the forested soil increases from 39.5% in the A horizon to 42.5% in the BAg horizon. The increase in clay content between the two soil horizons may indicate translocation of clay from the overlying eluvial zone. Low sand contents are found in both the cultivated (3.5 to 5.8%) and forested (4.0 to 10.2%) soils, consistent with the interpretations of these series (Iaquinta, 1994).

Parkhill soils are sandier than the Zilwaukee-Misteguay complex, thereby having loam to clay loam textures (Iaquinta, 1994). In the cultivated Parkhill soil, sand is the dominant particle size separate within the profile and ranges from 45.0 to 56.5% with depth. Clay content ranges from 16.7 to 23.4% within the soil profile. The profile of the

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Table 1. Particle size distribution of soils at the Zilwaukee-Misteguay and Parkhill sites.

<i>Soil</i>	<i>Land Use</i>	<i>Textural Class</i>	<i>Horizon</i>	<i>Depth (cm)</i>	<i>Clay (%)</i>	<i>Sand (%)</i>	<i>Silt (%)</i>
Zilwaukee-Misteguay	Cultivated	Silty clay	Ap	0-24	44.1	5.8	50.1
			Bg	24-44	46.1	4.7	49.2
			Cg	44-82	45.5	3.5	51.0
			Cdg	82-105+	44.4	3.7	51.9
Zilwaukee-Misteguay	Forested	Silty clay	A	0-15	39.5	8.5	51.9
			BAg	15-31	42.5	9.0	48.6
			Bg	31-51	38.2	10.2	51.6
			Cg	51-77	35.9	8.3	55.8
Parkhill	Cultivated	Loam	Cdg	77-112+	38.9	4.0	57.2
			Ap	0-24	20.7	56.5	22.8
			Bw	24-64	23.4	46.9	29.7
			Cg	64-82	17.6	46.8	35.7
Parkhill	Forested	Clay loam	Cdg	82-120+	16.6	45.0	38.4
			A	0-17	34.8	40.1	25.1
			BA	17-33	40.3	32.3	27.5
			Bg	33-68	42.4	28.4	29.2
			BCg	68-85	41.8	27.9	30.2
			Cg	85-116+	35.3	24.1	40.6

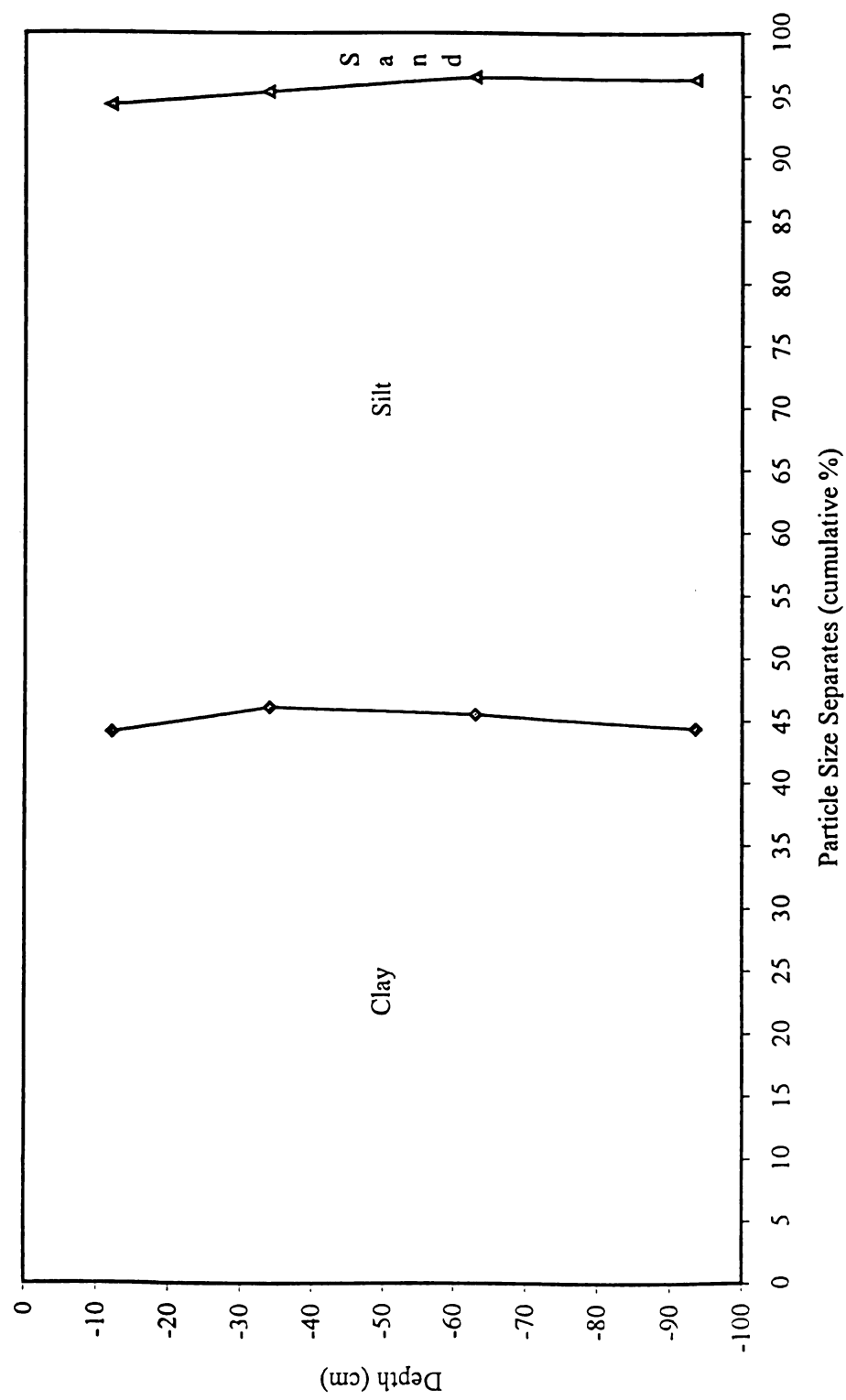


Figure 3. Particle size distribution within the soil profile of the cultivated Zilwaukee-Misteguay complex site.

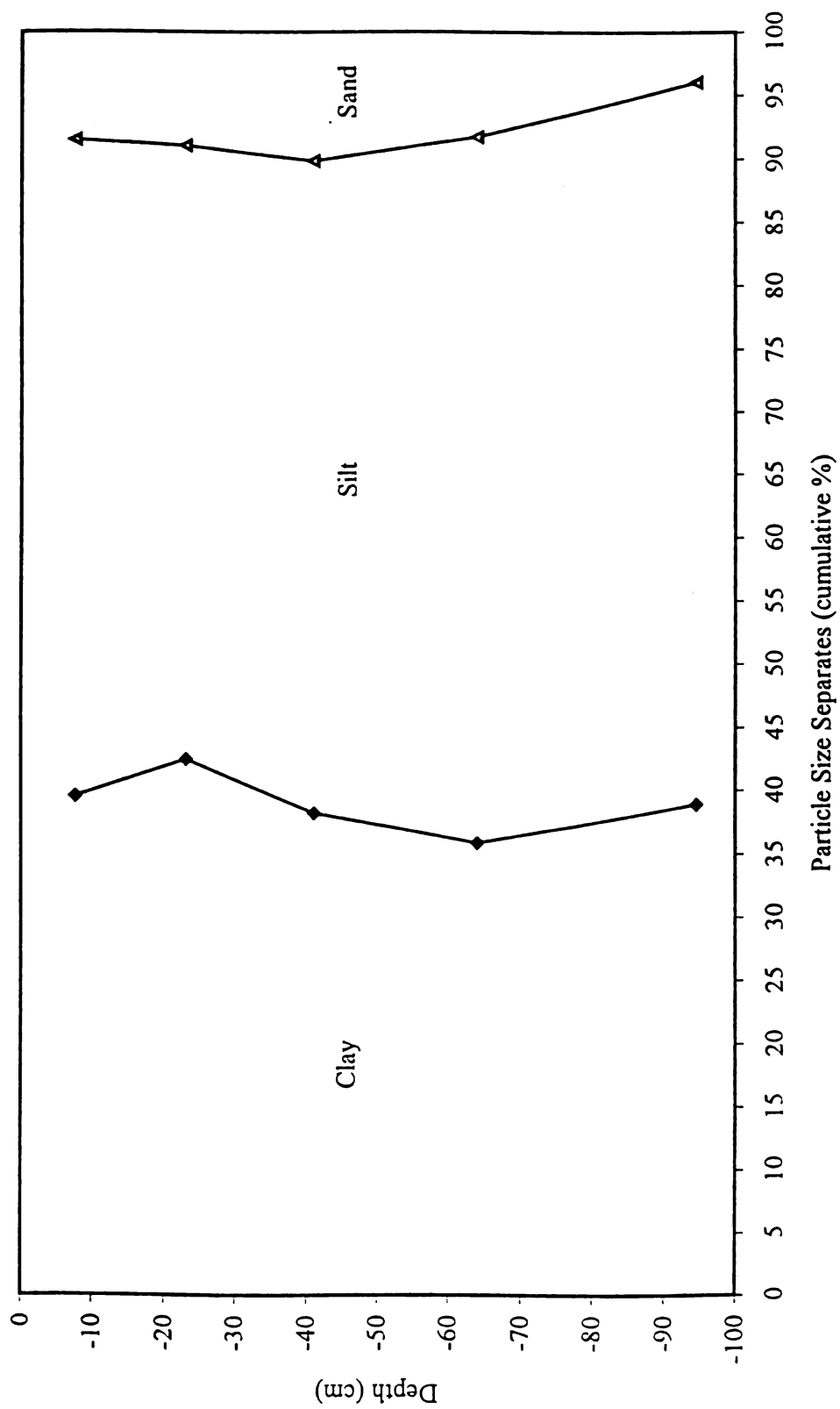


Figure 4. Particle size distribution within the soil profile of the forested Zilwaukee-Misteguay complex site.

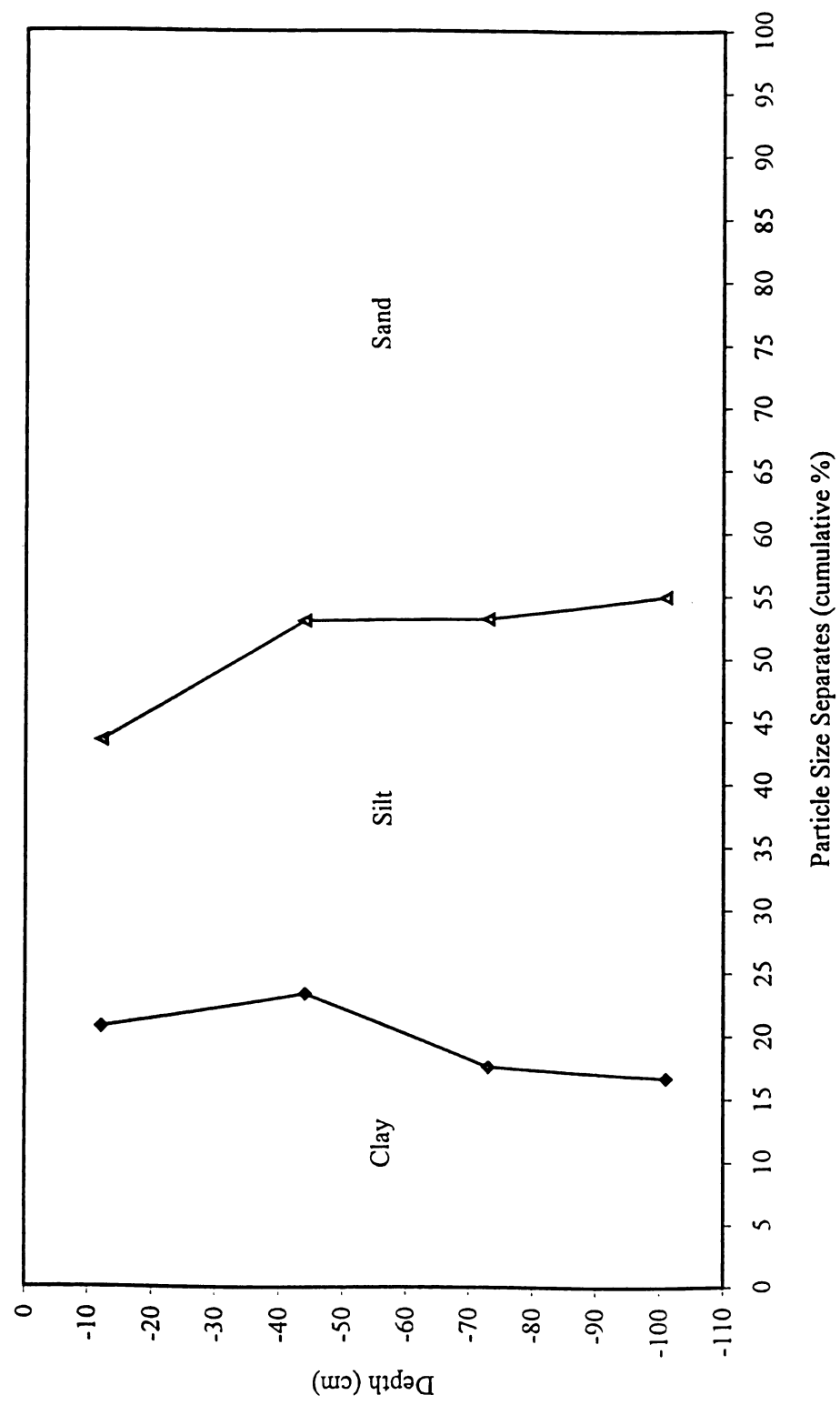


Figure 5. Particle size distribution within the soil profile of the cultivated Parkhill site.

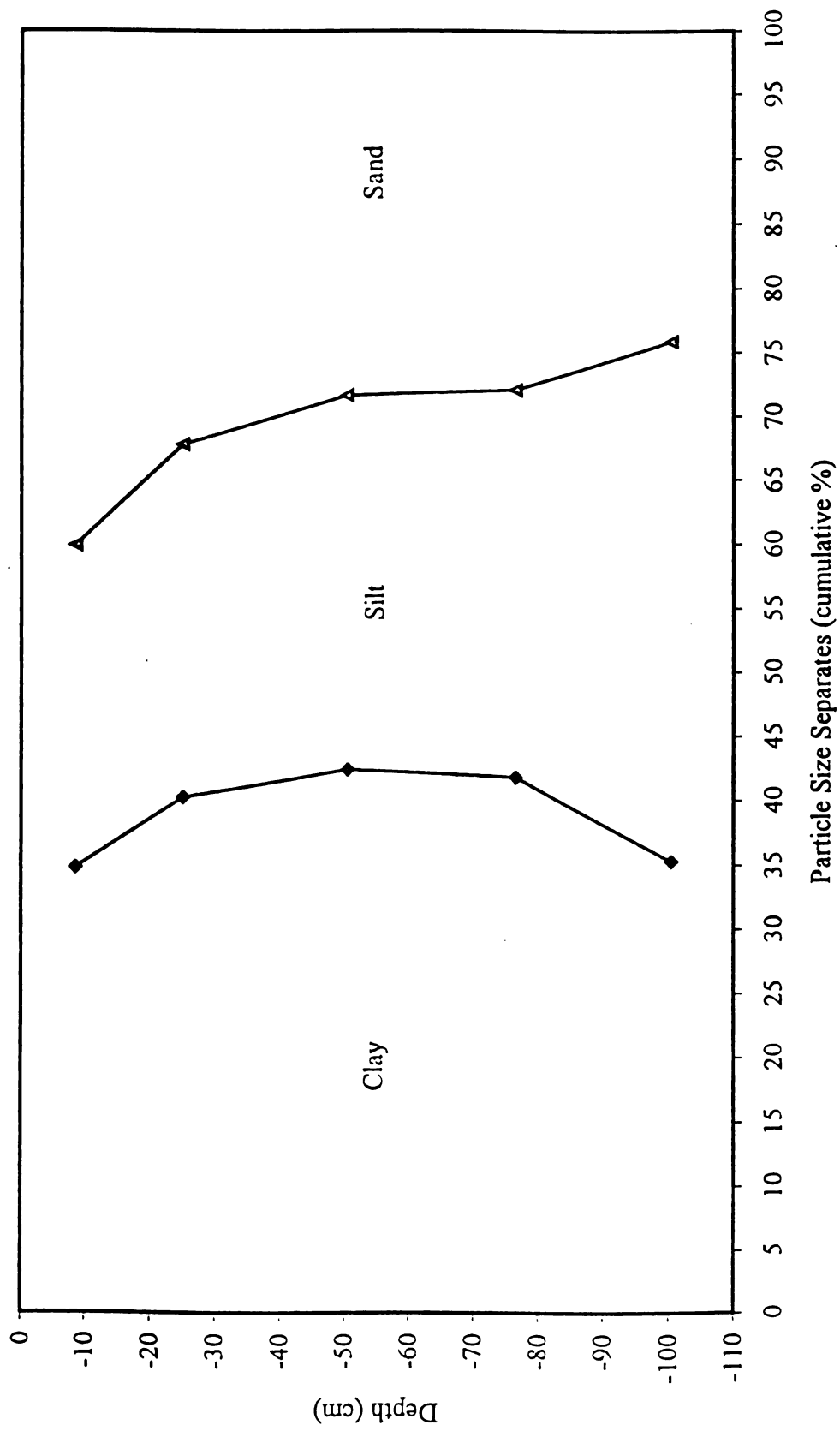


Figure 6. Particle size distribution within the soil profile of the forested Parkhill site.

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forested Parkhill soil is finer-textured than is the cultivated soil. Sand content of the forested Parkhill soil only ranges from 24.1 to 40.1% and decreases with depth, while the clay content ranges from 34.8 to 42.4%. Clay content increases with depth from the A horizon to the Bg horizon and then decreases in the Cg horizon. The peak in clay content in the Bg horizon is caused by translocation of clays from the overlying eluvial layer (Davies, 1971).

Microclimate of Study Sites

Loss of Data

Before discussing the temperature data collected from the sites, an unfortunate loss of data must first be addressed. Although air and soil temperature sensors were installed at all four sites, soil temperature data were not available from the cultivated Parkhill site due to malfunctions in the automated temperature loggers. The loggers at both soil depths (5 and 20 cm) malfunctioned, and no temperature data were collected for either depth. It is unknown why the loggers did not function correctly.

Freeze-thaw activity for the cultivated Parkhill soil was therefore estimated visually. Frozen soils at this site were noted during the February and March field visits. In addition, correlations could be made to the soil temperatures recorded at the cultivated Zilwaukee-Misteguay complex site since the two sites are only less than 10 km from one another and the environmental conditions are similar.

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Snowfall Data

Snowfall data were collected by National Weather Service (NWS) stations located at the Saginaw FAA Airport and at St. Charles, Michigan. Snowfall and snow accumulation data collected during the period of November, 1996, through April, 1997, from each NWS station are provided in Figures 7 and 8. These data are used to address the quantity of snowfall received near the sites and the extent and period in which snow accumulated on the ground. In addition, these data give a good representation of snowmelt events. Forested sites have less snow accumulation than at the NWS stations due to the sheltering of the areas by trees and other vegetation. Since snow cover serves as an insulating layer to the soils (Isard and Schaetzl, 1995), snowfall data are important for the interpretation of soil temperature data collected from the sites.

Total snowfall amounts during the period of November, 1996, through April, 1997, at Saginaw FAA Airport and St. Charles were 195 and 138 cm, respectively. In addition, total snowfall amounts from the two locations were compared to normal amounts (Fig. 9-10). Normal values were determined over the period of 1951-80. At the Saginaw FAA Airport, snowfall amounts for the 1996-97 winter season were above normal from December to April, ranging from 6.6 to 37.0 cm above normal (Fig. 9). At St. Charles, snowfall amounts were only above normal for December, January, and April, ranging from 3.3 to 26.9 cm above normal (Fig. 10). At both locations, the largest amount of above normal snowfall was during the month of January. Above normal snowfall, especially during December and January, may have provided a thicker snowpack regionally as compared to a "typical year".

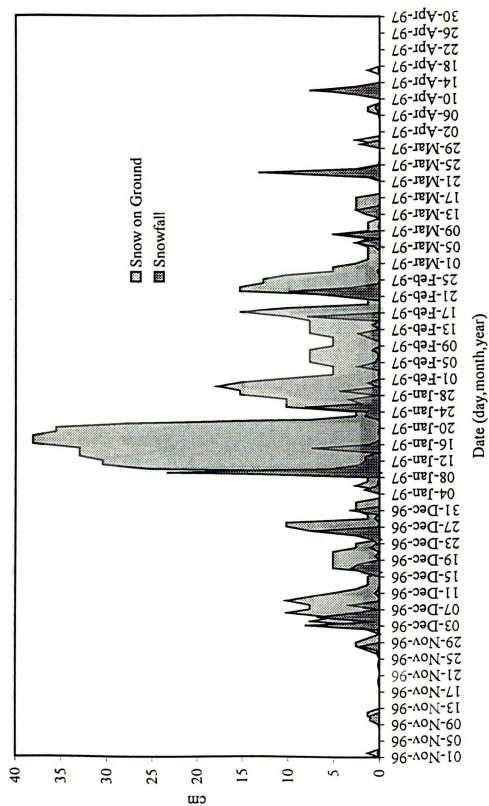


Figure 7. Snowfall and snow accumulation amounts (cm) at the Saginaw FAA Airport, Michigan, from November, 1996, to April, 1997.

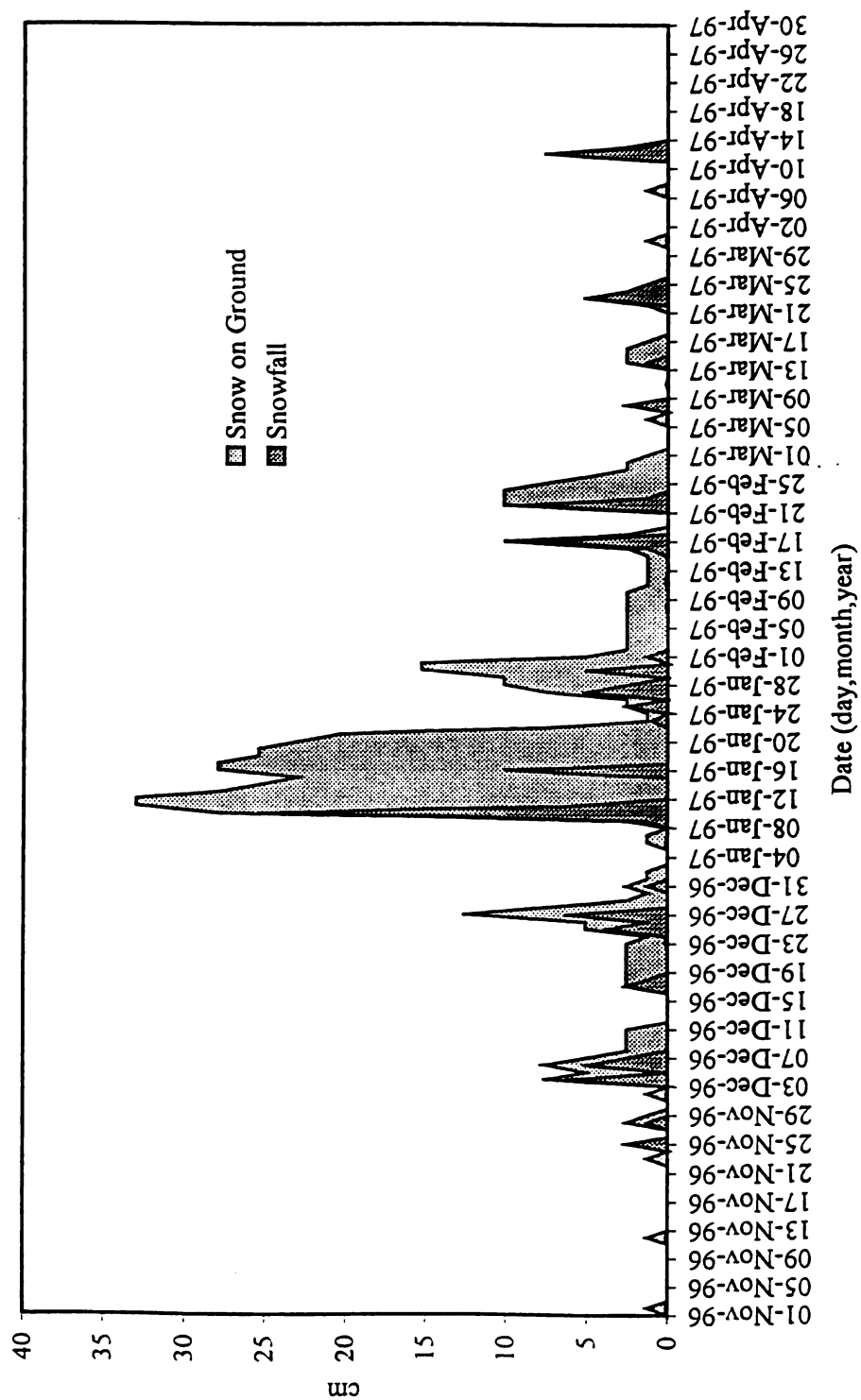


Figure 8. Snowfall and snow accumulation amounts (cm) at St. Charles, Michigan, from November, 1996, to April, 1997.

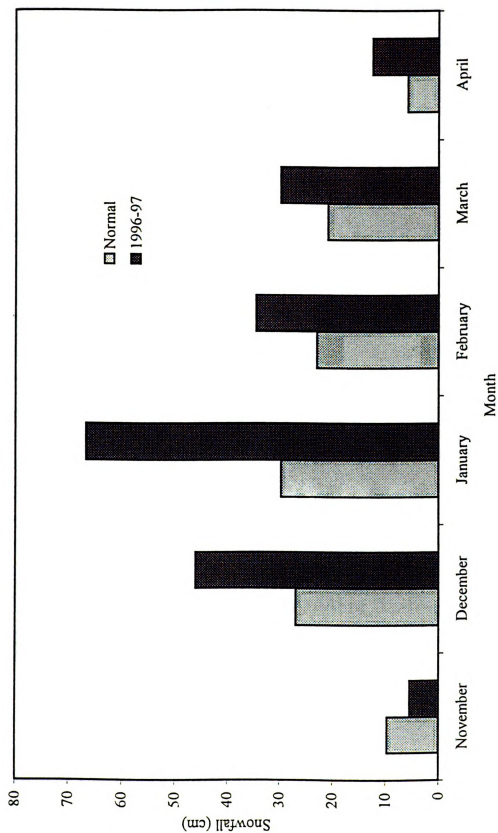


Figure 9. Monthly snowfall amounts (cm) at the Saginaw F.A.A. Airport during the 1996-97 winter season as compared to normal (1951-80).

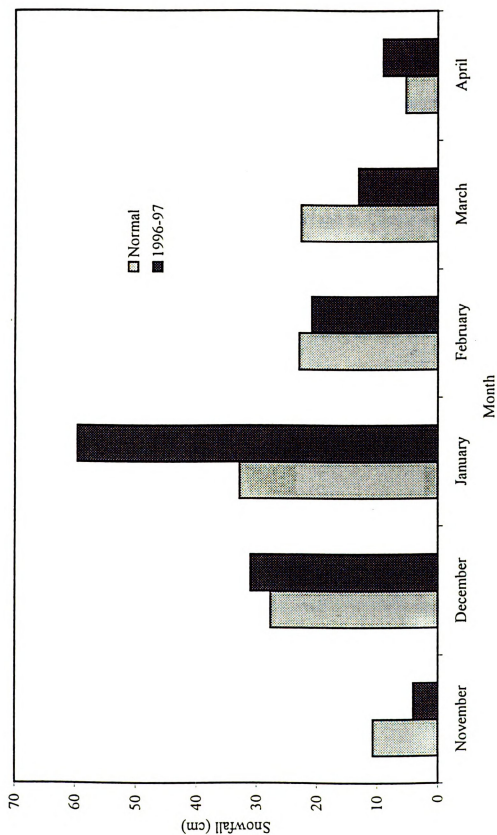


Figure 10. Monthly snowfall amounts (cm) at St. Charles, Michigan, during the 1996-97 winter season as compared to normal (1951-80).

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Snowpack levels fluctuated throughout the 1996-97 winter at both sites (Fig. 7 and 8). Saginaw FAA Airport recorded its maximum snowpack level of 38 cm on January 16-18, 1997, while St. Charles recorded 33 cm on January 11-12, 1997. Although the NWS stations are only approximately 28 km apart, snowpack differences were noted between the two sites (Fig. 11). Snowpacks at the Saginaw FAA Airport were on average about 2.5 cm thicker than at St. Charles. The maximum difference in snowpack levels between the Saginaw FAA Airport and St. Charles was 12.7 cm, measured on January 18 and 20, 1997. There were 87 days when the snowpack level at the Saginaw FAA Airport was thicker than at St. Charles during the period from November, 1996, to April, 1997. During the same period of time, there were only 11 days when the snowpack level was thicker at St. Charles than at the Saginaw FAA Airport.

Soil Temperatures

Soil temperature data for the 1996-97 winter are provided in Figures 12 to 17 and Appendix 1. Soil temperatures are provided for 5 and 20 cm from each of the sites except for the cultivated Parkhill site. Soils at both forested sites did not freeze at 5 cm, whereas the cultivated sites froze to depths >20 cm (Fig. 12-17; Appendix 1). Although soils at both forested sites did not freeze to depths ≥ 5 cm, frost was observed at 2-3 cm depths at both forested sites. Soils at the cultivated Zilwaukee-Misteguay site froze to ≥ 20 cm

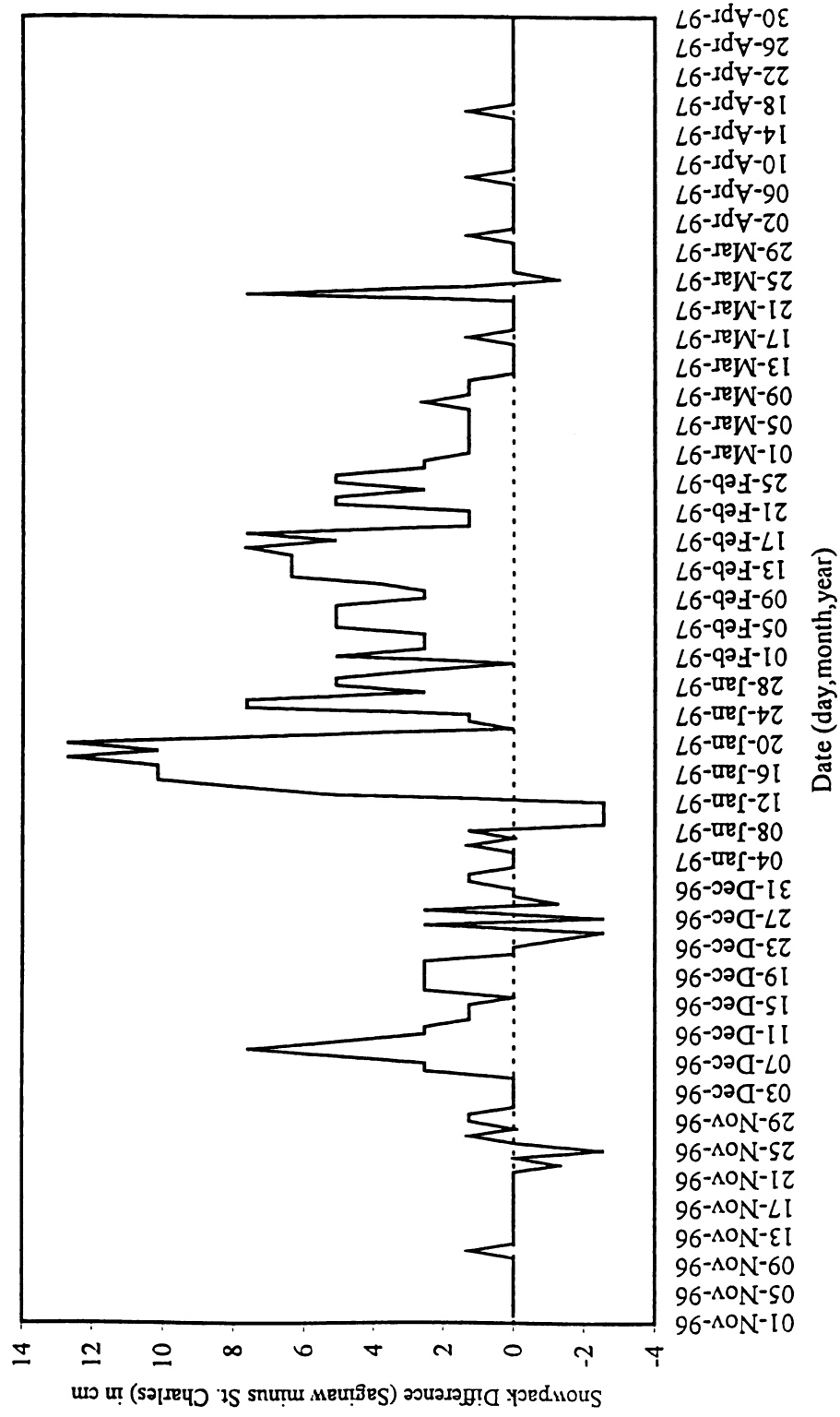


Figure 11. Snowpack difference (Saginaw FAA Airport minus St. Charles) in cm from November, 1996, to April, 1997.

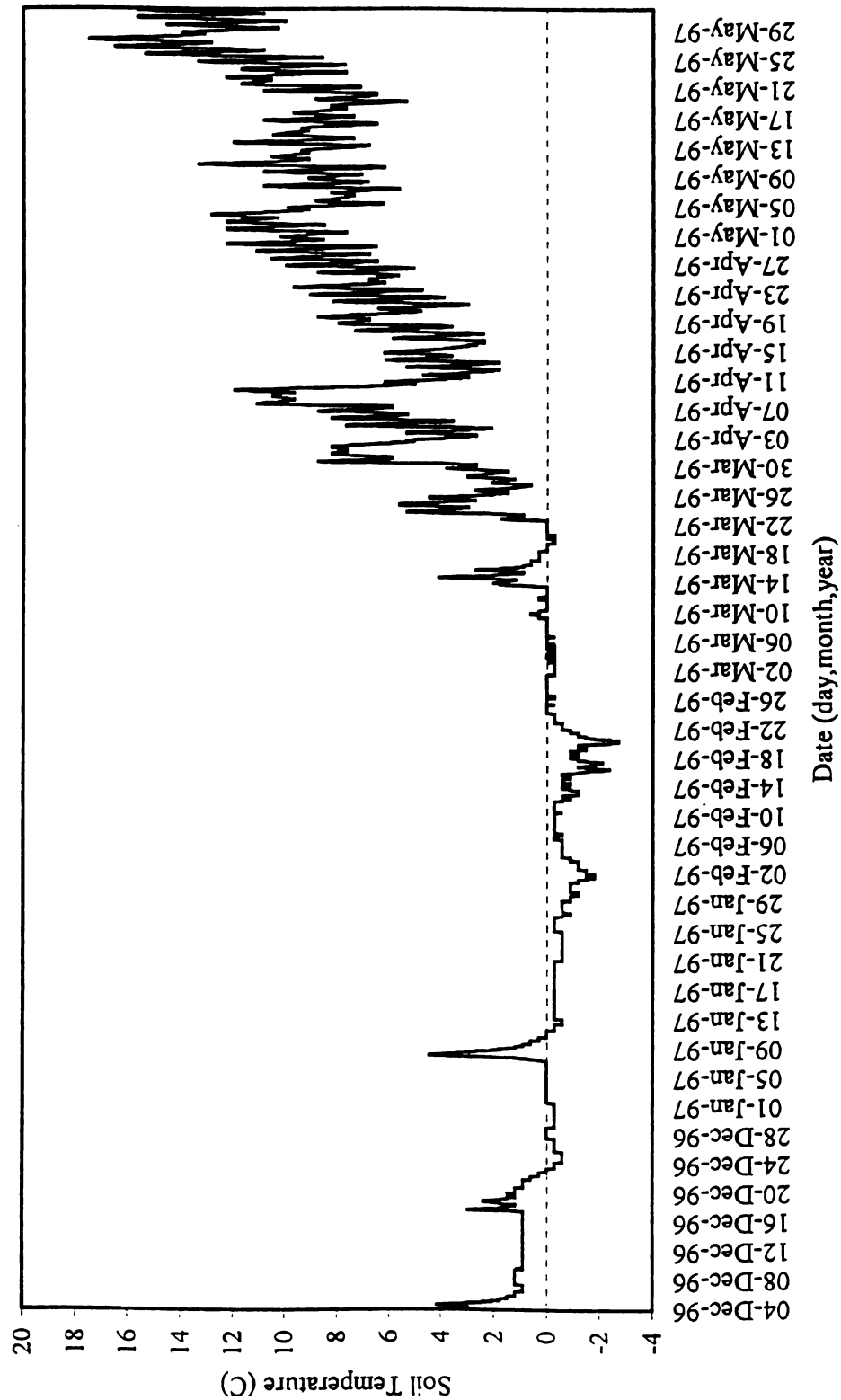


Figure 12. Plot of soil temperature data collected at 5 cm from the cultivated Zilwaukee-Misteguay site.

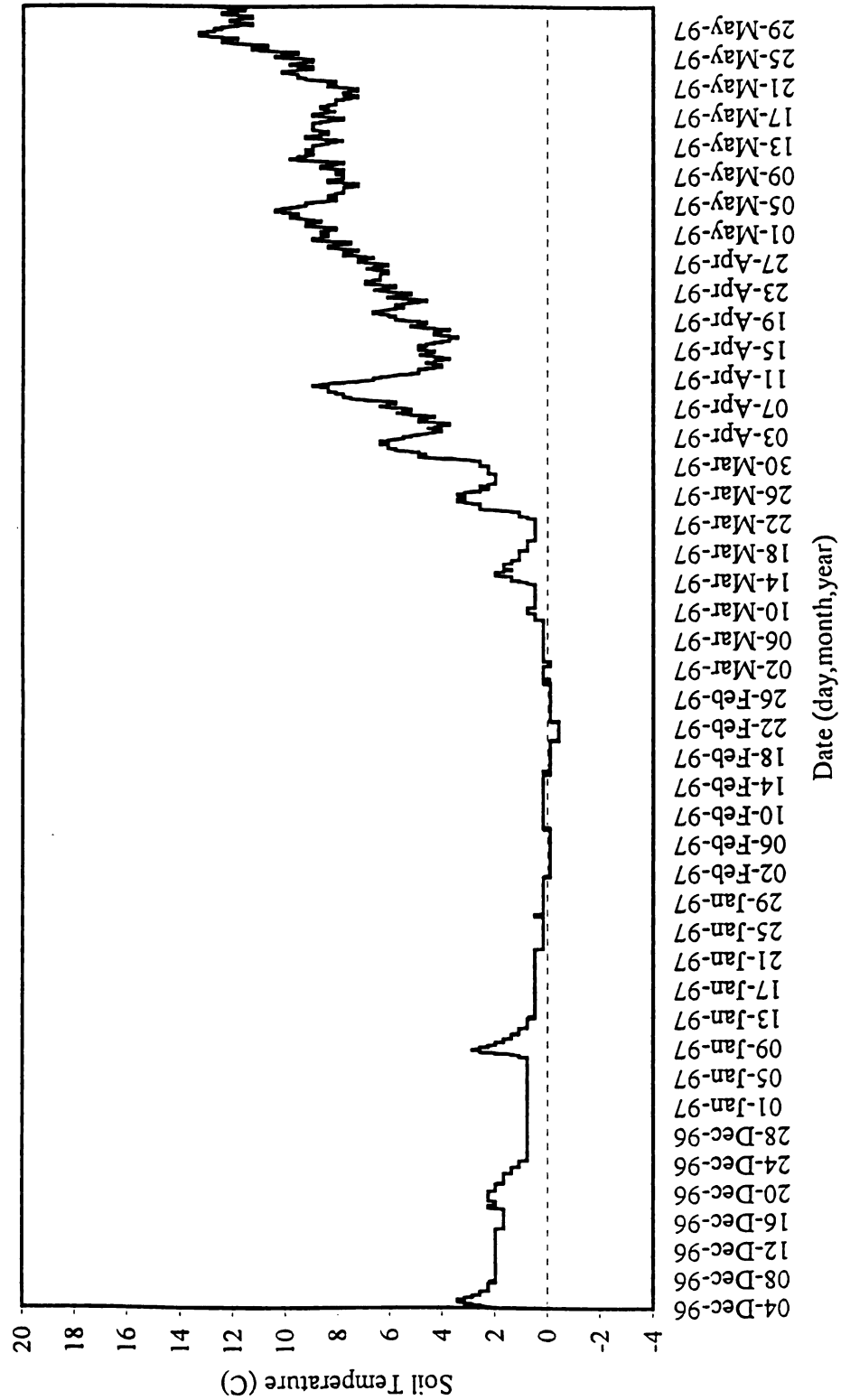


Figure 13. Plot of soil temperature data collected at 20 cm from the cultivated Zilwaukee-Misteguay site.

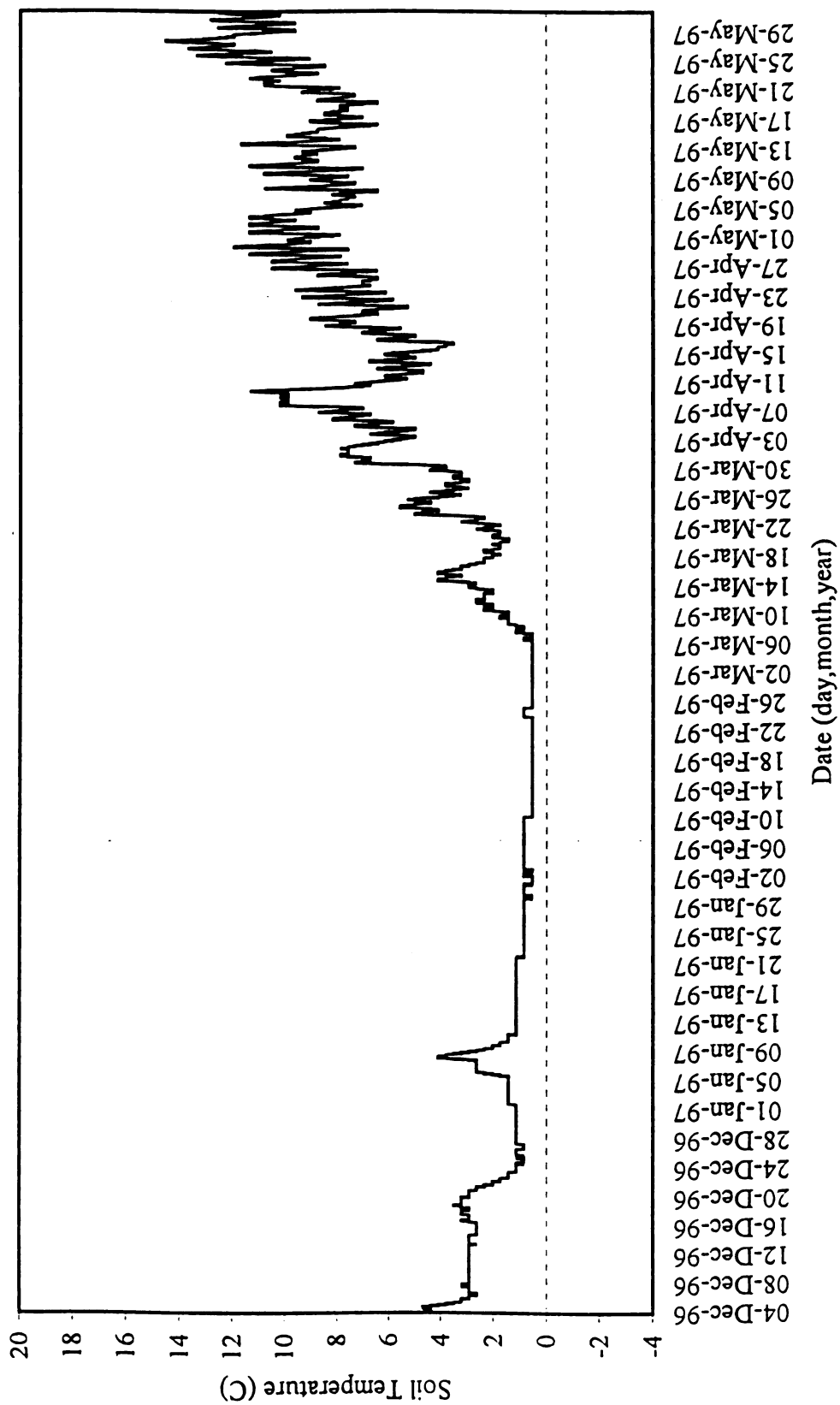


Figure 14. Plot of soil temperature data collected at 5 cm from the forested Zilwaukee-Misteguay site.

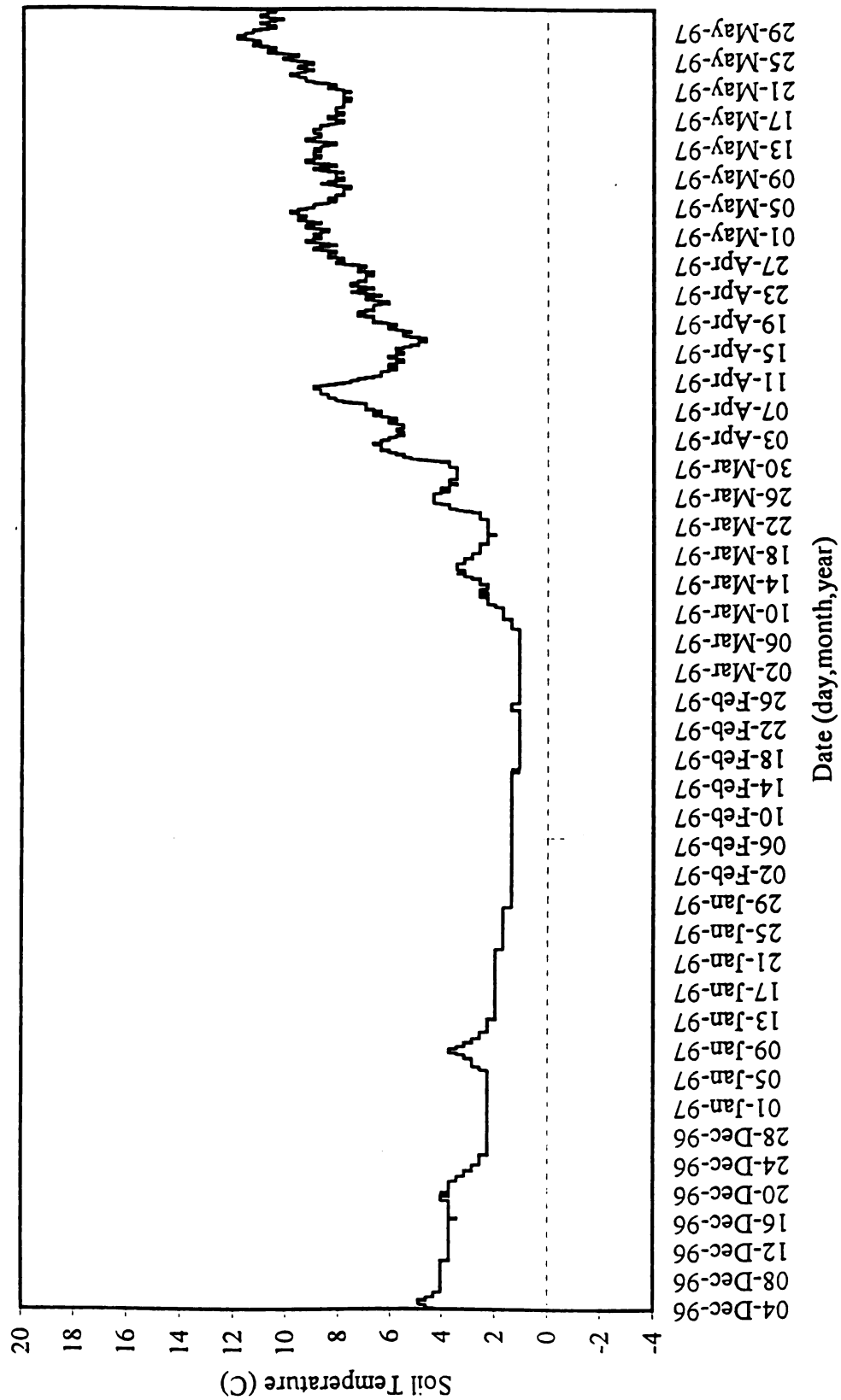


Figure 15. Plot of soil temperature data collected at 20 cm from the forested Zilwaukee-Misteguay site.

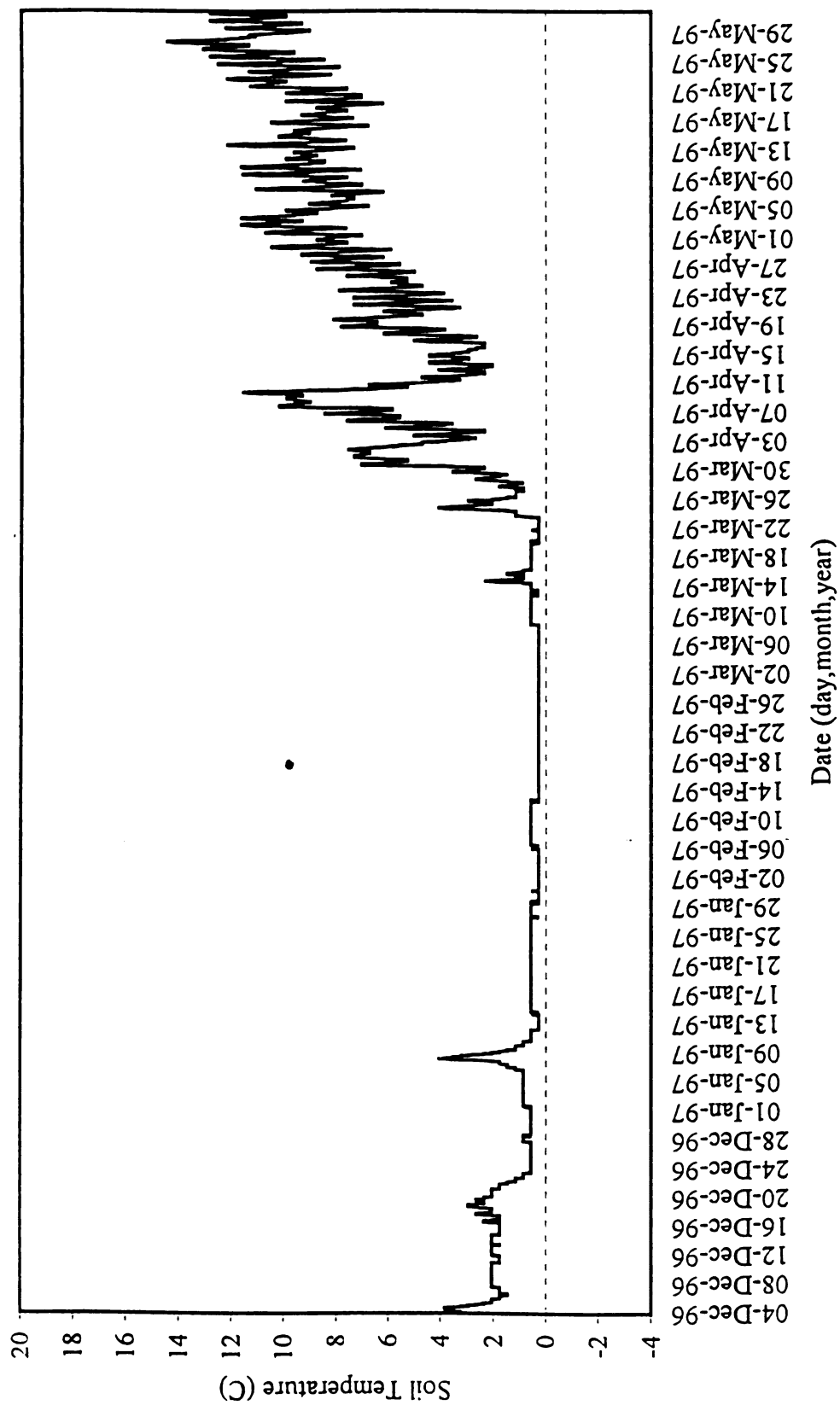


Figure 16. Plot of soil temperature data collected at 5 cm from the forested Parkhill site.

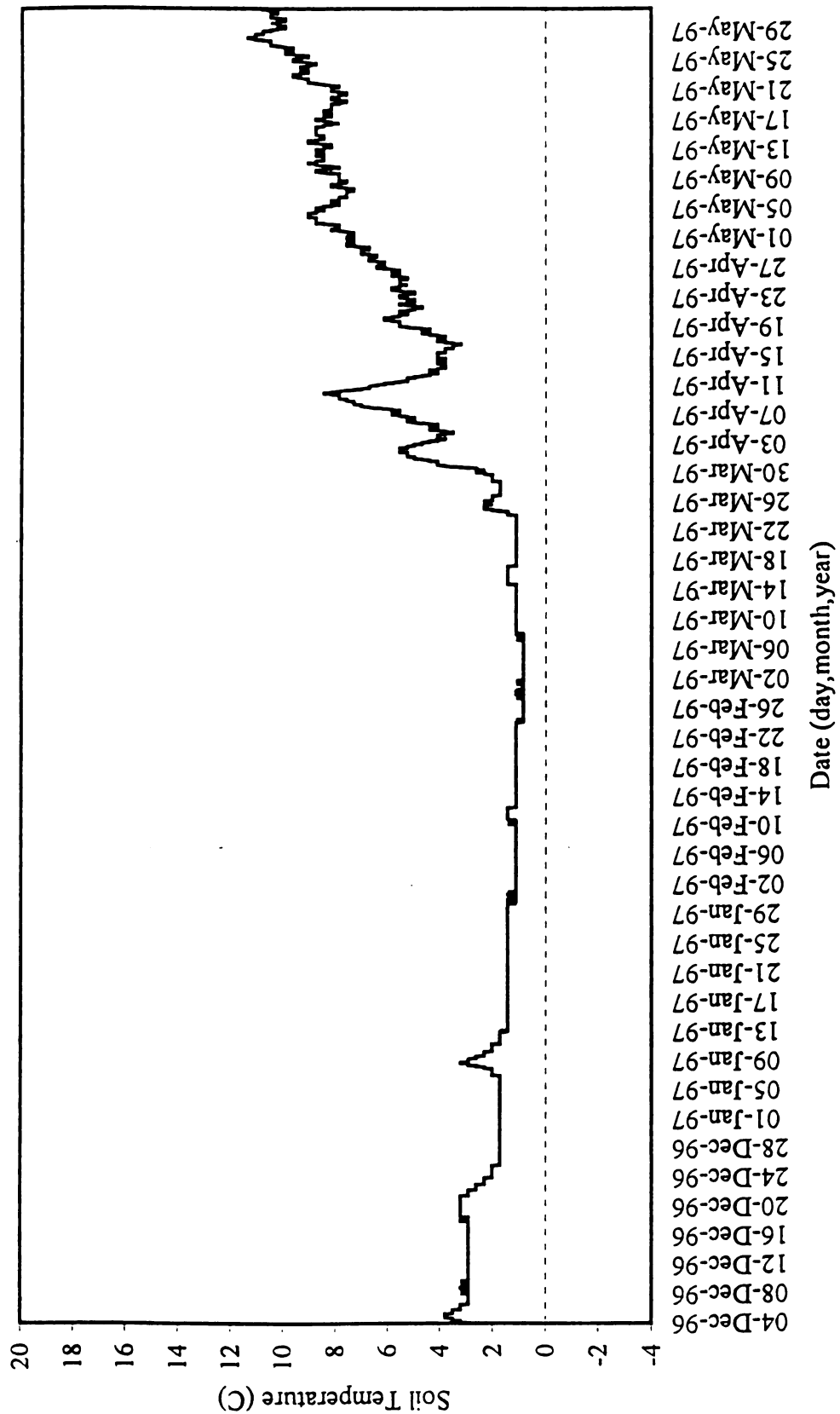


Figure 17. Plot of soil temperature data collected at 20 cm from the forested Parkhill site.

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(Fig. 12-13). Although the soil temperature data were not available, frozen soil was observed to depths >20 cm at the cultivated Parkhill site.

Periods of distinct changes and variability in the soil temperatures were determined from the temperature plots (Fig 12-17). These periods of time will hereafter be termed “pedothermic periods”. At least three distinct pedothermic periods could be determined based upon the data collected on the soils over the duration of this study (Figures 12-17). These periods included Late Fall (December 4 to mid December), Winter (mid December to early-mid March), and Spring (early-mid March to end of May). Statistical data are provided on these periods for each of the sites in Table 2. Mean soil temperatures and standard deviations for the periods are graphed in Figures 18 to 19.

Decreasing soil temperatures and low daily temperature variability were characteristics of the Late Fall period (Table 2; Fig. 18-19). Since the collection of soil temperatures did not begin until December 4, 1996, only limited interpretation of the Late Fall pedothermic period can be made. During this period mean soil temperatures at the sites ranged from 1.16 (5 cm cultivated Zilwaukee-Misteguay) to 3.73°C (20 cm forested Zilwaukee-Misteguay) (Table 2). In addition, variability in soil temperatures during this period was low, with standard deviations of the mean soil temperatures only ranging from 0.39 (20 cm forested Parkhill) to 0.70 (5 cm cultivated Zilwaukee-Misteguay) (Table 2). Low variability in the soil temperatures can be attributed to the insulating effect of snowpack, the result of above normal snowfall during December, 1996 (Fig 9-10).

Table 2. Statistical data on the soil temperatures for each pedothermic period during the 1996-97 winter season at the Zilwaukee-Misteguay and Parkhill sites.

LOCATION	LAND USE	DEPTH (cm)	PERIOD	START DATE	END DATE	PERIOD HIGH TEMP (C)	PERIOD LOW TEMP (C)	PERIOD TEMP RANGE (C)	PERIOD MEAN TEMP (C)	STD DEV
Zilwaukee-Misteguay	Forest	5	Late Fall	04-Dec-96	23-Dec-96	4.68	1.14	3.54	2.87	0.62
			Winter	24-Dec-96	06-Mar-97	4.09	0.54	3.55	0.97	0.54
			Spring	07-Mar-97	31-May-97	14.49	0.54	13.95	6.84	3.15
	20	20	Late Fall	04-Dec-96	25-Dec-96	4.91	2.27	2.64	3.73	0.54
			Winter	26-Dec-96	07-Mar-97	3.74	1.08	2.66	1.69	0.58
			Spring	08-Mar-97	31-May-97	11.82	1.38	10.44	6.53	2.66
Zilwaukee-Misteguay	Cultivated	5	Late Fall	04-Dec-96	23-Dec-96	4.15	-0.28	4.43	1.16	0.70
			Winter	24-Dec-96	13-Mar-97	4.44	-2.71	7.15	-0.34	0.68
			Spring	14-Mar-97	31-May-97	17.47	-0.28	17.75	6.83	3.89
	20	20	Late Fall	04-Dec-96	25-Dec-96	3.43	0.77	2.66	1.96	0.47
			Winter	26-Dec-96	07-Mar-97	2.85	-0.42	3.27	0.34	0.48
			Spring	08-Mar-97	31-May-97	13.26	0.47	12.79	6.31	3.18
Parkhill	Forest	5	Late Fall	04-Dec-96	23-Dec-96	3.83	0.58	3.25	2.00	0.55
			Winter	24-Dec-96	23-Mar-97	4.12	0.28	3.84	0.55	0.40
			Spring	24-Mar-97	31-May-97	14.49	0.88	13.61	7.11	3.05
	20	20	Late Fall	04-Dec-96	25-Dec-96	3.79	1.73	2.06	2.90	0.39
			Winter	26-Dec-96	24-Mar-97	3.21	0.84	2.37	1.33	0.37
			Spring	25-Mar-97	31-May-97	11.31	1.73	9.58	6.62	2.38

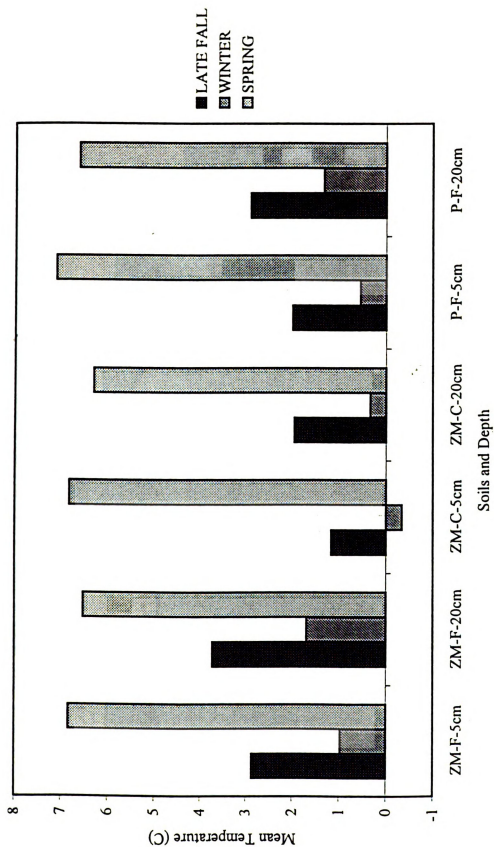


Figure 18. Graph of the pedothermic period mean temperatures from each of the soils in this study.

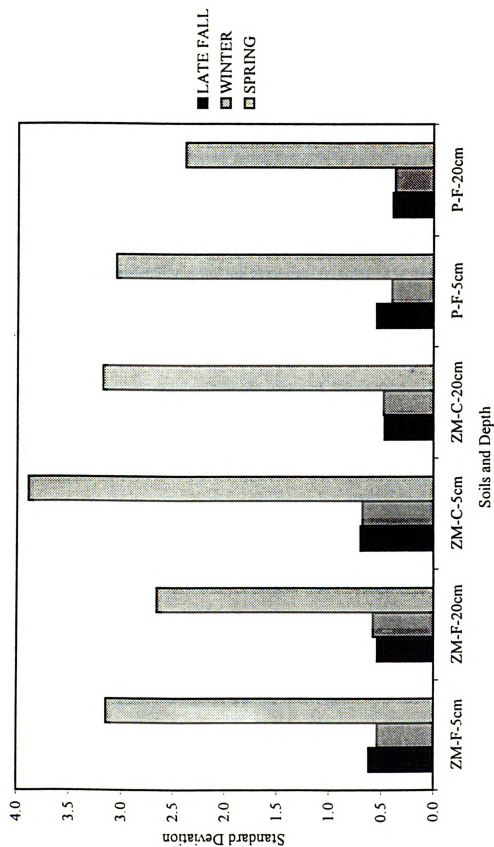


Figure 19. Graph of the standard deviations of the pedothermic period mean temperatures from each of the soils in this study.

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Depending upon the site, the end of the Late Fall period occurred between December 23-25, 1996. The end of the Late Fall period coincided with the first cold temperature event of December, occurring between December 22-24, 1996. During these three days, minimum daily air temperatures ranged from -14 to -16°C (Fig. 25-28). In addition, soil temperatures decreased during this cold temperature event (December 22-24, 1996) by as much as 1.78°C (5 cm forested Zilwaukee-Misteguay) before reaching a more steady state. Therefore, the cold temperature event between December 22-24, 1996, along with the low variability in soil temperatures, contributed to the transition from the Late Fall period to the Winter period.

During the Winter pedothermic period (mid December to early-mid March), mean soil temperatures maintained a near steady state with low variability. Mean soil temperatures during this period ranged from -0.34 (5 cm cultivated Zilwaukee-Misteguay) to 1.69°C (20 cm forested Zilwaukee-Misteguay) (Table 2). The shallow soils (5 cm) at the cultivated Zilwaukee-Misteguay site were the only soils in this study to maintain a subzero mean soil temperature (-0.34°C) during the Winter period, indicative of the effects of cold air temperatures on shallow, open soils. Shallow soils (5 cm) at the cultivated Parkhill site may have also maintained subzero soil temperatures during the Winter period, although no temperature data are available.

Soil temperatures maintained low variability during the Winter period. Standard deviations of the mean soil temperatures for the Winter period ranged from 0.37 (20 cm forested Parkhill) to 0.68 (5 cm cultivated Zilwaukee-Misteguay) (Table 2). Near steady-state soil temperatures are influenced by the insulating effect of snow cover (Sharratt et

al., 1992), thus explaining the low variability in the soil temperatures at the sites during the Winter period. Variability in soil temperatures will vary from year to year depending upon the amount and extent of snowpack. Above normal snowfall during the 1996-97 winter at the study sites (Fig. 9-10) may have contributed to thicker snowpacks as compared to past years, thereby contributing to lower variability in the mean soil temperatures as compared to past years.

Soil temperature varies less at greater depth at the cultivated sites. As an example, at the cultivated Zilwaukee-Misteguay site, standard deviations of the mean soil temperatures at the depths of 5 and 20 cm were 0.68 and 0.48, respectively. Surface soils at open cultivated sites are more exposed to cold air temperatures during the winter than deeper within the soil (Sharratt, 1993). Fluctuating cold air temperatures during the winter would therefore cause more variability in the soil temperatures at the surface of the cultivated sites. At the forested sites, deeper soils do not necessarily have lower variability. At the forested Parkhill site, standard deviations at the depths of 5 and 20 cm were 0.40 and 0.37, respectively; at the forested Zilwaukee-Misteguay site, standard deviations at 5 and 20 cm were 0.54 and 0.58, respectively. Within forests, snowpack, vegetation, and litter insulate the soils from the cold air temperatures (Pierce et al., 1958), thereby limiting the extent of soil temperature variability near the surface as compared to the deeper soils.

The end of the Winter period depends upon the site, with end of period dates ranging from early to mid March, 1997 (Table 2). The Winter period ended as early as March 6 at the 5 cm forested Zilwaukee-Misteguay site, and as late as March 24 at the 20 cm forested Parkhill site. These dates marked a change from a period of near steady state

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soil temperatures to a period of generally increasing and highly variable soil temperatures. The later end to the Winter period at the 20 cm forested Parkhill site may have been due to the effects of vegetation and litter cover in the forest. Pierce et al. (1958) reported that cover in the forests can slow the warming of soils in the spring, thereby enabling frost conditions to persist longer in the forest soils than in open, cultivated soils.

The end of the Winter period coincided with the loss of snowpack from the sites. Although snowpack thickness varied throughout the 1996-97 winter, the period of time with the greatest snowpack thickness was approximately from December 3, 1996, to March 2, 1997 (Fig. 7-8). The lag time between the end of the snowpack (March 2) and the end of the Winter period (March 6-24) is due to the different microclimatic conditions at each site. Stein et al. (1994) reported soil temperatures (6 cm) increased above 0°C in the range of 5-25 days after snow disappearance at a study site in Quebec. Although other snowfall events occurred after March 2, snowpack never developed for long periods of time, generally only for one to four days, before it melted (Fig. 7-8). In addition, during the first week in March, warming daily air temperatures reached as high as 12°C at the cultivated Zilwaukee-Misteguay site (Appendix 1). Therefore, the loss of snowpack and warming daily air temperatures contributed to the warming of soil temperatures and the transition from the Winter period to the Spring period.

The third pedothermic period identified by this study was the Spring, occurring from early-mid March to late May, 1997. Mean soil temperatures had high rates of change and high variability during this period. During the Spring period, mean soil

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temperatures ranged from 6.31°C at 20 cm of the cultivated Zilwaukee-Misteguay site to 7.11°C at 5 cm of the forested Parkhill site. The mean soil temperatures for the Spring period increased significantly over the mean temperatures in the Winter period, increasing by as much as 7.17°C at 5 cm of the cultivated Zilwaukee-Misteguay site. In a similar study, Sharratt (1993) reported that mean minimum soil temperatures at 5 and 20 cm increased 6.9 and 7.9°C, respectively, between April and May with the loss of snowpack on a silt loam soil in interior Alaska.

During the Spring period, soil temperatures at the sites maintained high variability. Standard deviations of the mean soil temperatures ranged from 2.38 at 20 cm of the forested Parkhill site to 3.89 at 5 cm of the cultivated Zilwaukee-Misteguay site (Table 2). Higher variability in soil temperatures in the spring can be attributed to the melting of the snowpack and exposing the soils to fluctuating daily air temperatures (Stein et al., 1994). In addition, standard deviations of the mean soil temperatures at 20 cm (2.38 to 3.18) were lower than at 5 cm (3.05 to 3.89), respectively, for all of the sites (Table 2). Deep soils are insulated by overlying soil material and are less affected by fluctuating daily air temperatures than near the surface. Daily maximum-minimum soil temperature differences are therefore greater at 5 cm than at 20 cm for all of the sites throughout the Spring period.

The end of the Spring period for all of the sites was determined to be May 31, 1997, since no additional data were available to define a change from the Spring period to the Summer period. The Summer period would be expected to have less variability in the soil temperatures as compared to the Spring period due to an increase in canopy and

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vegetation cover. As foliage and vegetation developed during the spring and through the summer, the soils would receive less solar radiation. Chen et al. (1993) reported that, during a growing season, soil temperatures within a clearcut area have greater variability than soil temperatures inside a forest due to the effects of more direct solar radiation. Therefore a decrease in variability in the soil temperatures during the Summer period could be contributed to the reduction of solar radiation by canopy and vegetation. Additional soil temperature data would be needed to better define the change from the Spring period to the Summer period.

All the soil temperature plots have distinct high peaks which appear to coincide with periods of snowfall (Fig. 12-17). Snow accumulation can insulate soil from cold air temperatures (Benoit et al., 1986; Sharratt, 1993) and allow ground heat flux to temporarily warm the soil (Pikul et al., 1986; Kennedy and Sharratt, 1998). As an example, the significant snowfall that occurred around January 8, 1997 (Fig. 7), coincides with the noticeable increase in the soil temperatures at all of the sites (Fig. 12-17). On that day, soil temperature at the cultivated Zilwaukee-Misteguay site increased from 0 to 4.4°C at 5 cm and from 0.8 to 2.9°C at 20 cm. Snowfall might have briefly insulated the surface soils from the cold air temperatures and enabled heat from the subsurface to move upward via ground heat flux.

Heat fluxes can cause melting within the soil matrix, thereby adding 0°C water to the soil (Stein et al., 1994). Soil temperatures can increase via heat flux, but peak and then decrease as heat loss from the surface soil occurs due to cold air temperatures. Snow

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cover can limit the extent of heat loss, and therefore limit the extent to which the soil temperatures decrease in mid-winter (Benoit et al., 1986; Johnsson and Lundin, 1991).

Soil temperatures for the Zilwaukee-Misteguay sites display distinct differences relative to depth and land use. One difference within the Zilwaukee-Misteguay complex is that periods of soil freezing were measured at the cultivated site at all depths, whereas below 5 cm soils did not freeze at the forested site. Within the cultivated Zilwaukee-Misteguay complex, soils reached low temperatures of -2.7°C at 5 cm on February 20 and -0.4°C at 20 cm from February 20-22 (Fig. 12-13). Open fields and thin snowpack at the cultivated Zilwaukee-Misteguay site exposed the soils to extreme air temperatures throughout the winter, thereby contributing to soil freezing to depths of >20 cm. Similar observations were made on agricultural soils in northeastern Oregon (Pikul, Jr. et al., 1986) and west central Minnesota (Benoit et al., 1986).

Soil temperatures within the forested Zilwaukee-Misteguay complex reached a low of 0.5°C at 5 cm between January 29-30 and from February 7 to March 4; and 1.1°C at 20 cm from February 13 to March 4 (Fig. 14-15). Wooded cover and litter at the forested site affected the air-soil temperature relationship by insulating the soil from the cold temperatures. Surface residue (Benoit et al., 1986; Pikul et al., 1986) and various forest ecosystems (Stein et al., 1994; Kite, 1998) have been reported to influence the extent and depth of soil freezing.

Figures 20 and 21 display soil temperature differences between the forested and cultivated sites of the Zilwaukee-Misteguay complex at 5 and 20 cm, respectively.

Throughout the winter months, soil temperatures at both depths at the forested site were

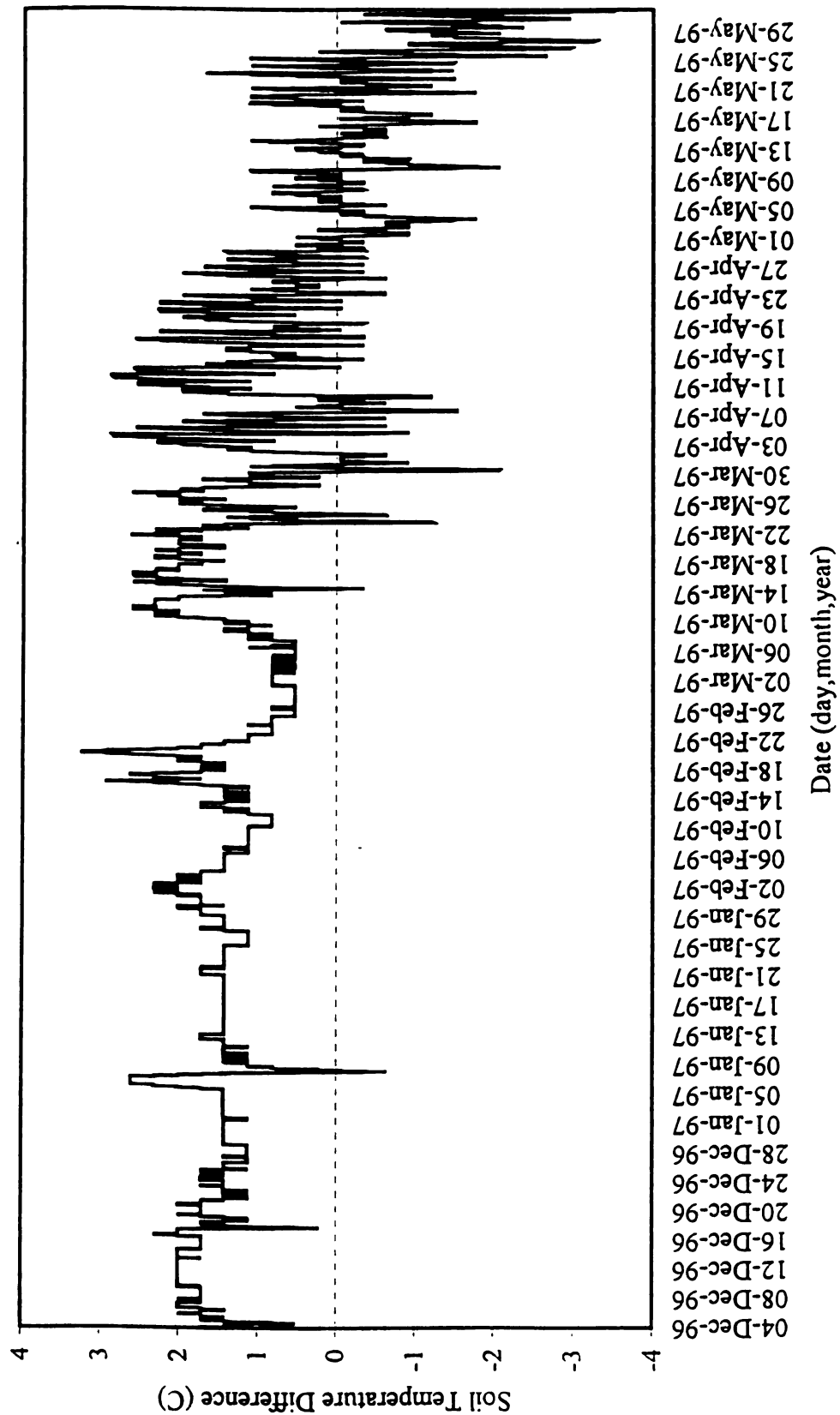


Figure 20. Plot of soil temperature differences between the Zilwaukee-Misteguay sites at 5 cm (forested minus cultivated).

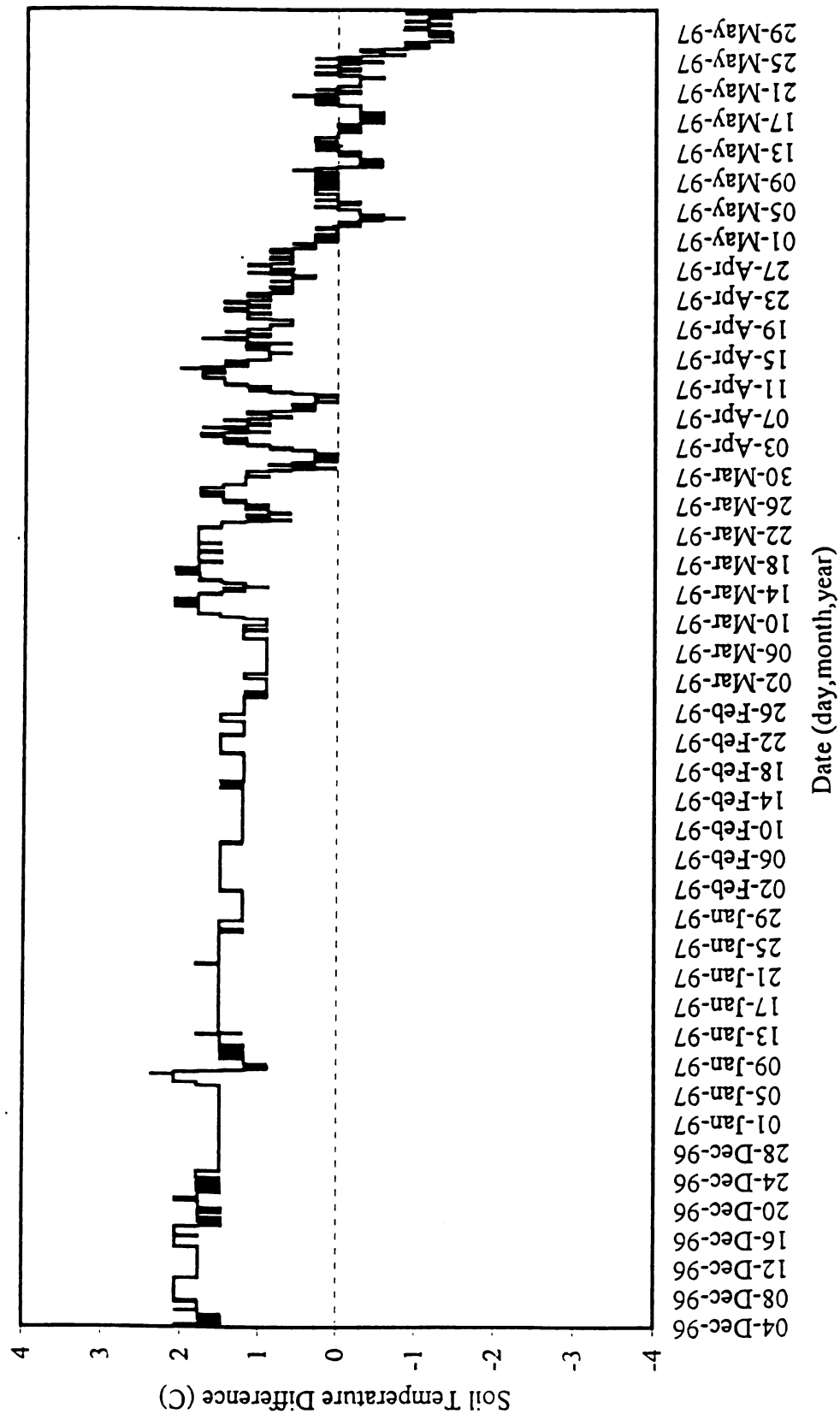


Figure 21. Plot of soil temperature differences between the Zilwaukee-Misteguay sites at 20 cm (forested minus cultivated).

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generally higher than at the cultivated site. During the Winter pedothermic period (December 24, 1996 to March 6-13, 1997), mean soil temperatures (5 cm) at the forested site were approximately 1.3°C higher than the cultivated site (Fig. 20). For the same period, mean soil temperatures (20 cm) at the forested site were approximately 1.4°C higher than the cultivated site (Fig. 21). After the change in pedothermic periods from Winter to Spring, soil temperatures at both depths began to fluctuate rapidly due to spring thaw and warming air temperatures.

Soil temperatures at the Zilwaukee-Misteguay sites also differ at the two depths. Figures 22 and 23 are plots of the temperature differences between the 5 and 20 cm depths at the Zilwaukee-Misteguay sites. At both the forest and cultivated sites, temperatures at 20 cm were warmer than at 5 cm throughout the winter months. During the Winter pedothermic period (December 24, 1996 to March 6-13, 1997), the mean soil temperature difference between the 5 and 20 cm depths at the cultivated site was approximately -0.7°C. During the same period, the soil temperature difference between the 5 and 20 cm depths at the forested site was also approximately -0.7°C. Cold air temperatures contributed to colder temperatures for the surface soils (5 cm). In addition, the soils at 20 cm are buffered by overlying soils and respond more slowly to the colder air temperatures (Isard and Schaetzl, 1995). Even though the soil did freeze to >20 cm depth at the cultivated Zilwaukee-Misteguay site, lower temperatures are consistently recorded at 5 cm than at 20 cm.

Fluctuation of soil temperature over time also differs by depth. Greater fluctuations in soil temperatures were observed at 5 cm than at 20 cm at both the

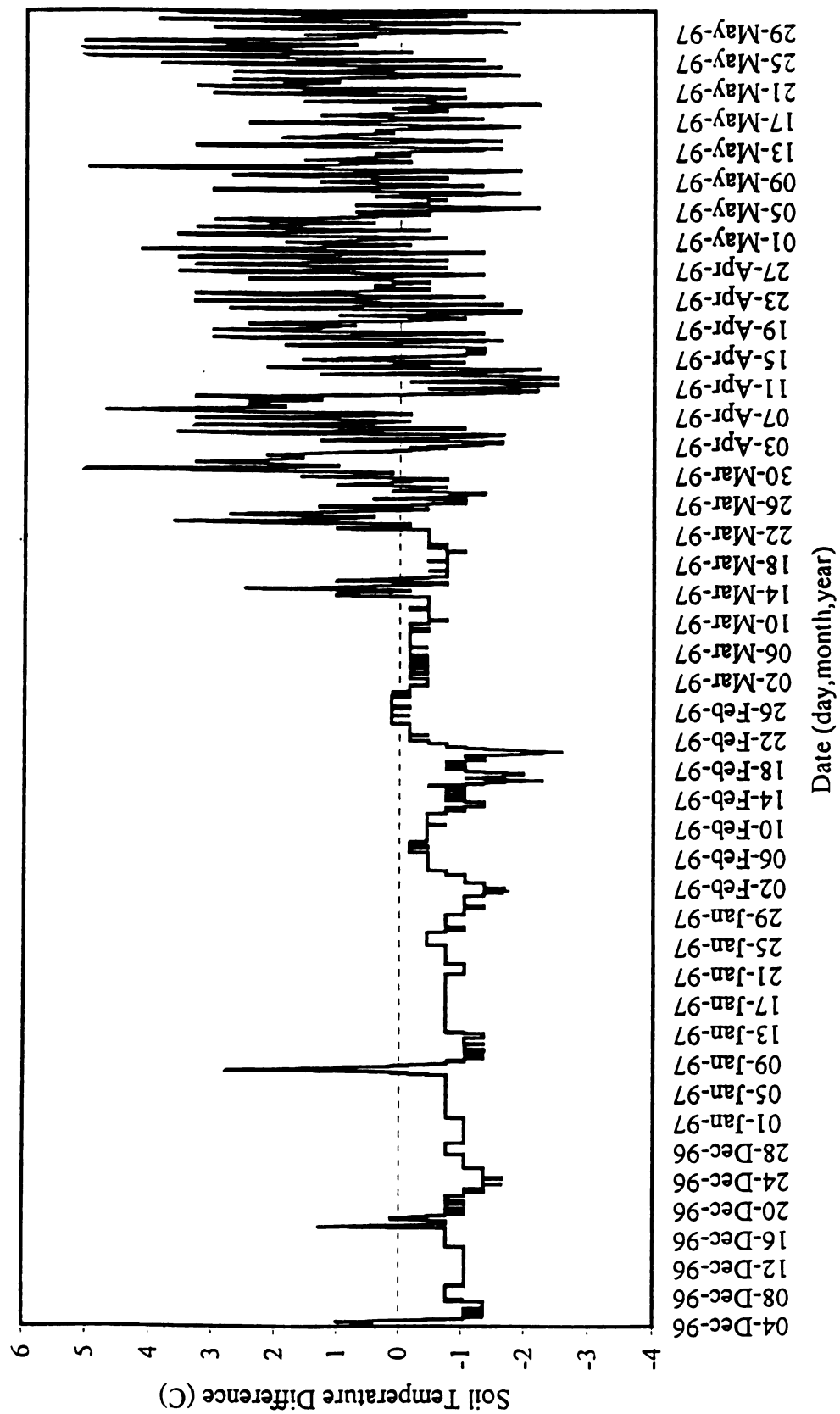


Figure 22. Plot of soil temperature differences at the cultivated Zilwaukee-Misteguay site (5 cm minus 20 cm).

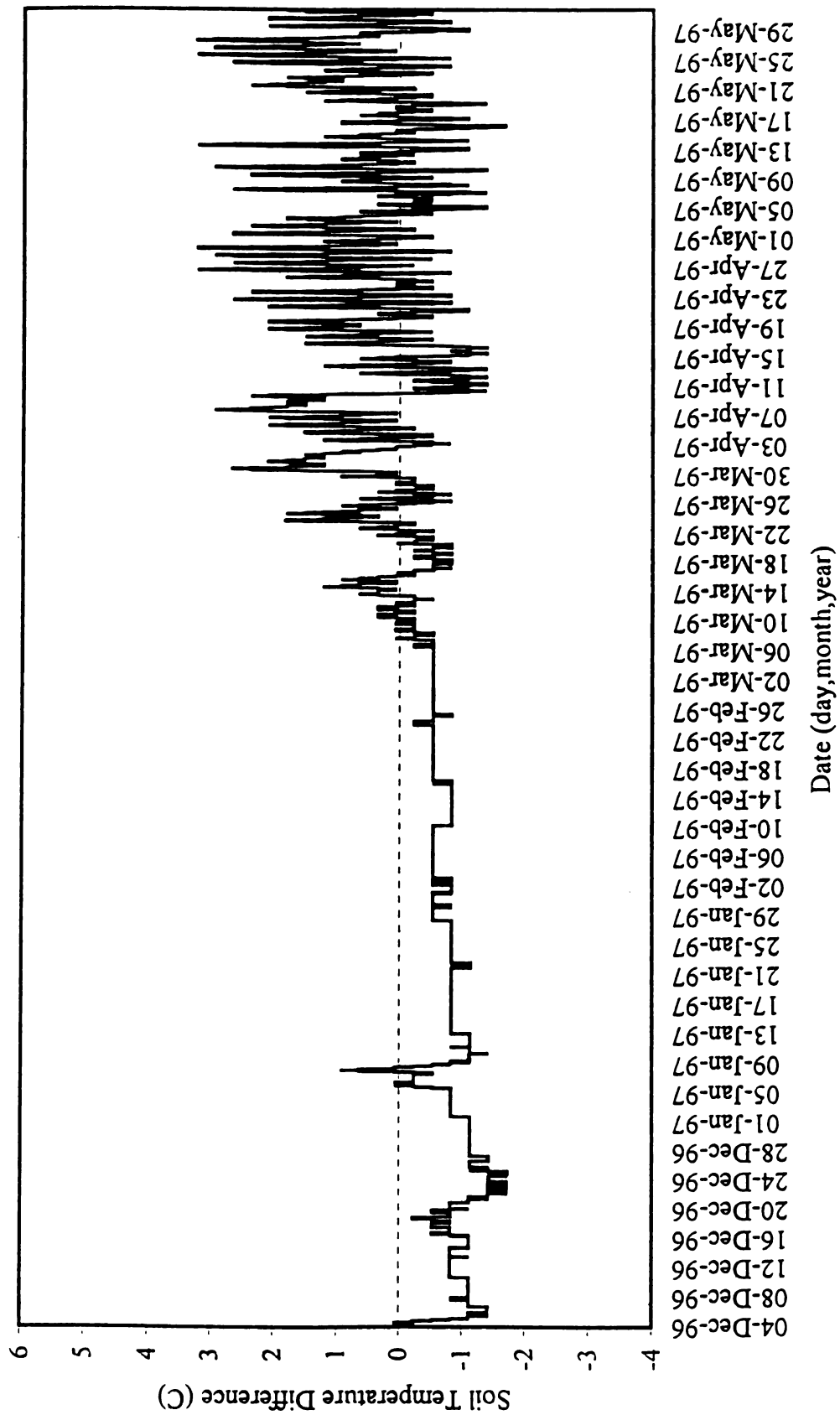


Figure 23. Plot of soil temperature differences at the forested Zilwaukee-Misteguay site (5 cm minus 20 cm).

cultivated and forested sites of the Zilwaukee-Misteguay complex (Fig. 12-15). For example, on March 30, 1997, the soil temperatures at the cultivated site fluctuated over the 24 hour period from 2.7 to 8.8°C at 5 cm and from 2.6 to 4.3°C at 20 cm. These temperature differences show that surface soils are affected by the cold air temperatures while the temperatures of the deeper soil are more buffered by overlying layers.

Thermal conductance properties of soils can influence the extent at which soils remain at a constant temperature (Johnsson and Lundin, 1991). When soil temperatures in the cultivated Zilwaukee-Misteguay complex fell below freezing, the soil would remain frozen for an extended period of time, from days to even weeks. For example, the soil temperature at 5 cm remained below 0°C over the period from January 11, to February 24, 1997. During this same period, the mean daily air temperature was only – 3.3°C and the lowest daily air temperature (–23.5°C) was measured on January 20. Cold air temperatures enabled the soil temperatures to remain below freezing during this period of time. Similar observations have been reported on agricultural soils of interior Alaska (Sharratt, 1993).

Since soil temperature data for the Parkhill soil were only obtained from the forested site, detailed discussion will hereby be limited to the forested site. Soil temperatures at the forested Parkhill site are similar to the forested Zilwaukee-Misteguay site; neither soil froze at 5 or 20 cm. Although temperature data are not available for the cultivated Parkhill soil, visual observations of frozen soil were noted during the February and March site visits. Open fields and low snowpack at the cultivated sites exposed the soils to extreme air temperatures. Conversely, vegetation, litter layer, and snowpack

helped insulate the forested Parkhill soil from the cold air temperatures. Low temperatures of only 0.3°C at 5 cm from January 29 to February 6 and from February 12 to March 8; and 0.8°C at 20 cm from February 24 to March 8 were recorded at the forested Parkhill site over the winter (Fig. 16-17).

Soil temperatures recorded at the forested Parkhill site also differ at the two depths. Figure 24 is a plot of the temperature differences between the 5 and 20 cm depths at the forested site of the Parkhill soil. As at the Zilwaukee-Misteguay sites, soil temperatures at 5 cm were generally lower than at 20 cm during the winter months. During the Winter pedothermic period (December 24, 1996, to March 24, 1997), the mean soil temperature difference between the 5 and 20 cm depths at the forested site was approximately -0.8°C. Overlying soil layers and forest litter buffered the forested Parkhill soils at 20 cm from the cold air temperatures, thereby causing the temperatures at 20 cm to remain slightly higher than at 5 cm throughout the winter months (Isard and Schaetzl, 1995). Starting around March 24, 1997, or the start of the Spring pedothermic period for the forested Parkhill site, soil temperatures at 5 cm became warmer than at 20 cm during the daytime hours (Fig. 24).

Similar to the characteristics of the forested Zilwaukee-Misteguay soil, fluctuation of soil temperature over time also differs by depth for the forested Parkhill soil. Throughout the Spring pedothermic period, ranges between high and low temperatures over a 24 hour period for the forested Parkhill soil are generally larger at 5 cm than at 20 cm (Fig. 16-17). For example, on April 23, 1997, the high and low soil temperatures during the 24 hour period ranged from 7.9 to 3.8°C (4.1°C difference) at 5 cm and from

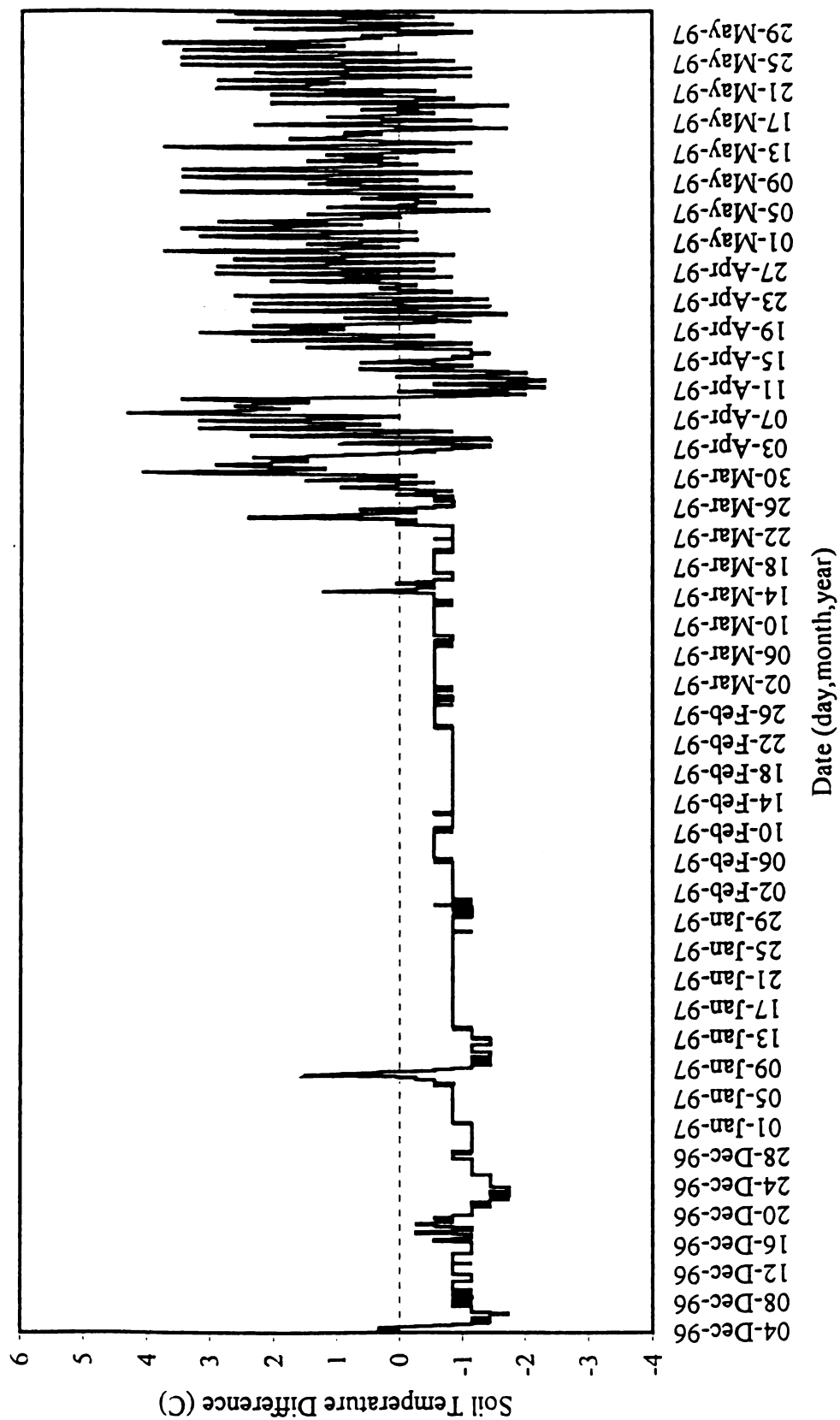


Figure 24. Plot of soil temperature differences at the forested Parkhill site (5 cm minus 20 cm).

5.8 to 5.0°C (0.8°C difference) at 20 cm. Temperatures of the Parkhill soils near the surface are therefore affected more by the daily fluctuation of air temperatures than are deeper soils during the Spring period.

Vegetation cover, soil moisture, and the variation of thermal properties with depth can influence the movement of heat through soils (Oliver et al, 1987). Time lag effects exist where deeper soils respond more slowly to fluctuations in the air temperatures (Isard and Schaetzl, 1995). At the forested Parkhill site, air temperatures warmed noticeably from -19.1°C on February 1 to 4.5°C on February 6 (Fig. 28). Soil temperatures warmed from 0.3 to 0.6°C at 5 cm on February 6 and from 1.1 to 1.4°C at 20 cm on February 10 (Fig. 16-17). The lag time reflects the snow cover, litter and vegetation cover, and soil moisture at the site.

As with the Zilwaukee-Misteguay sites, soil temperatures at the forested Parkhill site are insulated from the cold air temperatures by the forest litter and snow cover. Since the soil temperatures at the forested Parkhill site did not fall below 0°C (Fig. 16-17), there was no freeze-thaw activity at or below 5 cm during the winter. Although no data is available, soil temperatures did fall below 0°C at the cultivated Parkhill site and probably remained frozen for extended periods of time, similar to the soils of the cultivated Zilwaukee-Misteguay site.

Air Temperatures

Air temperature data, collected every 72 minutes from the four field sites, are provided in Figures 25-28. Raw data for the air temperatures are provided in Appendix 1. Although all the sites are within a 170 km² area of Saginaw County, differences in air temperatures between the sites are apparent.

Air temperatures during each of the pedothermic periods were examined statistically (Table 3). Figure 29 is a plot of the mean air temperatures at the cultivated and forested Zilwaukee-Misteguay and Parkhill sites for the Late Fall, Winter, and Summer periods. The beginning and end of each air temperature period is based upon the beginning and end dates of pedothermic periods at each respectively site. Loss of soil temperature data at the cultivated Parkhill site prevented an interpretation of the pedothermic periods for that site, therefore, the air temperature period for the cultivated Parkhill site was estimated using the pedothermic periods from the forested Parkhill site.

Mean air temperatures during the Late Fall period ranged from -1.13°C at the forested Zilwaukee-Misteguay site to 0.01°C at the cultivated Zilwaukee-Misteguay site; during the Winter period, temperatures ranged from -3.66°C at the forested Zilwaukee-Misteguay site to -1.93°C at the cultivated Parkhill site; and during the Spring period, temperatures ranged from 6.44°C at the forested Zilwaukee-Misteguay site to 9.44°C at the cultivated Parkhill site (Table 3). During all three periods at both the Zilwaukee-Misteguay and Parkhill sites, mean air temperatures at the cultivated setting were higher than at the respective forested setting. Bare fields at the cultivated sites enabled the air

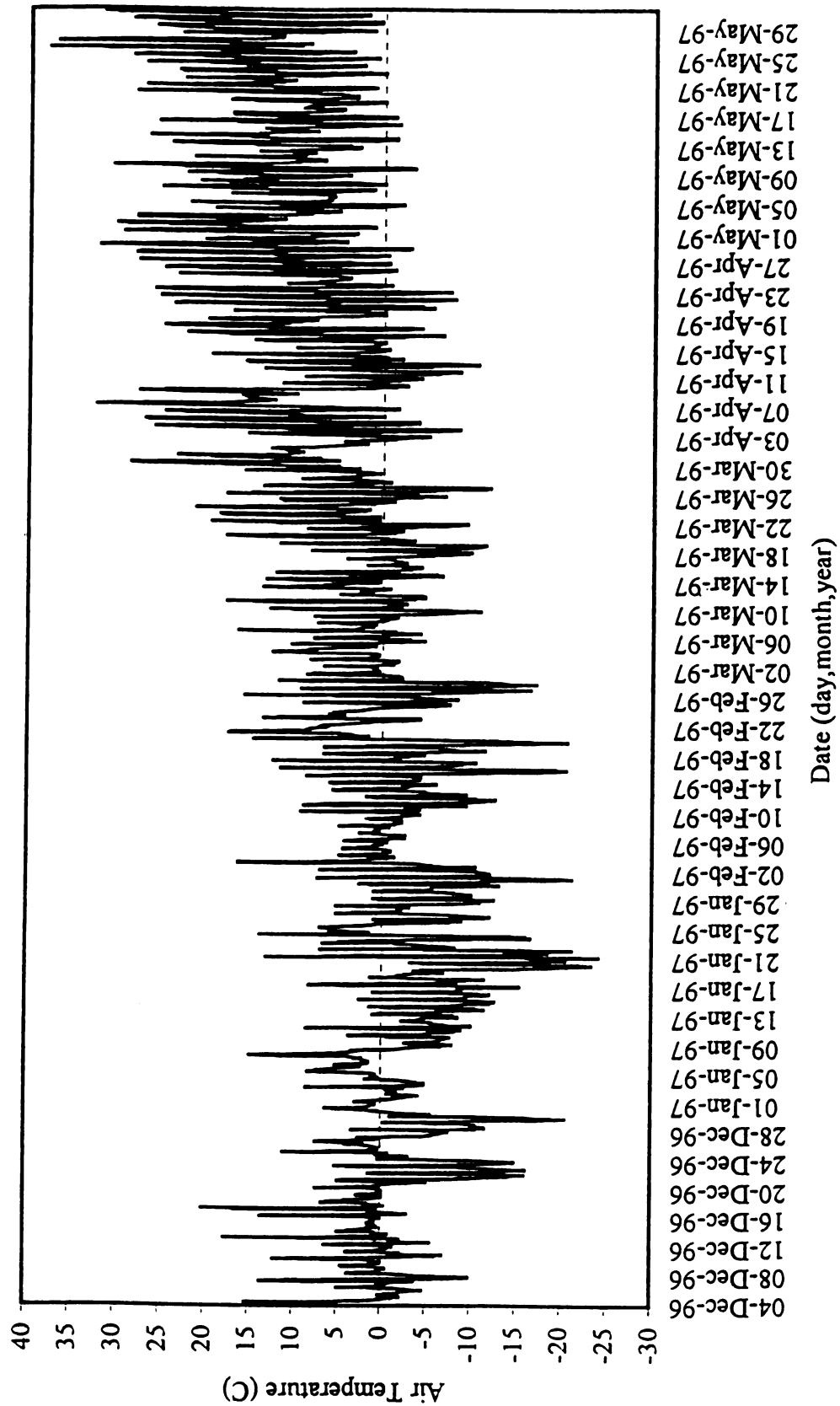


Figure 25. Plot of air temperature data collected from the cultivated Zilwaukee-Mistegway site.

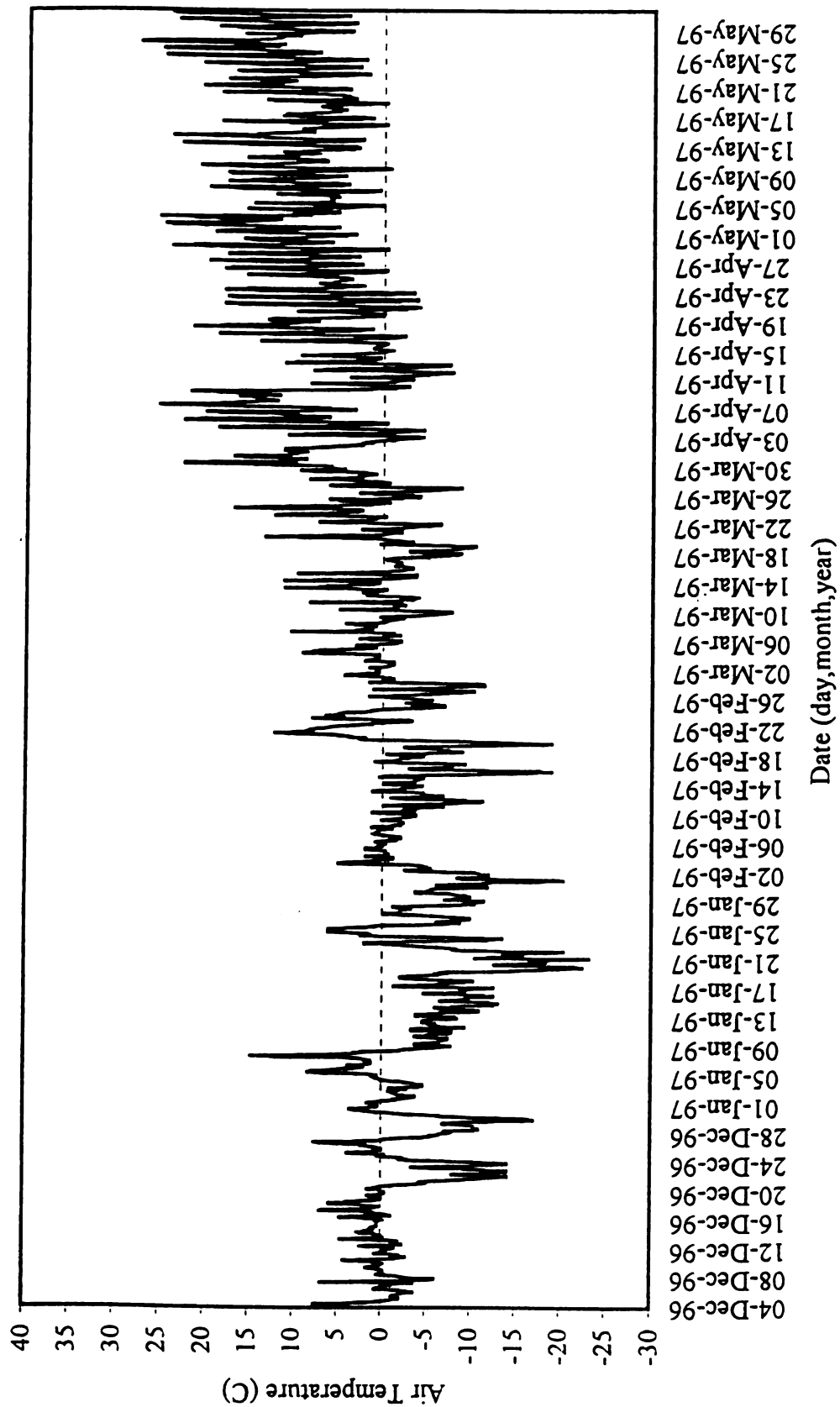


Figure 26. Plot of air temperature data collected from the forested Zilwaukee-Misteguay site.

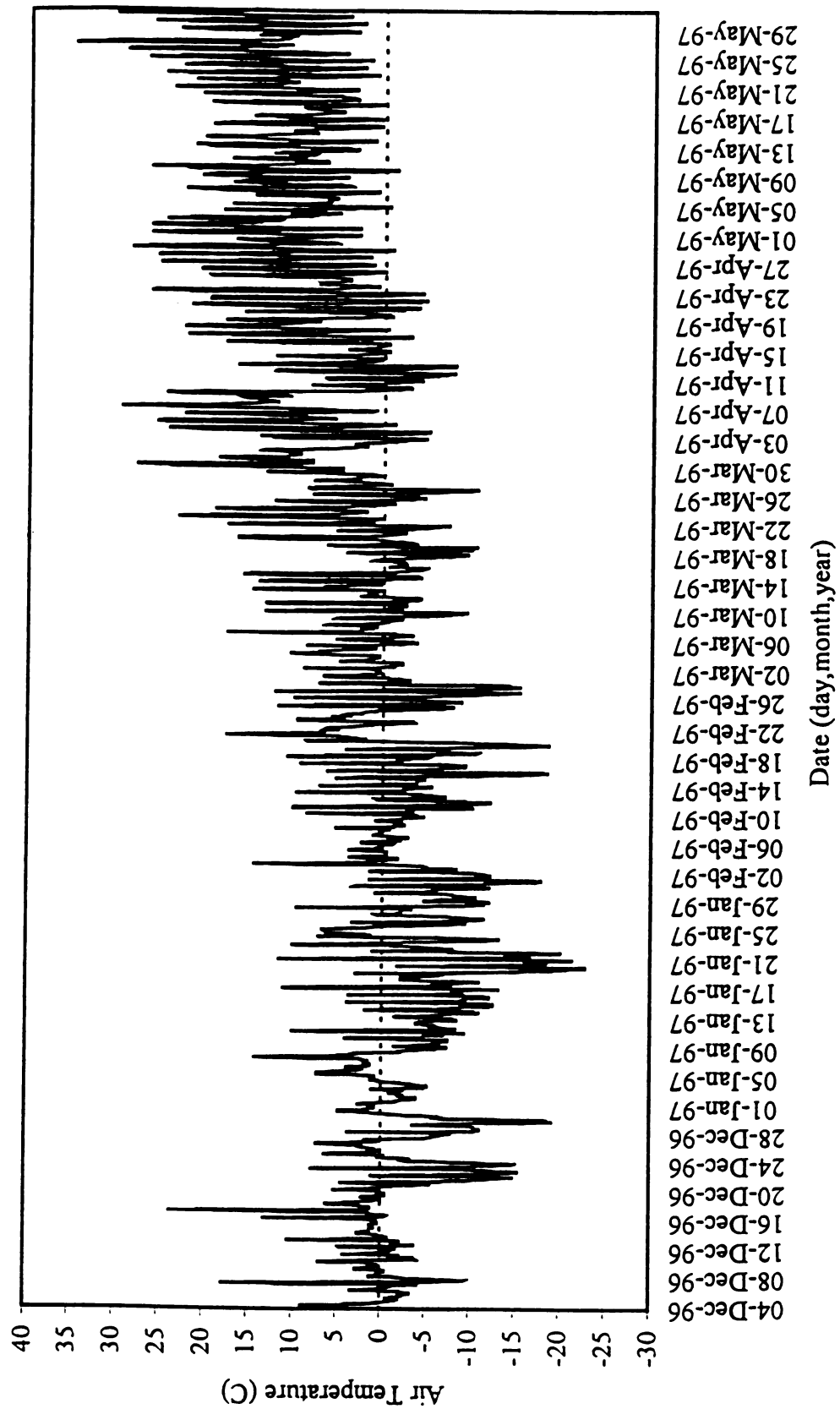


Figure 27. Air temperature data collected from the cultivated Parkhill site.

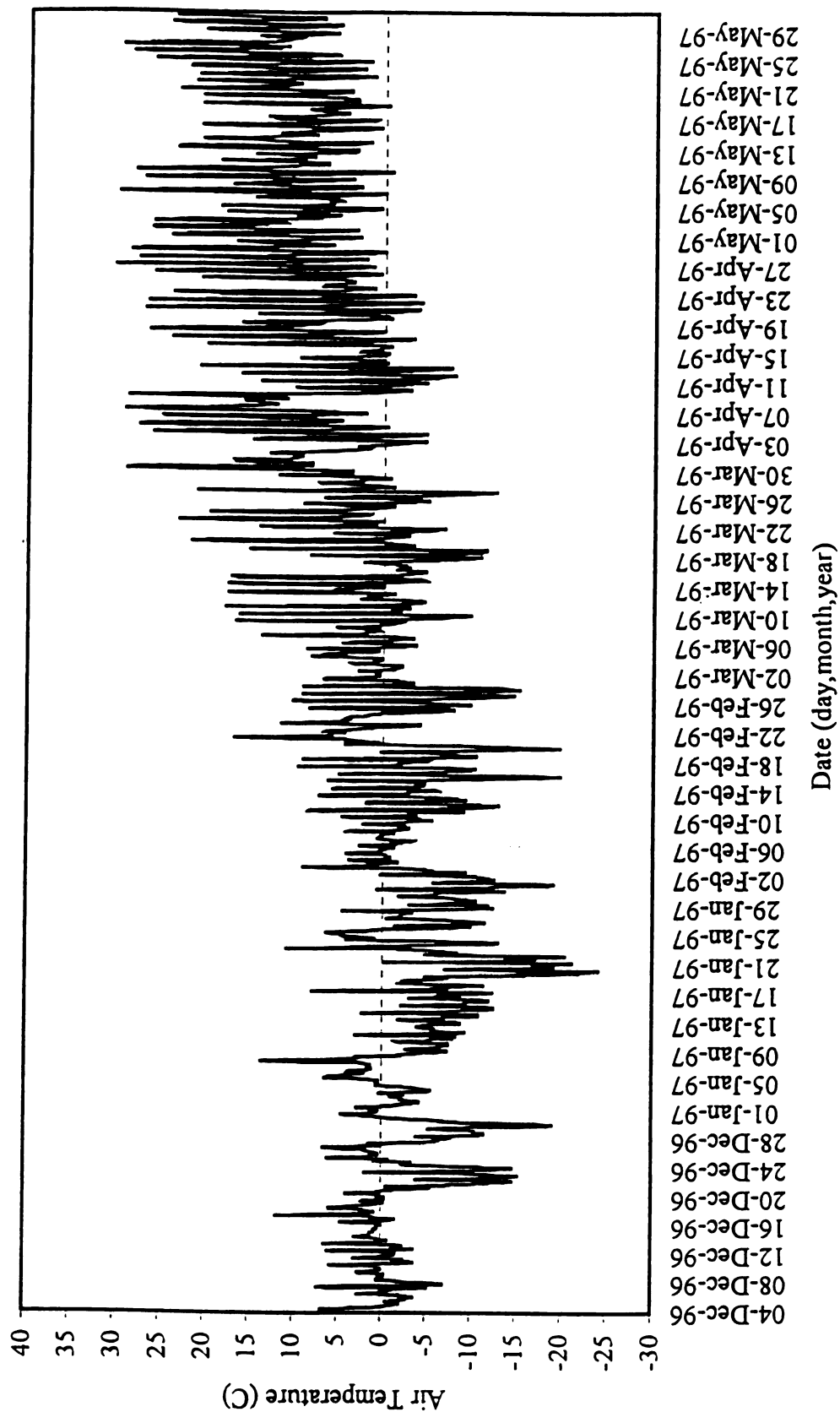


Figure 28. Plot of air temperature data collected from the forested Parkhill site.

Table 3. Statistical data on the mean air temperatures for the pedothermic periods identified at each of the sites during the 1996-97 winter season.

LOCATION	LAND USE	PERIOD	START DATE	END DATE	PERIOD HIGH TEMP (C)	PERIOD LOW TEMP (C)	PERIOD TEMP RANGE (C)	PERIOD MEAN TEMP (C)	STD DEV
Zilwaukee- Misteguay	Forest	Late Fall	04-Dec-96	23-Dec-96	7.72	-14.16	21.88	-1.13	4.29
		Winter	24-Dec-96	06-Mar-97	14.86	-23.29	38.15	-3.66	5.94
		Spring	07-Mar-97	31-May-97	27.53	-10.38	37.91	6.44	7.20
Zilwaukee- Misteguay	Cultivated	Late Fall	04-Dec-96	23-Dec-96	20.34	-16.07	36.41	0.01	5.44
		Winter	24-Dec-96	07-Mar-97	17.54	-24.24	41.78	-2.30	6.99
		Spring	08-Mar-97	31-May-97	38.07	-12.09	50.16	8.30	9.35
Parkhill	Forest	Late Fall	04-Dec-96	23-Dec-96	12.05	-15.36	27.41	-0.73	4.39
		Winter	24-Dec-96	23-Mar-97	23.27	-24.13	47.40	-2.46	6.61
		Spring	24-Mar-97	31-May-97	30.48	-12.52	43.00	9.20	7.89
Parkhill	Cultivated	Late Fall	04-Dec-96	23-Dec-96	23.56	-15.46	39.02	-0.10	5.19
		Winter	24-Dec-96	23-Mar-97	23.20	-22.76	45.96	-1.93	6.74
		Spring	24-Mar-97	31-May-97	34.98	-10.49	45.47	9.44	7.96

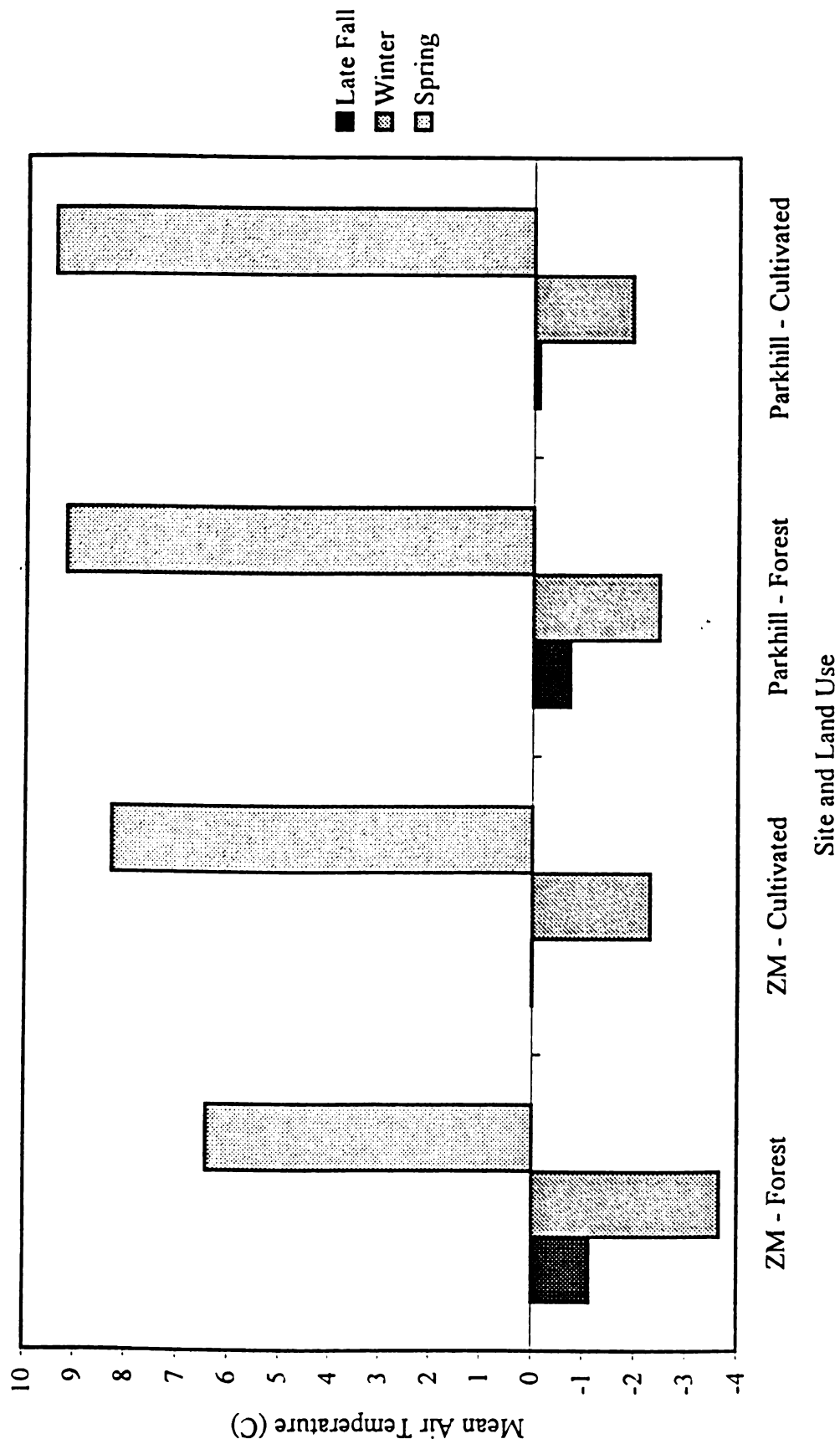


Figure 29. Graph of the mean air temperatures for the pedothermic periods identified at each of the sites.

temperatures to be greatly influenced by daily fluctuations in the solar radiation, wind, and precipitation during the winter months. In a similar study comparing a clear-cut region with a closed canopy forest, it was concluded that higher average daytime air temperatures within the clear-cut region are related to greater irradiance (Carlson and Groot, 1997).

Fluctuations in air temperatures, or the difference between maximum and minimum temperatures, at each of the sites can be examined by standard deviations (Table 3). Figure 30 is a plot of the standard deviations of the mean air temperatures for each period at each site. All four sites had significant increases in their standard deviations from the Winter period to the Spring period, implying larger variability in the air temperatures in the spring. Increases in the standard deviations from the Winter to Spring periods ranged from 1.22 at the cultivated Parkhill site to 2.36 at the cultivated Zilwaukee-Misteguay site.

In general, the open cultivated sites also often experience both higher maxima and lower minima monthly temperatures than do the forested sites. As an example, for May 1997, the maximum-minimum air temperature differences at the cultivated and forested Zilwaukee-Misteguay sites were 41.6 and 28.3°C, respectively (Table 3). Carlson and Groot (1997) reported maximum-minimum air temperature differences of 17.1 and 10.1°C in a clear-cut and nearby forested setting, respectively, over a three month summer period. In addition, Chen et al. (1993) reported maximum-minimum air temperature differences of

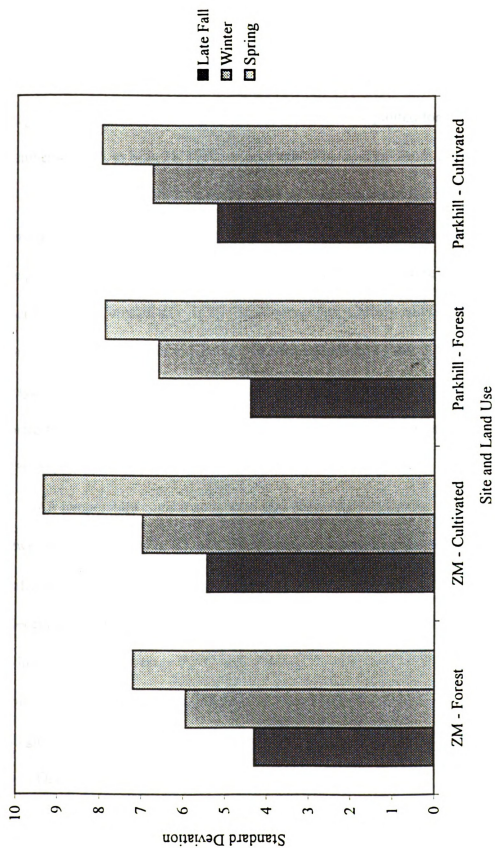


Figure 30. Graph of the standard deviations of the mean air temperatures for the pedothermic periods identified at each of the sites.

14.75 and 10.05°C in a clear-cut area and an adjacent forest, respectively, over a 35 day summer period.

Air temperature differences between the cultivated and forested Zilwaukee-Misteguay and Parkhill sites (cultivated minus forested) are plotted for the period of December 4, 1996, to May 31, 1997, respectively (Fig. 31-32). From December 24, 1996, to March 7, 1997 (Winter period), daily air temperatures at the cultivated Zilwaukee-Misteguay site were on average 1.3°C higher than at the forested site. For the same period, daily air temperatures at the cultivated Parkhill site were on average 0.6°C higher than at the forested site. In similar observations, Carlson and Groot (1997) reported that, over a three month period, air temperatures in a clear-cut region were on average 0.7°C higher than in a nearby forest setting. In addition, Chen et al. (1993) reported that, over a 35 day period, air temperatures in a clear-cut area were on average 0.61°C higher than in an adjacent forest.

Air temperature comparisons were also done between the two forested sites and the two cultivated sites (Fig. 33-34). This comparison was done in order to evaluate any significant climatic differences between sites with the same land use. During the period of December 4, 1996 to March 6, 1997 (Winter period), air temperatures at the forested Parkhill site were on average 0.3°C higher than at the forested Zilwaukee-Misteguay site (Table 3). For the same period of time, air temperatures at the cultivated Zilwaukee-Misteguay site were on average 0.3°C higher than at the cultivated Parkhill site.

One significant observation between the air temperature difference plots is that there is more daily fluctuation in the air temperatures at the cultivated site than at the

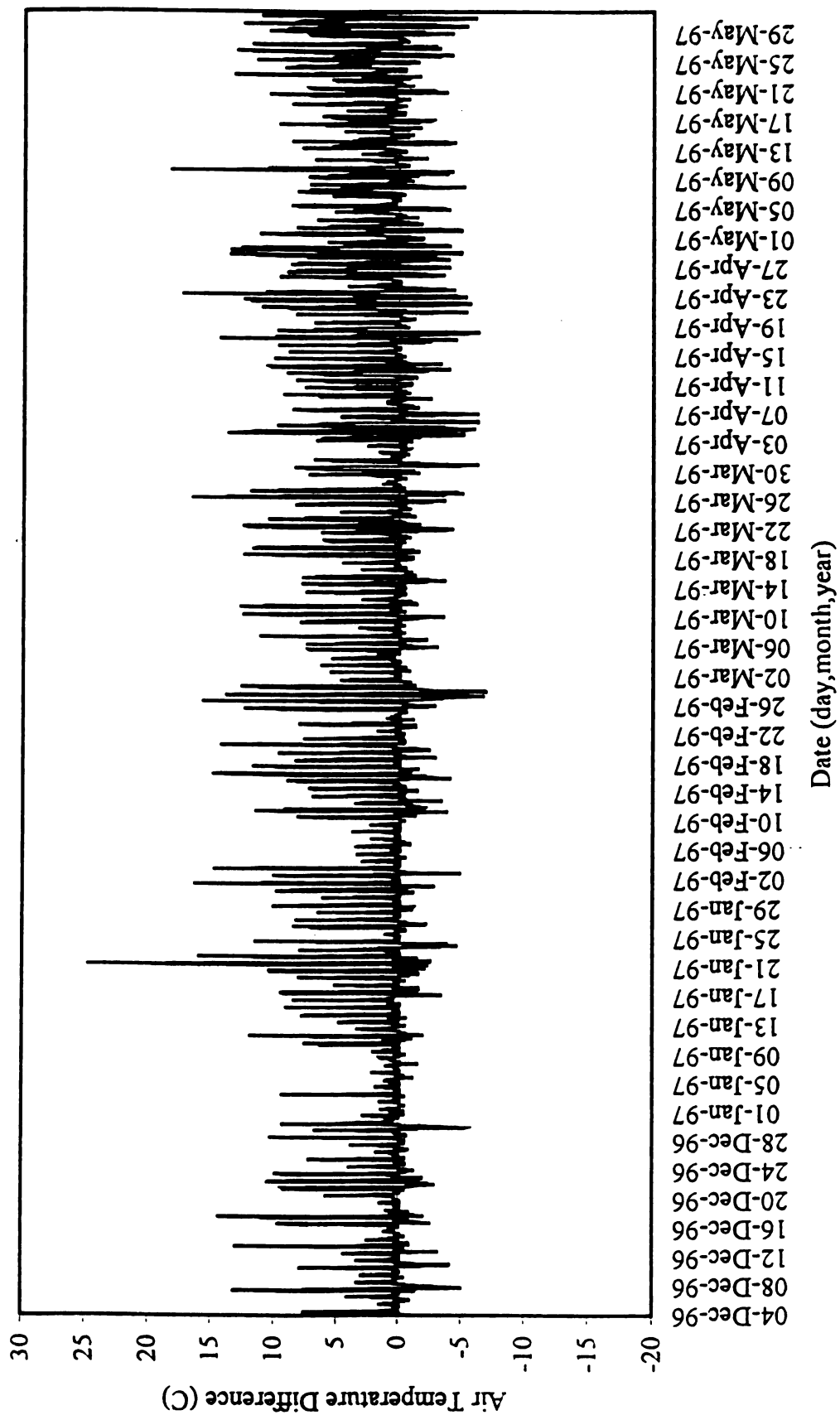


Figure 31. Plot of air temperature differences between the Zilwaukee-Misteguay sites (cultivated minus forested).

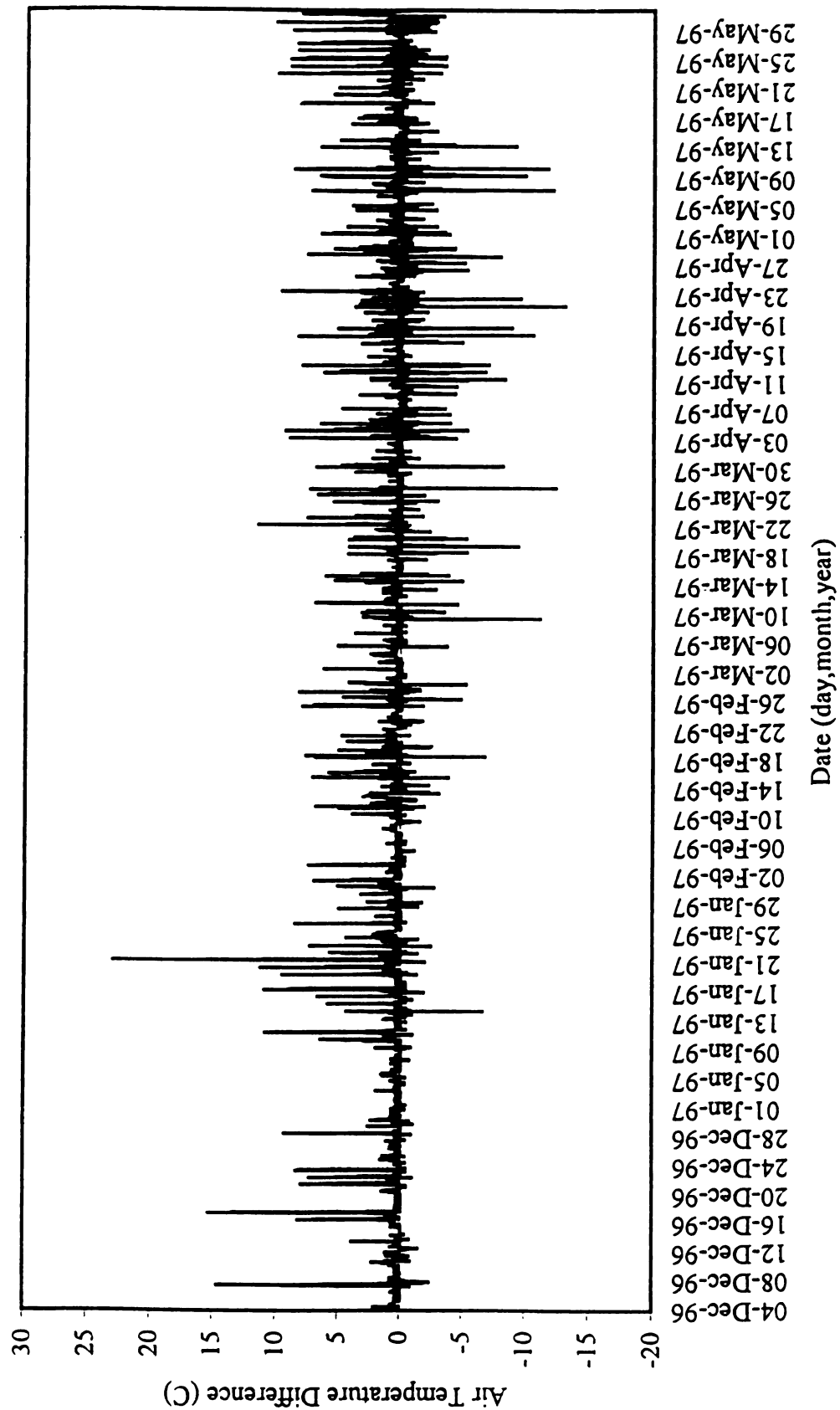


Figure 32. Plot of air temperature differences between the Parkhill sites (cultivated minus forested).

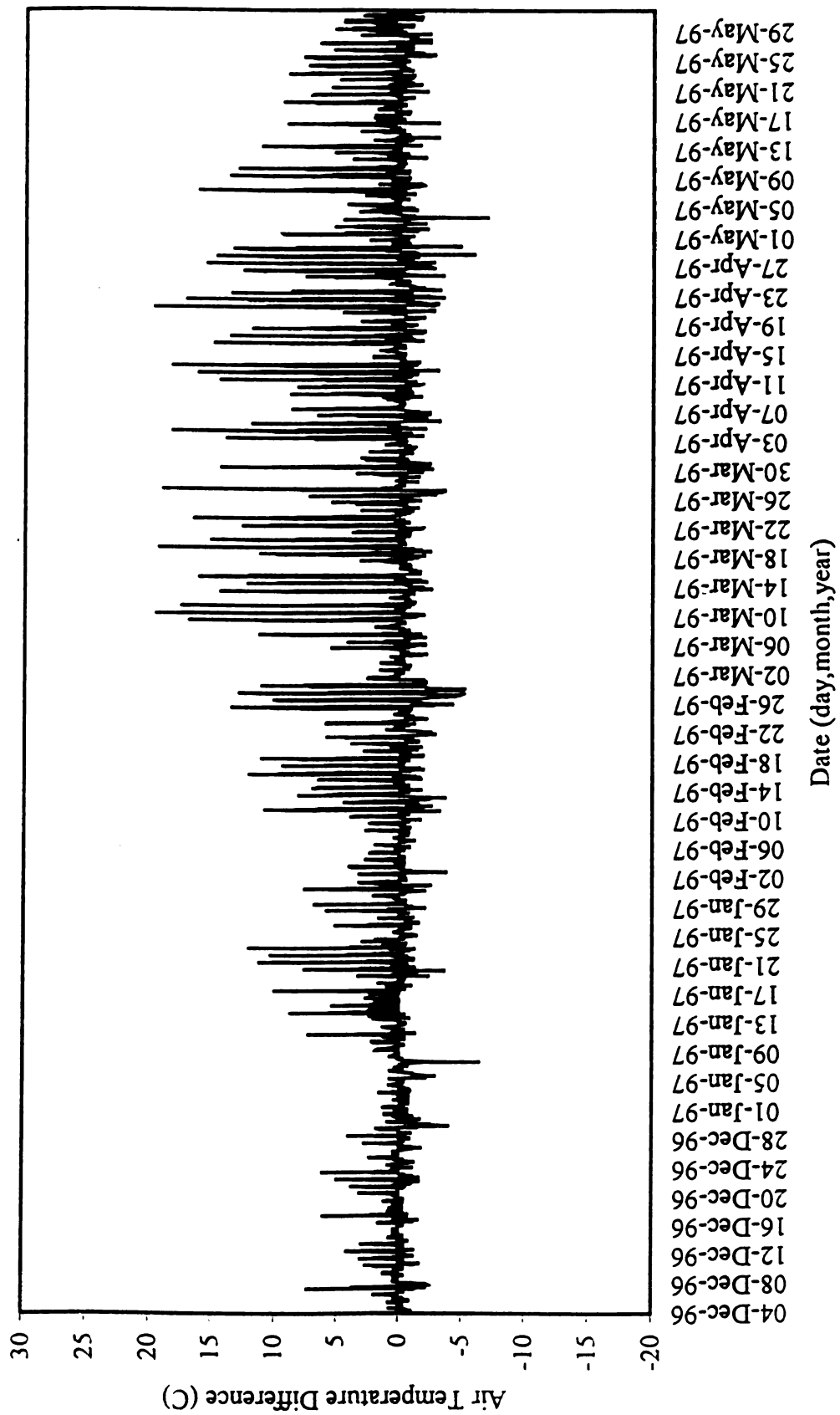


Figure 33. Plot of air temperature differences between the forested sites (Parkhill minus Zilwaukee)

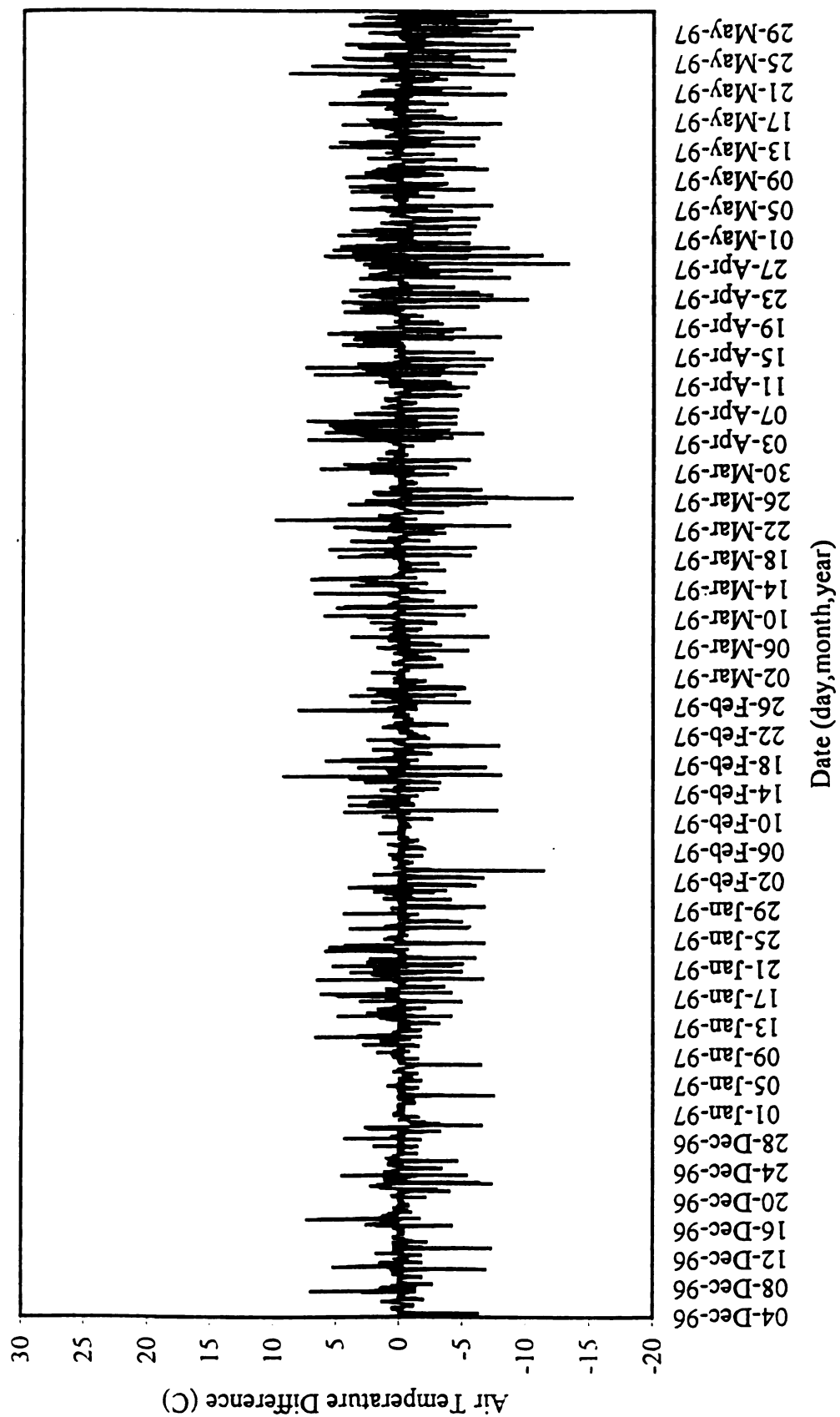


Figure 34. Plot of air temperature differences between the cultivated sites (Parkhill minus Zilwaukee).

forested site (Fig. 25-28). Solar radiation and wind can significantly affect the air temperatures at the cultivated sites. Greater fluctuations in air temperatures, especially lower monthly minima temperatures (Table 3), for the cultivated sites can influence both soil temperatures and the extent of freeze-thaw activity (Post and Dreibelbis, 1942; Sharratt, 1993). Larger differences in air temperatures were therefore noted between the two cultivated sites, even though the two sites are only approximately 11 km apart.

Frost Type

Frost and ice lenses were observed at both cultivated sites in February and March, 1997. In February, concrete frost had penetrated the Ap horizons at both the cultivated Zilwaukee-Misteguay and cultivated Parkhill sites. Concrete frost had developed to a depth of approximately 15-20 cm at the Zilwaukee-Misteguay site and >20 cm at the Parkhill site. In March, the frost had thawed in the upper 12-15 cm, but was still present below 15 cm at both cultivated soils. At both forested sites, frost was only observed very near the surface. Porous granular frost had developed in the top 2 to 3 cm of the A horizon at both the forested Parkhill and Zilwaukee-Misteguay sites.

Land use appears to affect the type of frost that develops in both the Parkhill and Zilwaukee-Misteguay soils. The open, bare fields of both cultivated sites expose the soils to extremely cold air temperatures and enable frost to penetrate deep within the Ap horizon (Post and Dreibelbis, 1942; Zuzel and Pikul, 1987). Concrete frost forms as a massive, dense structure. It develops into an impervious layer, thereby causing occasional ponding on the surface and limiting the amount of infiltration from snowmelt

and rain waters (Mostaghimi et al., 1988; Stein et al., 1994). Depending upon the spatial extent of the frozen soil, runoff of the ponded snowmelt waters may occur on top of the frozen surface and contribute locally to increased erosion and decreased ground water recharge (Pikul et al., 1986; Isard and Schaetzl, 1998).

Forested soils at both the Parkhill and Zilwaukee-Misteguay sites only developed a thin layer (2 to 3 cm) of porous, granular frost. The frost did not penetrate below 5 cm at either forest location. The wooded environment, in addition to several centimeters of O horizon material, insulates the soils, thereby not allowing a deep, dense frost layer to form. Porous, granular frost in the surface layers does not impede snowmelt infiltration as much as does concrete frost (Zuzel and Pikul, 1987). Infiltration of snowmelt water throughout the winter may cause the water table to rise nearer the surface in the forested environment. In addition, since the soils at both forested sites did not freeze below 5 cm, soil aggregate stability below 5 cm should not have been affected by freezing and thawing.

Ice lenses were observed in both the cultivated Parkhill and Zilwaukee-Misteguay soils during the February and March field visits. Although they were identified in both soil types, ice lenses were more prominent at the Zilwaukee-Misteguay site. Ice lens structures generally develop in soils that have fine textures, such as a clay, and high moisture contents (Chamberlain and Gow, 1979; Kay et al., 1985). Zilwaukee-Misteguay soils are more fine textured than are Parkhill soils (Table 1) and have higher moisture contents than Parkhill soils throughout the winter (Table 5). Extensive formation of ice lenses in the Zilwaukee-Misteguay soil would cause greater frost heave due to the expansion and breaking up of the soil matrix.

Ice lenses developed both horizontally and vertically within the soils. Ice lenses in the Zilwaukee-Misteguay soils ranged from 2-8 mm in thickness and up to 10 cm in length, while lenses in the Parkhill soils ranged from 4-8 mm in thickness and up to 4 cm in length. Although size and direction of development of ice lenses was similar in both soil types, morphology of the ice structures was very different. Ice lenses of the Parkhill soil generally developed as singular structures throughout the soil matrix, while lenses of the Zilwaukee-Misteguay soil were linked together and interconnected to form polygonal structures. The macromorphology of the ice lenses observed with the Zilwaukee-Misteguay soil is similar to those found elsewhere on clay loam (Kay et al., 1985) and other clay soils (Chamberlain and Gow, 1979).

Bulk Density

Soil bulk density data from all four of the sites are presented in Table 4. Three soil cores were collected from each sampling depth at each of the sites in both the fall (November) and again in the spring (May). The bulk density for each sample was determined and a mean value calculated for each depth. Reproducibility in the data is presented as the standard deviation. Bulk density standard deviations for all of the sites ranged from 0.01 to 0.08 g/cm³ (Table 4). This low range suggests that the reproducibility of the coring method is acceptable.

In comparing the standard deviations between the two soil types, the range for the Parkhill soil is 0.03 to 0.08 g/cm³, while the range for the Zilwaukee-Misteguay complex is 0.01 to 0.08 g/cm³ (Table 4). In addition, there was not a significant difference in the

Table 4. Bulk density and porosity data from each sampling depth of the Parkhill and Zilwaukee-Misteguay complex soils.

Soil	Land Use	Sampling Date	Sample Depth (cm)	Mean Bulk Density (g/cm ³)	Std Dev	Mean Porosity	Std Dev
Parkhill	Cultivated	Fall '96	5	1.72	0.04	0.35	0.01
			20	1.79	0.08	0.33	0.03
		Spring '97	5	1.81	0.05	0.32	0.02
			20	1.92	0.04	0.28	0.02
Parkhill	Forested	Fall '96	5	1.07	0.05	0.60	0.02
			20	1.35	0.04	0.49	0.02
		Spring '97	5	1.01	0.03	0.62	0.01
			20	1.37	0.08	0.48	0.03
Zilwaukee-Misteguay	Cultivated	Fall '96	5	1.53	0.02	0.42	0.01
			20	1.48	0.08	0.44	0.03
		Spring '97	5	1.49	0.02	0.44	0.01
			20	1.54	0.04	0.42	0.01
Zilwaukee-Misteguay	Forested	Fall '96	5	0.94	0.04	0.65	0.02
			20	1.43	0.08	0.46	0.03
		Spring '97	5	0.98	0.01	0.63	0.00
			20	1.32	0.05	0.50	0.02

reproducibility between the fall and spring sampling periods. The sample sets with the greatest deviation in their results (standard deviation of 0.08 g/cm³) were all from the 20-25 cm depth, although even these values are small and deemed acceptable. Large deviations in the bulk densities may be caused by the root channels within the soil matrix.

Mean bulk densities for all of the sites ranged from 0.94 to 1.92 g/cm³ (Fig. 35-36). Bulk density values varied between the soil types; the Parkhill soil ranged from 1.01 to 1.92 g/cm³, while for soils of the Zilwaukee-Misteguay complex, these values ranged from 0.94 to 1.54 g/cm³. Parkhill soils have slightly greater bulk densities than the soils of the Zilwaukee-Misteguay complex. Parkhill soils have loam textures; such coarser textured soils often have higher bulk densities than finer textured soils. In addition, for almost all of the sites, the bulk density at 20 cm was slightly greater than at 5 cm. Lower bulk densities at 5 cm as compared to 20 cm are due to breakup and mixing effects that occur within the surface layers. In addressing the changes in bulk density from fall to spring, each soil type will be reviewed individually.

Bulk densities within the forested Parkhill soil changed only slightly from the fall of 1996 to the spring of 1997; from 1.07 to 1.01 g/cm³ at 5 cm and from 1.35 to 1.37 g/cm³ at 20 cm (Fig. 35). Since the soil only froze to about 2 cm depth during the winter, bulk densities were not greatly affected by freeze-thaw activity. The decrease in bulk density at 5 cm may be attributed to spatial variation within the soils on the forest floor or by the lack of perfect reproducibility of the data. The change in bulk density at 20 cm is very small, increasing from 1.35 to 1.37 g/cm³. Since the soil temperatures at 20 cm only

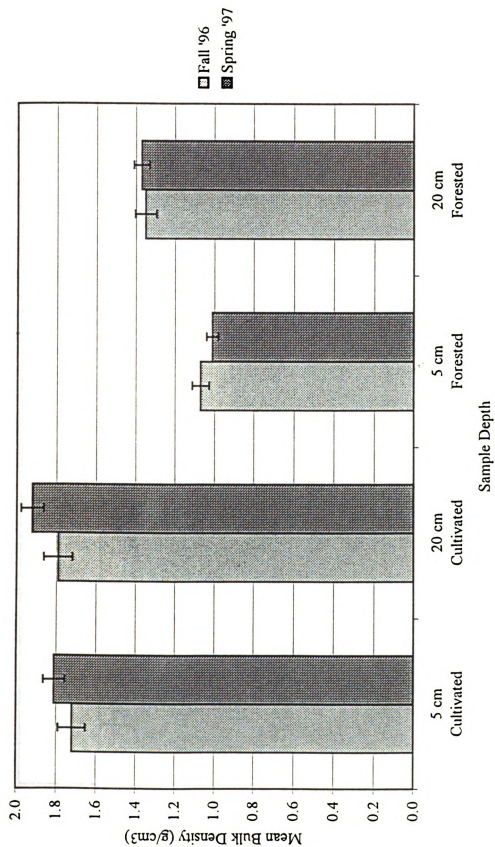


Figure 35. Changes in mean bulk densities of the Parkhill soils from the fall of 1996 to the spring of 1997 relative to depth and land use.

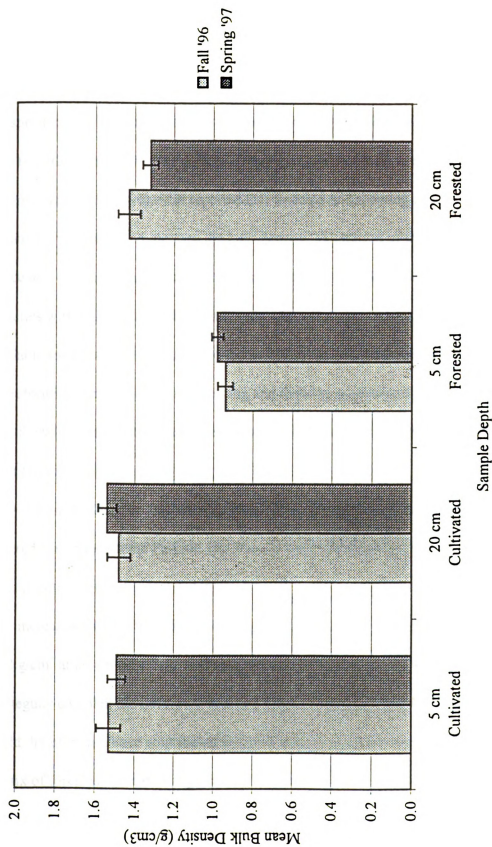


Figure 36. Changes in mean bulk densities of the soils of the Zilwaukee-Misreguay complex from the fall of 1996 to the spring of 1997 relative to depth and land use.

reached as low as approximately 1°C, soil structure was not affected by freeze-thaw processes, and hence, the bulk density changed little.

Bulk density within the cultivated Parkhill soil increased from the fall of 1996 to the spring of 1997 at both sampling depths, from 1.71 to 1.81 g/cm³ at 5 cm and from 1.79 to 1.92 g/cm³ at 20 cm (Fig. 35). These data coincide with the results of Chamberlain et al. (1990), who reported that freezing and thawing in clay soils can reduce the void ratio and increase the bulk density. Alteration of the soil matrix caused by ice lens formation, and subsequent reconsolidation may have increased the bulk densities within the cultivated Parkhill soils. Although soil temperature data are not available for the site, observations of frozen soil were noted during the winter of 1996-97. Therefore it can be assumed that freezing and thawing processes did occur within the soil over the winter, and that these processes contributed to the slight increases in bulk density from fall to spring.

Winter effects on the bulk densities within the Zilwaukee-Misteguay complex differed from those at the Parkhill site (Fig. 35-36). From fall of 1996 to spring of 1997, bulk densities within the forested Zilwaukee-Misteguay complex showed minimal change; they increased slightly from 0.94 to 0.98 g/cm³ at 5 cm while decreasing from 1.43 to 1.32 g/cm³ at 20 cm (Fig. 36). Soil temperature data show that the forested Zilwaukee-Misteguay complex did not freeze at either 5 or 20 cm (Fig. 14-15). Freeze-thaw activity could therefore not have contributed to the changes in the bulk density. However, the matrix of forested soil can be significantly influenced by root channeling and other macroporosity. Therefore, the increase in bulk density at 5 cm and decrease at 20 cm is

probably due only to spatial variations within the soil matrix, similar to trends at the forested Parkhill site.

From the fall of 1996 to spring of 1997, bulk densities of the cultivated Zilwaukee-Misteguay complex decreased slightly from 1.53 to 1.49 g/cm³ at 5 cm, while slightly increasing from 1.48 to 1.54 g/cm³ at 20 cm (Fig. 36). Recall that for the cultivated Parkhill soil, a slight increase in the bulk density at both 5 and 20 cm was observed. Soil temperature data (Fig. 12-13) for the cultivated Zilwaukee-Misteguay site illustrate that the soil at both depths froze during periods of the winter. Ice lenses were also observed within the soil matrix during February and March, 1997. The slight decrease in soil bulk density at 5 cm agrees with the work of Kay et al. (1985), who reported that bulk densities in a zero-till clay loam returned to values slightly less than what existed prior to freezing. The slight increase in soil bulk density at 20 cm may be due to reconsolidation upon thawing, similar to what was observed by Chamberlain et al. (1990). In the spring, reconsolidation within the soil matrix occurs as ice lens structures melt and the saturated soil drains. The consolidation period may have caused the soil at 20 cm to decrease its void ratio and thereby increase in bulk density.

Bulk density variations between the forested and cultivated sites of the Parkhill soil and the Zilwaukee-Misteguay complex yield insight into the effects of land use on soil properties. Bulk density values of the cultivated Parkhill soil ranged from 1.72 to 1.92 g/cm³, while values within the forested Parkhill soil ranged from 1.01 to 1.37 g/cm³ (Fig. 35). Within the Zilwaukee-Misteguay complex, bulk density values ranged from 1.48 to 1.54 g/cm³ and 0.94 to 1.43 g/cm³ at the cultivated and forested sites, respectively (Fig. 36). I conclude that consolidation by farming practices has contributed to greater

bulk densities within the cultivated soils. In addition, open fields at the cultivated sites enable the soils to freeze to depths greater than 25 cm, whereas trees and litter cover help insulate the forest soils from frost. These data show how changes in land use, such as a change from forest cover to agriculture, can affect or alter the physical properties of soil.

Moisture Content

Soil moisture data collected over the 1996-97 winter are presented in Table 5. Readings of soil moisture content were collected during monthly visits to the sites. Even though readings were only collected approximately once per month, to a certain extent they do reflect large scale moisture changes within the soils.

Soil moisture readings were generally higher in the Zilwaukee-Misteguay soils as compared to the Parkhill soils. Moisture contents of the Zilwaukee-Misteguay soils varied over the winter with depth and land use (Fig. 37). At the cultivated site, moisture contents were generally similar at both sampling depths. The mean values for soil moisture measured in December, February, and March were 0.39, 0.20, and 0.39 m^3/m^3 , respectively, at 5 cm; and 0.38, 0.38, and 0.40 m^3/m^3 , respectively, at 20 cm. In February, the moisture contents decreased relative to the previous readings in December, but the decrease was greater at 5 cm than at 20 cm. Low soil temperatures at 5 cm in February (Fig. 12) may have resulted in more frozen ice lenses, thereby decreasing the moisture content in the soil proper (5 cm). Soil moisture at 5 cm is greater in March than February because the ice thawed and rewetted the soil matrix.

Table 5. Soil moisture values at both 5 and 20 cm for the Parkhill and Zilwaukee-Misteguay complex sites.

Soil	Sample Depth (cm)	Land Use	Sampling Date	Mean Soil Moisture (m^3/m^3)	Std Dev	Land Use	Sampling Date	Mean Soil Moisture (m^3/m^3)	Std Dev
Zilwaukee-Misteguay	5	Cultivated	11/10/1996	NA	NA	Forested	11/10/1996	NA	NA
	20			NA	NA			NA	NA
	5		12/06/1996	0.39	0.00		12/06/1996	0.40	0.01
	20			0.38	0.01			0.36	0.01
	5		02/02/1997	0.20	0.01		02/02/1997	0.47	0.00
	20			0.38	0.01			0.43	0.01
	5		03/08/1997	0.39	0.00		03/08/1997	0.42	0.01
	20			0.40	0.01			0.43	0.01
	5		05/26/1997	NA	NA		06/01/1997	NA	NA
	20			0.36	0.02			0.39	0.01
Parkhill	5	Cultivated	11/10/1996	0.36	0.00	Forested	11/10/1996	0.39	0.00
	20			0.32	0.00			0.35	0.01
	5		12/06/1996	0.34	0.02		12/06/1996	0.41	0.01
	20			0.34	0.01			0.36	0.00
	5		02/02/1997	0.16	0.02		02/02/1997	0.39	0.01
	20			0.08	0.02			0.38	0.01
	5		03/08/1997	0.34	0.01		03/08/1997	0.46	0.01
	20			0.28	0.01			0.40	0.02
	5		05/26/1997	NA	NA		05/26/1997	NA	NA
	20			0.33	0.01			NA	NA

NA = not measured

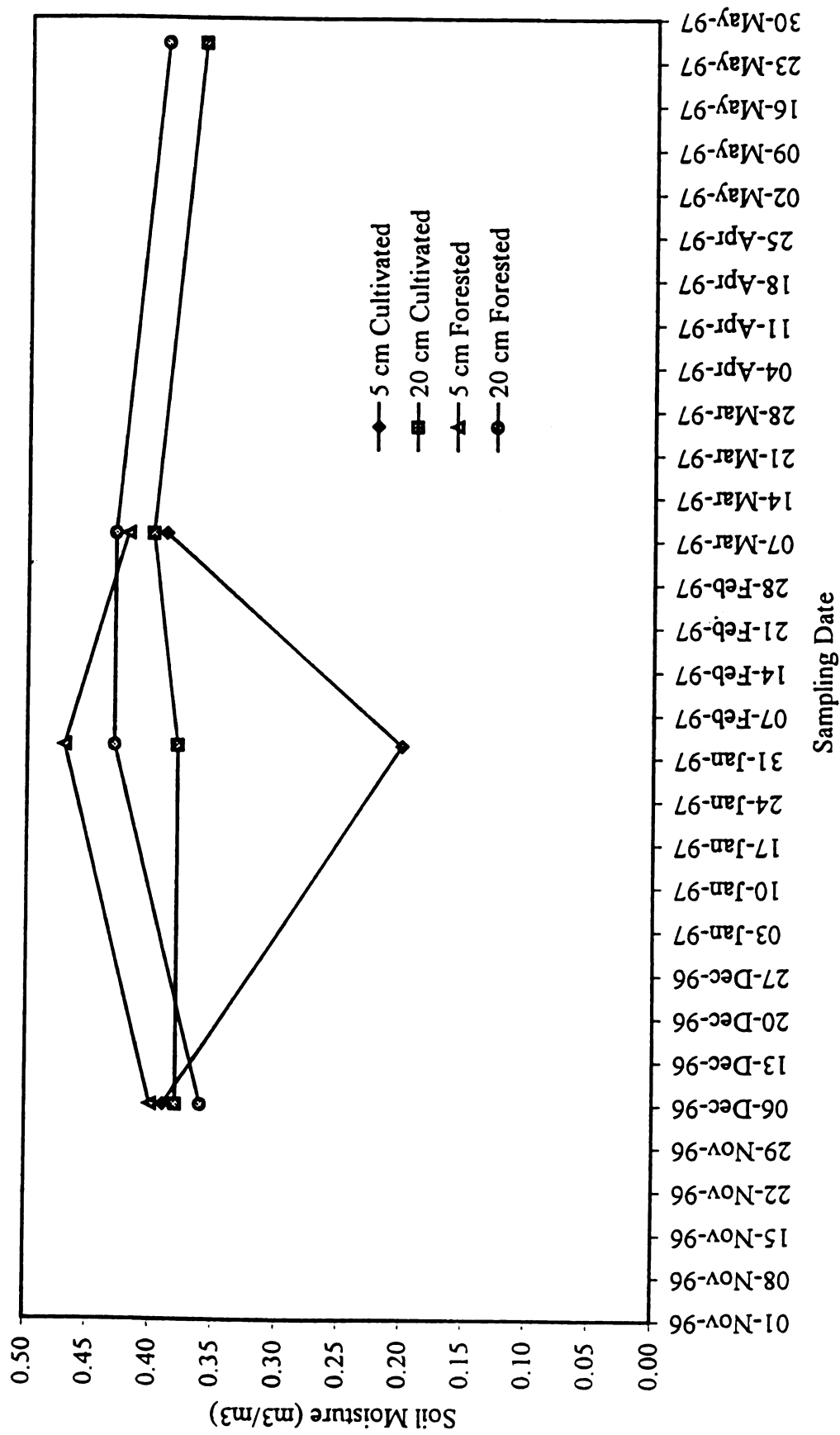


Figure 37. Soil moisture data for the cultivated and forested Zilwaukee-Misteguay sites.

At the forested Zilwaukee-Misteguay site, soil moisture contents were higher at 5 cm than at 20 cm until March (Fig. 37). The mean values for soil moisture measured in December, February, and March were 0.40, 0.47, and 0.42 m³/m³, respectively, at 5 cm; and 0.36, 0.43, and 0.43 m³/m³, respectively, at 20 cm. Higher soil moisture at 5 cm for most of the winter may be attributed to more frequent wetting of the surface by precipitation and snowmelt. By March, the moisture content was high at 20 cm within the forested soils because, by then, the water table had risen to within 20-25 cm of the surface. Snowmelt and spring rains led to saturation of the surface soils by March, evident by ponding in the swales of the forest floor microtopography. Depending on the yearly extent of snowmelt and spring rain events, such ponding could lead to localized flooding.

Moisture contents of the Parkhill soils also varied over the winter with depth and land use (Fig. 38). At the cultivated site, soil moisture was generally greater at 5 cm than at 20 cm. The mean values for soil moisture measured in December, February, and March were 0.34, 0.16, and 0.34 m³/m³, respectively, at 5 cm; and 0.34, 0.08, and 0.28 m³/m³, respectively, at 20 cm. Higher moisture content values could be attributed to a constant wetting of the surface by precipitation and snowmelt. Similar to the Zilwaukee-Misteguay soils, moisture content in the cultivated Parkhill soils decreased significantly in February relative to December at both depths. The decrease is greater at 20 cm than at 5 cm. Soil moisture at both 5 and 20 cm is greater in March than February because of ice thawing and rewetting the soil matrix.

At the forested Parkhill site, soil moisture was generally higher at 5 cm than at 20 cm throughout the winter (Fig. 38). The mean values for soil moisture measured in

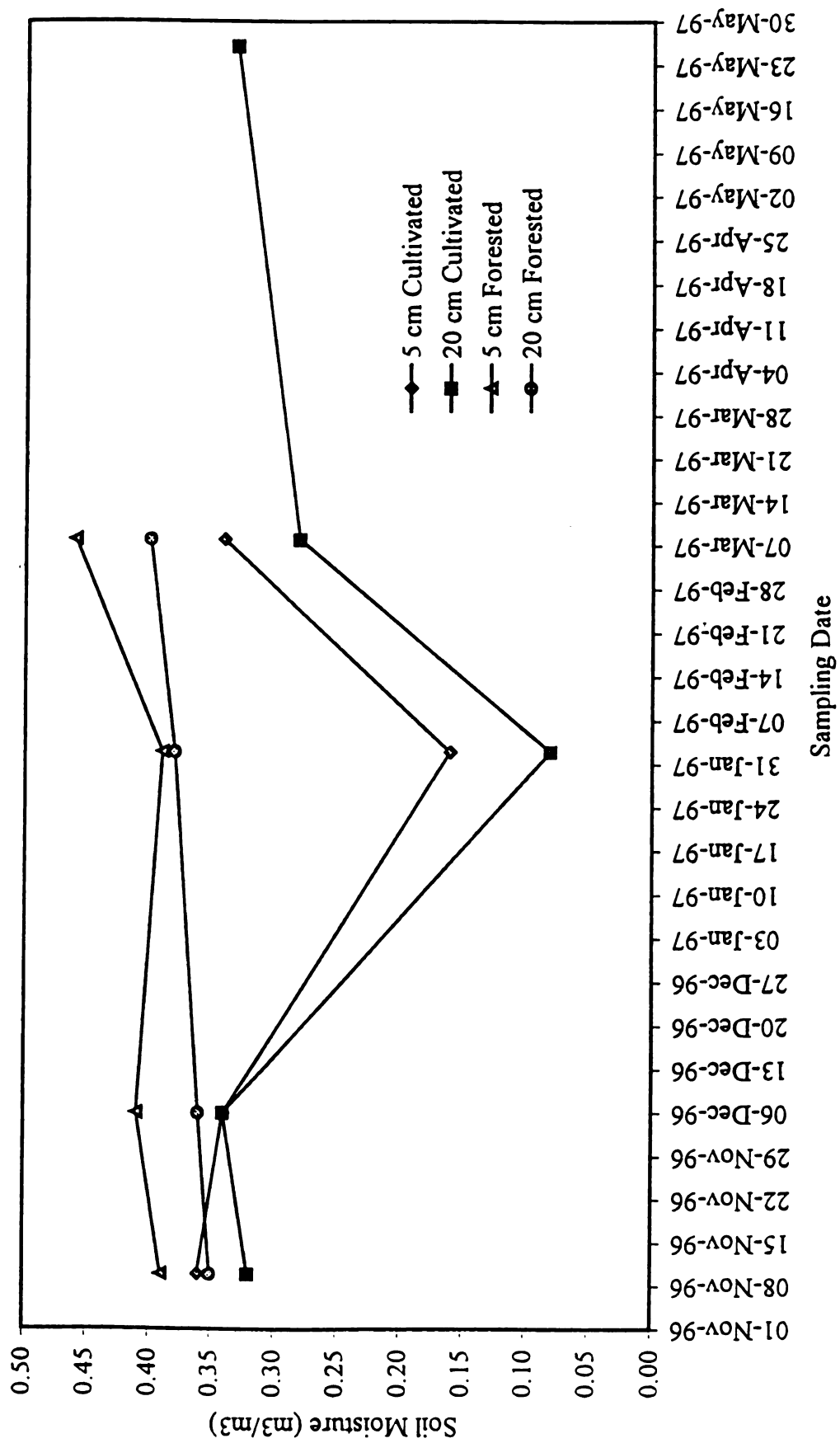


Figure 38. Soil moisture data for the cultivated and forested Parkhill sites.

December, February, and March were 0.41, 0.39, and 0.46 m³/m³, respectively, at 5 cm; and 0.36, 0.38, and 0.39 m³/m³, respectively, at 20 cm. The constant recharge of soil water by snowmelt enabled the soils at 5 cm to remain wetter, even through the spring. Similar to the forested Zilwaukee-Misteguay site, ponding was also observed in March within the swales of the forest floor microtopography at the forested Parkhill site.

Moisture contents of the Zilwaukee-Misteguay complex and the Parkhill soils may vary with land use (Fig. 37-38). Subsurface tile drains are used on the soils at both the cultivated Zilwaukee-Misteguay and Parkhill sites to assist in drainage. Tiles can alter the natural drainage and limit the extent to which the water table rises within the soils (Franzmeier et al., 1983). In addition, changing the vegetation, such as from forest to farm crops, can affect the natural drainage of soils. Farm crops generally transpire less soil water than native forest (Latshaw and Thompson, 1968). When forests are cleared for agricultural purposes, subsurface tiles may need to be installed to assist in the removal of excess water from the soils. Therefore, the presence of subsurface tiles at both cultivated sites may explain the lower moisture readings measured relative to the forested sites.

Moisture contents may also vary depending upon the extent to which snowmelt waters are able to infiltrate the soils. Open fields at the cultivated Parkhill and Zilwaukee-Misteguay sites expose the soils to cold air temperatures and soil freezing. Frozen soil can influence the amount of precipitation and snowmelt that is able to infiltrate into the soil relative to what is lost by runoff and evaporation (Pikul, Jr. et al., 1986; Stein et al., 1994). Therefore, during periods when the cultivated Parkhill soil and

Zilwaukee-Misteguay complex are frozen, more runoff and less infiltration of the snowmelt waters may lead to soil erosion or localized ponding or flooding.

Soil Hydrology

Mean hydraulic conductivity data from all four sites in the fall of 1996 and spring of 1997 are presented in Table 6. Three separate saturated hydraulic conductivity measurements were taken at each site and a mean value determined. Standard deviations were also reported to address the precision in the measurements and variability within the soils.

Standard deviations in the saturated hydraulic conductivity values were generally higher for the forested soils (0.23 to 1.70 cm/hr) than the cultivated soils (0.03 to 0.80 cm/hr). Generally, the isotropic nature of cultivated soils contribute to lower variability in hydraulic conductivity values (de Vries and Chow, 1978), although the cultivated soils of this study had greater proportional variability than the forested soils. Coefficients of variation ranged from 25-72% for the cultivated soils, but only ranged from 42-54% for the forested soils. Anisotropy within the matrix of forest soils can contribute to a significant spatial variation in their hydrologic behavior (de Vries and Chow, 1978). Specifically, anisotropy within forest soils can be attributed to macroporosity developed from either old root channels or via faunal turbation (Aubertin, 1971).

Freeze-thaw activity over the 1996-97 winter season could contribute to changes in the hydraulic conductivity of both the Parkhill and Zilwaukee-Misteguay complex soils. Saturated hydraulic conductivities within the cultivated soils of the Zilwaukee-

Table 6. Saturated hydraulic conductivity data collected on the Parkhill and Zilwaukee-Misteguay complex soils.

<i>Soil</i>	<i>Land Use</i>	<i>Sampling Date</i>	<i>Sample Depth (cm)</i>	<i>Average K (cm/hr)</i>	<i>Std Dev</i>	<i>Coeff of Variation</i>
Parkhill	Cultivated	Fall '96	20	0.12	0.03	25%
		Spring '97	20	0.71	0.41	58%
Parkhill	Forested	Fall '96	20	0.55	0.23	42%
		Spring '97	20	0.85	0.46	54%
Zilwaukee-Misteguay	Cultivated	Fall '96	20	0.32	0.23	72%
		Spring '97	20	1.51	0.80	53%
Zilwaukee-Misteguay	Forested	Fall '96	20	0.80	0.38	48%
		Spring '97	20	3.74	1.70	45%

Misteguay complex increased from 0.32 to 1.51 cm/hr between the fall of 1996 and spring of 1997 (Fig. 39), respectively, although porosity values (20 cm) decreased slightly from 0.44 to 0.42 between the fall and spring (Fig. 40). Within the cultivated Parkhill soils, saturated hydraulic conductivity values increased from 0.12 to 0.71 cm/hr values between the fall of 1996 and spring of 1997, respectively (Fig. 39), although porosity values (20 cm) decreased from 0.33 to 0.28 between the fall and spring (Fig. 41). The hydraulic conductivity was almost five times greater in the spring than in the fall for the cultivated Zilwaukee-Misteguay complex, and almost six times greater for the cultivated Parkhill soil.

Freezing temperatures and ice lens structures were observed and measured within the cultivated Parkhill soils and the Zilwaukee-Misteguay complex during the winter of 1996-97. Deep frost and ice lens formation can break up and expand the soil matrix,

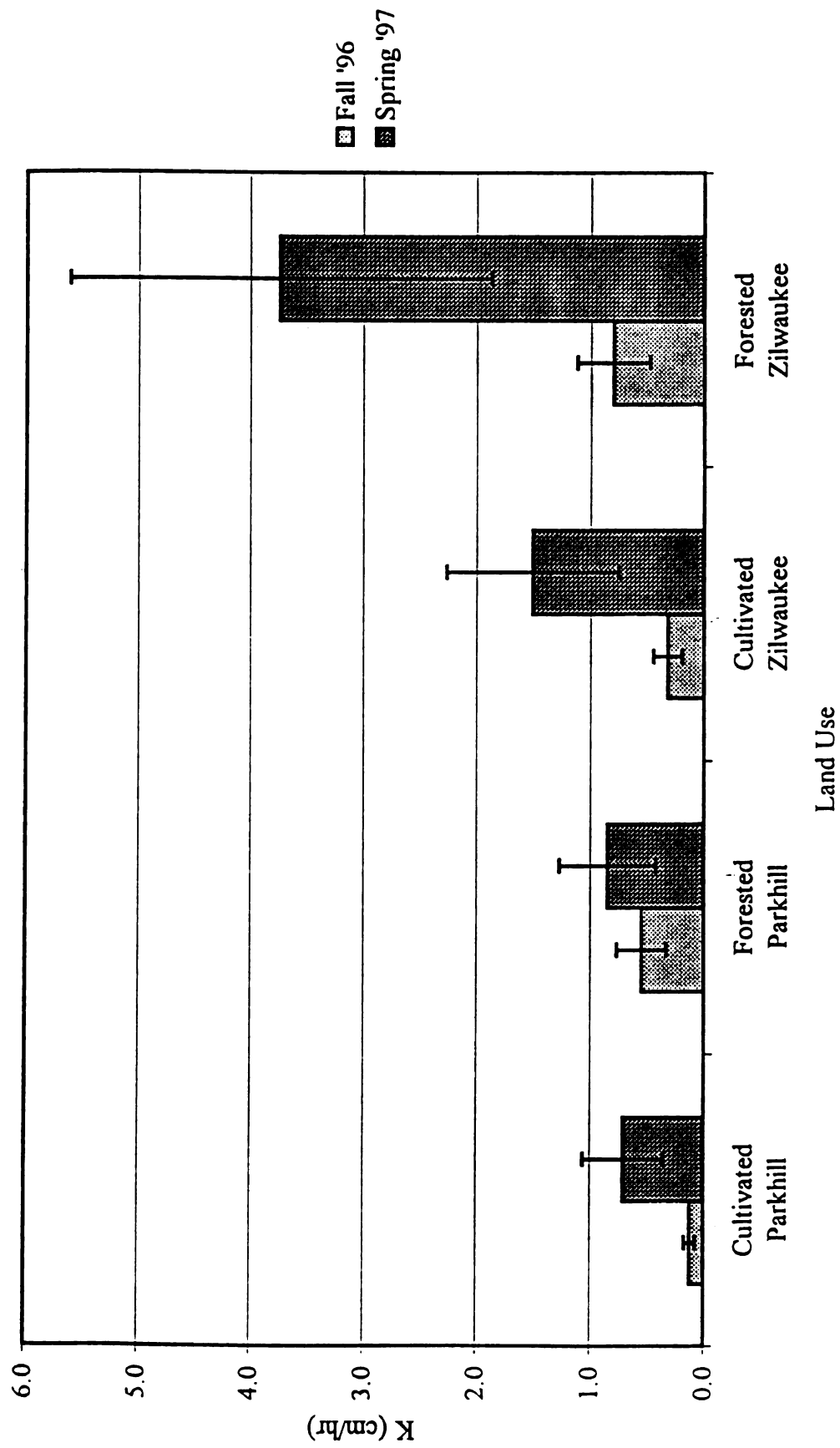


Figure 39. Changes in the mean saturated hydraulic conductivities of the Parkhill and Zilwaukee-Misteguay soils from the fall of 1996 to spring of 1997.

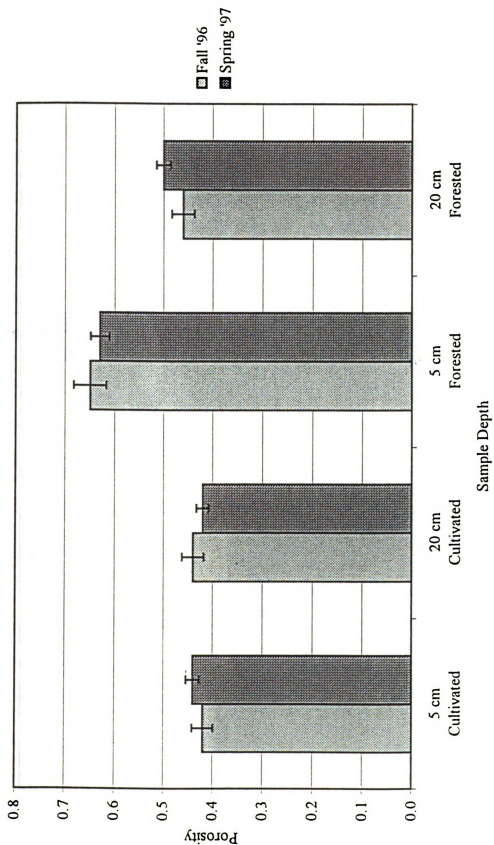


Figure 40. Changes in mean porosities of the soils of the Zilwaukee-Mistegway complex from the fall of 1996 to the spring of 1997 relative to depth and land use.

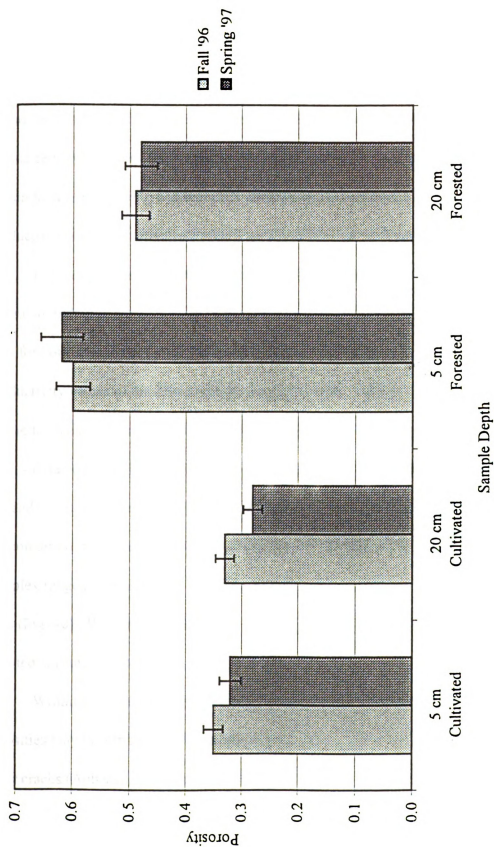


Figure 41. Changes in mean porosities of the Parkhill soils from the fall of 1996 to the spring of 1997 relative to depth and land use.

creating additional macroscopic pore space and increasing permeability (Kay et al., 1985; Chamberlain et al., 1990). In the spring, reconsolidation of the soils may only remove some of the newly formed pore space. Macroscopic cracks remaining after the melt period can assist the soils in snowmelt drainage by functioning as channels of low resistance to water flow. Such macropores might enable the soils to be more permeable (Chamberlain et al., 1990) and therefore attribute to the observed changes in hydraulic conductivities for the cultivated Parkhill soils and Zilwaukee-Misteguay complex.

Land use also appears to influence the hydraulic conductivity of these soils. Saturated hydraulic conductivities in the forested soils were higher than in the cultivated soils for both sites in the fall of 1996 and spring of 1997 (Fig. 39). Saturated hydraulic conductivity values of the Zilwaukee-Misteguay complex ranged from 0.44 to 5.67 cm/hr for the forested soils and 0.15 to 2.33 cm/hr for the cultivated soils. Within the Parkhill soils, saturated hydraulic conductivities ranged from 0.31 to 1.31 cm/hr at the forested site and 0.09 to 1.06 cm/hr at the cultivated site (Fig. 39). These data also correlate with the porosity of the soils (Fig. 40-41). Mean porosity for the Zilwaukee-Misteguay complex ranged from 0.46 to 0.65 for the forested soils and 0.42 to 0.44 for the cultivated soils (Fig. 40). Within the Parkhill soils, mean porosities ranged from 0.48 to 0.62 at the forested site and 0.28 to 0.35 at the cultivated site (Fig. 41).

Within forested soils, greater mean saturated hydraulic conductivities and porosities may be attributed to larger numbers of old root channels, biotic channels, or other cracks (Aubertin, 1971; de Vries and Chow, 1978). Studies have shown that, within forested soils, flow through macropores can be several hundred times greater than the flow through the soil matrix (Aubertin, 1971). Macropores develop into a network of

channels that assist in the conduction of storm and melt waters (de Vries and Chow, 1978). The highly porous nature of both forested soils causes the hydraulic conductivities to be higher than in the cultivated soils. Although cracks may develop within the cultivated soils due to freeze-thaw events, the degree of macroporosity within the forested soils is much greater. Therefore, the larger degree of macropores within both forested Zilwaukee-Misteguay complex and Parkhill soils contribute to higher mean hydraulic conductivity values, as compared with the cultivated soils.

Based upon soil temperature data, deep (>5 cm) freeze-thaw conditions did not exist in either the forested Parkhill or Zilwaukee-Misteguay complex soils during the winter (Fig. 14-17). Yet, mean saturated hydraulic conductivities of the soils measured at 20 cm increased from the fall of 1996 to the spring of 1997 at both sites (Fig. 39). For the forested Parkhill soils, hydraulic conductivities increased from 0.55 to 0.85 cm/hr between the fall and spring, respectively. For the forested soils of the Zilwaukee-Misteguay complex, mean hydraulic conductivities dramatically increased from 0.80 to 3.74 cm/hr between the fall and spring. The mean hydraulic conductivity of the forested Parkhill soil was one and a half times greater in the spring than it was in the fall, while the Zilwaukee-Misteguay complex was about four and a half times greater in the spring than in the fall.

Changes in the hydraulic conductivity within the forested soils from the fall to spring could be explained by heterogeneity within the soil matrix. Heterogeneity within forested soils is attributed to random distribution of macropores created by tree root channeling or biotic activity (de Vries and Chow, 1978). The density of macropores within a given volume of soil will affect the overall conductance of the soil (Aubertin,

1971). Since the density of macropores varies spatially throughout the forest floor, the hydraulic conductivity of the forest soils would also vary. Therefore, spatial variation in the macroporosity of the forest floor could contribute to the range of hydraulic conductivity values measured in the field.

Correlating microclimate with soil hydrological properties is important when interpreting seasonal peak flow and discharge rates of rivers and streams. Frozen or near-frozen soils (Fig. 12-17), common to the Saginaw River watershed region, can limit infiltration and cause ponding or runoff of snowmelt and rain waters (Johnsson and Lundin, 1991; Isard and Schaetzl, 1998). Based upon Saginaw River streamflow data collected at the Saginaw, Michigan, gaging station between December 1996 and May 1997, peak discharge (approximately 37,500 cfs) occurred around February 23, 1997 (United States Geological Survey). Climatic conditions at the study sites from February 16-20, 1997, included 7 to 8 cm of snowfall followed by a significant snowmelt that removed most of the snowpack (Fig. 7-8). In addition, surface soils were either frozen or near-frozen in both the cultivated and forested settings during this time period (Fig. 12-17). Runoff of snowmelt waters into nearby drainage channels and other tributaries of the Saginaw River may have contributed to the peak discharge observed at the gaging station around February 23, 1997. Soil properties and microclimate can therefore have a significant effect on the hydrological responses of watersheds.

CHAPTER VI

CONCLUSION

Pedothermic periods, or periods of time where the soil temperatures have distinct changes and variability, were identified in both forested and cultivated soils of Saginaw County, Michigan, during the winter and spring of 1996-97. These periods included Late Fall, Winter, and Spring. Due to the lack of data prior to December 4, 1996, only the latter part of Fall period, termed Late Fall, could be characterized. The end of the Late Fall period ranged between December 23-25, 1996, depending upon the site. During this period, mean soil temperatures ranged from 1.16 to 3.73°C with standard deviations (variability) ranging from 0.39 to 0.70.

The Winter period, a period of low change and low variability, was observed in both the Parkhill soils and the Zilwaukee-Misteguay complex from December 24-26, 1996, to March 6-24, 1997. The start and end dates of the Winter period varied between the sites and reflected the microclimatic conditions of each site. Mean soil temperatures during this period ranged from -0.34 to 1.69°C with standard deviations ranging from 0.37 to 0.68. Low variabilities in the soil temperatures during this period were attributed to the insulating effect of snow cover and consistently cold air temperatures.

The Spring period, a period of high change and variability, was also observed in the Parkhill soils and the Zilwaukee-Misteguay complex from March 7-25, 1997, to May 31, 1997. During this period, mean soil temperatures at the forested and cultivated sites ranged from 6.31 to 7.11°C with standard deviations ranging from 2.38 to 3.89.

Variability, as determined by standard deviation, in the soil temperatures increased from the Winter period to the Spring period by as much as 3.21. This increase in variability can be attributed to the loss of the snow cover and exposure of the soils to the fluctuating daily air temperatures.

Microclimates varied between the sites. Open fields at the cultivated sites exposed the soils to more extreme and variable air temperatures during the 1996-97 winter. As a result of the cold air temperatures, deep (>20 cm) concrete frost and ice lenses formed at the cultivated sites and broke up the soil matrix. Breaking up of the soil matrix created additional pore space, thereby contributing to an increase in the soil hydraulic conductivity in the spring relative to the fall. Saturated hydraulic conductivity increased as much as six times greater in the spring than in the fall. This increase in soil permeability can be important in removing snowmelt waters and water from spring rains that otherwise might pond on the surface.

Frost did not appear to penetrate deep (>5 cm) into the forested soils of this study. Unlike with the open and bare cultivated soils, litter, vegetation and snow cover helped to insulate the forested soils from the extreme and variable air temperatures. Frost action and ice lens formation probably did not affect the matrix of the forested soils as they did in the cultivated soils. However, saturated hydraulic conductivity within the forested soils increased by as much as four and a half times in the spring relative to the fall. One explanation for the increases may be due to the heterogeneous character of the forested soils created by spatially varying macroporosity.

Correlating pedothermic periods with changes in the hydraulic conductivity of soils is important in better understanding the hydrologic responses of watersheds.

Knowing when the Winter period ends, especially if there are frozen soil conditions, will help in the modeling of the removal of snowmelt and rainfall from a watershed.

Differences in the end date to the Winter period can vary spatially within the soils of a watershed, thereby varying the times at which soils thaw and resulting in localized ponding or even flooding. Flooding within the Shiawassee and Saginaw River Watersheds is very possible due to the flat terrain of Saginaw County. Change in the hydraulic conductivity of the soils over a winter season is also important in affecting how much snowmelt and rainfall can permeate the soils versus ponding or even runoff.

This project was a contribution in further understanding the relationships between microclimate and soil hydrology and how these relationships are important in watershed management. Land use influences both the microclimate and the hydrological behavior of soils. During winter and spring seasons, soil hydrology can affect how snowmelt and rainfall reach drainage channels within a watershed. Understanding the drainage and hydrological properties of both cultivated and forested soils can therefore help improve current management practices on soil erosion, flood prevention, and water quality assessment.

APPENDIX

Soil and Air Temperatures

APPENDIX

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
ZM-F-5 = Zilwaukee-Misteguay - Forested (5 cm)					P-F-20 = Parkhill - Forested (20 cm)					
ZM-F-20 = Zilwaukee-Misteguay - Forested (20 cm)					ZM-F-Air = Zilwaukee-Misteguay - Forested (Air)					
ZM-C-5 = Zilwaukee-Misteguay - Cultivated (5 cm)					ZM-C-Air = Zilwaukee-Misteguay - Cultivated (Air)					
ZM-C-20 = Zilwaukee-Misteguay - Cultivated (20 cm)					P-F-Air = Parkhill - Forested (Air)					
P-F-5 = Parkhill - Forested (5 cm)					P-C-Air = Parkhill - Cultivated (Air)					
All of the soil and air temperature readings are listed in Celcius.										
12/1/96 0:00	4.38	4.33	0.31	1.67	0.88	2.62	21.16	-4.35	-4.23	5.78
12/1/96 1:12	4.38	4.33	0.31	1.67	0.88	2.62	21.16	-4.79	-4.67	5.41
12/1/96 2:24	4.38	4.33	0.31	1.67	0.88	2.62	20.81	-4.79	-4.67	5.41
12/1/96 3:36	4.38	4.33	0.31	1.67	0.88	2.62	20.81	-4.79	-4.67	5.03
12/1/96 4:48	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-4.79	-4.67	4.65
12/1/96 6:00	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-4.35	-4.67	5.03
12/1/96 7:12	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-4.35	-4.23	5.03
12/1/96 8:24	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-3.91	-3.79	4.65
12/1/96 9:36	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-3.04	-3.35	4.65
12/1/96 10:48	4.38	4.62	0.31	1.67	0.88	2.62	20.81	-0.93	-2.07	4.65
12/1/96 12:00	4.68	4.62	0.31	1.67	0.88	2.62	20.81	1.89	0.41	9.11
12/1/96 13:12	4.68	4.62	0.31	1.67	0.88	2.62	20.81	1.49	0.41	5.41
12/1/96 14:24	4.68	4.62	0.31	1.67	0.88	2.62	20.81	2.28	0.82	3.88
12/1/96 15:36	4.68	4.91	0.31	1.67	0.88	2.62	20.81	0.69	0.01	3.88
12/1/96 16:48	4.68	4.91	0.31	1.67	0.88	2.62	20.81	0.69	-0.39	1.93
12/1/96 18:00	4.68	4.91	0.31	1.67	0.88	2.62	20.81	-1.34	-1.64	1.14
12/1/96 19:12	4.68	4.91	0.31	1.67	0.88	2.62	20.81	-5.24	-4.23	0.33
12/1/96 20:24	4.38	4.91	0.31	1.67	0.88	2.62	20.81	-5.24	-5.12	0.33
12/1/96 21:36	4.38	4.91	0.31	1.67	0.88	2.62	20.81	-3.91	-4.23	0.33
12/1/96 22:48	4.38	4.91	0.31	1.67	0.88	2.62	20.81	-2.62	-2.92	-0.07
12/2/96 0:00	4.09	4.91	0.31	1.67	0.88	2.62	20.46	-2.62	-2.92	-0.48
12/2/96 1:12	4.09	4.91	0.31	1.67	0.88	2.62	20.46	-2.62	-2.92	-0.89
12/2/96 2:24	4.09	4.91	0.31	1.67	0.88	2.62	20.46	-2.62	-2.49	-0.89
12/2/96 3:36	3.8	4.91	0.31	1.67	0.88	2.62	20.46	-2.62	-2.49	-1.31
12/2/96 4:48	3.8	4.91	0.31	1.67	0.88	2.62	20.46	-2.19	-2.49	-1.73
12/2/96 6:00	3.8	4.91	0.31	1.67	0.88	2.62	20.46	-3.48	-3.79	-1.73
12/2/96 7:12	3.51	4.62	0.31	1.67	0.88	2.32	20.46	-3.48	-3.79	-1.73
12/2/96 8:24	3.51	4.62	0.31	1.67	0.88	2.32	20.46	-5.69	-5.58	-2.15
12/2/96 9:36	3.51	4.62	0.01	1.67	0.88	2.32	20.81	-0.93	-1.64	-2.15
12/2/96 10:48	3.51	4.62	0.01	1.67	0.88	2.32	20.81	4.98	2.41	-1.31
12/2/96 12:00	3.21	4.62	0.01	1.37	0.88	2.32	20.81	6.48	2.41	-0.48
12/2/96 13:12	3.21	4.62	0.01	1.37	0.88	2.32	21.16	9.78	4.73	-1.31
12/2/96 14:24	3.21	4.62	0.01	1.37	0.88	2.32	21.5	12.98	5.49	-1.31
12/2/96 15:36	3.21	4.62	0.01	1.37	0.88	2.32	21.5	13.34	6.61	-1.31
12/2/96 16:48	3.21	4.33	0.31	1.37	0.88	2.32	21.85	5.36	3.97	-1.73
12/2/96 18:00	3.21	4.33	0.31	1.37	0.88	2.32	21.5	1.49	1.62	-2.15
12/2/96 19:12	3.21	4.33	0.31	1.37	0.88	2.32	21.5	1.49	2.02	-2.58
12/2/96 20:24	3.21	4.33	0.31	1.37	0.88	2.32	21.85	1.09	1.62	-2.58
12/2/96 21:36	3.21	4.33	0.31	1.37	0.88	2.32	21.5	0.69	1.22	-2.15
12/2/96 22:48	3.21	4.33	0.31	1.37	0.88	2.32	21.5	1.49	1.62	-2.15
12/3/96 0:00	2.92	4.33	0.31	1.37	0.88	2.32	21.16	2.28	2.41	-2.58
12/3/96 1:12	2.92	4.33	0.31	1.37	0.88	2.32	21.16	2.28	2.41	-3.01
12/3/96 2:24	2.92	4.33	0.31	1.37	0.88	2.32	21.16	1.89	2.02	-3.44

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/3/96 3:36	2.92	4.33	0.31	1.37	0.88	2.32	21.16	1.89	1.62	-3.44
12/3/96 4:48	2.92	4.33	0.31	1.37	0.88	2.32	20.81	2.67	2.41	-3.01
12/3/96 6:00	2.92	4.33	0.31	1.37	0.88	2.32	20.81	3.06	2.81	-2.58
12/3/96 7:12	2.92	4.33	0.31	1.37	1.17	2.32	20.81	3.06	2.81	-2.15
12/3/96 8:24	2.92	4.33	0.31	1.37	1.17	2.32	21.16	3.83	3.58	-2.15
12/3/96 9:36	2.62	4.04	0.31	1.37	1.17	2.32	21.16	4.22	3.58	-2.15
12/3/96 10:48	2.62	4.04	0.31	1.67	1.17	2.32	21.16	4.98	4.35	-1.31
12/3/96 12:00	2.62	4.04	0.31	1.37	1.47	2.32	19.76	6.48	5.87	0.33
12/3/96 13:12	2.62	4.04	0.31	1.67	1.77	2.32	15.56	8.69	7.36	1.14
12/3/96 14:24	2.62	4.04	0.61	1.37	2.06	2.32	7.72	7.96	7.73	3.49
12/3/96 15:36	2.62	4.04	0.91	1.67	2.36	2.62	7.72	7.96	7.36	1.53
12/3/96 16:48	2.62	4.04	1.21	1.67	2.65	2.62	6.98	7.22	7.36	0.73
12/3/96 18:00	2.92	4.04	1.5	1.67	2.65	2.62	6.23	6.48	6.98	0.33
12/3/96 19:12	2.92	4.04	1.8	1.67	2.94	2.62	6.61	6.85	6.61	0.33
12/3/96 20:24	2.92	4.04	2.09	1.67	2.94	2.62	6.61	6.85	6.61	0.33
12/3/96 21:36	2.92	4.04	2.39	1.97	3.24	2.91	6.98	6.48	6.61	-0.07
12/3/96 22:48	2.92	4.04	2.39	1.97	3.24	2.91	6.23	6.11	5.11	-0.07
12/4/96 0:00	2.92	4.04	2.68	1.97	3.24	2.91	5.86	5.73	5.11	-0.48
12/4/96 1:12	2.92	4.04	2.68	2.26	3.24	2.91	5.86	5.36	5.11	-0.89
12/4/96 2:24	2.92	4.04	2.98	2.26	3.24	3.21	5.11	4.98	5.11	-0.89
12/4/96 3:36	2.92	4.04	2.98	2.26	3.24	3.21	4.73	4.98	4.73	-1.31
12/4/96 4:48	2.92	4.04	2.98	2.56	3.24	3.21	4.73	4.98	4.73	-1.31
12/4/96 6:00	2.92	4.04	2.98	2.56	3.24	3.21	4.73	5.36	4.73	-1.31
12/4/96 7:12	2.92	4.04	2.98	2.56	3.53	3.21	5.11	5.36	4.73	-1.31
12/4/96 8:24	2.92	4.04	2.98	2.56	3.53	3.21	5.11	4.98	4.35	-4.32
12/4/96 9:36	2.92	4.04	3.27	2.85	3.53	3.5	5.48	5.36	4.35	-1.31
12/4/96 10:48	2.92	4.04	3.27	2.85	3.53	3.5	4.73	4.98	4.35	11.26
12/4/96 12:00	2.92	4.04	3.27	2.85	3.53	3.5	7.72	15.44	6.98	12.33
12/4/96 13:12	2.92	4.04	3.57	3.14	3.83	3.5	5.48	7.22	5.49	12.33
12/4/96 14:24	2.92	4.04	4.15	3.14	3.83	3.5	3.58	4.98	3.58	17.95
12/4/96 15:36	3.21	4.04	4.15	3.14	3.83	3.5	2.8	3.83	3.58	11.97
12/4/96 16:48	2.92	4.04	4.15	3.14	3.83	3.5	1.62	2.28	1.62	1.93
12/4/96 18:00	3.21	4.04	3.86	3.43	3.83	3.79	0.82	1.09	0.41	-3.88
12/4/96 19:12	2.92	4.04	3.57	3.43	3.53	3.79	0.42	0.29	0.01	-7.06
12/4/96 20:24	2.92	4.04	3.57	3.43	3.53	3.79	0.01	0.29	0.01	-7.53
12/4/96 21:36	3.21	4.04	2.98	3.43	3.24	3.79	0.01	0.29	-0.39	-8.98
12/4/96 22:48	2.92	4.04	2.98	3.43	3.24	3.79	-0.38	-0.11	-0.39	-9.48
12/5/96 0:00	3.21	4.04	2.68	3.43	2.94	3.79	-0.79	-0.52	-0.81	-7.06
12/5/96 1:12	2.92	4.04	2.39	3.43	2.94	3.79	-1.21	-0.93	-1.22	-8.49
12/5/96 2:24	2.92	4.04	2.39	3.43	2.94	3.79	-1.21	-1.34	-1.22	-4.76
12/5/96 3:36	2.92	4.04	2.09	3.14	2.65	3.79	-1.63	-1.34	-1.64	-4.32
12/5/96 4:48	2.92	4.04	2.09	3.14	2.65	3.79	-1.63	-1.34	-2.07	-3.44
12/5/96 6:00	2.92	4.04	2.09	3.14	2.36	3.79	-2.05	-2.19	-2.07	-2.58
12/5/96 7:12	2.92	4.04	1.8	3.14	2.36	3.79	-2.05	-2.19	-2.07	-2.15
12/5/96 8:24	2.92	4.04	1.8	3.14	2.36	3.5	-2.05	-1.77	-2.07	-1.73
12/5/96 9:36	2.92	4.04	1.8	3.14	2.36	3.5	-2.05	-1.77	-2.07	-1.73
12/5/96 10:48	2.92	4.04	1.8	2.85	2.36	3.5	-1.63	-0.93	-1.22	-0.48
12/5/96 12:00	2.92	4.04	1.8	2.85	2.06	3.5	-1.21	0.29	-0.39	1.14
12/5/96 13:12	2.92	4.04	1.5	2.85	2.06	3.5	-1.21	-0.11	-1.22	1.14
12/5/96 14:24	2.92	4.04	1.5	2.85	2.06	3.5	-1.21	-0.52	-1.22	1.14
12/5/96 15:36	2.92	4.04	1.5	2.85	2.06	3.5	-1.63	-0.52	-1.22	0.73
12/5/96 16:48	2.92	4.04	1.5	2.85	2.06	3.5	-1.21	-0.52	-1.64	0.33
12/5/96 18:00	2.92	4.04	1.5	2.56	2.06	3.5	-1.63	-1.77	-2.49	-0.07
12/5/96 19:12	2.92	4.04	1.5	2.56	2.06	3.5	-2.05	-2.19	-2.92	-0.07

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/5/96 20:24	2.92	4.04	1.5	2.56	2.06	3.21	-2.05	-2.19	-2.92	0.33
12/5/96 21:36	2.92	4.04	1.5	2.56	2.06	3.21	-2.05	-2.19	-2.49	0.33
12/5/96 22:48	2.92	4.04	1.21	2.56	2.06	3.21	-2.48	-2.19	-2.07	0.33
12/6/96 0:00	2.92	4.04	1.21	2.56	2.06	3.21	-2.48	-3.04	-2.49	0.33
12/6/96 1:12	2.92	4.04	1.21	2.56	1.77	3.21	-2.91	-3.48	-2.92	0.33
12/6/96 2:24	2.92	4.04	1.21	2.56	1.77	3.21	-3.34	-4.35	-3.79	0.33
12/6/96 3:36	2.92	4.04	1.21	2.56	1.77	3.21	-3.77	-4.79	-3.35	0.33
12/6/96 4:48	2.92	4.04	1.21	2.56	1.77	3.21	-2.91	-3.48	-2.92	-0.48
12/6/96 6:00	2.92	4.04	1.21	2.56	1.77	3.21	-2.91	-3.04	-2.92	-0.48
12/6/96 7:12	2.92	4.04	1.21	2.56	1.77	3.21	-2.48	-2.62	-2.49	-0.07
12/6/96 8:24	2.92	4.04	1.21	2.26	1.77	3.21	-2.05	-2.19	-2.07	0.33
12/6/96 9:36	2.92	4.04	1.21	2.26	1.77	3.21	-2.05	-1.77	-2.07	0.73
12/6/96 10:48	2.92	4.04	1.21	2.26	1.77	3.21	-1.21	0.69	-1.22	1.93
12/6/96 12:00	2.92	4.04	1.21	2.26	1.47	3.21	-0.79	1.09	0.01	2.72
12/6/96 13:12	2.92	4.04	0.91	2.26	1.77	3.21	-0.38	1.89	1.22	2.72
12/6/96 14:24	2.92	4.04	0.91	2.26	1.47	3.21	0.82	4.98	2.81	2.72
12/6/96 15:36	2.92	4.04	0.91	2.26	1.47	2.91	0.42	1.89	1.22	2.72
12/6/96 16:48	2.92	4.04	0.91	2.26	1.47	2.91	0.42	1.09	0.41	1.93
12/6/96 18:00	2.92	4.04	0.91	2.26	1.47	2.91	0.01	0.29	0.41	1.14
12/6/96 19:12	2.92	4.04	0.91	2.26	1.77	2.91	0.01	0.29	0.01	0.73
12/6/96 20:24	2.92	4.04	0.91	2.26	1.77	2.91	0.01	0.29	0.01	0.73
12/6/96 21:36	2.92	4.04	0.91	2.26	1.77	2.91	0.01	0.29	0.01	-0.07
12/6/96 22:48	2.92	4.04	0.91	2.26	1.77	2.91	0.01	0.29	0.01	-0.07
12/7/96 0:00	2.92	4.04	0.91	2.26	1.77	2.91	-0.38	-0.52	-0.81	0.33
12/7/96 1:12	2.92	4.04	0.91	2.26	1.77	2.91	-0.38	-0.52	-0.81	0.33
12/7/96 2:24	2.92	4.04	0.91	2.26	1.77	2.91	-0.79	-0.93	-0.81	0.33
12/7/96 3:36	2.92	4.04	0.91	2.26	1.77	2.91	-1.21	-0.93	-1.22	0.33
12/7/96 4:48	2.92	4.04	0.91	2.26	1.77	2.91	-1.21	-0.93	-1.22	1.14
12/7/96 6:00	2.92	4.04	0.91	2.26	1.77	2.91	-1.21	-0.93	-1.22	1.14
12/7/96 7:12	2.92	4.04	0.91	2.26	1.77	2.91	-1.21	-1.34	-1.64	1.14
12/7/96 8:24	2.92	4.04	0.91	2.26	1.77	2.91	-2.05	-3.48	-3.35	0.73
12/7/96 9:36	2.92	4.04	0.91	2.26	1.77	2.91	-3.77	-3.91	-5.12	1.14
12/7/96 10:48	2.92	4.04	1.21	1.97	1.77	2.91	-1.21	8.33	6.24	2.72
12/7/96 12:00	2.92	4.04	1.21	1.97	1.77	2.91	0.42	13.69	2.81	5.03
12/7/96 13:12	2.92	4.04	1.21	1.97	1.77	2.91	6.98	12.98	7.36	6.9
12/7/96 14:24	2.92	4.04	1.21	1.97	2.06	2.91	5.48	10.86	3.19	6.9
12/7/96 15:36	2.92	4.04	1.21	1.97	2.06	2.91	3.19	10.86	6.98	5.41
12/7/96 16:48	2.92	4.04	1.21	2.26	2.06	2.91	0.42	1.89	0.82	4.27
12/7/96 18:00	2.92	3.74	1.21	1.97	2.06	2.91	-1.63	-5.69	-3.79	0.33
12/7/96 19:12	2.92	3.74	1.21	1.97	2.06	2.91	-2.91	-8.03	-5.12	-1.31
12/7/96 20:24	2.92	3.74	1.21	1.97	2.06	2.91	-4.21	-9.01	-6.03	-3.88
12/7/96 21:36	2.92	3.74	1.21	1.97	2.06	2.91	-5.56	-9.51	-6.97	-3.44
12/7/96 22:48	2.92	3.74	1.21	1.97	2.06	2.91	-6.02	-10.02	-6.97	-0.89
12/8/96 0:00	2.92	3.74	1.21	1.97	2.06	2.91	-6.02	-8.52	-6.49	-1.73
12/8/96 1:12	2.92	3.74	1.21	1.97	2.06	3.21	-4.66	-7.08	-6.97	-3.88
12/8/96 2:24	2.92	3.74	1.21	1.97	2.06	2.91	-3.34	-6.16	-5.58	-2.15
12/8/96 3:36	2.92	3.74	1.21	1.97	2.06	2.91	-2.91	-3.48	-4.23	-1.31
12/8/96 4:48	2.92	3.74	1.21	1.97	2.06	2.91	-2.48	-3.91	-2.92	-0.89
12/8/96 6:00	2.92	3.74	1.21	1.97	2.06	2.91	-2.48	-3.04	-2.49	-1.31
12/8/96 7:12	2.92	3.74	1.21	1.97	2.06	2.91	-2.05	-2.62	-2.07	-2.15
12/8/96 8:24	2.92	3.74	1.21	1.97	2.06	3.21	-2.05	-1.77	-1.64	-2.15
12/8/96 9:36	2.92	3.74	1.21	1.97	2.06	2.91	-1.63	-1.34	-1.64	-2.15
12/8/96 10:48	2.92	3.74	1.21	1.97	2.06	2.91	-0.79	1.09	-0.39	-0.48
12/8/96 12:00	2.92	3.74	1.21	1.97	2.06	2.91	0.01	3.06	0.41	4.27

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/8/96 13:12	2.92	3.74	1.21	1.97	2.06	2.91	0.42	3.83	0.41	1.93
12/8/96 14:24	2.92	3.74	1.21	1.97	2.06	2.91	0.42	3.83	0.41	2.33
12/8/96 15:36	2.92	3.74	1.21	1.97	2.06	2.91	0.42	2.67	0.41	1.14
12/8/96 16:48	2.92	3.74	1.21	1.97	2.06	2.91	-0.38	0.69	0.01	1.53
12/8/96 18:00	2.92	3.74	1.21	1.97	2.06	2.91	-0.38	-0.11	-0.39	0.33
12/8/96 19:12	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.01	-0.07
12/8/96 20:24	2.92	3.74	1.21	1.97	2.06	3.21	0.01	0.29	0.01	-0.07
12/8/96 21:36	2.92	3.74	1.21	1.97	2.06	3.21	0.01	0.29	0.41	-0.89
12/8/96 22:48	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.01	-0.07
12/9/96 0:00	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.41	-1.31
12/9/96 1:12	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.01	-0.07
12/9/96 2:24	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.41	-0.07
12/9/96 3:36	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	0.01	-0.48
12/9/96 4:48	2.92	3.74	1.21	1.97	2.06	2.91	-0.38	-0.52	-0.39	-1.31
12/9/96 6:00	2.92	3.74	1.21	1.97	2.06	3.21	0.01	-0.52	-0.39	-1.31
12/9/96 7:12	2.92	3.74	1.21	1.97	2.06	2.91	0.01	0.29	-0.39	-1.73
12/9/96 8:24	2.92	3.74	1.21	1.97	2.06	2.91	0.42	0.29	0.01	-1.73
12/9/96 9:36	2.92	3.74	1.21	1.97	2.06	2.91	0.42	1.09	0.41	-1.31
12/9/96 10:48	2.92	3.74	1.21	1.97	2.06	2.91	1.22	3.83	2.02	0.73
12/9/96 12:00	2.92	3.74	1.21	1.97	2.06	2.91	1.22	4.22	2.41	3.49
12/9/96 13:12	2.92	3.74	0.91	1.97	2.06	2.91	1.62	4.22	2.41	4.27
12/9/96 14:24	2.92	3.74	0.91	1.97	2.06	3.21	1.62	4.22	2.81	4.65
12/9/96 15:36	2.92	3.74	0.91	1.97	2.06	2.91	1.62	4.6	2.41	3.49
12/9/96 16:48	2.92	3.74	0.91	1.97	2.06	2.91	1.22	2.67	1.62	1.14
12/9/96 18:00	2.92	3.74	1.21	1.97	2.06	2.91	0.82	1.09	0.82	-2.58
12/9/96 19:12	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.69	0.41	-3.88
12/9/96 20:24	2.92	3.74	0.91	1.97	2.06	3.21	0.42	0.29	0.41	-1.73
12/9/96 21:36	2.92	3.74	0.91	1.97	2.06	2.91	0.01	-0.11	0.01	-1.73
12/9/96 22:48	2.92	3.74	0.91	1.97	2.06	2.91	0.01	0.29	0.01	-1.31
12/10/96 0:00	2.92	3.74	0.91	1.97	2.06	2.91	0.01	0.29	0.01	-1.31
12/10/96 1:12	2.92	3.74	0.91	1.97	2.06	2.91	0.01	0.29	0.41	-1.31
12/10/96 2:24	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.29	0.01	-1.31
12/10/96 3:36	2.92	3.74	0.91	1.97	2.06	2.91	0.01	-0.11	0.41	-1.31
12/10/96 4:48	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.69	0.41	-1.31
12/10/96 6:00	2.92	3.74	0.91	1.97	2.06	2.91	0.82	1.09	0.41	-1.73
12/10/96 7:12	2.92	3.74	0.91	1.97	2.06	2.91	0.82	1.09	0.41	-2.15
12/10/96 8:24	2.92	3.74	0.91	1.97	2.06	2.91	0.42	1.09	0.41	-2.15
12/10/96 9:36	2.92	3.74	0.91	1.97	2.06	2.91	0.82	1.89	0.41	-1.31
12/10/96 10:48	2.92	3.74	0.91	1.97	2.06	2.91	1.22	3.45	2.41	1.53
12/10/96 12:00	2.92	3.74	0.91	1.97	2.06	2.91	2.41	6.48	4.35	4.65
12/10/96 13:12	2.62	3.74	0.91	1.97	2.06	2.91	3.96	9.06	5.49	10.55
12/10/96 14:24	2.92	3.74	0.91	1.97	2.06	2.91	3.19	10.5	5.87	7.27
12/10/96 15:36	2.92	3.74	0.91	1.97	2.06	2.91	4.34	12.28	3.97	5.03
12/10/96 16:48	2.92	3.74	0.91	1.97	2.06	2.91	2.41	10.14	2.02	2.72
12/10/96 18:00	2.92	3.74	0.91	1.97	2.06	2.91	0.82	-0.11	-0.39	0.73
12/10/96 19:12	2.92	3.74	0.91	1.97	2.06	2.91	-0.38	-2.19	-1.64	-0.48
12/10/96 20:24	2.92	3.74	0.91	1.97	2.06	2.91	-1.63	-3.48	-2.92	-0.89
12/10/96 21:36	2.92	3.74	0.91	1.97	2.06	2.91	-2.05	-5.24	-3.79	0.33
12/10/96 22:48	2.92	3.74	0.91	1.97	2.06	2.91	-2.05	-6.16	-2.07	-0.07
12/11/96 0:00	2.92	3.74	0.91	1.97	2.06	2.91	-2.05	-5.69	-2.07	-0.48
12/11/96 1:12	2.92	3.74	0.91	1.97	1.77	2.91	-2.91	-7.08	-3.35	-0.07
12/11/96 2:24	2.92	3.74	0.91	1.97	1.77	2.91	-2.05	-3.04	-2.49	-0.07
12/11/96 3:36	2.92	3.74	0.91	1.97	1.77	2.91	-1.21	-2.62	-1.64	0.33
12/11/96 4:48	2.92	3.74	0.91	1.97	1.77	2.91	-1.21	-2.19	-1.22	0.33

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/11/96 6:00	2.92	3.74	0.91	1.97	1.77	2.91	-1.21	-0.93	-1.22	0.33
12/11/96 7:12	2.92	3.74	0.91	1.97	1.77	2.91	-2.05	-2.19	-2.49	0.33
12/11/96 8:24	2.92	3.74	0.91	1.97	1.77	2.91	-2.05	-2.19	-2.49	1.14
12/11/96 9:36	2.92	3.74	0.91	1.97	1.77	2.91	-2.05	-2.19	-2.07	1.93
12/11/96 10:48	2.92	3.74	0.91	1.97	1.77	2.91	-1.21	-0.11	-0.39	2.72
12/11/96 12:00	2.92	3.74	0.91	1.97	1.77	2.91	0.01	2.67	3.19	2.33
12/11/96 13:12	2.92	3.74	0.91	1.97	1.77	2.91	0.82	3.83	2.81	2.72
12/11/96 14:24	2.92	3.74	0.91	1.97	1.77	2.91	0.42	3.83	2.02	2.72
12/11/96 15:36	2.92	3.74	0.91	1.97	1.77	2.91	-0.38	1.09	1.62	1.93
12/11/96 16:48	2.92	3.74	0.91	1.97	1.77	2.91	0.01	1.49	1.22	1.93
12/11/96 18:00	2.92	3.74	0.91	1.97	1.77	2.91	0.01	0.29	0.01	1.14
12/11/96 19:12	2.92	3.74	0.91	1.97	1.77	2.91	-0.38	0.29	0.01	1.14
12/11/96 20:24	2.62	3.74	0.91	1.97	1.77	2.91	0.01	-0.11	-0.39	1.14
12/11/96 21:36	2.62	3.74	0.91	1.97	1.77	2.91	-0.38	-0.52	-1.22	1.14
12/11/96 22:48	2.62	3.74	0.91	1.97	2.06	2.91	0.01	-0.11	-1.22	1.14
12/12/96 0:00	2.62	3.74	0.91	1.97	1.77	2.91	-0.38	-0.52	-1.64	1.14
12/12/96 1:12	2.62	3.74	0.91	1.97	2.06	2.91	-0.38	-0.52	-1.22	1.14
12/12/96 2:24	2.62	3.74	0.91	1.97	2.06	2.91	-0.38	-0.11	-0.39	1.14
12/12/96 3:36	2.62	3.74	0.91	1.97	2.06	2.91	-0.38	-0.52	-0.81	1.14
12/12/96 4:48	2.62	3.74	0.91	1.97	2.06	2.91	-0.79	-0.93	-1.22	1.14
12/12/96 6:00	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-1.34	-1.22	0.73
12/12/96 7:12	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-1.34	-1.64	0.73
12/12/96 8:24	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-1.34	-1.64	0.73
12/12/96 9:36	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-0.93	-1.22	0.73
12/12/96 10:48	2.62	3.74	0.91	1.97	2.06	2.91	-0.38	1.49	1.22	0.73
12/12/96 12:00	2.62	3.74	0.91	1.97	2.06	2.91	0.42	4.22	4.35	0.73
12/12/96 13:12	2.62	3.74	0.91	1.97	2.06	2.91	1.62	5.36	4.73	1.14
12/12/96 14:24	2.62	3.74	0.91	1.97	2.06	2.91	2.02	6.48	6.24	1.14
12/12/96 15:36	2.62	3.74	0.91	1.97	2.06	2.91	1.62	4.6	4.35	1.14
12/12/96 16:48	2.62	3.74	0.91	1.97	2.06	2.91	0.01	1.49	1.62	1.14
12/12/96 18:00	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-3.04	-2.49	0.73
12/12/96 19:12	2.62	3.74	0.91	1.97	2.06	2.91	-2.48	-5.69	-3.79	0.73
12/12/96 20:24	2.62	3.74	0.91	1.97	2.06	2.91	-2.05	-2.62	-2.49	0.73
12/12/96 21:36	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-1.77	-2.07	0.33
12/12/96 22:48	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-1.77	-1.64	0.33
12/13/96 0:00	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-1.34	-1.22	0.73
12/13/96 1:12	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-1.34	-1.22	0.73
12/13/96 2:24	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-0.93	-1.22	0.73
12/13/96 3:36	2.62	3.74	0.91	1.97	2.06	2.91	-1.21	-1.34	-1.22	0.73
12/13/96 4:48	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-1.34	-1.64	0.73
12/13/96 6:00	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-2.19	-2.07	0.33
12/13/96 7:12	2.62	3.74	0.91	1.97	2.06	2.91	-2.05	-2.19	-2.49	0.73
12/13/96 8:24	2.62	3.74	0.91	1.97	2.06	2.91	-1.63	-1.77	-2.07	1.14
12/13/96 9:36	2.62	3.74	0.91	1.97	2.06	2.91	-0.79	-0.11	-1.22	1.53
12/13/96 10:48	2.62	3.45	0.91	1.97	1.77	2.91	0.82	3.45	1.22	2.72
12/13/96 12:00	2.62	3.45	0.91	1.97	1.77	2.91	2.02	8.33	3.97	3.88
12/13/96 13:12	2.62	3.74	0.91	1.97	2.06	2.91	4.73	17.89	6.61	5.03
12/13/96 14:24	2.92	3.74	0.91	1.97	2.06	2.91	3.58	8.69	6.61	13.04
12/13/96 15:36	2.92	3.74	0.91	1.97	2.06	2.91	2.8	5.73	5.11	10.91
12/13/96 16:48	2.92	3.74	0.91	1.97	2.06	2.91	2.02	4.6	2.41	9.11
12/13/96 18:00	3.21	3.74	0.91	1.97	2.06	2.91	0.82	0.29	0.82	1.53
12/13/96 19:12	3.21	3.74	0.91	1.97	2.06	2.91	0.42	-0.52	0.01	-0.07
12/13/96 20:24	3.21	3.74	0.91	1.97	2.06	2.91	0.01	-0.52	0.01	-0.48
12/13/96 21:36	3.21	3.74	0.91	1.97	2.06	2.91	0.01	0.29	0.01	0.33

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/13/96 22:48	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.29	0.01	-0.48
12/14/96 0:00	2.92	3.74	0.91	1.97	2.06	2.91	0.01	-0.93	-0.81	-0.48
12/14/96 1:12	2.92	3.74	0.91	1.97	2.06	2.91	0.01	-0.11	-0.39	-0.07
12/14/96 2:24	2.92	3.74	0.91	1.97	2.06	2.91	0.01	0.29	0.01	0.33
12/14/96 3:36	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.29	0.01	1.14
12/14/96 4:48	2.92	3.74	0.91	1.97	2.06	2.91	0.42	0.69	0.41	1.14
12/14/96 6:00	2.92	3.74	0.91	1.97	2.06	2.91	0.82	0.69	0.41	1.53
12/14/96 7:12	2.92	3.74	0.91	1.97	2.06	2.91	0.82	1.09	0.41	1.14
12/14/96 8:24	2.92	3.74	0.91	1.97	2.06	2.91	0.82	0.69	0.82	1.53
12/14/96 9:36	2.92	3.74	0.91	1.97	2.06	2.91	0.82	1.89	1.62	2.33
12/14/96 10:48	2.92	3.74	0.91	1.97	2.06	2.91	2.41	4.98	2.02	4.65
12/14/96 12:00	2.92	3.74	0.91	1.97	2.06	2.91	2.02	3.06	2.41	23.56
12/14/96 13:12	2.92	3.74	0.91	1.97	2.06	2.91	2.41	3.45	3.19	16.55
12/14/96 14:24	2.92	3.74	0.91	1.97	2.06	2.91	2.41	3.83	2.81	17.25
12/14/96 15:36	3.21	3.74	0.91	1.97	2.06	2.91	2.02	2.67	2.02	20.76
12/14/96 16:48	3.21	3.74	0.91	1.97	2.06	2.91	1.62	2.28	2.02	18.65
12/14/96 18:00	3.21	3.74	0.91	1.97	2.06	2.91	1.22	1.49	1.22	3.88
12/14/96 19:12	3.21	3.74	0.91	1.97	2.06	2.91	1.62	1.49	1.22	2.33
12/14/96 20:24	3.21	3.74	0.91	1.97	2.06	2.91	1.22	1.49	1.22	1.53
12/14/96 21:36	3.21	3.74	0.91	1.97	1.77	2.91	1.22	1.09	1.22	1.53
12/14/96 22:48	3.21	3.74	0.91	1.97	1.77	2.91	1.22	0.69	1.22	1.53
12/15/96 0:00	3.21	3.74	0.91	1.67	1.77	2.91	1.22	1.09	1.22	1.14
12/15/96 1:12	3.21	3.74	0.91	1.67	1.77	2.91	0.82	1.09	1.22	1.14
12/15/96 2:24	3.21	3.74	0.91	1.67	1.77	2.91	0.82	0.69	1.22	1.14
12/15/96 3:36	3.21	3.74	0.91	1.67	1.77	2.91	1.22	1.09	1.22	1.14
12/15/96 4:48	2.92	3.74	0.91	1.67	1.77	2.91	0.82	1.09	1.22	1.53
12/15/96 6:00	2.92	3.74	0.91	1.67	1.77	2.91	0.82	0.69	0.82	1.93
12/15/96 7:12	2.92	3.74	0.91	1.67	1.77	2.91	0.82	0.69	0.82	2.33
12/15/96 8:24	2.92	3.74	0.91	1.67	1.77	2.91	0.82	0.69	0.82	2.33
12/15/96 9:36	2.92	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.82	2.72
12/15/96 10:48	2.92	3.74	0.91	1.67	1.77	2.91	0.42	1.09	0.82	3.49
12/15/96 12:00	2.92	3.74	0.91	1.67	1.77	2.91	0.42	1.09	0.82	5.03
12/15/96 13:12	2.92	3.74	0.91	1.67	1.77	2.91	0.42	1.49	0.82	5.78
12/15/96 14:24	3.21	3.74	0.91	1.67	1.77	2.91	0.42	1.49	0.82	6.16
12/15/96 15:36	3.21	3.74	0.91	1.67	1.77	2.91	0.42	1.49	0.41	6.16
12/15/96 16:48	3.21	3.74	0.91	1.67	1.77	2.91	0.42	1.09	0.82	5.41
12/15/96 18:00	3.21	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.41	3.88
12/15/96 19:12	3.21	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.41	4.27
12/15/96 20:24	3.51	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.41	3.49
12/15/96 21:36	3.51	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.41	2.33
12/15/96 22:48	3.51	3.74	0.91	1.67	1.77	2.91	0.42	0.69	0.41	1.53
12/16/96 0:00	3.51	4.04	0.91	1.67	1.77	2.91	0.42	0.69	0.41	1.14
12/16/96 1:12	3.51	4.04	0.91	1.67	1.77	2.91	0.42	1.09	0.41	0.73
12/16/96 2:24	3.21	4.04	0.91	1.67	1.77	2.91	0.42	1.09	0.41	0.73
12/16/96 3:36	3.21	4.04	0.91	1.67	1.77	2.91	0.82	1.09	0.41	0.73
12/16/96 4:48	3.21	4.04	0.91	1.67	1.77	2.91	0.42	0.69	0.01	0.33
12/16/96 6:00	3.21	4.04	0.91	1.67	1.77	2.91	0.01	-0.11	0.01	0.33
12/16/96 7:12	3.21	4.04	0.91	1.67	1.77	2.91	0.42	1.09	0.41	-0.07
12/16/96 8:24	3.21	4.04	0.91	1.67	1.77	2.91	0.42	0.69	0.41	-0.07
12/16/96 9:36	3.21	4.04	0.91	1.67	1.77	2.91	0.82	1.49	0.82	-0.07
12/16/96 10:48	3.21	4.04	0.91	1.67	1.77	2.91	1.62	3.06	2.02	0.33
12/16/96 12:00	3.21	4.04	0.91	1.67	2.06	2.91	1.62	4.22	3.19	1.93
12/16/96 13:12	3.21	4.04	0.91	1.67	2.06	2.91	2.41	6.48	3.97	2.33
12/16/96 14:24	3.21	4.04	0.91	1.67	2.36	2.91	3.96	11.21	4.73	1.93

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/16/96 15:36	3.21	3.74	0.91	1.67	2.36	2.91	4.73	13.69	4.35	1.93
12/16/96 16:48	3.21	3.74	0.91	1.67	2.36	2.91	3.58	13.34	2.41	1.93
12/16/96 18:00	3.21	3.74	0.91	1.67	2.36	2.91	2.02	0.29	0.82	0.33
12/16/96 19:12	3.21	4.04	0.91	1.67	2.36	2.91	0.01	-2.62	0.01	0.33
12/16/96 20:24	3.21	4.04	0.91	1.67	2.06	2.91	-1.21	-3.04	-1.22	-0.48
12/16/96 21:36	3.21	3.74	0.91	1.67	2.06	2.91	0.01	-1.77	0.01	-0.48
12/16/96 22:48	3.21	3.74	0.91	1.67	2.06	2.91	0.01	-0.52	-0.39	-0.48
12/17/96 0:00	3.21	4.04	0.91	1.67	1.77	2.91	0.01	-1.34	-1.64	-0.48
12/17/96 1:12	3.21	3.74	0.91	1.67	1.77	2.91	-0.38	-0.11	-0.39	-0.48
12/17/96 2:24	2.92	3.74	0.91	1.67	1.77	2.91	-0.38	-0.11	0.01	-0.07
12/17/96 3:36	2.92	4.04	0.91	1.67	1.77	2.91	0.01	0.29	0.41	0.33
12/17/96 4:48	2.92	3.74	0.91	1.67	1.77	2.91	0.82	1.09	0.82	0.33
12/17/96 6:00	2.92	3.74	0.91	1.67	1.77	2.91	1.62	1.49	1.22	0.33
12/17/96 7:12	2.92	3.74	0.91	1.67	1.77	2.91	1.62	1.09	0.82	0.33
12/17/96 8:24	2.92	3.74	0.91	1.67	1.77	2.91	1.22	0.29	1.22	0.33
12/17/96 9:36	2.92	3.74	0.91	1.67	1.77	2.91	0.82	1.09	1.22	0.33
12/17/96 10:48	2.92	3.74	0.91	1.67	1.77	2.91	2.02	3.83	3.19	1.14
12/17/96 12:00	2.92	3.74	0.91	1.67	1.77	2.91	5.11	16.14	8.09	1.93
12/17/96 13:12	2.92	3.74	0.91	1.67	2.06	2.91	5.86	16.84	12.05	3.88
12/17/96 14:24	2.92	3.74	1.21	1.67	2.36	2.91	6.98	10.86	8.46	5.41
12/17/96 15:36	2.92	3.74	1.8	1.67	2.65	2.91	6.61	17.89	8.82	3.88
12/17/96 16:48	2.92	3.74	2.39	1.67	2.65	2.91	5.86	20.34	5.11	3.11
12/17/96 18:00	2.92	3.74	2.98	1.67	2.65	2.91	3.58	2.67	2.81	1.53
12/17/96 19:12	2.92	3.74	2.98	1.97	2.65	2.91	2.8	0.69	2.41	1.14
12/17/96 20:24	2.92	3.74	2.98	1.97	2.65	2.91	2.02	0.69	1.62	0.73
12/17/96 21:36	2.92	3.74	2.68	2.26	2.36	2.91	2.02	0.69	1.62	0.73
12/17/96 22:48	2.92	3.74	2.39	2.26	2.36	3.21	1.22	0.29	1.22	-0.07
12/18/96 0:00	2.92	3.74	2.09	2.26	2.36	3.21	0.82	-0.11	0.82	-0.48
12/18/96 1:12	2.62	3.74	1.8	2.26	2.06	3.21	0.42	0.29	0.82	-1.31
12/18/96 2:24	2.62	3.74	1.8	2.26	2.06	3.21	0.82	-0.11	0.82	-1.31
12/18/96 3:36	2.62	3.74	1.5	2.26	2.06	3.21	0.42	0.29	1.22	-2.15
12/18/96 4:48	2.62	3.74	1.5	2.26	2.06	3.21	0.82	1.49	1.62	-3.44
12/18/96 6:00	2.62	3.74	1.5	2.26	2.06	3.21	1.22	1.49	2.02	-4.32
12/18/96 7:12	2.62	3.74	1.5	2.26	2.06	3.21	2.02	1.89	2.41	-4.76
12/18/96 8:24	2.62	3.74	1.21	1.97	2.06	2.91	2.41	1.49	2.02	-5.21
12/18/96 9:36	2.62	3.74	1.21	1.97	2.06	3.21	2.41	2.67	2.41	-5.67
12/18/96 10:48	2.62	3.74	1.21	1.97	2.06	3.21	3.19	3.45	3.19	-2.15
12/18/96 12:00	2.62	3.74	1.21	1.97	2.06	2.91	4.73	5.36	4.73	3.49
12/18/96 13:12	2.33	3.74	1.21	1.97	2.36	2.91	5.86	6.85	5.87	3.11
12/18/96 14:24	2.33	3.74	1.5	1.97	2.36	3.21	5.86	6.11	5.87	4.65
12/18/96 15:36	2.33	3.74	1.8	1.97	2.65	3.21	5.86	6.11	5.87	1.93
12/18/96 16:48	2.33	3.74	1.8	1.97	2.65	3.21	4.73	4.98	5.49	-1.31
12/18/96 18:00	2.33	3.45	2.09	1.97	2.65	3.21	3.96	3.83	3.97	-6.59
12/18/96 19:12	2.33	3.45	2.09	1.97	2.94	3.21	3.96	3.83	3.97	-7.06
12/18/96 20:24	2.03	3.45	2.09	2.26	2.94	3.21	3.96	4.22	3.58	-7.53
12/18/96 21:36	2.03	3.45	2.39	2.26	2.94	3.21	2.41	2.67	2.41	-9.48
12/18/96 22:48	2.03	3.45	2.39	2.26	2.94	3.21	1.62	1.89	1.62	-9.98
12/19/96 0:00	2.03	3.45	2.39	2.26	2.94	3.21	0.82	1.09	1.22	-11.01
12/19/96 1:12	2.03	3.45	2.09	2.26	2.65	3.21	0.42	0.69	0.82	-11.53
12/19/96 2:24	2.03	3.45	2.09	2.26	2.65	3.21	0.42	0.69	0.41	-12.07
12/19/96 3:36	2.03	3.45	1.8	2.26	2.65	3.21	0.42	0.29	0.41	-12.07
12/19/96 4:48	2.03	3.45	1.8	2.26	2.36	3.21	0.01	0.29	0.41	-12.61
12/19/96 6:00	2.03	3.45	1.8	2.26	2.36	3.21	0.01	0.29	0.41	-13.73
12/19/96 7:12	1.74	3.45	1.5	2.26	2.36	3.21	0.01	-0.11	0.01	-13.73

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/19/96 8:24	1.74	3.45	1.5	2.26	2.36	3.21	0.01	-0.11	-0.39	-14.87
12/19/96 9:36	1.74	3.16	1.5	2.26	2.36	3.21	0.01	-0.11	0.01	-11.53
12/19/96 10:48	1.74	3.16	1.5	2.26	2.36	3.21	0.42	1.09	0.41	-9.98
12/19/96 12:00	1.74	3.16	1.21	2.26	2.36	3.21	1.22	2.67	2.02	-0.07
12/19/96 13:12	1.74	3.16	1.21	2.26	2.36	3.21	1.22	2.67	2.41	1.14
12/19/96 14:24	1.74	3.16	1.21	2.26	2.36	3.21	1.22	2.67	2.02	-3.88
12/19/96 15:36	1.74	3.16	1.5	2.26	2.65	3.21	1.22	2.28	2.02	-5.67
12/19/96 16:48	1.74	3.16	1.5	2.26	2.65	3.21	1.62	2.28	1.62	-6.59
12/19/96 18:00	1.74	3.16	1.5	2.26	2.65	3.21	0.82	0.69	0.41	-11.53
12/19/96 19:12	1.44	3.16	1.5	2.26	2.65	3.21	0.42	0.29	0.01	-12.61
12/19/96 20:24	1.44	3.16	1.5	2.26	2.36	3.21	0.01	-0.11	-0.39	-13.73
12/19/96 21:36	1.44	3.16	1.5	2.26	2.36	3.21	0.01	-0.11	-0.39	-13.16
12/19/96 22:48	1.44	3.16	1.5	2.26	2.36	3.21	-0.38	-0.11	-0.39	-14.29
12/20/96 0:00	1.44	3.16	1.5	2.26	2.36	3.21	-0.38	-0.11	-0.39	-14.87
12/20/96 1:12	1.44	3.16	1.5	2.26	2.36	3.21	-0.38	-0.11	-0.39	-15.46
12/20/96 2:24	1.44	3.16	1.21	2.26	2.36	3.21	-0.38	-0.11	-0.39	-15.46
12/20/96 3:36	1.44	3.16	1.21	2.26	2.06	3.21	0.01	0.29	0.01	-14.29
12/20/96 4:48	1.44	2.86	1.21	2.26	2.06	3.21	0.01	0.29	0.41	-12.61
12/20/96 6:00	1.44	2.86	1.21	2.26	2.06	3.21	0.01	0.29	0.41	-12.61
12/20/96 7:12	1.44	2.86	1.21	1.97	2.06	3.21	0.01	0.29	0.41	-11.01
12/20/96 8:24	1.44	2.86	1.21	1.97	2.06	3.21	0.01	0.29	0.01	-10.49
12/20/96 9:36	1.44	2.86	1.21	1.97	2.06	3.21	0.01	0.29	0.41	-9.48
12/20/96 10:48	1.44	2.86	1.21	1.97	2.06	3.21	0.01	1.09	0.41	-8.01
12/20/96 12:00	1.44	2.86	1.21	1.97	2.06	3.21	0.42	1.89	1.22	4.65
12/20/96 13:12	1.44	2.86	1.21	1.97	2.06	3.21	0.82	4.22	2.41	8.01
12/20/96 14:24	1.14	2.86	1.21	1.97	2.06	3.21	1.62	7.59	3.97	6.16
12/20/96 15:36	1.14	2.86	1.21	1.97	2.06	3.21	0.82	3.45	3.97	-0.07
12/20/96 16:48	1.14	2.86	1.21	1.97	2.06	3.21	0.82	2.67	2.02	-5.21
12/20/96 18:00	1.14	2.86	1.21	1.97	2.06	3.21	0.42	1.09	0.41	-7.53
12/20/96 19:12	1.14	2.86	1.21	1.97	2.06	3.21	0.42	0.69	0.41	-8.98
12/20/96 20:24	1.14	2.86	0.91	1.97	2.06	3.21	0.42	0.69	0.41	-10.49
12/20/96 21:36	1.14	2.86	0.91	1.97	2.06	3.21	0.42	0.69	0.41	-11.01
12/20/96 22:48	1.14	2.86	0.91	1.97	2.06	3.21	0.01	-0.11	0.01	-12.61
12/21/96 0:00	1.14	2.57	0.91	1.97	2.06	3.21	-0.38	-0.52	-0.39	-13.16
12/21/96 1:12	1.14	2.57	0.91	1.97	2.06	3.21	-1.21	-0.93	-1.22	-13.73
12/21/96 2:24	1.14	2.57	0.91	1.97	2.06	3.21	-1.21	-1.34	-1.22	-14.29
12/21/96 3:36	1.14	2.57	0.91	1.97	2.06	3.21	-2.05	-1.77	-2.07	-14.87
12/21/96 4:48	1.14	2.57	0.91	1.97	2.06	3.21	-2.91	-3.04	-2.92	-13.73
12/21/96 6:00	1.14	2.57	0.91	1.97	2.06	3.21	-3.77	-3.48	-3.79	-12.07
12/21/96 7:12	1.14	2.57	0.91	1.67	1.77	3.21	-4.21	-4.35	-4.23	-11.53
12/21/96 8:24	1.14	2.57	0.91	1.67	1.77	3.21	-4.66	-5.24	-5.12	-9.98
12/21/96 9:36	1.14	2.57	0.91	1.97	1.77	3.21	-5.11	-4.79	-5.58	-8.49
12/21/96 10:48	1.14	2.57	0.91	1.67	1.77	3.21	-5.11	1.89	-2.49	-7.06
12/21/96 12:00	1.14	2.57	0.91	1.67	1.77	2.91	-5.11	4.22	-2.07	-5.21
12/21/96 13:12	1.14	2.57	0.91	1.67	1.77	2.91	-4.21	4.22	-0.39	-3.01
12/21/96 14:24	1.14	2.57	0.91	1.67	1.77	2.91	-4.21	4.98	-3.35	-2.58
12/21/96 15:36	1.14	2.57	0.91	1.67	1.77	2.91	-4.66	4.6	-4.23	-2.15
12/21/96 16:48	0.84	2.57	0.91	1.67	1.77	2.91	-5.56	1.49	-6.03	-2.15
12/21/96 18:00	1.14	2.57	0.91	1.67	1.77	2.91	-6.48	-6.62	-6.97	-2.15
12/21/96 19:12	1.14	2.57	0.91	1.67	1.77	2.91	-7.42	-8.52	-7.44	-2.58
12/21/96 20:24	0.84	2.57	0.91	1.67	1.77	2.91	-7.89	-8.52	-7.44	-3.44
12/21/96 21:36	1.14	2.57	0.91	1.67	1.77	2.91	-8.87	-10.02	-9.39	-3.01
12/21/96 22:48	1.14	2.57	0.91	1.67	1.47	2.91	-9.37	-11.04	-10.41	-2.15
12/22/96 0:00	0.84	2.57	0.61	1.67	1.47	2.91	-10.38	-12.09	-10.93	-1.31

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/22/96 1:12	0.84	2.57	0.61	1.67	1.47	2.91	-10.89	-13.19	-11.98	-0.07
12/22/96 2:24	0.84	2.57	0.61	1.67	1.47	2.91	-11.41	-14.32	-11.98	0.33
12/22/96 3:36	0.84	2.57	0.61	1.67	1.47	2.91	-11.94	-13.75	-12.52	0.33
12/22/96 4:48	0.84	2.57	0.61	1.67	1.47	2.91	-12.48	-14.32	-13.63	0.33
12/22/96 6:00	0.84	2.57	0.61	1.67	1.17	2.91	-13.03	-14.89	-14.2	-0.48
12/22/96 7:12	0.84	2.57	0.61	1.67	1.17	2.91	-13.03	-15.47	-14.78	-0.07
12/22/96 8:24	0.84	2.57	0.61	1.67	1.17	2.62	-14.16	-16.07	-14.78	-0.48
12/22/96 9:36	0.84	2.27	0.61	1.67	1.17	2.62	-14.16	-12.63	-11.98	-0.48
12/22/96 10:48	1.14	2.27	0.61	1.67	1.17	2.62	-12.48	-2.62	-8.89	1.14
12/22/96 12:00	0.84	2.27	0.31	1.67	1.17	2.62	-9.87	0.69	-7.44	5.41
12/22/96 13:12	0.84	2.27	0.31	1.67	1.17	2.62	-8.87	1.49	-3.79	5.41
12/22/96 14:24	0.84	2.27	0.31	1.67	1.17	2.62	-7.89	0.69	-6.03	6.53
12/22/96 15:36	0.84	2.27	0.31	1.67	1.17	2.62	-8.38	0.69	-7.44	4.65
12/22/96 16:48	0.84	2.27	0.31	1.67	1.17	2.62	-9.37	-6.62	-9.9	3.49
12/22/96 18:00	1.14	2.27	0.31	1.37	1.17	2.62	-10.89	-11.57	-11.45	1.93
12/22/96 19:12	0.84	2.27	0.31	1.37	0.88	2.62	-11.94	-13.75	-12.52	1.14
12/22/96 20:24	1.14	2.27	0.31	1.37	0.88	2.62	-12.48	-13.75	-14.2	1.53
12/22/96 21:36	0.84	2.27	0.31	1.37	0.88	2.62	-13.03	-13.75	-13.07	1.53
12/22/96 22:48	1.14	2.27	0.31	1.37	0.88	2.62	-13.59	-14.32	-14.2	1.14
12/23/96 0:00	1.14	2.27	0.01	1.37	0.88	2.62	-14.16	-16.07	-14.78	0.33
12/23/96 1:12	1.14	2.27	0.01	1.37	0.88	2.62	-14.16	-16.07	-15.36	0.33
12/23/96 2:24	1.14	2.27	0.01	1.37	0.88	2.32	-14.16	-15.47	-15.36	0.33
12/23/96 3:36	1.14	2.27	0.01	1.37	0.88	2.32	-14.16	-13.75	-14.2	0.33
12/23/96 4:48	1.14	2.27	0.01	1.37	0.88	2.32	-12.48	-12.63	-12.52	0.73
12/23/96 6:00	1.14	2.27	0.01	1.37	0.88	2.32	-11.94	-12.09	-12.52	0.73
12/23/96 7:12	1.14	2.27	0.01	1.37	0.88	2.32	-11.41	-10.53	-11.45	1.14
12/23/96 8:24	1.14	2.27	0.01	1.37	0.88	2.32	-9.37	-9.51	-9.9	1.14
12/23/96 9:36	1.14	2.27	0.01	1.37	0.88	2.32	-9.37	-9.01	-9.39	1.53
12/23/96 10:48	1.14	2.27	0.01	1.37	0.58	2.32	-7.89	-6.62	-7.44	1.53
12/23/96 12:00	1.14	2.27	0.01	1.37	0.58	2.32	-5.56	3.83	-3.79	2.33
12/23/96 13:12	1.14	2.27	-0.28	1.37	0.58	2.32	-4.21	3.45	2.02	2.72
12/23/96 14:24	1.14	2.27	-0.28	1.07	0.58	2.32	-3.34	3.83	-2.07	2.72
12/23/96 15:36	1.14	2.27	-0.28	1.07	0.58	2.32	-4.66	5.36	-2.92	2.33
12/23/96 16:48	1.14	2.27	-0.28	1.07	0.58	2.32	-5.56	-4.35	-5.12	2.33
12/23/96 18:00	1.14	2.27	-0.28	1.07	0.58	2.32	-7.42	-7.56	-6.97	1.93
12/23/96 19:12	0.84	2.27	-0.28	1.07	0.58	2.32	-8.87	-9.51	-8.89	2.72
12/23/96 20:24	0.84	2.27	-0.28	1.07	0.58	2.32	-10.38	-11.04	-10.41	3.88
12/23/96 21:36	0.84	2.27	-0.28	1.07	0.58	2.32	-11.41	-12.09	-10.93	5.03
12/23/96 22:48	0.84	2.27	-0.28	1.07	0.58	2.32	-12.48	-13.19	-12.52	6.16
12/24/96 0:00	0.84	2.27	-0.28	1.07	0.58	2.03	-13.03	-13.75	-13.07	5.78
12/24/96 1:12	0.84	2.27	-0.28	1.07	0.58	2.03	-13.59	-14.89	-13.63	7.27
12/24/96 2:24	0.84	2.27	-0.28	1.07	0.58	2.03	-14.16	-14.89	-14.2	7.27
12/24/96 3:36	0.84	2.27	-0.28	1.07	0.58	2.03	-14.16	-14.89	-14.78	4.65
12/24/96 4:48	0.84	2.27	-0.28	1.07	0.58	2.03	-13.03	-13.75	-14.2	3.11
12/24/96 6:00	0.84	2.27	-0.28	1.07	0.58	2.03	-12.48	-12.63	-11.98	1.93
12/24/96 7:12	0.84	2.27	-0.28	1.07	0.58	2.03	-11.41	-11.57	-11.45	0.73
12/24/96 8:24	0.84	2.27	-0.58	1.07	0.58	2.03	-10.38	-10.02	-10.41	0.33
12/24/96 9:36	0.84	2.27	-0.58	1.07	0.58	2.03	-9.37	-8.52	-8.89	-0.07
12/24/96 10:48	1.14	2.27	-0.58	1.07	0.58	2.03	-7.42	-5.69	-6.97	0.33
12/24/96 12:00	1.14	2.27	-0.58	0.77	0.58	2.03	-5.56	-1.77	-4.67	0.73
12/24/96 13:12	1.14	2.27	-0.58	0.77	0.58	2.03	-3.77	0.29	-2.92	1.93
12/24/96 14:24	1.14	2.27	-0.58	0.77	0.58	2.03	-2.91	0.29	-2.49	1.14
12/24/96 15:36	1.14	2.27	-0.58	0.77	0.58	2.03	-2.91	-1.34	-2.49	-1.31
12/24/96 16:48	1.14	2.27	-0.58	0.77	0.58	2.03	-2.05	-1.34	-2.07	-3.44

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/24/96 18:00	1.14	2.27	-0.58	0.77	0.58	2.03	-2.05	-2.19	-2.49	-4.76
12/24/96 19:12	1.14	2.27	-0.58	0.77	0.58	2.03	-2.48	-3.04	-3.35	-5.21
12/24/96 20:24	1.14	2.27	-0.58	0.77	0.58	2.03	-2.48	-3.04	-3.35	-5.67
12/24/96 21:36	1.14	2.27	-0.58	0.77	0.58	2.03	-2.48	-3.04	-3.35	-5.67
12/24/96 22:48	1.14	2.27	-0.58	0.77	0.58	2.03	-2.05	-2.62	-3.35	-5.67
12/25/96 0:00	1.14	2.27	-0.58	0.77	0.58	2.03	-1.63	-2.19	-2.92	-6.12
12/25/96 1:12	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.11	-1.22	-6.12
12/25/96 2:24	1.14	2.27	-0.58	0.77	0.58	2.03	0.01	-0.11	-0.39	-6.59
12/25/96 3:36	1.14	2.27	-0.58	0.77	0.58	2.03	0.42	0.69	0.41	-6.59
12/25/96 4:48	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.52	0.01	-6.59
12/25/96 6:00	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.93	-0.39	-7.06
12/25/96 7:12	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.52	-0.39	-7.06
12/25/96 8:24	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.52	-0.39	-7.53
12/25/96 9:36	1.14	2.27	-0.58	0.77	0.58	2.03	-0.38	-0.93	-0.81	-8.01
12/25/96 10:48	1.14	2.27	-0.58	0.77	0.58	2.03	0.82	2.67	1.62	-7.53
12/25/96 12:00	1.14	2.27	-0.58	0.77	0.58	2.03	2.02	7.22	3.97	-6.59
12/25/96 13:12	1.14	2.27	-0.58	0.77	0.58	2.03	3.19	9.42	5.49	-3.44
12/25/96 14:24	1.14	2.27	-0.58	0.77	0.58	2.03	3.96	11.21	6.24	3.88
12/25/96 15:36	1.14	2.27	-0.58	0.77	0.58	1.73	2.8	5.73	4.35	-1.31
12/25/96 16:48	1.14	2.27	-0.58	0.77	0.58	1.73	2.41	3.83	2.81	-9.48
12/25/96 18:00	1.14	2.27	-0.58	0.77	0.58	1.73	1.62	1.09	1.62	-10.49
12/25/96 19:12	1.14	2.27	-0.28	0.77	0.58	1.73	0.82	0.29	1.22	-10.49
12/25/96 20:24	1.14	2.27	-0.28	0.77	0.58	1.73	0.82	0.69	1.22	-10.49
12/25/96 21:36	1.14	2.27	-0.28	0.77	0.58	1.73	0.82	1.09	1.22	-11.01
12/25/96 22:48	1.14	2.27	-0.28	0.77	0.58	1.73	0.82	0.69	1.22	-11.01
12/26/96 0:00	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.41	-11.01
12/26/96 1:12	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.41	-11.01
12/26/96 2:24	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.41	-10.49
12/26/96 3:36	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	0.29	0.41	-10.49
12/26/96 4:48	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.41	-10.49
12/26/96 6:00	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.82	-10.49
12/26/96 7:12	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.82	-10.49
12/26/96 8:24	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	1.09	0.82	-10.49
12/26/96 9:36	1.14	2.27	-0.28	0.77	0.58	1.73	0.82	1.49	1.22	-9.98
12/26/96 10:48	1.14	2.27	-0.28	0.77	0.58	1.73	1.22	1.89	1.22	-9.48
12/26/96 12:00	1.14	2.27	-0.28	0.77	0.58	1.73	1.62	2.28	1.62	-7.53
12/26/96 13:12	1.14	2.27	-0.28	0.77	0.58	1.73	2.02	3.06	2.02	-7.06
12/26/96 14:24	1.14	2.27	-0.28	0.77	0.58	1.73	2.41	4.22	2.02	-3.44
12/26/96 15:36	1.14	2.27	-0.28	0.77	0.58	1.73	2.02	2.67	2.02	-3.44
12/26/96 16:48	1.14	2.27	-0.28	0.77	0.58	1.73	2.41	2.28	1.62	-5.67
12/26/96 18:00	1.14	2.27	-0.28	0.77	0.58	1.73	1.62	1.89	1.62	-7.53
12/26/96 19:12	1.14	2.27	-0.28	0.77	0.58	1.73	3.19	2.67	2.02	-9.98
12/26/96 20:24	1.14	2.27	-0.28	0.77	0.58	1.73	4.34	3.83	3.97	-9.48
12/26/96 21:36	1.14	2.27	-0.28	0.77	0.58	1.73	5.48	4.98	5.11	-12.07
12/26/96 22:48	1.14	2.27	-0.28	0.77	0.58	1.73	6.61	6.11	5.87	-14.87
12/27/96 0:00	1.14	2.27	-0.28	0.77	0.58	1.73	6.98	6.11	5.11	-17.27
12/27/96 1:12	1.14	2.27	-0.28	0.77	0.58	1.73	7.35	7.59	6.61	-17.92
12/27/96 2:24	1.14	2.27	-0.28	0.77	0.58	1.73	7.72	7.22	6.61	-19.24
12/27/96 3:36	1.14	2.27	-0.28	0.77	0.58	1.73	4.73	4.6	4.35	-17.92
12/27/96 4:48	1.14	2.27	-0.28	0.77	0.58	1.73	2.8	3.06	2.81	-17.92
12/27/96 6:00	1.14	2.27	-0.28	0.77	0.58	1.73	2.02	1.89	1.62	-18.58
12/27/96 7:12	1.14	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.41	-18.58
12/27/96 8:24	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.01	-17.92
12/27/96 9:36	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.01	-16.05

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/27/96 10:48	1.14	2.27	-0.28	0.77	0.58	1.73	0.01	1.49	0.01	-11.53
12/27/96 12:00	1.14	2.27	-0.28	0.77	0.58	1.73	-0.38	1.09	0.82	-7.53
12/27/96 13:12	1.14	2.27	-0.28	0.77	0.58	1.73	-1.21	-0.11	1.62	-6.59
12/27/96 14:24	1.14	2.27	-0.28	0.77	0.58	1.73	-1.21	2.67	0.01	-7.06
12/27/96 15:36	1.14	2.27	0.01	0.77	0.58	1.73	-2.05	-0.93	-1.22	-5.67
12/27/96 16:48	1.14	2.27	0.01	0.77	0.58	1.73	-3.34	-3.04	-2.92	-6.12
12/27/96 18:00	1.14	2.27	0.01	0.77	0.58	1.73	-4.66	-4.79	-4.67	-6.59
12/27/96 19:12	1.14	2.27	0.01	0.77	0.58	1.73	-4.66	-5.24	-5.12	-6.59
12/27/96 20:24	1.14	2.27	0.01	0.77	0.88	1.73	-5.11	-5.24	-5.58	-5.21
12/27/96 21:36	1.14	2.27	0.01	0.77	0.88	1.73	-5.56	-5.69	-6.03	-4.32
12/27/96 22:48	1.14	2.27	0.01	0.77	0.88	1.73	-5.56	-5.69	-6.03	-3.44
12/28/96 0:00	1.14	2.27	0.01	0.77	0.88	1.73	-5.56	-6.16	-6.03	-2.15
12/28/96 1:12	1.14	2.27	0.01	0.77	0.88	1.73	-6.02	-6.16	-6.49	-1.31
12/28/96 2:24	1.14	2.27	0.01	0.77	0.88	1.73	-6.48	-6.62	-6.49	-1.31
12/28/96 3:36	1.14	2.27	0.01	0.77	0.88	1.73	-6.48	-6.62	-6.97	-0.48
12/28/96 4:48	1.14	2.27	0.01	0.77	0.88	1.73	-6.48	-6.62	-6.97	0.33
12/28/96 6:00	1.14	2.27	0.01	0.77	0.88	1.73	-6.48	-7.08	-7.44	0.73
12/28/96 7:12	1.14	2.27	0.01	0.77	0.88	1.73	-6.94	-7.08	-6.97	1.14
12/28/96 8:24	1.14	2.27	0.01	0.77	0.88	1.73	-7.42	-7.56	-7.44	1.53
12/28/96 9:36	1.14	2.27	0.01	0.77	0.88	1.73	-7.89	-7.56	-7.92	2.33
12/28/96 10:48	1.14	2.27	0.01	0.77	0.88	1.73	-7.89	-6.16	-7.44	2.72
12/28/96 12:00	1.14	2.27	0.01	0.77	0.88	1.73	-7.42	-4.79	-5.58	2.72
12/28/96 13:12	1.14	2.27	0.01	0.77	0.58	1.73	-7.89	-2.19	-3.79	5.03
12/28/96 14:24	1.14	2.27	0.01	0.77	0.88	1.73	-6.94	3.45	-5.58	3.88
12/28/96 15:36	1.14	2.27	0.01	0.77	0.88	1.73	-6.94	-5.69	-6.97	5.03
12/28/96 16:48	1.14	2.27	0.01	0.77	0.88	1.73	-8.87	-9.01	-9.39	3.11
12/28/96 18:00	1.14	2.27	0.01	0.77	0.88	1.73	-10.38	-10.53	-10.93	1.93
12/28/96 19:12	1.14	2.27	0.01	0.77	0.88	1.73	-10.38	-10.53	-10.93	1.53
12/28/96 20:24	1.14	2.27	0.01	0.77	0.58	1.73	-10.38	-10.53	-10.93	1.93
12/28/96 21:36	1.14	2.27	0.01	0.77	0.58	1.73	-10.89	-11.57	-11.45	1.14
12/28/96 22:48	1.14	2.27	0.01	0.77	0.58	1.73	-10.89	-11.57	-11.45	0.73
12/29/96 0:00	1.14	2.27	0.01	0.77	0.58	1.73	-10.38	-11.04	-11.45	0.73
12/29/96 1:12	1.14	2.27	0.01	0.77	0.58	1.73	-10.38	-11.04	-10.93	1.53
12/29/96 2:24	1.14	2.27	0.01	0.77	0.58	1.73	-10.38	-10.53	-10.41	0.73
12/29/96 3:36	1.14	2.27	0.01	0.77	0.58	1.73	-10.38	-10.02	-10.41	0.73
12/29/96 4:48	1.14	2.27	-0.28	0.77	0.58	1.73	-10.38	-10.53	-10.41	0.73
12/29/96 6:00	1.14	2.27	-0.28	0.77	0.58	1.73	-10.38	-10.53	-10.41	0.73
12/29/96 7:12	1.14	2.27	-0.28	0.77	0.58	1.73	-10.38	-10.53	-10.41	0.73
12/29/96 8:24	1.14	2.27	-0.28	0.77	0.58	1.73	-10.38	-10.02	-10.41	1.14
12/29/96 9:36	1.14	2.27	-0.28	0.77	0.58	1.73	-9.87	-9.51	-9.9	1.14
12/29/96 10:48	1.14	2.27	-0.28	0.77	0.58	1.73	-9.37	-8.03	-9.39	1.14
12/29/96 12:00	1.14	2.27	-0.28	0.77	0.58	1.73	-8.87	-5.69	-7.44	2.33
12/29/96 13:12	1.14	2.27	-0.28	0.77	0.58	1.73	-8.38	-5.24	-6.97	2.72
12/29/96 14:24	1.14	2.27	-0.28	0.77	0.58	1.73	-6.94	-0.11	-5.12	2.33
12/29/96 15:36	1.14	2.27	-0.28	0.77	0.58	1.73	-6.94	-1.34	-6.03	1.53
12/29/96 16:48	1.14	2.27	-0.28	0.77	0.58	1.73	-6.94	-4.79	-6.03	0.73
12/29/96 18:00	1.14	2.27	-0.28	0.77	0.58	1.73	-7.89	-7.56	-7.92	0.33
12/29/96 19:12	1.14	2.27	-0.28	0.77	0.58	1.73	-8.38	-10.02	-9.9	-0.48
12/29/96 20:24	1.14	2.27	-0.28	0.77	0.58	1.73	-8.87	-9.51	-9.39	-0.89
12/29/96 21:36	1.44	2.27	-0.28	0.77	0.58	1.73	-9.87	-13.19	-10.93	-1.73
12/29/96 22:48	1.44	2.27	-0.28	0.77	0.58	1.73	-11.94	-17.28	-14.78	-1.73
12/30/96 0:00	1.44	2.27	-0.28	0.77	0.58	1.73	-12.48	-17.93	-16.56	-1.73
12/30/96 1:12	1.44	2.27	-0.28	0.77	0.58	1.73	-15.32	-19.93	-18.48	-2.15
12/30/96 2:24	1.44	2.27	-0.28	0.77	0.58	1.73	-15.91	-19.26	-18.48	-2.58

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
12/30/96 3:36	1.44	2.27	-0.28	0.77	0.58	1.73	-17.12	-20.61	-18.48	-3.01
12/30/96 4:48	1.44	2.27	-0.28	0.77	0.58	1.73	-16.51	-18.59	-18.48	-3.44
12/30/96 6:00	1.44	2.27	-0.28	0.77	0.58	1.73	-16.51	-17.93	-19.14	-3.44
12/30/96 7:12	1.44	2.27	-0.28	0.77	0.58	1.73	-16.51	-16.67	-17.82	-3.88
12/30/96 8:24	1.44	2.27	-0.28	0.77	0.58	1.73	-15.91	-16.07	-17.17	-3.88
12/30/96 9:36	1.44	2.27	-0.28	0.77	0.58	1.73	-15.91	-14.89	-16.56	-3.88
12/30/96 10:48	1.44	2.27	-0.28	0.77	0.58	1.73	-13.03	-10.02	-12.52	-3.01
12/30/96 12:00	1.44	2.27	-0.28	0.77	0.58	1.73	-10.38	-0.93	-9.9	-2.58
12/30/96 13:12	1.44	2.27	-0.28	0.77	0.58	1.73	-9.37	-4.79	-8.4	-2.15
12/30/96 14:24	1.44	2.27	-0.28	0.77	0.58	1.73	-8.38	-3.91	-8.4	-1.73
12/30/96 15:36	1.44	2.27	-0.28	0.77	0.58	1.73	-6.94	-2.62	-7.44	-2.15
12/30/96 16:48	1.44	2.27	-0.28	0.77	0.58	1.73	-6.48	-3.04	-6.49	-2.15
12/30/96 18:00	1.44	2.27	-0.28	0.77	0.58	1.73	-6.48	-5.69	-6.49	-2.58
12/30/96 19:12	1.44	2.27	-0.28	0.77	0.58	1.73	-6.02	-5.69	-6.97	-2.15
12/30/96 20:24	1.44	2.27	-0.28	0.77	0.58	1.73	-5.11	-3.91	-5.58	-2.15
12/30/96 21:36	1.44	2.27	-0.28	0.77	0.58	1.73	-3.34	-2.19	-5.12	-1.73
12/30/96 22:48	1.44	2.27	-0.28	0.77	0.58	1.73	-2.48	-1.77	-3.79	-1.73
12/31/96 0:00	1.44	2.27	-0.28	0.77	0.58	1.73	-2.05	-1.34	-2.49	-1.31
12/31/96 1:12	1.44	2.27	-0.28	0.77	0.58	1.73	-1.21	-0.52	-1.64	-0.89
12/31/96 2:24	1.44	2.27	-0.28	0.77	0.58	1.73	-1.21	-0.52	-1.22	-0.89
12/31/96 3:36	1.44	2.27	-0.28	0.77	0.58	1.73	-0.79	0.29	-0.39	-0.89
12/31/96 4:48	1.44	2.27	-0.28	0.77	0.58	1.73	0.01	0.29	0.01	-1.73
12/31/96 6:00	1.44	2.27	-0.28	0.77	0.58	1.73	0.82	1.09	0.41	-2.15
12/31/96 7:12	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	1.49	0.82	-1.73
12/31/96 8:24	1.44	2.27	-0.28	0.77	0.58	1.73	2.02	1.89	0.82	-2.15
12/31/96 9:36	1.44	2.27	-0.28	0.77	0.58	1.73	2.02	2.67	2.02	-2.58
12/31/96 10:48	1.44	2.27	-0.28	0.77	0.58	1.73	2.41	3.45	2.41	-2.58
12/31/96 12:00	1.44	2.27	-0.28	0.77	0.58	1.73	2.41	3.45	2.41	-0.48
12/31/96 13:12	1.44	2.27	-0.28	0.77	0.58	1.73	3.19	5.36	4.35	0.33
12/31/96 14:24	1.44	2.27	-0.28	0.77	0.58	1.73	3.58	5.36	3.58	1.14
12/31/96 15:36	1.44	2.27	-0.28	0.77	0.58	1.73	3.58	6.48	4.73	-1.73
12/31/96 16:48	1.44	2.27	-0.28	0.77	0.58	1.73	2.8	4.22	2.81	-3.01
12/31/96 18:00	1.44	2.27	-0.28	0.77	0.58	1.73	2.41	2.28	2.02	-4.76
12/31/96 19:12	1.44	2.27	-0.28	0.77	0.58	1.73	2.02	1.49	1.22	-4.76
12/31/96 20:24	1.44	2.27	-0.28	0.77	0.58	1.73	1.62	1.49	1.22	-4.76
12/31/96 21:36	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	1.49	1.22	-4.76
12/31/96 22:48	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	1.09	1.22	-5.21
1/1/97 0:00	1.44	2.27	-0.28	0.77	0.58	1.73	0.42	1.09	0.41	-5.21
1/1/97 1:12	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	1.09	0.82	-4.76
1/1/97 2:24	1.44	2.27	-0.28	0.77	0.58	1.73	0.82	0.69	0.82	-4.32
1/1/97 3:36	1.44	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.82	-3.88
1/1/97 4:48	1.44	2.27	-0.28	0.77	0.58	1.73	0.42	0.69	0.41	-3.44
1/1/97 6:00	1.44	2.27	-0.28	0.77	0.58	1.73	0.82	0.69	0.41	-3.44
1/1/97 7:12	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	0.69	0.41	-3.01
1/1/97 8:24	1.44	2.27	-0.28	0.77	0.58	1.73	0.42	1.09	0.82	-2.58
1/1/97 9:36	1.44	2.27	-0.28	0.77	0.58	1.73	0.42	1.09	0.82	-2.15
1/1/97 10:48	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	1.49	1.22	-2.15
1/1/97 12:00	1.44	2.27	-0.28	0.77	0.58	1.73	1.22	2.67	2.41	-1.31
1/1/97 13:12	1.44	2.27	-0.28	0.77	0.58	1.73	1.62	3.06	2.81	-0.48
1/1/97 14:24	1.44	2.27	0.01	0.77	0.88	1.73	1.62	2.28	2.81	0.33
1/1/97 15:36	1.44	2.27	-0.28	0.77	0.58	1.73	0.82	1.49	1.62	0.33
1/1/97 16:48	1.44	2.27	0.01	0.77	0.58	1.73	0.42	0.69	0.82	0.33
1/1/97 18:00	1.44	2.27	0.01	0.77	0.88	1.73	0.42	0.29	0.01	0.33
1/1/97 19:12	1.44	2.27	0.01	0.77	0.88	1.73	0.01	-0.11	-0.39	0.73

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/1/97 20:24	1.44	2.27	0.01	0.77	0.88	1.73	-0.79	-0.93	-0.81	1.14
1/1/97 21:36	1.44	2.27	0.01	0.77	0.88	1.73	-1.21	-1.34	-1.64	1.14
1/1/97 22:48	1.44	2.27	0.01	0.77	0.88	1.73	-1.21	-1.34	-1.64	1.14
1/2/97 0:00	1.44	2.27	0.01	0.77	0.88	1.73	-1.63	-1.77	-1.64	1.14
1/2/97 1:12	1.44	2.27	0.01	0.77	0.88	1.73	-1.63	-2.19	-2.49	1.14
1/2/97 2:24	1.44	2.27	0.01	0.77	0.88	1.73	-2.48	-2.62	-2.92	0.73
1/2/97 3:36	1.44	2.27	0.01	0.77	0.88	1.73	-2.48	-2.62	-3.35	0.73
1/2/97 4:48	1.44	2.27	0.01	0.77	0.88	1.73	-2.91	-3.04	-3.35	0.73
1/2/97 6:00	1.44	2.27	0.01	0.77	0.88	1.73	-3.34	-3.48	-3.79	0.73
1/2/97 7:12	1.44	2.27	0.01	0.77	0.88	1.73	-3.34	-3.48	-4.23	0.73
1/2/97 8:24	1.44	2.27	0.01	0.77	0.88	1.73	-3.77	-3.91	-4.23	0.73
1/2/97 9:36	1.44	2.27	0.01	0.77	0.88	1.73	-3.77	-3.48	-3.79	0.73
1/2/97 10:48	1.44	2.27	0.01	0.77	0.88	1.73	-2.91	-2.62	-3.35	1.53
1/2/97 12:00	1.44	2.27	0.01	0.77	0.88	1.73	-2.48	-1.34	-2.92	2.33
1/2/97 13:12	1.44	2.27	0.01	0.77	0.88	1.73	-2.48	-1.34	-2.07	2.72
1/2/97 14:24	1.44	2.27	0.01	0.77	0.88	1.73	-2.05	-0.52	-2.07	3.88
1/2/97 15:36	1.44	2.27	0.01	0.77	0.88	1.73	-1.63	-0.93	-2.07	6.16
1/2/97 16:48	1.44	2.27	0.01	0.77	0.88	1.73	-1.63	-1.34	-2.49	7.27
1/2/97 18:00	1.44	2.27	0.01	0.77	0.88	1.73	-1.63	-1.77	-2.49	7.27
1/2/97 19:12	1.74	2.27	0.01	0.77	0.88	1.73	-1.63	-1.77	-2.07	7.27
1/2/97 20:24	1.74	2.27	0.01	0.77	0.88	1.73	-1.63	-1.34	-2.07	7.27
1/2/97 21:36	1.74	2.27	0.01	0.77	0.88	1.73	-1.21	-1.34	-2.07	7.27
1/2/97 22:48	2.03	2.27	0.01	0.77	0.88	1.73	-1.21	-0.93	-1.64	6.16
1/3/97 0:00	2.03	2.27	0.01	0.77	0.88	1.73	-1.21	-0.93	-1.22	6.16
1/3/97 1:12	2.03	2.27	0.01	0.77	0.88	1.73	-1.21	-0.93	-1.22	5.03
1/3/97 2:24	2.33	2.27	0.01	0.77	0.88	1.73	-0.79	-0.52	-0.81	4.65
1/3/97 3:36	2.33	2.57	0.01	0.77	0.88	1.73	-0.79	-0.52	-0.81	4.27
1/3/97 4:48	2.33	2.57	0.01	0.77	0.88	1.73	-0.79	-0.52	-1.64	3.11
1/3/97 6:00	2.33	2.57	0.01	0.77	0.88	1.73	-1.63	-1.77	-2.07	2.72
1/3/97 7:12	2.62	2.57	0.01	0.77	0.88	1.73	-2.05	-1.77	-2.07	2.33
1/3/97 8:24	2.62	2.57	0.01	0.77	0.88	1.73	-1.63	-2.19	-2.49	1.93
1/3/97 9:36	2.62	2.57	0.01	0.77	0.88	1.73	-2.91	-2.62	-2.49	1.93
1/3/97 10:48	2.62	2.57	0.01	0.77	0.88	1.73	-2.48	-1.77	-2.49	2.72
1/3/97 12:00	2.62	2.57	0.01	0.77	0.88	1.73	-1.63	1.89	-1.22	3.11
1/3/97 13:12	2.62	2.57	0.01	0.77	0.88	1.73	-1.21	4.22	0.41	3.49
1/3/97 14:24	2.62	2.86	0.01	0.77	0.88	1.73	-0.79	8.69	-0.81	3.88
1/3/97 15:36	2.62	2.86	0.01	0.77	0.88	1.73	-2.48	1.09	-2.07	3.88
1/3/97 16:48	2.62	2.86	0.01	0.77	0.88	1.73	-3.34	-2.19	-2.92	3.11
1/3/97 18:00	2.62	2.86	0.01	0.77	0.88	1.73	-4.21	-3.91	-4.67	2.33
1/3/97 19:12	2.62	2.86	0.01	0.77	0.88	1.73	-4.21	-4.35	-5.12	1.53
1/3/97 20:24	2.62	2.86	0.01	0.77	0.88	1.73	-4.21	-4.35	-5.12	1.93
1/3/97 21:36	2.62	2.86	0.01	0.77	0.88	1.73	-4.66	-4.79	-5.12	1.53
1/3/97 22:48	2.62	2.86	0.01	0.77	0.88	1.73	-4.66	-4.79	-5.58	1.14
1/4/97 0:00	2.62	2.86	0.01	0.77	0.88	1.73	-4.66	-4.79	-5.12	1.53
1/4/97 1:12	2.62	2.86	0.01	0.77	0.88	1.73	-4.21	-4.35	-4.67	1.53
1/4/97 2:24	2.62	2.86	0.01	0.77	0.88	1.73	-3.77	-3.91	-4.67	1.14
1/4/97 3:36	2.62	2.86	0.01	0.77	0.88	1.73	-3.77	-3.91	-3.79	1.93
1/4/97 4:48	2.62	2.86	0.01	0.77	0.88	1.73	-3.77	-3.48	-3.79	1.93
1/4/97 6:00	2.62	2.86	0.01	0.77	0.88	1.73	-3.34	-3.48	-3.79	1.93
1/4/97 7:12	2.62	2.86	0.01	0.77	0.88	1.73	-2.91	-3.04	-3.35	1.93
1/4/97 8:24	2.62	2.86	0.01	0.77	0.88	1.73	-2.48	-2.62	-2.92	1.93
1/4/97 9:36	2.62	2.86	0.01	0.77	0.88	1.73	-2.48	-2.19	-2.49	1.93
1/4/97 10:48	2.62	2.86	0.01	0.77	0.88	1.73	-2.05	-1.77	-2.07	1.53
1/4/97 12:00	2.62	2.86	0.01	0.77	0.88	1.73	-1.21	-0.11	-0.81	1.53

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/4/97 13:12	2.62	2.86	0.01	0.77	0.88	1.73	-0.79	-0.11	-0.39	1.93
1/4/97 14:24	2.62	2.86	0.01	0.77	0.88	1.73	-0.38	1.49	0.41	1.93
1/4/97 15:36	2.62	3.16	0.01	0.77	0.88	1.73	0.01	1.89	0.82	2.33
1/4/97 16:48	2.62	2.86	0.01	0.77	0.88	1.73	0.01	1.09	0.41	2.33
1/4/97 18:00	2.62	3.16	0.01	0.77	0.88	1.73	0.01	0.29	0.41	2.33
1/4/97 19:12	2.62	3.16	0.01	0.77	0.88	1.73	0.01	0.29	0.41	3.11
1/4/97 20:24	2.62	3.16	0.01	0.77	0.88	1.73	0.42	0.29	0.41	5.03
1/4/97 21:36	2.92	3.16	0.01	0.77	0.88	1.73	0.82	0.69	0.41	13.04
1/4/97 22:48	2.92	3.16	0.01	0.77	0.88	1.73	0.82	1.09	0.82	14.45
1/5/97 0:00	3.21	3.16	0.01	0.77	0.88	1.73	0.82	1.09	0.41	14.45
1/5/97 1:12	3.51	3.16	0.01	0.77	0.88	1.73	0.42	1.09	0.41	13.39
1/5/97 2:24	3.8	3.16	0.01	0.77	0.88	1.73	0.82	1.09	0.41	9.47
1/5/97 3:36	3.8	3.16	0.01	0.77	0.88	1.73	0.42	1.09	0.41	7.64
1/5/97 4:48	4.09	3.16	0.01	0.77	0.88	1.73	0.82	1.09	0.41	5.78
1/5/97 6:00	4.09	3.45	0.01	0.77	0.88	1.73	0.82	0.69	0.41	4.27
1/5/97 7:12	4.09	3.45	0.01	0.77	0.88	1.73	0.42	0.69	0.41	3.88
1/5/97 8:24	4.09	3.45	0.01	0.77	0.88	1.73	0.82	0.69	0.82	3.49
1/5/97 9:36	4.09	3.45	0.01	0.77	0.88	1.73	0.82	1.09	1.22	3.49
1/5/97 10:48	3.8	3.74	0.01	0.77	0.88	1.73	1.22	1.89	1.62	3.11
1/5/97 12:00	3.8	3.74	0.01	0.77	0.88	1.73	1.62	2.67	2.41	2.72
1/5/97 13:12	3.8	3.74	0.01	0.77	0.88	1.73	3.19	4.22	2.81	3.11
1/5/97 14:24	3.8	3.74	0.01	0.77	0.88	1.73	4.73	5.73	3.58	1.53
1/5/97 15:36	3.8	3.74	0.01	0.77	0.88	1.73	6.98	7.22	4.73	0.33
1/5/97 16:48	3.51	3.74	0.01	0.77	0.88	1.73	7.72	8.33	6.61	-1.31
1/5/97 18:00	3.51	3.74	0.01	0.77	0.88	1.73	8.09	8.33	6.24	-2.15
1/5/97 19:12	3.21	3.74	0.01	0.77	0.88	1.73	8.46	8.33	6.24	-2.15
1/5/97 20:24	3.21	3.74	0.01	0.77	0.88	1.73	7.72	7.22	5.87	-1.73
1/5/97 21:36	3.21	3.74	0.01	0.77	0.88	1.73	7.72	7.59	6.24	-2.58
1/5/97 22:48	2.92	3.74	0.01	0.77	0.88	1.73	8.09	6.85	5.11	-3.44
1/6/97 0:00	2.92	3.74	0.01	0.77	0.88	1.73	6.61	6.48	4.73	-3.88
1/6/97 1:12	2.92	3.45	0.01	0.77	0.88	1.73	5.48	5.73	4.35	-4.32
1/6/97 2:24	2.62	3.45	0.01	0.77	0.88	1.73	5.86	5.73	4.35	-5.21
1/6/97 3:36	2.62	3.45	0.01	0.77	0.88	1.73	5.11	4.98	3.97	-6.12
1/6/97 4:48	2.62	3.45	0.01	0.77	0.88	1.73	4.34	4.22	3.19	-6.12
1/6/97 6:00	2.62	3.45	0.01	0.77	0.88	1.73	3.58	3.06	2.41	-6.59
1/6/97 7:12	2.33	3.45	0.01	0.77	0.88	1.73	2.8	2.67	2.02	-7.06
1/6/97 8:24	2.33	3.45	0.01	0.77	0.88	1.73	2.41	2.28	2.02	-7.53
1/6/97 9:36	2.33	3.16	0.01	0.77	0.88	1.73	2.41	2.28	2.02	-7.06
1/6/97 10:48	2.33	3.16	0.01	0.77	0.88	1.73	2.8	3.45	2.81	-5.21
1/6/97 12:00	2.33	3.16	0.01	0.77	0.88	1.73	2.8	3.45	2.41	-1.31
1/6/97 13:12	2.03	3.16	0.01	0.77	0.88	1.73	2.8	4.22	3.19	-3.44
1/6/97 14:24	2.03	3.16	0.01	0.77	0.88	1.73	3.19	5.36	3.97	-2.58
1/6/97 15:36	2.03	3.16	0.01	0.77	0.88	1.73	3.96	4.6	3.58	-3.44
1/6/97 16:48	2.03	3.16	0.01	0.77	1.17	1.73	2.8	3.45	2.81	-3.88
1/6/97 18:00	2.03	3.16	0.01	0.77	1.17	1.73	2.41	2.67	2.41	-4.76
1/6/97 19:12	2.03	3.16	0.01	0.77	1.17	1.73	2.02	1.89	1.62	-5.21
1/6/97 20:24	2.03	3.16	0.01	0.77	1.17	1.73	1.62	1.49	1.62	-6.12
1/6/97 21:36	2.03	3.16	0.01	0.77	1.17	1.73	1.22	1.49	1.62	-6.59
1/6/97 22:48	1.74	2.86	0.01	0.77	1.17	2.03	1.22	1.49	1.22	-6.59
1/7/97 0:00	1.74	2.86	0.01	0.77	1.17	2.03	1.22	1.49	1.22	-6.59
1/7/97 1:12	1.74	2.86	0.01	0.77	1.47	2.03	1.22	1.49	1.62	-6.59
1/7/97 2:24	1.74	2.86	0.01	0.77	1.47	2.03	1.62	1.49	1.22	-6.59
1/7/97 3:36	1.74	2.86	0.01	0.77	1.47	2.03	1.62	1.89	1.62	-7.06
1/7/97 4:48	1.74	2.86	0.01	0.77	1.47	2.03	1.62	1.89	1.62	-7.06

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/7/97 6:00	1.74	2.86	0.01	0.77	1.47	2.03	1.62	1.89	1.62	-7.53
1/7/97 7:12	1.74	2.86	0.01	0.77	1.47	2.03	2.02	2.28	1.22	-7.53
1/7/97 8:24	1.74	2.86	0.01	0.77	1.47	2.03	2.02	2.28	1.62	-7.53
1/7/97 9:36	1.74	2.86	0.31	0.77	1.47	2.03	2.02	2.28	1.62	-7.53
1/7/97 10:48	1.44	2.86	0.31	0.77	1.47	2.03	1.62	2.28	1.62	-2.15
1/7/97 12:00	1.44	2.57	0.31	0.77	1.77	2.03	2.02	2.28	1.22	-1.73
1/7/97 13:12	1.44	2.57	0.61	0.77	1.77	2.03	2.02	3.06	1.62	-3.01
1/7/97 14:24	1.44	2.57	0.61	0.77	1.77	2.03	2.41	3.06	2.02	2.33
1/7/97 15:36	1.44	2.57	0.61	0.77	1.77	2.03	2.8	3.45	2.02	4.27
1/7/97 16:48	1.44	2.57	0.91	0.77	1.77	2.03	3.58	3.45	2.41	3.11
1/7/97 18:00	1.44	2.57	0.91	1.07	1.77	2.03	3.96	3.83	2.41	-4.32
1/7/97 19:12	1.44	2.57	1.21	1.07	1.77	2.03	5.86	4.22	3.19	-4.76
1/7/97 20:24	1.44	2.57	1.21	1.07	2.06	2.03	12.39	11.57	5.87	-4.76
1/7/97 21:36	1.44	2.57	1.5	1.07	2.06	2.03	13.81	14.04	12.41	-4.76
1/7/97 22:48	1.44	2.57	2.09	1.07	2.36	2.32	14.86	15.09	13.82	-4.76
1/8/97 0:00	1.44	2.57	2.68	1.37	2.94	2.32	14.51	14.74	13.82	-5.21
1/8/97 1:12	1.44	2.57	3.27	1.37	3.53	2.32	13.81	13.69	13.47	-7.06
1/8/97 2:24	1.44	2.57	4.15	1.37	3.83	2.32	9.54	9.42	9.55	-6.59
1/8/97 3:36	1.44	2.57	4.44	1.67	4.12	2.62	7.72	7.96	7.36	-6.12
1/8/97 4:48	1.44	2.57	4.44	1.97	4.12	2.62	5.86	6.11	5.87	-5.21
1/8/97 6:00	1.44	2.57	4.44	1.97	3.83	2.62	4.34	4.6	3.97	-5.67
1/8/97 7:12	1.44	2.57	4.15	2.26	3.83	2.62	3.58	4.22	3.58	-7.53
1/8/97 8:24	1.44	2.57	4.15	2.56	3.83	2.91	3.19	3.45	3.19	-9.48
1/8/97 9:36	1.44	2.27	3.86	2.56	3.53	2.91	3.19	3.45	3.19	-7.53
1/8/97 10:48	1.14	2.27	3.57	2.56	3.53	2.91	2.8	3.45	2.81	-3.44
1/8/97 12:00	1.14	2.27	3.57	2.56	3.24	2.91	2.02	2.67	2.41	0.33
1/8/97 13:12	1.14	2.27	3.27	2.56	3.24	2.91	2.41	3.45	3.19	5.03
1/8/97 14:24	1.14	2.27	2.98	2.85	3.24	2.91	1.22	2.67	1.22	10.19
1/8/97 15:36	1.14	2.27	2.98	2.85	2.94	3.21	0.42	1.89	0.41	1.93
1/8/97 16:48	1.14	2.27	2.68	2.85	2.94	3.21	-1.21	-0.93	-1.22	6.9
1/8/97 18:00	1.14	2.27	2.68	2.56	2.65	3.21	-2.05	-1.77	-2.07	-3.88
1/8/97 19:12	1.14	2.27	2.39	2.56	2.65	3.21	-2.05	-2.19	-2.07	-5.67
1/8/97 20:24	1.14	2.27	2.09	2.56	2.36	2.91	-2.05	-2.19	-1.64	-7.06
1/8/97 21:36	1.14	2.27	2.09	2.56	2.36	2.91	-2.48	-2.62	-2.49	-8.49
1/8/97 22:48	1.14	2.27	1.8	2.56	2.06	2.91	-3.34	-3.48	-3.35	-8.49
1/9/97 0:00	1.14	2.27	1.8	2.56	2.06	2.91	-3.77	-3.48	-3.79	-7.06
1/9/97 1:12	1.14	2.27	1.8	2.56	2.06	2.91	-4.21	-4.35	-4.23	-6.59
1/9/97 2:24	1.14	2.27	1.5	2.26	1.77	2.91	-5.11	-4.79	-5.12	-6.12
1/9/97 3:36	1.14	2.27	1.5	2.26	1.77	2.91	-6.02	-6.62	-6.03	-5.67
1/9/97 4:48	1.14	2.27	1.5	2.26	1.77	2.91	-6.48	-6.62	-6.49	-5.67
1/9/97 6:00	1.14	2.27	1.21	2.26	1.77	2.91	-6.48	-6.62	-6.49	-5.67
1/9/97 7:12	1.14	2.27	1.21	2.26	1.47	2.62	-6.94	-7.08	-6.97	-5.21
1/9/97 8:24	1.14	2.27	1.21	2.26	1.47	2.62	-7.89	-8.03	-7.44	-5.21
1/9/97 9:36	1.14	2.27	1.21	1.97	1.47	2.62	-6.94	-7.08	-6.97	-6.12
1/9/97 10:48	1.14	2.27	0.91	1.97	1.47	2.62	-6.48	-4.79	-4.67	-5.67
1/9/97 12:00	1.14	2.27	0.91	1.97	1.17	2.62	-5.11	-3.04	-3.35	-4.76
1/9/97 13:12	1.14	2.27	0.91	1.97	1.17	2.62	-4.21	-3.04	-2.49	-4.76
1/9/97 14:24	1.14	2.27	0.91	1.97	1.17	2.62	-3.77	-2.62	-2.49	-3.88
1/9/97 15:36	1.14	2.27	0.91	1.97	1.17	2.62	-3.77	-2.62	-2.92	-3.88
1/9/97 16:48	1.14	2.27	0.91	1.97	1.17	2.32	-4.66	-3.48	-3.79	-3.88
1/9/97 18:00	1.14	2.27	0.61	1.97	1.17	2.32	-5.11	-4.79	-4.67	-3.88
1/9/97 19:12	1.14	2.27	0.61	1.67	1.17	2.32	-5.56	-5.69	-5.58	-4.32
1/9/97 20:24	1.14	2.27	0.61	1.67	1.17	2.32	-6.48	-6.16	-6.03	-4.32
1/9/97 21:36	1.14	2.27	0.61	1.67	1.17	2.32	-6.48	-6.16	-6.49	-4.32

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/9/97 22:48	1.14	2.27	0.61	1.67	1.17	2.32	-6.48	-6.62	-6.49	-4.76
1/10/97 0:00	1.14	2.27	0.61	1.67	1.17	2.32	-6.48	-6.62	-6.49	-5.67
1/10/97 1:12	1.14	2.27	0.61	1.67	0.88	2.32	-6.48	-6.62	-6.49	-7.06
1/10/97 2:24	1.14	2.27	0.61	1.67	0.88	2.32	-6.94	-6.62	-6.97	-8.49
1/10/97 3:36	1.14	2.27	0.61	1.67	0.88	2.32	-6.94	-6.62	-6.97	-8.49
1/10/97 4:48	1.14	1.98	0.61	1.67	0.88	2.32	-6.94	-7.08	-7.44	-8.01
1/10/97 6:00	1.14	1.98	0.31	1.67	0.88	2.32	-7.42	-7.08	-7.44	-8.01
1/10/97 7:12	1.14	1.98	0.31	1.37	0.88	2.03	-7.42	-7.56	-7.44	-8.01
1/10/97 8:24	1.14	1.98	0.31	1.37	0.88	2.03	-7.42	-7.56	-7.44	-8.01
1/10/97 9:36	1.14	1.98	0.31	1.37	0.88	2.03	-7.42	-7.08	-7.44	-7.06
1/10/97 10:48	1.14	1.98	0.31	1.37	0.88	2.03	-6.94	-0.52	-5.12	-4.32
1/10/97 12:00	1.14	1.98	0.31	1.37	0.88	2.03	-5.56	-3.04	-3.79	-2.58
1/10/97 13:12	1.14	1.98	0.31	1.37	0.88	2.03	-4.66	-1.77	-2.92	-2.15
1/10/97 14:24	1.14	1.98	0.31	1.37	0.88	2.03	-4.21	-0.52	-2.07	-1.31
1/10/97 15:36	1.14	1.98	0.31	1.37	0.58	2.03	-3.77	3.83	-1.64	-2.15
1/10/97 16:48	1.14	1.98	0.01	1.37	0.58	2.03	-3.77	1.89	-3.35	-3.01
1/10/97 18:00	1.14	1.98	0.01	1.37	0.58	2.03	-4.66	-4.79	-4.67	-4.76
1/10/97 19:12	1.14	1.98	0.01	1.37	0.58	2.03	-5.11	-5.24	-5.12	-6.12
1/10/97 20:24	1.14	1.98	0.01	1.07	0.58	2.03	-5.11	-4.79	-5.12	-6.59
1/10/97 21:36	1.14	1.98	0.01	1.37	0.58	2.03	-5.11	-4.79	-5.12	-7.06
1/10/97 22:48	1.14	1.98	0.01	1.07	0.58	2.03	-5.11	-5.24	-5.58	-6.59
1/11/97 0:00	1.14	1.98	0.01	1.07	0.58	2.03	-5.56	-5.69	-6.03	-7.53
1/11/97 1:12	1.14	1.98	0.01	1.07	0.58	2.03	-7.42	-7.56	-7.92	-8.49
1/11/97 2:24	1.14	1.98	0.01	1.07	0.58	2.03	-7.42	-8.03	-7.92	-9.98
1/11/97 3:36	1.14	1.98	0.01	1.07	0.58	2.03	-7.89	-7.56	-6.97	-11.01
1/11/97 4:48	1.14	1.98	0.01	1.07	0.58	2.03	-6.94	-5.69	-5.58	-8.98
1/11/97 6:00	1.14	1.98	0.01	1.07	0.58	2.03	-6.02	-5.24	-5.58	-8.49
1/11/97 7:12	1.14	1.98	0.01	1.07	0.58	1.73	-6.48	-6.62	-6.97	-9.48
1/11/97 8:24	1.14	1.98	0.01	1.07	0.58	1.73	-7.89	-9.01	-8.4	-10.49
1/11/97 9:36	1.14	1.98	0.01	1.07	0.58	1.73	-7.89	-7.08	-7.92	-9.48
1/11/97 10:48	1.14	1.98	0.01	1.07	0.58	1.73	-5.56	-3.48	-4.23	-2.15
1/11/97 12:00	1.14	1.98	0.01	1.07	0.58	1.73	-3.34	-0.11	-1.22	1.93
1/11/97 13:12	1.14	1.98	0.01	1.07	0.58	1.73	-4.21	2.67	3.19	-4.32
1/11/97 14:24	1.14	1.98	-0.28	1.07	0.58	1.73	-3.77	3.45	-0.81	0.73
1/11/97 15:36	1.14	1.98	-0.28	1.07	0.58	1.73	-3.34	1.89	0.01	-3.01
1/11/97 16:48	1.14	1.98	-0.28	0.77	0.58	1.73	-3.34	8.69	-3.35	-4.76
1/11/97 18:00	1.14	1.98	-0.28	0.77	0.58	1.73	-4.21	-3.48	-5.58	-7.53
1/11/97 19:12	1.14	1.98	-0.28	0.77	0.58	1.73	-6.48	-8.52	-7.44	-8.01
1/11/97 20:24	1.14	1.98	-0.28	0.77	0.58	1.73	-8.38	-10.02	-8.4	-8.49
1/11/97 21:36	1.14	1.98	-0.28	0.77	0.58	1.73	-9.37	-10.02	-9.39	-8.98
1/11/97 22:48	1.14	1.98	-0.28	0.77	0.58	1.73	-8.87	-9.01	-8.89	-8.98
1/12/97 0:00	1.14	1.98	-0.28	0.77	0.58	1.73	-6.94	-7.08	-6.49	-12.07
1/12/97 1:12	1.14	1.98	-0.28	0.77	0.58	1.73	-6.48	-7.08	-6.49	-12.07
1/12/97 2:24	1.14	1.98	-0.28	0.77	0.58	1.73	-6.48	-6.62	-6.03	-12.07
1/12/97 3:36	1.14	1.98	-0.28	0.77	0.58	1.73	-6.02	-6.16	-5.58	-12.61
1/12/97 4:48	1.14	1.98	-0.28	0.77	0.58	1.73	-5.56	-5.69	-5.58	-12.07
1/12/97 6:00	1.14	1.98	-0.28	0.77	0.28	1.73	-5.56	-5.69	-5.58	-12.61
1/12/97 7:12	1.14	1.98	-0.28	0.77	0.28	1.73	-5.11	-5.24	-5.58	-12.07
1/12/97 8:24	1.14	1.98	-0.28	0.77	0.28	1.73	-5.56	-5.69	-5.58	-12.07
1/12/97 9:36	1.14	1.98	-0.28	0.77	0.28	1.73	-6.02	-5.69	-6.03	-11.53
1/12/97 10:48	1.14	1.98	-0.28	0.77	0.28	1.73	-6.02	-4.79	-5.58	-8.98
1/12/97 12:00	1.14	1.98	-0.58	0.77	0.28	1.73	-5.56	-3.48	-4.67	-2.15
1/12/97 13:12	1.14	1.98	-0.58	0.77	0.28	1.73	-5.56	-3.04	-4.67	-0.07
1/12/97 14:24	1.14	1.98	-0.58	0.77	0.28	1.73	-5.56	-2.19	-4.23	3.88

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/12/97 15:36	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-2.19	-4.23	-4.76
1/12/97 16:48	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-3.04	-3.79	-6.59
1/12/97 18:00	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-3.91	-4.23	-8.01
1/12/97 19:12	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-4.35	-4.67	-8.98
1/12/97 20:24	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-4.35	-4.67	-8.98
1/12/97 21:36	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-4.35	-4.67	-9.48
1/12/97 22:48	1.14	1.98	-0.58	0.77	0.28	1.73	-4.66	-4.79	-5.12	-9.48
1/13/97 0:00	1.14	1.98	-0.58	0.77	0.28	1.43	-5.11	-4.79	-5.58	-9.48
1/13/97 1:12	1.14	1.98	-0.58	0.77	0.28	1.73	-6.94	-6.62	-6.97	-9.48
1/13/97 2:24	1.14	1.98	-0.58	0.47	0.28	1.43	-7.89	-8.52	-7.92	-10.49
1/13/97 3:36	1.14	1.98	-0.28	0.47	0.28	1.73	-8.38	-8.52	-8.89	-12.07
1/13/97 4:48	1.14	1.98	-0.28	0.47	0.28	1.43	-7.89	-7.56	-8.4	-12.07
1/13/97 6:00	1.14	1.98	-0.28	0.77	0.28	1.43	-7.89	-7.56	-8.4	-12.07
1/13/97 7:12	1.14	1.98	-0.28	0.47	0.28	1.43	-7.89	-8.03	-7.92	-12.07
1/13/97 8:24	1.14	1.98	-0.28	0.47	0.28	1.43	-8.38	-8.03	-8.4	-11.53
1/13/97 9:36	1.14	1.98	-0.28	0.47	0.28	1.43	-7.42	-6.62	-7.44	-11.53
1/13/97 10:48	1.14	1.98	-0.28	0.47	0.28	1.43	-5.56	-3.04	-5.58	-8.98
1/13/97 12:00	1.14	1.98	-0.28	0.47	0.28	1.43	-4.21	0.29	-3.79	-6.59
1/13/97 13:12	1.14	1.98	-0.28	0.47	0.28	1.43	-3.77	1.09	-3.35	-3.88
1/13/97 14:24	1.14	1.98	-0.28	0.47	0.28	1.43	-4.21	0.29	-2.49	3.88
1/13/97 15:36	1.14	1.98	-0.28	0.47	0.28	1.43	-3.77	0.29	-1.64	-4.32
1/13/97 16:48	1.14	1.98	-0.28	0.47	0.28	1.43	-4.21	-2.19	-2.92	-7.06
1/13/97 18:00	1.14	1.98	-0.28	0.47	0.28	1.43	-5.11	-4.79	-4.67	-8.01
1/13/97 19:12	1.14	1.98	-0.28	0.47	0.28	1.43	-5.56	-5.24	-6.49	-8.98
1/13/97 20:24	1.14	1.98	-0.28	0.47	0.28	1.43	-6.48	-6.62	-6.97	-8.49
1/13/97 21:36	1.14	1.98	-0.28	0.47	0.28	1.43	-6.94	-6.62	-6.97	-8.01
1/13/97 22:48	1.14	1.98	-0.28	0.47	0.28	1.43	-6.48	-6.16	-6.97	-8.01
1/14/97 0:00	1.14	1.98	-0.28	0.47	0.28	1.43	-8.87	-8.03	-6.97	-8.49
1/14/97 1:12	1.14	1.98	-0.28	0.47	0.28	1.43	-9.87	-9.51	-7.44	-8.49
1/14/97 2:24	1.14	1.98	-0.28	0.47	0.28	1.43	-10.38	-10.02	-9.39	-8.49
1/14/97 3:36	1.14	1.98	-0.28	0.47	0.28	1.43	-10.89	-11.57	-10.41	-8.49
1/14/97 4:48	1.14	1.98	-0.28	0.47	0.28	1.43	-10.89	-10.53	-9.9	-8.98
1/14/97 6:00	1.14	1.98	-0.28	0.47	0.28	1.43	-9.87	-9.51	-8.89	-9.98
1/14/97 7:12	1.14	1.98	-0.28	0.47	0.58	1.43	-10.38	-10.02	-9.39	-11.01
1/14/97 8:24	1.14	1.98	-0.28	0.47	0.28	1.43	-10.38	-10.53	-10.93	-13.16
1/14/97 9:36	1.14	1.98	-0.28	0.47	0.58	1.43	-10.38	-10.53	-8.89	-8.98
1/14/97 10:48	1.14	1.98	-0.28	0.47	0.28	1.43	-8.38	-0.52	-4.67	2.72
1/14/97 12:00	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	-3.04	-2.49	9.83
1/14/97 13:12	1.14	1.98	-0.28	0.47	0.58	1.43	-6.48	-0.11	2.41	11.26
1/14/97 14:24	1.14	1.98	-0.28	0.47	0.28	1.43	-6.02	1.49	-0.81	9.47
1/14/97 15:36	1.14	1.98	-0.28	0.47	0.58	1.43	-6.02	-2.19	-2.07	9.83
1/14/97 16:48	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	-4.79	-4.23	5.03
1/14/97 18:00	1.14	1.98	-0.28	0.47	0.58	1.43	-7.89	-7.08	-6.97	-4.32
1/14/97 19:12	1.14	1.98	-0.28	0.47	0.58	1.43	-7.89	-8.03	-7.92	-6.59
1/14/97 20:24	1.14	1.98	-0.28	0.47	0.58	1.43	-8.38	-8.52	-8.4	-8.01
1/14/97 21:36	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-9.01	-8.89	-5.67
1/14/97 22:48	1.14	1.98	-0.28	0.47	0.58	1.43	-11.94	-11.57	-9.39	-5.67
1/15/97 0:00	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.45	-6.59
1/15/97 1:12	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.98	-7.06
1/15/97 2:24	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.98	-8.01
1/15/97 3:36	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-12.52	-8.49
1/15/97 4:48	1.14	1.98	-0.28	0.47	0.58	1.43	-13.03	-12.63	-12.52	-8.98
1/15/97 6:00	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.63	-12.52	-8.98
1/15/97 7:12	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.98	-10.49

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/15/97 8:24	1.14	1.98	-0.28	0.47	0.58	1.43	-11.94	-11.57	-11.98	-11.01
1/15/97 9:36	1.14	1.98	-0.28	0.47	0.58	1.43	-11.94	-11.04	-11.45	-9.98
1/15/97 10:48	1.14	1.98	-0.28	0.47	0.58	1.43	-10.89	-8.03	-8.89	-7.06
1/15/97 12:00	1.14	1.98	-0.28	0.47	0.58	1.43	-8.38	-3.91	-2.92	-6.12
1/15/97 13:12	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	1.89	-3.35	-4.32
1/15/97 14:24	1.14	1.98	-0.28	0.47	0.58	1.43	-6.48	2.67	-2.07	-2.15
1/15/97 15:36	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	-2.62	-6.03	-2.58
1/15/97 16:48	1.14	1.98	-0.28	0.47	0.58	1.43	-8.38	-6.62	-6.03	-2.15
1/15/97 18:00	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-8.52	-7.92	-2.15
1/15/97 19:12	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-9.01	-8.89	-2.15
1/15/97 20:24	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.51	-9.39	-2.15
1/15/97 21:36	1.14	1.98	-0.28	0.47	0.58	1.43	-9.87	-9.51	-9.39	-2.15
1/15/97 22:48	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.51	-9.39	-2.15
1/16/97 0:00	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.51	-9.39	-2.58
1/16/97 1:12	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.51	-9.39	-2.58
1/16/97 2:24	1.14	1.98	-0.28	0.47	0.58	1.43	-11.41	-10.53	-9.39	-3.44
1/16/97 3:36	1.14	1.98	-0.28	0.47	0.58	1.43	-11.94	-11.57	-11.45	-5.67
1/16/97 4:48	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.98	-6.59
1/16/97 6:00	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-12.09	-11.98	-6.12
1/16/97 7:12	1.14	1.98	-0.28	0.47	0.58	1.43	-11.94	-11.57	-11.98	-5.67
1/16/97 8:24	1.14	1.98	-0.28	0.47	0.58	1.43	-11.41	-11.04	-11.45	-5.67
1/16/97 9:36	1.14	1.98	-0.28	0.47	0.58	1.43	-11.41	-10.53	-10.93	-7.06
1/16/97 10:48	1.14	1.98	-0.28	0.47	0.58	1.43	-9.87	-8.03	-9.39	-5.67
1/16/97 12:00	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-3.91	-6.49	3.11
1/16/97 13:12	1.14	1.98	-0.28	0.47	0.58	1.43	-7.42	1.09	-4.67	-6.12
1/16/97 14:24	1.14	1.98	-0.28	0.47	0.58	1.43	-5.11	0.69	-2.92	-9.48
1/16/97 15:36	1.14	1.98	-0.28	0.47	0.58	1.43	-4.66	-1.77	-4.67	-3.44
1/16/97 16:48	1.14	1.98	-0.28	0.47	0.58	1.43	-7.89	-5.69	-6.97	-11.01
1/16/97 18:00	1.14	1.98	-0.28	0.47	0.58	1.43	-8.38	-7.56	-7.92	-13.73
1/16/97 19:12	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-8.52	-8.89	-14.87
1/16/97 20:24	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.01	-8.4	-15.46
1/16/97 21:36	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-8.52	-8.4	-17.27
1/16/97 22:48	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.01	-8.4	-18.58
1/17/97 0:00	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.01	-7.92	-19.24
1/17/97 1:12	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.01	-8.4	-19.24
1/17/97 2:24	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-8.52	-6.49	-20.61
1/17/97 3:36	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-8.52	-6.97	-20.61
1/17/97 4:48	1.14	1.98	-0.28	0.47	0.58	1.43	-9.87	-11.04	-9.9	-22.02
1/17/97 6:00	1.14	1.98	-0.28	0.47	0.58	1.43	-11.41	-14.89	-11.45	-22.76
1/17/97 7:12	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-15.47	-12.52	-22.76
1/17/97 8:24	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-14.89	-12.52	-22.76
1/17/97 9:36	1.14	1.98	-0.28	0.47	0.58	1.43	-12.48	-10.53	-10.41	-17.92
1/17/97 10:48	1.14	1.98	-0.28	0.47	0.58	1.43	-7.89	0.29	-2.92	-10.49
1/17/97 12:00	1.14	1.98	-0.28	0.47	0.58	1.43	-4.66	4.6	-1.22	-1.73
1/17/97 13:12	1.14	1.98	-0.28	0.47	0.58	1.43	-2.05	4.98	8.09	-5.21
1/17/97 14:24	1.14	1.98	-0.28	0.47	0.58	1.43	-1.21	7.59	0.41	-8.01
1/17/97 15:36	1.14	1.98	-0.28	0.47	0.58	1.43	-1.21	8.33	0.82	-8.01
1/17/97 16:48	1.14	1.98	-0.28	0.47	0.58	1.43	-2.48	6.85	-2.07	-7.53
1/17/97 18:00	1.14	1.98	-0.28	0.47	0.58	1.43	-4.21	-0.11	-4.23	-15.46
1/17/97 19:12	1.14	1.98	-0.28	0.47	0.58	1.43	-6.02	-7.56	-6.49	-17.27
1/17/97 20:24	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	-8.52	-7.44	-17.92
1/17/97 21:36	1.14	1.98	-0.28	0.47	0.58	1.43	-5.56	-5.69	-5.58	-18.58
1/17/97 22:48	1.14	1.98	-0.28	0.47	0.58	1.43	-6.48	-6.16	-5.58	-17.92
1/18/97 0:00	1.14	1.98	-0.28	0.47	0.58	1.43	-6.94	-6.62	-6.49	-17.27

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/18/97 1:12	1.14	1.98	-0.28	0.47	0.58	1.43	-7.42	-7.08	-6.97	-17.27
1/18/97 2:24	1.14	1.98	-0.28	0.47	0.58	1.43	-8.38	-8.03	-7.44	-17.27
1/18/97 3:36	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.51	-8.4	-16.05
1/18/97 4:48	1.14	1.98	-0.28	0.47	0.58	1.43	-9.37	-9.01	-8.89	-16.05
1/18/97 6:00	1.14	1.98	-0.28	0.47	0.58	1.43	-8.87	-9.01	-8.89	-16.66
1/18/97 7:12	1.14	1.98	-0.28	0.47	0.58	1.43	-9.87	-11.57	-10.93	-19.92
1/18/97 8:24	1.14	1.98	-0.28	0.47	0.58	1.43	-10.38	-11.57	-11.45	-21.31
1/18/97 9:36	1.14	1.98	-0.28	0.47	0.58	1.43	-9.87	-9.51	-9.9	-16.66
1/18/97 10:48	1.14	1.98	-0.28	0.47	0.58	1.43	-7.89	-4.79	-7.44	-4.76
1/18/97 12:00	1.14	1.98	-0.28	0.47	0.58	1.43	-6.48	-3.04	-5.58	11.62
1/18/97 13:12	1.14	1.98	-0.28	0.47	0.58	1.43	-5.11	-2.19	-4.23	10.55
1/18/97 14:24	1.14	1.98	-0.28	0.47	0.58	1.43	-3.77	1.49	-2.07	4.65
1/18/97 15:36	1.14	1.98	-0.28	0.47	0.58	1.43	-3.34	-1.34	-2.92	1.14
1/18/97 16:48	1.14	1.98	-0.28	0.47	0.58	1.43	-2.48	-0.93	-2.07	-3.01
1/18/97 18:00	1.14	1.98	-0.28	0.47	0.58	1.43	-2.05	-2.19	-2.49	-12.61
1/18/97 19:12	1.14	1.98	-0.28	0.47	0.58	1.43	-2.48	-2.19	-2.49	-16.66
1/18/97 20:24	1.14	1.98	-0.28	0.47	0.58	1.43	-2.05	-1.77	-2.49	-15.46
1/18/97 21:36	1.14	1.98	-0.28	0.47	0.58	1.43	-2.05	-1.77	-2.07	-14.87
1/18/97 22:48	1.14	1.98	-0.28	0.47	0.58	1.43	-2.05	-1.77	-2.49	-16.05
1/19/97 0:00	1.14	1.98	-0.28	0.47	0.58	1.43	-2.48	-2.62	-2.49	-14.87
1/19/97 1:12	0.84	1.98	-0.28	0.47	0.58	1.43	-2.91	-2.62	-2.92	-14.29
1/19/97 2:24	0.84	1.98	-0.28	0.47	0.58	1.43	-3.34	-3.04	-3.35	-13.73
1/19/97 3:36	0.84	1.98	-0.28	0.47	0.58	1.43	-5.11	-5.24	-5.58	-13.73
1/19/97 4:48	0.84	1.98	-0.28	0.47	0.58	1.43	-6.48	-7.08	-6.97	-14.29
1/19/97 6:00	1.14	1.98	-0.28	0.47	0.58	1.43	-6.02	-6.16	-6.49	-15.46
1/19/97 7:12	0.84	1.98	-0.28	0.47	0.58	1.43	-6.02	-5.69	-6.49	-18.58
1/19/97 8:24	0.84	1.98	-0.28	0.47	0.58	1.43	-6.02	-5.69	-6.03	-19.92
1/19/97 9:36	0.84	1.98	-0.28	0.47	0.58	1.43	-6.94	-6.62	-7.44	-13.73
1/19/97 10:48	0.84	1.98	-0.28	0.47	0.58	1.43	-7.42	-4.79	-6.49	-7.53
1/19/97 12:00	0.84	1.98	-0.28	0.47	0.58	1.43	-7.42	-3.48	-6.49	-8.98
1/19/97 13:12	0.84	1.98	-0.28	0.47	0.58	1.43	-6.48	-3.48	-4.67	-7.53
1/19/97 14:24	0.84	1.98	-0.28	0.47	0.58	1.43	-6.94	-7.08	-9.39	1.14
1/19/97 15:36	0.84	1.98	-0.28	0.47	0.58	1.43	-10.38	-4.79	-6.97	-3.44
1/19/97 16:48	0.84	1.98	-0.28	0.47	0.58	1.43	-12.48	-4.35	-13.07	-7.53
1/19/97 18:00	0.84	1.68	-0.28	0.47	0.58	1.43	-14.16	-9.51	-14.78	-8.01
1/19/97 19:12	0.84	1.68	-0.28	0.47	0.58	1.43	-14.73	-14.89	-15.96	-8.01
1/19/97 20:24	0.84	1.68	-0.28	0.47	0.58	1.43	-15.32	-15.47	-14.78	-8.01
1/19/97 21:36	0.84	1.68	-0.28	0.47	0.58	1.43	-17.12	-17.28	-17.82	-7.53
1/19/97 22:48	0.84	1.68	-0.28	0.47	0.58	1.43	-17.77	-18.59	-18.48	-7.06
1/20/97 0:00	0.84	1.68	-0.28	0.47	0.58	1.43	-18.42	-19.26	-19.82	-6.59
1/20/97 1:12	0.84	1.68	-0.28	0.47	0.58	1.43	-19.08	-19.26	-20.5	-6.12
1/20/97 2:24	0.84	1.68	-0.28	0.47	0.58	1.43	-20.43	-20.61	-21.92	-5.21
1/20/97 3:36	0.84	1.68	-0.28	0.47	0.58	1.43	-21.13	-22.76	-21.92	-4.32
1/20/97 4:48	0.84	1.68	-0.28	0.47	0.58	1.43	-21.84	-23.48	-22.65	-3.44
1/20/97 6:00	0.84	1.68	-0.28	0.47	0.58	1.43	-22.57	-23.48	-22.65	-3.01
1/20/97 7:12	0.84	1.68	-0.28	0.47	0.58	1.43	-21.84	-22.76	-23.37	-0.89
1/20/97 8:24	0.84	1.68	-0.28	0.47	0.58	1.43	-20.43	-22.03	-24.13	-2.15
1/20/97 9:36	0.84	1.68	-0.28	0.47	0.58	1.43	-21.84	-17.93	-19.14	-0.07
1/20/97 10:48	0.84	1.68	-0.28	0.47	0.58	1.43	-17.77	-8.52	-11.98	8.38
1/20/97 12:00	0.84	1.68	-0.28	0.47	0.58	1.43	-14.73	-5.69	-13.07	10.19
1/20/97 13:12	0.84	1.68	-0.28	0.47	0.58	1.43	-14.73	-4.35	-6.97	3.88
1/20/97 14:24	0.84	1.68	-0.28	0.47	0.58	1.43	-12.48	-4.79	-10.41	5.03
1/20/97 15:36	0.84	1.68	-0.28	0.47	0.58	1.43	-13.59	-3.04	-10.41	3.11
1/20/97 16:48	0.84	1.68	-0.28	0.47	0.58	1.43	-14.73	-5.24	-13.63	1.14

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/20/97 18:00	0.84	1.68	-0.28	0.47	0.58	1.43	-15.32	-12.09	-15.96	-0.89
1/20/97 19:12	0.84	1.68	-0.28	0.47	0.58	1.43	-17.12	-18.59	-17.82	-2.15
1/20/97 20:24	0.84	1.68	-0.28	0.47	0.58	1.43	-17.77	-18.59	-19.14	-3.01
1/20/97 21:36	0.84	1.68	-0.28	0.47	0.58	1.43	-18.42	-20.61	-19.14	-4.32
1/20/97 22:48	0.84	1.68	-0.28	0.47	0.58	1.43	-18.42	-17.93	-17.82	-7.53
1/21/97 0:00	0.84	1.68	-0.28	0.47	0.58	1.43	-17.12	-17.93	-17.82	-9.98
1/21/97 1:12	0.84	1.68	-0.28	0.47	0.58	1.43	-17.77	-18.59	-18.48	-11.01
1/21/97 2:24	0.84	1.68	-0.28	0.47	0.58	1.43	-17.12	-17.28	-17.82	-12.07
1/21/97 3:36	0.84	1.68	-0.28	0.47	0.58	1.43	-16.51	-16.67	-16.56	-10.49
1/21/97 4:48	0.84	1.68	-0.58	0.47	0.58	1.43	-16.51	-17.28	-17.17	-12.07
1/21/97 6:00	0.84	1.68	-0.58	0.47	0.58	1.43	-16.51	-16.07	-17.17	-13.16
1/21/97 7:12	0.84	1.68	-0.58	0.47	0.58	1.43	-18.42	-19.26	-17.82	-9.98
1/21/97 8:24	0.84	1.68	-0.58	0.47	0.58	1.43	-21.84	-24.24	-20.5	-9.48
1/21/97 9:36	0.84	1.68	-0.58	0.47	0.58	1.43	-23.29	-22.03	-21.2	-8.49
1/21/97 10:48	0.84	1.68	-0.58	0.47	0.58	1.43	-19.75	-0.52	-8.4	-4.32
1/21/97 12:00	0.84	1.68	-0.58	0.47	0.58	1.43	-14.73	10.14	-11.45	1.53
1/21/97 13:12	0.84	1.68	-0.58	0.47	0.58	1.43	-10.38	13.34	0.01	2.72
1/21/97 14:24	0.84	1.68	-0.58	0.47	0.58	1.43	-11.94	5.73	-10.93	6.9
1/21/97 15:36	0.84	1.68	-0.58	0.47	0.58	1.43	-11.94	3.06	-9.39	7.27
1/21/97 16:48	0.84	1.68	-0.58	0.47	0.58	1.43	-12.48	1.49	-11.98	2.33
1/21/97 18:00	0.84	1.68	-0.58	0.47	0.58	1.43	-13.59	-7.56	-13.07	1.53
1/21/97 19:12	0.84	1.68	-0.58	0.47	0.58	1.43	-15.32	-17.93	-16.56	1.14
1/21/97 20:24	0.84	1.68	-0.58	0.47	0.58	1.43	-14.73	-16.07	-15.96	1.93
1/21/97 21:36	0.84	1.68	-0.58	0.47	0.58	1.43	-15.32	-16.07	-15.36	1.93
1/21/97 22:48	0.84	1.68	-0.58	0.47	0.58	1.43	-15.91	-18.59	-17.17	2.72
1/22/97 0:00	0.84	1.68	-0.58	0.47	0.58	1.43	-15.32	-16.67	-16.56	3.49
1/22/97 1:12	0.84	1.68	-0.58	0.47	0.58	1.43	-13.59	-13.75	-14.78	5.41
1/22/97 2:24	0.84	1.68	-0.58	0.47	0.58	1.43	-13.59	-13.75	-14.2	6.16
1/22/97 3:36	0.84	1.68	-0.58	0.47	0.58	1.43	-13.59	-13.75	-13.63	6.16
1/22/97 4:48	0.84	1.68	-0.58	0.47	0.58	1.43	-14.16	-13.75	-14.2	6.16
1/22/97 6:00	0.84	1.68	-0.58	0.47	0.58	1.43	-16.51	-16.67	-15.96	6.53
1/22/97 7:12	0.84	1.68	-0.58	0.47	0.58	1.43	-18.42	-18.59	-18.48	6.16
1/22/97 8:24	0.84	1.68	-0.58	0.47	0.58	1.43	-19.75	-21.31	-20.5	5.78
1/22/97 9:36	0.84	1.68	-0.58	0.47	0.58	1.43	-20.43	-16.07	-18.48	6.16
1/22/97 10:48	0.84	1.68	-0.58	0.47	0.58	1.43	-16.51	-4.79	-6.03	6.16
1/22/97 12:00	0.84	1.68	-0.58	0.47	0.58	1.43	-13.03	-4.79	-10.41	6.53
1/22/97 13:12	0.84	1.68	-0.58	0.47	0.58	1.43	-11.41	-3.48	-8.4	6.53
1/22/97 14:24	0.84	1.68	-0.58	0.17	0.58	1.43	-8.87	7.22	-4.67	6.16
1/22/97 15:36	0.84	1.68	-0.58	0.17	0.58	1.43	-7.89	-3.04	-6.03	6.9
1/22/97 16:48	0.84	1.68	-0.58	0.17	0.58	1.43	-8.38	-5.69	-6.97	4.65
1/22/97 18:00	0.84	1.68	-0.58	0.17	0.58	1.43	-8.38	-7.56	-8.4	3.11
1/22/97 19:12	0.84	1.68	-0.58	0.17	0.58	1.43	-8.38	-8.03	-8.4	2.33
1/22/97 20:24	0.84	1.68	-0.58	0.17	0.58	1.43	-7.89	-7.56	-7.92	1.53
1/22/97 21:36	0.84	1.68	-0.58	0.17	0.58	1.43	-7.42	-7.56	-7.92	1.14
1/22/97 22:48	0.84	1.68	-0.58	0.17	0.58	1.43	-6.94	-7.08	-6.97	1.14
1/23/97 0:00	0.84	1.68	-0.58	0.17	0.58	1.43	-6.48	-6.16	-6.97	0.33
1/23/97 1:12	0.84	1.68	-0.58	0.17	0.58	1.43	-6.02	-5.69	-6.03	-0.48
1/23/97 2:24	0.84	1.68	-0.58	0.17	0.58	1.43	-4.66	-4.79	-5.58	-2.15
1/23/97 3:36	0.84	1.68	-0.58	0.17	0.58	1.43	-4.21	-3.91	-4.67	-5.21
1/23/97 4:48	0.84	1.68	-0.58	0.17	0.58	1.43	-3.77	-3.48	-3.79	-7.06
1/23/97 6:00	0.84	1.68	-0.58	0.17	0.58	1.43	-2.91	-2.62	-3.35	-7.53
1/23/97 7:12	0.84	1.68	-0.58	0.17	0.58	1.43	-2.48	-1.34	-1.64	-8.01
1/23/97 8:24	0.84	1.68	-0.58	0.17	0.58	1.43	-2.05	-2.19	-3.35	-8.98
1/23/97 9:36	0.84	1.68	-0.58	0.17	0.58	1.43	-2.48	-1.77	-2.92	-9.48

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/23/97 10:48	0.84	1.68	-0.58	0.17	0.58	1.43	-1.21	6.85	10.98	-2.58
1/23/97 12:00	0.84	1.68	-0.58	0.17	0.58	1.43	0.01	4.22	2.81	3.49
1/23/97 13:12	0.84	1.68	-0.58	0.17	0.58	1.43	0.42	4.22	4.35	3.11
1/23/97 14:24	0.84	1.68	-0.58	0.17	0.58	1.43	2.02	4.98	4.35	-3.01
1/23/97 15:36	0.84	1.68	-0.58	0.17	0.58	1.43	2.02	3.45	3.19	-5.67
1/23/97 16:48	0.84	1.68	-0.58	0.17	0.58	1.43	0.42	1.89	0.41	-4.32
1/23/97 18:00	0.84	1.68	-0.58	0.17	0.58	1.43	-1.21	-0.93	-1.22	-8.49
1/23/97 19:12	0.84	1.68	-0.58	0.17	0.58	1.43	-2.05	-2.62	-2.49	-9.98
1/23/97 20:24	0.84	1.68	-0.58	0.17	0.58	1.43	-2.48	-3.48	-2.92	-10.49
1/23/97 21:36	0.84	1.68	-0.58	0.17	0.58	1.43	-5.11	-8.52	-3.79	-11.01
1/23/97 22:48	0.84	1.68	-0.58	0.17	0.58	1.43	-7.89	-9.51	-6.97	-11.01
1/24/97 0:00	0.84	1.68	-0.58	0.17	0.58	1.43	-9.37	-13.75	-9.39	-11.53
1/24/97 1:12	0.84	1.68	-0.58	0.17	0.58	1.43	-11.94	-16.67	-12.52	-11.01
1/24/97 2:24	0.84	1.68	-0.58	0.17	0.58	1.43	-11.41	-14.32	-11.98	-10.49
1/24/97 3:36	0.84	1.68	-0.58	0.17	0.58	1.43	-11.41	-13.19	-10.93	-9.48
1/24/97 4:48	0.84	1.68	-0.58	0.17	0.58	1.43	-12.48	-15.47	-12.52	-8.98
1/24/97 6:00	0.84	1.68	-0.58	0.17	0.58	1.43	-13.59	-16.07	-13.07	-8.49
1/24/97 7:12	0.84	1.68	-0.58	0.17	0.58	1.43	-10.38	-14.32	-9.9	-7.53
1/24/97 8:24	0.84	1.68	-0.58	0.17	0.58	1.43	-11.41	-11.57	-8.4	-7.06
1/24/97 9:36	0.84	1.68	-0.58	0.17	0.58	1.43	-8.38	-7.56	-6.97	-5.67
1/24/97 10:48	0.84	1.68	-0.58	0.17	0.58	1.43	-5.11	-0.52	-4.67	-4.32
1/24/97 12:00	0.84	1.68	-0.58	0.17	0.58	1.43	-1.63	4.98	-0.39	-0.07
1/24/97 13:12	0.84	1.68	-0.58	0.17	0.58	1.43	0.82	6.85	1.22	0.33
1/24/97 14:24	0.84	1.68	-0.58	0.17	0.58	1.43	1.62	10.86	2.41	0.73
1/24/97 15:36	0.84	1.68	-0.58	0.17	0.58	1.43	2.41	14.04	4.35	-0.48
1/24/97 16:48	0.84	1.68	-0.58	0.17	0.58	1.43	2.41	3.83	2.02	-1.31
1/24/97 18:00	0.84	1.68	-0.58	0.17	0.58	1.43	1.62	1.89	1.22	-1.73
1/24/97 19:12	0.84	1.68	-0.58	0.17	0.58	1.43	1.22	1.49	0.82	-1.73
1/24/97 20:24	0.84	1.68	-0.58	0.17	0.58	1.43	1.62	1.49	1.22	-2.15
1/24/97 21:36	0.84	1.68	-0.58	0.17	0.58	1.43	1.62	1.89	1.62	-2.15
1/24/97 22:48	0.84	1.68	-0.58	0.17	0.58	1.43	2.41	2.67	2.02	-2.15
1/25/97 0:00	0.84	1.68	-0.58	0.17	0.58	1.43	3.58	3.83	2.81	-2.15
1/25/97 1:12	0.84	1.68	-0.58	0.17	0.58	1.43	4.34	4.22	3.19	-2.15
1/25/97 2:24	0.84	1.68	-0.58	0.17	0.58	1.43	5.11	4.98	4.35	-2.15
1/25/97 3:36	0.84	1.68	-0.58	0.17	0.58	1.43	6.23	6.11	4.73	-2.15
1/25/97 4:48	0.84	1.68	-0.58	0.17	0.58	1.43	5.86	5.73	4.73	-2.15
1/25/97 6:00	0.84	1.68	-0.28	0.17	0.58	1.43	5.86	5.73	4.73	-3.01
1/25/97 7:12	0.84	1.68	-0.28	0.17	0.58	1.43	5.48	5.36	4.35	-3.44
1/25/97 8:24	0.84	1.68	-0.28	0.17	0.58	1.43	5.11	5.36	4.35	-3.01
1/25/97 9:36	0.84	1.68	-0.28	0.17	0.58	1.43	5.11	5.36	4.73	-2.15
1/25/97 10:48	0.84	1.68	-0.28	0.17	0.58	1.43	5.11	5.73	5.11	-0.89
1/25/97 12:00	0.84	1.38	-0.28	0.17	0.58	1.43	5.48	6.11	5.49	1.53
1/25/97 13:12	0.84	1.38	-0.28	0.17	0.58	1.43	5.86	6.85	6.24	9.83
1/25/97 14:24	0.84	1.38	-0.28	0.17	0.58	1.43	6.23	6.85	5.87	3.11
1/25/97 15:36	0.84	1.38	-0.28	0.17	0.58	1.43	6.23	7.22	6.61	1.93
1/25/97 16:48	0.84	1.38	-0.28	0.17	0.58	1.43	4.34	4.6	4.73	-2.58
1/25/97 18:00	0.84	1.38	-0.28	0.17	0.58	1.43	2.8	3.06	2.81	-4.32
1/25/97 19:12	0.84	1.38	-0.28	0.17	0.58	1.43	2.02	2.28	2.02	-6.59
1/25/97 20:24	0.84	1.38	-0.28	0.17	0.58	1.43	1.62	1.89	1.62	-8.49
1/25/97 21:36	0.84	1.38	-0.28	0.17	0.58	1.43	1.22	1.09	1.22	-9.98
1/25/97 22:48	0.84	1.38	-0.28	0.17	0.58	1.43	0.82	1.09	0.82	-11.53
1/26/97 0:00	0.84	1.38	-0.28	0.17	0.58	1.43	0.82	0.69	0.41	-11.53
1/26/97 1:12	0.84	1.38	-0.28	0.17	0.58	1.43	0.01	-0.52	-0.81	-10.49
1/26/97 2:24	0.84	1.38	-0.28	0.17	0.58	1.43	-1.21	-1.77	-2.07	-9.98

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/26/97 3:36	0.84	1.38	-0.28	0.17	0.58	1.43	-4.66	-5.24	-5.58	-9.48
1/26/97 4:48	0.84	1.38	-0.28	0.17	0.58	1.43	-6.48	-6.62	-6.97	-9.98
1/26/97 6:00	0.84	1.38	-0.28	0.17	0.58	1.43	-6.94	-7.56	-7.92	-12.07
1/26/97 7:12	0.84	1.38	-0.28	0.17	0.58	1.43	-7.42	-7.56	-8.4	-11.53
1/26/97 8:24	0.84	1.38	-0.28	0.17	0.58	1.43	-8.38	-8.52	-8.89	-12.07
1/26/97 9:36	0.84	1.38	-0.28	0.17	0.58	1.43	-8.87	-9.01	-9.9	-10.49
1/26/97 10:48	0.84	1.38	-0.28	0.17	0.58	1.43	-8.38	-1.77	-4.67	-4.76
1/26/97 12:00	0.84	1.38	-0.28	0.17	0.58	1.43	-7.42	-0.52	-5.12	-4.76
1/26/97 13:12	0.84	1.38	-0.28	0.17	0.58	1.43	-6.48	0.69	-1.22	-6.59
1/26/97 14:24	0.84	1.38	-0.28	0.17	0.58	1.43	-6.02	-1.77	-3.79	-5.67
1/26/97 15:36	0.84	1.38	-0.28	0.17	0.58	1.43	-6.94	-0.52	-5.12	-6.12
1/26/97 16:48	0.84	1.38	-0.28	0.17	0.58	1.43	-7.42	1.09	-6.49	-7.06
1/26/97 18:00	0.84	1.38	-0.28	0.17	0.58	1.43	-7.89	-3.04	-8.4	-8.98
1/26/97 19:12	0.84	1.38	-0.28	0.17	0.58	1.43	-9.37	-11.04	-9.9	-9.98
1/26/97 20:24	0.84	1.38	-0.28	0.17	0.58	1.43	-9.37	-11.57	-10.41	-9.98
1/26/97 21:36	0.84	1.38	-0.28	0.17	0.58	1.43	-9.87	-12.09	-10.93	-10.49
1/26/97 22:48	0.84	1.38	-0.28	0.47	0.58	1.43	-9.87	-12.09	-11.45	-10.49
1/27/97 0:00	0.84	1.38	-0.28	0.47	0.58	1.43	-9.87	-12.09	-11.45	-9.98
1/27/97 1:12	0.84	1.38	-0.28	0.47	0.58	1.43	-9.87	-11.04	-10.93	-9.98
1/27/97 2:24	0.84	1.38	-0.28	0.47	0.58	1.43	-9.87	-11.04	-10.93	-9.48
1/27/97 3:36	0.84	1.38	-0.28	0.47	0.58	1.43	-9.37	-9.51	-9.9	-8.98
1/27/97 4:48	0.84	1.38	-0.58	0.47	0.58	1.43	-8.38	-8.52	-8.89	-8.49
1/27/97 6:00	0.54	1.38	-0.58	0.47	0.58	1.43	-7.89	-8.52	-8.4	-8.01
1/27/97 7:12	0.84	1.38	-0.58	0.47	0.58	1.43	-6.94	-7.56	-7.44	-8.01
1/27/97 8:24	0.84	1.38	-0.58	0.47	0.58	1.43	-6.02	-6.16	-6.97	-8.01
1/27/97 9:36	0.84	1.38	-0.88	0.17	0.58	1.43	-5.56	-5.24	-6.03	-7.53
1/27/97 10:48	0.54	1.38	-0.88	0.17	0.58	1.43	-4.66	-2.62	-4.67	-6.59
1/27/97 12:00	0.84	1.38	-0.88	0.17	0.58	1.43	-3.77	4.6	-2.07	-5.21
1/27/97 13:12	0.84	1.38	-0.88	0.17	0.58	1.43	-2.05	5.36	-0.39	-3.01
1/27/97 14:24	0.84	1.38	-0.88	0.17	0.28	1.43	-1.63	3.06	-0.81	0.73
1/27/97 15:36	0.54	1.38	-0.88	0.17	0.58	1.43	0.01	3.45	-1.22	0.73
1/27/97 16:48	0.84	1.38	-0.58	0.17	0.28	1.43	-1.21	0.69	-1.22	-1.31
1/27/97 18:00	0.84	1.38	-0.58	0.17	0.58	1.43	-1.63	-0.93	-1.64	-3.44
1/27/97 19:12	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-1.77	-2.07	-5.21
1/27/97 20:24	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-1.77	-2.07	-5.21
1/27/97 21:36	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-1.77	-2.07	-5.21
1/27/97 22:48	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-1.77	-2.07	-6.12
1/28/97 0:00	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-2.19	-2.07	-6.12
1/28/97 1:12	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-2.19	-2.07	-5.67
1/28/97 2:24	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-1.77	-2.07	-6.12
1/28/97 3:36	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-2.19	-2.07	-8.01
1/28/97 4:48	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-2.19	-2.49	-7.53
1/28/97 6:00	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	-2.19	-2.92	-11.53
1/28/97 7:12	0.84	1.38	-0.58	0.17	0.58	1.43	-3.34	-3.04	-3.35	-11.53
1/28/97 8:24	0.84	1.38	-0.58	0.17	0.58	1.43	-2.91	-3.04	-3.35	-12.07
1/28/97 9:36	0.84	1.38	-0.58	0.17	0.58	1.43	-2.48	-1.77	-2.92	-8.49
1/28/97 10:48	0.84	1.38	-0.58	0.17	0.58	1.43	-2.05	0.29	-1.22	-7.53
1/28/97 12:00	0.84	1.38	-0.58	0.17	0.58	1.43	-1.63	3.06	1.22	-1.31
1/28/97 13:12	0.84	1.38	-0.58	0.17	0.58	1.43	-1.21	5.36	4.73	3.11
1/28/97 14:24	0.84	1.38	-0.58	0.17	0.58	1.43	-1.21	3.45	2.41	2.72
1/28/97 15:36	0.84	1.38	-0.58	0.17	0.58	1.43	-1.21	1.09	-0.81	1.14
1/28/97 16:48	0.84	1.38	-0.58	0.17	0.58	1.43	-3.34	-2.19	-3.35	-0.89
1/28/97 18:00	0.84	1.38	-0.58	0.17	0.58	1.43	-4.66	-3.91	-4.67	-8.98
1/28/97 19:12	0.84	1.38	-0.58	0.17	0.58	1.43	-6.48	-6.62	-6.03	-11.01

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/28/97 20:24	0.84	1.38	-0.58	0.17	0.58	1.43	-7.89	-8.03	-6.97	-11.53
1/28/97 21:36	0.84	1.38	-0.58	0.17	0.58	1.43	-8.87	-9.51	-9.9	-11.53
1/28/97 22:48	0.84	1.38	-0.58	0.17	0.58	1.43	-9.87	-11.04	-11.45	-12.07
1/29/97 0:00	0.84	1.38	-0.58	0.17	0.58	1.43	-10.38	-11.04	-12.52	-13.73
1/29/97 1:12	0.84	1.38	-0.58	0.17	0.58	1.43	-10.38	-10.02	-10.93	-15.46
1/29/97 2:24	0.84	1.38	-0.58	0.17	0.58	1.43	-9.37	-9.51	-10.41	-17.27
1/29/97 3:36	0.54	1.38	-0.58	0.17	0.58	1.43	-9.37	-9.51	-10.41	-17.27
1/29/97 4:48	0.84	1.38	-0.58	0.17	0.58	1.43	-9.37	-9.51	-10.41	-17.92
1/29/97 6:00	0.84	1.38	-0.58	0.17	0.58	1.43	-10.38	-11.57	-10.93	-16.66
1/29/97 7:12	0.84	1.38	-0.58	0.17	0.58	1.43	-10.89	-12.09	-11.45	-17.92
1/29/97 8:24	0.54	1.38	-0.88	0.17	0.58	1.43	-11.41	-12.63	-11.98	-16.05
1/29/97 9:36	0.54	1.38	-0.88	0.17	0.58	1.43	-11.41	-10.02	-11.45	-13.73
1/29/97 10:48	0.54	1.38	-0.88	0.17	0.58	1.43	-9.87	0.29	-2.92	-8.49
1/29/97 12:00	0.54	1.38	-0.88	0.17	0.58	1.43	-8.87	0.29	-7.44	1.53
1/29/97 13:12	0.54	1.38	-0.88	0.17	0.28	1.43	-8.38	-1.34	-7.44	-3.88
1/29/97 14:24	0.54	1.38	-0.88	0.17	0.28	1.43	-6.94	1.09	-6.03	-3.01
1/29/97 15:36	0.54	1.38	-0.88	0.17	0.58	1.43	-7.42	-2.19	-6.97	-5.67
1/29/97 16:48	0.54	1.38	-0.88	0.17	0.58	1.43	-7.89	-3.91	-7.92	-9.98
1/29/97 18:00	0.54	1.38	-0.88	0.17	0.58	1.43	-8.87	-8.03	-9.39	-11.01
1/29/97 19:12	0.54	1.38	-0.88	0.17	0.28	1.43	-9.37	-9.51	-9.9	-12.07
1/29/97 20:24	0.54	1.38	-0.88	0.17	0.28	1.43	-9.87	-10.02	-10.41	-12.07
1/29/97 21:36	0.54	1.38	-0.88	0.17	0.58	1.43	-9.87	-10.02	-10.41	-12.07
1/29/97 22:48	0.54	1.38	-0.88	0.17	0.28	1.43	-9.87	-10.02	-10.41	-12.07
1/30/97 0:00	0.54	1.38	-0.88	0.17	0.28	1.43	-9.87	-10.02	-10.41	-12.07
1/30/97 1:12	0.54	1.38	-0.88	0.17	0.28	1.43	-9.87	-9.51	-9.9	-11.53
1/30/97 2:24	0.54	1.38	-0.88	0.17	0.28	1.43	-9.37	-9.51	-9.39	-11.53
1/30/97 3:36	0.54	1.38	-1.18	0.17	0.28	1.43	-9.37	-9.01	-9.39	-11.53
1/30/97 4:48	0.54	1.38	-1.18	0.17	0.28	1.43	-8.87	-8.52	-8.4	-11.01
1/30/97 6:00	0.54	1.38	-1.18	0.17	0.28	1.43	-8.38	-8.03	-8.4	-10.49
1/30/97 7:12	0.54	1.38	-1.18	0.17	0.28	1.43	-7.89	-8.03	-7.92	-10.49
1/30/97 8:24	0.84	1.38	-1.18	0.17	0.28	1.13	-7.89	-7.56	-7.92	-9.98
1/30/97 9:36	0.84	1.38	-1.18	0.17	0.28	1.43	-7.89	-7.08	-7.44	-9.48
1/30/97 10:48	0.84	1.38	-1.18	0.17	0.28	1.43	-7.42	-5.69	-6.49	-6.59
1/30/97 12:00	0.84	1.38	-1.18	0.17	0.28	1.43	-6.02	-3.04	-5.58	-3.88
1/30/97 13:12	0.84	1.38	-1.18	0.17	0.28	1.13	-5.11	1.09	-3.79	-1.31
1/30/97 14:24	0.54	1.38	-0.88	0.17	0.28	1.43	-3.77	-0.11	-2.49	1.53
1/30/97 15:36	0.84	1.38	-0.88	0.17	0.28	1.13	-3.77	-0.52	-1.64	-0.07
1/30/97 16:48	0.84	1.38	-0.88	0.17	0.28	1.13	-3.77	-0.11	-2.49	-0.07
1/30/97 18:00	0.54	1.38	-0.88	0.17	0.28	1.13	-4.21	-3.48	-3.79	-3.01
1/30/97 19:12	0.54	1.38	-0.88	0.17	0.28	1.13	-5.11	-5.24	-5.12	-5.67
1/30/97 20:24	0.84	1.38	-0.88	0.17	0.28	1.43	-5.11	-5.24	-5.58	-4.76
1/30/97 21:36	0.84	1.38	-0.88	0.17	0.28	1.43	-5.56	-5.24	-5.58	-8.49
1/30/97 22:48	0.84	1.38	-0.88	0.17	0.28	1.43	-5.56	-5.69	-6.03	-6.59
1/31/97 0:00	0.54	1.38	-0.88	0.17	0.28	1.13	-5.56	-5.69	-6.03	-5.21
1/31/97 1:12	0.54	1.38	-0.88	0.17	0.28	1.43	-5.56	-5.69	-6.03	-4.76
1/31/97 2:24	0.84	1.38	-0.88	0.17	0.28	1.13	-5.56	-5.69	-6.03	-5.21
1/31/97 3:36	0.54	1.38	-0.88	0.17	0.28	1.43	-6.94	-7.56	-7.92	-5.21
1/31/97 4:48	0.54	1.38	-0.88	0.17	0.28	1.13	-7.42	-8.03	-8.4	-4.76
1/31/97 6:00	0.54	1.38	-0.88	0.17	0.58	1.13	-9.37	-10.53	-10.93	-4.76
1/31/97 7:12	0.84	1.38	-0.88	0.17	0.28	1.13	-10.38	-11.57	-12.52	-4.76
1/31/97 8:24	0.84	1.38	-0.88	0.17	0.28	1.43	-11.94	-13.19	-13.63	-4.32
1/31/97 9:36	0.84	1.38	-0.88	0.17	0.28	1.13	-11.41	-8.03	-8.4	-3.44
1/31/97 10:48	0.84	1.38	-0.88	0.17	0.28	1.13	-9.37	-5.69	-4.67	-3.01
1/31/97 12:00	0.84	1.38	-0.88	0.17	0.28	1.13	-8.38	1.49	-2.92	1.14

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
1/31/97 13:12	0.84	1.38	-0.88	0.17	0.28	1.13	-6.94	1.09	0.82	5.03
1/31/97 14:24	0.84	1.38	-0.88	0.17	0.28	1.43	-6.02	2.67	-2.07	14.45
1/31/97 15:36	0.84	1.38	-0.88	0.17	0.28	1.43	-6.48	1.89	-2.07	14.45
1/31/97 16:48	0.84	1.38	-0.88	0.17	0.28	1.13	-7.42	0.29	-6.03	11.97
1/31/97 18:00	0.84	1.38	-0.88	0.17	0.28	1.13	-8.87	-5.24	-9.39	5.41
1/31/97 19:12	0.84	1.38	-0.88	0.17	0.28	1.13	-10.38	-11.04	-11.45	3.49
1/31/97 20:24	0.84	1.38	-0.88	0.17	0.28	1.43	-11.41	-12.09	-12.52	2.72
1/31/97 21:36	0.84	1.38	-1.18	0.17	0.28	1.13	-11.41	-11.04	-11.98	1.53
1/31/97 22:48	0.84	1.38	-1.18	0.17	0.28	1.13	-11.94	-11.57	-11.98	1.53
2/1/97 0:00	0.84	1.38	-1.18	0.17	0.28	1.13	-11.94	-12.63	-14.2	1.14
2/1/97 1:12	0.84	1.38	-1.18	0.17	0.28	1.43	-14.73	-17.28	-17.17	0.73
2/1/97 2:24	0.84	1.38	-1.18	0.17	0.28	1.13	-17.77	-19.26	-18.48	-0.48
2/1/97 3:36	0.84	1.38	-1.18	0.17	0.28	1.13	-18.42	-21.31	-18.48	-0.48
2/1/97 4:48	0.84	1.38	-1.18	0.17	0.28	1.13	-19.08	-20.61	-19.14	-0.48
2/1/97 6:00	0.84	1.38	-1.18	0.17	0.28	1.13	-20.43	-19.93	-18.48	-1.31
2/1/97 7:12	0.84	1.38	-1.48	0.17	0.28	1.13	-19.75	-19.93	-19.14	-1.73
2/1/97 8:24	0.84	1.38	-1.48	0.17	0.28	1.13	-19.75	-16.07	-16.56	-1.73
2/1/97 9:36	0.84	1.38	-1.48	0.17	0.28	1.13	-16.51	-14.32	-14.78	-1.31
2/1/97 10:48	0.84	1.38	-1.48	0.17	0.28	1.13	-12.48	-3.48	-10.41	1.14
2/1/97 12:00	0.84	1.38	-1.79	-0.12	0.28	1.13	-8.87	7.59	-5.58	3.11
2/1/97 13:12	0.84	1.38	-1.79	-0.12	0.28	1.13	-9.37	-0.93	-7.44	3.49
2/1/97 14:24	0.84	1.38	-1.48	-0.12	0.28	1.13	-8.38	2.67	-6.97	3.88
2/1/97 15:36	0.84	1.38	-1.48	0.17	0.28	1.13	-9.37	-3.91	-8.4	3.49
2/1/97 16:48	0.84	1.38	-1.48	-0.12	0.28	1.13	-9.87	-8.03	-9.9	1.14
2/1/97 18:00	0.84	1.38	-1.48	-0.12	0.28	1.13	-11.41	-11.04	-11.45	0.33
2/1/97 19:12	0.84	1.38	-1.48	-0.12	0.28	1.13	-11.94	-12.09	-12.52	-0.48
2/1/97 20:24	0.84	1.38	-1.48	-0.12	0.28	1.13	-11.94	-12.09	-12.52	-0.48
2/1/97 21:36	0.84	1.38	-1.79	-0.12	0.28	1.13	-11.94	-12.09	-12.52	-0.48
2/1/97 22:48	0.84	1.38	-1.79	-0.12	0.28	1.13	-11.94	-12.09	-12.52	-0.48
2/2/97 0:00	0.84	1.38	-1.79	-0.12	0.28	1.13	-11.94	-11.57	-11.98	-0.48
2/2/97 1:12	0.84	1.38	-1.48	-0.12	0.28	1.13	-11.94	-11.57	-11.98	-0.48
2/2/97 2:24	0.84	1.38	-1.48	-0.12	0.28	1.13	-11.41	-11.04	-11.45	-0.48
2/2/97 3:36	0.84	1.38	-1.48	-0.12	0.28	1.13	-10.89	-11.04	-11.45	-0.48
2/2/97 4:48	0.84	1.38	-1.48	-0.12	0.28	1.13	-10.89	-10.53	-10.93	-0.48
2/2/97 6:00	0.84	1.38	-1.48	-0.12	0.28	1.13	-10.89	-10.53	-10.93	-0.48
2/2/97 7:12	0.84	1.38	-1.48	-0.12	0.28	1.13	-10.38	-10.53	-10.41	-0.48
2/2/97 8:24	0.84	1.38	-1.48	-0.12	0.28	1.13	-10.38	-9.51	-10.41	-0.07
2/2/97 9:36	0.84	1.38	-1.48	-0.12	0.28	1.13	-8.87	-8.52	-9.39	-0.07
2/2/97 10:48	0.84	1.38	-1.48	-0.12	0.28	1.13	-6.94	-3.91	-6.49	1.14
2/2/97 12:00	0.84	1.38	-1.48	-0.12	0.28	1.13	-5.56	-0.11	-4.23	2.72
2/2/97 13:12	0.84	1.38	-1.48	-0.12	0.28	1.13	-4.21	5.36	-1.22	3.11
2/2/97 14:24	0.84	1.38	-1.48	-0.12	0.28	1.13	-2.91	7.22	0.41	3.88
2/2/97 15:36	0.84	1.38	-1.48	-0.12	0.28	1.13	-2.48	4.22	-0.39	3.49
2/2/97 16:48	0.84	1.38	-1.18	-0.12	0.28	1.13	-2.48	4.98	-0.39	2.33
2/2/97 18:00	0.84	1.38	-1.18	-0.12	0.28	1.13	-3.34	-2.19	-2.92	1.53
2/2/97 19:12	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.21	-4.35	-6.03	0.73
2/2/97 20:24	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.21	-4.79	-5.12	0.73
2/2/97 21:36	0.84	1.38	-1.18	-0.12	0.28	1.13	-5.56	-10.53	-9.39	0.33
2/2/97 22:48	0.84	1.38	-1.18	-0.12	0.28	1.13	-5.11	-6.16	-6.97	0.33
2/3/97 0:00	0.84	1.38	-1.18	-0.12	0.28	1.13	-5.11	-5.24	-6.03	0.33
2/3/97 1:12	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.66	-4.79	-5.58	0.33
2/3/97 2:24	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.66	-5.24	-5.58	0.33
2/3/97 3:36	0.84	1.38	-1.18	-0.12	0.28	1.13	-5.11	-5.69	-5.58	-0.07
2/3/97 4:48	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.66	-4.79	-5.12	-0.07

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/3/97 6:00	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.66	-4.79	-5.12	-0.07
2/3/97 7:12	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.66	-4.35	-4.67	-0.48
2/3/97 8:24	0.84	1.38	-1.18	-0.12	0.28	1.13	-4.21	-3.91	-4.67	-0.89
2/3/97 9:36	0.84	1.38	-1.18	-0.12	0.28	1.13	-3.77	-3.04	-3.79	-1.31
2/3/97 10:48	0.84	1.38	-1.18	-0.12	0.28	1.13	-3.34	-1.77	-3.35	-0.07
2/3/97 12:00	0.84	1.38	-1.18	-0.12	0.28	1.13	-0.79	6.48	0.41	1.53
2/3/97 13:12	0.84	1.38	-1.18	-0.12	0.28	1.13	1.62	16.49	5.49	2.33
2/3/97 14:24	0.84	1.38	-1.18	-0.12	0.28	1.13	4.34	15.79	6.98	2.33
2/3/97 15:36	0.84	1.38	-1.18	-0.12	0.28	1.13	5.11	16.49	9.19	2.33
2/3/97 16:48	0.84	1.38	-1.18	-0.12	0.28	1.13	5.11	14.39	5.49	1.14
2/3/97 18:00	0.84	1.38	-1.18	-0.12	0.28	1.13	4.34	5.73	4.35	-0.48
2/3/97 19:12	0.84	1.38	-0.88	-0.12	0.28	1.13	3.19	3.06	2.81	-0.89
2/3/97 20:24	0.84	1.38	-0.88	-0.12	0.28	1.13	2.8	3.06	2.41	-0.89
2/3/97 21:36	0.84	1.38	-0.88	-0.12	0.28	1.13	2.02	1.89	1.62	-2.15
2/3/97 22:48	0.84	1.38	-0.88	-0.12	0.28	1.13	1.62	1.49	1.62	-1.31
2/4/97 0:00	0.84	1.38	-0.88	-0.12	0.28	1.13	1.22	1.49	1.22	-0.48
2/4/97 1:12	0.84	1.38	-0.88	-0.12	0.28	1.13	0.82	1.09	0.41	-1.73
2/4/97 2:24	0.84	1.38	-0.88	-0.12	0.28	1.13	-0.38	-0.11	0.01	-1.73
2/4/97 3:36	0.84	1.38	-0.88	-0.12	0.28	1.13	-0.79	-0.52	-0.39	-2.15
2/4/97 4:48	0.84	1.38	-0.88	-0.12	0.28	1.13	-0.38	-0.52	-0.81	-2.58
2/4/97 6:00	0.84	1.38	-0.88	-0.12	0.28	1.13	-0.79	-0.93	-1.22	-3.01
2/4/97 7:12	0.84	1.38	-0.88	-0.12	0.28	1.13	-1.21	-1.34	-1.64	-2.58
2/4/97 8:24	0.84	1.38	-0.58	-0.12	0.28	1.13	-1.21	-1.34	-1.64	-1.73
2/4/97 9:36	0.84	1.38	-0.58	-0.12	0.28	1.13	-1.21	-0.52	-1.22	-1.31
2/4/97 10:48	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	1.49	1.22	-0.48
2/4/97 12:00	0.84	1.38	-0.58	-0.12	0.28	1.13	0.82	3.83	3.19	0.33
2/4/97 13:12	0.84	1.38	-0.58	-0.12	0.28	1.13	0.82	3.45	3.58	0.33
2/4/97 14:24	0.84	1.38	-0.58	-0.12	0.28	1.13	2.02	4.98	3.19	1.14
2/4/97 15:36	0.84	1.38	-0.58	-0.12	0.28	1.13	1.22	3.45	3.97	0.73
2/4/97 16:48	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	1.89	1.22	0.73
2/4/97 18:00	0.84	1.38	-0.58	-0.12	0.28	1.13	0.01	0.29	0.41	0.33
2/4/97 19:12	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.39	0.33
2/4/97 20:24	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.79	-0.52	-0.81	0.33
2/4/97 21:36	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.81	0.33
2/4/97 22:48	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.81	0.33
2/5/97 0:00	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.81	0.33
2/5/97 1:12	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.93	-0.81	0.33
2/5/97 2:24	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.93	-0.39	0.33
2/5/97 3:36	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.39	0.33
2/5/97 4:48	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.39	0.33
2/5/97 6:00	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.11	-0.39	0.33
2/5/97 7:12	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-0.39	-0.48
2/5/97 8:24	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.11	-0.39	-0.89
2/5/97 9:36	0.84	1.38	-0.58	-0.12	0.28	1.13	0.01	0.69	0.01	-0.89
2/5/97 10:48	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	2.28	0.82	-0.07
2/5/97 12:00	0.84	1.38	-0.58	-0.12	0.28	1.13	1.22	4.6	3.58	0.33
2/5/97 13:12	0.84	1.38	-0.58	-0.12	0.28	1.13	2.02	4.22	4.35	3.11
2/5/97 14:24	0.84	1.38	-0.58	-0.12	0.28	1.13	1.62	4.6	3.97	5.41
2/5/97 15:36	0.84	1.38	-0.58	-0.12	0.28	1.13	1.62	2.67	3.58	3.49
2/5/97 16:48	0.84	1.38	-0.58	-0.12	0.28	1.13	2.02	2.67	2.02	1.14
2/5/97 18:00	0.84	1.38	-0.58	-0.12	0.28	1.13	1.22	1.49	1.62	-0.48
2/5/97 19:12	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	0.69	0.41	-1.31
2/5/97 20:24	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	0.69	0.41	-1.31
2/5/97 21:36	0.84	1.38	-0.58	-0.12	0.28	1.13	0.82	0.69	0.41	-1.31

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/5/97 22:48	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	0.29	0.01	-2.15
2/6/97 0:00	0.84	1.38	-0.58	-0.12	0.28	1.13	0.42	0.69	0.41	-2.58
2/6/97 1:12	0.84	1.38	-0.58	-0.12	0.58	1.13	0.01	0.69	0.41	-2.15
2/6/97 2:24	0.84	1.38	-0.58	-0.12	0.28	1.13	0.01	0.29	0.01	-2.15
2/6/97 3:36	0.84	1.38	-0.58	-0.12	0.58	1.13	0.01	0.29	0.01	-2.15
2/6/97 4:48	0.84	1.38	-0.58	-0.12	0.28	1.13	0.01	0.29	-0.39	-2.15
2/6/97 6:00	0.84	1.38	-0.58	-0.12	0.58	1.13	0.01	-0.11	-0.39	-2.15
2/6/97 7:12	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.11	-0.39	-2.15
2/6/97 8:24	0.84	1.38	-0.58	-0.12	0.58	1.13	-0.38	-0.52	-1.22	-2.15
2/6/97 9:36	0.84	1.38	-0.58	-0.12	0.28	1.13	-0.38	-0.52	-1.22	-2.15
2/6/97 10:48	0.84	1.38	-0.58	-0.12	0.58	1.13	0.01	0.69	0.41	-1.73
2/6/97 12:00	0.84	1.38	-0.58	-0.12	0.58	1.13	0.42	3.45	1.62	0.73
2/6/97 13:12	0.84	1.38	-0.58	-0.12	0.28	1.13	0.82	4.22	1.22	0.33
2/6/97 14:24	0.84	1.38	-0.58	-0.12	0.58	1.13	0.82	3.83	2.81	0.73
2/6/97 15:36	0.84	1.38	-0.58	-0.12	0.58	1.13	0.82	3.83	1.62	0.73
2/6/97 16:48	0.84	1.38	-0.58	-0.12	0.58	1.13	0.42	2.67	0.82	0.33
2/6/97 18:00	0.84	1.38	-0.58	-0.12	0.58	1.13	-0.38	0.29	-0.39	-0.89
2/6/97 19:12	0.84	1.38	-0.58	-0.12	0.58	1.13	-1.21	-0.93	-1.22	-1.73
2/6/97 20:24	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.21	-0.93	-1.22	-2.15
2/6/97 21:36	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.63	-2.62	-1.64	-2.15
2/6/97 22:48	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.21	-0.93	-1.22	-3.01
2/7/97 0:00	0.84	1.38	-0.28	-0.12	0.58	1.13	-0.79	-1.34	-0.81	-3.01
2/7/97 1:12	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.63	-2.62	-2.07	-3.88
2/7/97 2:24	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.63	-1.34	-2.07	-4.76
2/7/97 3:36	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.63	-2.19	-2.07	-4.32
2/7/97 4:48	0.84	1.38	-0.28	-0.12	0.58	1.13	-2.05	-2.19	-2.92	-3.88
2/7/97 6:00	0.84	1.38	-0.28	-0.12	0.58	1.13	-2.05	-2.62	-3.35	-3.88
2/7/97 7:12	0.84	1.38	-0.28	-0.12	0.58	1.13	-1.63	-1.77	-2.49	-3.88
2/7/97 8:24	0.84	1.38	-0.58	-0.12	0.58	1.13	-1.21	-1.34	-2.07	-3.88
2/7/97 9:36	0.84	1.38	-0.58	-0.12	0.58	1.13	-1.21	-0.11	-1.22	-3.01
2/7/97 10:48	0.54	1.38	-0.58	-0.12	0.58	1.13	-0.38	0.29	-0.39	-0.48
2/7/97 12:00	0.54	1.38	-0.58	-0.12	0.58	1.13	0.01	1.09	0.01	2.33
2/7/97 13:12	0.54	1.38	-0.58	-0.12	0.58	1.13	0.01	1.09	0.41	3.11
2/7/97 14:24	0.54	1.38	-0.58	-0.12	0.58	1.13	0.42	2.67	0.82	5.03
2/7/97 15:36	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	1.09	0.41	8.74
2/7/97 16:48	0.54	1.38	-0.28	-0.12	0.58	1.13	0.82	1.09	0.41	3.49
2/7/97 18:00	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.69	0.41	1.53
2/7/97 19:12	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.29	0.41	-2.58
2/7/97 20:24	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.29	0.41	-3.01
2/7/97 21:36	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.29	0.01	-3.44
2/7/97 22:48	0.54	1.38	-0.28	0.17	0.58	1.13	0.82	1.09	0.01	-3.44
2/8/97 0:00	0.54	1.38	-0.28	0.17	0.58	1.13	0.42	0.69	0.41	-3.01
2/8/97 1:12	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.29	0.01	-2.58
2/8/97 2:24	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.69	0.01	-3.01
2/8/97 3:36	0.54	1.38	-0.28	-0.12	0.58	1.13	0.42	0.69	0.01	-3.01
2/8/97 4:48	0.54	1.38	-0.28	0.17	0.58	1.13	0.42	0.69	0.01	-3.44
2/8/97 6:00	0.54	1.38	-0.28	0.17	0.58	1.13	0.42	0.69	0.01	-4.32
2/8/97 7:12	0.54	1.38	-0.28	-0.12	0.58	1.13	-0.38	-0.11	-1.22	-7.06
2/8/97 8:24	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	-0.93	-1.22	-9.98
2/8/97 9:36	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-0.52	-1.22	-0.07
2/8/97 10:48	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	0.29	-0.81	10.19
2/8/97 12:00	0.54	1.38	-0.28	0.17	0.58	1.13	-0.38	0.69	0.01	9.11
2/8/97 13:12	0.54	1.38	-0.28	0.17	0.58	1.13	0.42	1.49	2.02	10.19
2/8/97 14:24	0.54	1.38	-0.28	0.17	0.58	1.13	1.22	4.98	3.97	8.38

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/8/97 15:36	0.54	1.38	-0.28	0.17	0.58	1.13	0.82	3.45	3.19	3.11
2/8/97 16:48	0.54	1.38	-0.28	0.17	0.58	1.13	0.01	1.09	0.82	-0.89
2/8/97 18:00	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	-0.11	-1.22	2.72
2/8/97 19:12	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-1.34	-1.64	-7.06
2/8/97 20:24	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-1.34	-2.07	-8.01
2/8/97 21:36	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-1.34	-1.64	-9.48
2/8/97 22:48	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-1.77	-2.49	-10.49
2/9/97 0:00	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.92	-11.53
2/9/97 1:12	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.92	-11.53
2/9/97 2:24	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-1.77	-2.49	-12.07
2/9/97 3:36	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-1.77	-2.49	-12.07
2/9/97 4:48	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.49	-8.49
2/9/97 6:00	0.54	1.38	-0.28	0.17	0.58	1.13	-2.48	-2.19	-2.49	-8.98
2/9/97 7:12	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.49	-9.48
2/9/97 8:24	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.49	-8.98
2/9/97 9:36	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-1.77	-2.07	-3.01
2/9/97 10:48	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-0.93	-1.22	-3.01
2/9/97 12:00	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	1.49	0.82	0.73
2/9/97 13:12	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	1.09	1.22	0.33
2/9/97 14:24	0.54	1.38	-0.28	0.17	0.58	1.13	0.01	1.49	2.41	0.33
2/9/97 15:36	0.54	1.38	-0.28	0.17	0.58	1.13	-0.38	1.09	1.62	0.73
2/9/97 16:48	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	0.29	0.41	-0.48
2/9/97 18:00	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-0.52	-0.81	-1.73
2/9/97 19:12	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-1.34	-1.64	-3.44
2/9/97 20:24	0.54	1.38	-0.28	0.17	0.58	1.13	-1.21	-1.34	-2.07	-6.59
2/9/97 21:36	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-2.19	-2.49	-7.06
2/9/97 22:48	0.54	1.38	-0.28	0.17	0.58	1.13	-2.48	-2.62	-2.92	-7.06
2/10/97 0:00	0.54	1.38	-0.28	0.17	0.58	1.13	-2.91	-3.04	-3.35	-5.67
2/10/97 1:12	0.54	1.38	-0.28	0.17	0.58	1.13	-3.34	-3.48	-3.79	-5.21
2/10/97 2:24	0.54	1.38	-0.28	0.17	0.58	1.13	-3.77	-4.35	-5.58	-5.21
2/10/97 3:36	0.54	1.38	-0.28	0.17	0.58	1.13	-3.77	-3.91	-4.67	-4.76
2/10/97 4:48	0.54	1.38	-0.28	0.17	0.58	1.43	-3.77	-3.91	-4.23	-5.67
2/10/97 6:00	0.54	1.38	-0.28	0.17	0.58	1.13	-3.77	-3.91	-4.23	-4.32
2/10/97 7:12	0.54	1.38	-0.28	0.17	0.58	1.13	-3.77	-3.91	-3.79	-4.32
2/10/97 8:24	0.54	1.38	-0.28	0.17	0.58	1.13	-3.77	-3.91	-4.23	-3.88
2/10/97 9:36	0.54	1.38	-0.28	0.17	0.58	1.13	-3.34	-2.62	-3.35	-1.73
2/10/97 10:48	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	0.29	-0.39	6.9
2/10/97 12:00	0.54	1.38	-0.28	0.17	0.58	1.13	-0.79	4.98	2.41	1.53
2/10/97 13:12	0.54	1.38	-0.58	0.17	0.58	1.13	-0.38	4.6	3.58	9.83
2/10/97 14:24	0.54	1.38	-0.28	0.17	0.58	1.43	0.42	7.59	3.97	5.78
2/10/97 15:36	0.54	1.38	-0.28	0.17	0.58	1.13	1.22	9.42	4.73	5.03
2/10/97 16:48	0.54	1.38	-0.28	0.17	0.58	1.43	0.42	3.83	2.41	3.11
2/10/97 18:00	0.54	1.38	-0.28	0.17	0.58	1.13	-0.38	0.69	0.41	-0.07
2/10/97 19:12	0.54	1.38	-0.28	0.17	0.58	1.13	-2.05	-3.04	-2.49	-2.15
2/10/97 20:24	0.54	1.38	-0.28	0.17	0.58	1.43	-2.91	-4.35	-3.79	-2.58
2/10/97 21:36	0.54	1.38	-0.28	0.17	0.58	1.43	-3.77	-3.48	-3.79	-2.15
2/10/97 22:48	0.54	1.38	-0.28	0.17	0.58	1.43	-3.34	-3.04	-3.35	-2.58
2/11/97 0:00	0.54	1.38	-0.28	0.17	0.58	1.43	-2.91	-2.62	-2.92	-3.01
2/11/97 1:12	0.54	1.38	-0.28	0.17	0.58	1.43	-2.48	-2.62	-2.92	-3.44
2/11/97 2:24	0.54	1.38	-0.28	0.17	0.58	1.43	-2.91	-3.04	-3.35	-3.44
2/11/97 3:36	0.54	1.38	-0.28	0.17	0.58	1.43	-2.91	-3.04	-3.35	-3.44
2/11/97 4:48	0.54	1.38	-0.28	0.17	0.58	1.43	-3.34	-3.48	-3.79	-4.32
2/11/97 6:00	0.54	1.38	-0.28	0.17	0.58	1.43	-3.77	-4.35	-4.23	-5.21
2/11/97 7:12	0.54	1.38	-0.28	0.17	0.58	1.43	-4.21	-6.16	-6.97	-5.67

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/11/97 8:24	0.54	1.38	-0.28	0.17	0.58	1.43	-5.56	-9.51	-8.89	-4.32
2/11/97 9:36	0.54	1.38	-0.28	0.17	0.58	1.43	-6.94	-3.04	-1.22	-3.44
2/11/97 10:48	0.54	1.38	-0.28	0.17	0.58	1.43	-4.21	5.73	5.11	0.33
2/11/97 12:00	0.54	1.38	-0.28	0.17	0.58	1.43	-2.48	9.06	8.46	7.27
2/11/97 13:12	0.54	1.38	-0.28	0.17	0.58	1.43	0.01	8.33	8.09	1.93
2/11/97 14:24	0.54	1.38	-0.28	0.17	0.58	1.43	-0.38	8.69	3.58	3.11
2/11/97 15:36	0.54	1.38	-0.28	0.17	0.58	1.43	-1.63	7.22	5.11	2.72
2/11/97 16:48	0.54	1.38	-0.28	0.17	0.58	1.43	-2.05	6.85	-1.22	0.73
2/11/97 18:00	0.54	1.38	-0.28	0.17	0.58	1.43	-2.91	4.98	-4.23	-0.89
2/11/97 19:12	0.54	1.38	-0.28	0.17	0.58	1.43	-5.11	-7.08	-6.49	-3.01
2/11/97 20:24	0.54	1.38	-0.28	0.17	0.58	1.43	-6.94	-8.52	-8.4	-3.88
2/11/97 21:36	0.54	1.38	-0.28	0.17	0.58	1.43	-7.89	-10.02	-9.9	-3.88
2/11/97 22:48	0.54	1.38	-0.28	0.17	0.58	1.43	-8.87	-11.04	-10.93	-3.88
2/12/97 0:00	0.54	1.38	-0.28	0.17	0.58	1.43	-9.87	-11.57	-12.52	-3.88
2/12/97 1:12	0.54	1.38	-0.28	0.17	0.58	1.43	-10.89	-11.57	-11.98	-3.88
2/12/97 2:24	0.54	1.38	-0.58	0.17	0.58	1.43	-10.89	-12.63	-11.98	-3.88
2/12/97 3:36	0.54	1.38	-0.58	0.17	0.58	1.43	-11.41	-12.63	-13.07	-3.88
2/12/97 4:48	0.54	1.38	-0.58	0.17	0.58	1.43	-10.38	-11.04	-10.93	-4.32
2/12/97 6:00	0.54	1.38	-0.58	0.17	0.58	1.43	-8.87	-9.51	-9.9	-4.32
2/12/97 7:12	0.54	1.38	-0.58	0.17	0.58	1.43	-8.87	-9.51	-10.41	-4.76
2/12/97 8:24	0.54	1.38	-0.58	0.17	0.58	1.43	-9.37	-10.53	-10.93	-4.76
2/12/97 9:36	0.54	1.38	-0.88	0.17	0.58	1.43	-7.89	-7.08	-3.79	-3.44
2/12/97 10:48	0.54	1.38	-0.88	0.17	0.58	1.43	-4.66	-1.77	-3.35	-0.48
2/12/97 12:00	0.54	1.38	-0.88	0.17	0.58	1.13	-2.48	1.09	2.02	2.72
2/12/97 13:12	0.54	1.38	-0.88	0.17	0.28	1.13	-1.63	0.29	1.22	5.41
2/12/97 14:24	0.54	1.38	-0.88	0.17	0.28	1.13	-1.63	1.09	1.22	3.11
2/12/97 15:36	0.54	1.38	-0.88	0.17	0.28	1.13	-1.21	1.89	2.02	2.33
2/12/97 16:48	0.54	1.38	-0.88	0.17	0.58	1.13	-1.63	-0.11	0.41	3.49
2/12/97 18:00	0.54	1.38	-0.58	0.17	0.58	1.13	-2.48	-1.77	-1.22	1.14
2/12/97 19:12	0.54	1.38	-0.58	0.17	0.58	1.13	-3.34	-3.91	-3.35	-8.98
2/12/97 20:24	0.54	1.38	-0.58	0.17	0.28	1.13	-5.11	-7.08	-6.49	-10.49
2/12/97 21:36	0.54	1.38	-0.58	0.17	0.28	1.13	-6.02	-9.51	-8.4	-11.53
2/12/97 22:48	0.54	1.38	-0.88	0.17	0.28	1.13	-6.94	-8.52	-9.39	-12.61
2/13/97 0:00	0.54	1.38	-0.88	0.17	0.28	1.13	-5.56	-6.16	-7.44	-15.46
2/13/97 1:12	0.54	1.38	-1.18	0.17	0.28	1.13	-4.66	-5.24	-6.49	-15.46
2/13/97 2:24	0.54	1.38	-1.18	0.17	0.28	1.13	-4.66	-5.24	-6.49	-16.66
2/13/97 3:36	0.54	1.08	-1.18	0.17	0.28	1.13	-4.66	-4.79	-6.03	-17.27
2/13/97 4:48	0.54	1.38	-1.18	0.17	0.28	1.13	-4.66	-4.79	-8.4	-18.58
2/13/97 6:00	0.54	1.08	-1.18	0.17	0.28	1.13	-4.66	-4.79	-6.97	-18.58
2/13/97 7:12	0.54	1.38	-1.18	0.17	0.28	1.13	-4.66	-3.91	-5.58	-16.66
2/13/97 8:24	0.54	1.08	-1.18	0.17	0.28	1.13	-4.21	-4.79	-5.12	-17.92
2/13/97 9:36	0.54	1.38	-1.18	0.17	0.28	1.13	-3.77	-2.19	-3.79	0.33
2/13/97 10:48	0.54	1.08	-1.18	0.17	0.28	1.13	-1.63	5.36	6.61	-3.01
2/13/97 12:00	0.54	1.38	-1.18	0.17	0.28	1.13	-0.79	1.09	4.73	6.16
2/13/97 13:12	0.54	1.38	-1.18	0.17	0.28	1.13	1.22	5.73	7.36	3.88
2/13/97 14:24	0.54	1.08	-1.18	0.17	0.28	1.13	0.42	3.83	5.87	3.49
2/13/97 15:36	0.54	1.08	-0.88	0.17	0.28	1.13	0.82	4.22	6.61	5.03
2/13/97 16:48	0.54	1.08	-0.88	0.17	0.28	1.13	0.42	4.6	5.49	-2.15
2/13/97 18:00	0.54	1.08	-0.88	0.17	0.28	1.13	-0.79	0.29	0.01	-4.32
2/13/97 19:12	0.54	1.08	-0.88	0.17	0.28	1.13	-2.05	-2.19	-2.07	-6.12
2/13/97 20:24	0.54	1.08	-0.58	0.17	0.28	1.13	-2.05	-2.62	-2.49	-6.59
2/13/97 21:36	0.54	1.08	-0.58	0.17	0.28	1.13	-2.05	-2.19	-2.92	-6.59
2/13/97 22:48	0.54	1.08	-0.58	0.17	0.28	1.13	-2.48	-2.62	-2.92	-8.01
2/14/97 0:00	0.54	1.08	-0.58	0.17	0.28	1.13	-2.48	-3.04	-2.92	-8.01

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/14/97 1:12	0.54	1.08	-0.58	0.17	0.28	1.13	-2.91	-3.48	-3.35	-8.98
2/14/97 2:24	0.54	1.08	-0.58	0.17	0.28	1.13	-3.34	-3.48	-3.79	-8.49
2/14/97 3:36	0.54	1.08	-0.58	0.17	0.28	1.13	-3.34	-3.48	-3.79	-8.01
2/14/97 4:48	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-4.35	-3.79	-8.49
2/14/97 6:00	0.54	1.08	-0.58	0.17	0.28	1.13	-4.21	-5.69	-6.03	-9.48
2/14/97 7:12	0.54	1.08	-0.88	0.17	0.28	1.13	-4.66	-6.16	-5.58	-9.48
2/14/97 8:24	0.54	1.08	-0.88	0.17	0.28	1.13	-4.21	-4.35	-4.67	-8.01
2/14/97 9:36	0.54	1.08	-0.88	0.17	0.28	1.13	-3.77	-2.62	-3.79	-6.59
2/14/97 10:48	0.54	1.08	-0.88	0.17	0.28	1.13	-2.05	2.28	-1.22	-1.73
2/14/97 12:00	0.54	1.08	-0.88	0.17	0.28	1.13	-1.21	5.73	5.87	3.49
2/14/97 13:12	0.54	1.08	-0.88	0.17	0.28	1.13	0.01	3.83	1.62	9.47
2/14/97 14:24	0.54	1.08	-0.88	0.17	0.28	1.13	-1.21	6.11	5.49	9.47
2/14/97 15:36	0.54	1.08	-0.88	0.17	0.28	1.13	-0.38	5.36	4.73	5.78
2/14/97 16:48	0.54	1.08	-0.58	0.17	0.28	1.13	-0.38	3.83	2.02	1.14
2/14/97 18:00	0.54	1.08	-0.58	0.17	0.28	1.13	-1.63	-0.11	-0.39	-0.07
2/14/97 19:12	0.54	1.08	-0.58	0.17	0.28	1.13	-2.91	-3.48	-3.35	-1.31
2/14/97 20:24	0.54	1.08	-0.58	0.17	0.28	1.13	-3.34	-3.91	-4.23	-1.31
2/14/97 21:36	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-3.91	-4.23	-1.73
2/14/97 22:48	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-4.35	-4.67	-1.73
2/15/97 0:00	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-3.91	-3.79	-2.15
2/15/97 1:12	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-3.91	-3.79	-2.15
2/15/97 2:24	0.54	1.08	-0.58	0.17	0.28	1.13	-3.77	-3.48	-3.79	-2.58
2/15/97 3:36	0.54	1.08	-0.58	0.17	0.28	1.13	-4.21	-3.91	-3.79	-3.01
2/15/97 4:48	0.54	1.08	-0.88	0.17	0.28	1.13	-4.21	-4.35	-4.23	-3.01
2/15/97 6:00	0.54	1.08	-0.88	0.17	0.28	1.13	-4.21	-4.35	-4.67	-3.88
2/15/97 7:12	0.54	1.08	-0.88	0.17	0.28	1.13	-4.66	-4.35	-4.67	-4.76
2/15/97 8:24	0.54	1.08	-0.88	0.17	0.28	1.13	-4.66	-4.35	-4.67	-5.21
2/15/97 9:36	0.54	1.08	-0.88	0.17	0.28	1.13	-4.21	-2.62	-3.79	-2.58
2/15/97 10:48	0.54	1.08	-0.88	0.17	0.28	1.13	-2.91	-0.11	-1.22	8.38
2/15/97 12:00	0.54	1.08	-0.88	0.17	0.28	1.13	-1.21	-0.11	1.62	10.91
2/15/97 13:12	0.54	1.08	-0.88	0.17	0.28	1.13	0.42	8.69	3.58	10.19
2/15/97 14:24	0.54	1.08	-0.88	-0.12	0.28	1.13	0.01	5.73	4.73	2.33
2/15/97 15:36	0.54	1.08	-0.88	-0.12	0.28	1.13	-0.38	2.67	6.24	3.88
2/15/97 16:48	0.54	1.08	-0.58	0.17	0.28	1.13	-3.34	5.73	-2.49	0.33
2/15/97 18:00	0.54	1.08	-0.58	-0.12	0.28	1.13	-4.21	1.89	-6.03	6.53
2/15/97 19:12	0.54	1.08	-0.58	0.17	0.28	1.13	-7.42	-8.03	-8.89	-5.67
2/15/97 20:24	0.54	1.08	-0.58	-0.12	0.28	1.13	-9.37	-10.02	-10.93	-8.01
2/15/97 21:36	0.54	1.08	-0.58	-0.12	0.28	1.13	-10.89	-11.57	-11.45	-9.98
2/15/97 22:48	0.54	1.08	-0.88	0.17	0.28	1.13	-12.48	-16.67	-14.2	-10.49
2/16/97 0:00	0.54	1.08	-0.88	0.17	0.28	1.13	-14.73	-17.93	-14.78	-7.53
2/16/97 1:12	0.54	1.08	-1.18	0.17	0.28	1.13	-15.91	-17.28	-15.36	-7.53
2/16/97 2:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-16.51	-19.26	-17.17	-7.53
2/16/97 3:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-17.12	-19.93	-18.48	-7.53
2/16/97 4:48	0.54	1.08	-1.48	-0.12	0.28	1.13	-18.42	-20.61	-19.14	-7.06
2/16/97 6:00	0.54	1.08	-1.79	-0.12	0.28	1.13	-19.08	-19.93	-19.82	-7.06
2/16/97 7:12	0.54	1.08	-1.79	-0.12	0.28	1.13	-17.12	-19.26	-17.17	-6.59
2/16/97 8:24	0.54	1.08	-1.79	-0.12	0.28	1.13	-17.12	-19.26	-17.17	-6.59
2/16/97 9:36	0.54	1.08	-2.09	-0.12	0.28	1.13	-17.77	-9.01	-5.58	-5.21
2/16/97 10:48	0.54	1.08	-2.09	-0.12	0.28	1.13	-10.89	-0.11	-4.67	-1.31
2/16/97 12:00	0.54	1.08	-2.4	-0.12	0.28	1.13	-7.42	6.48	2.41	4.27
2/16/97 13:12	0.54	1.08	-2.09	-0.12	0.28	1.13	-4.21	6.48	5.11	0.33
2/16/97 14:24	0.54	1.08	-2.09	-0.12	0.28	1.13	-3.34	11.57	3.97	-0.48
2/16/97 15:36	0.54	1.08	-1.79	-0.12	0.28	1.13	-2.91	11.57	2.02	1.14
2/16/97 16:48	0.54	1.08	-1.79	-0.12	0.28	1.13	-3.34	1.89	-2.92	-2.58

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/16/97 18:00	0.54	1.08	-1.48	-0.12	0.28	1.13	-4.21	-3.04	-4.23	-5.67
2/16/97 19:12	0.54	1.08	-1.48	-0.12	0.28	1.13	-5.56	-6.62	-6.03	-9.98
2/16/97 20:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-6.02	-6.16	-6.97	-11.53
2/16/97 21:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-6.94	-7.56	-6.97	-15.46
2/16/97 22:48	0.54	1.08	-1.48	-0.12	0.28	1.13	-7.42	-8.03	-7.92	-16.66
2/17/97 0:00	0.54	1.08	-1.48	-0.12	0.28	1.13	-7.89	-8.52	-8.4	-18.58
2/17/97 1:12	0.54	1.08	-1.48	-0.12	0.28	1.13	-7.89	-9.01	-9.9	-18.58
2/17/97 2:24	0.54	1.08	-1.79	-0.12	0.28	1.13	-7.89	-8.03	-9.39	-18.58
2/17/97 3:36	0.54	1.08	-1.79	-0.12	0.28	1.13	-7.89	-8.03	-8.89	-16.05
2/17/97 4:48	0.54	1.08	-1.79	-0.12	0.28	1.13	-7.89	-8.52	-9.39	-16.05
2/17/97 6:00	0.54	1.08	-1.79	-0.12	0.28	1.13	-8.87	-10.53	-10.41	-14.87
2/17/97 7:12	0.54	1.08	-1.79	-0.12	0.28	1.13	-9.37	-10.02	-10.41	-13.16
2/17/97 8:24	0.54	1.08	-2.09	-0.12	0.28	1.13	-8.38	-8.52	-8.4	-12.07
2/17/97 9:36	0.54	1.08	-2.09	-0.12	0.28	1.13	-6.94	-5.24	-6.97	-9.48
2/17/97 10:48	0.54	1.08	-2.09	-0.12	0.28	1.13	-4.66	-0.52	-2.07	-7.06
2/17/97 12:00	0.54	1.08	-2.09	-0.12	0.28	1.13	-1.63	8.33	1.22	-5.21
2/17/97 13:12	0.54	1.08	-1.79	-0.12	0.28	1.13	0.01	6.11	9.55	-2.15
2/17/97 14:24	0.54	1.08	-1.79	-0.12	0.28	1.13	0.42	9.42	7.73	1.53
2/17/97 15:36	0.54	1.08	-1.48	-0.12	0.28	1.13	0.82	12.63	6.61	8.38
2/17/97 16:48	0.54	1.08	-1.48	-0.12	0.28	1.13	0.01	1.89	1.62	8.74
2/17/97 18:00	0.54	1.08	-1.18	-0.12	0.28	1.13	-0.38	0.69	0.01	5.41
2/17/97 19:12	0.54	1.08	-1.18	-0.12	0.28	1.13	-1.21	-0.93	-1.22	1.93
2/17/97 20:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-1.21	-1.34	-1.64	1.93
2/17/97 21:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-1.63	-1.77	-1.64	1.93
2/17/97 22:48	0.54	1.08	-1.18	-0.12	0.28	1.13	-1.63	-1.34	-2.07	2.33
2/18/97 0:00	0.54	1.08	-1.18	-0.12	0.28	1.13	-1.63	-1.77	-2.07	2.72
2/18/97 1:12	0.54	1.08	-1.18	-0.12	0.28	1.13	-2.05	-1.77	-2.07	3.11
2/18/97 2:24	0.54	1.08	-0.88	-0.12	0.28	1.13	-2.48	-2.19	-2.49	3.11
2/18/97 3:36	0.54	1.08	-0.88	-0.12	0.28	1.13	-2.91	-3.04	-2.92	3.88
2/18/97 4:48	0.54	1.08	-0.88	-0.12	0.28	1.13	-2.91	-2.62	-3.35	4.27
2/18/97 6:00	0.54	1.08	-1.18	-0.12	0.28	1.13	-2.91	-3.04	-3.79	5.03
2/18/97 7:12	0.54	1.08	-1.18	-0.12	0.28	1.13	-4.21	-4.35	-4.67	5.03
2/18/97 8:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-4.66	-4.79	-5.12	5.03
2/18/97 9:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-4.66	-3.48	-4.23	11.62
2/18/97 10:48	0.54	1.08	-1.18	-0.12	0.28	1.13	-3.77	4.6	4.35	13.04
2/18/97 12:00	0.54	1.08	-1.18	-0.12	0.28	1.13	-2.05	4.98	3.97	17.6
2/18/97 13:12	0.54	1.08	-1.18	-0.12	0.28	1.13	-0.79	6.85	5.11	16.2
2/18/97 14:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-2.05	2.28	9.19	14.8
2/18/97 15:36	0.54	1.08	-0.88	-0.12	0.28	1.13	-0.38	5.36	3.97	14.8
2/18/97 16:48	0.54	1.08	-0.88	-0.12	0.28	1.13	-2.05	0.29	0.82	11.26
2/18/97 18:00	0.54	1.08	-0.88	-0.12	0.28	1.13	-3.34	1.89	-1.22	9.47
2/18/97 19:12	0.54	1.08	-0.88	-0.12	0.28	1.13	-5.11	-6.16	-6.03	7.64
2/18/97 20:24	0.54	1.08	-0.88	-0.12	0.28	1.13	-6.48	-9.51	-8.4	7.27
2/18/97 21:36	0.54	1.08	-0.88	-0.12	0.28	1.13	-8.38	-10.53	-9.39	6.53
2/18/97 22:48	0.54	1.08	-0.88	-0.12	0.28	1.13	-8.87	-11.57	-10.41	6.53
2/19/97 0:00	0.54	1.08	-0.88	-0.12	0.28	1.13	-8.38	-8.03	-10.41	6.9
2/19/97 1:12	0.54	1.08	-0.88	-0.12	0.28	1.13	-7.89	-7.56	-7.92	7.27
2/19/97 2:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-7.42	-8.03	-8.4	7.27
2/19/97 3:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-7.42	-7.56	-7.92	6.9
2/19/97 4:48	0.54	1.08	-1.18	-0.12	0.28	1.13	-6.94	-6.62	-7.44	6.53
2/19/97 6:00	0.54	1.08	-1.48	-0.12	0.28	1.13	-6.48	-6.62	-7.44	5.03
2/19/97 7:12	0.54	1.08	-1.48	-0.12	0.28	1.13	-6.48	-6.62	-6.97	5.41
2/19/97 8:24	0.54	1.08	-1.48	-0.12	0.28	1.13	-6.48	-6.62	-6.49	6.16
2/19/97 9:36	0.54	1.08	-1.48	-0.12	0.28	1.13	-5.56	-3.91	-5.58	5.78

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/19/97 10:48	0.54	1.08	-1.48	-0.12	0.28	1.13	-4.21	0.29	-3.35	6.53
2/19/97 12:00	0.54	1.08	-1.48	-0.12	0.28	1.13	-2.91	6.85	-0.81	6.16
2/19/97 13:12	0.54	1.08	-1.48	-0.12	0.28	1.13	-2.48	-0.11	0.41	6.16
2/19/97 14:24	0.54	1.08	-1.48	-0.12	0.28	1.13	-2.48	1.89	-0.81	3.49
2/19/97 15:36	0.54	1.08	-1.48	-0.12	0.28	1.13	-2.91	1.89	-0.39	3.49
2/19/97 16:48	0.54	1.08	-1.18	-0.12	0.28	1.13	-3.77	-0.93	-3.35	3.11
2/19/97 18:00	0.54	1.08	-1.18	-0.12	0.28	1.13	-6.02	-5.24	-6.49	2.72
2/19/97 19:12	0.54	1.08	-1.18	-0.12	0.28	1.13	-8.38	-9.51	-9.9	1.14
2/19/97 20:24	0.54	1.08	-1.18	-0.12	0.28	1.13	-10.38	-11.57	-11.45	1.14
2/19/97 21:36	0.54	1.08	-1.18	-0.12	0.28	1.13	-12.48	-14.32	-13.07	1.14
2/19/97 22:48	0.54	1.08	-1.48	-0.12	0.28	1.13	-14.73	-17.28	-14.2	0.33
2/20/97 0:00	0.54	1.08	-1.79	-0.12	0.28	1.13	-17.77	-17.93	-17.17	-0.48
2/20/97 1:12	0.54	1.08	-1.79	-0.12	0.28	1.13	-18.42	-20.61	-17.82	-1.73
2/20/97 2:24	0.54	1.08	-2.09	-0.12	0.28	1.13	-19.08	-20.61	-19.82	-2.15
2/20/97 3:36	0.54	1.08	-2.4	-0.12	0.28	1.13	-16.51	-16.07	-17.17	-2.58
2/20/97 4:48	0.54	1.08	-2.4	-0.12	0.28	1.13	-15.32	-16.67	-17.17	-3.44
2/20/97 6:00	0.54	1.08	-2.4	-0.42	0.28	1.13	-14.73	-14.32	-14.78	-3.01
2/20/97 7:12	0.54	1.08	-2.71	-0.42	0.28	1.13	-13.03	-12.63	-13.63	-3.01
2/20/97 8:24	0.54	1.08	-2.71	-0.42	0.28	1.13	-11.94	-11.57	-12.52	-3.44
2/20/97 9:36	0.54	1.08	-2.71	-0.12	0.28	1.13	-9.87	-7.08	-9.9	2.72
2/20/97 10:48	0.54	1.08	-2.71	-0.42	0.28	1.13	-8.38	-5.24	-7.44	6.9
2/20/97 12:00	0.54	1.08	-2.71	-0.42	0.28	1.13	-6.94	-3.04	-5.12	8.01
2/20/97 13:12	0.54	1.08	-2.4	-0.42	0.28	1.13	-4.66	2.67	-2.07	9.83
2/20/97 14:24	0.54	1.08	-2.4	-0.42	0.28	1.13	-1.63	9.42	1.22	6.53
2/20/97 15:36	0.54	1.08	-2.4	-0.42	0.28	1.13	0.42	14.74	4.35	9.83
2/20/97 16:48	0.54	1.08	-2.09	-0.42	0.28	1.13	2.41	13.69	4.35	7.27
2/20/97 18:00	0.54	1.08	-1.79	-0.42	0.28	1.13	2.8	6.85	2.02	6.16
2/20/97 19:12	0.54	1.08	-1.79	-0.42	0.28	1.13	2.41	1.89	1.22	4.27
2/20/97 20:24	0.54	1.08	-1.79	-0.42	0.28	1.13	2.02	1.89	0.41	4.27
2/20/97 21:36	0.54	1.08	-1.48	-0.42	0.28	1.13	2.02	1.49	0.82	4.65
2/20/97 22:48	0.54	1.08	-1.48	-0.42	0.28	1.13	2.8	2.28	1.62	5.03
2/21/97 0:00	0.54	1.08	-1.48	-0.42	0.28	1.13	3.58	3.06	2.02	5.03
2/21/97 1:12	0.54	1.08	-1.48	-0.42	0.28	1.13	3.58	3.45	2.41	5.41
2/21/97 2:24	0.54	1.08	-1.18	-0.42	0.28	1.13	3.96	3.45	2.81	4.27
2/21/97 3:36	0.84	1.08	-1.18	-0.42	0.28	1.13	3.96	3.45	3.19	3.49
2/21/97 4:48	0.84	1.08	-1.18	-0.42	0.28	1.13	4.34	3.83	3.97	4.65
2/21/97 6:00	0.84	1.08	-1.18	-0.42	0.28	1.13	5.11	4.6	4.35	4.65
2/21/97 7:12	0.84	1.08	-1.18	-0.42	0.28	1.13	5.11	4.98	4.35	4.65
2/21/97 8:24	0.84	1.08	-1.18	-0.42	0.28	1.13	5.48	4.98	4.35	4.27
2/21/97 9:36	0.84	1.08	-1.18	-0.42	0.28	1.13	6.23	9.06	10.63	3.88
2/21/97 10:48	0.84	1.08	-1.18	-0.42	0.28	1.13	7.72	12.28	11.34	2.33
2/21/97 12:00	0.84	1.08	-1.18	-0.42	0.28	1.13	9.9	17.54	12.76	2.33
2/21/97 13:12	0.84	1.08	-1.18	-0.42	0.28	1.13	10.97	16.84	16.98	2.33
2/21/97 14:24	0.84	1.08	-0.88	-0.42	0.28	1.13	12.39	17.19	14.17	2.33
2/21/97 15:36	0.84	1.08	-0.88	-0.42	0.28	1.13	10.97	15.44	13.47	1.93
2/21/97 16:48	0.84	1.38	-0.88	-0.42	0.28	1.13	10.62	13.34	10.27	1.53
2/21/97 18:00	0.84	1.38	-0.88	-0.42	0.28	1.13	9.9	11.21	8.82	0.73
2/21/97 19:12	0.84	1.38	-0.88	-0.42	0.28	1.13	8.82	8.69	7.36	0.73
2/21/97 20:24	0.84	1.38	-0.88	-0.42	0.28	1.13	8.46	8.33	6.24	0.33
2/21/97 21:36	0.84	1.38	-0.88	-0.42	0.28	1.13	8.82	8.33	5.87	-1.31
2/21/97 22:48	0.84	1.38	-0.88	-0.42	0.28	1.13	8.46	8.69	5.87	-2.58
2/22/97 0:00	0.84	1.38	-0.58	-0.42	0.28	1.13	8.46	8.33	5.87	-3.88
2/22/97 1:12	0.84	1.38	-0.58	-0.42	0.28	1.13	8.09	8.33	6.24	-4.76
2/22/97 2:24	0.84	1.38	-0.58	-0.42	0.28	1.13	7.72	7.96	6.24	-5.67

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/22/97 3:36	0.84	1.38	-0.58	-0.42	0.28	1.13	8.09	7.59	5.87	-6.59
2/22/97 4:48	0.84	1.38	-0.58	-0.42	0.28	1.13	7.72	7.22	5.87	-7.06
2/22/97 6:00	0.84	1.38	-0.58	-0.42	0.28	1.13	6.98	6.48	4.35	-7.06
2/22/97 7:12	0.84	1.38	-0.58	-0.42	0.28	1.13	6.61	6.48	4.73	-7.53
2/22/97 8:24	0.84	1.38	-0.58	-0.42	0.28	1.13	6.23	6.11	4.73	-8.01
2/22/97 9:36	0.54	1.38	-0.58	-0.42	0.28	1.13	6.23	6.11	5.49	-6.12
2/22/97 10:48	0.54	1.38	-0.58	-0.42	0.28	1.13	5.86	7.22	6.61	4.27
2/22/97 12:00	0.54	1.38	-0.58	-0.42	0.28	1.13	5.11	6.85	6.24	11.97
2/22/97 13:12	0.54	1.38	-0.58	-0.42	0.28	1.13	5.11	6.48	6.24	6.53
2/22/97 14:24	0.54	1.38	-0.58	-0.42	0.28	1.13	3.96	4.6	3.97	6.16
2/22/97 15:36	0.54	1.08	-0.58	-0.42	0.28	1.13	3.19	3.83	3.19	7.64
2/22/97 16:48	0.54	1.08	-0.58	-0.42	0.28	1.13	2.8	3.45	3.19	7.64
2/22/97 18:00	0.54	1.08	-0.58	-0.12	0.28	1.13	2.41	2.67	2.81	5.03
2/22/97 19:12	0.54	1.08	-0.58	-0.42	0.28	1.13	1.62	1.49	1.22	-3.88
2/22/97 20:24	0.54	1.08	-0.58	-0.42	0.28	1.13	1.22	1.49	1.22	-5.67
2/22/97 21:36	0.54	1.08	-0.58	-0.42	0.28	1.13	1.22	1.09	1.22	-6.59
2/22/97 22:48	0.54	1.08	-0.28	-0.12	0.28	1.13	0.82	1.09	0.82	-7.06
2/23/97 0:00	0.54	1.08	-0.28	-0.12	0.28	1.13	0.01	-0.52	0.41	-8.01
2/23/97 1:12	0.54	1.08	-0.28	-0.12	0.28	1.13	-1.63	-2.62	-2.07	-8.98
2/23/97 2:24	0.54	1.08	-0.28	-0.12	0.28	1.13	-2.05	-3.48	-2.92	-7.53
2/23/97 3:36	0.54	1.08	-0.28	-0.12	0.28	1.13	-2.91	-3.48	-2.92	-7.06
2/23/97 4:48	0.54	1.08	-0.28	-0.12	0.28	1.13	-3.34	-4.35	-3.79	-6.12
2/23/97 6:00	0.54	1.08	-0.28	-0.12	0.28	1.13	-2.48	-3.91	-3.35	-4.76
2/23/97 7:12	0.54	1.08	-0.28	-0.12	0.28	1.13	-2.91	-3.48	-3.35	-3.88
2/23/97 8:24	0.54	1.08	-0.28	-0.12	0.28	1.13	-2.91	-4.35	-4.23	-3.44
2/23/97 9:36	0.54	1.08	-0.28	-0.12	0.28	1.13	-1.63	4.6	4.35	-0.48
2/23/97 10:48	0.54	1.08	-0.28	-0.12	0.28	1.13	1.22	8.69	5.11	3.11
2/23/97 12:00	0.54	1.08	-0.28	-0.12	0.28	1.13	2.8	10.86	8.82	4.27
2/23/97 13:12	0.54	1.08	-0.28	-0.12	0.28	1.13	5.86	13.69	11.69	3.88
2/23/97 14:24	0.54	1.08	-0.28	-0.12	0.28	1.13	6.98	9.78	7.73	9.83
2/23/97 15:36	0.54	1.08	-0.28	-0.12	0.28	1.13	8.09	11.92	8.82	10.19
2/23/97 16:48	0.54	1.08	-0.28	-0.12	0.28	1.13	6.98	7.96	7.36	6.9
2/23/97 18:00	0.54	1.08	-0.28	-0.12	0.28	1.13	5.86	5.73	5.87	3.49
2/23/97 19:12	0.54	1.08	-0.28	-0.12	0.28	1.13	4.34	4.6	3.97	-4.32
2/23/97 20:24	0.54	1.08	-0.28	-0.12	0.28	1.13	4.34	4.22	3.97	-6.12
2/23/97 21:36	0.54	1.08	-0.28	-0.12	0.28	1.13	5.11	4.98	4.35	-7.53
2/23/97 22:48	0.54	1.08	-0.28	-0.12	0.28	1.13	5.86	5.73	4.35	-7.53
2/24/97 0:00	0.54	1.08	-0.28	-0.12	0.28	1.13	6.23	6.11	4.73	-9.98
2/24/97 1:12	0.54	1.08	-0.28	-0.12	0.28	1.13	6.61	6.11	4.35	-9.98
2/24/97 2:24	0.54	1.08	-0.28	-0.12	0.28	1.13	5.11	4.6	3.97	-11.01
2/24/97 3:36	0.54	1.08	-0.28	-0.12	0.28	0.84	5.48	4.22	3.58	-11.01
2/24/97 4:48	0.54	1.08	-0.28	-0.12	0.28	1.13	4.73	5.36	4.35	-12.61
2/24/97 6:00	0.54	1.08	-0.28	-0.12	0.28	1.13	4.73	5.73	3.97	-13.73
2/24/97 7:12	0.54	1.08	0.01	-0.12	0.28	0.84	5.11	5.36	3.97	-15.46
2/24/97 8:24	0.54	1.08	0.01	-0.12	0.28	0.84	4.73	4.98	3.97	-15.46
2/24/97 9:36	0.54	1.08	0.01	-0.12	0.28	0.84	4.34	4.22	3.58	-9.48
2/24/97 10:48	0.54	1.08	0.01	-0.12	0.28	0.84	3.19	3.06	2.02	5.78
2/24/97 12:00	0.54	1.08	0.01	-0.12	0.28	0.84	2.02	2.28	2.02	12.33
2/24/97 13:12	0.54	1.08	0.01	-0.12	0.28	1.13	1.62	2.28	2.02	8.01
2/24/97 14:24	0.54	1.08	0.01	-0.12	0.28	0.84	1.62	1.89	1.62	3.88
2/24/97 15:36	0.54	1.08	0.01	-0.12	0.28	0.84	1.22	1.49	1.62	2.33
2/24/97 16:48	0.54	1.08	0.01	-0.12	0.28	0.84	1.22	1.49	1.22	1.14
2/24/97 18:00	0.54	1.08	0.01	-0.12	0.28	0.84	0.82	1.09	0.41	-2.15
2/24/97 19:12	0.54	1.08	0.01	-0.12	0.28	0.84	0.42	0.69	0.41	-7.53

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/24/97 20:24	0.54	1.08	0.01	-0.12	0.28	0.84	0.01	-0.11	0.01	-11.01
2/24/97 21:36	0.54	1.08	0.01	-0.12	0.28	0.84	-0.79	-0.52	-1.22	-13.16
2/24/97 22:48	0.54	1.08	0.01	-0.12	0.28	0.84	-2.05	-2.19	-2.92	-13.73
2/25/97 0:00	0.54	1.08	0.01	-0.12	0.28	0.84	-3.34	-3.91	-3.79	-14.29
2/25/97 1:12	0.54	1.08	0.01	-0.12	0.28	0.84	-4.66	-4.79	-4.67	-15.46
2/25/97 2:24	0.54	1.08	0.01	-0.12	0.28	0.84	-5.11	-5.69	-6.03	-15.46
2/25/97 3:36	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	-6.16	-6.49	-14.29
2/25/97 4:48	0.54	1.08	0.01	-0.12	0.28	0.84	-6.48	-7.08	-6.97	-13.73
2/25/97 6:00	0.54	1.08	0.01	-0.12	0.28	0.84	-6.48	-7.08	-7.44	-13.73
2/25/97 7:12	0.54	1.08	0.01	-0.12	0.28	0.84	-6.94	-7.56	-7.92	-14.29
2/25/97 8:24	0.54	1.08	0.01	-0.12	0.28	0.84	-6.94	-7.56	-7.92	-13.73
2/25/97 9:36	0.54	1.08	-0.28	-0.12	0.28	0.84	-6.48	-6.62	-7.44	-1.73
2/25/97 10:48	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	0.29	2.02	-2.15
2/25/97 12:00	0.54	1.08	0.01	-0.12	0.28	0.84	-6.02	3.83	3.97	6.53
2/25/97 13:12	0.54	1.08	0.01	-0.12	0.28	0.84	-5.11	4.22	8.46	3.88
2/25/97 14:24	0.54	1.08	0.01	-0.12	0.28	0.84	-3.34	5.36	6.61	7.27
2/25/97 15:36	0.54	1.08	0.01	-0.12	0.28	0.84	-3.34	9.06	7.73	6.9
2/25/97 16:48	0.54	1.08	0.01	-0.12	0.28	0.84	-2.91	7.96	2.41	6.16
2/25/97 18:00	0.54	1.08	0.01	-0.12	0.28	0.84	-2.48	4.98	-2.07	4.27
2/25/97 19:12	0.54	1.08	0.01	-0.12	0.28	0.84	-3.34	-3.91	-4.23	-1.73
2/25/97 20:24	0.54	1.08	0.01	-0.12	0.28	0.84	-4.21	-6.62	-6.49	-2.15
2/25/97 21:36	0.54	1.08	0.01	-0.12	0.28	0.84	-4.66	-7.08	-7.44	-3.01
2/25/97 22:48	0.54	1.08	0.01	-0.12	0.28	0.84	-5.11	-7.08	-6.97	-3.01
2/26/97 0:00	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	-8.52	-7.92	-3.01
2/26/97 1:12	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	-8.52	-9.9	-2.58
2/26/97 2:24	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	-6.62	-7.92	-2.15
2/26/97 3:36	0.54	1.08	0.01	-0.12	0.28	0.84	-4.66	-5.69	-6.49	-2.15
2/26/97 4:48	0.54	1.08	0.01	-0.12	0.28	0.84	-4.21	-4.79	-6.03	-1.73
2/26/97 6:00	0.54	1.08	0.01	-0.12	0.28	0.84	-3.77	-4.35	-5.58	-0.89
2/26/97 7:12	0.54	1.08	0.01	-0.12	0.28	0.84	-2.91	-3.48	-4.23	-0.48
2/26/97 8:24	0.54	1.08	-0.28	-0.12	0.28	0.84	-2.91	-3.48	-3.79	-0.48
2/26/97 9:36	0.54	1.08	-0.28	-0.12	0.28	0.84	-2.05	0.69	-1.64	3.11
2/26/97 10:48	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.79	3.83	3.97	5.03
2/26/97 12:00	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.79	5.73	9.19	6.53
2/26/97 13:12	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.38	4.98	6.24	6.53
2/26/97 14:24	0.54	1.08	-0.28	-0.12	0.28	0.84	1.62	7.59	9.19	6.9
2/26/97 15:36	0.54	1.08	-0.28	-0.12	0.28	0.84	0.01	15.79	10.27	6.53
2/26/97 16:48	0.54	1.08	0.01	-0.12	0.28	0.84	-0.79	8.33	3.97	4.27
2/26/97 18:00	0.54	1.08	0.01	-0.12	0.28	0.84	-1.21	4.6	-1.22	2.72
2/26/97 19:12	0.54	1.08	0.01	-0.12	0.28	0.84	-2.91	-3.91	-4.67	2.33
2/26/97 20:24	0.54	1.08	0.01	-0.12	0.28	0.84	-3.77	-5.69	-6.03	1.53
2/26/97 21:36	0.54	1.08	0.01	-0.12	0.28	0.84	-4.21	-7.08	-7.44	0.73
2/26/97 22:48	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	-7.56	-7.92	0.73
2/27/97 0:00	0.54	1.08	0.01	-0.12	0.28	0.84	-6.02	-9.01	-9.9	0.33
2/27/97 1:12	0.54	1.08	0.01	-0.12	0.28	0.84	-6.48	-10.02	-10.41	0.33
2/27/97 2:24	0.54	1.08	0.01	-0.12	0.28	0.84	-7.42	-10.53	-11.98	0.33
2/27/97 3:36	0.54	1.08	0.01	-0.12	0.28	0.84	-7.89	-11.57	-11.45	0.73
2/27/97 4:48	0.54	1.08	0.01	-0.12	0.28	0.84	-8.87	-13.19	-13.07	0.73
2/27/97 6:00	0.54	1.08	0.01	-0.12	0.28	0.84	-9.37	-14.89	-14.2	0.73
2/27/97 7:12	0.54	1.08	0.01	-0.12	0.28	0.84	-9.87	-16.67	-14.78	0.73
2/27/97 8:24	0.54	1.08	0.01	-0.12	0.28	1.13	-10.38	-15.47	-14.78	0.33
2/27/97 9:36	0.54	1.08	0.01	-0.12	0.28	0.84	-8.87	-6.62	-10.93	0.73
2/27/97 10:48	0.54	1.08	0.01	-0.12	0.28	0.84	-6.48	7.22	-2.49	1.14
2/27/97 12:00	0.54	1.08	0.01	-0.12	0.28	0.84	-5.56	8.33	5.87	1.14

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
2/27/97 13:12	0.54	1.08	0.01	-0.12	0.28	0.84	-3.77	9.42	9.19	3.11
2/27/97 14:24	0.54	1.08	0.01	-0.12	0.28	0.84	1.22	8.33	2.02	4.27
2/27/97 15:36	0.54	1.08	0.01	-0.12	0.28	0.84	-1.21	0.29	2.81	9.11
2/27/97 16:48	0.54	1.08	0.01	-0.12	0.28	0.84	-2.91	2.67	2.81	2.33
2/27/97 18:00	0.54	1.08	0.01	-0.12	0.28	0.84	-3.77	-1.77	-4.67	0.73
2/27/97 19:12	0.54	1.08	0.01	-0.12	0.28	0.84	-5.11	-9.01	-7.92	-0.07
2/27/97 20:24	0.54	1.08	0.01	-0.12	0.28	0.84	-6.48	-12.09	-9.39	-1.31
2/27/97 21:36	0.54	1.08	0.01	-0.12	0.28	1.13	-7.42	-13.19	-11.98	-0.89
2/27/97 22:48	0.54	1.08	0.01	0.17	0.28	1.13	-7.89	-14.89	-13.07	-1.31
2/28/97 0:00	0.54	1.08	0.01	-0.12	0.28	1.13	-9.37	-13.75	-14.2	-1.31
2/28/97 1:12	0.54	1.08	0.01	-0.12	0.28	0.84	-10.38	-17.28	-15.36	-1.31
2/28/97 2:24	0.54	1.08	0.01	0.17	0.28	1.13	-11.41	-16.07	-15.36	-1.73
2/28/97 3:36	0.54	1.08	0.01	0.17	0.28	0.84	-11.41	-13.75	-14.78	-1.73
2/28/97 4:48	0.54	1.08	0.01	-0.12	0.28	0.84	-11.41	-13.19	-13.63	-2.15
2/28/97 6:00	0.54	1.08	0.01	-0.12	0.28	1.13	-11.41	-13.75	-13.63	-2.15
2/28/97 7:12	0.54	1.08	0.01	0.17	0.28	1.13	-11.41	-13.19	-13.63	-2.15
2/28/97 8:24	0.54	1.08	0.01	0.17	0.28	1.13	-10.89	-11.57	-13.07	-2.15
2/28/97 9:36	0.54	1.08	0.01	0.17	0.28	0.84	-9.37	-4.35	-2.07	-1.31
2/28/97 10:48	0.54	1.08	0.01	0.17	0.28	0.84	-6.02	2.67	-2.07	-0.07
2/28/97 12:00	0.54	1.08	0.01	-0.12	0.28	1.13	-3.34	7.96	4.73	1.93
2/28/97 13:12	0.54	1.08	0.01	0.17	0.28	0.84	-2.05	9.06	9.19	1.93
2/28/97 14:24	0.54	1.08	0.01	-0.12	0.28	1.13	1.62	9.42	4.35	5.03
2/28/97 15:36	0.54	1.08	0.01	0.17	0.28	0.84	-0.79	11.92	6.98	3.88
2/28/97 16:48	0.54	1.08	0.01	-0.12	0.28	0.84	0.01	10.5	4.35	3.49
2/28/97 18:00	0.54	1.08	0.01	0.17	0.28	0.84	0.01	7.96	0.01	2.33
2/28/97 19:12	0.54	1.08	0.01	0.17	0.28	0.84	-0.79	-0.52	-2.07	1.93
2/28/97 20:24	0.54	1.08	0.01	0.17	0.28	0.84	-0.79	-2.19	-2.49	1.53
2/28/97 21:36	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-2.19	-2.92	1.14
2/28/97 22:48	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-2.19	-3.35	1.14
3/1/97 0:00	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-1.77	-3.35	1.14
3/1/97 1:12	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-2.19	-3.35	0.73
3/1/97 2:24	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-1.77	-2.49	0.73
3/1/97 3:36	0.54	1.08	0.01	0.17	0.28	0.84	-0.79	-1.77	-2.49	0.33
3/1/97 4:48	0.54	1.08	0.01	0.17	0.28	0.84	-0.79	-1.77	-2.07	0.73
3/1/97 6:00	0.54	1.08	0.01	0.17	0.28	1.13	0.01	-0.93	-1.22	0.73
3/1/97 7:12	0.54	1.08	0.01	0.17	0.28	0.84	0.01	-0.93	-1.22	0.73
3/1/97 8:24	0.54	1.08	0.01	0.17	0.28	0.84	0.42	-0.11	-1.64	0.33
3/1/97 9:36	0.54	1.08	0.01	0.17	0.28	1.13	1.62	4.6	2.41	1.14
3/1/97 10:48	0.54	1.08	0.01	0.17	0.28	0.84	2.8	6.85	4.73	3.11
3/1/97 12:00	0.54	1.08	-0.28	0.17	0.28	1.13	3.96	8.69	5.87	6.16
3/1/97 13:12	0.54	1.08	-0.28	0.17	0.28	0.84	4.34	7.59	6.98	6.53
3/1/97 14:24	0.54	1.08	0.01	0.17	0.28	0.84	4.34	7.96	6.61	8.01
3/1/97 15:36	0.54	1.08	-0.28	0.17	0.28	0.84	3.96	7.96	6.24	9.83
3/1/97 16:48	0.54	1.08	-0.28	0.17	0.28	0.84	3.19	4.98	4.35	10.55
3/1/97 18:00	0.54	1.08	-0.28	0.17	0.28	0.84	2.41	3.06	2.81	7.64
3/1/97 19:12	0.54	1.08	-0.28	0.17	0.28	1.13	2.02	1.89	2.02	8.38
3/1/97 20:24	0.54	1.08	-0.28	0.17	0.28	0.84	1.22	1.49	2.02	6.16
3/1/97 21:36	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.29	0.82	7.27
3/1/97 22:48	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	7.27
3/2/97 0:00	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	7.27
3/2/97 1:12	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	6.9
3/2/97 2:24	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	5.41
3/2/97 3:36	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.82	3.49
3/2/97 4:48	0.54	1.08	-0.28	0.17	0.28	0.84	0.82	0.69	0.82	2.33

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/2/97 6:00	0.54	1.08	-0.28	0.17	0.28	0.84	0.82	0.69	0.82	1.14
3/2/97 7:12	0.54	1.08	-0.28	0.17	0.28	0.84	0.82	1.09	0.41	1.14
3/2/97 8:24	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	0.73
3/2/97 9:36	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.82	1.14
3/2/97 10:48	0.54	1.08	-0.28	-0.12	0.28	0.84	0.82	1.49	0.82	2.33
3/2/97 12:00	0.54	1.08	-0.28	-0.12	0.28	0.84	0.82	0.69	0.82	2.72
3/2/97 13:12	0.54	1.08	-0.28	-0.12	0.28	0.84	0.82	2.67	2.02	2.72
3/2/97 14:24	0.54	1.08	-0.28	-0.12	0.28	0.84	1.62	4.22	2.81	2.33
3/2/97 15:36	0.54	1.08	-0.28	-0.12	0.28	0.84	1.22	6.85	2.81	4.27
3/2/97 16:48	0.54	1.08	-0.28	-0.12	0.28	0.84	0.42	2.28	2.02	5.03
3/2/97 18:00	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.38	0.69	0.41	8.74
3/2/97 19:12	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.38	-0.11	-0.39	1.53
3/2/97 20:24	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.38	-1.34	-1.22	0.33
3/2/97 21:36	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.79	-0.52	-1.22	-0.07
3/2/97 22:48	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.79	-0.52	-1.22	-2.15
3/3/97 0:00	0.54	1.08	-0.28	-0.12	0.28	0.84	-0.79	-0.93	-1.22	-2.58
3/3/97 1:12	0.54	1.08	-0.28	-0.12	0.28	0.84	-1.21	-1.34	-1.64	-3.01
3/3/97 2:24	0.54	1.08	-0.28	0.17	0.28	0.84	-1.21	-1.34	-1.64	-3.88
3/3/97 3:36	0.54	1.08	-0.28	0.17	0.28	0.84	-1.21	-1.34	-1.64	-2.58
3/3/97 4:48	0.54	1.08	-0.28	0.17	0.28	0.84	-1.21	-1.77	-2.07	-3.44
3/3/97 6:00	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-1.77	-2.07	-3.01
3/3/97 7:12	0.54	1.08	-0.28	0.17	0.28	0.84	-1.21	-1.34	-2.07	-2.58
3/3/97 8:24	0.54	1.08	0.01	0.17	0.28	0.84	-1.21	-1.77	-2.07	-2.15
3/3/97 9:36	0.54	1.08	-0.28	0.17	0.28	0.84	-1.21	-0.11	-1.22	1.14
3/3/97 10:48	0.54	1.08	-0.28	0.17	0.28	0.84	-0.38	2.28	-0.39	4.65
3/3/97 12:00	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	4.6	0.82	4.27
3/3/97 13:12	0.54	1.08	-0.28	0.17	0.28	0.84	0.82	4.98	1.22	1.93
3/3/97 14:24	0.54	1.08	-0.28	0.17	0.28	0.84	2.02	8.33	3.19	2.33
3/3/97 15:36	0.54	1.08	-0.28	0.17	0.28	0.84	2.02	7.22	3.58	5.41
3/3/97 16:48	0.84	1.08	-0.28	0.17	0.28	0.84	1.62	4.6	2.41	3.88
3/3/97 18:00	0.84	1.08	-0.28	0.17	0.28	0.84	1.62	3.06	1.22	1.53
3/3/97 19:12	0.84	1.08	-0.28	0.17	0.28	0.84	1.22	1.49	0.82	-0.48
3/3/97 20:24	0.84	1.08	-0.28	0.17	0.28	0.84	0.82	1.09	1.22	-0.89
3/3/97 21:36	0.84	1.08	0.01	0.17	0.28	0.84	0.82	1.09	1.22	-0.89
3/3/97 22:48	0.84	1.08	0.01	0.17	0.28	0.84	0.82	0.69	0.82	-0.89
3/4/97 0:00	0.84	1.08	0.01	0.17	0.28	0.84	0.82	0.69	1.22	-2.15
3/4/97 1:12	0.84	1.08	-0.28	0.17	0.28	0.84	0.42	0.29	0.41	-2.58
3/4/97 2:24	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.69	0.41	-3.44
3/4/97 3:36	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	0.29	0.01	-3.01
3/4/97 4:48	0.54	1.08	0.01	0.17	0.28	0.84	0.42	0.69	0.41	-1.73
3/4/97 6:00	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	1.09	0.41	-1.73
3/4/97 7:12	0.54	1.08	0.01	0.17	0.28	0.84	0.42	0.69	0.41	-1.31
3/4/97 8:24	0.54	1.08	0.01	0.17	0.28	0.84	0.42	0.69	0.01	-1.31
3/4/97 9:36	0.54	1.08	-0.28	0.17	0.28	0.84	0.42	1.49	0.41	0.33
3/4/97 10:48	0.54	1.08	-0.28	0.17	0.28	0.84	1.22	4.98	1.62	10.55
3/4/97 12:00	0.54	1.08	0.01	0.17	0.28	0.84	3.19	8.69	3.97	17.6
3/4/97 13:12	0.54	1.08	-0.28	0.17	0.28	0.84	4.73	9.42	4.35	13.74
3/4/97 14:24	0.54	1.08	-0.28	0.17	0.28	0.84	6.98	9.78	6.61	9.47
3/4/97 15:36	0.84	1.08	-0.28	0.17	0.28	0.84	9.18	12.63	8.09	5.41
3/4/97 16:48	0.84	1.08	-0.28	0.17	0.28	0.84	8.82	11.92	8.09	3.11
3/4/97 18:00	0.84	1.08	0.01	0.17	0.28	0.84	8.82	10.14	6.98	2.72
3/4/97 19:12	1.14	1.08	-0.28	0.17	0.28	0.84	7.72	9.42	6.24	2.33
3/4/97 20:24	1.14	1.38	-0.28	0.17	0.28	0.84	8.09	8.69	5.87	2.33
3/4/97 21:36	1.14	1.38	0.01	0.17	0.28	0.84	7.35	7.59	5.87	2.72

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/4/97 22:48	1.14	1.38	-0.28	0.17	0.28	0.84	6.98	8.69	6.98	1.93
3/5/97 0:00	1.14	1.38	-0.28	0.17	0.28	0.84	7.35	8.33	6.61	1.93
3/5/97 1:12	1.14	1.38	-0.28	0.17	0.28	0.84	6.61	8.33	6.24	1.53
3/5/97 2:24	1.14	1.38	-0.28	0.17	0.28	0.84	5.11	5.73	4.73	1.14
3/5/97 3:36	1.14	1.38	0.01	0.17	0.28	0.84	3.58	3.83	2.81	1.14
3/5/97 4:48	1.14	1.38	0.01	0.17	0.28	0.84	2.41	2.28	1.62	1.14
3/5/97 6:00	1.14	1.38	0.01	0.17	0.28	0.84	1.22	1.49	0.82	1.14
3/5/97 7:12	0.84	1.38	0.01	0.17	0.28	0.84	0.82	0.69	0.41	0.73
3/5/97 8:24	0.84	1.38	-0.28	0.17	0.28	0.84	0.82	1.09	0.41	0.73
3/5/97 9:36	0.84	1.38	-0.28	0.17	0.28	0.84	0.82	1.49	0.82	2.33
3/5/97 10:48	0.84	1.38	0.01	0.17	0.28	0.84	1.62	2.67	1.22	2.72
3/5/97 12:00	0.84	1.38	0.01	0.17	0.28	0.84	2.02	4.6	2.41	3.88
3/5/97 13:12	0.84	1.38	-0.28	0.17	0.28	0.84	1.62	4.22	2.41	4.65
3/5/97 14:24	0.84	1.38	0.01	0.17	0.28	0.84	2.02	3.83	2.02	6.53
3/5/97 15:36	1.14	1.38	0.01	0.17	0.28	0.84	2.41	6.48	3.58	5.78
3/5/97 16:48	1.14	1.38	-0.28	0.17	0.28	0.84	3.19	10.5	8.82	3.88
3/5/97 18:00	1.14	1.38	0.01	0.17	0.28	0.84	2.41	9.78	3.58	2.33
3/5/97 19:12	1.14	1.38	0.01	0.17	0.28	0.84	1.62	2.28	0.82	1.14
3/5/97 20:24	1.14	1.38	0.01	0.17	0.28	0.84	0.42	0.29	0.41	0.33
3/5/97 21:36	1.44	1.38	0.01	0.17	0.28	0.84	-1.21	-1.34	-0.81	0.33
3/5/97 22:48	1.44	1.38	0.01	0.17	0.28	0.84	-0.79	-2.19	-2.07	-0.07
3/6/97 0:00	1.44	1.38	0.01	0.17	0.28	0.84	-1.63	-3.91	-2.49	-0.48
3/6/97 1:12	1.44	1.38	0.01	0.17	0.28	0.84	-1.63	-4.79	-2.92	-0.48
3/6/97 2:24	1.44	1.38	0.01	0.17	0.28	0.84	-1.63	-3.91	-3.79	-0.48
3/6/97 3:36	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	-2.62	-2.92	-0.89
3/6/97 4:48	1.44	1.68	0.01	0.17	0.28	0.84	-1.63	-2.62	-3.79	-1.31
3/6/97 6:00	1.44	1.68	0.01	0.17	0.28	0.84	-2.05	-3.04	-3.35	-1.73
3/6/97 7:12	1.44	1.68	0.01	0.17	0.28	0.84	-2.05	-3.04	-2.07	-1.73
3/6/97 8:24	1.44	1.68	0.01	0.17	0.28	0.84	-2.05	-2.62	-2.49	-2.15
3/6/97 9:36	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	0.69	0.01	1.53
3/6/97 10:48	1.44	1.68	0.01	0.17	0.28	0.84	0.42	7.96	4.73	4.27
3/6/97 12:00	1.44	1.68	0.01	0.17	0.28	0.84	1.62	7.22	3.19	5.41
3/6/97 13:12	1.44	1.68	0.01	0.17	0.28	0.84	1.22	4.22	2.41	5.03
3/6/97 14:24	1.44	1.68	0.01	0.17	0.28	0.84	1.22	4.6	1.22	2.72
3/6/97 15:36	1.44	1.68	0.01	0.17	0.28	0.84	2.8	7.96	3.97	3.11
3/6/97 16:48	1.44	1.68	-0.28	0.17	0.28	0.84	2.02	6.48	3.19	0.33
3/6/97 18:00	1.74	1.68	0.01	0.17	0.28	0.84	1.62	3.06	0.82	1.93
3/6/97 19:12	1.74	1.68	0.01	0.17	0.28	0.84	0.01	-0.52	-0.81	-4.76
3/6/97 20:24	1.74	1.68	0.01	0.17	0.28	0.84	-0.38	-0.52	-0.81	-5.67
3/6/97 21:36	1.74	1.68	0.01	0.17	0.28	0.84	0.01	-0.52	-0.81	-6.59
3/6/97 22:48	1.74	1.68	0.01	0.17	0.28	0.84	-0.38	-0.93	-1.22	-6.59
3/7/97 0:00	1.74	1.68	0.01	0.17	0.28	0.84	-1.21	-3.04	-2.07	-7.53
3/7/97 1:12	1.74	1.68	0.01	0.17	0.28	0.84	-1.63	-3.04	-2.92	-7.53
3/7/97 2:24	1.74	1.68	0.01	0.17	0.28	0.84	-2.05	-4.35	-3.35	-8.01
3/7/97 3:36	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	-2.19	-3.35	-8.98
3/7/97 4:48	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	-1.34	-1.64	-8.49
3/7/97 6:00	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	-1.34	-1.64	-8.98
3/7/97 7:12	1.44	1.68	0.01	0.17	0.28	1.13	-1.21	-1.34	-1.64	-9.48
3/7/97 8:24	1.44	1.68	0.01	0.17	0.28	0.84	-1.21	-1.34	-1.22	-5.67
3/7/97 9:36	1.44	1.68	0.01	0.17	0.28	0.84	-0.38	0.69	0.01	8.74
3/7/97 10:48	1.44	1.68	0.01	0.17	0.28	0.84	1.22	9.06	9.91	12.68
3/7/97 12:00	1.44	1.68	0.01	0.17	0.28	0.84	2.41	13.69	13.82	13.39
3/7/97 13:12	1.44	1.68	0.01	0.17	0.28	0.84	5.48	15.44	12.76	4.27
3/7/97 14:24	1.74	1.68	0.01	0.17	0.28	0.84	10.62	16.49	8.82	3.11

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/7/97 15:36	1.74	1.68	0.01	0.17	0.28	0.84	4.34	6.11	5.87	10.19
3/7/97 16:48	2.03	1.68	0.01	0.17	0.28	1.13	3.58	4.6	3.58	1.93
3/7/97 18:00	2.03	1.98	0.01	0.17	0.28	0.84	2.41	2.67	2.41	0.33
3/7/97 19:12	2.33	1.98	0.01	0.17	0.28	0.84	2.41	2.28	2.02	-0.48
3/7/97 20:24	2.33	1.98	0.01	0.17	0.28	0.84	2.41	3.06	2.02	-2.15
3/7/97 21:36	2.33	1.98	0.01	0.17	0.28	0.84	2.8	2.67	2.02	-1.73
3/7/97 22:48	2.33	1.98	0.01	0.17	0.28	0.84	2.41	1.89	1.62	-0.89
3/8/97 0:00	2.33	1.98	0.01	0.17	0.28	0.84	1.22	1.09	1.22	-0.89
3/8/97 1:12	2.33	1.98	0.01	0.17	0.28	0.84	1.22	1.09	1.22	-0.48
3/8/97 2:24	2.33	1.98	0.01	0.17	0.28	1.13	1.62	1.49	1.22	-1.31
3/8/97 3:36	2.33	2.27	0.01	0.17	0.28	1.13	1.22	1.09	0.41	-2.58
3/8/97 4:48	2.33	2.27	0.01	0.17	0.28	0.84	1.22	1.09	0.82	-2.58
3/8/97 6:00	2.03	2.27	0.01	0.17	0.28	1.13	1.22	1.09	0.82	-2.58
3/8/97 7:12	2.03	2.27	0.01	0.17	0.28	1.13	0.82	1.09	0.82	-2.58
3/8/97 8:24	2.03	2.27	0.01	0.17	0.28	1.13	0.82	0.69	0.41	-2.58
3/8/97 9:36	2.03	2.27	0.01	0.17	0.28	1.13	1.22	1.89	2.02	-1.73
3/8/97 10:48	2.03	2.27	0.01	0.17	0.28	1.13	1.62	4.22	2.81	13.04
3/8/97 12:00	2.03	2.27	0.01	0.17	0.28	1.13	3.19	4.98	4.35	10.91
3/8/97 13:12	2.03	2.27	0.01	0.17	0.28	1.13	3.19	4.98	5.11	9.47
3/8/97 14:24	2.03	2.27	0.01	0.17	0.28	1.13	3.19	4.98	5.11	13.39
3/8/97 15:36	2.33	2.27	0.01	0.17	0.28	1.13	4.34	7.59	5.49	9.83
3/8/97 16:48	2.33	2.27	0.01	0.17	0.28	1.13	2.8	4.6	3.58	10.91
3/8/97 18:00	2.62	2.27	0.01	0.17	0.28	1.13	2.02	2.28	2.02	7.27
3/8/97 19:12	2.62	2.27	0.01	0.17	0.58	1.13	0.42	0.29	1.22	0.73
3/8/97 20:24	2.62	2.27	0.01	0.47	0.58	1.13	0.01	-0.11	0.41	-1.73
3/8/97 21:36	2.62	2.27	0.01	0.47	0.58	1.13	0.01	0.29	0.41	-2.58
3/8/97 22:48	2.62	2.27	0.01	0.47	0.58	1.13	0.01	-0.52	0.01	-3.01
3/9/97 0:00	2.62	2.27	0.01	0.47	0.58	1.13	-0.38	-0.52	-0.39	-3.44
3/9/97 1:12	2.62	2.27	0.01	0.47	0.58	1.13	-0.38	-0.52	-0.81	-3.88
3/9/97 2:24	2.62	2.27	0.01	0.47	0.58	1.13	-0.38	-0.52	-0.81	-3.88
3/9/97 3:36	2.62	2.57	0.01	0.47	0.58	1.13	-0.79	-0.52	-1.22	-4.32
3/9/97 4:48	2.62	2.57	0.01	0.47	0.58	1.13	-1.21	-1.34	-1.22	-3.88
3/9/97 6:00	2.33	2.57	0.01	0.47	0.58	1.13	-1.21	-1.34	-1.64	-3.88
3/9/97 7:12	2.33	2.57	0.31	0.47	0.58	1.13	-1.63	-1.34	-1.64	-3.88
3/9/97 8:24	2.33	2.57	0.31	0.47	0.58	1.13	-2.05	-1.77	-2.07	-2.58
3/9/97 9:36	2.33	2.57	0.31	0.47	0.58	1.13	-1.63	0.29	0.01	-1.31
3/9/97 10:48	2.33	2.57	0.31	0.47	0.58	1.13	-0.79	7.22	9.91	0.33
3/9/97 12:00	2.33	2.57	0.31	0.47	0.58	1.13	-0.38	3.06	16.63	1.53
3/9/97 13:12	2.33	2.27	0.31	0.47	0.58	1.13	0.42	7.96	2.81	2.72
3/9/97 14:24	2.33	2.27	0.31	0.47	0.58	1.13	0.01	4.22	2.81	1.53
3/9/97 15:36	2.33	2.27	0.31	0.47	0.58	1.13	0.01	4.6	3.97	0.73
3/9/97 16:48	2.33	2.27	0.61	0.77	0.58	1.13	-1.21	2.28	1.22	0.73
3/9/97 18:00	2.33	2.27	0.61	0.77	0.58	1.13	-3.34	2.67	-1.22	1.14
3/9/97 19:12	2.33	2.57	0.61	0.77	0.58	1.13	-4.21	-4.79	-3.79	1.14
3/9/97 20:24	2.33	2.57	0.61	0.77	0.58	1.13	-5.11	-5.69	-5.58	1.53
3/9/97 21:36	2.33	2.57	0.61	0.77	0.58	1.13	-5.11	-6.16	-6.03	1.93
3/9/97 22:48	2.33	2.57	0.31	0.77	0.58	1.13	-5.56	-6.62	-6.97	1.53
3/10/97 0:00	2.33	2.57	0.31	0.77	0.58	1.13	-6.02	-7.56	-6.97	1.93
3/10/97 1:12	2.33	2.57	0.31	0.77	0.58	1.13	-6.48	-8.03	-7.44	1.14
3/10/97 2:24	2.33	2.57	0.31	0.77	0.58	1.13	-6.48	-8.52	-7.92	1.14
3/10/97 3:36	2.03	2.57	0.31	0.77	0.58	1.13	-6.94	-9.01	-8.4	0.73
3/10/97 4:48	2.03	2.57	0.31	0.77	0.58	1.13	-7.42	-11.04	-9.39	0.33
3/10/97 6:00	2.03	2.27	0.31	0.77	0.58	1.13	-7.42	-9.51	-9.39	-0.07
3/10/97 7:12	2.03	2.27	0.01	0.77	0.58	1.13	-7.89	-10.53	-9.9	-0.07

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/10/97 8:24	2.03	2.27	0.01	0.77	0.58	1.13	-7.42	-7.08	-8.89	2.72
3/10/97 9:36	2.03	2.27	0.01	0.77	0.58	1.13	-5.56	2.67	7.36	11.26
3/10/97 10:48	2.03	2.27	0.01	0.77	0.58	1.13	-3.34	6.85	16.28	14.8
3/10/97 12:00	2.03	2.27	0.01	0.47	0.58	1.13	-2.05	10.5	15.23	12.68
3/10/97 13:12	2.03	2.27	0.01	0.47	0.58	1.13	-0.79	9.42	6.98	11.62
3/10/97 14:24	2.03	2.27	0.01	0.47	0.58	1.13	1.62	7.22	3.19	11.62
3/10/97 15:36	2.33	2.27	0.01	0.47	0.58	1.13	5.11	12.98	7.36	6.16
3/10/97 16:48	2.62	2.27	0.01	0.47	0.58	1.13	0.82	4.22	2.02	6.53
3/10/97 18:00	2.62	2.27	0.01	0.47	0.58	1.13	0.01	1.49	0.41	6.9
3/10/97 19:12	2.62	2.27	0.01	0.47	0.58	1.13	-0.79	-0.11	-0.81	5.78
3/10/97 20:24	2.92	2.27	0.01	0.47	0.58	1.13	-1.63	-2.19	-2.07	5.41
3/10/97 21:36	2.92	2.57	0.01	0.47	0.58	1.13	-1.63	-2.19	-2.07	6.9
3/10/97 22:48	2.92	2.57	0.01	0.47	0.58	1.13	-1.21	-0.93	-1.22	4.27
3/11/97 0:00	2.92	2.57	0.01	0.47	0.58	1.13	-1.21	-0.93	-0.81	3.88
3/11/97 1:12	2.92	2.57	0.01	0.47	0.58	1.13	-1.21	-0.52	-0.81	1.14
3/11/97 2:24	2.92	2.57	0.01	0.47	0.58	1.13	-1.21	-1.34	-1.64	0.33
3/11/97 3:36	2.92	2.57	0.01	0.47	0.58	1.13	-2.05	-2.19	-2.49	0.33
3/11/97 4:48	2.92	2.57	0.01	0.47	0.58	1.13	-2.48	-2.62	-2.92	0.33
3/11/97 6:00	2.92	2.57	0.01	0.47	0.58	1.13	-2.48	-2.62	-2.92	0.33
3/11/97 7:12	2.92	2.57	0.01	0.47	0.58	1.13	-2.05	-2.19	-2.92	0.33
3/11/97 8:24	2.92	2.57	0.01	0.47	0.58	1.13	-2.05	-2.19	-2.92	0.33
3/11/97 9:36	2.62	2.57	0.01	0.47	0.58	1.13	-2.05	-0.52	-2.07	1.53
3/11/97 10:48	2.92	2.57	0.01	0.47	0.58	1.13	0.01	7.96	17.68	6.16
3/11/97 12:00	2.62	2.57	0.01	0.47	0.58	1.13	0.01	12.28	9.55	14.09
3/11/97 13:12	2.92	2.57	0.01	0.47	0.58	1.13	1.62	14.39	8.82	10.19
3/11/97 14:24	2.92	2.57	0.01	0.47	0.58	1.13	8.46	17.89	10.98	10.91
3/11/97 15:36	3.21	2.86	0.01	0.47	0.58	1.13	2.02	9.42	3.97	12.68
3/11/97 16:48	3.51	2.86	0.01	0.47	0.58	1.13	2.8	6.48	3.97	13.04
3/11/97 18:00	3.8	2.86	0.01	0.47	0.58	1.13	2.41	13.34	1.22	10.19
3/11/97 19:12	4.09	2.86	0.31	0.47	0.58	1.13	-0.38	0.69	-0.39	3.11
3/11/97 20:24	4.09	2.86	0.31	0.47	0.58	1.13	-1.63	-2.62	-2.49	-0.48
3/11/97 21:36	4.09	3.16	0.31	0.47	0.58	1.13	-2.05	-3.48	-2.92	-0.89
3/11/97 22:48	4.09	3.16	0.31	0.47	0.58	1.13	-2.05	-3.48	-3.35	-1.73
3/12/97 0:00	4.09	3.16	0.31	0.47	0.58	1.13	-2.91	-3.91	-3.79	-3.01
3/12/97 1:12	4.09	3.16	0.31	0.47	0.58	1.13	-3.34	-4.79	-4.23	-4.32
3/12/97 2:24	3.8	3.16	0.31	0.47	0.58	1.13	-3.34	-4.35	-4.23	-3.44
3/12/97 3:36	3.8	3.16	0.31	0.47	0.58	1.13	-3.77	-4.79	-4.67	-3.01
3/12/97 4:48	3.8	3.16	0.01	0.47	0.58	1.13	-3.34	-4.35	-4.23	-3.01
3/12/97 6:00	3.8	3.16	0.01	0.47	0.58	1.13	-3.77	-4.35	-4.23	-3.01
3/12/97 7:12	3.51	3.45	0.01	0.47	0.58	1.13	-3.34	-4.35	-4.23	-3.88
3/12/97 8:24	3.51	3.16	0.01	0.47	0.58	1.13	-3.34	-2.62	-3.79	2.33
3/12/97 9:36	3.51	3.16	0.01	0.47	0.58	1.13	-2.05	0.29	-2.49	10.91
3/12/97 10:48	3.21	3.16	0.01	0.47	0.58	1.13	0.01	3.06	0.01	12.68
3/12/97 12:00	3.21	3.16	0.01	0.47	0.58	1.13	0.82	3.83	1.22	15.85
3/12/97 13:12	3.21	3.16	0.01	0.47	0.58	1.13	2.02	4.98	2.81	12.33
3/12/97 14:24	3.51	3.16	0.01	0.47	0.58	1.13	1.22	2.67	1.62	10.91
3/12/97 15:36	3.51	3.16	0.01	0.47	0.58	1.13	1.22	2.28	1.22	15.15
3/12/97 16:48	3.8	3.16	0.01	0.47	0.58	1.13	0.82	1.89	0.41	9.47
3/12/97 18:00	3.8	3.16	0.01	0.47	0.58	1.13	0.82	1.49	0.82	6.9
3/12/97 19:12	4.09	3.16	0.01	0.47	0.58	1.13	0.82	1.09	0.82	0.73
3/12/97 20:24	4.09	3.45	0.01	0.47	0.28	1.13	1.62	1.89	0.82	-1.31
3/12/97 21:36	4.09	3.45	0.01	0.47	0.58	1.13	2.41	2.67	2.02	-1.31
3/12/97 22:48	4.09	3.45	0.01	0.47	0.58	1.13	1.62	1.49	1.22	-2.15
3/13/97 0:00	4.09	3.45	0.01	0.47	0.58	1.13	1.22	1.49	0.41	-2.58

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/13/97 1:12	3.8	3.45	0.01	0.47	0.58	1.13	1.22	1.09	0.01	-3.01
3/13/97 2:24	3.8	3.45	0.01	0.47	0.58	1.13	0.82	0.69	-0.39	-3.44
3/13/97 3:36	3.8	3.45	0.01	0.47	0.58	1.13	0.42	-0.11	-0.39	-3.88
3/13/97 4:48	3.8	3.45	0.01	0.47	0.58	1.13	0.01	-0.11	-0.81	-4.32
3/13/97 6:00	3.51	3.45	0.01	0.47	0.58	1.13	0.01	-0.52	-1.22	-4.32
3/13/97 7:12	3.51	3.45	0.01	0.47	0.28	1.13	-0.38	-0.93	-1.22	-4.32
3/13/97 8:24	3.51	3.45	0.01	0.47	0.58	1.13	-0.38	2.28	1.22	-4.76
3/13/97 9:36	3.21	3.45	0.01	0.47	0.58	1.13	1.22	6.11	10.27	-3.88
3/13/97 10:48	3.21	3.45	0.01	0.47	0.28	1.13	3.19	7.96	17.68	-3.01
3/13/97 12:00	3.21	3.45	0.01	0.47	0.58	1.13	4.34	11.92	12.41	-2.58
3/13/97 13:12	3.21	3.45	0.01	0.47	0.28	1.13	6.23	11.92	14.53	-2.15
3/13/97 14:24	3.21	3.45	0.31	0.47	0.58	1.13	11.33	13.69	12.41	-0.48
3/13/97 15:36	3.21	3.45	0.61	0.47	0.58	1.13	6.23	6.85	6.98	-1.31
3/13/97 16:48	3.21	3.45	1.21	0.47	0.58	1.13	6.98	10.14	5.11	-2.15
3/13/97 18:00	3.21	3.16	1.5	0.47	0.58	1.13	7.35	8.69	5.49	-2.15
3/13/97 19:12	3.21	3.16	1.8	0.77	0.58	1.13	6.98	6.48	4.35	-2.58
3/13/97 20:24	2.92	3.16	1.8	0.77	0.58	1.13	5.86	5.73	4.35	-2.58
3/13/97 21:36	2.92	3.16	1.8	0.77	0.58	1.13	6.61	6.85	5.87	-2.15
3/13/97 22:48	2.92	3.16	1.8	0.77	0.58	1.13	5.11	4.6	3.97	-2.15
3/14/97 0:00	2.92	3.16	1.8	1.07	0.58	1.13	3.96	3.83	3.19	-2.15
3/14/97 1:12	2.92	3.16	2.09	1.07	0.58	1.13	3.19	2.67	1.22	-2.15
3/14/97 2:24	2.62	3.16	1.8	1.07	0.58	1.13	1.22	0.69	0.41	-2.58
3/14/97 3:36	2.62	3.16	1.8	1.07	0.58	1.13	0.82	0.69	0.01	-2.15
3/14/97 4:48	2.62	3.16	1.8	1.37	0.58	1.13	0.82	0.69	0.41	-1.73
3/14/97 6:00	2.62	3.16	1.5	1.37	0.58	1.13	0.82	0.29	0.01	-0.89
3/14/97 7:12	2.62	3.16	1.5	1.37	0.58	1.13	0.42	0.29	0.01	-1.31
3/14/97 8:24	2.33	3.16	1.5	1.37	0.58	1.13	0.42	0.29	0.01	-1.73
3/14/97 9:36	2.33	3.16	1.21	1.37	0.58	1.13	1.62	2.28	1.22	-0.48
3/14/97 10:48	2.33	2.86	1.21	1.37	0.58	1.13	2.02	5.73	3.19	0.33
3/14/97 12:00	2.33	2.86	1.5	1.37	0.88	1.13	3.58	10.14	15.93	1.14
3/14/97 13:12	2.33	2.86	1.8	1.37	0.88	1.13	4.73	9.78	8.82	0.73
3/14/97 14:24	2.33	2.86	2.39	1.37	1.17	1.13	11.33	10.86	10.27	0.33
3/14/97 15:36	2.33	2.86	2.98	1.37	1.77	1.13	7.72	11.57	17.68	0.33
3/14/97 16:48	2.33	2.86	3.57	1.37	2.06	1.13	5.48	13.34	12.41	0.33
3/14/97 18:00	2.33	2.86	4.15	1.67	2.36	1.13	6.98	10.86	4.73	-0.48
3/14/97 19:12	2.33	2.86	4.15	1.67	2.36	1.43	3.19	5.36	1.22	-3.01
3/14/97 20:24	2.33	2.86	3.86	1.97	2.06	1.43	0.42	-1.34	-0.81	-3.88
3/14/97 21:36	2.33	2.86	3.27	1.97	1.77	1.43	-1.21	-3.48	-2.49	-5.67
3/14/97 22:48	2.33	2.86	2.98	1.97	1.47	1.43	-2.05	-2.19	-2.49	-5.21
3/15/97 0:00	2.03	2.86	2.68	1.97	1.47	1.43	-2.05	-3.91	-3.35	-6.59
3/15/97 1:12	2.03	2.86	2.39	1.97	1.17	1.43	-2.91	-6.62	-4.67	-7.53
3/15/97 2:24	2.03	2.86	2.09	1.97	1.17	1.43	-3.77	-6.62	-4.23	-8.01
3/15/97 3:36	2.03	2.57	1.8	1.97	1.17	1.43	-3.77	-5.69	-3.35	-8.49
3/15/97 4:48	2.03	2.57	1.5	1.97	0.88	1.43	-3.77	-4.79	-3.79	-8.98
3/15/97 6:00	2.03	2.57	1.5	1.97	0.88	1.43	-3.77	-5.69	-3.79	-9.48
3/15/97 7:12	2.03	2.57	1.21	1.97	0.88	1.43	-3.77	-6.16	-4.23	-9.48
3/15/97 8:24	2.03	2.57	1.21	1.97	0.88	1.43	-3.77	-0.11	0.01	-6.59
3/15/97 9:36	1.74	2.57	0.91	1.67	0.88	1.43	-0.79	3.83	4.73	2.33
3/15/97 10:48	1.74	2.57	0.91	1.67	0.88	1.43	0.42	6.85	16.63	1.14
3/15/97 12:00	1.74	2.57	0.91	1.67	0.88	1.43	1.62	9.42	16.28	1.53
3/15/97 13:12	2.03	2.57	0.91	1.67	0.88	1.43	2.8	10.14	10.27	4.27
3/15/97 14:24	2.03	2.57	0.91	1.67	0.88	1.43	9.9	12.28	9.91	3.11
3/15/97 15:36	2.03	2.57	1.5	1.37	1.17	1.43	5.11	11.92	17.33	2.72
3/15/97 16:48	2.33	2.57	2.09	1.37	1.47	1.43	3.96	9.42	7.73	-0.07

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/15/97 18:00	2.33	2.57	2.39	1.37	1.47	1.43	3.19	6.85	3.58	-2.15
3/15/97 19:12	2.33	2.57	2.68	1.67	1.47	1.43	1.22	0.29	0.01	-6.12
3/15/97 20:24	2.33	2.57	2.68	1.67	1.47	1.43	-0.38	-1.77	-2.07	-8.49
3/15/97 21:36	2.33	2.57	2.39	1.67	1.17	1.43	-0.79	-1.77	-1.64	-9.48
3/15/97 22:48	2.33	2.57	2.09	1.67	1.17	1.43	-1.21	-2.19	-2.07	-9.98
3/16/97 0:00	2.33	2.57	1.8	1.67	1.17	1.43	-2.05	-3.04	-2.92	-9.48
3/16/97 1:12	2.03	2.57	1.8	1.67	0.88	1.43	-2.48	-3.04	-3.35	-9.48
3/16/97 2:24	2.03	2.57	1.5	1.67	0.88	1.43	-2.48	-3.04	-3.79	-9.48
3/16/97 3:36	2.03	2.57	1.21	1.67	0.88	1.43	-2.48	-3.48	-4.23	-9.48
3/16/97 4:48	2.03	2.57	1.21	1.67	0.88	1.43	-3.34	-4.35	-4.23	-9.98
3/16/97 6:00	1.74	2.57	1.21	1.67	0.88	1.43	-3.34	-4.35	-4.67	-9.98
3/16/97 7:12	1.74	2.57	0.91	1.67	0.88	1.43	-3.34	-3.91	-4.67	-10.49
3/16/97 8:24	1.74	2.57	0.91	1.67	0.58	1.43	-3.34	-3.91	-4.67	-6.59
3/16/97 9:36	1.74	2.57	0.91	1.67	0.58	1.43	-2.91	-2.62	-3.79	3.49
3/16/97 10:48	1.74	2.57	0.91	1.67	0.58	1.43	-2.91	-2.19	-3.35	5.41
3/16/97 12:00	1.74	2.27	0.61	1.37	0.58	1.43	-2.48	-1.34	-2.49	5.78
3/16/97 13:12	1.74	2.27	0.61	1.37	0.58	1.43	-1.63	1.49	-2.07	4.27
3/16/97 14:24	1.74	2.27	0.61	1.37	0.58	1.43	-1.21	1.89	-1.22	6.53
3/16/97 15:36	1.74	2.27	0.61	1.37	0.58	1.43	-1.63	-0.11	-1.64	2.72
3/16/97 16:48	1.74	2.27	0.61	1.37	0.58	1.43	-1.63	-0.93	-2.07	1.93
3/16/97 18:00	2.03	2.27	0.61	1.37	0.58	1.43	-2.05	-1.77	-2.07	0.33
3/16/97 19:12	2.03	2.27	0.61	1.37	0.58	1.43	-2.05	-2.62	-2.92	-2.58
3/16/97 20:24	2.03	2.27	0.61	1.37	0.58	1.43	-2.05	-2.62	-2.92	-3.44
3/16/97 21:36	1.74	2.27	0.61	1.37	0.58	1.43	-1.63	-2.19	-2.07	-3.01
3/16/97 22:48	1.74	2.27	0.61	1.37	0.58	1.43	-1.63	-1.77	-2.07	-3.01
3/17/97 0:00	1.74	2.27	0.61	1.37	0.58	1.43	-2.05	-1.77	-2.49	-2.58
3/17/97 1:12	1.74	2.27	0.61	1.07	0.58	1.43	-2.05	-2.19	-2.49	-2.15
3/17/97 2:24	1.74	2.27	0.61	1.07	0.58	1.43	-2.05	-1.77	-2.49	-1.73
3/17/97 3:36	1.74	2.27	0.31	1.07	0.58	1.43	-1.63	-1.34	-2.49	-0.89
3/17/97 4:48	1.44	2.27	0.31	1.07	0.58	1.43	-1.63	-1.34	-1.64	-0.07
3/17/97 6:00	1.44	2.27	0.31	1.07	0.58	1.13	-1.21	-0.93	-1.22	0.33
3/17/97 7:12	1.44	2.27	0.31	1.07	0.58	1.13	-1.21	-1.34	-1.64	-0.07
3/17/97 8:24	1.44	2.27	0.31	1.07	0.58	1.13	-1.21	-0.93	-1.64	2.33
3/17/97 9:36	1.44	2.27	0.31	1.07	0.58	1.13	-0.79	0.29	-1.22	10.19
3/17/97 10:48	1.44	2.27	0.31	1.07	0.58	1.13	-0.79	1.89	0.01	13.74
3/17/97 12:00	1.44	2.27	0.31	1.07	0.58	1.13	-0.38	4.22	0.82	16.55
3/17/97 13:12	1.44	2.27	0.31	1.07	0.58	1.13	-1.21	1.09	-0.39	16.55
3/17/97 14:24	1.44	2.27	0.31	1.07	0.58	1.13	-0.79	0.69	0.41	14.09
3/17/97 15:36	1.74	2.27	0.31	1.07	0.58	1.13	-0.79	1.09	2.41	16.55
3/17/97 16:48	1.74	1.98	0.31	1.07	0.58	1.13	-1.21	0.29	0.82	16.55
3/17/97 18:00	2.03	1.98	0.31	1.07	0.58	1.13	-1.63	-0.11	0.82	14.09
3/17/97 19:12	2.03	2.27	0.31	1.07	0.58	1.13	-3.34	-3.04	-2.49	7.27
3/17/97 20:24	2.03	2.27	0.31	1.07	0.58	1.13	-3.77	-3.91	-4.23	2.33
3/17/97 21:36	2.03	2.27	0.31	1.07	0.58	1.13	-5.11	-5.69	-6.03	1.14
3/17/97 22:48	2.03	2.27	0.31	1.07	0.58	1.13	-4.66	-4.79	-5.58	0.33
3/18/97 0:00	2.03	2.27	0.31	1.07	0.58	1.13	-6.02	-6.62	-6.97	-0.48
3/18/97 1:12	2.03	2.27	0.31	1.07	0.58	1.13	-6.48	-7.56	-7.92	-0.89
3/18/97 2:24	2.03	2.27	0.31	1.07	0.58	1.13	-7.42	-8.03	-8.4	-1.31
3/18/97 3:36	2.03	2.27	0.31	1.07	0.58	1.13	-7.89	-8.52	-8.89	-1.73
3/18/97 4:48	1.74	2.27	0.31	1.07	0.58	1.13	-8.38	-9.51	-9.9	-2.15
3/18/97 6:00	1.74	2.27	0.31	1.07	0.58	1.13	-8.38	-9.51	-9.9	-2.15
3/18/97 7:12	1.74	2.27	0.31	1.07	0.58	1.13	-8.87	-10.02	-10.93	-2.58
3/18/97 8:24	1.74	2.27	0.31	0.77	0.58	1.13	-8.38	-6.62	-7.92	-2.15
3/18/97 9:36	1.74	2.27	0.31	0.77	0.58	1.13	-7.42	-2.62	-2.07	-0.48

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/18/97 10:48	1.74	2.27	0.01	0.77	0.58	1.13	-6.02	1.89	3.97	0.33
3/18/97 12:00	1.74	2.27	0.01	0.77	0.58	1.13	-4.21	0.29	1.22	1.93
3/18/97 13:12	1.74	2.27	0.01	0.77	0.58	1.13	-3.34	6.85	4.73	3.11
3/18/97 14:24	1.74	2.27	0.01	0.77	0.58	1.13	-2.91	-0.11	8.46	5.41
3/18/97 15:36	1.74	2.27	0.01	0.77	0.58	1.13	-4.21	8.33	3.58	5.03
3/18/97 16:48	2.03	2.27	0.01	0.77	0.58	1.13	-3.34	-3.04	1.22	5.03
3/18/97 18:00	2.33	2.27	0.01	0.77	0.58	1.13	-5.56	1.89	-3.35	2.33
3/18/97 19:12	2.33	2.27	0.01	0.77	0.58	1.13	-6.48	-5.69	-6.03	-0.07
3/18/97 20:24	2.62	2.27	0.01	0.77	0.58	1.13	-7.89	-8.52	-8.89	-3.01
3/18/97 21:36	2.62	2.27	0.01	0.77	0.58	1.13	-8.38	-9.01	-9.39	-3.44
3/18/97 22:48	2.33	2.27	0.01	0.77	0.58	1.13	-8.38	-9.51	-10.93	-4.32
3/19/97 0:00	2.33	2.27	0.01	0.77	0.58	1.13	-8.87	-10.53	-10.41	-4.76
3/19/97 1:12	2.33	2.27	0.01	0.77	0.58	1.13	-8.87	-10.02	-10.41	-5.21
3/19/97 2:24	2.33	2.27	0.01	0.77	0.58	1.13	-8.87	-10.53	-10.41	-6.12
3/19/97 3:36	2.03	2.27	0.01	0.77	0.58	1.13	-9.37	-10.53	-10.93	-5.67
3/19/97 4:48	2.03	2.27	0.01	0.77	0.58	1.13	-9.87	-11.04	-10.93	-6.12
3/19/97 6:00	2.03	2.27	0.01	0.77	0.58	1.13	-10.38	-11.04	-11.45	-7.53
3/19/97 7:12	2.03	2.27	0.01	0.77	0.58	1.13	-10.38	-11.57	-11.45	-7.06
3/19/97 8:24	2.03	2.27	0.01	0.77	0.58	1.13	-10.38	-6.16	-8.4	-0.07
3/19/97 9:36	1.74	2.27	0.01	0.77	0.58	1.13	-7.42	-2.19	-0.81	14.45
3/19/97 10:48	1.74	2.27	0.01	0.77	0.58	1.13	-5.11	3.83	9.19	17.6
3/19/97 12:00	1.74	2.27	0.01	0.77	0.58	1.13	-4.21	7.59	15.23	10.19
3/19/97 13:12	2.03	2.27	-0.28	0.77	0.58	1.13	-2.05	8.69	6.24	15.85
3/19/97 14:24	2.03	2.27	-0.28	0.77	0.58	1.13	0.42	11.92	6.24	14.45
3/19/97 15:36	2.33	2.27	-0.28	0.77	0.58	1.13	-0.79	6.48	6.24	10.91
3/19/97 16:48	2.62	2.27	-0.28	0.77	0.58	1.13	-0.79	7.96	2.41	7.64
3/19/97 18:00	2.62	2.27	-0.28	0.47	0.58	1.13	-2.05	1.09	0.01	5.78
3/19/97 19:12	2.92	2.27	-0.28	0.47	0.58	1.13	-2.91	-2.62	-2.92	5.41
3/19/97 20:24	2.92	2.57	-0.28	0.47	0.58	1.13	-3.34	-3.48	-3.35	1.14
3/19/97 21:36	3.21	2.57	-0.28	0.47	0.58	1.13	-3.34	-3.48	-3.35	1.14
3/19/97 22:48	2.92	2.57	-0.28	0.47	0.58	1.13	-2.91	-3.04	-3.35	1.14
3/20/97 0:00	2.92	2.57	-0.28	0.47	0.28	1.13	-2.48	-2.62	-2.92	1.14
3/20/97 1:12	2.92	2.57	-0.28	0.47	0.58	1.13	-2.05	-2.19	-2.07	1.14
3/20/97 2:24	2.62	2.57	-0.28	0.47	0.28	1.13	-1.63	-1.77	-2.07	1.14
3/20/97 3:36	2.62	2.57	0.01	0.47	0.28	1.13	-1.21	-1.34	-1.22	1.14
3/20/97 4:48	2.62	2.57	0.01	0.47	0.28	1.13	-0.38	-0.52	-0.39	0.73
3/20/97 6:00	2.62	2.57	0.01	0.47	0.58	1.13	0.01	0.29	0.01	0.33
3/20/97 7:12	2.33	2.57	-0.28	0.47	0.58	1.13	0.01	-0.52	-0.39	-0.07
3/20/97 8:24	2.33	2.57	0.01	0.47	0.28	1.13	0.42	2.67	0.82	5.41
3/20/97 9:36	2.33	2.57	0.01	0.47	0.58	1.13	2.41	7.96	5.87	19.01
3/20/97 10:48	2.33	2.57	0.01	0.47	0.28	1.13	4.73	10.14	16.98	18.3
3/20/97 12:00	2.33	2.57	-0.28	0.47	0.28	1.13	6.61	12.63	21.87	23.2
3/20/97 13:12	2.33	2.57	0.01	0.47	0.28	1.13	9.18	14.39	18.03	20.41
3/20/97 14:24	2.62	2.57	-0.28	0.47	0.28	1.13	13.45	16.49	17.33	16.9
3/20/97 15:36	2.92	2.57	-0.28	0.47	0.28	1.13	11.68	17.89	20.13	17.95
3/20/97 16:48	3.21	2.57	-0.28	0.47	0.28	1.13	10.62	15.79	13.47	19.71
3/20/97 18:00	3.8	2.57	0.01	0.47	0.28	1.13	9.54	13.69	10.27	16.2
3/20/97 19:12	4.38	2.86	0.01	0.47	0.28	1.13	6.23	7.96	5.87	9.11
3/20/97 20:24	4.68	2.86	0.01	0.47	0.28	1.13	2.8	2.28	2.41	6.16
3/20/97 21:36	4.68	2.86	0.01	0.47	0.28	1.13	0.82	1.49	1.22	5.41
3/20/97 22:48	4.97	3.16	0.01	0.47	0.28	1.13	0.01	-0.52	0.41	4.65
3/21/97 0:00	4.97	3.16	0.01	0.47	0.28	1.13	-0.38	-1.34	-0.81	3.49
3/21/97 1:12	4.68	3.45	0.01	0.47	0.28	1.13	-0.38	-0.52	-1.22	3.11
3/21/97 2:24	4.68	3.45	0.01	0.47	0.28	1.13	-0.79	-0.93	-1.22	2.72

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/21/97 3:36	4.68	3.45	0.01	0.47	0.28	1.13	-1.21	-1.77	-2.07	2.33
3/21/97 4:48	4.68	3.45	0.01	0.47	0.28	1.13	-1.63	-2.19	-2.07	1.93
3/21/97 6:00	4.38	3.45	0.01	0.47	0.28	1.13	-2.05	-2.19	-2.49	1.93
3/21/97 7:12	4.38	3.74	0.01	0.47	0.28	1.13	-2.05	-2.19	-2.92	2.72
3/21/97 8:24	4.38	3.74	0.01	0.47	0.28	1.13	-2.05	-1.77	-2.49	3.11
3/21/97 9:36	4.09	3.74	0.01	0.47	0.28	1.13	-0.79	0.29	-0.39	5.41
3/21/97 10:48	4.09	3.74	0.01	0.47	0.28	1.13	0.01	1.49	-0.39	7.64
3/21/97 12:00	4.09	3.74	0.01	0.47	0.28	1.13	0.42	3.45	4.35	13.74
3/21/97 13:12	4.09	3.74	0.01	0.47	0.28	1.13	1.22	5.73	3.19	19.01
3/21/97 14:24	4.38	3.74	0.01	0.47	0.28	1.13	2.41	7.96	4.73	18.3
3/21/97 15:36	4.38	3.74	0.01	0.47	0.28	1.13	2.41	8.69	5.87	14.8
3/21/97 16:48	4.68	3.74	0.01	0.47	0.28	1.13	2.02	8.33	3.19	13.74
3/21/97 18:00	4.97	3.74	0.01	0.47	0.28	1.13	0.42	4.6	0.41	11.97
3/21/97 19:12	5.26	3.74	0.01	0.47	0.58	1.13	-0.79	2.67	-1.64	10.19
3/21/97 20:24	5.54	3.74	0.01	0.47	0.28	1.13	-2.05	-3.48	-2.92	6.9
3/21/97 21:36	5.54	4.04	0.01	0.47	0.28	1.13	-2.48	-3.91	-3.35	5.03
3/21/97 22:48	5.54	4.04	0.01	0.47	0.28	1.13	-2.91	-5.69	-4.23	3.49
3/22/97 0:00	5.54	4.04	0.01	0.47	0.28	1.13	-3.34	-7.08	-4.67	3.11
3/22/97 1:12	5.54	4.33	0.01	0.47	0.28	1.13	-3.77	-7.56	-5.58	1.14
3/22/97 2:24	5.26	4.33	0.01	0.47	0.28	1.13	-4.21	-8.52	-6.03	1.14
3/22/97 3:36	5.26	4.33	0.01	0.47	0.28	1.13	-5.11	-8.52	-6.03	0.33
3/22/97 4:48	4.97	4.33	0.01	0.47	0.28	1.13	-5.56	-9.51	-5.58	-0.07
3/22/97 6:00	4.97	4.33	0.01	0.47	0.28	1.13	-6.48	-9.01	-6.97	-0.07
3/22/97 7:12	4.97	4.33	0.01	0.47	0.28	1.13	-6.48	-9.51	-6.97	-1.31
3/22/97 8:24	4.68	4.33	0.01	0.47	0.28	1.13	-6.48	3.45	-0.39	-0.89
3/22/97 9:36	4.68	4.33	0.01	0.47	0.28	1.13	-2.48	9.78	2.81	3.49
3/22/97 10:48	4.38	4.33	0.01	0.47	0.28	1.13	0.01	12.28	12.76	3.88
3/22/97 12:00	4.38	4.33	0.01	0.47	0.28	1.13	1.62	10.14	5.87	6.9
3/22/97 13:12	4.38	4.33	0.01	0.47	0.28	1.13	3.58	16.14	14.17	8.74
3/22/97 14:24	4.68	4.33	0.01	0.47	0.28	1.13	5.86	16.84	9.91	4.65
3/22/97 15:36	4.68	4.33	0.01	0.47	0.28	1.13	7.35	19.64	10.98	9.11
3/22/97 16:48	4.97	4.33	0.61	0.47	0.28	1.13	6.23	10.14	6.61	12.33
3/22/97 18:00	4.97	4.33	1.21	0.47	0.28	1.13	4.73	9.78	5.49	5.03
3/22/97 19:12	4.97	4.33	1.5	0.77	0.28	1.13	3.96	7.22	4.35	3.11
3/22/97 20:24	5.26	4.33	1.8	0.77	0.28	1.13	2.02	0.29	1.62	-0.07
3/22/97 21:36	4.97	4.33	1.8	0.77	0.28	1.13	1.62	0.69	0.82	-2.58
3/22/97 22:48	4.97	4.33	1.5	0.77	0.28	1.13	1.62	1.09	1.22	-3.44
3/23/97 0:00	4.97	4.33	1.5	1.07	0.28	1.13	1.62	1.09	0.82	-3.01
3/23/97 1:12	4.68	4.33	1.21	1.07	0.28	1.13	0.82	1.09	1.22	-3.88
3/23/97 2:24	4.68	4.33	1.21	1.07	0.28	1.13	1.22	1.09	1.22	-4.76
3/23/97 3:36	4.38	4.33	1.21	1.07	0.28	1.13	1.22	0.69	1.22	-3.01
3/23/97 4:48	4.09	4.33	0.91	1.07	0.28	1.13	0.82	0.69	0.82	-3.01
3/23/97 6:00	4.09	4.33	0.91	1.07	0.28	1.13	0.42	0.29	0.41	-3.44
3/23/97 7:12	3.8	4.33	0.91	1.07	0.28	1.13	0.42	0.29	0.01	-3.88
3/23/97 8:24	3.8	4.33	0.91	1.07	0.28	1.13	-0.38	4.98	3.58	-3.44
3/23/97 9:36	3.8	4.04	0.91	1.07	0.28	1.13	2.41	9.06	11.34	-1.31
3/23/97 10:48	3.51	4.04	0.91	1.07	0.28	1.13	5.11	11.57	13.47	1.93
3/23/97 12:00	3.51	4.04	1.21	1.07	0.28	1.13	6.61	17.19	23.27	4.27
3/23/97 13:12	3.21	4.04	1.8	1.07	0.28	1.13	8.46	15.44	18.03	5.03
3/23/97 14:24	3.51	4.04	2.68	1.07	0.58	1.13	12.39	18.24	16.98	6.53
3/23/97 15:36	3.51	3.74	3.57	1.37	0.58	1.13	11.33	18.24	19.78	8.01
3/23/97 16:48	3.8	3.74	4.44	1.37	0.88	1.13	10.97	18.59	15.93	8.01
3/23/97 18:00	3.8	3.74	5.02	1.67	1.17	1.13	10.97	16.49	14.53	6.53
3/23/97 19:12	4.09	3.74	5.31	1.67	1.17	1.13	8.09	8.69	8.46	3.49

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/23/97 20:24	4.38	3.74	5.31	1.97	1.17	1.13	6.23	4.98	6.24	-3.88
3/23/97 21:36	4.38	3.74	5.02	2.26	1.17	1.13	5.11	3.83	5.11	-4.76
3/23/97 22:48	4.38	4.04	4.73	2.26	1.17	1.13	4.34	3.06	4.35	-5.67
3/24/97 0:00	4.09	4.04	4.44	2.56	1.17	1.13	2.8	1.89	3.19	-7.06
3/24/97 1:12	4.09	4.04	4.15	2.56	1.17	1.13	3.19	2.28	2.81	-8.49
3/24/97 2:24	3.8	4.04	3.86	2.56	1.17	1.13	2.8	2.28	2.41	-9.48
3/24/97 3:36	3.8	4.04	3.57	2.56	1.17	1.13	2.41	1.89	1.62	-9.98
3/24/97 4:48	3.51	4.04	3.57	2.56	1.17	1.43	2.41	1.89	2.02	-9.98
3/24/97 6:00	3.51	3.74	3.27	2.56	1.17	1.43	2.41	1.49	1.62	-10.49
3/24/97 7:12	3.21	3.74	3.27	2.56	1.17	1.43	2.8	2.67	2.41	-10.49
3/24/97 8:24	3.21	3.74	2.98	2.56	1.17	1.43	3.19	3.83	3.19	2.33
3/24/97 9:36	3.21	3.74	2.98	2.56	1.17	1.43	5.11	7.22	5.11	8.38
3/24/97 10:48	2.92	3.74	2.98	2.56	1.47	1.43	8.09	10.14	6.98	7.64
3/24/97 12:00	2.92	3.74	2.98	2.56	1.47	1.43	12.39	17.19	12.76	8.74
3/24/97 13:12	3.21	3.74	3.57	2.56	2.06	1.43	16.96	21.38	18.38	7.64
3/24/97 14:24	3.21	3.74	4.15	2.56	2.65	1.43	16.61	18.94	19.78	6.9
3/24/97 15:36	3.21	3.45	4.73	2.56	3.24	1.43	14.86	15.44	15.58	6.16
3/24/97 16:48	3.51	3.45	5.31	2.85	3.83	1.43	13.81	14.39	13.82	8.01
3/24/97 18:00	3.51	3.45	5.59	2.85	3.83	1.73	12.04	12.98	12.41	5.03
3/24/97 19:12	3.8	3.45	5.59	3.14	4.12	1.73	10.97	10.86	10.27	3.49
3/24/97 20:24	3.8	3.74	5.59	3.14	3.83	2.03	8.09	7.22	6.98	2.33
3/24/97 21:36	3.8	3.74	5.59	3.14	3.83	2.03	5.86	5.36	5.11	1.53
3/24/97 22:48	3.8	3.74	5.31	3.43	3.53	2.03	4.73	3.83	3.19	-0.48
3/25/97 0:00	3.8	3.74	5.02	3.43	3.53	2.03	3.58	3.06	2.81	-0.89
3/25/97 1:12	3.8	3.74	4.73	3.43	3.24	2.32	1.62	1.09	1.22	-0.48
3/25/97 2:24	3.51	3.74	4.44	3.43	2.94	2.32	1.22	1.09	0.82	-0.07
3/25/97 3:36	3.51	3.74	4.15	3.43	2.94	2.32	0.82	0.29	0.41	0.33
3/25/97 4:48	3.21	3.74	3.86	3.43	2.65	2.32	0.42	-0.11	0.01	0.33
3/25/97 6:00	3.21	3.74	3.57	3.43	2.36	2.32	0.01	-0.52	-0.39	1.14
3/25/97 7:12	3.21	3.74	3.27	3.43	2.36	2.32	-0.79	-1.34	-1.22	1.93
3/25/97 8:24	2.92	3.45	2.98	3.43	2.06	2.32	-0.79	-0.52	-0.81	3.11
3/25/97 9:36	2.92	3.45	2.98	3.14	2.06	2.32	0.42	2.67	3.97	4.27
3/25/97 10:48	2.92	3.45	2.68	3.14	2.06	2.32	2.02	7.22	5.11	4.65
3/25/97 12:00	2.92	3.45	2.98	3.14	2.06	2.32	3.19	11.57	3.97	5.78
3/25/97 13:12	2.92	3.45	3.27	3.14	2.36	2.32	5.11	4.6	5.87	8.01
3/25/97 14:24	2.92	3.45	3.57	3.14	2.36	2.32	2.02	10.14	2.41	7.64
3/25/97 15:36	2.92	3.45	3.86	3.14	2.36	2.03	2.41	7.22	3.58	6.16
3/25/97 16:48	3.21	3.45	4.15	3.14	2.65	2.32	3.58	10.14	9.19	5.78
3/25/97 18:00	3.21	3.45	4.44	3.14	2.94	2.32	6.23	11.92	8.09	3.88
3/25/97 19:12	3.21	3.45	4.44	3.14	2.94	2.32	2.8	3.45	2.41	3.49
3/25/97 20:24	3.51	3.45	4.44	3.14	2.65	2.32	0.42	-1.77	-0.81	2.72
3/25/97 21:36	3.51	3.45	4.15	3.43	2.36	2.32	-1.21	-3.91	-2.92	2.72
3/25/97 22:48	3.51	3.45	3.57	3.43	2.06	2.32	-2.05	-4.35	-3.35	3.11
3/26/97 0:00	3.51	3.45	3.27	3.43	2.06	2.32	-2.05	-3.91	-3.35	2.72
3/26/97 1:12	3.51	3.45	2.98	3.43	1.77	2.32	-2.91	-6.62	-3.79	2.33
3/26/97 2:24	3.51	3.45	2.68	3.14	1.77	2.32	-4.21	-7.08	-5.12	1.93
3/26/97 3:36	3.21	3.45	2.39	3.14	1.47	2.32	-3.34	-3.48	-3.35	0.73
3/26/97 4:48	3.21	3.45	2.09	3.14	1.47	2.32	-2.48	-3.04	-2.92	0.33
3/26/97 6:00	3.21	3.45	2.09	3.14	1.47	2.03	-2.91	-3.48	-3.79	1.14
3/26/97 7:12	3.21	3.45	1.8	2.85	1.47	2.03	-3.34	-3.91	-4.23	1.14
3/26/97 8:24	3.21	3.45	1.8	2.85	1.17	2.03	-3.34	-2.62	-3.79	1.14
3/26/97 9:36	3.21	3.45	1.8	2.85	1.17	2.03	-2.48	1.09	-1.22	1.93
3/26/97 10:48	3.21	3.45	1.5	2.56	1.17	2.03	-1.63	14.04	2.02	3.88
3/26/97 12:00	3.21	3.45	1.5	2.56	1.17	2.03	1.22	17.89	5.87	6.53

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/26/97 13:12	3.21	3.45	1.5	2.56	1.17	2.03	-0.38	10.5	6.98	7.27
3/26/97 14:24	3.21	3.45	1.5	2.56	1.17	2.03	1.22	15.09	5.87	8.01
3/26/97 15:36	3.21	3.45	1.5	2.56	1.17	2.03	2.8	9.42	1.22	13.04
3/26/97 16:48	3.51	3.45	1.8	2.26	1.17	2.03	0.42	10.14	3.58	13.39
3/26/97 18:00	3.51	3.45	2.39	2.26	1.17	2.03	0.82	10.14	3.58	10.19
3/26/97 19:12	3.8	3.45	2.68	2.26	1.17	2.03	0.42	9.06	-2.49	8.38
3/26/97 20:24	4.09	3.45	2.68	2.26	1.17	2.03	-2.05	-5.69	-4.67	4.65
3/26/97 21:36	4.38	3.45	2.68	2.26	1.17	2.03	-3.34	-5.69	-6.03	5.03
3/26/97 22:48	4.38	3.45	2.39	2.56	1.17	1.73	-4.21	-4.79	-6.03	5.41
3/27/97 0:00	4.09	3.74	2.09	2.56	1.17	1.73	-5.11	-6.62	-7.44	5.78
3/27/97 1:12	4.09	3.74	2.09	2.56	1.17	1.73	-5.56	-10.02	-8.89	5.41
3/27/97 2:24	4.09	3.74	1.8	2.56	1.17	1.73	-6.48	-11.57	-9.39	5.03
3/27/97 3:36	4.09	3.74	1.5	2.56	1.17	1.73	-6.94	-11.04	-10.41	5.41
3/27/97 4:48	3.8	3.74	1.5	2.26	0.88	1.73	-7.42	-12.09	-10.41	5.78
3/27/97 6:00	3.8	3.74	1.21	2.26	0.88	1.73	-8.38	-12.09	-10.93	5.41
3/27/97 7:12	3.8	3.74	1.21	2.26	0.88	1.73	-8.87	-11.04	-12.52	4.65
3/27/97 8:24	3.8	3.74	1.21	2.26	0.88	1.73	-7.42	4.6	-5.12	12.68
3/27/97 9:36	3.8	3.74	0.91	2.26	0.88	1.73	-2.91	8.33	5.11	20.41
3/27/97 10:48	3.8	3.74	0.91	1.97	0.88	1.73	0.42	9.06	5.87	24.27
3/27/97 12:00	3.8	3.74	0.91	1.97	0.88	1.73	2.02	11.57	21.17	21.1
3/27/97 13:12	4.09	3.74	0.61	1.97	0.88	1.73	3.96	13.69	11.34	19.01
3/27/97 14:24	4.38	3.74	0.61	1.97	0.88	1.73	5.86	13.34	5.87	23.91
3/27/97 15:36	4.68	3.74	0.91	1.97	1.17	1.73	5.11	10.86	6.61	27.49
3/27/97 16:48	5.26	3.74	1.21	1.97	1.47	1.73	6.23	12.28	6.24	27.85
3/27/97 18:00	5.83	4.04	1.5	1.97	1.47	1.73	4.73	6.48	4.73	24.27
3/27/97 19:12	6.41	4.04	1.8	1.97	1.77	1.73	3.19	3.45	3.19	21.1
3/27/97 20:24	6.7	4.33	2.09	1.97	1.77	1.73	2.02	1.49	2.41	14.45
3/27/97 21:36	6.99	4.33	2.09	1.97	1.47	1.73	1.22	1.09	1.22	10.91
3/27/97 22:48	7.28	4.62	1.8	1.97	1.47	1.73	-0.79	-0.93	-0.39	8.01
3/28/97 0:00	7.28	4.62	1.8	1.97	1.17	1.73	-0.79	-0.52	-1.22	10.19
3/28/97 1:12	7.28	4.91	1.8	1.97	1.17	1.73	-0.38	-0.11	-0.39	8.74
3/28/97 2:24	6.99	4.91	1.8	1.97	1.17	1.73	0.01	0.29	0.01	8.74
3/28/97 3:36	6.99	5.2	1.5	1.97	1.17	1.73	0.01	0.29	0.01	9.83
3/28/97 4:48	6.99	5.2	1.5	1.97	1.17	1.73	0.42	0.69	0.41	10.19
3/28/97 6:00	6.99	5.2	1.5	1.97	1.17	1.73	1.22	1.49	0.82	9.47
3/28/97 7:12	6.7	5.2	1.5	1.97	0.88	1.73	2.02	1.89	2.02	8.01
3/28/97 8:24	6.7	5.2	1.21	1.97	1.17	1.73	2.8	3.45	2.81	9.11
3/28/97 9:36	6.7	5.49	1.5	1.97	1.17	1.73	3.96	5.36	3.97	13.74
3/28/97 10:48	6.7	5.49	1.5	1.97	1.47	1.73	4.73	5.73	4.35	17.95
3/28/97 12:00	6.7	5.49	1.8	1.97	1.47	1.73	6.23	6.85	5.49	16.2
3/28/97 13:12	6.7	5.49	2.09	1.97	1.77	1.73	8.46	9.42	6.98	13.74
3/28/97 14:24	6.7	5.49	2.39	1.97	2.06	1.73	7.72	7.96	7.36	13.39
3/28/97 15:36	6.99	5.49	2.68	1.97	2.36	1.73	5.48	6.48	5.87	18.65
3/28/97 16:48	6.99	5.49	2.98	1.97	2.36	1.73	5.11	5.73	5.49	17.95
3/28/97 18:00	7.28	5.49	2.98	1.97	2.65	1.73	3.96	4.98	3.97	13.74
3/28/97 19:12	7.57	5.77	2.98	2.26	2.65	1.73	3.19	3.45	3.19	10.91
3/28/97 20:24	7.57	5.77	2.98	2.26	2.36	2.03	2.41	2.67	2.41	10.91
3/28/97 21:36	7.86	5.77	2.98	2.26	2.36	2.03	2.41	2.67	2.41	10.91
3/28/97 22:48	7.86	5.77	2.68	2.26	2.36	2.03	2.8	3.06	2.81	10.91
3/29/97 0:00	7.86	5.77	2.68	2.26	2.06	2.03	2.8	2.67	2.41	10.55
3/29/97 1:12	7.86	6.06	2.39	2.26	2.06	2.03	2.02	2.28	2.02	10.19
3/29/97 2:24	7.86	6.06	2.39	2.26	2.06	2.03	2.02	2.28	1.62	9.83
3/29/97 3:36	7.86	6.06	2.09	2.26	2.06	2.03	1.62	1.09	0.41	9.83
3/29/97 4:48	7.57	6.06	2.09	2.26	1.77	2.03	0.82	0.29	-0.81	9.47

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/29/97 6:00	7.57	6.06	1.8	2.26	1.77	2.03	1.22	1.09	0.82	9.47
3/29/97 7:12	7.57	6.06	1.8	2.26	1.77	2.03	1.22	1.49	1.22	9.83
3/29/97 8:24	7.57	6.06	1.8	2.26	1.77	2.03	1.62	1.49	1.22	10.55
3/29/97 9:36	7.57	6.35	1.8	2.26	1.47	2.03	2.02	2.67	2.02	10.55
3/29/97 10:48	7.57	6.35	1.5	2.26	1.77	2.03	2.8	4.6	4.35	10.19
3/29/97 12:00	7.57	6.35	1.5	2.26	1.77	2.03	3.96	6.11	5.87	10.55
3/29/97 13:12	7.57	6.35	1.8	2.26	2.06	2.03	5.11	7.59	6.98	11.62
3/29/97 14:24	7.57	6.35	2.09	2.26	2.36	2.03	8.09	9.78	8.82	10.55
3/29/97 15:36	7.57	6.35	2.39	2.26	2.65	2.03	8.46	15.79	12.05	12.33
3/29/97 16:48	7.57	6.35	2.98	2.26	3.24	2.03	9.18	14.74	9.55	13.74
3/29/97 18:00	7.57	6.35	3.27	2.26	3.53	2.03	9.54	14.04	9.55	13.04
3/29/97 19:12	7.57	6.35	3.57	2.26	3.53	2.32	8.09	10.86	6.24	10.55
3/29/97 20:24	7.57	6.35	3.86	2.26	3.53	2.32	5.48	4.22	4.35	8.38
3/29/97 21:36	7.86	6.35	3.57	2.56	3.24	2.32	4.34	2.67	3.58	7.64
3/29/97 22:48	7.57	6.35	3.27	2.56	2.94	2.32	5.48	4.98	4.35	6.16
3/30/97 0:00	7.57	6.35	3.27	2.56	2.94	2.32	6.61	5.73	5.49	5.03
3/30/97 1:12	7.57	6.35	2.98	2.56	2.65	2.62	6.61	6.11	4.73	4.27
3/30/97 2:24	7.57	6.64	2.98	2.56	2.65	2.62	6.23	6.11	4.73	3.88
3/30/97 3:36	7.57	6.64	2.98	2.56	2.65	2.62	5.86	5.73	4.35	3.11
3/30/97 4:48	7.28	6.64	2.98	2.56	2.65	2.62	6.23	6.11	4.73	2.33
3/30/97 6:00	7.28	6.64	2.68	2.56	2.36	2.62	5.86	5.73	4.35	1.93
3/30/97 7:12	7.28	6.35	2.68	2.56	2.36	2.62	6.23	4.98	3.58	1.93
3/30/97 8:24	6.99	6.35	2.68	2.56	2.36	2.62	6.61	12.63	8.82	1.93
3/30/97 9:36	6.99	6.35	2.68	2.56	2.36	2.62	9.54	15.79	14.53	1.93
3/30/97 10:48	6.7	6.35	2.98	2.56	2.94	2.32	12.74	17.89	17.33	2.33
3/30/97 12:00	6.7	6.35	3.57	2.56	3.53	2.62	14.51	22.07	29.01	1.93
3/30/97 13:12	6.7	6.35	4.15	2.56	4.12	2.62	17.31	23.48	27.2	2.72
3/30/97 14:24	6.41	6.35	5.31	2.85	4.98	2.62	22.54	27.42	26.13	3.49
3/30/97 15:36	6.41	6.35	6.17	2.85	5.84	2.62	20.11	28.51	28.28	2.72
3/30/97 16:48	6.41	6.35	7.33	3.14	6.71	2.91	22.19	28.51	22.92	2.33
3/30/97 18:00	6.41	6.35	7.91	3.14	6.99	2.91	22.54	28.51	22.57	2.33
3/30/97 19:12	6.12	6.06	8.48	3.43	6.99	3.21	19.41	24.91	17.33	0.73
3/30/97 20:24	6.12	6.06	8.77	3.73	6.99	3.5	15.21	11.21	12.76	-0.07
3/30/97 21:36	6.12	6.06	8.48	4.02	6.71	3.5	11.68	6.85	10.63	-0.89
3/30/97 22:48	6.12	6.06	8.19	4.31	6.42	3.79	9.9	4.98	8.09	-1.31
3/31/97 0:00	5.83	6.06	7.62	4.6	6.13	3.79	10.62	5.73	9.19	-1.31
3/31/97 1:12	5.83	6.06	7.33	4.6	5.84	3.79	11.68	5.36	9.19	-1.31
3/31/97 2:24	5.83	6.06	6.75	4.89	5.84	4.09	10.62	6.85	8.82	-2.15
3/31/97 3:36	5.54	6.06	6.46	4.89	5.56	4.09	10.26	7.59	9.19	-2.58
3/31/97 4:48	5.54	5.77	6.17	4.89	5.56	4.09	10.62	9.06	9.19	-3.01
3/31/97 6:00	5.26	5.77	5.88	4.89	5.27	4.09	8.82	8.69	9.19	-3.88
3/31/97 7:12	5.26	5.77	5.88	4.89	5.27	4.09	8.82	7.22	8.09	-4.76
3/31/97 8:24	5.26	5.77	5.88	4.89	5.27	4.09	9.54	9.42	8.82	-1.31
3/31/97 9:36	4.97	5.77	5.88	4.89	5.27	4.09	12.04	14.74	13.82	9.47
3/31/97 10:48	4.97	5.49	6.17	4.6	5.56	4.09	14.16	19.64	16.98	12.68
3/31/97 12:00	4.97	5.49	6.46	4.6	5.84	4.09	15.91	19.29	15.58	11.26
3/31/97 13:12	4.97	5.49	6.75	4.89	6.13	4.09	13.81	16.14	13.82	11.26
3/31/97 14:24	4.97	5.49	7.04	4.89	6.42	4.09	13.81	15.44	14.88	10.91
3/31/97 15:36	5.26	5.49	7.33	4.89	6.71	4.38	16.96	22.42	16.28	13.74
3/31/97 16:48	5.54	5.49	7.62	4.89	6.99	4.38	16.61	23.48	16.63	14.09
3/31/97 18:00	6.12	5.49	8.19	4.89	7.28	4.38	11.33	11.92	14.53	11.26
3/31/97 19:12	6.41	5.49	8.19	5.18	7.28	4.38	10.97	10.86	10.98	8.01
3/31/97 20:24	6.7	5.49	8.19	5.18	7.28	4.67	10.97	10.86	10.63	2.33
3/31/97 21:36	6.7	5.49	8.19	5.47	7.28	4.67	10.62	10.86	10.63	0.73

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
3/31/97 22:48	6.41	5.77	8.19	5.47	7.28	4.96	10.62	10.5	10.63	0.73
4/1/97 0:00	6.41	5.77	8.19	5.76	7.28	4.96	10.26	10.14	10.27	-0.89
4/1/97 1:12	6.41	5.77	7.91	5.76	6.99	4.96	9.9	9.78	9.91	-3.01
4/1/97 2:24	6.12	5.77	7.91	5.76	6.99	4.96	9.9	9.78	9.91	-4.32
4/1/97 3:36	6.12	5.77	7.91	5.76	6.99	4.96	9.9	9.42	9.91	-4.32
4/1/97 4:48	5.83	5.77	7.62	5.76	6.99	4.96	9.54	9.06	9.55	-5.21
4/1/97 6:00	5.54	5.77	7.62	5.76	6.99	5.25	9.18	9.78	9.19	-4.32
4/1/97 7:12	5.54	5.77	7.62	6.05	6.71	5.25	9.54	10.14	9.55	-5.21
4/1/97 8:24	5.26	5.77	7.62	6.05	6.71	5.25	10.62	10.86	10.27	4.27
4/1/97 9:36	5.26	5.49	7.62	6.05	6.71	5.25	10.97	11.21	10.27	20.41
4/1/97 10:48	4.97	5.49	7.62	6.05	6.71	5.25	10.62	9.78	9.55	17.95
4/1/97 12:00	4.97	5.49	7.62	6.05	6.71	5.25	10.26	10.5	10.27	20.41
4/1/97 13:12	4.97	5.49	7.91	6.05	6.99	5.25	10.26	10.5	10.27	21.45
4/1/97 14:24	4.97	5.49	7.91	6.05	6.99	5.25	10.26	10.5	10.27	21.8
4/1/97 15:36	5.26	5.49	7.91	6.05	6.99	5.25	10.62	11.92	13.12	23.91
4/1/97 16:48	5.83	5.49	7.91	6.05	7.28	5.25	11.33	12.63	11.69	24.27
4/1/97 18:00	6.41	5.49	8.19	6.05	7.28	5.25	10.62	12.28	12.05	19.71
4/1/97 19:12	6.7	5.49	8.19	6.05	7.57	5.25	9.54	10.14	10.27	15.5
4/1/97 20:24	6.99	5.49	8.19	6.34	7.28	5.54	8.09	7.59	8.09	8.38
4/1/97 21:36	7.28	5.77	8.19	6.34	7.28	5.54	7.35	6.85	6.98	5.03
4/1/97 22:48	7.28	5.77	7.91	6.34	6.99	5.54	6.61	6.48	5.87	3.88
4/2/97 0:00	7.28	5.77	7.62	6.34	6.99	5.54	5.86	5.36	5.11	3.11
4/2/97 1:12	7.28	6.06	7.62	6.34	6.71	5.54	5.11	4.6	3.97	2.33
4/2/97 2:24	6.99	6.06	7.33	6.34	6.42	5.54	4.34	4.22	3.58	1.14
4/2/97 3:36	6.7	6.06	7.04	6.34	6.42	5.54	3.96	3.06	2.81	1.14
4/2/97 4:48	6.7	6.06	6.75	6.34	6.13	5.54	3.19	2.28	2.02	-0.48
4/2/97 6:00	6.41	6.06	6.46	6.34	5.84	5.54	2.41	1.89	2.02	-1.31
4/2/97 7:12	6.41	6.06	6.17	6.05	5.84	5.54	2.41	1.89	1.62	-1.31
4/2/97 8:24	6.12	6.06	5.88	6.05	5.56	5.54	2.41	1.89	1.62	5.78
4/2/97 9:36	6.12	6.06	5.88	6.05	5.56	5.54	2.41	1.89	1.62	15.15
4/2/97 10:48	5.83	6.06	5.59	6.05	5.27	5.25	2.41	2.67	1.62	24.62
4/2/97 12:00	5.83	6.06	5.31	5.76	4.98	5.25	1.22	2.28	1.22	23.56
4/2/97 13:12	5.83	5.77	5.31	5.76	4.69	5.25	2.02	3.06	2.02	25.7
4/2/97 14:24	6.12	5.77	5.02	5.76	4.69	5.25	2.02	4.6	3.19	24.27
4/2/97 15:36	6.41	5.77	5.31	5.47	4.69	5.25	1.62	3.83	2.81	23.56
4/2/97 16:48	6.99	5.77	5.31	5.47	4.69	4.96	1.22	2.67	1.22	24.98
4/2/97 18:00	7.28	5.77	5.31	5.47	4.69	4.96	0.82	2.67	1.62	20.76
4/2/97 19:12	7.86	6.06	5.02	5.47	4.69	4.96	0.82	0.69	0.41	19.01
4/2/97 20:24	8.14	6.06	5.02	5.47	4.41	4.96	0.01	-0.52	-0.39	12.68
4/2/97 21:36	8.14	6.06	4.73	5.18	4.12	4.96	-0.79	-1.34	-1.22	10.19
4/2/97 22:48	8.14	6.35	4.44	5.18	4.12	4.96	-1.21	-1.34	-1.22	8.38
4/3/97 0:00	8.14	6.35	4.15	5.18	3.83	4.67	-1.21	-1.34	-1.64	7.27
4/3/97 1:12	8.14	6.35	3.86	5.18	3.83	4.67	-1.63	-1.77	-1.64	5.41
4/3/97 2:24	7.86	6.64	3.86	4.89	3.53	4.67	-2.05	-2.19	-2.49	5.78
4/3/97 3:36	7.57	6.64	3.57	4.89	3.53	4.67	-2.48	-3.04	-2.92	7.64
4/3/97 4:48	7.57	6.64	3.57	4.89	3.24	4.67	-3.34	-3.91	-3.35	8.74
4/3/97 6:00	7.28	6.64	3.27	4.6	3.24	4.38	-3.77	-4.79	-4.23	9.11
4/3/97 7:12	7.28	6.64	2.98	4.6	2.94	4.38	-4.21	-5.24	-4.67	9.47
4/3/97 8:24	6.99	6.64	2.98	4.6	2.94	4.38	-3.77	1.49	3.19	8.74
4/3/97 9:36	6.99	6.64	2.68	4.31	2.94	4.38	-2.48	4.22	3.19	9.83
4/3/97 10:48	6.99	6.64	2.68	4.31	2.65	4.09	-0.38	5.36	3.58	11.97
4/3/97 12:00	6.7	6.64	2.68	4.31	2.94	4.09	0.82	6.48	14.88	14.8
4/3/97 13:12	6.7	6.64	2.98	4.02	2.94	4.09	3.58	8.33	13.47	17.25
4/3/97 14:24	6.99	6.35	3.57	4.02	3.53	4.09	10.97	11.92	11.34	18.65

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/3/97 15:36	6.99	6.35	4.15	4.02	4.12	3.79	6.61	12.98	14.17	22.49
4/3/97 16:48	7.57	6.35	4.73	4.02	4.69	3.79	8.82	14.04	13.12	21.1
4/3/97 18:00	7.86	6.35	5.31	4.02	4.98	4.09	9.18	15.44	13.47	20.41
4/3/97 19:12	8.43	6.64	5.31	4.02	4.98	4.09	7.35	11.21	5.49	16.9
4/3/97 20:24	8.43	6.64	5.31	4.31	4.69	4.09	2.8	1.09	2.41	10.91
4/3/97 21:36	8.72	6.64	5.02	4.31	4.41	4.09	0.42	0.29	0.82	6.9
4/3/97 22:48	8.43	6.64	4.73	4.31	4.12	4.09	-0.38	-0.52	0.01	5.78
4/4/97 0:00	8.43	6.93	4.15	4.31	3.53	4.09	-1.21	-0.93	-0.81	3.88
4/4/97 1:12	8.43	6.93	3.86	4.6	3.53	4.09	-2.05	-6.16	-2.07	1.93
4/4/97 2:24	8.14	6.93	3.57	4.31	3.24	4.09	-2.48	-7.56	-2.92	1.14
4/4/97 3:36	7.86	6.93	3.27	4.31	2.94	4.09	-2.91	-7.56	-3.79	2.72
4/4/97 4:48	7.86	6.93	2.98	4.31	2.94	4.09	-3.34	-8.52	-4.23	5.03
4/4/97 6:00	7.57	6.93	2.98	4.31	2.65	4.09	-4.21	-8.52	-3.79	5.41
4/4/97 7:12	7.57	6.93	2.68	4.02	2.36	3.79	-4.66	-8.52	-4.67	5.78
4/4/97 8:24	7.28	6.93	2.39	4.02	2.36	3.79	-2.91	10.86	7.36	6.16
4/4/97 9:36	7.28	6.93	2.39	4.02	2.36	3.79	1.22	14.39	10.98	7.64
4/4/97 10:48	6.99	6.93	2.09	3.73	2.36	3.79	4.73	15.09	10.63	16.9
4/4/97 12:00	6.99	6.93	2.39	3.73	2.94	3.5	7.35	19.99	25.77	20.76
4/4/97 13:12	7.28	6.93	2.98	3.73	3.53	3.5	10.26	21.38	22.22	24.27
4/4/97 14:24	7.57	6.93	4.15	3.73	4.12	3.5	18.71	23.48	18.73	25.7
4/4/97 15:36	7.86	6.93	5.31	3.73	4.98	3.5	14.16	25.98	22.57	29.68
4/4/97 16:48	8.43	6.93	6.17	3.73	5.56	3.79	16.61	24.91	18.73	26.77
4/4/97 18:00	9.01	6.93	7.04	4.02	6.13	3.79	15.91	23.48	19.78	24.62
4/4/97 19:12	9.58	6.93	7.62	4.02	6.13	3.79	13.81	19.29	11.69	21.1
4/4/97 20:24	9.87	7.22	7.62	4.31	5.84	4.09	9.18	3.83	7.73	19.01
4/4/97 21:36	10.16	7.22	7.33	4.6	5.56	4.09	6.23	0.69	5.87	18.3
4/4/97 22:48	10.16	7.51	6.75	4.89	5.27	4.38	4.73	-1.34	4.35	17.25
4/5/97 0:00	10.16	7.51	6.46	4.89	4.98	4.38	3.19	-1.77	3.58	16.9
4/5/97 1:12	10.16	7.79	5.88	4.89	4.69	4.38	1.62	-3.04	1.62	15.85
4/5/97 2:24	10.16	7.79	5.31	4.89	4.69	4.38	0.42	-2.19	0.82	15.15
4/5/97 3:36	10.16	7.79	5.02	4.89	4.41	4.38	0.42	-3.91	1.22	14.45
4/5/97 4:48	10.16	7.79	4.44	4.89	4.12	4.38	-0.38	-3.91	0.41	14.09
4/5/97 6:00	10.16	8.08	4.15	4.89	3.83	4.38	-0.38	-3.91	0.01	13.74
4/5/97 7:12	10.16	8.08	3.86	4.89	3.83	4.38	-0.38	-3.48	-0.39	12.33
4/5/97 8:24	9.87	8.08	3.57	4.6	3.53	4.38	1.22	7.22	3.19	11.97
4/5/97 9:36	9.87	8.08	3.57	4.6	3.53	4.09	6.98	16.84	10.98	12.33
4/5/97 10:48	9.87	8.08	3.57	4.6	3.83	4.09	13.1	18.94	18.03	12.68
4/5/97 12:00	9.87	8.08	4.15	4.31	4.41	4.09	15.56	22.77	27.56	13.04
4/5/97 13:12	9.87	8.08	4.73	4.31	5.27	4.09	18.36	24.91	25.06	13.39
4/5/97 14:24	9.87	8.37	5.59	4.31	5.84	4.09	22.54	26.7	26.13	13.39
4/5/97 15:36	9.87	8.37	6.46	4.31	6.71	4.09	19.76	26.34	24.34	14.09
4/5/97 16:48	9.87	8.37	7.33	4.6	7.28	4.38	20.81	27.06	22.92	14.09
4/5/97 18:00	9.87	8.37	7.91	4.6	7.57	4.38	20.46	25.27	22.22	15.15
4/5/97 19:12	9.87	8.37	8.19	4.89	7.57	4.67	17.31	21.73	16.98	15.15
4/5/97 20:24	10.16	8.37	8.19	5.18	7.57	4.67	12.74	9.06	11.34	15.85
4/5/97 21:36	10.16	8.37	8.19	5.18	7.28	4.96	10.97	4.6	7.73	15.15
4/5/97 22:48	10.16	8.37	7.62	5.47	6.99	4.96	7.35	1.49	5.87	15.85
4/6/97 0:00	10.16	8.37	7.04	5.47	6.42	4.96	6.23	-0.11	5.87	16.2
4/6/97 1:12	10.16	8.37	6.75	5.47	6.13	5.25	6.23	-0.11	5.49	13.74
4/6/97 2:24	10.16	8.37	6.17	5.76	6.13	5.25	6.23	1.89	4.73	12.33
4/6/97 3:36	10.16	8.66	5.88	5.47	5.84	5.25	7.35	6.48	5.87	10.91
4/6/97 4:48	10.16	8.66	5.59	5.47	5.56	5.25	8.82	8.33	8.09	11.62
4/6/97 6:00	9.87	8.66	5.59	5.47	5.56	5.25	9.54	9.42	8.82	13.39
4/6/97 7:12	9.87	8.66	5.31	5.47	5.56	5.25	10.26	10.86	9.55	14.09

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/6/97 8:24	9.87	8.66	5.31	5.47	5.56	4.96	9.9	9.42	7.73	18.3
4/6/97 9:36	9.87	8.66	5.59	5.47	5.56	4.96	9.9	10.14	8.82	23.2
4/6/97 10:48	9.87	8.66	5.59	5.18	5.84	4.96	11.68	13.34	11.69	22.84
4/6/97 12:00	9.87	8.66	5.88	5.18	5.84	4.96	12.39	15.79	15.93	24.62
4/6/97 13:12	9.87	8.66	6.17	5.18	6.42	4.96	14.16	18.94	16.28	23.2
4/6/97 14:24	10.16	8.66	6.46	5.18	6.71	4.96	18.71	22.77	19.08	21.1
4/6/97 15:36	10.44	8.66	7.04	5.18	7.57	5.25	18.01	22.07	24.69	20.06
4/6/97 16:48	10.73	8.66	7.91	5.47	8.15	5.25	19.76	24.19	25.06	16.9
4/6/97 18:00	11.02	8.66	8.48	5.47	8.44	5.25	20.11	24.91	22.22	10.55
4/6/97 19:12	11.31	8.95	8.77	5.47	8.44	5.54	17.31	20.34	14.88	6.16
4/6/97 20:24	11.02	8.95	8.77	5.76	8.15	5.54	12.04	9.78	10.63	3.11
4/6/97 21:36	11.02	8.95	8.48	6.05	7.86	5.54	9.9	7.22	8.09	2.33
4/6/97 22:48	10.73	8.95	8.19	6.05	7.57	5.83	8.09	3.45	5.87	1.14
4/7/97 0:00	10.16	8.95	7.62	6.05	7.28	5.83	6.61	0.29	4.35	0.33
4/7/97 1:12	9.87	8.95	7.33	6.34	6.99	5.83	3.58	-1.34	3.19	-1.73
4/7/97 2:24	9.29	8.95	6.75	6.34	6.42	5.83	3.19	-1.77	2.02	-1.31
4/7/97 3:36	9.01	8.95	6.46	6.05	6.42	5.83	4.34	0.69	2.81	-1.73
4/7/97 4:48	8.43	8.95	6.17	6.05	6.13	5.83	5.86	3.83	4.35	-3.01
4/7/97 6:00	8.14	8.66	5.88	6.05	6.13	5.83	6.23	4.98	5.49	-3.01
4/7/97 7:12	7.86	8.66	5.88	6.05	5.84	5.83	6.23	5.73	5.87	-3.01
4/7/97 8:24	7.57	8.37	5.88	6.05	5.84	5.83	6.61	6.48	6.24	-2.58
4/7/97 9:36	7.28	8.37	5.88	5.76	5.84	5.54	7.35	8.69	7.36	-1.31
4/7/97 10:48	6.99	8.08	5.88	5.76	6.13	5.54	10.97	18.24	12.05	1.53
4/7/97 12:00	6.99	8.08	6.17	5.76	6.42	5.54	15.56	22.07	24.34	4.65
4/7/97 13:12	6.7	8.08	7.04	5.76	6.99	5.54	19.76	27.78	27.2	3.49
4/7/97 14:24	6.7	7.79	8.19	5.76	8.15	5.54	25.03	30.34	25.77	6.53
4/7/97 15:36	6.7	7.79	9.06	5.76	9.01	5.83	23.96	32.58	29.37	8.38
4/7/97 16:48	6.99	7.79	9.92	6.05	9.59	5.83	25.38	31.08	26.84	6.16
4/7/97 18:00	7.28	7.51	10.49	6.05	10.16	5.83	23.96	26.7	24.69	5.03
4/7/97 19:12	7.28	7.51	11.07	6.34	10.16	6.12	21.16	20.69	21.52	2.72
4/7/97 20:24	7.28	7.51	11.07	6.63	10.16	6.41	19.41	17.89	19.43	0.73
4/7/97 21:36	7.28	7.51	11.07	6.92	10.16	6.41	18.36	16.84	18.38	-0.07
4/7/97 22:48	6.99	7.51	10.78	6.92	9.88	6.7	17.66	16.84	17.33	-0.89
4/8/97 0:00	6.99	7.51	10.78	7.21	9.88	6.7	16.96	15.79	16.98	-1.31
4/8/97 1:12	6.7	7.22	10.49	7.21	9.59	6.7	16.26	15.79	15.93	-1.73
4/8/97 2:24	6.41	7.22	10.21	7.49	9.59	6.99	15.56	14.39	15.23	-2.15
4/8/97 3:36	6.41	7.22	10.21	7.49	9.59	6.99	14.51	14.04	14.17	-2.58
4/8/97 4:48	6.12	7.22	9.92	7.49	9.3	6.99	14.51	13.34	14.17	-3.01
4/8/97 6:00	6.12	7.22	9.92	7.49	9.3	6.99	13.81	12.98	13.47	-4.32
4/8/97 7:12	5.83	6.93	9.63	7.78	9.3	6.99	12.74	12.28	12.76	-4.32
4/8/97 8:24	5.54	6.93	9.63	7.78	9.01	6.99	12.04	12.28	12.05	-2.15
4/8/97 9:36	5.54	6.93	9.63	7.78	9.01	7.28	12.39	13.34	12.41	-1.73
4/8/97 10:48	5.54	6.64	9.63	7.78	9.3	7.28	12.74	13.69	12.76	6.53
4/8/97 12:00	5.26	6.64	9.63	7.78	9.3	7.28	13.1	14.04	13.12	5.78
4/8/97 13:12	5.54	6.64	9.92	7.78	9.3	7.28	13.45	14.39	13.82	1.93
4/8/97 14:24	5.54	6.64	9.92	7.78	9.59	7.28	13.81	14.74	13.82	5.41
4/8/97 15:36	5.54	6.35	9.92	7.78	9.59	7.28	14.51	15.44	14.17	6.9
4/8/97 16:48	5.83	6.35	10.21	7.78	9.59	7.28	13.81	14.74	14.17	4.27
4/8/97 18:00	5.83	6.35	10.21	7.78	9.88	7.28	14.86	15.79	15.93	-0.48
4/8/97 19:12	6.12	6.35	10.49	8.07	9.88	7.28	14.86	15.09	14.88	-2.15
4/8/97 20:24	6.12	6.35	10.49	8.07	9.88	7.57	14.86	14.74	15.58	-3.01
4/8/97 21:36	6.12	6.35	10.49	8.07	9.88	7.57	14.51	14.39	15.23	-4.76
4/8/97 22:48	6.12	6.35	10.49	8.07	9.88	7.57	16.26	15.79	15.58	-5.67
4/9/97 0:00	5.83	6.35	10.49	8.07	9.88	7.57	16.26	16.14	15.93	-6.12

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/9/97 1:12	5.83	6.35	10.49	8.36	9.88	7.57	12.39	12.98	13.82	-5.21
4/9/97 2:24	5.54	6.35	10.21	8.36	9.88	7.57	11.68	11.21	10.98	-6.12
4/9/97 3:36	5.26	6.35	10.21	8.36	9.59	7.86	12.39	9.78	11.34	-7.06
4/9/97 4:48	5.26	6.35	9.92	8.36	9.59	7.86	13.1	11.57	11.34	-7.06
4/9/97 6:00	4.97	6.06	9.63	8.36	9.3	7.86	13.81	13.34	13.47	-8.01
4/9/97 7:12	4.97	6.06	9.63	8.36	9.3	7.86	14.16	13.69	14.17	-7.53
4/9/97 8:24	4.68	6.06	9.63	8.36	9.3	7.86	14.86	20.69	17.33	-1.73
4/9/97 9:36	4.68	6.06	9.63	8.36	9.3	7.86	16.61	23.13	19.78	8.38
4/9/97 10:48	4.68	6.06	9.92	8.36	9.88	7.86	18.71	24.55	21.52	4.27
4/9/97 12:00	4.68	5.77	10.49	8.36	10.45	7.86	20.11	25.98	29.01	9.11
4/9/97 13:12	4.68	5.77	11.07	8.36	10.74	7.86	21.85	27.78	22.92	12.33
4/9/97 14:24	4.68	5.77	11.36	8.36	11.31	7.86	21.5	22.07	24.34	9.83
4/9/97 15:36	4.97	5.77	11.64	8.36	11.31	7.86	15.56	24.91	21.17	12.33
4/9/97 16:48	5.26	5.77	11.93	8.65	11.6	8.15	16.61	19.99	18.38	11.97
4/9/97 18:00	5.83	5.77	11.93	8.65	11.31	8.15	11.33	14.39	10.27	7.64
4/9/97 19:12	6.12	5.77	11.36	8.94	10.74	8.44	6.23	6.48	6.61	4.65
4/9/97 20:24	6.41	5.77	10.78	8.94	10.16	8.44	3.96	3.45	3.19	-0.07
4/9/97 21:36	6.41	5.77	10.21	8.94	9.59	8.44	2.8	1.89	2.81	-2.15
4/9/97 22:48	6.41	6.06	9.34	8.94	8.73	8.44	1.62	1.09	1.22	-2.58
4/10/97 0:00	6.12	6.06	8.77	8.94	8.15	8.44	1.22	0.69	0.41	-3.88
4/10/97 1:12	6.12	6.06	8.19	8.65	7.57	8.15	-0.38	-0.93	-0.81	-4.32
4/10/97 2:24	5.83	6.06	7.62	8.65	7.28	8.15	-1.21	-1.34	-0.81	-5.21
4/10/97 3:36	5.54	6.06	7.04	8.36	6.71	7.86	-1.21	-1.34	-1.64	-6.59
4/10/97 4:48	5.26	6.06	6.75	8.36	6.42	7.86	-2.05	-2.19	-2.49	-7.53
4/10/97 6:00	5.26	6.06	6.17	8.07	6.13	7.57	-2.05	-2.62	-2.92	-8.01
4/10/97 7:12	4.97	5.77	5.88	7.78	5.84	7.57	-2.91	-2.62	-2.92	-8.01
4/10/97 8:24	4.68	5.77	5.59	7.78	5.56	7.28	-2.05	-2.19	-2.07	-0.07
4/10/97 9:36	4.68	5.77	5.31	7.49	5.27	7.28	-2.05	1.49	-2.07	16.2
4/10/97 10:48	4.38	5.77	5.02	7.21	5.27	6.99	0.82	3.83	2.02	12.68
4/10/97 12:00	4.38	5.77	5.02	7.21	5.27	6.99	0.82	6.48	9.19	13.74
4/10/97 13:12	4.68	5.49	5.31	6.92	5.56	6.7	2.8	7.96	6.61	13.04
4/10/97 14:24	4.68	5.49	5.31	6.92	6.13	6.7	3.96	9.78	9.55	11.62
4/10/97 15:36	4.97	5.49	5.59	6.63	6.42	6.7	3.96	11.57	10.27	11.62
4/10/97 16:48	5.54	5.49	5.88	6.63	6.71	6.7	5.48	9.42	8.46	10.19
4/10/97 18:00	6.12	5.49	6.17	6.63	6.71	6.7	8.46	10.5	6.98	9.11
4/10/97 19:12	6.41	5.49	6.17	6.63	6.42	6.7	3.19	6.85	1.62	6.16
4/10/97 20:24	6.7	5.49	5.88	6.63	6.13	6.7	0.42	-0.11	0.01	3.49
4/10/97 21:36	6.7	5.77	5.59	6.63	5.56	6.7	-0.38	-0.52	-0.81	1.53
4/10/97 22:48	6.7	5.77	5.31	6.63	5.27	6.41	-0.79	-1.77	-1.64	1.14
4/11/97 0:00	6.41	5.77	5.02	6.34	4.98	6.41	-1.21	-1.34	-2.07	1.53
4/11/97 1:12	6.12	6.06	4.44	6.34	4.69	6.41	-1.21	-1.77	-2.07	1.14
4/11/97 2:24	6.12	6.06	4.15	6.34	4.41	6.12	-1.21	-2.19	-2.07	0.33
4/11/97 3:36	5.83	6.06	3.86	6.05	4.12	6.12	-1.63	-2.62	-2.92	0.73
4/11/97 4:48	5.54	6.06	3.86	6.05	4.12	6.12	-2.48	-3.48	-2.92	0.33
4/11/97 6:00	5.54	6.06	3.57	5.76	3.83	6.12	-2.91	-3.91	-3.79	0.33
4/11/97 7:12	5.26	5.77	3.27	5.76	3.53	5.83	-3.34	-4.35	-4.67	0.33
4/11/97 8:24	5.26	5.77	3.27	5.76	3.53	5.83	-2.91	1.89	3.19	1.53
4/11/97 9:36	4.97	5.77	2.98	5.47	3.24	5.54	-1.63	0.69	-2.07	3.49
4/11/97 10:48	4.97	5.77	2.98	5.47	3.24	5.54	-1.21	4.6	3.97	5.41
4/11/97 12:00	4.97	5.77	2.98	5.18	3.53	5.54	-0.38	5.73	14.17	7.27
4/11/97 13:12	4.97	5.77	3.57	5.18	3.83	5.25	0.01	3.45	5.87	8.74
4/11/97 14:24	5.26	5.49	3.86	5.18	4.12	5.25	3.96	9.06	3.58	10.55
4/11/97 15:36	5.26	5.49	4.15	4.89	4.69	5.25	-0.38	7.96	4.35	12.33
4/11/97 16:48	5.54	5.49	4.44	4.89	4.69	5.25	0.42	3.45	2.81	8.74

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/11/97 18:00	5.83	5.49	4.73	4.89	4.69	5.25	-1.21	-0.52	-0.81	6.9
4/11/97 19:12	6.12	5.49	4.44	4.89	4.69	5.25	-2.05	-2.19	-2.07	4.65
4/11/97 20:24	6.12	5.77	4.44	4.89	4.41	5.25	-2.91	-3.04	-2.92	2.72
4/11/97 21:36	6.12	5.77	4.15	4.89	4.12	5.25	-3.77	-4.79	-4.67	1.93
4/11/97 22:48	6.12	5.77	3.57	4.89	3.53	5.25	-4.66	-5.69	-5.58	1.53
4/12/97 0:00	6.12	5.77	3.27	4.89	3.24	5.25	-5.11	-6.16	-6.03	0.33
4/12/97 1:12	5.83	5.77	2.98	4.89	3.24	4.96	-4.66	-6.16	-5.58	0.33
4/12/97 2:24	5.83	5.77	2.98	4.89	2.94	4.96	-5.56	-6.62	-6.03	0.33
4/12/97 3:36	5.54	5.77	2.68	4.89	2.94	4.96	-6.02	-7.08	-6.49	-0.07
4/12/97 4:48	5.26	5.77	2.39	4.6	2.65	4.96	-7.42	-8.52	-6.97	-0.48
4/12/97 6:00	4.97	5.77	2.39	4.6	2.65	4.67	-7.89	-8.52	-7.44	-0.48
4/12/97 7:12	4.97	5.77	2.09	4.6	2.36	4.67	-6.48	-6.62	-7.92	-0.48
4/12/97 8:24	4.68	5.77	2.09	4.31	2.36	4.67	-4.66	1.49	2.02	0.33
4/12/97 9:36	4.68	5.77	2.09	4.31	2.36	4.38	-3.34	1.49	2.02	1.14
4/12/97 10:48	4.38	5.49	1.8	4.31	2.36	4.38	-1.21	3.45	4.73	1.93
4/12/97 12:00	4.38	5.49	1.8	4.02	2.36	4.38	-0.38	6.11	15.93	2.72
4/12/97 13:12	4.09	5.49	2.09	4.02	2.36	4.38	1.62	8.69	13.12	4.27
4/12/97 14:24	4.09	5.49	2.98	4.02	2.65	4.09	8.09	11.21	8.09	2.72
4/12/97 15:36	4.09	5.2	3.57	4.02	3.24	4.09	3.19	12.28	14.53	2.33
4/12/97 16:48	4.09	5.2	4.44	4.02	3.83	4.09	5.86	11.92	6.98	1.93
4/12/97 18:00	4.09	5.2	5.02	4.02	4.12	4.09	6.98	13.69	8.09	1.93
4/12/97 19:12	4.09	5.2	5.31	4.02	4.12	4.09	5.11	8.69	2.02	1.53
4/12/97 20:24	4.09	5.2	5.31	4.31	3.83	4.38	-0.38	-2.19	-0.81	0.73
4/12/97 21:36	4.09	4.91	4.73	4.31	3.53	4.38	-2.05	-3.91	-2.92	0.73
4/12/97 22:48	4.09	4.91	4.44	4.31	3.24	4.38	-2.91	-5.24	-2.92	0.73
4/13/97 0:00	3.8	4.91	3.86	4.6	2.94	4.38	-3.34	-5.24	-3.35	0.33
4/13/97 1:12	3.8	4.91	3.57	4.6	2.94	4.38	-3.77	-4.79	-4.23	0.33
4/13/97 2:24	3.8	4.91	3.27	4.6	2.65	4.09	-4.66	-5.69	-5.58	-0.07
4/13/97 3:36	3.8	4.91	2.98	4.31	2.36	4.09	-5.56	-7.56	-6.49	-0.07
4/13/97 4:48	3.8	4.91	2.68	4.31	2.36	4.09	-6.48	-10.53	-6.97	-0.48
4/13/97 6:00	3.8	4.91	2.68	4.31	2.36	4.09	-7.42	-10.53	-7.44	-0.48
4/13/97 7:12	3.51	4.91	2.39	4.31	2.06	4.09	-7.42	-8.52	-7.44	-0.48
4/13/97 8:24	3.51	4.62	2.09	4.02	2.06	3.79	-4.66	3.45	4.73	1.93
4/13/97 9:36	3.51	4.62	2.09	4.02	2.06	3.79	-1.63	8.69	8.09	8.74
4/13/97 10:48	3.51	4.62	1.8	4.02	2.06	3.79	1.22	10.14	10.98	14.45
4/13/97 12:00	3.51	4.62	2.09	3.73	2.06	3.79	2.41	12.63	20.82	15.15
4/13/97 13:12	3.8	4.62	2.68	3.73	2.36	3.79	4.73	15.09	16.63	17.95
4/13/97 14:24	4.09	4.62	3.57	3.73	3.24	3.79	11.33	15.44	9.91	15.5
4/13/97 15:36	4.68	4.62	4.73	3.73	3.83	3.79	6.61	15.09	16.28	10.19
4/13/97 16:48	5.26	4.62	5.59	3.73	4.12	3.79	8.46	15.09	9.91	12.33
4/13/97 18:00	5.83	4.62	5.88	4.02	4.41	3.79	10.26	15.79	8.82	10.55
4/13/97 19:12	6.12	4.91	6.17	4.02	4.41	3.79	5.86	9.42	5.49	7.64
4/13/97 20:24	6.41	4.91	6.17	4.31	4.41	3.79	3.19	2.67	3.19	4.65
4/13/97 21:36	6.41	4.91	5.88	4.31	4.12	4.09	1.62	-0.52	0.82	1.93
4/13/97 22:48	6.41	5.2	5.59	4.6	3.83	4.09	1.22	-2.19	-0.39	0.33
4/14/97 0:00	6.41	5.2	5.02	4.6	3.53	4.09	1.22	0.69	1.22	0.73
4/14/97 1:12	6.12	5.49	4.73	4.6	3.53	4.09	1.22	1.49	0.82	-0.48
4/14/97 2:24	6.12	5.49	4.44	4.89	3.24	4.09	0.82	1.09	0.41	-1.31
4/14/97 3:36	5.83	5.49	4.44	4.89	3.24	4.09	0.82	0.29	0.41	-2.15
4/14/97 4:48	5.54	5.49	4.15	4.6	3.24	4.09	0.82	0.29	0.41	-3.01
4/14/97 6:00	5.54	5.49	4.15	4.6	2.94	4.09	0.42	-0.11	0.41	-3.01
4/14/97 7:12	5.26	5.49	3.86	4.6	2.94	4.09	0.42	0.29	0.01	-2.58
4/14/97 8:24	5.26	5.49	3.86	4.6	2.94	4.09	1.22	2.28	1.22	9.83
4/14/97 9:36	4.97	5.49	3.57	4.6	2.94	3.79	3.19	6.11	3.19	17.25

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/14/97 10:48	4.97	5.49	3.86	4.6	2.94	3.79	5.11	9.42	4.73	14.09
4/14/97 12:00	4.97	5.49	3.86	4.31	3.24	3.79	5.86	10.14	6.24	13.39
4/14/97 13:12	4.97	5.49	4.15	4.31	3.53	3.79	5.86	12.63	8.09	22.14
4/14/97 14:24	5.26	5.2	4.44	4.31	3.53	3.79	7.72	16.84	9.19	18.65
4/14/97 15:36	5.83	5.2	5.02	4.31	4.12	3.79	9.54	19.64	9.55	15.15
4/14/97 16:48	6.12	5.2	5.59	4.31	4.41	3.79	7.35	12.98	9.55	14.45
4/14/97 18:00	6.7	5.49	6.17	4.6	4.41	4.09	5.86	8.69	6.61	15.5
4/14/97 19:12	6.99	5.49	6.17	4.6	4.41	4.09	5.11	4.98	4.73	11.26
4/14/97 20:24	6.99	5.49	6.17	4.89	4.41	4.09	3.19	3.06	3.19	7.27
4/14/97 21:36	6.99	5.77	5.88	4.89	4.12	4.09	2.02	1.89	2.02	6.53
4/14/97 22:48	6.99	5.77	5.88	4.89	4.12	4.09	1.62	1.09	1.22	5.03
4/15/97 0:00	6.99	5.77	5.59	4.89	3.83	4.09	0.42	0.29	0.01	4.65
4/15/97 1:12	6.7	6.06	5.31	4.89	3.53	4.09	0.42	0.29	0.01	3.11
4/15/97 2:24	6.7	6.06	5.02	4.89	3.53	4.09	0.01	0.29	0.01	1.14
4/15/97 3:36	6.41	6.06	4.73	4.89	3.24	4.09	0.01	-0.11	0.01	0.33
4/15/97 4:48	6.41	6.06	4.44	4.89	3.24	4.09	-0.38	-0.11	-0.39	0.33
4/15/97 6:00	6.12	6.06	4.15	4.89	2.94	4.09	-0.38	-0.52	-0.39	-0.48
4/15/97 7:12	6.12	6.06	4.15	4.89	2.94	4.09	-0.79	-0.52	-0.39	1.53
4/15/97 8:24	5.83	6.06	3.86	4.89	2.94	4.09	-0.38	0.69	0.41	8.74
4/15/97 9:36	5.83	6.06	3.86	4.89	2.94	4.09	0.01	2.28	1.22	16.2
4/15/97 10:48	5.54	6.06	3.57	4.6	2.94	4.09	0.42	3.06	1.22	16.2
4/15/97 12:00	5.54	5.77	3.57	4.6	2.94	3.79	0.42	4.22	1.62	17.6
4/15/97 13:12	5.83	5.77	3.57	4.6	2.94	3.79	1.22	10.14	2.81	22.49
4/15/97 14:24	6.12	5.77	3.27	4.6	2.94	3.79	1.22	4.22	2.41	21.1
4/15/97 15:36	6.7	5.77	3.27	4.6	2.65	3.79	1.22	4.6	1.62	22.49
4/15/97 16:48	7.28	5.77	2.98	4.31	2.65	3.79	1.22	2.28	1.62	17.95
4/15/97 18:00	7.86	6.06	2.98	4.31	2.65	3.79	0.42	1.49	1.22	17.95
4/15/97 19:12	8.14	6.06	2.98	4.31	2.65	3.79	0.82	1.49	1.22	16.55
4/15/97 20:24	8.14	6.06	2.98	4.31	2.65	3.79	0.82	0.69	0.41	13.04
4/15/97 21:36	8.43	6.35	2.68	4.02	2.36	3.79	0.82	1.09	0.41	12.68
4/15/97 22:48	8.14	6.35	2.68	4.02	2.36	3.79	0.42	0.69	0.41	11.26
4/16/97 0:00	8.14	6.64	2.68	4.02	2.36	3.79	0.01	0.29	0.41	10.91
4/16/97 1:12	7.86	6.64	2.68	4.02	2.36	3.5	0.01	0.29	0.01	11.26
4/16/97 2:24	7.86	6.64	2.68	3.73	2.36	3.5	0.01	0.29	0.01	9.47
4/16/97 3:36	7.57	6.64	2.39	3.73	2.36	3.5	0.01	-0.11	-0.39	9.83
4/16/97 4:48	7.57	6.64	2.39	3.73	2.36	3.5	-0.38	-0.11	-0.39	9.47
4/16/97 6:00	7.57	6.64	2.39	3.73	2.36	3.5	-0.38	-0.11	-0.81	8.38
4/16/97 7:12	7.28	6.64	2.39	3.73	2.36	3.5	-0.38	-0.11	-0.39	8.01
4/16/97 8:24	7.28	6.64	2.39	3.73	2.36	3.5	0.01	1.49	0.82	7.27
4/16/97 9:36	7.28	6.64	2.39	3.73	2.36	3.5	1.62	5.36	5.49	9.11
4/16/97 10:48	7.28	6.64	2.39	3.43	2.36	3.5	3.96	13.69	12.41	13.74
4/16/97 12:00	7.28	6.64	2.68	3.43	2.36	3.5	5.11	12.28	20.13	17.95
4/16/97 13:12	7.57	6.64	3.57	3.43	2.94	3.21	7.35	13.34	19.43	15.85
4/16/97 14:24	7.86	6.64	4.15	3.43	3.53	3.21	14.16	14.74	14.17	13.39
4/16/97 15:36	8.14	6.64	5.02	3.43	4.41	3.5	8.82	9.78	9.91	14.45
4/16/97 16:48	8.43	6.64	5.31	3.73	4.69	3.5	8.46	11.92	10.63	11.62
4/16/97 18:00	8.72	6.93	5.59	3.73	4.98	3.5	9.54	10.86	13.47	9.47
4/16/97 19:12	9.01	6.93	5.88	4.02	4.98	3.79	7.72	7.22	7.36	7.27
4/16/97 20:24	9.01	6.93	5.59	4.02	4.98	3.79	5.86	3.83	3.97	4.27
4/16/97 21:36	9.01	7.22	5.31	4.31	4.69	3.79	2.8	1.09	2.02	2.72
4/16/97 22:48	9.01	7.22	4.73	4.31	4.41	3.79	1.22	-1.34	0.01	1.93
4/17/97 0:00	8.72	7.22	4.44	4.31	4.12	4.09	-0.38	-2.19	0.82	0.33
4/17/97 1:12	8.43	7.22	4.15	4.31	3.83	4.09	-1.21	-0.52	-0.39	-0.89
4/17/97 2:24	8.14	7.22	3.86	4.31	3.53	4.09	-1.21	-1.77	-1.22	-0.07

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/17/97 3:36	7.86	7.22	3.57	4.31	3.24	4.09	-1.63	-2.62	-2.49	-0.07
4/17/97 4:48	7.57	7.22	3.27	4.31	2.94	4.09	-2.05	-6.62	-2.92	-0.07
4/17/97 6:00	7.28	7.22	2.98	4.31	2.94	3.79	-2.48	-6.62	-3.35	-0.48
4/17/97 7:12	7.28	7.22	2.98	4.31	2.65	3.79	-2.48	-4.35	-2.92	-0.48
4/17/97 8:24	6.99	7.22	2.68	4.02	2.65	3.79	-0.38	14.04	6.98	-0.07
4/17/97 9:36	6.7	7.22	2.39	4.02	2.65	3.79	3.19	17.54	8.82	1.14
4/17/97 10:48	6.7	6.93	2.68	4.02	2.94	3.79	7.35	14.39	14.88	1.93
4/17/97 12:00	6.41	6.93	2.98	3.73	3.53	3.79	10.26	16.84	23.98	6.53
4/17/97 13:12	6.41	6.93	3.86	3.73	4.12	3.79	12.39	18.59	21.17	5.03
4/17/97 14:24	6.41	6.93	4.73	3.73	4.98	3.79	18.71	21.38	18.38	9.11
4/17/97 15:36	6.41	6.64	5.88	3.73	5.84	3.79	13.1	20.34	14.88	15.85
4/17/97 16:48	6.7	6.64	6.46	4.02	6.13	3.79	12.39	22.42	14.53	12.33
4/17/97 18:00	6.7	6.64	7.04	4.31	6.13	4.09	12.04	15.09	12.76	11.62
4/17/97 19:12	6.99	6.64	7.33	4.31	6.13	4.09	10.97	14.74	11.34	9.11
4/17/97 20:24	6.99	6.64	7.04	4.6	6.13	4.38	8.82	7.22	8.09	3.11
4/17/97 21:36	6.99	6.64	7.04	4.89	5.84	4.38	8.09	5.36	6.24	-0.07
4/17/97 22:48	6.99	6.64	6.75	4.89	5.56	4.38	5.86	3.06	4.73	-2.15
4/18/97 0:00	6.99	6.64	6.46	4.89	5.27	4.38	3.96	0.29	2.81	-1.31
4/18/97 1:12	6.7	6.64	5.88	5.18	4.98	4.67	2.8	-2.62	1.22	-1.31
4/18/97 2:24	6.7	6.64	5.59	5.18	4.69	4.67	2.41	-2.19	0.41	-1.73
4/18/97 3:36	6.41	6.64	5.02	5.18	4.41	4.67	2.41	-3.04	0.41	-2.58
4/18/97 4:48	6.12	6.64	4.73	5.18	4.12	4.67	2.02	-4.35	0.41	-3.44
4/18/97 6:00	5.83	6.64	4.15	4.89	4.12	4.67	1.22	-3.04	0.41	-3.88
4/18/97 7:12	5.54	6.64	3.86	4.89	3.83	4.38	1.22	-0.11	0.01	-0.89
4/18/97 8:24	5.54	6.35	3.57	4.89	3.83	4.38	3.96	12.98	7.73	6.53
4/18/97 9:36	5.26	6.35	3.57	4.89	3.83	4.38	8.46	18.24	10.98	13.39
4/18/97 10:48	5.26	6.35	3.86	4.6	4.12	4.38	12.04	18.59	17.68	14.45
4/18/97 12:00	5.26	6.35	4.15	4.6	4.98	4.38	14.51	21.38	26.48	14.09
4/18/97 13:12	5.26	6.06	5.02	4.6	5.56	4.38	16.96	22.77	23.98	20.06
4/18/97 14:24	5.83	6.06	5.88	4.6	6.42	4.38	21.5	24.19	21.17	18.65
4/18/97 15:36	6.41	6.06	6.46	4.6	6.99	4.38	18.01	24.91	23.63	21.8
4/18/97 16:48	6.99	6.06	7.33	4.6	7.57	4.67	18.01	23.13	18.73	19.71
4/18/97 18:00	7.57	6.06	7.62	4.89	7.86	4.67	16.61	19.29	16.28	16.9
4/18/97 19:12	8.14	6.35	7.91	4.89	7.57	4.96	15.56	18.94	15.23	14.45
4/18/97 20:24	8.43	6.35	7.91	5.18	7.57	4.96	13.1	12.28	12.05	6.16
4/18/97 21:36	8.72	6.64	7.91	5.47	7.28	5.25	11.68	10.86	10.63	2.33
4/18/97 22:48	8.43	6.64	7.62	5.47	6.99	5.25	10.97	10.86	11.34	1.53
4/19/97 0:00	8.43	6.64	7.33	5.76	6.99	5.25	10.62	10.86	11.34	-0.48
4/19/97 1:12	8.14	6.93	7.33	5.76	6.71	5.54	11.33	10.86	9.91	-2.58
4/19/97 2:24	7.86	6.93	7.04	5.76	6.71	5.54	9.9	9.42	9.19	-3.88
4/19/97 3:36	7.57	6.93	7.04	5.76	6.42	5.54	9.9	9.78	9.55	-3.88
4/19/97 4:48	7.28	6.93	7.04	5.76	6.42	5.54	9.54	9.42	9.19	-4.32
4/19/97 6:00	6.99	6.93	6.75	5.76	6.42	5.54	8.46	8.69	8.09	-4.76
4/19/97 7:12	6.41	6.93	6.75	5.76	6.42	5.54	8.09	7.96	7.73	-0.48
4/19/97 8:24	6.12	6.93	6.75	5.76	6.42	5.54	7.35	7.59	7.36	9.47
4/19/97 9:36	6.12	6.64	6.75	6.05	6.42	5.54	8.46	10.14	8.82	19.71
4/19/97 10:48	5.83	6.64	6.75	5.76	6.42	5.54	12.74	17.19	15.23	15.15
4/19/97 12:00	5.83	6.64	7.04	5.76	6.71	5.54	13.1	19.99	16.28	17.25
4/19/97 13:12	6.12	6.64	7.62	6.05	7.28	5.54	13.1	17.89	13.47	18.65
4/19/97 14:24	6.7	6.35	8.19	6.05	7.57	5.54	12.74	14.74	13.12	18.3
4/19/97 15:36	7.28	6.35	8.48	6.05	7.86	5.54	10.26	15.79	12.41	19.71
4/19/97 16:48	8.14	6.35	8.48	6.05	7.86	5.83	12.74	14.74	13.47	18.65
4/19/97 18:00	8.72	6.64	8.77	6.34	8.15	5.83	8.82	9.06	9.19	15.15
4/19/97 19:12	9.29	6.64	8.48	6.34	7.86	5.83	8.09	7.59	6.98	13.04

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/19/97 20:24	9.29	6.93	8.19	6.34	7.57	6.12	5.86	4.98	4.35	6.53
4/19/97 21:36	9.29	6.93	7.91	6.63	7.28	6.12	3.96	3.06	2.41	4.27
4/19/97 22:48	9.29	7.22	7.62	6.63	6.71	6.12	2.41	1.89	1.62	1.53
4/20/97 0:00	9.01	7.22	7.33	6.63	6.42	6.12	1.62	0.69	0.41	-0.48
4/20/97 1:12	8.43	7.22	6.75	6.63	6.13	6.12	1.22	-0.11	-0.81	-1.31
4/20/97 2:24	8.14	7.51	6.46	6.63	5.84	6.12	0.01	-0.11	-0.39	-0.89
4/20/97 3:36	7.86	7.51	6.17	6.34	5.56	6.12	0.42	0.29	0.01	-2.58
4/20/97 4:48	7.57	7.22	5.88	6.34	5.27	5.83	0.42	-0.11	0.01	-3.88
4/20/97 6:00	7.28	7.22	5.59	6.34	5.27	5.83	0.01	-0.11	-0.39	-4.32
4/20/97 7:12	6.99	7.22	5.31	6.05	4.98	5.83	0.01	-0.11	-0.39	0.33
4/20/97 8:24	6.41	7.22	5.02	6.05	4.69	5.83	0.42	0.29	0.01	10.55
4/20/97 9:36	6.41	7.22	5.02	6.05	4.69	5.54	1.22	1.89	0.82	22.14
4/20/97 10:48	6.12	6.93	4.73	5.76	4.69	5.54	2.02	3.83	2.41	15.5
4/20/97 12:00	6.12	6.93	4.73	5.76	4.69	5.54	3.96	6.85	4.73	20.76
4/20/97 13:12	6.7	6.93	5.02	5.76	4.98	5.54	4.73	5.73	5.11	26.42
4/20/97 14:24	7.28	6.64	5.02	5.76	5.27	5.25	4.73	8.69	7.36	22.14
4/20/97 15:36	7.57	6.64	5.31	5.47	5.56	5.25	8.82	17.19	12.76	26.06
4/20/97 16:48	8.43	6.93	5.88	5.47	5.84	5.25	9.9	12.63	14.53	20.41
4/20/97 18:00	8.72	6.93	6.17	5.47	6.13	5.25	9.54	11.21	10.98	17.95
4/20/97 19:12	9.29	6.93	6.17	5.47	6.13	5.25	8.46	9.06	7.73	15.5
4/20/97 20:24	9.29	7.22	6.46	5.47	6.13	5.54	4.73	2.28	3.19	7.64
4/20/97 21:36	9.58	7.22	6.17	5.76	5.84	5.54	2.8	-2.62	0.01	5.03
4/20/97 22:48	9.29	7.51	5.88	5.76	5.27	5.54	-0.38	-5.24	-1.22	4.27
4/21/97 0:00	9.01	7.51	5.31	5.76	4.98	5.54	-1.21	-5.69	-0.81	4.65
4/21/97 1:12	8.72	7.51	5.02	5.76	4.69	5.54	-2.48	-1.77	-1.64	3.49
4/21/97 2:24	8.43	7.51	4.44	5.76	4.41	5.54	-2.05	-2.19	-2.07	1.14
4/21/97 3:36	8.14	7.51	4.15	5.47	4.12	5.25	-2.91	-2.62	-2.49	0.73
4/21/97 4:48	7.86	7.51	3.86	5.47	3.83	5.25	-3.34	-3.48	-3.35	0.73
4/21/97 6:00	7.57	7.51	3.57	5.47	3.53	5.25	-3.77	-4.35	-3.79	2.72
4/21/97 7:12	7.28	7.51	3.27	5.18	3.53	4.96	-3.34	-0.52	-3.79	1.93
4/21/97 8:24	6.99	7.51	3.27	5.18	3.24	4.96	-0.79	6.48	4.73	4.27
4/21/97 9:36	6.7	7.22	2.98	4.89	3.24	4.96	2.02	10.86	9.55	6.9
4/21/97 10:48	6.7	7.22	2.98	4.89	3.53	4.96	5.48	14.39	16.28	7.64
4/21/97 12:00	6.7	7.22	3.57	4.89	4.12	4.67	7.35	13.69	27.2	7.27
4/21/97 13:12	6.99	7.22	4.44	4.6	4.98	4.67	10.26	16.84	19.43	6.9
4/21/97 14:24	6.99	7.22	5.31	4.6	5.84	4.67	16.61	18.59	18.03	6.9
4/21/97 15:36	6.99	6.93	6.17	4.6	6.42	4.67	12.74	23.83	23.63	6.9
4/21/97 16:48	6.99	6.93	7.04	4.89	6.99	4.96	15.91	22.07	18.03	6.9
4/21/97 18:00	6.99	6.93	7.62	4.89	7.28	4.96	18.01	23.13	15.23	7.27
4/21/97 19:12	6.99	6.93	7.91	5.18	7.28	4.96	13.45	17.54	10.98	6.53
4/21/97 20:24	6.99	6.93	8.19	5.47	6.71	5.25	8.09	5.36	5.87	5.78
4/21/97 21:36	6.99	6.93	7.91	5.47	6.42	5.25	5.11	1.49	2.02	4.65
4/21/97 22:48	6.99	6.93	7.33	5.76	6.13	5.25	3.58	0.69	2.02	3.88
4/22/97 0:00	6.99	6.93	7.04	5.76	5.56	5.54	2.41	-2.19	0.41	3.88
4/22/97 1:12	6.99	6.93	6.46	5.76	5.27	5.54	0.01	-5.69	-1.64	3.88
4/22/97 2:24	6.7	6.93	5.88	6.05	4.98	5.54	-1.63	-6.16	-2.49	3.88
4/22/97 3:36	6.7	6.93	5.59	6.05	4.69	5.25	-1.63	-7.08	-2.92	3.88
4/22/97 4:48	6.7	6.93	5.02	5.76	4.41	5.25	-3.34	-8.03	-3.79	3.88
4/22/97 6:00	6.7	6.93	4.73	5.76	4.12	5.25	-3.77	-8.03	-4.23	4.27
4/22/97 7:12	6.41	6.93	4.15	5.76	3.83	5.25	-3.77	-0.93	-3.79	4.27
4/22/97 8:24	6.41	6.93	3.86	5.47	3.53	4.96	-0.38	11.57	8.09	4.65
4/22/97 9:36	6.41	6.64	3.86	5.47	3.83	4.96	4.34	15.09	16.63	7.64
4/22/97 10:48	6.41	6.64	4.15	5.18	4.12	4.96	8.46	16.14	19.43	9.83
4/22/97 12:00	6.41	6.64	4.73	5.18	4.98	4.96	9.54	17.89	26.84	14.09

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/22/97 13:12	6.41	6.64	5.59	5.18	5.56	4.96	11.68	19.64	19.78	10.91
4/22/97 14:24	6.7	6.64	6.46	5.18	6.13	4.96	17.31	22.07	16.28	19.36
4/22/97 15:36	6.99	6.64	7.33	5.18	6.71	4.96	12.39	24.91	20.48	19.71
4/22/97 16:48	7.28	6.64	8.19	5.18	7.28	4.96	15.21	25.27	16.98	17.25
4/22/97 18:00	7.86	6.64	8.77	5.47	7.28	5.25	17.66	25.27	14.88	14.8
4/22/97 19:12	8.43	6.64	9.06	5.76	7.28	5.25	14.16	20.69	10.63	12.68
4/22/97 20:24	8.72	6.93	9.06	6.05	6.99	5.25	9.18	6.48	6.24	8.01
4/22/97 21:36	8.72	6.93	8.77	6.05	6.42	5.54	5.86	3.45	4.35	4.27
4/22/97 22:48	8.72	7.22	8.48	6.34	6.13	5.54	4.73	-0.11	2.81	3.11
4/23/97 0:00	8.72	7.22	7.91	6.34	5.56	5.54	3.19	-2.19	0.82	2.33
4/23/97 1:12	8.43	7.22	7.33	6.34	5.27	5.54	0.42	-4.35	0.01	1.93
4/23/97 2:24	8.14	7.22	7.04	6.63	4.98	5.54	-0.79	-3.91	-0.39	1.93
4/23/97 3:36	7.86	7.22	6.46	6.63	4.69	5.54	-1.21	-5.24	-2.07	-0.07
4/23/97 4:48	7.57	7.22	5.88	6.34	4.41	5.54	-2.05	-6.62	-2.92	0.33
4/23/97 6:00	7.28	7.22	5.59	6.34	4.41	5.25	-3.34	-7.56	-3.35	0.33
4/23/97 7:12	7.28	7.22	5.02	6.34	4.12	5.25	-3.34	-0.93	-2.92	4.65
4/23/97 8:24	6.99	7.22	4.73	6.05	3.83	5.25	0.42	17.89	9.91	9.47
4/23/97 9:36	6.7	7.22	4.73	6.05	4.12	5.25	5.11	19.29	18.73	17.95
4/23/97 10:48	6.41	7.22	5.02	5.76	4.41	4.96	9.54	19.64	17.33	18.65
4/23/97 12:00	6.7	6.93	5.59	5.76	4.98	4.96	13.1	23.48	18.38	20.76
4/23/97 13:12	7.28	6.93	6.46	5.76	5.56	4.96	14.51	24.19	16.63	20.06
4/23/97 14:24	7.57	6.93	7.33	5.76	6.13	4.96	14.86	24.91	22.92	20.41
4/23/97 15:36	8.43	6.93	8.19	5.76	6.99	4.96	15.21	25.98	23.98	20.76
4/23/97 16:48	9.29	6.93	8.77	5.76	7.57	5.25	18.01	21.38	16.98	19.01
4/23/97 18:00	9.87	7.22	9.34	6.05	7.86	5.25	15.21	24.19	17.33	15.5
4/23/97 19:12	10.44	7.22	9.63	6.34	7.86	5.54	15.56	15.79	13.47	13.39
4/23/97 20:24	10.44	7.51	9.63	6.34	7.57	5.54	10.62	8.33	7.36	8.38
4/23/97 21:36	10.44	7.79	9.34	6.63	7.28	5.54	6.98	3.45	4.35	5.78
4/23/97 22:48	10.16	7.79	9.06	6.92	6.99	5.83	4.73	0.29	3.97	4.27
4/24/97 0:00	9.87	7.79	8.48	6.92	6.42	5.83	5.48	3.06	4.35	2.72
4/24/97 1:12	9.58	8.08	8.19	6.92	6.13	5.83	4.34	1.89	3.19	2.33
4/24/97 2:24	9.29	8.08	7.62	6.92	5.84	5.83	3.19	-0.11	1.22	1.53
4/24/97 3:36	9.01	8.08	7.33	6.92	5.56	5.83	2.8	-0.93	1.22	1.53
4/24/97 4:48	8.72	8.08	7.04	6.92	5.27	5.83	2.41	0.29	1.22	1.14
4/24/97 6:00	8.43	8.08	6.46	6.92	4.98	5.83	3.19	1.89	2.02	1.93
4/24/97 7:12	8.14	8.08	6.46	6.92	4.98	5.54	2.8	2.67	1.62	2.33
4/24/97 8:24	7.86	7.79	6.17	6.63	4.69	5.54	4.73	6.48	3.58	10.19
4/24/97 9:36	7.86	7.79	6.17	6.63	4.69	5.54	6.98	11.21	6.24	19.71
4/24/97 10:48	7.57	7.79	6.17	6.63	4.98	5.54	6.98	9.42	7.36	21.1
4/24/97 12:00	7.86	7.79	6.46	6.34	5.27	5.54	7.35	10.14	6.98	25.34
4/24/97 13:12	8.43	7.79	6.46	6.34	5.27	5.54	7.35	8.69	6.61	23.2
4/24/97 14:24	9.01	7.79	6.75	6.34	5.27	5.25	6.61	8.33	6.61	14.45
4/24/97 15:36	9.58	7.79	6.75	6.34	5.56	5.25	5.86	7.22	5.87	15.85
4/24/97 16:48	10.16	7.79	6.75	6.34	5.56	5.54	5.48	7.22	6.24	16.55
4/24/97 18:00	10.44	7.79	6.75	6.34	5.84	5.54	5.86	7.59	6.61	16.55
4/24/97 19:12	10.44	8.08	6.75	6.34	5.84	5.54	5.86	6.48	5.87	15.5
4/24/97 20:24	10.44	8.08	6.75	6.34	5.84	5.54	5.86	5.73	5.49	10.55
4/24/97 21:36	10.44	8.37	6.75	6.34	5.84	5.54	5.11	4.98	4.35	8.01
4/24/97 22:48	10.16	8.37	6.46	6.34	5.56	5.54	4.73	4.6	3.97	8.01
4/25/97 0:00	9.87	8.37	6.46	6.34	5.56	5.54	4.34	4.22	3.58	6.16
4/25/97 1:12	9.87	8.37	6.46	6.34	5.56	5.54	4.34	4.22	3.58	4.65
4/25/97 2:24	9.58	8.37	6.17	6.34	5.27	5.54	3.96	3.83	3.58	4.65
4/25/97 3:36	9.29	8.37	6.17	6.34	5.27	5.54	3.58	3.83	3.97	3.11
4/25/97 4:48	9.01	8.37	5.88	6.34	5.27	5.54	3.96	3.83	3.97	1.53

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/25/97 6:00	8.72	8.37	5.88	6.34	5.27	5.54	3.96	4.22	3.97	1.53
4/25/97 7:12	8.43	8.37	5.88	6.34	5.27	5.54	3.96	4.22	3.97	3.49
4/25/97 8:24	8.14	8.37	5.59	6.05	5.27	5.25	4.34	4.98	4.35	7.27
4/25/97 9:36	7.86	8.37	5.59	6.05	5.27	5.25	5.48	7.22	6.24	13.74
4/25/97 10:48	7.86	8.08	5.88	6.05	5.27	5.25	6.98	8.69	8.09	19.71
4/25/97 12:00	8.14	8.08	6.17	6.05	5.56	5.25	8.09	11.92	13.47	25.7
4/25/97 13:12	8.72	8.08	6.46	6.05	6.13	5.25	7.72	9.06	9.91	25.34
4/25/97 14:24	9.29	8.08	6.46	6.05	6.42	5.25	10.97	16.14	15.58	17.95
4/25/97 15:36	10.16	8.08	7.04	6.05	6.99	5.54	13.1	19.64	20.82	24.27
4/25/97 16:48	10.73	8.08	7.91	6.05	7.57	5.54	15.56	21.73	18.03	11.97
4/25/97 18:00	11.02	8.37	8.48	6.05	7.57	5.54	13.81	23.48	13.47	16.55
4/25/97 19:12	11.31	8.37	8.77	6.34	7.57	5.54	13.81	17.54	10.27	15.85
4/25/97 20:24	11.31	8.66	8.77	6.34	7.28	5.83	8.82	6.48	7.73	11.97
4/25/97 21:36	11.02	8.66	8.48	6.63	6.99	5.83	5.86	3.06	5.11	8.01
4/25/97 22:48	11.02	8.95	8.19	6.63	6.71	5.83	5.11	1.49	3.97	5.03
4/26/97 0:00	10.44	8.95	7.62	6.63	6.42	5.83	3.19	0.69	3.58	3.49
4/26/97 1:12	10.16	8.95	7.04	6.92	6.13	5.83	2.02	0.69	2.81	3.11
4/26/97 2:24	9.87	8.95	6.75	6.92	5.84	5.83	1.22	-0.52	1.22	0.33
4/26/97 3:36	9.29	8.95	6.17	6.63	5.56	5.83	0.82	-1.34	0.41	-0.48
4/26/97 4:48	9.01	8.95	5.88	6.63	5.27	5.83	0.01	-0.93	2.02	-0.48
4/26/97 6:00	8.72	8.95	5.59	6.63	5.27	5.83	0.01	-1.34	1.62	-0.89
4/26/97 7:12	8.14	8.66	5.31	6.63	4.98	5.83	-0.38	4.98	3.19	7.27
4/26/97 8:24	7.86	8.66	5.02	6.34	4.98	5.83	3.58	12.63	10.98	11.97
4/26/97 9:36	7.57	8.37	5.02	6.34	5.27	5.54	8.46	16.49	20.13	24.62
4/26/97 10:48	7.57	8.37	5.31	6.05	5.56	5.54	12.04	21.03	21.52	20.76
4/26/97 12:00	7.86	8.37	5.88	6.05	6.42	5.54	13.45	21.03	26.13	24.27
4/26/97 13:12	8.72	8.08	6.75	6.05	6.99	5.54	14.86	23.13	22.22	28.58
4/26/97 14:24	9.29	8.08	7.62	6.05	7.57	5.54	18.01	24.91	21.52	24.98
4/26/97 15:36	10.16	8.08	8.77	6.05	8.15	5.83	16.26	24.55	22.57	26.77
4/26/97 16:48	11.02	8.37	9.34	6.34	8.73	5.83	17.31	23.48	19.43	26.06
4/26/97 18:00	11.59	8.37	9.92	6.34	8.73	5.83	15.21	22.77	14.88	22.49
4/26/97 19:12	11.88	8.66	9.92	6.63	8.44	6.12	14.51	18.59	11.69	19.01
4/26/97 20:24	11.88	8.66	9.92	6.92	8.15	6.12	10.26	8.69	8.09	14.45
4/26/97 21:36	11.59	8.95	9.63	6.92	7.57	6.41	7.72	4.98	5.87	12.33
4/26/97 22:48	11.31	8.95	9.06	7.21	7.28	6.41	6.61	3.45	4.35	10.55
4/27/97 0:00	11.02	9.24	8.77	7.21	6.99	6.41	5.86	2.67	3.97	9.11
4/27/97 1:12	10.73	9.24	8.19	7.21	6.71	6.41	3.96	-0.11	3.19	7.64
4/27/97 2:24	10.44	9.24	7.91	7.21	6.42	6.41	3.19	-0.52	2.41	6.53
4/27/97 3:36	9.87	9.24	7.33	7.21	6.13	6.41	2.41	-0.52	2.02	5.41
4/27/97 4:48	9.58	9.24	7.04	7.21	5.84	6.41	3.58	3.45	1.22	5.78
4/27/97 6:00	9.58	9.24	6.75	7.21	5.84	6.12	4.34	3.45	2.02	5.41
4/27/97 7:12	9.29	8.95	6.46	7.21	5.56	6.12	3.58	3.83	2.02	5.78
4/27/97 8:24	9.01	8.95	6.46	6.92	5.56	6.12	5.86	11.21	11.34	9.47
4/27/97 9:36	9.01	8.95	6.46	6.92	5.56	6.12	8.82	17.54	18.73	11.97
4/27/97 10:48	9.01	8.95	6.75	6.92	6.13	6.12	12.39	19.99	23.27	14.8
4/27/97 12:00	9.01	8.95	7.33	6.63	6.99	6.12	14.86	22.42	30.48	15.85
4/27/97 13:12	9.29	8.66	8.19	6.63	7.86	6.12	17.31	25.27	25.77	15.15
4/27/97 14:24	9.58	8.66	9.06	6.63	8.44	6.12	19.76	27.78	16.98	15.85
4/27/97 15:36	9.58	8.66	9.92	6.92	8.73	6.12	14.51	15.79	14.17	16.9
4/27/97 16:48	9.87	8.66	10.21	6.92	9.01	6.12	16.61	20.69	16.28	15.5
4/27/97 18:00	9.87	8.66	10.49	7.21	9.01	6.41	15.21	17.89	14.53	13.04
4/27/97 19:12	9.87	8.66	10.49	7.21	8.73	6.41	13.45	13.34	13.47	11.26
4/27/97 20:24	9.87	8.95	10.21	7.49	8.44	6.7	10.26	9.42	9.91	9.83
4/27/97 21:36	9.58	8.95	9.92	7.78	8.15	6.7	8.82	6.48	8.09	8.38

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/27/97 22:48	9.58	8.95	9.63	7.78	8.15	6.7	8.46	7.22	7.36	7.64
4/28/97 0:00	9.29	8.95	9.34	7.78	7.86	6.7	6.98	6.11	6.24	7.27
4/28/97 1:12	9.29	8.95	8.77	7.78	7.57	6.7	5.11	1.09	5.11	6.16
4/28/97 2:24	9.01	8.95	8.48	7.78	7.28	6.7	3.96	1.89	4.35	5.03
4/28/97 3:36	8.72	8.66	8.19	7.78	6.99	6.7	4.34	0.69	3.58	3.49
4/28/97 4:48	8.72	8.66	7.91	7.78	6.71	6.7	2.8	-0.52	2.81	3.11
4/28/97 6:00	8.43	8.66	7.33	7.78	6.42	6.7	2.8	2.28	2.02	2.72
4/28/97 7:12	8.14	8.66	7.04	7.78	6.42	6.7	3.96	3.06	2.41	3.49
4/28/97 8:24	8.14	8.66	6.75	7.49	6.13	6.7	5.11	12.63	15.23	6.53
4/28/97 9:36	7.86	8.37	6.75	7.49	6.42	6.41	7.72	11.92	19.08	23.2
4/28/97 10:48	7.86	8.37	7.04	7.21	6.99	6.41	11.33	17.54	23.63	19.36
4/28/97 12:00	8.43	8.37	7.62	7.21	7.86	6.41	13.1	19.99	27.92	23.91
4/28/97 13:12	9.01	8.37	8.77	7.21	8.44	6.41	17.66	27.42	23.63	26.42
4/28/97 14:24	9.58	8.37	9.63	7.21	9.01	6.41	16.61	28.14	15.93	26.06
4/28/97 15:36	10.16	8.37	10.49	7.21	9.3	6.7	17.66	18.24	16.63	23.2
4/28/97 16:48	11.02	8.37	11.07	7.49	9.3	6.7	16.61	13.69	10.63	20.76
4/28/97 18:00	11.31	8.66	11.07	7.78	9.3	6.7	14.16	27.78	13.47	19.01
4/28/97 19:12	11.31	8.66	11.07	7.78	9.01	6.99	13.45	23.13	12.76	19.71
4/28/97 20:24	11.31	8.95	11.07	8.07	9.01	6.99	10.97	11.57	10.27	14.45
4/28/97 21:36	11.02	8.95	10.78	8.07	8.73	6.99	9.18	4.22	7.73	11.97
4/28/97 22:48	11.02	9.24	10.21	8.36	8.15	6.99	6.23	3.45	5.49	12.68
4/29/97 0:00	10.73	9.24	9.92	8.36	7.86	6.99	3.96	0.69	3.19	9.83
4/29/97 1:12	10.44	9.24	9.34	8.36	7.57	6.99	3.58	2.28	2.81	7.27
4/29/97 2:24	10.16	9.24	8.77	8.36	7.28	6.99	2.41	-2.62	1.22	5.03
4/29/97 3:36	9.87	9.24	8.19	8.36	6.99	6.99	0.42	-2.62	1.62	3.88
4/29/97 4:48	9.58	9.24	7.62	8.36	6.71	6.99	0.42	-2.19	0.41	2.72
4/29/97 6:00	9.29	9.24	7.33	8.07	6.42	6.99	-0.38	-3.04	0.01	3.88
4/29/97 7:12	9.01	9.24	6.75	8.07	6.13	6.99	-0.38	5.73	2.41	7.64
4/29/97 8:24	8.72	8.95	6.46	7.78	5.84	6.7	3.96	17.54	16.28	13.74
4/29/97 9:36	8.72	8.95	6.46	7.78	6.13	6.7	9.18	19.29	19.08	21.45
4/29/97 10:48	8.72	8.95	6.75	7.49	6.71	6.7	13.45	20.69	23.98	21.1
4/29/97 12:00	9.01	8.95	7.62	7.49	7.57	6.7	15.21	25.63	28.64	23.2
4/29/97 13:12	9.29	8.66	8.48	7.49	8.15	6.7	18.01	25.63	27.2	24.27
4/29/97 14:24	9.87	8.66	9.63	7.49	9.01	6.7	20.46	27.78	26.48	25.7
4/29/97 15:36	10.16	8.95	10.49	7.49	9.88	6.7	19.06	31.83	27.56	26.42
4/29/97 16:48	10.73	8.95	11.36	7.49	10.45	6.7	23.96	32.21	22.57	25.7
4/29/97 18:00	11.02	8.95	11.93	7.78	10.45	6.99	20.11	31.08	22.22	23.56
4/29/97 19:12	11.31	8.95	12.22	8.07	10.45	6.99	21.5	25.27	16.63	21.45
4/29/97 20:24	11.31	9.24	12.22	8.36	10.16	7.28	14.51	12.63	14.53	18.65
4/29/97 21:36	11.31	9.24	11.93	8.36	9.59	7.28	11.68	7.59	12.41	15.85
4/29/97 22:48	11.02	9.24	11.64	8.65	9.3	7.57	10.97	9.78	11.34	14.09
4/30/97 0:00	11.02	9.52	11.07	8.94	9.01	7.57	9.54	7.22	9.91	14.09
4/30/97 1:12	10.73	9.52	10.49	8.94	8.73	7.57	8.09	4.22	8.46	14.8
4/30/97 2:24	10.73	9.52	10.21	8.94	8.44	7.57	8.09	6.11	7.36	14.09
4/30/97 3:36	10.44	9.52	9.63	8.94	8.15	7.57	6.98	4.98	6.24	13.39
4/30/97 4:48	10.16	9.52	9.34	8.94	7.86	7.57	6.61	4.6	5.87	12.33
4/30/97 6:00	10.16	9.52	9.06	8.94	7.86	7.57	5.86	4.22	5.87	11.97
4/30/97 7:12	9.87	9.52	8.77	8.65	7.57	7.57	6.23	5.73	6.61	13.74
4/30/97 8:24	9.58	9.52	8.77	8.65	7.57	7.28	9.18	10.5	8.82	16.55
4/30/97 9:36	9.58	9.52	8.48	8.65	7.57	7.28	10.26	14.74	10.98	20.41
4/30/97 10:48	9.58	9.24	8.77	8.65	7.57	7.28	14.51	20.34	13.82	24.62
4/30/97 12:00	9.87	9.24	9.06	8.36	7.86	7.28	15.21	18.94	14.88	23.91
4/30/97 13:12	10.16	9.24	9.34	8.36	8.15	7.28	15.21	17.89	14.53	22.14
4/30/97 14:24	10.44	9.24	9.63	8.36	8.44	7.28	15.21	16.49	15.23	21.8

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
4/30/97 15:36	10.73	9.24	9.92	8.36	8.44	7.28	15.91	18.24	16.98	20.76
4/30/97 16:48	10.73	9.52	9.92	8.36	8.73	7.28	13.81	15.44	16.28	22.14
4/30/97 18:00	11.02	9.52	10.21	8.36	8.73	7.28	12.39	13.34	13.47	19.36
4/30/97 19:12	11.31	9.52	9.92	8.65	8.73	7.28	10.26	11.21	10.98	11.62
4/30/97 20:24	11.31	9.52	9.92	8.65	8.73	7.57	9.9	7.96	9.91	8.74
4/30/97 21:36	11.31	9.52	9.63	8.65	8.44	7.57	8.82	7.59	8.46	8.38
4/30/97 22:48	11.02	9.52	9.63	8.65	8.44	7.57	8.09	6.85	7.36	8.38
5/1/97 0:00	10.73	9.81	9.34	8.65	8.15	7.57	6.98	6.48	6.98	7.64
5/1/97 1:12	10.73	9.81	9.06	8.65	8.15	7.57	6.61	4.6	6.24	8.74
5/1/97 2:24	10.44	9.81	9.06	8.65	7.86	7.57	5.48	4.22	5.49	10.91
5/1/97 3:36	10.44	9.81	8.77	8.65	7.57	7.57	4.34	3.45	4.35	8.74
5/1/97 4:48	10.16	9.81	8.48	8.65	7.57	7.57	4.73	4.22	3.58	6.9
5/1/97 6:00	9.87	9.52	8.19	8.36	7.28	7.28	3.96	3.06	3.58	5.78
5/1/97 7:12	9.58	9.52	7.91	8.36	6.99	7.28	3.19	4.22	2.81	5.03
5/1/97 8:24	9.58	9.52	7.62	8.36	6.99	7.28	6.23	7.59	6.24	5.78
5/1/97 9:36	9.29	9.52	7.62	8.36	6.99	7.28	10.26	18.24	16.63	9.11
5/1/97 10:48	9.01	9.52	7.91	8.07	7.57	7.28	13.81	18.94	23.27	6.9
5/1/97 12:00	9.01	9.52	8.48	8.07	8.44	7.28	14.86	24.55	24.34	7.64
5/1/97 13:12	9.01	9.24	9.34	8.07	9.3	7.28	18.36	29.6	20.82	10.55
5/1/97 14:24	9.01	9.24	10.21	8.07	9.88	7.28	19.06	25.98	22.57	11.26
5/1/97 15:36	9.01	9.24	11.07	8.07	10.16	7.28	18.71	27.78	22.22	13.74
5/1/97 16:48	9.01	9.24	11.64	8.36	10.45	7.57	18.01	26.34	19.43	18.3
5/1/97 18:00	9.29	8.95	11.93	8.36	10.74	7.57	18.01	24.19	22.57	15.15
5/1/97 19:12	9.58	8.95	12.22	8.65	10.45	7.57	17.66	19.99	17.68	13.39
5/1/97 20:24	9.58	8.95	12.22	8.94	10.45	7.86	14.51	14.04	14.88	9.47
5/1/97 21:36	9.29	8.95	11.93	8.94	10.16	7.86	13.81	12.98	12.41	5.78
5/1/97 22:48	9.01	8.95	11.64	9.22	9.88	7.86	12.04	10.86	11.34	3.49
5/2/97 0:00	9.01	8.95	11.36	9.22	9.59	8.15	9.9	7.96	9.19	4.65
5/2/97 1:12	8.72	8.95	11.07	9.22	9.3	8.15	8.46	3.45	6.98	3.11
5/2/97 2:24	8.43	8.95	10.49	9.22	9.01	8.15	6.61	2.28	5.49	2.33
5/2/97 3:36	8.14	8.95	10.21	9.22	8.73	8.15	5.86	1.09	5.11	-0.48
5/2/97 4:48	7.86	8.95	9.63	9.22	8.44	8.15	5.86	1.09	3.58	-0.48
5/2/97 6:00	7.57	8.66	9.34	9.22	8.15	7.86	5.11	1.89	3.19	-0.48
5/2/97 7:12	7.28	8.66	8.77	9.22	7.86	7.86	5.11	6.85	5.87	8.01
5/2/97 8:24	7.28	8.37	8.48	8.94	7.57	7.86	9.54	17.54	13.12	9.11
5/2/97 9:36	6.99	8.37	8.48	8.94	7.86	7.86	14.51	22.77	16.98	11.26
5/2/97 10:48	6.99	8.37	8.77	8.94	8.44	7.86	18.36	24.55	21.87	14.8
5/2/97 12:00	7.28	8.37	9.34	8.65	9.01	7.86	20.81	24.19	26.13	14.8
5/2/97 13:12	7.86	8.08	9.92	8.65	9.88	7.86	21.85	27.78	25.41	17.25
5/2/97 14:24	8.14	8.08	10.49	8.65	10.45	7.86	23.96	29.23	24.69	12.33
5/2/97 15:36	8.14	8.08	11.07	8.65	11.03	7.86	22.89	27.06	26.48	9.47
5/2/97 16:48	8.43	8.08	11.36	8.94	11.31	7.86	24.67	30.34	24.69	8.38
5/2/97 18:00	8.43	8.08	11.93	8.94	11.6	8.15	24.31	29.6	23.98	6.9
5/2/97 19:12	8.43	8.08	12.22	8.94	11.6	8.15	20.81	22.07	20.48	6.53
5/2/97 20:24	8.14	8.37	12.22	9.22	11.6	8.44	18.71	18.24	17.68	6.16
5/2/97 21:36	8.14	8.37	12.22	9.51	11.31	8.44	16.96	15.44	15.93	6.16
5/2/97 22:48	8.14	8.37	11.93	9.51	11.03	8.73	15.91	14.04	13.82	6.53
5/3/97 0:00	7.86	8.37	11.64	9.51	10.74	8.73	15.21	14.39	14.17	6.53
5/3/97 1:12	7.86	8.08	11.64	9.8	10.45	8.73	14.51	13.69	13.47	6.53
5/3/97 2:24	7.86	8.08	11.36	9.8	10.16	8.73	14.16	12.63	13.82	6.16
5/3/97 3:36	7.86	8.08	11.07	9.8	10.16	8.73	13.45	12.98	13.12	6.53
5/3/97 4:48	7.86	8.08	10.78	9.8	9.88	8.73	12.39	11.92	12.05	6.53
5/3/97 6:00	7.57	8.08	10.78	9.8	9.59	8.73	12.04	11.21	11.34	5.78
5/3/97 7:12	7.57	8.08	10.49	9.8	9.3	8.73	11.68	13.69	11.69	5.41

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/3/97 8:24	7.57	8.08	10.21	9.8	9.3	8.73	14.86	18.94	15.23	5.41
5/3/97 9:36	7.57	8.08	10.21	9.51	9.59	8.73	18.71	23.48	20.13	5.78
5/3/97 10:48	7.57	8.08	10.49	9.51	9.88	8.73	21.5	28.14	26.13	5.78
5/3/97 12:00	7.57	7.79	11.07	9.51	10.45	8.73	21.16	26.34	23.98	6.16
5/3/97 13:12	7.28	7.79	11.64	9.51	10.74	8.73	21.5	25.98	23.98	6.9
5/3/97 14:24	7.28	7.79	11.93	9.51	11.03	8.73	21.16	24.19	22.92	8.01
5/3/97 15:36	7.28	7.79	12.22	9.8	11.31	8.73	21.16	24.19	20.13	10.55
5/3/97 16:48	7.57	7.79	12.22	9.8	11.6	8.73	25.38	28.14	22.57	13.74
5/3/97 18:00	7.57	7.79	12.8	9.8	11.6	9.02	20.46	20.69	19.43	14.8
5/3/97 19:12	7.86	7.79	12.8	10.09	11.6	9.02	18.01	17.89	10.98	12.68
5/3/97 20:24	8.14	7.79	12.8	10.09	11.03	9.02	11.68	10.14	8.46	10.19
5/3/97 21:36	8.14	7.79	12.51	10.09	10.74	9.02	9.9	9.42	8.09	6.9
5/3/97 22:48	8.14	7.79	12.22	10.37	10.45	9.02	8.46	8.33	7.36	6.16
5/4/97 0:00	7.86	7.79	11.64	10.37	10.16	9.02	8.46	8.33	7.36	5.03
5/4/97 1:12	7.86	7.79	11.36	10.37	9.88	9.02	8.82	9.06	8.46	3.49
5/4/97 2:24	7.57	7.79	11.07	10.37	9.59	9.02	10.62	10.14	10.27	2.33
5/4/97 3:36	7.28	7.79	10.78	10.37	9.59	9.02	8.82	8.33	8.82	1.53
5/4/97 4:48	6.99	7.79	10.78	10.09	9.59	9.02	6.98	6.48	6.98	1.14
5/4/97 6:00	6.99	7.79	10.49	10.09	9.3	9.02	5.48	5.36	5.87	0.73
5/4/97 7:12	6.7	7.79	9.92	10.09	9.01	9.02	5.11	4.98	5.11	10.55
5/4/97 8:24	6.41	7.79	9.63	10.09	8.73	8.73	5.48	5.73	5.87	18.3
5/4/97 9:36	6.41	7.51	9.34	9.8	8.73	8.73	6.61	8.69	8.09	17.95
5/4/97 10:48	6.41	7.51	9.34	9.8	8.73	8.73	6.23	7.22	6.61	19.01
5/4/97 12:00	6.99	7.51	9.34	9.8	8.73	8.73	6.61	7.59	7.36	17.95
5/4/97 13:12	7.57	7.51	9.06	9.51	9.01	8.73	6.98	10.86	10.27	20.76
5/4/97 14:24	8.43	7.51	9.06	9.51	9.01	8.73	7.35	12.63	10.27	21.1
5/4/97 15:36	9.29	7.51	9.06	9.51	9.3	8.44	11.33	14.74	13.12	22.49
5/4/97 16:48	9.87	7.51	9.34	9.51	9.88	8.44	14.51	17.19	14.53	19.71
5/4/97 18:00	10.44	7.79	9.63	9.22	9.88	8.44	15.56	19.29	18.03	18.65
5/4/97 19:12	10.73	8.08	9.92	9.22	9.88	8.73	13.81	15.44	12.41	16.9
5/4/97 20:24	10.44	8.08	9.92	9.22	9.59	8.73	9.54	11.57	8.82	11.62
5/4/97 21:36	10.16	8.37	9.63	9.22	9.3	8.73	5.86	4.6	5.11	6.53
5/4/97 22:48	9.87	8.37	9.06	9.22	9.01	8.73	4.34	0.29	3.97	5.03
5/5/97 0:00	9.58	8.37	8.77	9.22	8.44	8.73	3.58	0.69	3.19	4.65
5/5/97 1:12	9.01	8.66	8.19	9.22	8.15	8.73	3.96	0.29	2.81	3.88
5/5/97 2:24	8.72	8.66	7.91	9.22	7.86	8.44	2.8	-0.93	2.02	4.27
5/5/97 3:36	8.43	8.37	7.33	8.94	7.57	8.44	1.62	-1.77	0.82	4.27
5/5/97 4:48	8.14	8.37	7.04	8.94	7.28	8.44	0.42	-1.77	0.41	5.03
5/5/97 6:00	7.86	8.37	6.75	8.65	6.99	8.44	0.01	-2.19	0.41	5.03
5/5/97 7:12	7.57	8.37	6.46	8.65	6.99	8.15	2.02	10.14	3.97	10.19
5/5/97 8:24	7.28	8.37	6.17	8.36	6.71	8.15	5.48	10.86	8.09	14.45
5/5/97 9:36	7.28	8.08	6.46	8.36	6.99	8.15	8.09	12.98	10.27	11.26
5/5/97 10:48	7.28	8.08	6.75	8.07	7.28	7.86	11.68	20.34	14.88	13.74
5/5/97 12:00	7.28	8.08	7.33	8.07	7.86	7.86	14.16	22.07	14.17	17.25
5/5/97 13:12	7.57	7.79	7.91	8.07	8.44	7.86	14.86	18.59	18.73	14.8
5/5/97 14:24	7.86	7.79	8.48	8.07	8.73	7.86	10.62	12.28	14.88	12.68
5/5/97 15:36	8.14	7.79	8.77	8.07	9.01	7.86	8.46	10.14	9.91	12.33
5/5/97 16:48	8.14	7.79	8.77	8.07	9.01	7.86	7.35	8.69	8.46	13.39
5/5/97 18:00	8.43	7.79	8.77	8.07	8.73	7.86	6.23	7.22	6.98	16.2
5/5/97 19:12	8.72	7.79	8.77	8.36	8.73	7.86	6.23	6.48	6.24	14.8
5/5/97 20:24	8.72	8.08	8.48	8.36	8.44	8.15	5.86	6.11	6.24	12.33
5/5/97 21:36	9.01	8.08	8.19	8.36	8.15	8.15	5.86	6.11	5.87	9.11
5/5/97 22:48	9.01	8.08	8.19	8.36	8.15	8.15	5.86	6.48	6.24	8.74
5/6/97 0:00	8.72	8.08	7.91	8.36	7.86	8.15	6.23	6.48	6.24	8.01

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/6/97 1:12	8.72	8.08	7.91	8.36	7.86	7.86	6.23	6.48	6.61	6.53
5/6/97 2:24	8.43	8.08	7.91	8.36	7.57	7.86	6.23	6.48	6.24	6.16
5/6/97 3:36	8.43	8.08	7.62	8.07	7.57	7.86	6.23	6.48	6.61	6.16
5/6/97 4:48	8.14	8.08	7.62	8.07	7.57	7.86	6.23	6.11	6.24	5.41
5/6/97 6:00	8.14	8.08	7.62	8.07	7.57	7.86	5.86	6.48	5.87	4.27
5/6/97 7:12	7.86	8.08	7.62	8.07	7.28	7.86	5.86	5.73	5.11	12.33
5/6/97 8:24	7.57	8.08	7.62	8.07	7.28	7.86	5.48	5.73	5.49	18.65
5/6/97 9:36	7.57	8.08	7.33	8.07	7.28	7.86	5.11	5.73	5.87	20.76
5/6/97 10:48	7.57	8.08	7.33	7.78	7.28	7.86	5.48	6.11	5.49	20.41
5/6/97 12:00	8.14	8.08	7.33	7.78	7.28	7.57	5.48	5.73	5.87	17.25
5/6/97 13:12	8.72	7.79	7.33	7.78	7.28	7.57	6.23	6.48	6.24	20.06
5/6/97 14:24	9.29	8.08	7.33	7.78	7.28	7.57	6.61	7.59	7.36	17.6
5/6/97 15:36	9.87	8.08	7.33	7.78	7.28	7.57	7.72	9.06	8.82	19.36
5/6/97 16:48	10.44	8.08	7.33	7.78	7.57	7.57	9.9	12.98	11.69	18.3
5/6/97 18:00	10.73	8.37	7.62	7.78	7.86	7.57	12.04	17.54	14.88	17.25
5/6/97 19:12	10.73	8.37	7.91	7.78	8.15	7.57	12.39	12.63	12.05	14.8
5/6/97 20:24	10.73	8.66	8.19	7.78	8.15	7.57	9.54	10.14	9.91	11.26
5/6/97 21:36	10.44	8.66	8.19	7.78	7.86	7.57	6.61	6.48	7.36	6.53
5/6/97 22:48	10.16	8.66	7.91	7.78	7.86	7.57	6.61	6.48	5.87	5.78
5/7/97 0:00	9.87	8.95	7.62	7.78	7.57	7.57	6.23	5.73	5.11	4.65
5/7/97 1:12	9.29	8.95	7.33	7.78	7.28	7.57	5.11	4.98	3.97	2.33
5/7/97 2:24	9.01	8.95	7.04	7.78	6.99	7.57	3.58	3.45	3.58	0.33
5/7/97 3:36	8.72	8.95	6.75	7.78	6.71	7.57	2.02	3.06	1.62	-0.89
5/7/97 4:48	8.43	8.66	6.46	7.78	6.42	7.57	1.22	1.49	0.82	-1.31
5/7/97 6:00	7.86	8.66	6.17	7.49	6.42	7.57	0.42	1.09	0.01	-1.31
5/7/97 7:12	7.57	8.66	5.88	7.49	6.13	7.28	1.22	8.69	4.73	10.19
5/7/97 8:24	7.28	8.37	5.59	7.49	6.13	7.28	6.23	14.39	10.98	20.76
5/7/97 9:36	6.99	8.37	5.59	7.21	6.42	7.28	9.54	17.54	14.88	22.14
5/7/97 10:48	6.99	8.37	6.17	7.21	6.99	7.28	12.74	16.84	24.34	22.49
5/7/97 12:00	7.57	8.08	6.75	7.21	7.86	7.28	13.81	18.59	30.11	16.55
5/7/97 13:12	8.43	8.08	7.62	7.21	8.73	7.28	16.26	19.64	22.57	22.14
5/7/97 14:24	9.01	8.08	8.48	7.21	9.88	7.28	16.96	22.42	25.77	23.56
5/7/97 15:36	10.16	8.08	9.34	7.21	10.45	7.28	17.66	24.91	25.41	26.42
5/7/97 16:48	11.02	8.37	10.21	7.21	11.03	7.57	19.41	25.27	20.13	21.45
5/7/97 18:00	11.31	8.37	10.49	7.49	11.03	7.57	19.76	24.55	21.87	17.25
5/7/97 19:12	11.31	8.66	10.78	7.78	10.74	7.86	15.91	19.29	15.58	16.2
5/7/97 20:24	11.31	8.95	10.78	7.78	10.45	7.86	11.68	14.04	10.98	13.74
5/7/97 21:36	11.02	8.95	10.49	8.07	9.88	8.15	7.72	7.59	6.98	12.33
5/7/97 22:48	10.73	8.95	9.92	8.36	9.59	8.15	5.86	1.89	5.11	11.62
5/8/97 0:00	10.44	9.24	9.63	8.36	9.01	8.15	4.73	1.49	3.58	11.62
5/8/97 1:12	10.16	9.24	9.06	8.36	8.44	8.15	5.11	-0.11	3.58	10.55
5/8/97 2:24	9.87	9.24	8.48	8.36	8.15	8.15	3.96	1.89	2.81	10.19
5/8/97 3:36	9.87	9.24	7.91	8.36	7.86	8.15	4.34	1.89	2.81	10.19
5/8/97 4:48	9.58	9.24	7.62	8.36	7.57	8.15	4.73	2.67	2.81	7.64
5/8/97 6:00	9.29	9.24	7.04	8.36	6.99	7.86	5.48	4.22	3.58	6.53
5/8/97 7:12	9.29	9.24	7.04	8.07	6.99	7.86	7.35	11.92	8.09	6.53
5/8/97 8:24	9.01	8.95	6.75	8.07	6.99	7.86	10.62	17.89	12.41	6.9
5/8/97 9:36	8.72	8.95	7.04	7.78	6.99	7.86	10.97	12.28	10.98	6.9
5/8/97 10:48	8.72	8.95	7.04	7.78	7.28	7.57	13.1	16.14	11.34	6.53
5/8/97 12:00	8.72	8.95	7.33	7.78	7.57	7.57	17.66	21.03	17.33	7.64
5/8/97 13:12	8.72	8.95	7.62	7.78	8.15	7.57	15.91	15.44	16.63	8.38
5/8/97 14:24	8.72	8.66	8.19	7.78	8.44	7.57	13.45	13.69	13.12	10.91
5/8/97 15:36	8.72	8.66	8.19	7.78	8.44	7.57	12.04	12.28	11.69	13.04
5/8/97 16:48	9.01	8.66	8.48	7.78	8.73	7.57	13.1	13.69	12.76	14.09

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/8/97 18:00	9.01	8.66	8.77	7.78	8.73	7.86	15.21	16.14	15.23	17.25
5/8/97 19:12	9.29	8.66	9.06	7.78	9.01	7.86	14.16	14.74	14.17	16.55
5/8/97 20:24	9.58	8.66	9.06	7.78	9.3	7.86	12.74	11.57	12.05	14.09
5/8/97 21:36	9.58	8.66	9.06	7.78	9.01	7.86	9.54	9.06	9.55	13.04
5/8/97 22:48	9.58	8.95	9.06	8.07	9.01	7.86	7.72	7.59	8.46	14.09
5/9/97 0:00	9.58	8.95	8.77	8.07	8.73	7.86	8.46	7.96	7.73	9.11
5/9/97 1:12	9.58	8.95	8.48	8.07	8.44	7.86	6.98	6.48	6.24	9.11
5/9/97 2:24	9.58	8.95	8.19	8.07	8.44	7.86	6.23	6.11	5.87	10.91
5/9/97 3:36	9.29	8.95	8.19	8.07	8.15	7.86	6.23	6.48	5.87	10.19
5/9/97 4:48	9.29	8.95	7.91	8.07	7.86	7.86	5.86	4.98	5.11	9.11
5/9/97 6:00	9.29	8.95	7.62	8.07	7.57	7.86	4.34	3.83	3.58	8.38
5/9/97 7:12	9.01	8.95	7.33	8.07	7.57	7.86	4.34	10.5	6.61	8.01
5/9/97 8:24	9.01	8.95	7.04	7.78	7.57	7.86	7.35	14.39	12.41	8.74
5/9/97 9:36	9.01	8.95	7.04	7.78	7.86	7.86	9.54	16.84	14.17	9.47
5/9/97 10:48	8.72	8.95	7.62	7.78	8.44	7.86	12.74	18.24	23.63	8.74
5/9/97 12:00	9.01	8.66	8.19	7.78	9.3	7.86	13.45	18.94	27.2	11.62
5/9/97 13:12	9.01	8.66	8.77	7.78	9.88	7.86	16.96	18.94	19.08	12.68
5/9/97 14:24	9.01	8.66	9.34	7.78	10.74	7.86	17.31	15.79	23.63	9.47
5/9/97 15:36	9.29	8.66	9.92	7.78	11.03	7.86	16.61	22.42	20.82	11.97
5/9/97 16:48	9.29	8.66	10.49	8.07	11.6	8.15	17.66	21.73	20.48	10.19
5/9/97 18:00	9.29	8.66	10.78	8.07	11.6	8.15	15.91	19.99	21.52	10.19
5/9/97 19:12	9.29	8.66	10.78	8.36	11.31	8.44	13.81	17.89	14.17	6.53
5/9/97 20:24	9.01	8.66	10.78	8.36	11.03	8.44	10.97	13.69	10.98	5.41
5/9/97 21:36	9.01	8.95	10.49	8.65	10.45	8.44	8.09	4.22	7.36	4.65
5/9/97 22:48	8.72	8.66	9.92	8.65	9.88	8.73	5.11	3.06	6.24	3.49
5/10/97 0:00	8.43	8.66	9.34	8.65	9.59	8.73	5.11	4.98	5.49	3.11
5/10/97 1:12	8.14	8.66	8.77	8.65	9.01	8.73	4.34	1.49	3.97	3.11
5/10/97 2:24	8.14	8.66	8.48	8.65	8.73	8.73	2.02	-1.34	1.62	3.49
5/10/97 3:36	7.86	8.66	7.91	8.65	8.15	8.73	1.22	-3.04	0.41	3.88
5/10/97 4:48	7.57	8.66	7.33	8.65	7.86	8.44	0.01	-3.48	0.01	4.27
5/10/97 6:00	7.57	8.37	6.75	8.36	7.57	8.44	-0.79	-3.04	-0.81	3.88
5/10/97 7:12	7.28	8.37	6.46	8.36	7.28	8.44	-0.38	10.14	3.58	4.27
5/10/97 8:24	7.28	8.37	6.17	8.07	6.99	8.15	4.34	22.77	12.05	16.2
5/10/97 9:36	7.28	8.37	6.17	8.07	7.28	8.15	9.9	22.07	15.23	17.95
5/10/97 10:48	7.28	8.08	6.75	7.78	7.86	8.15	13.1	20.69	25.06	20.06
5/10/97 12:00	7.86	8.08	7.91	7.78	8.73	7.86	15.21	23.48	28.28	14.45
5/10/97 13:12	8.43	8.08	9.06	7.78	9.59	7.86	16.61	25.27	23.27	17.25
5/10/97 14:24	9.29	8.08	10.49	7.78	10.74	8.15	19.41	25.27	23.63	19.36
5/10/97 15:36	10.16	8.08	11.64	7.78	11.31	8.15	20.11	30.71	24.34	21.45
5/10/97 16:48	11.02	8.37	12.51	8.07	11.6	8.15	20.81	27.42	21.17	19.01
5/10/97 18:00	11.59	8.37	13.38	8.36	11.6	8.44	17.66	19.64	19.43	18.3
5/10/97 19:12	11.59	8.66	13.38	8.65	11.31	8.44	15.91	17.19	15.58	16.2
5/10/97 20:24	11.59	8.95	13.09	8.94	11.03	8.73	13.45	12.98	13.47	11.97
5/10/97 21:36	11.31	8.95	12.8	9.22	10.74	8.73	12.39	11.57	12.05	8.01
5/10/97 22:48	11.02	9.24	12.22	9.51	10.45	8.73	11.68	11.21	12.05	4.65
5/11/97 0:00	10.44	9.24	11.93	9.51	10.16	8.73	11.68	10.86	11.34	4.65
5/11/97 1:12	10.16	9.24	11.36	9.51	9.88	9.02	10.62	9.78	10.27	3.88
5/11/97 2:24	9.58	9.24	11.07	9.8	9.59	9.02	9.9	9.78	9.91	3.88
5/11/97 3:36	9.29	9.24	10.78	9.8	9.3	9.02	9.9	9.78	9.55	1.93
5/11/97 4:48	9.01	9.24	10.49	9.51	9.01	8.73	8.46	7.96	8.09	1.14
5/11/97 6:00	8.72	9.24	10.21	9.51	9.01	8.73	6.61	6.85	6.61	1.14
5/11/97 7:12	8.43	8.95	9.92	9.51	8.73	8.73	6.61	6.85	6.61	10.91
5/11/97 8:24	8.14	8.95	9.63	9.51	8.73	8.73	6.98	7.22	6.61	9.83
5/11/97 9:36	7.86	8.95	9.34	9.51	8.44	8.73	6.98	7.22	6.61	13.04

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/11/97 10:48	8.14	8.66	9.34	9.51	8.44	8.73	6.98	7.59	6.61	13.04
5/11/97 12:00	8.14	8.66	9.06	9.22	8.44	8.44	7.35	9.42	7.73	13.74
5/11/97 13:12	8.43	8.66	9.06	9.22	8.44	8.44	8.82	10.14	8.46	15.15
5/11/97 14:24	8.43	8.66	9.06	9.22	8.44	8.44	10.62	12.63	11.34	14.09
5/11/97 15:36	8.72	8.66	9.34	9.22	8.73	8.44	12.04	14.04	12.41	15.5
5/11/97 16:48	9.01	8.66	9.63	8.94	9.01	8.44	13.1	15.44	13.82	19.36
5/11/97 18:00	9.29	8.66	9.92	8.94	9.3	8.44	14.86	21.73	18.73	20.41
5/11/97 19:12	9.58	8.66	10.21	8.94	9.88	8.44	15.56	21.03	15.58	18.65
5/11/97 20:24	9.58	8.66	10.49	8.94	9.88	8.44	13.81	12.98	13.47	16.55
5/11/97 21:36	9.87	8.66	10.49	9.22	9.88	8.44	12.39	11.57	12.41	14.45
5/11/97 22:48	9.87	8.66	10.21	9.22	9.59	8.44	12.39	11.57	13.47	14.09
5/12/97 0:00	9.87	8.95	10.21	9.22	9.59	8.44	11.33	9.06	9.19	14.09
5/12/97 1:12	9.58	8.95	9.92	9.22	9.3	8.73	9.9	9.06	9.19	13.04
5/12/97 2:24	9.58	8.95	9.92	9.22	9.3	8.73	9.9	10.14	9.91	11.97
5/12/97 3:36	9.58	8.95	9.63	9.22	9.01	8.73	9.9	9.78	9.55	11.62
5/12/97 4:48	9.58	8.95	9.63	9.22	9.01	8.73	9.18	9.06	8.82	9.83
5/12/97 6:00	9.29	8.95	9.34	9.22	9.01	8.73	8.09	8.33	8.09	8.01
5/12/97 7:12	9.29	8.95	9.34	9.22	8.73	8.73	7.72	7.96	8.09	7.64
5/12/97 8:24	9.01	8.95	9.06	9.22	8.73	8.44	8.09	9.06	8.82	8.38
5/12/97 9:36	9.01	8.95	9.06	8.94	8.73	8.44	8.82	10.5	9.91	8.01
5/12/97 10:48	8.72	8.95	9.06	8.94	9.01	8.44	8.82	9.42	9.55	9.83
5/12/97 12:00	8.72	8.95	9.06	8.94	9.01	8.44	11.68	14.39	10.98	9.47
5/12/97 13:12	8.72	8.95	9.06	8.94	9.3	8.44	10.26	13.34	12.05	10.19
5/12/97 14:24	8.72	8.66	9.34	8.94	9.3	8.44	9.18	9.78	10.63	9.11
5/12/97 15:36	8.72	8.66	9.34	8.94	9.3	8.44	9.54	10.86	14.88	10.55
5/12/97 16:48	8.72	8.66	9.34	8.94	9.59	8.44	9.18	10.5	10.63	9.11
5/12/97 18:00	8.72	8.66	9.34	8.94	9.59	8.44	8.09	9.78	9.19	9.11
5/12/97 19:12	8.72	8.66	9.06	8.94	9.59	8.73	6.61	6.11	6.98	8.38
5/12/97 20:24	8.72	8.66	9.06	8.94	9.3	8.73	5.11	4.98	5.87	7.64
5/12/97 21:36	8.43	8.66	8.77	8.94	9.01	8.73	4.73	4.6	4.73	5.78
5/12/97 22:48	8.43	8.66	8.48	8.94	8.73	8.73	3.58	3.06	3.58	4.27
5/13/97 0:00	8.14	8.66	8.19	8.94	8.44	8.73	3.58	3.06	3.58	3.88
5/13/97 1:12	7.86	8.66	7.91	8.65	8.15	8.44	2.8	2.67	3.19	2.72
5/13/97 2:24	7.57	8.37	7.62	8.65	7.86	8.44	3.19	3.45	3.58	1.14
5/13/97 3:36	7.28	8.37	7.33	8.65	7.86	8.44	3.58	3.83	3.97	1.53
5/13/97 4:48	6.99	8.37	7.33	8.36	7.57	8.44	3.96	4.22	4.35	0.33
5/13/97 6:00	6.7	8.37	7.04	8.36	7.57	8.44	3.96	4.22	3.97	0.73
5/13/97 7:12	6.7	8.08	7.04	8.36	7.28	8.15	3.19	3.83	3.19	2.72
5/13/97 8:24	6.41	8.08	6.75	8.36	7.28	8.15	5.11	12.98	10.63	6.16
5/13/97 9:36	6.41	8.08	6.75	8.07	7.57	8.15	8.09	14.74	11.34	11.26
5/13/97 10:48	6.41	7.79	7.33	8.07	8.15	8.15	10.62	14.39	18.03	19.36
5/13/97 12:00	6.99	7.79	7.91	8.07	9.3	8.15	12.39	16.14	23.63	15.85
5/13/97 13:12	7.28	7.79	8.48	7.78	10.16	8.15	15.56	19.29	19.43	15.15
5/13/97 14:24	7.86	7.79	9.34	8.07	11.03	8.15	16.61	21.03	23.27	17.6
5/13/97 15:36	7.86	7.79	10.49	8.07	11.6	8.15	18.36	23.83	23.27	18.65
5/13/97 16:48	8.43	7.79	11.07	8.07	12.18	8.44	22.54	23.83	20.82	16.2
5/13/97 18:00	8.72	7.79	11.64	8.36	11.89	8.44	22.89	24.19	22.57	16.2
5/13/97 19:12	9.01	8.08	11.93	8.65	11.89	8.73	14.86	19.64	15.23	15.15
5/13/97 20:24	9.01	8.08	11.93	8.65	11.31	8.73	12.04	15.09	11.69	11.26
5/13/97 21:36	9.01	8.08	11.64	8.94	10.74	9.02	8.09	6.48	8.46	8.01
5/13/97 22:48	9.01	8.08	11.07	9.22	10.45	9.02	6.23	2.28	5.87	5.78
5/14/97 0:00	8.72	8.37	10.49	9.22	9.88	9.02	4.73	9.69	4.35	4.65
5/14/97 1:12	8.43	8.37	9.92	9.22	9.3	9.02	3.58	9.29	3.19	3.49
5/14/97 2:24	8.43	8.37	9.34	9.22	9.01	9.02	3.58	-0.93	3.19	2.72

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/14/97 3:36	8.14	8.37	8.77	9.22	8.73	9.02	2.8	-1.34	2.81	1.14
5/14/97 4:48	7.86	8.37	8.19	9.22	8.15	9.02	2.41	-1.34	2.41	0.33
5/14/97 6:00	7.57	8.37	7.91	8.94	7.86	8.73	2.41	-1.34	1.62	1.14
5/14/97 7:12	7.28	8.08	7.33	8.94	7.57	8.73	4.34	12.98	5.87	3.49
5/14/97 8:24	6.99	8.08	7.33	8.65	7.57	8.73	9.18	12.28	11.34	9.47
5/14/97 9:36	6.99	8.08	7.33	8.65	7.86	8.44	11.33	15.09	10.98	10.91
5/14/97 10:48	7.28	8.08	7.62	8.36	8.15	8.44	13.81	15.09	12.76	12.68
5/14/97 12:00	7.28	7.79	7.91	8.36	8.44	8.44	12.74	15.09	13.47	12.33
5/14/97 13:12	7.57	7.79	8.19	8.36	8.73	8.44	15.56	17.89	14.88	9.11
5/14/97 14:24	7.86	7.79	8.48	8.36	8.73	8.44	14.51	15.09	13.82	9.47
5/14/97 15:36	7.86	7.79	8.77	8.36	9.01	8.44	14.86	16.49	14.88	14.8
5/14/97 16:48	8.14	7.79	9.06	8.36	9.3	8.44	19.06	22.42	19.08	13.74
5/14/97 18:00	8.43	7.79	9.63	8.36	9.88	8.44	23.96	26.7	20.82	14.45
5/14/97 19:12	8.43	7.79	9.92	8.36	10.16	8.44	18.71	19.29	18.38	10.91
5/14/97 20:24	8.43	8.08	10.21	8.36	10.16	8.44	16.26	16.49	16.63	8.74
5/14/97 21:36	8.43	8.08	10.49	8.65	10.16	8.44	14.16	13.34	14.17	7.64
5/14/97 22:48	8.43	8.08	10.21	8.65	10.16	8.73	14.51	14.39	14.17	7.64
5/15/97 0:00	8.43	8.08	10.21	8.94	9.88	8.73	14.16	13.69	13.47	6.53
5/15/97 1:12	8.43	8.08	10.21	8.94	9.88	8.73	13.45	12.98	12.76	5.78
5/15/97 2:24	8.14	8.08	9.92	8.94	9.88	8.73	12.74	12.28	12.05	5.03
5/15/97 3:36	8.14	8.08	9.92	8.94	9.59	8.73	11.33	11.57	11.34	5.03
5/15/97 4:48	7.86	8.08	9.92	8.94	9.59	8.73	10.26	9.06	9.91	4.65
5/15/97 6:00	7.86	8.08	9.63	8.94	9.3	8.73	8.46	7.59	8.46	5.03
5/15/97 7:12	7.86	8.08	9.34	8.94	9.3	8.73	8.09	7.59	7.73	5.03
5/15/97 8:24	7.57	8.08	9.34	8.94	9.01	8.73	8.09	9.06	8.09	5.03
5/15/97 9:36	7.57	8.08	9.06	8.94	9.01	8.73	8.09	9.78	9.55	5.78
5/15/97 10:48	7.57	8.08	9.06	8.94	9.01	8.73	8.82	10.5	9.55	6.53
5/15/97 12:00	7.57	8.08	9.06	8.94	9.01	8.73	9.54	12.98	10.63	7.27
5/15/97 13:12	7.57	7.79	9.34	8.94	9.3	8.73	8.82	9.78	10.27	7.64
5/15/97 14:24	7.57	7.79	9.34	8.94	9.3	8.73	8.82	9.42	12.05	8.74
5/15/97 15:36	7.86	7.79	9.34	8.94	9.59	8.73	9.18	13.69	10.98	9.11
5/15/97 16:48	7.86	7.79	9.34	8.94	9.59	8.73	9.54	10.86	9.19	8.74
5/15/97 18:00	7.86	7.79	9.34	8.94	9.59	8.73	9.18	10.5	9.55	9.47
5/15/97 19:12	7.86	7.79	9.34	8.94	9.3	8.73	8.46	9.06	8.82	8.01
5/15/97 20:24	7.86	7.79	9.06	8.94	9.3	8.73	7.35	7.59	7.73	7.27
5/15/97 21:36	7.86	7.79	9.06	8.94	9.01	8.73	5.86	4.98	6.24	6.16
5/15/97 22:48	7.86	7.79	8.77	8.94	8.73	8.73	4.34	3.83	4.35	5.41
5/16/97 0:00	7.86	7.79	8.48	8.94	8.44	8.73	3.19	2.67	3.97	4.27
5/16/97 1:12	7.57	7.79	8.19	8.65	8.15	8.73	2.41	1.89	2.41	3.11
5/16/97 2:24	7.57	7.79	7.62	8.65	7.86	8.73	1.22	0.69	1.62	1.93
5/16/97 3:36	7.28	7.79	7.33	8.65	7.57	8.44	0.82	0.29	1.22	1.14
5/16/97 4:48	6.99	7.79	7.04	8.65	7.28	8.44	0.01	-1.77	0.41	-0.07
5/16/97 6:00	6.99	7.79	6.75	8.36	6.99	8.44	-0.38	0.29	1.22	-0.07
5/16/97 7:12	6.7	7.79	6.46	8.36	6.71	8.44	1.62	2.67	2.81	11.62
5/16/97 8:24	6.41	7.79	6.46	8.07	6.99	8.15	3.96	7.59	6.24	18.65
5/16/97 9:36	6.41	7.51	6.46	8.07	6.99	8.15	6.98	12.98	10.98	10.91
5/16/97 10:48	6.41	7.51	6.75	7.78	7.57	8.15	9.18	14.74	15.23	18.3
5/16/97 12:00	6.7	7.51	7.62	7.78	8.15	8.15	10.97	16.84	17.33	19.71
5/16/97 13:12	7.28	7.51	8.19	7.78	8.73	7.86	10.26	15.09	15.58	16.2
5/16/97 14:24	7.86	7.51	8.77	7.78	9.3	8.15	10.26	15.09	19.43	15.15
5/16/97 15:36	8.14	7.51	9.06	7.78	9.88	8.15	15.91	25.63	20.82	15.15
5/16/97 16:48	8.72	7.51	9.92	8.07	10.16	8.15	18.36	24.19	15.23	10.19
5/16/97 18:00	8.72	7.51	10.49	8.07	10.45	8.15	14.16	18.59	14.88	5.41
5/16/97 19:12	8.72	7.79	10.78	8.36	10.45	8.44	13.45	18.94	13.12	3.11

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/16/97 20:24	8.72	7.79	10.78	8.36	10.16	8.44	10.97	11.57	11.34	3.11
5/16/97 21:36	8.43	7.79	10.78	8.65	9.88	8.44	8.82	7.22	8.46	3.11
5/16/97 22:48	8.14	7.79	10.49	8.65	9.59	8.44	6.23	5.36	6.61	3.49
5/17/97 0:00	8.14	7.79	9.92	8.94	9.3	8.73	4.34	3.06	5.87	3.88
5/17/97 1:12	7.86	7.79	9.63	8.94	9.01	8.73	2.8	1.89	4.73	3.49
5/17/97 2:24	7.86	7.79	9.06	8.94	8.73	8.73	2.8	0.29	3.19	3.88
5/17/97 3:36	7.57	7.79	8.48	8.94	8.15	8.73	1.22	-1.34	2.41	3.88
5/17/97 4:48	7.57	7.79	8.19	8.94	7.86	8.44	1.22	-0.93	1.62	4.27
5/17/97 6:00	7.57	7.79	7.62	8.65	7.57	8.44	1.62	0.29	1.22	4.65
5/17/97 7:12	7.28	7.79	7.33	8.65	7.57	8.44	2.41	3.06	2.81	5.03
5/17/97 8:24	7.28	7.79	7.33	8.65	7.28	8.44	5.86	10.14	5.87	5.03
5/17/97 9:36	7.28	7.79	7.33	8.36	7.57	8.44	9.9	15.09	12.05	6.53
5/17/97 10:48	7.28	7.79	7.62	8.36	7.86	8.15	11.68	17.19	12.41	10.91
5/17/97 12:00	7.28	7.79	8.19	8.36	8.15	8.15	10.97	12.63	12.76	18.65
5/17/97 13:12	7.28	7.79	8.48	8.36	8.44	8.15	8.09	9.78	8.46	16.55
5/17/97 14:24	7.57	7.51	8.77	8.07	8.44	8.15	8.82	10.86	8.82	19.71
5/17/97 15:36	7.86	7.51	8.77	8.36	8.73	8.15	10.62	14.74	11.69	16.55
5/17/97 16:48	8.14	7.51	9.06	8.36	9.01	8.15	10.97	17.19	10.98	20.76
5/17/97 18:00	8.72	7.79	9.34	8.36	9.3	8.15	11.33	17.19	13.47	17.95
5/17/97 19:12	9.01	7.79	9.63	8.36	9.3	8.15	10.26	11.57	10.27	16.9
5/17/97 20:24	9.29	7.79	9.63	8.36	9.01	8.44	8.82	9.06	8.82	12.68
5/17/97 21:36	9.29	7.79	9.63	8.36	9.01	8.44	8.09	7.59	7.36	8.74
5/17/97 22:48	9.29	8.08	9.34	8.65	8.73	8.44	6.98	7.22	7.36	8.01
5/18/97 0:00	9.29	8.08	9.34	8.65	8.73	8.44	6.23	6.11	6.24	6.9
5/18/97 1:12	9.01	8.08	9.06	8.65	8.44	8.44	5.86	5.73	5.49	4.27
5/18/97 2:24	9.01	8.08	8.77	8.65	8.44	8.44	5.11	4.98	5.11	3.49
5/18/97 3:36	8.72	8.37	8.48	8.65	8.15	8.44	5.11	4.98	4.35	3.49
5/18/97 4:48	8.72	8.37	8.19	8.65	8.15	8.44	5.11	4.6	4.35	3.11
5/18/97 6:00	8.43	8.37	8.19	8.65	7.86	8.44	5.11	4.98	4.73	3.49
5/18/97 7:12	8.14	8.37	7.91	8.36	7.86	8.15	4.73	4.6	4.73	5.03
5/18/97 8:24	8.14	8.37	7.62	8.36	7.57	8.15	4.34	5.36	4.73	9.47
5/18/97 9:36	7.86	8.08	7.62	8.36	7.57	8.15	5.11	7.96	5.49	13.04
5/18/97 10:48	7.86	8.08	7.62	8.36	7.86	8.15	5.11	9.42	6.24	22.14
5/18/97 12:00	8.14	8.08	7.62	8.36	7.86	8.15	5.48	8.33	7.36	23.91
5/18/97 13:12	8.72	8.08	7.91	8.07	8.15	8.15	6.23	7.22	6.98	21.45
5/18/97 14:24	9.29	8.08	7.91	8.07	8.15	8.15	5.86	8.33	7.36	22.14
5/18/97 15:36	9.87	8.08	8.19	8.07	8.44	8.15	6.61	9.06	8.46	19.36
5/18/97 16:48	10.16	8.37	8.19	8.07	8.73	8.15	6.98	7.59	8.09	18.3
5/18/97 18:00	10.44	8.37	8.19	8.07	8.73	8.15	7.35	8.69	8.82	16.2
5/18/97 19:12	10.73	8.37	8.19	8.07	8.73	8.15	6.98	7.22	7.36	16.2
5/18/97 20:24	10.73	8.66	8.19	8.07	8.73	8.15	6.98	7.96	7.73	14.09
5/18/97 21:36	10.73	8.66	7.91	8.07	8.44	8.15	5.86	6.11	5.87	12.33
5/18/97 22:48	10.73	8.95	7.91	8.07	8.15	8.15	5.48	5.73	5.49	11.97
5/19/97 0:00	10.73	8.95	7.62	8.07	7.86	8.15	4.34	4.22	4.35	11.62
5/19/97 1:12	10.73	8.95	7.33	8.07	7.57	8.15	3.19	3.06	3.19	11.26
5/19/97 2:24	10.73	8.95	6.75	8.07	7.28	8.15	2.41	2.28	2.02	10.91
5/19/97 3:36	10.73	9.24	6.46	8.07	6.99	8.15	1.62	1.09	1.22	10.19
5/19/97 4:48	10.44	9.24	6.17	7.78	6.71	7.86	0.42	0.29	0.01	10.19
5/19/97 6:00	10.44	9.24	5.88	7.78	6.42	7.86	-0.38	-0.11	-0.39	9.83
5/19/97 7:12	10.44	9.24	5.59	7.78	6.13	7.86	2.41	8.33	3.58	10.19
5/19/97 8:24	10.44	9.24	5.31	7.49	6.13	7.86	4.34	12.98	10.63	10.91
5/19/97 9:36	10.16	9.24	5.31	7.49	6.71	7.57	6.61	14.74	13.47	13.39
5/19/97 10:48	10.16	9.24	5.88	7.21	7.28	7.57	9.18	14.74	15.23	15.5
5/19/97 12:00	10.16	9.24	6.75	7.21	8.15	7.57	11.33	17.19	20.82	20.06

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/19/97 13:12	10.44	9.24	7.33	7.21	9.01	7.57	12.74	17.54	17.33	19.01
5/19/97 14:24	10.44	9.24	7.91	7.21	9.59	7.57	12.04	14.74	15.23	21.45
5/19/97 15:36	10.73	9.24	8.48	7.21	9.88	7.86	13.45	17.19	16.63	16.2
5/19/97 16:48	11.02	9.52	8.77	7.21	9.88	7.86	9.9	10.86	10.98	13.39
5/19/97 18:00	11.02	9.52	8.77	7.49	9.59	7.86	5.48	5.73	5.49	13.39
5/19/97 19:12	11.31	9.52	8.77	7.49	9.3	8.15	3.58	3.45	3.58	12.33
5/19/97 20:24	11.02	9.52	8.19	7.78	8.73	8.15	3.19	3.06	3.19	9.47
5/19/97 21:36	11.02	9.52	7.91	7.78	8.15	8.15	3.58	3.45	3.19	7.27
5/19/97 22:48	11.02	9.81	7.62	7.78	7.86	8.15	3.96	4.22	3.58	6.16
5/20/97 0:00	10.73	9.81	7.33	7.78	7.57	8.15	4.34	4.22	3.97	4.27
5/20/97 1:12	10.44	9.81	7.04	7.78	7.57	8.15	3.96	3.06	3.58	3.49
5/20/97 2:24	10.16	9.81	6.75	7.78	7.28	8.15	4.34	4.22	3.19	2.33
5/20/97 3:36	9.87	9.81	6.75	7.78	6.99	7.86	4.34	4.22	3.97	0.73
5/20/97 4:48	9.58	9.52	6.75	7.49	6.99	7.86	3.96	4.22	4.35	1.14
5/20/97 6:00	9.58	9.52	6.46	7.49	6.99	7.86	4.34	4.6	4.73	2.72
5/20/97 7:12	9.29	9.52	6.46	7.49	6.99	7.86	4.73	4.98	4.73	15.15
5/20/97 8:24	9.01	9.52	6.46	7.49	6.99	7.86	4.73	4.98	4.73	22.49
5/20/97 9:36	8.72	9.24	6.46	7.21	6.99	7.57	6.23	7.59	6.61	14.09
5/20/97 10:48	8.72	9.24	6.46	7.21	6.99	7.57	6.61	7.96	6.98	24.62
5/20/97 12:00	8.72	9.24	6.75	7.21	7.28	7.57	8.46	15.79	13.12	20.76
5/20/97 13:12	9.01	9.24	7.33	7.21	7.86	7.57	9.9	15.09	16.98	15.85
5/20/97 14:24	9.58	8.95	7.91	7.21	8.44	7.57	12.74	19.29	19.78	17.25
5/20/97 15:36	9.87	8.95	8.77	7.21	9.01	7.57	14.16	21.03	15.23	19.36
5/20/97 16:48	10.16	8.95	9.63	7.49	9.59	7.57	18.36	28.14	20.82	16.55
5/20/97 18:00	10.44	9.24	10.21	7.49	9.88	7.86	15.91	26.34	16.63	14.09
5/20/97 19:12	10.44	9.24	10.78	7.78	9.88	7.86	14.51	21.03	15.23	13.74
5/20/97 20:24	10.44	9.24	10.78	7.78	9.88	7.86	11.33	15.09	11.69	10.91
5/20/97 21:36	10.44	9.24	10.78	8.07	9.59	8.15	9.18	7.59	8.82	8.38
5/20/97 22:48	10.44	9.52	10.21	8.36	9.3	8.15	8.82	4.98	7.73	6.9
5/21/97 0:00	10.44	9.52	9.92	8.36	9.01	8.15	8.09	5.36	5.87	5.78
5/21/97 1:12	10.16	9.52	9.34	8.36	8.73	8.15	5.86	3.45	4.73	4.27
5/21/97 2:24	9.87	9.52	8.77	8.36	8.44	8.15	4.73	2.67	4.35	3.11
5/21/97 3:36	9.58	9.52	8.48	8.36	8.15	8.15	3.96	1.89	3.97	2.72
5/21/97 4:48	9.29	9.52	7.91	8.36	7.86	8.15	3.96	1.09	3.97	2.33
5/21/97 6:00	9.01	9.52	7.62	8.36	7.57	8.15	4.34	1.49	3.97	2.33
5/21/97 7:12	8.72	9.24	7.33	8.36	7.57	8.15	4.73	5.36	5.49	13.74
5/21/97 8:24	8.72	9.24	7.04	8.07	7.57	8.15	8.09	12.63	8.82	17.95
5/21/97 9:36	8.43	9.24	7.33	8.07	7.57	7.86	10.97	16.14	13.12	11.26
5/21/97 10:48	8.43	8.95	7.62	8.07	8.15	7.86	15.21	22.07	16.98	21.45
5/21/97 12:00	8.43	8.95	8.48	8.07	9.3	7.86	17.66	24.91	23.27	22.84
5/21/97 13:12	9.01	8.95	9.63	8.07	10.16	7.86	19.76	27.06	21.17	19.01
5/21/97 14:24	9.58	8.95	10.49	8.07	10.74	8.15	20.46	27.06	20.48	21.1
5/21/97 15:36	10.16	8.95	11.07	8.07	11.03	8.15	19.41	21.38	19.08	22.14
5/21/97 16:48	11.02	8.95	11.36	8.36	11.31	8.44	18.01	19.29	16.98	20.41
5/21/97 18:00	11.59	9.24	11.64	8.36	11.03	8.44	16.26	16.84	16.28	20.06
5/21/97 19:12	11.88	9.24	11.64	8.65	11.03	8.44	16.61	16.84	15.58	17.25
5/21/97 20:24	12.17	9.52	11.64	8.94	11.03	8.73	14.86	15.09	13.12	13.04
5/21/97 21:36	12.17	9.52	11.36	8.94	10.74	8.73	14.16	12.98	12.41	9.11
5/21/97 22:48	11.88	9.81	11.36	9.22	10.74	8.73	11.68	11.57	12.76	7.64
5/22/97 0:00	11.88	9.81	11.07	9.22	10.45	9.02	11.68	11.57	11.34	6.9
5/22/97 1:12	11.59	9.81	11.07	9.22	10.45	9.02	11.68	11.57	10.98	4.65
5/22/97 2:24	11.02	10.1	10.78	9.22	10.45	9.02	11.68	11.21	10.63	3.11
5/22/97 3:36	10.73	10.1	10.78	9.51	10.16	9.02	10.97	10.86	10.27	3.11
5/22/97 4:48	10.44	10.1	10.78	9.51	10.16	9.02	10.62	10.5	9.91	1.93

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/22/97 6:00	10.16	10.1	10.49	9.51	10.16	9.02	10.26	10.14	9.55	1.53
5/22/97 7:12	9.87	9.81	10.49	9.51	9.88	9.02	10.26	10.5	9.55	13.74
5/22/97 8:24	9.58	9.81	10.49	9.51	9.88	9.02	10.97	12.28	10.27	20.76
5/22/97 9:36	9.29	9.81	10.49	9.51	9.88	9.02	12.04	15.79	11.34	12.33
5/22/97 10:48	9.01	9.81	10.49	9.51	10.16	9.02	14.16	17.89	13.82	24.98
5/22/97 12:00	9.29	9.52	11.07	9.51	10.45	9.02	17.66	22.77	18.03	26.77
5/22/97 13:12	9.87	9.52	11.36	9.51	11.03	9.02	17.31	19.64	20.82	23.2
5/22/97 14:24	10.44	9.52	11.93	9.51	11.6	9.02	16.61	19.99	21.52	22.49
5/22/97 15:36	11.31	9.52	12.22	9.51	11.89	9.31	14.86	15.44	17.68	23.56
5/22/97 16:48	11.88	9.52	12.22	9.8	12.18	9.31	13.1	13.34	13.82	22.49
5/22/97 18:00	12.46	9.81	11.93	9.8	11.89	9.31	11.68	17.19	12.76	23.2
5/22/97 19:12	13.04	9.81	11.93	9.8	11.89	9.59	12.39	11.57	11.34	19.01
5/22/97 20:24	13.04	10.1	11.64	10.09	11.6	9.59	9.54	12.63	9.55	16.2
5/22/97 21:36	13.33	10.1	11.07	10.09	11.03	9.59	7.72	7.22	7.36	9.47
5/22/97 22:48	13.04	10.38	10.78	10.09	10.74	9.59	6.61	6.48	6.61	7.27
5/23/97 0:00	12.75	10.38	10.21	10.09	10.16	9.59	5.48	4.6	4.73	6.53
5/23/97 1:12	12.46	10.67	9.92	10.09	9.88	9.59	4.34	3.83	3.97	6.53
5/23/97 2:24	12.17	10.67	9.34	9.8	9.3	9.59	3.58	2.67	2.81	5.03
5/23/97 3:36	11.88	10.67	8.77	9.8	9.01	9.59	2.8	1.89	1.62	4.27
5/23/97 4:48	11.59	10.67	8.48	9.8	8.73	9.31	1.62	-0.11	1.22	6.9
5/23/97 6:00	11.31	10.67	8.19	9.51	8.44	9.31	2.02	1.89	2.81	7.27
5/23/97 7:12	11.02	10.67	7.62	9.51	8.15	9.31	3.58	13.69	5.11	8.01
5/23/97 8:24	10.73	10.67	7.62	9.22	8.15	9.02	6.23	17.54	15.23	9.83
5/23/97 9:36	10.73	10.38	7.62	8.94	8.73	9.02	9.9	23.13	17.33	14.45
5/23/97 10:48	10.44	10.38	8.48	8.94	9.3	9.02	12.39	15.79	18.73	18.3
5/23/97 12:00	10.73	10.38	9.06	8.94	9.88	9.02	13.81	22.77	21.17	28.94
5/23/97 13:12	11.02	10.38	10.21	8.94	10.74	9.02	16.26	17.89	16.28	26.77
5/23/97 14:24	11.31	10.38	10.78	8.94	11.03	9.02	16.61	23.48	18.03	26.42
5/23/97 15:36	12.17	10.38	11.07	8.94	11.03	9.02	16.61	20.34	17.33	28.94
5/23/97 16:48	12.75	10.38	11.64	8.94	11.31	9.02	15.21	17.19	15.58	26.06
5/23/97 18:00	13.33	10.38	11.64	9.22	11.31	9.31	14.16	15.09	14.17	24.98
5/23/97 19:12	13.62	10.67	11.64	9.51	11.03	9.31	14.16	16.14	13.12	22.49
5/23/97 20:24	13.62	10.67	11.64	9.51	10.74	9.31	10.97	12.63	10.63	19.71
5/23/97 21:36	13.62	10.96	11.36	9.51	10.45	9.31	8.82	8.33	8.82	16.55
5/23/97 22:48	13.33	10.96	10.78	9.8	10.16	9.31	7.72	7.22	7.36	13.39
5/24/97 0:00	13.04	10.96	10.49	9.8	9.88	9.31	6.61	6.11	6.24	12.68
5/24/97 1:12	13.04	11.24	9.92	9.8	9.3	9.31	5.48	4.98	4.73	12.33
5/24/97 2:24	12.75	11.24	9.63	9.8	9.01	9.31	3.96	3.45	3.58	13.39
5/24/97 3:36	12.46	11.24	9.06	9.51	8.73	9.31	3.19	2.67	3.19	13.04
5/24/97 4:48	12.46	11.24	8.77	9.51	8.44	9.31	2.8	2.67	2.41	11.97
5/24/97 6:00	12.17	11.24	8.19	9.51	8.15	9.02	2.8	2.28	2.41	10.55
5/24/97 7:12	11.88	11.24	7.91	9.22	7.86	9.02	4.73	10.14	4.73	13.04
5/24/97 8:24	11.88	11.24	7.62	9.22	7.86	9.02	6.61	15.79	12.76	14.8
5/24/97 9:36	11.88	10.96	7.91	8.94	8.44	9.02	9.18	17.89	14.88	20.41
5/24/97 10:48	11.88	10.96	8.19	8.94	9.01	8.73	11.68	14.39	19.08	34.98
5/24/97 12:00	11.88	10.96	9.06	8.94	9.88	8.73	14.51	19.99	19.08	34.59
5/24/97 13:12	12.46	10.96	9.92	8.94	10.74	8.73	15.21	18.24	22.22	28.21
5/24/97 14:24	12.75	10.96	10.78	8.94	11.6	8.73	17.31	23.13	21.17	31.54
5/24/97 15:36	13.33	10.96	11.64	8.94	11.89	9.02	18.71	27.06	20.82	31.16
5/24/97 16:48	13.91	11.24	12.51	9.22	12.47	9.02	20.46	25.98	22.22	28.21
5/24/97 18:00	14.19	11.24	13.09	9.22	12.47	9.02	18.71	21.03	19.43	25.7
5/24/97 19:12	14.49	11.24	13.38	9.51	12.18	9.31	15.91	21.03	15.58	21.8
5/24/97 20:24	14.49	11.53	13.09	9.8	11.89	9.31	12.74	17.19	12.41	18.65
5/24/97 21:36	14.49	11.53	12.8	10.09	11.31	9.59	10.26	9.42	9.91	12.68

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/24/97 22:48	14.19	11.82	12.22	10.09	10.74	9.59	8.09	7.96	8.09	11.62
5/25/97 0:00	13.91	11.82	11.93	10.09	10.45	9.59	6.98	6.48	6.98	11.97
5/25/97 1:12	13.62	11.82	11.36	10.37	10.16	9.59	5.86	4.22	5.11	11.97
5/25/97 2:24	13.33	11.82	10.78	10.37	9.59	9.59	4.34	3.83	4.35	11.26
5/25/97 3:36	13.04	11.82	10.21	10.37	9.3	9.59	3.19	3.06	3.58	11.26
5/25/97 4:48	13.04	11.82	9.92	10.09	9.01	9.59	2.41	1.89	2.81	10.91
5/25/97 6:00	12.75	11.82	9.34	10.09	8.73	9.31	2.02	0.69	1.62	10.91
5/25/97 7:12	12.46	11.82	8.77	10.09	8.44	9.31	3.96	10.86	4.73	10.91
5/25/97 8:24	12.46	11.82	8.48	9.8	8.44	9.31	6.61	17.19	12.41	10.91
5/25/97 9:36	12.17	11.82	8.77	9.8	8.73	9.02	9.18	20.69	15.93	11.62
5/25/97 10:48	12.17	11.53	9.34	9.51	9.3	9.02	12.04	20.69	19.08	10.91
5/25/97 12:00	12.17	11.53	10.21	9.51	10.16	9.02	13.81	22.42	19.08	10.19
5/25/97 13:12	11.88	11.53	11.07	9.51	11.03	9.02	15.91	25.27	21.87	11.62
5/25/97 14:24	11.88	11.53	12.51	9.51	11.89	9.02	18.36	25.98	26.13	14.45
5/25/97 15:36	11.88	11.53	13.38	9.51	12.18	9.02	20.11	28.51	23.63	13.39
5/25/97 16:48	11.88	11.53	14.53	9.8	12.76	9.31	23.6	26.34	23.27	14.09
5/25/97 18:00	11.88	11.24	15.11	10.09	12.76	9.31	24.67	27.42	22.22	13.74
5/25/97 19:12	11.88	11.24	15.4	10.37	12.76	9.59	17.66	19.64	19.08	13.04
5/25/97 20:24	11.88	11.24	15.11	10.66	12.47	9.59	16.26	21.73	14.88	10.55
5/25/97 21:36	11.59	11.24	14.82	10.95	12.18	9.88	13.1	9.78	10.27	8.38
5/25/97 22:48	11.31	11.24	14.53	10.95	11.6	9.88	10.62	7.59	8.82	6.53
5/26/97 0:00	11.02	11.24	13.67	11.24	11.31	9.88	9.54	6.85	8.46	4.27
5/26/97 1:12	10.73	11.24	13.09	11.24	10.74	9.88	8.82	6.11	8.09	3.11
5/26/97 2:24	10.73	11.24	12.51	11.24	10.45	9.88	8.09	3.83	6.61	3.11
5/26/97 3:36	10.44	10.96	12.22	11.24	10.16	9.88	7.35	3.45	5.49	5.03
5/26/97 4:48	10.16	10.96	11.64	11.24	9.88	9.88	7.35	5.73	5.87	6.53
5/26/97 6:00	9.87	10.96	11.07	11.24	9.59	9.88	7.35	7.22	6.98	4.65
5/26/97 7:12	9.58	10.67	11.07	11.24	9.59	9.59	8.46	8.69	7.73	17.6
5/26/97 8:24	9.58	10.67	10.78	10.95	9.59	9.59	9.54	11.57	9.55	20.41
5/26/97 9:36	9.58	10.67	10.78	10.95	9.59	9.59	11.68	18.59	13.47	14.8
5/26/97 10:48	9.58	10.38	11.07	10.66	9.88	9.59	14.16	22.42	18.03	21.45
5/26/97 12:00	9.87	10.38	11.64	10.66	10.45	9.59	17.66	29.6	20.48	23.2
5/26/97 13:12	10.16	10.38	12.51	10.66	11.31	9.59	20.46	31.46	24.34	17.6
5/26/97 14:24	10.73	10.38	13.67	10.66	12.18	9.59	23.25	31.46	28.64	18.3
5/26/97 15:36	11.59	10.38	14.82	10.66	12.47	9.59	25.03	38.07	25.41	18.65
5/26/97 16:48	12.17	10.38	15.69	10.95	13.04	9.59	22.89	28.87	24.69	16.9
5/26/97 18:00	12.46	10.38	16.28	11.24	13.04	9.88	23.96	28.14	22.92	15.5
5/26/97 19:12	12.46	10.67	16.58	11.52	13.04	9.88	21.16	23.83	21.52	14.45
5/26/97 20:24	12.17	10.67	16.28	11.81	13.04	10.17	19.41	21.38	19.08	12.33
5/26/97 21:36	12.17	10.67	15.99	11.81	13.04	10.17	16.96	14.04	16.28	8.38
5/26/97 22:48	11.88	10.96	15.69	12.1	12.76	10.17	14.16	10.86	14.53	6.16
5/27/97 0:00	11.59	10.96	15.11	12.1	12.47	10.45	12.04	9.42	12.05	5.78
5/27/97 1:12	11.31	10.96	14.53	12.39	12.18	10.45	13.1	10.14	12.05	4.65
5/27/97 2:24	11.02	10.96	13.96	12.39	11.89	10.45	12.74	11.57	12.76	4.27
5/27/97 3:36	10.73	10.67	13.67	12.39	11.6	10.45	12.74	11.92	13.12	3.11
5/27/97 4:48	10.44	10.67	13.38	12.39	11.6	10.45	12.39	11.57	12.41	2.72
5/27/97 6:00	10.16	10.67	13.09	12.1	11.31	10.45	11.33	8.33	10.98	2.33
5/27/97 7:12	9.87	10.67	12.8	12.1	11.31	10.45	12.74	15.09	12.41	19.01
5/27/97 8:24	9.58	10.38	12.8	12.1	11.31	10.45	14.16	16.84	13.82	22.49
5/27/97 9:36	9.58	10.38	12.8	12.1	11.31	10.45	16.96	28.14	17.68	17.25
5/27/97 10:48	9.58	10.38	13.09	11.81	11.6	10.45	20.46	30.71	26.48	25.34
5/27/97 12:00	9.87	10.38	13.67	11.81	12.47	10.45	23.25	32.58	29.74	26.06
5/27/97 13:12	10.44	10.1	14.53	11.81	13.33	10.45	25.03	36.86	26.13	20.41
5/27/97 14:24	11.02	10.1	15.69	11.81	13.91	10.45	27.53	36.86	25.06	21.45

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/27/97 15:36	11.59	10.1	16.58	12.1	14.2	10.45	25.74	31.83	26.84	21.8
5/27/97 16:48	12.17	10.38	17.17	12.39	14.2	10.74	26.82	30.34	25.77	20.41
5/27/97 18:00	12.46	10.38	17.47	12.39	14.49	10.74	25.74	29.97	24.69	19.36
5/27/97 19:12	12.75	10.67	17.47	12.68	14.2	11.03	23.25	24.19	21.17	16.9
5/27/97 20:24	12.75	10.67	17.47	12.97	14.2	11.03	20.11	19.99	19.43	14.09
5/27/97 21:36	12.46	10.67	17.17	12.97	13.62	11.03	14.51	13.69	13.12	11.62
5/27/97 22:48	12.17	10.96	16.58	13.26	13.33	11.03	14.16	13.69	11.69	8.01
5/28/97 0:00	11.88	10.96	16.28	13.26	12.76	11.31	13.1	12.63	11.69	6.9
5/28/97 1:12	11.88	10.96	15.69	13.26	12.47	11.31	12.74	12.28	12.05	5.03
5/28/97 2:24	11.59	10.96	15.4	13.26	12.18	11.31	12.39	11.92	11.34	5.41
5/28/97 3:36	11.31	10.96	14.82	13.26	12.18	11.03	12.04	11.57	11.34	5.41
5/28/97 4:48	11.02	10.96	14.53	13.26	11.89	11.03	12.04	11.92	10.98	4.27
5/28/97 6:00	10.73	10.96	14.24	13.26	11.89	11.03	12.04	11.57	10.98	3.88
5/28/97 7:12	10.44	10.67	13.96	13.26	11.6	11.03	11.68	11.57	10.98	9.47
5/28/97 8:24	10.44	10.67	13.96	13.26	11.6	11.03	11.68	11.57	10.63	14.8
5/28/97 9:36	10.16	10.67	13.67	12.97	11.31	11.03	10.97	11.57	10.98	17.95
5/28/97 10:48	10.16	10.67	13.38	12.97	11.31	11.03	11.68	12.98	10.27	28.94
5/28/97 12:00	10.44	10.67	13.38	12.97	11.31	11.03	9.54	12.28	9.55	30.42
5/28/97 13:12	11.02	10.38	13.09	12.68	11.03	10.74	9.9	15.09	10.98	25.7
5/28/97 14:24	11.31	10.38	13.09	12.68	11.31	10.74	10.62	16.14	13.82	26.06
5/28/97 15:36	11.88	10.38	13.38	12.68	11.31	10.74	12.04	18.24	12.76	25.34
5/28/97 16:48	12.17	10.67	13.38	12.68	11.31	10.74	15.56	21.73	14.53	24.62
5/28/97 18:00	12.17	10.67	13.67	12.68	11.31	10.74	15.91	23.13	13.47	23.2
5/28/97 19:12	12.17	10.67	13.96	12.39	11.03	10.74	11.68	18.94	11.69	21.1
5/28/97 20:24	12.46	10.67	13.67	12.68	10.74	10.74	9.9	16.14	9.91	19.01
5/28/97 21:36	12.17	10.96	13.38	12.68	10.45	10.74	8.82	7.22	8.82	17.25
5/28/97 22:48	12.17	10.96	13.09	12.68	10.16	10.74	8.09	5.73	7.73	16.2
5/29/97 0:00	12.17	10.96	12.51	12.39	9.88	10.45	6.23	1.89	5.87	15.5
5/29/97 1:12	11.88	10.96	12.22	12.39	9.59	10.45	4.73	1.09	5.87	14.45
5/29/97 2:24	11.88	10.96	11.64	12.39	9.59	10.45	3.58	2.67	5.49	13.39
5/29/97 3:36	11.88	10.96	11.07	12.39	9.3	10.45	4.34	4.6	6.98	11.62
5/29/97 4:48	11.59	10.96	10.78	12.1	9.3	10.17	7.72	6.48	7.73	11.62
5/29/97 6:00	11.59	10.96	10.49	12.1	9.01	10.17	6.98	4.98	6.98	11.26
5/29/97 7:12	11.59	10.96	10.21	11.81	9.01	10.17	8.82	17.89	8.82	11.62
5/29/97 8:24	11.59	10.96	10.21	11.81	9.01	9.88	10.26	20.69	14.17	12.68
5/29/97 9:36	11.31	10.96	10.21	11.52	9.59	9.88	12.04	22.07	15.58	12.68
5/29/97 10:48	11.31	10.96	10.78	11.24	9.88	9.88	13.81	22.77	19.08	12.33
5/29/97 12:00	11.31	10.96	11.36	11.24	10.45	9.88	15.56	23.48	18.38	13.39
5/29/97 13:12	11.31	10.96	12.22	11.24	11.31	9.88	15.91	22.07	19.08	14.8
5/29/97 14:24	11.31	10.96	13.09	11.24	11.89	9.88	16.61	24.19	20.48	14.8
5/29/97 15:36	11.59	10.96	13.67	11.24	12.18	9.88	16.61	24.91	18.38	14.8
5/29/97 16:48	11.59	10.96	14.24	11.52	12.18	10.17	18.71	22.77	17.68	15.15
5/29/97 18:00	11.59	10.96	14.53	11.52	11.89	10.17	16.96	25.98	15.93	14.45
5/29/97 19:12	11.59	10.96	14.53	11.81	11.6	10.17	13.45	19.99	13.12	13.74
5/29/97 20:24	11.59	10.96	14.24	11.81	11.31	10.17	12.74	16.84	12.05	12.68
5/29/97 21:36	11.59	10.96	13.96	12.1	11.03	10.17	10.62	8.33	9.91	12.68
5/29/97 22:48	11.59	10.96	13.67	12.1	10.74	10.17	9.18	4.22	8.09	12.33
5/30/97 0:00	11.59	10.96	13.09	12.1	10.45	10.45	7.35	1.89	8.09	12.33
5/30/97 1:12	11.59	10.96	12.51	12.1	10.16	10.17	5.86	1.09	5.87	11.97
5/30/97 2:24	11.59	10.96	11.93	12.1	9.88	10.17	4.34	0.29	6.24	11.97
5/30/97 3:36	11.59	10.96	11.36	12.1	9.88	10.17	3.58	1.09	5.87	11.97
5/30/97 4:48	11.31	10.96	11.07	11.81	9.59	10.17	3.58	1.49	5.49	11.97
5/30/97 6:00	11.31	10.96	10.49	11.81	9.3	10.17	3.19	0.29	5.11	11.97
5/30/97 7:12	11.31	10.96	9.92	11.81	9.3	10.17	8.46	16.14	8.82	11.97

Date/Time	ZM-F-5	ZM-F-20	ZM-C-5	ZM-C-20	P-F-5	P-F-20	ZM-F-Air	ZM-C-Air	P-F-Air	P-C-Air
5/30/97 8:24	11.31	10.96	9.92	11.52	9.3	9.88	10.97	23.48	15.58	13.74
5/30/97 9:36	11.31	10.96	10.21	11.24	9.88	9.88	13.81	24.91	17.33	17.25
5/30/97 10:48	11.31	10.96	10.78	11.24	10.45	9.88	17.66	25.27	22.22	18.65
5/30/97 12:00	11.59	10.96	11.64	11.24	11.03	9.88	18.71	25.63	23.27	23.56
5/30/97 13:12	11.88	10.96	12.51	11.24	11.89	9.88	19.76	25.98	21.52	18.65
5/30/97 14:24	12.17	10.96	13.38	11.24	12.47	9.88	19.76	26.34	24.34	20.41
5/30/97 15:36	12.17	10.96	14.24	11.24	12.76	9.88	20.11	28.51	21.52	21.45
5/30/97 16:48	12.46	10.96	15.11	11.52	12.76	10.17	23.25	27.78	21.52	21.45
5/30/97 18:00	12.75	10.96	15.4	11.52	12.76	10.17	20.11	28.14	19.43	20.06
5/30/97 19:12	12.75	11.24	15.69	11.81	12.47	10.45	16.96	23.83	15.58	17.25
5/30/97 20:24	12.75	11.24	15.4	12.1	12.18	10.45	14.51	18.24	13.82	16.55
5/30/97 21:36	12.75	11.24	15.11	12.1	11.6	10.45	13.1	11.57	12.05	14.8
5/30/97 22:48	12.75	11.24	14.53	12.39	11.31	10.45	12.04	9.06	10.27	13.04
5/31/97 0:00	12.75	11.24	13.96	12.39	11.03	10.45	10.26	5.36	8.82	11.62
5/31/97 1:12	12.75	11.53	13.38	12.39	10.74	10.45	8.82	2.67	6.98	10.91
5/31/97 2:24	12.46	11.53	12.8	12.39	10.45	10.45	6.98	2.67	7.73	9.11
5/31/97 3:36	12.46	11.53	12.22	12.39	10.16	10.45	6.98	4.22	8.09	9.11
5/31/97 4:48	12.17	11.53	11.93	12.39	10.16	10.45	5.48	1.89	7.73	9.83
5/31/97 6:00	11.88	11.53	11.36	12.1	9.88	10.45	3.96	1.89	6.98	10.55
5/31/97 7:12	11.88	11.53	11.07	12.1	9.88	10.17	8.09	11.21	8.09	11.97
5/31/97 8:24	11.59	11.24	10.78	11.81	9.88	10.17	10.26	16.14	11.34	14.45
5/31/97 9:36	11.59	11.24	10.78	11.81	9.88	10.17	13.81	24.91	16.63	15.5
5/31/97 10:48	11.59	11.24	11.36	11.81	10.45	10.17	20.11	28.87	20.82	15.5
5/31/97 12:00	11.88	11.24	12.22	11.52	11.03	10.17	22.54	30.34	23.63	14.09
5/31/97 13:12	11.88	11.24	13.38	11.52	12.18	10.17	23.6	28.87	23.63	15.5
5/31/97 14:24	12.17	11.24	14.24	11.52	12.76	10.17	23.96	31.83	23.27	17.6
5/31/97 15:36	12.17	11.24	14.82	11.81	12.76	10.17	23.96	29.97	22.92	21.1
5/31/97 16:48	12.46	11.24	15.11	11.81	12.76	10.45	22.89	28.14	22.57	20.06
5/31/97 18:00	12.46	11.24	15.4	12.1	12.76	10.45	23.25	25.27	21.52	18.65
5/31/97 19:12	12.46	11.24	15.69	12.1	12.76	10.45	20.11	21.38	20.48	15.85
5/31/97 20:24	12.46	11.24	15.4	12.39	12.76	10.74	18.36	18.24	18.73	13.39
5/31/97 21:36	12.46	11.53	15.4	12.68	12.47	10.74	16.96	16.49	17.33	11.26
5/31/97 22:48	12.46	11.53	14.82	12.68	12.18	10.74	16.26	14.74	16.63	10.19

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