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ANNUAL REPORT ON STRONG-MOTION EARTHQUAKE RECORDS IN JAPANESE PORTS (1981)

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港湾地域強震観測年報(1981)

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Abbreviations used above:

AR: Analog record (computer plot of digitized record)
IR: Integrated velocities and displacements (computer plots of digitized record)
RS: Response spectra
NR: Numerical tables of response spectra
FS: Fourier spectra

港湾地域強震観測年報(1981)

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要　旨

港湾地域における強震観測は昭和37年より港湾技術研究所が中心となり，のちに示す港湾関係諸機関が協力して実施してきた。1981年12月現在，港湾地域強震観測網には76台の強震計が51港に設置されている。このうち57台が地盤上，17台が構造物上に，2台が地中に設置されている。使用している強震計は大別するとSMAC－B2強震計とERS強震計である。SMAC－B2強震計は強震計開発委員会で開発された機械式の加速度計である。ERS強震計は港湾技術研究所耐震構造研究室が開発した可動線輪型換振器と電磁オシログラフと組合せた加速度計であり，B型，C型およびD型がある。B型は地震動の水平2成分を記録し，C型，D型は地震動の2成分および鉛直成分を記録する。B型，C型の換振器は同一のもので，各成分ごとに独立しており，必要成分数の換振器を同一底版に固定した状態で使用されている。D型の換振器は3成分を1個の防水ケースに納めたもので，ボーリング孔内に設置するためのものである。

この年報は，前記観測網で1981年に得られた記録について報告するものであり，観測結果を強震観測表，記録波形，速度および変位波形，フーリェスペクトル，応答スペクトル，ディジタル記録などで示す。

強度観測表（Strong-Motion Earthquake Observation Results）には，対象期間中に得られたすべての記録を地震ごとに分類し，地震の資料と最大成分加速度等を示した。ただし，成分の最大加速度が20ガル以下で対応する地震が確認できないものは除いてある。地震資料（Earthquake Data）に示すものは，震度（Intensities）を除き，気象庁地震課発行の「地震月報」によっている。しかし，この年報を編集する時点で地震月報が刊行されていない地震については，地震課が速報的に発表する「地震火山概況」によっている。その場合には，そのことが地震資料に注記されている。記録番号は記録が港湾技術研究所に到着する順序で付され，Sで始まる番号の記録はSMAC－B2強震計，M，MBで始まる番号の記録はERS強震計で得られたものである。

記録波形は最大加速度が20ガル以上の記録について示した。これはディジタル記録に関連して後に説明されている手法により記録を数字化し，これを電子計算機により図化したものである。

最大加速度が約20～50ガルの範囲の記録については水平2成分の波形を，50ガル以上の記録については水平2成分と上下成分の計3成分の波形を示した。ただし，ERS－B強震計は鉛直成分を含まないので，この強震計の記録では常に水平2成分の波形のみが示される。最大加速度によって振幅の目盛の尺度を変えることがあるので注意されたい。水平成分の方向は真北を基準にして示してある。これは，SMAC－B2強震計の場合，地震動の周期が地震計の振子の固有周期よりも十分に長いときに，地盤の加速度の方向を示すように定めたものである。ERS強震計の場合には，地震動の周期が強震計の振子の固有周期付近であるときに地盤の加速度の方向を示すように定めたものである。

ディジタル記録は次のようにして作られたものである。SMAC－B2強震計の記録の場合には，マイラーベースの感光フィルムを用いて密着印画を作り，これを数字化装置により時間軸に対し，0.1 mm（これは時間にして0.01秒に対応するが，後記のように円孤誤差を含んでいるので厳密な0.01

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秒でない）ごとに振幅を読取り数字化する。数字化装置の読取範囲の関係から，記録は30～45 cmごとに区切って数字化される。数字化された記録は読取区間ごとにゼロ線が設定され，各区間の記録が接続され一本の記録とされる。この際に，円弧誤差，記録紙送り誤差（記録開始時に記録紙の送り速度が徐々に一定値に近づく立上り誤差を含む），記録ペンの軸が加速度ゼロのときに紙送り方向に平行になっていないことによる誤差が補正される。このような補正のために，記録の数字化においては各成分の波形の他に，２本の基線，各成分の記録の前にある点検時に記録した円弧も数字化される。また，記録ごとに記録紙の送り速度が読取られる。円弧補正後の記録の数値の時間間隔は一定値とはなっていないが，直線補間により 0.01 秒間隔の記録に直される。

このようにして得られたものがこの年報でSMAC－B２強震計のディジタル記録として示されている。

ERS－B.C.D強震計の記録の場合には，原記録を用いて，数字化装置により時間軸0.1mm間隔に振幅を読取り数字化する。ERS－B強震計の記録紙の送り速度（仕様値）は２cm/sでERS－C/D強震計のそれは４cm/sである。したがって，読取り時間間隔はそれぞれ 0.005 秒および 0.0025 秒である。数字化は約70cmの区間ごとに行われる。各成分の波形の他に基線が１本数字化される。また，記録紙の送り速度が読取られる。得られた記録に区間ごとにゼロ線の設定をおこなった後，記録の一本化，時間間隔の補正，平滑化を行い，0.01 秒間隔の記録とする。このようにして得られたものが，この年報でERS－B.C.D強震計のディジタル記録として示されている。

ERS－A強震計による記録はこの年報には含まれていないので，その処理方法の説明は省略する。

ディジタル記録の作表様式は表－７のディジタル記録の例に示されているとおりである。数値の配列順序は行の左から右へ，ページの左半分から右半分へと進む。ある数値が記録の先頭から何番目の数値であるかを知るには，その数値を含む行の左端のNo.の値と，その数値の欄の最上行にある（ ）内の数値を加えればよい。１行には10個の数値が含まれており，各データは空白を含めて６字となっている。これはディジタル記録を80欄カードにさん孔するときの便利さを考慮して定めたものである。カード１枚のうち60欄のデータに，残り20欄をカードの判別記号（地震番号，成分，カード番号等）に用いれば１行がカード１枚にさん孔できる。小数点は印字されていないが，数値の末尾にあるとすれば，数値の単位は 0.1 ガルとなる。

以上のようにして得られた等時間間隔のディジタル記録をフーリェ変換し，計器特性を補正する。

その結果にフィルター操作を加える。フィルターは２種類のものを用いる。ひとつは，フィルターの定数が固定されているもの（以後固定フィルターと書く）で，フィルターの定数が記録波形のフーリェ変換の特性により修正されているもの（以後パラメタ付フィルターと書く）である。

フィルター操作後，速度および変位に対するフーリェ変換を求め，それぞれのフーリェ逆変換を求めて，補正加速度，速度，変位の波形とした。本報告では，パラメタ付フィルターにより求まった加速度波形を補正加速度波形として示した。また，２種類のフィルターを用いて求まった速度，変位の波形も示した。両フィルターの特性等は本文または別報を参照されたい。(24)

２種類のフィルターを用いた結果を並列して示している理由は次の通りである。第１に，現在のところどのような特性のフィルターが最適であるかを決め難いこと，第２に，求まる速度および変位の波形はフィルターの特性に著しく依存するが，単一の方法による結果を示した場合には無批判に利用されるおそれがあること。第３に，両フィルターがそれぞれ特長を有していること，などである。

ERS－B.C.D強震計はSMAC－B２強震計に比し，より高い振動数まで感度が一様になっている。そのため，両強震計の記録波形をそのまま比較することは適切でないことがある。それ故，ERS－B.C.D強震計の記録については，SMAC－B２強震計が同一地点にあった場合に求まるであろう波形を求め，これをSMAC－B２等価加速度波形として示してある。

本年報に示されている応答スペクトルは，パラメタ付フィルターによる操作後の補正加速度波形を用いて求めたものである。前記のように，本年報に示すディジタル記録は計器補正の前段階にお

けるものである。したがって，ディジタル記録をそのまま用いて応答スペクトルを計算しても，本年報に示されているものと同一とはならない。また，1975年以前の年報では，ここに示す記録の補正方法と異なった処理によるディジタル記録および応答スペクトル等が示されていることに留意する必要がある。なお速度，変位波形の計算およびスペクトルの計算において，SMAC−B2 強震計の記録の場合は最初の1秒間を無視した。これは，記録紙送りの立上り補正は行なってはいるが，記録の最初の部分における微少な誤差が記録の極く最初の部分の補正に与える影響が大きいことを考慮しての処置である。

本年報に示されているフーリェスペクトルは，高速フーリェ変換により求めたスペクトル値をバンド幅が1ヘルツのParzenウィンドウを用いて平滑化したものである。スペクトルの計算に用いた記録の範囲は，区間長をTUSとしスペクトルを求めた区間の始点と記録の始点との時間長をTSKとして，ともに秒の単位で図中に示した。フーリェスペクトルも応答スペクトルと同様に，それぞれの強震計の計器特性の補正を行った加速度波形から求めたものである。

1981年における港湾地域強震観測には以下の諸機関が関係した。関係機関の協力に謝意を表する。

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北海道開発局港湾部　　大阪市港湾局
沖縄開発庁沖縄総合事務局

本年報は強震観測担当者の努力に負うところが非常に大きく，これら担当者の努力はこの年報の著者に準ずるものである。担当者各位に敬意と謝意を表する。なお，各観測地点で強震計の点検ならびに記録の取扱いは強震観測担当者によりなされているのでこれら担当者に対し将来，記録について問合せたい事項等が発生した時に備えるため，全担当者を以下に示す。

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ANNUAL REPORT ON STRONG-MOTION EARTHQUAKE RECORDS IN JAPANESE PORTS (1981)

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Synopsis

In the major ports in Japan, the strong-motion earthquake and the earthquake response of structures have been observed for 20 years; and as of December 1981, 1963 accelerograms were accumulated and analysed in the Earthquake Resistant Structures Laboratory. The observation network consisted of 77 strong-motion accelerographs; the 57 accelerographs were on the ground, the 2 accelerographs were in the ground and the rest on the structures. Two types of accelerographs, the SMAC-B2 accelerograph and the ERS accelerograph are being used. This report presents all the records obtained in 1981, which are listed in the tables with their maximum accelerations, being classified in accordance with earthquakes. The accelerograms of ground motions with maximum accelerations exceeding 20 Gals are reproduced in form of computer plots. For the ground acceleration records with maximum accelerations greater than 50 Gals, digitized records, response spectra, and integrated velocities and displacements are presented.

1. Introduction

The observation of the strong-motion earthquake in major ports was started in 1962 in Japan by the Earthquake Resistant Structures Laboratory of the Port and Harbour Research Institute. The observation network was expanded year by year; and as of December 1981, 77 accelerographs had been installed in 51 ports. Two types of accelerographs were being used, namely the SMAC-B2 accelerograph and the ERS accelerograph.

Until the end of 1981, 1963 accelerograms had been obtained in the network; 1457 accelerograms were obtained in the SMAC-B2 accelerographs and 506 accelerograms, in the ERS accelerographs. They were collected in the Laboratory for preliminary processing and analyses which would be explained later on. The records from 1963 to 1975 had been published in the preceding annual reports which had similar format to the present one.[1~11)]

In 1968, there occured an earthquake of large magnitude, the 1968 Tokachi-Oki Eathquake, and large number of aftershocks followed. The damage took place to buildings, roads, port facilities and many other types of structures. The largest acceleration was recorded at Hachinohe Port, which was 259 Gals. Because of the large magnitude of the earthquake and the damage to structures, the records were of great interest and importance. Therefore, the authors published a report of similar format to the annual report.[16)] Digitized data of vertical components were not included in those reports; however, the data were reported separately.[12)] In the annual report for the records of 1976 and 1977, a new data processing procedure was introduced, and accelerations after instrument correction, integrated velocities

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and displacements, and response spectra calculated with the instrument corrected accelerations were included.[13] In 1978, Japan was hit by two great earthquakes, the 1978 Izu-Oshima-Kinkai Earthquake (Magnitude 7.0) in January and the 1978 Miyagi-Ken-Oki Earthquake (Magnitude 7.4) in June. Records of these earthquakes are compiled respectively into two special reports by the new data processing of similar format to the annual report.[17,18] Damages to port structures by the 1978 Miyagi-ken-Oki Earthquake were reported in the report[28] separately.

The records and the results of the preliminary analyses in those reports have been used very effectively for analyses of the earthquake damage, for analyses of earthquake response of structures and also for designing large piers; and the usefulness of the strong-motion earthquake observation has been perfectly proved.[27]

The present report consists of the Strong-Motion Earthquake Observation Results, reproduced accelerograms, digitized records, reponse spectra, Fourier spectra, and integrated velocities and displacements. All the records in 1981 are listed in the Strong-Motion Earthquake Observation Results with their maximum accelerations. The computer plots of digitized records are prepared for the ground acceleration records with maximum accelerations exceeding 20 Gals and the digitized records and the spectra are provided on records exceeding 50 Gals.

Following organizations are being cooperated with the Port and Harbour Research Institute in the strong-motion earthquake observation:

The Bureau for Ports and Harbours of the Ministry of Transport;
The Regional Bureaus for Port Construction of the Ministry of Transport;
The Port and Harbour Division, Hokkaido Development Bureau of the Hokkaido Development Agency;
The Okinawa General Office of the Okinawa Development Agency;
The Harbour Sections of Iwate, Shizuoka, and Miyazaki Prefectural Governments; and
The Harbour Bureaus of Tokyo and Osaka Municipal Governments.

2. Network and Instruments

(1) Network

The network of the Port and Harbour Research Institute was covering the coast-line of Japan with 77 strong motion accelerographs in 1981; the location of ports where the accelerographs are installed, are shown in **Fig. 1**. The numbers attached to the ports in **Fig. 1** are corresponding to the numbers in **Table 1**. In **Table 1**, being classified in accordance with the ports, the stations are listed with the type of accelerograph, the installation condition, and the reference number. The reference number is showing the number of the Technical Note of the Port and Harbour Research Institute in which the site condition of each station is described.[19~23]

The accelerographs at the 52 stations out of the 77 stations were the SMAC-B2 accelerographs and the rest, the ERS accelerographs.

(2) Servicing

The installation and the servicing of the instruments have been made by the port construction offices of the previously described organizations under the direction of the Earthquake Resistant Structures Laboratory. It is directed that the instrument should be checked at least twice a month and after an earthquake larger than the intensity II as soon as possible. The accelerogram is sent carefully to the Earthquake Resistant Structures Laboratory by post

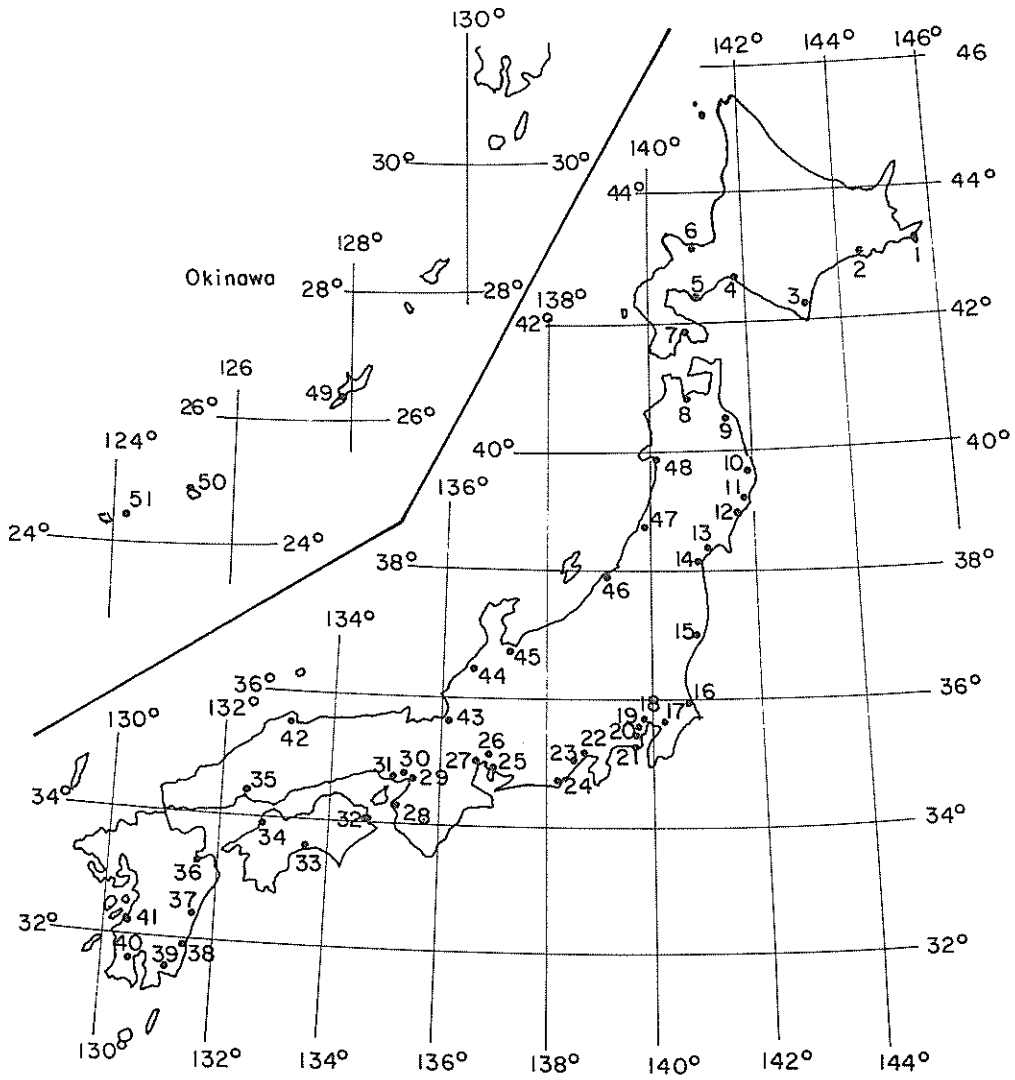


Fig. 1 Location of ports where the accelerographs are installed.
(The numbers to each port are corresponding to the numbers in Table 1)

Table 1 List of Strong-Motion Earthquake Stations of the Port and Harbour Research Institute

No. of port*	Name of port	Name of port	Type of accelerograph	Installation condition	Ref.No.**
1	Hanasaki	Hanasaki-M	ERS-C	on ground	298
2	Kushiro	Kushiro-S	SMAC-B2	on ground	34
3	Tokachi	Tokachi-M	ERS-C	on ground	298
4	Tomakomai	Tomakomai-S	SMAC-B2	on ground	107
5	Muroran	Muroran-S	SMAC-B2	on ground	34,107
6	Otaru	Otaru-S	SMAC-B2	on ground	107
7	Hakodate	Hakodate-M	ERS-C	on ground	298
8	Aomori	Aomori-S	SMAC-B2	on ground	107,156
9	Hachinohe	Hachinohe-S	SMAC-B2	on ground	34,107
10	Miyako	Miyako-S	SMAC-B2	on ground	34,107
11	Kamaishi	Kamaishi-M	ERS-C	on ground	351
		Kamaishi-MB	ERS-D	on ground	351
12	Ofunato	Ofunato-bochi-S	SMAC-B2	on ground	34,107
		Ofunato-bo-S	SMAC-B2	on structure	34,107
		Ofunato-mound-M	ERS-C	on structure	
13	Shiogama	Shiogama-kojyo-S	SMAC-B2	on ground	34,107,156
14	Sendai	Sendai-M	ERS-C	on ground	351
		Sendai-MB	ERS-D	in ground	351
15	Onahama	Onahama-ji-S	SMAC-B2	on ground	34,351
16	Kashima	Kashima-zokan-S	SMAC-B2	on ground	156
17	Chiba	Chiba-S	SMAC-B2	on ground	107
18	Tokyo	Shinagawa-S	SMAC-B2	on ground	34,107
		Shinagawa-M	ERS-A	on structure	34,107
19	Kawasaki	Kawasaki-dai 5-ko-M	ERS-B	on ground	34
		Kawasaki-dai 5-chi-M	ERS-B	on ground	34
20	Yokohama	Keihin-ji-S	SMAC-B2	on ground	34
		Yamashita-hen-S	SMAC-B2	on ground	34
		Yamashita-hen-M	ERS-C	on ground	298
		Yamashita-dai 6-S	SMAC-B2	on structure	34
		Yamashita-dai 7-M	ERS-B	on structure	34
21	Yokosuka	Koken-S	SMAC-B2	on ground	34
		Koken-M	ERS-B	on ground	34
22	Tagonoura	Tagonoura-S	SMAC-B2	on ground	107
23	Shimizu	Shimizu-kojyo-S	SMAC-B2	on ground	34,156
		Okitsu-S	SMAC-B2	on groune	34,156
		Shimizu-miho-S	SMAC-B2	on ground	298
		Shimizu-sekitan-M	ERS-B	on ground	34
24	Omaezaki	Omaezaki-M	ERS-C	on ground	351
25	Kinuura	Kinuura-ji-S	SMAC-B2	on ground	107,298
26	Nagoya	Nagoya-zokan-S	SMAC-B2	on ground	34,156
		Nagoya-inae-S	SMAC-B2	on structure	34
		Inae-sanbashi-M	ERS-B	on structure	34
		Inae-yaita-M	ERS-B	on structure	34
27	Yokkaichi	Yokkaichi-chitose-S	SMAC-B2	on ground	107
		Yokkaichi-sekitan-M	ERS-B	on structure	34

(to be continued)

(Table 1, continued)

No. of port*	Name of port	Name of port	Type of accelerograph	Installation condition	Ref.No.**
		Yokkaichi-dai 2-M	ERS-B	on structure	34
28	Wakayama	Wakayama-S	SMAC-B2	on ground	298
		Wakayama-ganpeki-S	SMAC-B2	on structure	156
29	Osaka	Osaka-ji-S	SMAC-B2	on ground	34
		Osaka-chuo-S	SMAC-B2	on structure	34
30	Amagasaki	Amagasaki-S	SMAC-B2	on ground	156
31	Kobe	Kobe-ji-S	SMAC-B2	on ground	34
		Kobe-dai 6-S	SMAC-B2	on structure	34
		Kobe-dai 8-S	SMAC-B2	on structure	34
		Maya-M	ERS-C	on ground	298
		Maya-dai 1-M	ERS-B	on structure	34
		Maya-dai 2-M	ERS-B	on structure	34
32	Komatsujima	Komatsujima-S	SMAC-B2	on ground	107
33	Kochi	Kochi-ji-S	SMAC-B2	on ground	34,298
34	Matsuyama	Matsuyama-S	SMAC-B2	on ground	156
35	Hiroshima	Hiroshima-S	SMAC-B2	on ground	34
36	Oita	Oita-S	SMAC-B2	on ground	156
37	Hososhima	Hososhima-S	SMAC-B2	on ground	34
38	Miyazaki	Miyazaki-M	ERS-C	on ground	298
39	Shibushi	Shibushi-S	SMAC-B2	on ground	
40	Kagoshima	Kagoshima-S	SMAC-B2	on ground	34
41	Minamata	Minamata-M	ERS-C	on ground	351
42	Sakaiminato	Sakaiminato-ji-S	SMAC-B2	on ground	34
43	Tsuruga	Tsuruga-S	SMAC-B2	on ground	34
44	Kanazawa	Kanazawa-S	SMAC-B2	on ground	107
45	Toyama	Toyama-S	SMAC-B2	on ground	34
46	Niigata	Niigata-ji-S	SMAC-B2	on ground	34,298
47	Sakata	Sakata-S	SMAC-B2	on ground	34
48	Akita	Akita-S	SMAC-B2	on ground	34
49	Naha	Naha-zokan-S	SMAC-B2	on ground	298
50	Hirara	Hirara-S	SMAC-B2	on ground	298
51	Ishigaki	Ishigaki-S	SMAC-B2	on ground	298

* The numbers correspond to those in Fig. 1.
** The numbers correspond to those of the Technical Note of the Port and Harbour Research Institute, in which the site condition of the station is given.

or in hand, without any treatment or reading in the station, to eliminate possible danger to damage the accelerogram by unaccustomed persons to handle it.

The Earthquake Resistant Structures Laboratory has been offering every year a training course of about 4 days to the presons who take care of the accelerographs at the stations. During the course, the trainees are instructed proper procedure to maintain the instruments and to handle the accelerograms, by the experts from the manufacturing companies of the accelerographs. They also attend introductory lectures to the earthquake engineering by the instructors inside and outside of the Institute.

(3) Stations

In the network, there are three kinds of stations; the first is to record acceleration of the ground surface, the second to record acceleration in the ground, and the third to record the earthquake response of structures. The station to record the earthquake response is always accompanied with another station to record the ground acceleration in its vicinity.

In the stations recording the ground acceleration independently, one of the horizontal components of the instrument is directed to the due north except a few number of instruments which have been installed in parallel with the structures. It is the reason that in the ports where the instruments are installed in parallel to the structures, there are many quay-walls or piers parallel each other, and that it is desirable to record components of the ground acceleration in parallel and perpendicular to the axes of the structures. At the stations recording structural response and the accompanying stations recording the ground acceleration, the instruments are installed parallel to the structures whose earthquake response is needed. Because two horizontal components of the accelerographs are always named NS and EW, the direction of the NS-component makes an angle to the due north direction in some of the accelerographs in the network.

Each station in the network has its own abbreviated name which implies its location, the type of its accelerograph and installation condition, on the ground or on the structure. For instance, the station in Hachinohe Port is named Hachinohe-S in which Hachinohe is the name of the place where the station is located and the capital letter S at the end of the abbreviated name is showing that the accelerograph in the station is the SMAC-B2 accelerograph. If the ERS accelerograph is being used in a station, the name of the place is followed by a capital letter M. As this naming is made to distinguish the stations accurately in the network, it may be a little difficult for the people outside the network to imagine the location from its name, especially for the people who does not understand the Japanese language. The detailed publication on the network will help those people to find the location as well as other necessary data of the station.

(4) Accelerographs

i) SMAC-B2 Accelerograph

The SMAC-B2 accelerograph was developed by the Committee for the Standard Strong Motion Accelerograph. It is a three component mechanical accelerograph which leaves records on a rolled waxed paper. The specifications, inside view and theoretical frequency characteristics are shown in **Table** 2 and **Figs.** 2 and 3 respectively.

In the network of the Port and Harbour Research Institute the SMAC-B2 accelerograph is practically one of the standard accelerographs; it is because at the earlier time of the

observation the SMAC-B2 accelerograph was one of the most latest models and suitable for the observation condition in port areas. After the SMAC-B2 accelerograph, several types of accelerograph were developed by the Committee. However, it is inconvenient to use many types of accelerograph in a network from view point of instrument characteristics and maintenance; and the number of the SMAC-B2 accelerograph in the network continued to increase.

The triggering levels of the accelerographs in the network are 5 gals in places where ground noise is small and 8 gals in places where ground noise is relatively large because of heavy motor trucks for construction work or cargo transportation. Exceptionally a few number of the accelerographs located beside roads carrying very heavy traffic are triggered at 11 Gals.

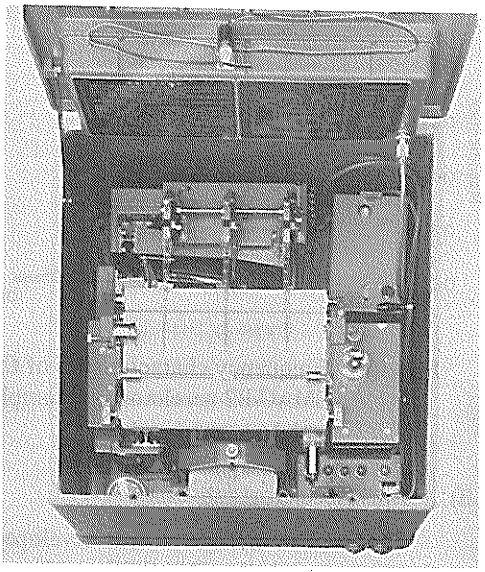


Fig. 2 Inside view of the SMAC-B2 accelerograph

Table 2 Specifications of the SMAC-B2 accelerograph

Component	2 horizontal and 1 vertical
Natural period	0.14 s.
Sensitivity	12.5 Gal/mm
Damping	Critical
Damping mechanism	Air piston
Maximum recording acceleration	500 Gal
Recording speed	10 mm/s.
Recording medium	Waxed paper
Driving mechanism for recorder	Hand-wound spring motor
Recording duration	3 min.
Recording capacity	5 earthquakes/roll
Starter	Electric contact made by vertical motion
Period of starter pendulum	0.3 s.
Starter threshold	5 Gal
Auxiliary starter	Mechanical, works at 100 gal
Time marking	1 s.
Power supply	4 dry cells
Size	54 x 54 x 37 in cm
Net weight	100 kg

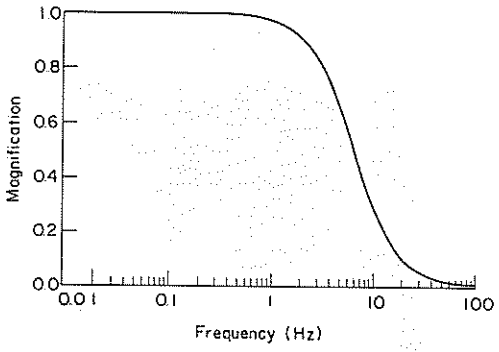


Fig. 3(a) Frequency characteristics of the SMAC-B2 accelerograph (amplitude)

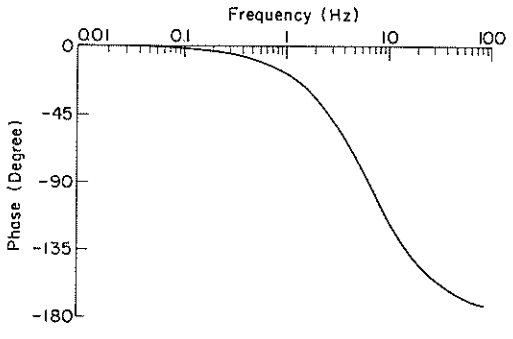


Fig. 3(b) Frequency characteristics of the SMAC-B2 accelerograph (phase)

ii) ERS Accelerograph

The ERS accelerograph was developed by the Earthquake Resistant Structures Laboratory. In the network the SMAC-B2 accelerograph is very widely used. However, there are some places where the SMAC-B2 accelerograph is not convenient to be installed, especially on structures. For instance, if the earthquake response of a pier is going to measured with the SMAC-B2 accelerograph, a house for the instrument will be constructed on the pier where many motor trucks and cargo handling equipments are working. It is almost always difficult to find a place on a port structures for the house. Then, it is considered that transducers and a recorder are separately installed in a member of a pier and in a house which is located in the vicinity of the transducers but not disturbing the cargo handling work.

The ERS accelerograph consists of transducers of moving coil type and a recorder including power supply. Originally magnetic tape data recorders were used; this type of accelerograph is called the ERS-A accelerograph. After some period of operation the magnetic tape data recorders had been replaced by electro magnetic oscillographs except one at the Shinagawa-M station. The model with an electro magnetic oscillogaph was named as the ERS-B accelerograph.

Recently a new model of similar type, the ERS-C accelerograph, had been developed and accelerographs of this type have been installed at two stations in the network. While the ERS-B accelerograph records accelerations in two horizontal components, the ERS-C accelerograph does acceleration of vertical component as well as accelerations of two horizontal ones.

In the ERS-B/C accelerograph the transducers are almost directly connected with galvanometers in the electro magnetic oscillograph; between them there exists only resistor circuits to adjust sensitivity and impedance matching. Non electronic amplifier is used to attain maximum reliability of the instrument. The overall sensitivity is more than 1 mm per Gal and it is easily adjusted by changing resistors of the circuit. Therefore the ERS-B/C accelerograph has advantage to start the observation in its maximum sensitivity and after obtaining some records to readjust the sensitivity into the appropriate one for the strong-motion accelerograph. It will enable for researchers to obtain the record of sufficient amplitude to analyze although the real acceleration amplitude is rather small and to start analyses from earlier stage of the observation.

The specifications of the ERS-B accelerograph are listed in **Table 3**, the transducer and the recorder are shown in **Fig. 4** and **5**. The corresponding information on the ERS-C accelero-

graph is given in **Table 4** and **Figs. 7** and **8**. The frequency characteristics are shown in **Fig. 6**.

The triggering levels of the ERS accelerographs are similar to those of the SMAC-B2 accelerographs.

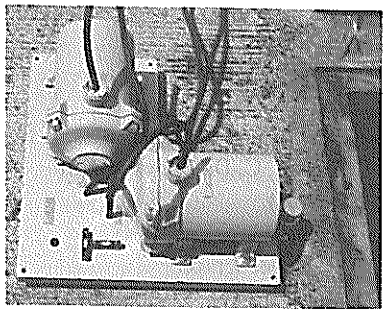


Fig. 4 Transducers of the ERS-A/B accelerograph

Fig. 5 Recorder of the ERS-B accelerograph

Table 3 Specifications of the ERS-B accelerograph

Transducer	
Type	Moving coil type
Component	2 horizontal
Natural period	0.5 s.
Damping factor	17
Damping mechanism	Electro-magnetic
Capacity	250 Gal
Coil impedance	320 ohm
Sensitivity	about 2 mv/gal (circuit open)
Water tightness	over 200 kg/cm^2
Recorder	
Type	Electro magnetic oscillograph
Natural frequency of galvanometer	100 Hz
Sensitivity	166 mm/mA
Recording paper	92 mm (width) x 30 m (length) (visible without processing)
Paper speed	2 cm/s.
Time mark	0.1 s.
Power supply	
Rechargeable battery, charged automatically when it is necessary.	

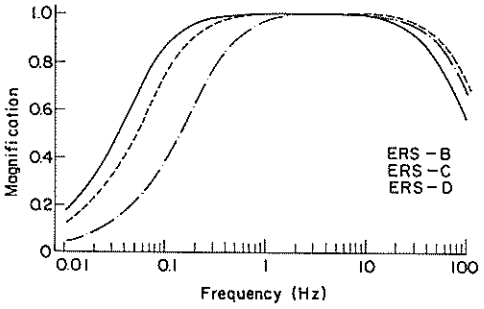


Fig. 6(a) Frequency characteristics of the ERS-B, C, D accelerograph (amplitude)

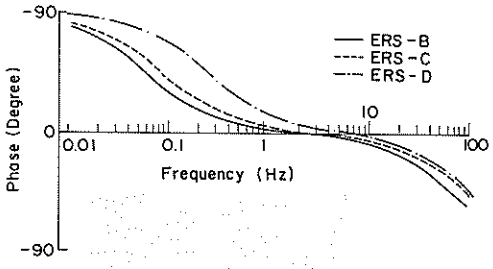


Fig. 6(b) Frequency characteristics of the ERS-B, C, D accelerograph (phase)

Table 4 Specifications of the ERS-C (D) accelerograph

Transducer	
Type	Moving coil type
Component	2 horizontal and 1 vertical
Natural frequency	3 Hz (5 Hz)
Damping factor	17 (10)
Damping mechanism	Electro-magnetic
Capacity	500 Gal
Water tightness	over 20 kg/cm^2
Recorder	
Type	Electro magnetic oscillograph
Natural frequency of galvanometer	270 Hz
Recording paper	198 mm (width) x 30 m (length) (visible without processing)
Paper speed	4 cm/s.
Time mark	0.1 s.
Sensitivity (overall)	2 Gal/mm
Power supply	
Rechargeable battery, charged automatically when it is necessary.	

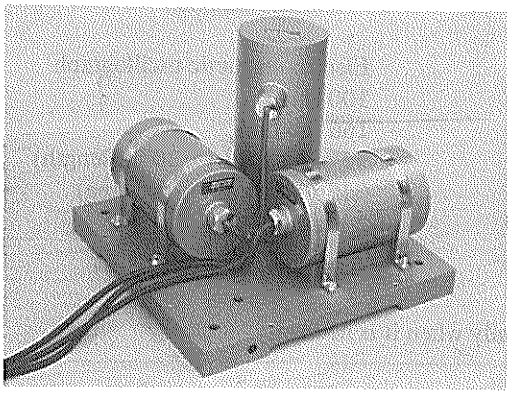


Fig. 7 Transducers of the ERS-C accelerograph

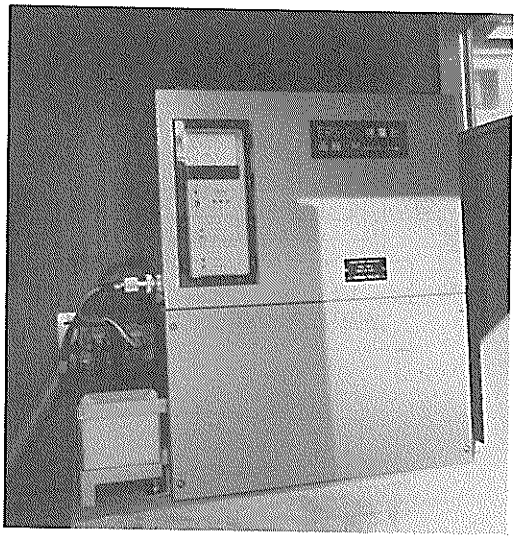


Fig. 8 Recorder of the ERS-C accelerograph

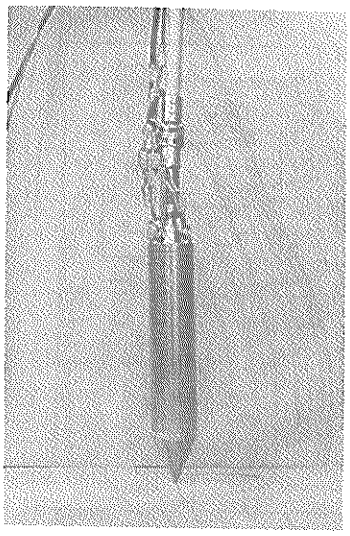


Fig. 9 Transducers of the ERS-D accelerograph

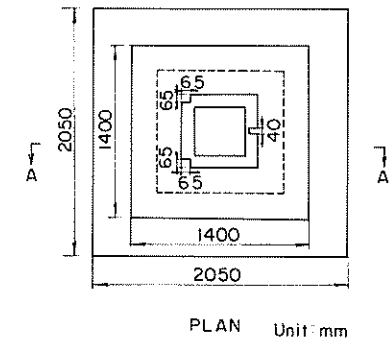
(5) Foundation and House

All the SMAC-B2 accelerographs in the network are installed on simple shallow foundations which were designed based upon the same idea. It was supposed that the shape and the dimensions of a foundation on which a seismograph is installed affects to the earthquake record obtained by it. However, as there was no convincing idea to design the most suitable foundation, the foundations of almost same size and of same shape were selected for all the accelerographs in the network. This makes it easier to compare accelerograms of an earthquake recorded at several stations. As the most of the harbour structures have shallow foundations and do not rest on bed rock, it was decided to make shallow foundations for the accelerographs, as shown in **Fig. 10**. The hollow space under the foundation was made to make the bulk density of the foundation equal to that of the soil, so that the disturbance to the records due to the foundation is eliminated.

Usually, no pile is used to support the accelerograph and its foundation, but in the stations on very soft soil or loose sand, concrete piles or wooden piles were used. For example, the foundations in the Hachinohe-S station and the Niigata-S station are supported by piles. The foundation is isolated from a house covering the instrument.

In the network only two ERS-B accelerographs are installed on ground, and the standard foundation for this accelerograph has not been established. The shapes of the two foundations are shown in the separate reports.[19,20,21] Shape and size of a standard foundation for transducers of the ERS-C accelerograph are illustrated in **Fig. 11**.

The most of the accelerographs are covered with houses which were built for the instruments. Some of the accelerographs were installed in houses which had been built for other purposes. The house built for the instruments are made of reinforced concrete or concrete blocks; some are prefabricated houses. In **Fig. 12** as an example, the house of the Onahama-ji-S station is shown.



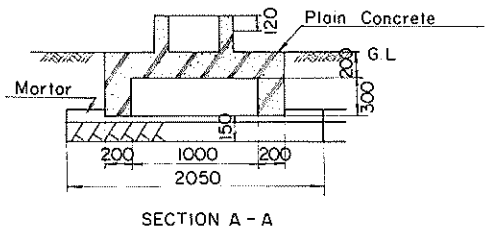


Fig. 10 Foundation for accelerograph (SMAC-B2)

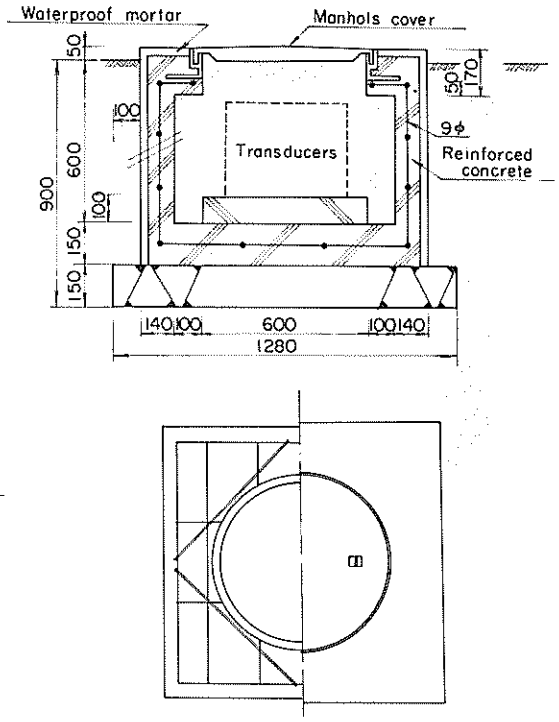


Fig. 11 Foundation for transducers of the ERS-C accelerograph

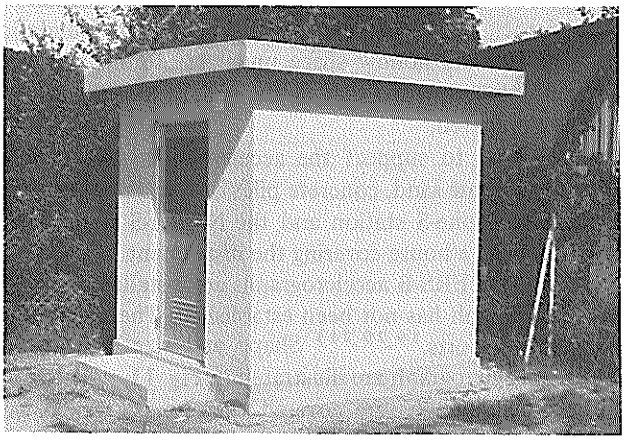


Fig. 12 House of the Onahama-ji-S station

3. Accelerogram Processing

(1) Preliminary Processing

The accelerograms collected at the Earthquake Resistant Structures Laboratory will be listed in the table "Strong-Motion Earthquake Observation Results" through the following processing.

At first, each accelerogram is given a record number according to the order of its arrival at the Laboratory. The record number for the accelerogram from the SMAC-B2 accelerograph begins with a capital letter S, and that from the ERS accelerograph, with a capital letter M.

Then, the earthquake corresponding to the accelerogram is confirmed or determined. Most of the accelerograms are sent from the stations with information on the earthquake for which the accelerograms have been obtained. A few of the accelerograms, however, are sent without such information because the accelerograms have been found in the regular servicings, and at the station it is difficult to find the corresponding earthquake. For the accelerogram without the information, the earthquake is determined considering the possible period of the recording and the earthquakes occurred in that period. The determination or the check is made based on the Seismological Bulletin of the Japan Meteorological Agency. As at the time of compilation of the annual report the Seismological Bulletins on the earthquakes in later months in a year are not available because of time lag of the publication after earthquakes, the preliminary reports (Jishin Kazan Gaikyo published by the Japan Meteorological Agency) are used to check the records in those months. Some of the accelerograms are impossible to determine their corresponding earthquakes even in the Laboratory and they are treated as earthquake unknown. It will be noted that the reliability of the earthquake determination for accelerograms of small acceleration is limited because of such procedure.

In the SMAC-B2 accelerograph, the recording is made on waxed paper which has dark red background. The recording by scratching the waxed paper with a stylus leaves the semi-translucent trace on the paper. As the waxed paper is not stable against scratchings, the original accelerogram is not appropriate to be used for the digitization. The photographic contact print is made from the original accelerogram on a special photographic sheet. The base of the sheet is made of mylar film and very stable against temperature change, humidity, and mechanical distortion.

The sizes of the sheet are 55 cm in length and 30 cm in width. If the significant portion of the record is longer than 30 ~ 45 cm, the copy will be made on two sheets or more; and a portion of about 10 cm of the record at the end of a sheet is overlappedly appearing in the successive sheet. After the processing, the copy has black traces and semi-translucent background. They are in very good contrast for the digitization.

The record from the ERS-B accelerograph is only chemically stabilized before being used for analysis.

From the stabilized original record or the photographic copy, the maximum accelerations of each component are read with the aid of a magnifying glass. In this reading the base-line setting is not so accurate as that made in digitizing the accelerogram, since this is just preliminary processing. The difference between two accuracies in base-line setting may cause a little difference between the maximum accelerations read with the magnifying glass and in the digitized record.

The accelerograms are classified in accordance with the earthquakes, and listed with their maximum accelerations in the tables "Strong-Motion Earthquake Observation Results". The items in the table will be explained in the following sub-sections. The Strong-Motion Earthquake Observation Results are compiled every two months and sent to all the stations.

The copy of the accelerogram is also sent with the necessary directions on the maintenance of the instrument to the station where the accelerogram was obtained. The Strong-Motion Earthquake Observation Results are included in the later part of this report.

(2) Earthquake Data

The earthquake data except the remarks in the Strong-Motion Earthquake Observation Results are based upon the Seismological Bulletin of the Japan Meteorological Agency. Because of the reason explained previously regarding the checking of earthquakes, the data on earthquakes in November and December are based upon the preliminary reports. Some of the remarks come from different sources.

The time in the earthquake data refers to the Japan Standard Time (JST) which is earlier than GMT by 9 hours.

The magnitude in the earthquake data is determined using Tsuboi's formula:

$$M = \frac{1}{2}\log(A^2_N + A^2_E) + 1.73 \log \Delta - 0.83 \cdots\cdots\cdots\cdots\cdots (1)$$

where, M is the magnitude. A_N and A_E are the maximum amplitudes of N- and E-components in micron respectively, and Δ is the epicentral distance in km. Those ground amplitudes are of seismometers with periods of about 5 seconds, and of waves shorter than 5 seconds. The magnitude is the averaged value over magnitudes for every $\sqrt{A^2_N + A^2_E}$ reported by the stations of JMA.

The intensity of the shock is estimated according to the scale as shown in **Table 5**.

Table 5 JMA Seismic Intensity Scale (After Ref. 26)

0:	NO FEELING Shocks too weak to cause human feelings and registered only by a seismograph.
I:	SLIGHT Extremely feeble shocks only felt by persons at rest or by those who are observant to an earthquake.
II:	WEAK Shocks felt by most persons, slight shaking of doors and Japanese latticed sliding doors (shoji).
III:	RATHER STRONG Slight shaking of houses and buildings, rattling of doors and Japanese latticed sliding doors (shoji), swinging of hanging objects like electric lamps, moving of liquids in vessels.
IV:	STRONG Strong shaking of houses and buildings, overturning of unstable objects, spilling of liquids out of vessels.
V:	VERY STRONG Cracks in the walls, overturning of gravestones, stone lanterns, etc., damage to chimneys and mud-and-plaster warehouses.
VI:	DISASTROUS Demolition of houses by less than 30% in total number, landslips, fissures in the ground, etc.
VII:	VERY DISASTROUS Demolition of houses by more than 30%, intense landslips, large fissures in the ground, faults.

(3) Accelerograph Results

The items in the accelerograph results have been explained previously. The maximum accelerations are those determined by the preliminary processing.

The accelerogram whose earthquake is unknown is not listed in the table, if both of its maximum horizontal accelerations are smaller than 20 Gals. If at least one of the maximum accelerations is larger than 20 Gals, then it is listed in the table, but the earthquake data can not be given.

4. Digitization

(1) Digitizers

Two strong-motion accelerogram digitizers are being used in the Port and Harbour Research Institute; one is for digitization of records by the SMAC-B2 accelerograph and the other for digitization of records by the ERS-B, C, D accelerograph.

a. Digitizer for records by the SMAC-B2 accelerograph

The digitizer being used for the accelerograms obtained by the SMAC-B2 accelerograph is a semiautomatic instrument with perforated paper tape output. The view and the specifications of the digitizer are shown in **Fig. 13** and **Table 6** respectively.

Table 6 Specifications of digitizer for records by the SMAC-B2 accelerograph

Digitizer Table	
Sizes of table to accommodate accelerogram	750 mm (X) x 660 mm (Y)
Effective area	430 mm (X) x 300 mm (Y)
Magnifying glass	5x, with a cross mark and illumination
Translation of magnifying glass	
Y-axis	manual by rotating a wheel
X-axis	automatic, after perforating value in paper tape punch at intervals of 0.1 mm
Analog to Digital Converter and Control	
Resolution (overall)	1000 counts per a millimeter
Indication	
Y-axis	sign and 4 digits
X-axis	4 digits
Paper Tape Punch	
Paper tape	International 8 unit specification
Code	JIS code

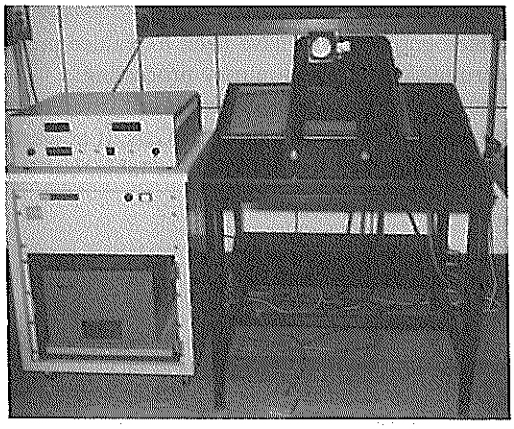


Fig. 13 Digitizer for records by the SMAC-B2 accelerograph

The digitizer works in the following way. On the digitizer table there is a magnifying glass which can be translated along the Y-axis by rotating a small wheel near the glass. A potentiometer is connected to the wheel, and the electric analog output corresponding to the position of the magnifying glass is available from the potentiometer. The magnifying glass has a cross mark and a lamp to illuminate the accelerogram within its range. The operator places the cross mark on the trace and pùshes a push-switch; then the analog output from the potentiometer is converted, by the analog to digital converter, into a digital value which will be perforated on the paper tape. The digital value is also displayed on the panel of the housing of the electronic circuits. After the conversion from analog to digital, the magnifying glass is automatically shifted along the X-axis by 0.1 mm. The code to perforate the value is the JIS code.

b. Digitizer for records by the ERS-B, C, D accelerograph

The records obtained by the ERS-B, C, D accelerograph are processed by an on-line oscillogram digitizer. The digitizer is connected to a hybrid computer which is combination of a digital and an analog computers. The digitizer and the computer are photographed in **Fig. 14** and **15**.

The records is placed on the table and an operator traces waves in the records with cursor of the digitizer. The travels of the cursor along X- and Y-axis are digitally counted and at each 0.1 mm increment or decrement of travel along the X-axis, the location counts of the cursor are transferred into memories of the computer. After tracing the necessary segment of the record, digitized values in the memories are processed by appropriate programs. According to the direction given to the computer through the I/O typewriter, output of the digitized records in the memories is available in forms of printed list, magnetic tape, perforated paper tape and analog reproduction.

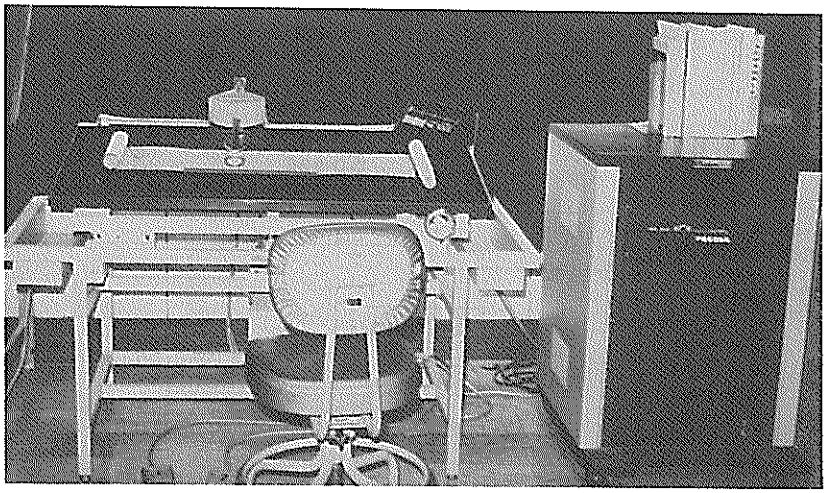


Fig. 14 Digitizer for records by the ERS-B, C, D accelerograph

Fig. 15 Hybrid computer controlling the digitizer

(2) Digitization

The digitization procedure described here is applied for records obtained since 1976.

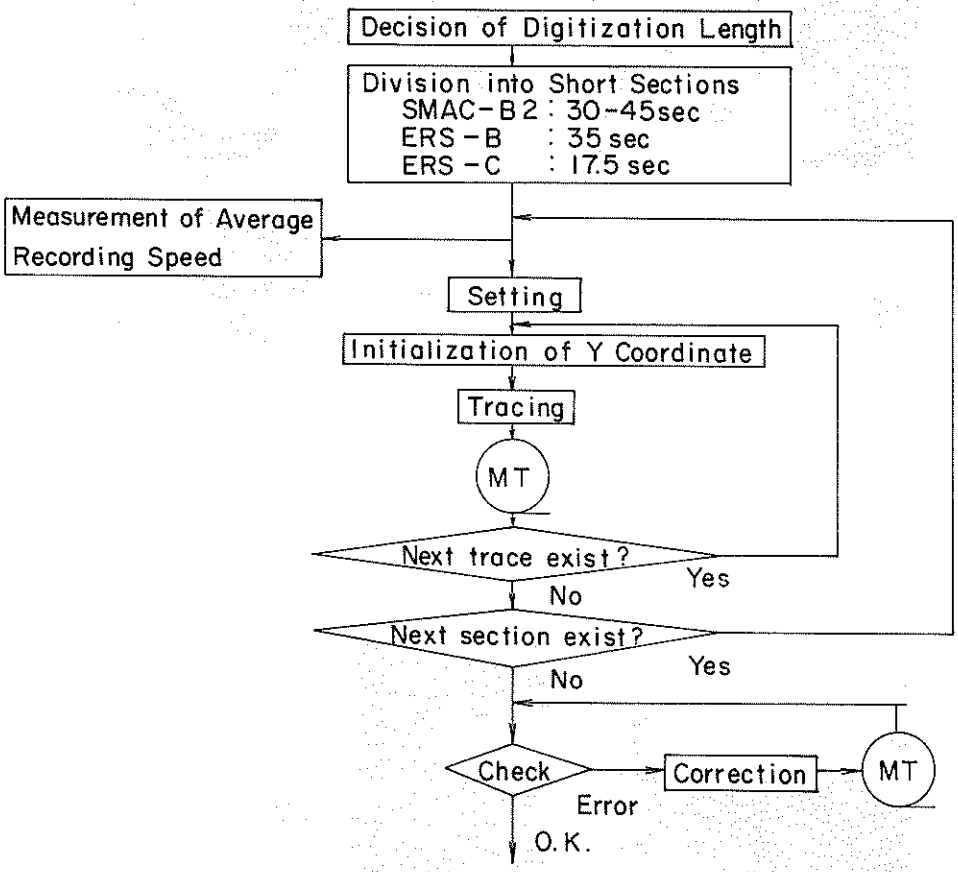


Fig. 16 Digitization procedure

i) Digitization of a record by the SMAC-B2 accelerograph

A recore by the SMAC-B2 accelerograph consists of following traces;

Recorded accelerations
Fixed traces
Timing marks
Arc traces
Free vibration traces for calibration of the characteristic periods and damping factors of the accelerograph

The fixed traces are recorded by the pens fixed to the accelerograph frame. The timing marks are pulses at intervals of one second. The arc traces are recorded manually with the recording pens supported by pivots when the paper drive mechanism is stopped. They show offset of the pens from the normal position where the pens are parallel to the direction of

paper driving.

Traces to be digitized are the recorded accelerations, the fixed traces, and the arc traces. Digitized fixed traces and digitized arc traces are used for the standard data processing described later. The timing marks are used only to obtain the average recording speed because fluctuation of the timing marks are estimated as small as the digital unit of the digitizer (0.1 mm) according to the results of the tests of the SMAC-B2 accelerographs.[24] The average error in the time marking is expected to be less than 1 % and the fluctuation is less than 0.5 % according to the results of the tests of the SMAC-B2 accelerographs.[24] In order to obtain the average paper speed, length of intervals of 30 pulses is measured by the digitizer for a record by the ERS-B, C, D accelerograph.

A record is digitized from the starting point of recording. Portion of the record to be digitized is determined so as to include discernible acceleration on the paper. This determination is done by observation of a record to be digitized. The portion of the record to be digitized is divided into some sections because of the limitation of effective area of the digitizer table. Length of each section is about 30 cm to 45 cm which is almost equivalent to 30 second to 45 seconds. Digitization unit in the amplitude is 0.008 mm which is equivalent to 0.1 Gal. Contact prints are made for each section as described previously.

Digitization procedure is summarised as follows.

(a) Setting of the copy: A copy of a record to be digitized is fixed with the magnets on the table of the digitizer. The table is rotated by an adjusting screw so that the fixed trace on the copy is parallel to X axis of the digitizer. Two points on the fixed trace located on the both ends of the section are used for this adjustment: Y coordinate value of the two points are made to coincide with each other.

(b) Initialization of Y coordinate: Y coordinate is arbitrarily initialized in the digitization procedure because "Sectional Base-Line Location" described later is to be applied in the standard data processing. Y coordinate of a first point to be digitized is usually set to be zero.

(c) Tracing: The traces are digitized by an operator in the way described in the preceding section. Three accelerations, two fixed traces, and three are traces are digitized at intervals of 0.1 mm along X axis. The intervals are almost equivalent to 0.001 s. Accelerations are, however, recorded in a cylindrical coordinate system so that the digitized amplitude values are not corresponding to equal time intervals.

(d) Recording of Digitized Data: Data punched on a paper tape are recorded in a magnetic tape with such data as record number, component, station, date and time of the earthquake, time intervals, etc.

ii) Digitization of a record by the ERS-B, C, D accelerograph

A record by the ERS-B, C, D accelerograph consists of recorded accelerations, fixed traces, and timing marks. The Fixed traces are recorded by light beams reflected from fixed mirrors attached to the oscillograph frame. They are parallel lines at intervals of 2 mm drawn in the whole breadth of the recording paper. The recorded accelerations and one of the fixed traces located in the center of the oscillogram are digitized.

Portion of the record to be digitized is divided into some sections because of limitation of the effective area of the digitizer table. Length of each section is about 70 cm, which corresponds to about 35 seconds on a record by the ERS-B accelerograph and about 17.5 seconds on a record by the ERS-C/D accelerograph.

Procedure of setting of a record by the ERS-B, C, D accelerograph and the initialization of Y coordinate is similar to that for a record by the SMAC-B2 accelerograph. The record is digitized by an operator in the way described in the preceding section. The accelerations are

degitized at intervals of 0.1 mm, which corresponds to 0.005 s. on a record by the ERS-B accelerograph and about 0.0025 s. on a record by the ERS-C/D accelerograph. The fixed trace is digitized at intervals of about 5 cm, which corresponds to 2.5 seconds on a record by the ERS-B accelerograph and 1.25 seconds on a record by the ERS-C/D accelerograph; then the digitized data are obtained by linear interpolation at intervals of 0.1 mm. The digital unit in the amplitude is 0.1 mm, which corresponds to about 0.1 Gal on a record by the ERS-B accelerograph and about 0.2 Gal or about 1.0 Gal on a record by the ERS-C/D accelerograph. In the case of the ERS-C/D accelerograph, sensitivities of the galvanometers are calibrated for each recording with calibration currents before resetting paper drive.

Timing marks are used only to measure the average recording speed of the record by the ERS-C/D accelerograph because fluctuation of the timing marks is expected as small as the digital unit of the digitizer (0.1 mm) according to the results of the tests of the ERS-C/D accelerographs. [24] They are pulses of intervals of 0.1 second generated by a crystal timer. In case of a record by the ERS-B accelerograph, timing marks are not used because accuracy of the timer depends on that of the frequency of the power supply which consists of batteries and a DC-AC inverter.

(3) Standard Data Processing

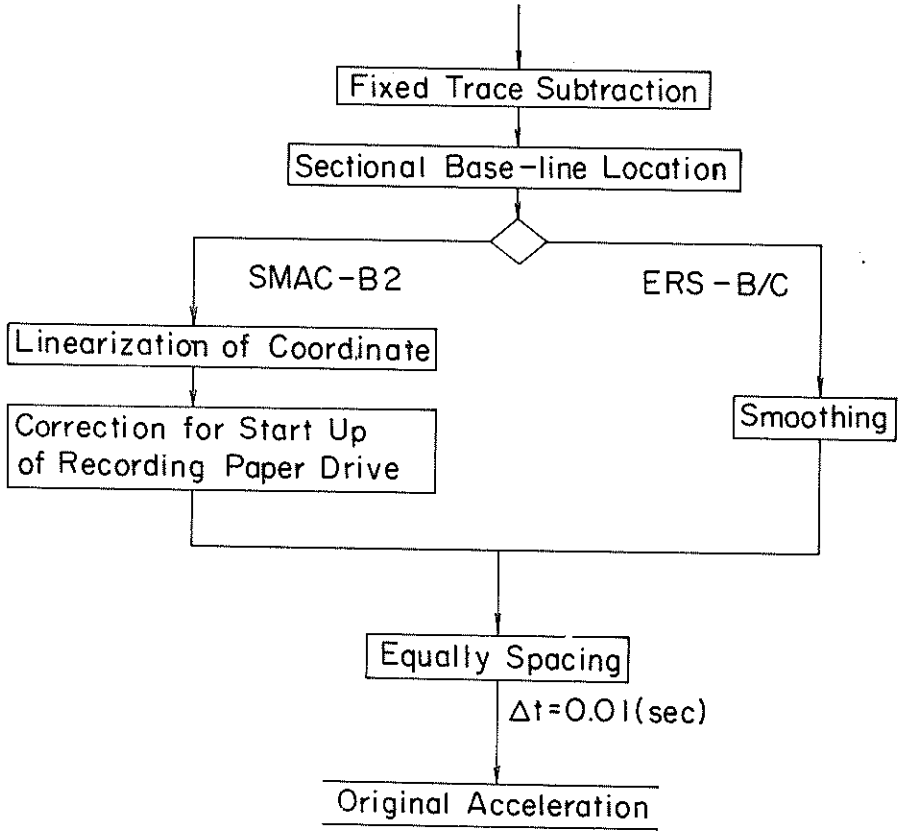


Fig. 17 Procedures of standard data processing

The procedure for the standard data processing described here is applied for records obtained since 1976, although the correction for start up of recording paper drive of the BMAC-B2 accelerograph was slightly modified for the improvement after the preceding annual report had been published. For the detailed description, see a separate report.[24] The acceleration processed through the standard data processing will be called "Original Acceleration". The original acceleration is showed in a figure and listed on a table. Data numbers of junctions of sections for digitalization are listed also on the table, if any (See Table 7).

Standard date processing for a record by the SMAC-B2 accelerograph is performed under following procedures.

1. Fixed Trace Subtraction
2. Sectional Base-line Location
3. Linearization of Coordinate
4. Correction for Start up of Recording Paper Drive
5. Equally Spacing

Standard data processing for a record by the ERS-B, C, D accelerograph is performed under following procedures.

1. Fixed Trace Subtraction
2. Sectional Base-line Location
3. Smoothing
4. Equally Spacing

Each correction procedure is described briefly as follows.

i) Fixed Trace Subtraction

This correction is applied in order to eliminate the following errors.

Errors caused by the transverse motion of recording paper in the drive mechanism of the accelerograph

Systematic errors caused by an imperfect mechanical transverse mechanism of the digitizer cross-hair system

Errors of sectional rotation of the record on the table of the digitizer at the setting

The systematic errors of the digitizer cross-hair system were found to be negligible according to the tests with a straight line made of a stretched steel wire and a stretched gut.

Digitized fixed traces are smoothed by a weighted running average scheme before subtracted from the accelerogram. The wieght function is defined by

$$w(t) = \begin{cases} \sqrt{\frac{\alpha}{\pi}} \exp\left[-\alpha t^2\right] & \text{if} \quad |t| \geqslant t_0 \\ 0 & \text{otherwise} \end{cases} \qquad \cdots\cdots\cdots\cdots\cdots\cdots (2)$$

where

$$\alpha = \left(\frac{\pi}{2}\right)^2$$

$$t_0 = \sqrt{\alpha / 5} = 0.7 \text{ (s.)}$$

At both ends of a section for digitization, α in the equation (2) is redefined by

$$\alpha = 5 / S^2 \qquad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (3)$$

where S is distance from the end of a section.

This weighted running average corresponds to a low pass filter of the cut off frequency of about 0.5 Hz.

The smoothed fixed traces are subtracted from the accelerogram. In the case of a record

Table 7 Example of digitized record

RECORD – S-1043 COMPONENT – W25N
STATION – ONAHAMA-S DATE AND TIME – 1977-12-17-00-10
TOTAL NUMBER OF DATA – 4600
SAMPLING INTERVAL – 0.010 (SEC) UNIT – 0.1 GAL
SIGNAL – GR. ACC. CORRECTION – ARC. ERR.

No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	-15	-15	-15	-15	-15	-14	-14	-14	-14	-14
10	-13	-13	-13	-13	-13	-12	-12	-12	-11	-11
20	-11	-10	-10	-10	-9	-9	-8	-8	-7	-6
30	-6	-6	-6	-6	-6	-6	-6	-7	-9	-10
40	-9	-8	-7	-7	-7	-8	-9	-10	-12	-14
50	-18	-23	-27	-28	-29	-25	-21	-17	-13	-7
60	-1	1	2	1	0	-3	-6	-8	-11	-14
70	-19	-26	-30	-30	-28	-25	-22	-15	-6	-1
80	3	6	1	-6	-9	-12	-16	-18	-19	-19
90	-13	-6	1	7	6	3	0	2	5	8
100	5	3	-1	-8	-10	-10	-8	-2	1	-1
110	1	8	6	0	7	13	13	12	8	3
120	-1	-4	-6	2	3	3	1	-1	-2	2
130	0	-5	-4	3	10	10	9	3	3	3
140	5	4	3	2	0	-4	-8	-6	-6	-6
150	-8	-12	-15	-15	-12	-9	-10	-12	-14	-18
160	-22	-22	-28	-29	-29	-29	-26	-21	-15	-8
170	0	6	11	15	15	13	9	9	7	4
180	0	-8	-18	-24	-23	-32	-31	-29	-14	-6
190	-7	-4	-10	-11	-9	-4	1	10	11	9
200	8	9	9	11	12	12	9	4	0	-7
210	-3	3	3	1	-2	-8	-11	-10	-3	0
220	0	0	1	4	1	7	13	13	10	7
230	4	-1	-7	-6	-6	-3	0	9	9	9
240	9	9	8	3	-3	-14	-27	-30	-24	-16
250	-10	-6	-3	1	3	6	11	11	8	5
260	5	1	-6	-9	-6	-8	-11	-15	-21	-21
270	-16	-10	-5	-1	0	5	6	2	0	9
280	20	14	16	23	17	12	9	7	4	-2
290	-11	-25	-25	-20	-19	-23	-23	-18	-12	-4
300	3	6	12	21	30	29	27	25	22	17
310	10	1	-4	-10	-19	-25	-24	-18	-11	-2
320	1	-1	0	0	0	4	8	12	16	17
330	19	27	28	24	17	14	6	1	-2	-9
340	-16	-15	-15	-12	-7	0	3	1	2	-1
350	0	-1	2	11	11	10	11	13	10	6
360	-2	-12	-22	-30	-32	-32	-30	-25	-20	-17
370	-16	-16	-17	-17	-14	-7	0	5	5	3
380	-1	-2	-4	-10	-16	-26	-26	-22	-16	-11
390	-9	-4	-1	3	6	4	2	-3	-10	-10
400	-6	-3	0	4	2	5	5	6	13	15
410	17	13	10	10	11	7	-1	-4	0	3
420	9	15	16	14	13	11	11	10	7	6
430	2	-3	-10	-13	-10	-8	-4	4	11	12
440	14	14	8	5	5	0	0	-3	-4	-4
450	0	5	8	13	16	17	18	14	8	5
460	4	6	6	5	2	-1	-6	-10	-21	-30
470	-29	-29	-26	-20	-15	-9	-3	5	16	23
480	25	24	20	15	5	-17	-27	-35	-32	-32
490	-27	-22	-16	-12	-6	-1	10	4	4	1
500	-2	-11	-13	-10	-6	1	6	8	12	18

TO BE CONTINUED

CONTINUED (S-1043 W25N)

No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
510	22	20	15	6	-2	-6	-6	-6	-5	-4
520	-1	1	4	6	8	8	7	4	2	2
530	5	9	15	20	20	16	13	6	0	-1
540	-2	-8	-3	0	9	12	19	27	30	34
550	34	29	24	19	10	2	-4	-15	-14	-9
560	-4	0	7	7	4	3	0	-2	-4	-9
570	-11	-10	-6	2	14	22	28	27	21	16
580	13	8	0	-4	-13	-19	-18	-16	-18	-16
590	-20	-27	-27	-26	-26	-23	-17	-11	-5	2
600	6	15	22	21	25	24	21	18	14	9
610	4	6	12	19	23	20	18	16	12	8
620	5	-6	-16	-10	0	9	14	20	21	18
630	15	14	16	16	14	10	6	1	-4	-3
640	-2	-2	-4	1	8	1	-4	-7	-4	3
650	11	11	3	-4	-15	-21	-22	-22	-19	-15
660	-8	0	12	23	26	27	26	20	8	3
670	6	10	12	13	16	19	23	25	26	26
680	26	26	25	26	27	24	16	3	-16	-26
690	-40	-47	-53	-56	-49	-43	-30	-20	-27	-42
700	-65	-91	-134	-157	-211	-249	-292	-309	-325	-345
710	-358	-357	-352	-344	-335	-329	-328	-324	-320	-292
720	-258	-210	-153	-99	-48	4	59	118	175	220
730	254	277	293	322	382	439	467	507	535	533
740	522	502	483	471	462	460	465	472	482	483
750	467	441	396	315	220	143	96	70	65	64
760	62	55	46	31	5	-1	11	66	135	173
770	201	223	200	142	62	-90	-278	-393	-485	-671
780	-737	-801	-728	-605	-446	-241	-4	215	368	444
790	492	500	452	372	239	3	-102	-236	-505	-649
800	-696	-711	-700	-676	-601	-508	-397	-253	-105	31
810	135	177	184	176	130	54	-8	-75	-156	-209
820	-234	-239	-215	-168	-103	-31	33	106	177	219
830	246	257	239	202	165	135	113	102	97	120
840	138	151	152	120	65	17	-10	-58	-93	-113
850	-140	-139	-119	-58	-10	45	93	156	229	305
860	328	344	355	342	320	250	182	118	45	-10
870	-44	-70	-91	-103	-94	-63	-32	10	75	125
880	150	163	154	128	95	62	35	11	-15	-35
890	-40	-41	-53	-70	-92	-105	-122	-134	-143	-155
900	-148	-136	-123	-113	-107	-103	-103	-102	-90	-71
910	-52	-24	-4	7	9	14	18	22	31	48
920	82	122	153	176	194	206	211	196	161	123
930	87	48	9	-18	-36	-44	-34	-24	-12	-6
940	-7	-13	-22	-32	-40	-40	-41	-41	-34	-32
950	-34	-37	-43	-44	-47	-54	-64	-62	-58	-53
960	-48	-42	-36	-30	-20	-15	-12	-13	-19	-42
970	-73	-100	-117	-129	-137	-130	-112	-94	-78	-54
980	-23	2	22	36	46	52	55	52	37	9
990	-3	-12	-24	-18	4	21	35	50	53	60
1000	71	91	107	125	146	164	181	189	176	156
1010	134	106	87	70	58	61	71	86	95	96
1020	88	55	7	-37	-72	-113	-150	-176	-200	-216
1030	-226	-224	-212	-200	-188	-179	-173	-164	-153	-142
1040	-132	-120	-106	-89	-46	-16	28	70	100	119

TO BE CONTINUED

by the SMAC-B2 accelerograph, subtraction is made as follows;

An upper trace is corrected with an upper fixed trace.

A lower trace is corrected with a lower fixed trace.

A center trace is corrected with an average of an upper fixed trace and lower one.

In the case of a record by the ERS-B, C, D accelerograph, one fixed trace is subtracted from all the components of accelerogram.

ii) Sectional Base-line Location

As described previously, base-line is arbitrarily inserted for each section by the initialization of Y coordinate. Sectional translation brings mainly low frequency errors into the accelerogram and produces an unnatural response of a low cut filter for integration around a point of junction of digitized sections.

Base-line is located so as to make an ideal average of acceleration over almost infinite length zero. On the sectional base-line location, the authors assume that low frequency components up to about $1/T$, where T is minimum length of sections, is almost none if calculation of spectrum is done over the infinite length for the accelerogram which have been corrected by the fixed trace subtraction and which have an ideal true base-line for each section. Based on the detailed study of the base-line location in the frequency space, the base-line is located sectionally so as to make a weighted average of each sectional acceleration zero. The weight function is difined by

$$u(t) = \sqrt{\frac{\beta}{\pi}} \exp\left[-\beta t^2\right] \quad \cdots\cdots (4)$$

Where $\beta = 20/T^2$, and T (s.) is length of each section.

The expected error of the location is almost proportional to the quantities of low frequency components up to about $1/T$ (Hz).

Because the authors do not have enough space to describe the detailed study, the authors introduce an example calculation to illustrate the difference between the proposed base-line location and the base-line location of least square fit scheme for each section. A sine wave generated by a computer of 100 Gals, 5 Hz, 5000 data with time intervals of 0.01 sec is divided into two sections; one section is the first 2510 data and the other is the last 2490 data, which are looked upon as a sectionally digitized accelerogram. Sectional base-lines are located by the two methods. Displacements are calculated from the two accelerations by the fixed filter method described later and a portion of the results including the junction of two sections are shown in Fig. 18(a) and (b) respectively. (10.1 sec is the junction in these figures.) These figures indicate that the proposed base-line location is much better in this case because true displacement is a sine wave.

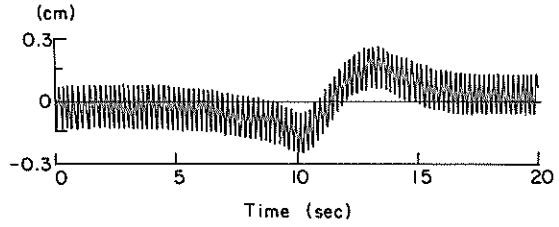


Fig. 18(a) Integrated displacement from the acceleration with sectionally located base-line by a least square fit scheme

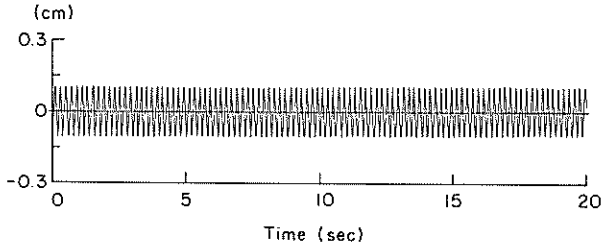


Fig. 18(b) Integrated displacement from the acceleration with sectionally located base-lines by the proposed method

iii) Linearization of Coordinate

This correction is applied to a record by the SMAC-B2 accelerograph to obtain a corrected X coordinate of each datum. Y coordinate of the pivot of the recording pen is calculated from the digitized arc trace.

Let r (mm) denote the radius of the arc (length of the arm of the recording pen), r (mm) denote Y coordinate of a point whose X coordinate is to be corrected, a (mm) denote Y coordinate of the center of the arc (the pivot of the pen) and e (mm) denote error of X cordinate of the point to be corrected then we have

$$e = r - \sqrt{r^2 - (y-a)^2} \qquad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (5)$$

Although the arc trace is digitized with arbitrarily determined base-line, the linearization of coordinate is uniformly performed because $(y-a)$ in the equation remains constant for any base-line. a (mm) in the equation will be set to be zero if arc traces are accidentally not drawn or length of the arc trace is short (if maximum difference of X coordinates of the arc trace is less than 0.5 mm.)

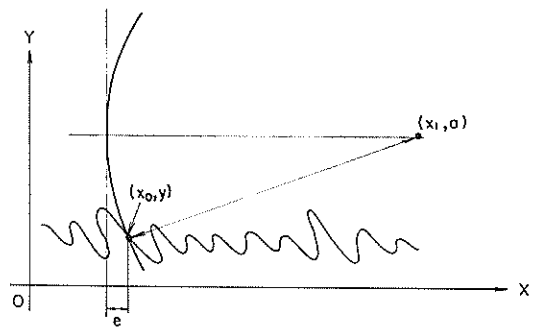


Fig. 19 Linearization of coordinate

iv) Correction for start up of recording paper drive

The variation of recording paper speed of the SMAC-B2 accelerograph is represented by the following equation which is based on the tests made by the authors.

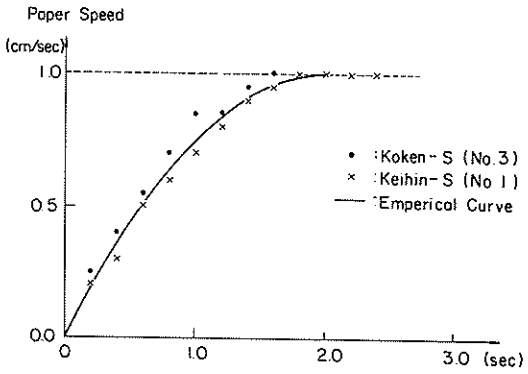


Fig. 20 Variable recording speed on start up of recording paper drive

$$v = [\,1 - \frac{1}{b^2}(t - t_0)^2\,] \cdot v_a \quad \text{if} \quad 0 \leqslant t \leqslant t_0 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (6)$$

$$v = v_a \quad \text{if} \quad t_0 < t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Where; v : paper speed at time t (cm/s.)
v_a : paper speed after reaching constant speed (cm/s.)
t : time after triggering (s.)
t_0 : constant (s.)
b : constant (s.)

If t_0 and b are given, the correction for the start up of recording paper drive is simple problem.

For the correction of the digitized records in the preceding annual report, t_0 = 2.0 s. and b = 2.0 s. were used. After the annual report had been published, it was found that more appropriate correction would be possible with a slight modification of t_0 value. For the correction of the most of the digitized records in this report, t_0 = 1.9 s. was used.

v) Smoothing

Smoothing is applied to a record by the ERS-B, C, D accelerograph. A record by the ERS-B, C, D accelerograph is digitized at intervals of 0.1 mm which corresponds to about 0.005 s. on a record by the ERS-B accelerograph and corresponds to about 0.0025 s. on a record by the ERS-C/D accelerograph. Frequency components higher than about 50 Hz are eliminated because there are almost no significant components of seismic acceleration over 50 Hz for the most of the record of ground according to the records obtained by the ERS-B, C, D accelerograph so far.

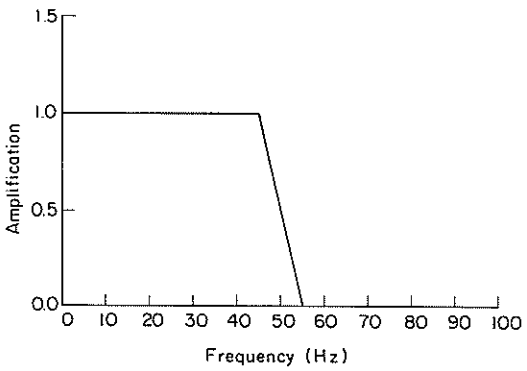


Fig. 21 Filter for the smoothing

The weight function is defined by

$$g(t) = \begin{cases} f_0 + f_1 & \text{if } t = 0 \\ \dfrac{2}{f_1 - f_0} \left[\dfrac{\cos(2\pi f_0 t) - \cos(2\pi f_1 t)}{(2\pi t)^2} \right] & \text{if } 0 < |t| \leqslant \ldots\ldots (8) \\ 0 & \text{otherwise} \end{cases}$$

where $f_0 = 45$ (Hz) and $f_1 = 55$ (Hz)

The filer corresponding to this weighted running average is approximately expressed as follows. (Errors of the approximation is less than 0.3%)

$$G(f) = \begin{cases} 1 & \text{if } |f| \leqslant f_0 \\ \dfrac{f_1 - |f|}{f_1 - f_0} & \text{if } f_0 < |f| \leqslant f_1 \ldots\ldots (9) \\ 0 & \text{if } |f| > f_1 \end{cases}$$

where $f_0 = 45$ (Hz) and $f_1 = 55$ (Hz)

iv) Equally Spacing

Data are equally spaced at intervals of 0.01 s. by means of linear interpolation.

A record by the SMAC-B2 accelerograph is digitized at intervals of 0.1 mm and is processed through the linearization of coordinate. The date processed through the linearization of coordinate are unequally spaced date, whose intervals of data are longer than 0.01 s. on portions of accelerogram where absolute value of acceleration decreases and intervals of data are shorter than 0.01 s. else where.

A record by the ERS-B, C, D accelerograph is digitized at intervals of 0.1 mm, which corresponds to about 0.005 s. on a record by the ERS-B accelerograph and about 0.0025 s. on a record by the ERS-C/D accelerograph. There is no possibility of aliasing by the equally spacing at intervals of 0.01 sec because their high frequency components over 50 Hz are eliminated by the smoothing. High density of sampling at digitization enables us to separate high frequency components which are possibly contaminated by digitization errors and assures us much accuracy of the interpolation.

5. Preliminary Analyses

The Standard procedures of preliminary analyses described here is applied for records obtained since 1976. For the detailed description, see separate reports.[24,25] The standard procedures of preliminary analyses consist of filtering for instrument correction, filtering for correction of low or high frequency components, integration, calculation of response spectra and Fourier spectra (Fig. 22).

(1) The Method of Correction and Integration

Instrument correction, filtering, integration is applied in frequency space. FFT is applied for the accelerogram which is extended with a section of zero outside the digitized portion in order to avoid link effect. The length of section of zero L (s.) is determined so as to meet the following condition.

$$L > \max\left[\frac{2}{3}T, 10.0\right] \quad \ldots\ldots (10)$$

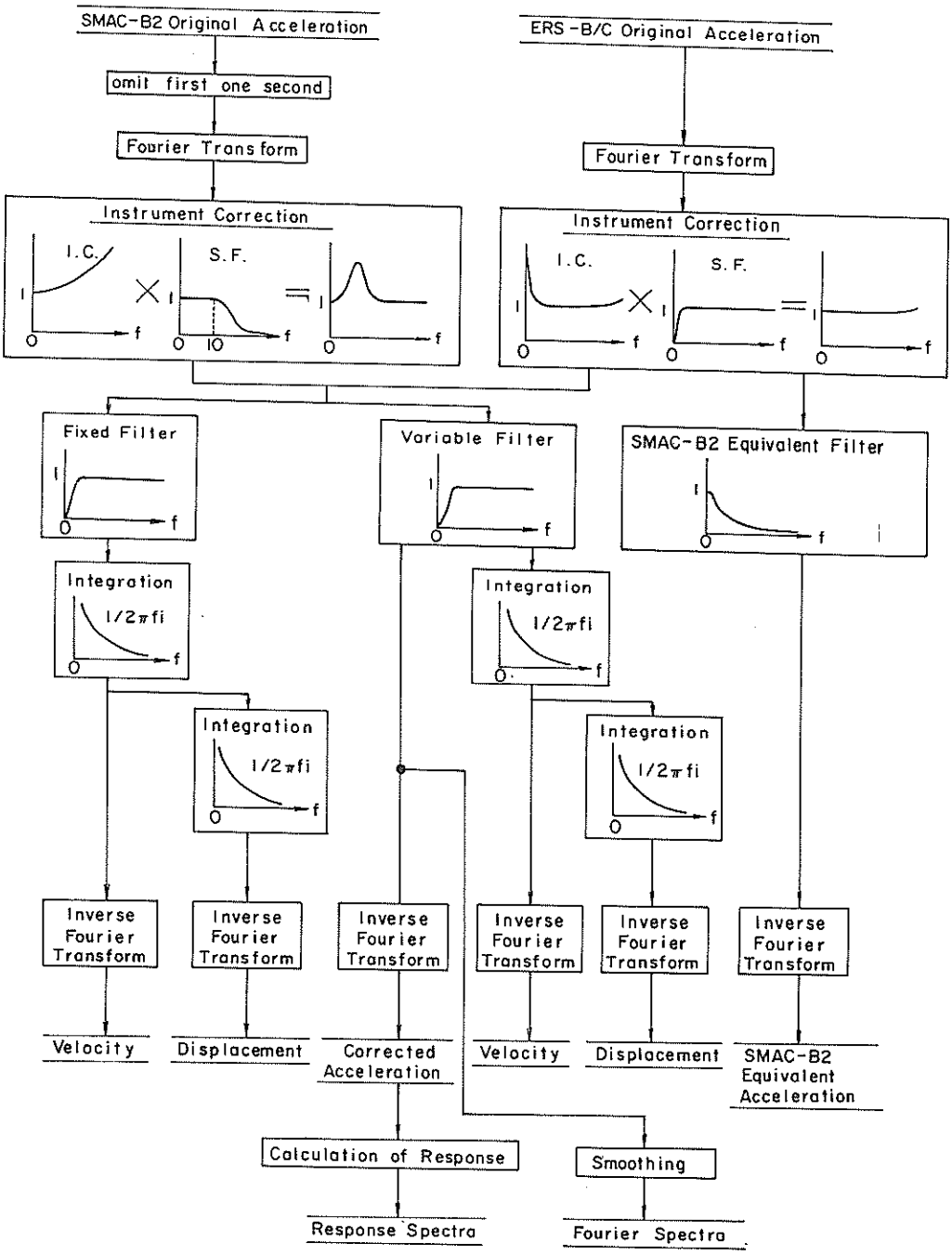


Fig. 22 Procedures of Preliminary Analyses

where T (s.) is the minimum length of sections made by the division of an accelerogram for the digitization. This condition is based on the examination of impulse responses of the high pass filters for integration to be described later. Length of the section of zero L is decided so as to make calculation time of FFT short as much as possible in the given memory size of the given computer.

i) The Filter for Instrument Correction and the Supplementary Filter

(a) Filters for a Record by the SMAC-B2 Accelerograph
The filter for instrument correction $A_S(f)$ is defined by

$$A_S(f) = 1 - (\frac{f}{f_S})^2 + 2h_S(\frac{f}{f_S})\ i \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (11)$$

where $f_S = 1/0.14$ (Hz) and $h_S = 1.0$

The supplementary filter $B_S(f)$ is defined by

$$B_S(f) = \begin{cases} 1 \\ [\,1 + (\,|A_S(f)| - 1\,) \exp\left\{ -\dfrac{(|f| - f_0)^2}{20} \right\}\,] \dfrac{1}{|A_S(f)|} \end{cases} \quad \begin{matrix} \text{if } |f| \leqslant f_0 \\ \text{otherwise} \end{matrix} \quad \cdots (12)$$

where $f_0 = 10$ (Hz)

The supplementary filter is designed to suppress high frequency digitization noise and at the same time preserve high frequency components of an accelerogram in order to lessen an abnormal response of the filter to discontinuities at both ends of digitized portion of the accelerogram.

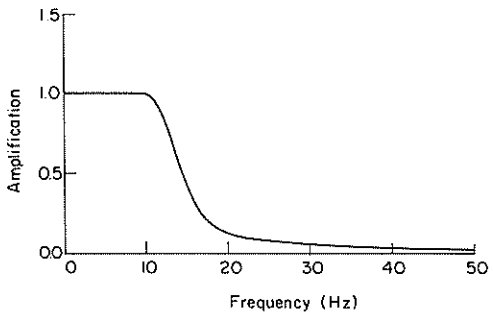


Fig. 23 The Supplementary Filter for a record by the SMAC-B2 accelerograph

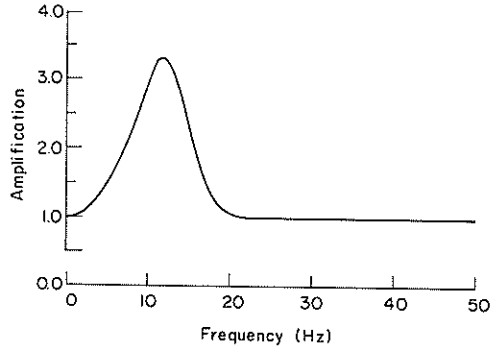


Fig. 24 Combined frequency characteristics of the filter for instrument correction and the supplementary filter for records by the SMAC-B2 accelerograph

(b) Filters for a Record by the ERS-B, C, D Accelerograph

The filter for the instrument correction $A_E(f)$ is defined by

$$A_E(f) = A_p(f) \cdot A_G(f)$$

$$A_p(f) = 1 + \frac{i}{2h_p}\left(\frac{f}{f_p} - \frac{f_p}{f}\right) \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (13)$$

$$A_G(f) = 1 - \left(\frac{f}{f_G}\right)^2 + 2h_G\left(\frac{f}{f_G}\right) i$$

where for a record by the ERS-B accelerograph

$f_p = 2.0$ (Hz), $h_p = 17$, $f_G = 100$ (Hz) and $h_G = 0.7$

and for a record by the ERS-C accelerograph

$f_p = 3.0$ (Hz), $h_p = 17$, $f_G = 250$ (Hz) and $h_G = 0.7$

$1/A_p(f)$ is frequency characteristics of the pick up of the accelerograph and $1/A_G(f)$ is those of the galvanometer.

The supplementary filter $B_E(f)$ is defined by

$$B_E(f) = \begin{cases} 1/|A_p(f)| & \text{if } |f| \leqslant f_p \\ 1 & \text{otherwise} \end{cases} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (14)$$

where $A_p(f)$ is the filter for the instrument correction of the pick up and f_p is the characteristic frequency of the instrument defined above for each type of accelerograph. The supplementary filter is designed to suppress low frequency digitazation errors.

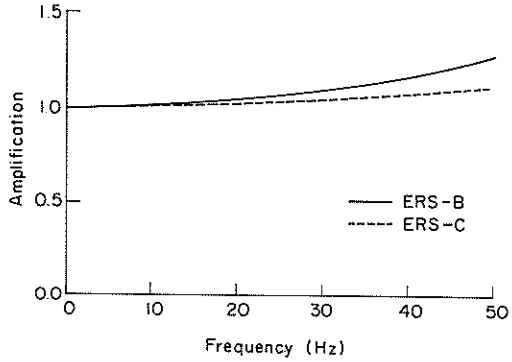


Fig. 25 The Combined Filter of Instrument Correction and Supplementary Filtering for a Record by the ERS-B, C, D Accelerograph

ii) SMAC-B2 Equivalent Filter

Frequency characteristics of SMAC-B2 accelerograph are different from that of ERS-B, C, D accelerograph. In order to make it easy to compare the accelerograms by these different types of accelerographs each other, a filter difined in the following equation is applied for a record by the ERS-B, C, D accelerograph.

$$S(f) = \frac{1}{1 - (\frac{f}{f_S})^2 + 2h_S(\frac{f}{f_S})\,i} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \quad (15)$$

where $f_S = 1/0.14$ (Hz) and $h_S = 1.0$

The filter has the same frequency characteristics as those of the SMAC-B2 accelerograph. The filter is applied for the acceleration processed through the filter for instrument correction and the supplementary filter. Acceleration processed through this filter will be called "SMAC-B2 Equivalent Acceleration". This acceleration can be compared with the original acceleration by the SMAC-B2 accelerograph.

iii) The High Pass Filters for Integration

Processed through the preliminary correction procedure, a digitized accelerogram is expected to have only such errors as random digitization errors and errors of sectional base-line location. Errors of sectional base-line location affect mainly to frequency components lower than about $1/T$ where T is length of a section of an accelerogram devided for digitization.

As a result of the examination of random digitization errors, frequency characteristics of *SN* ratio calculated for each frequency are found to be similar to those of digitized acceleration. In other words, ratio of digitized acceleration to digitization errors calculated for each frequency is large if the corresponding frequency components of the digitized acceleration is large. For the frequency components higher than about $1/T$, the result of the examination of digitization errors may remain valid. The result implies that *SN* ratio of a frequency component varies with the frequency characteristics of accelerogram to be digitized.

The cut-off frequency of a high pass filter for integration of a digitized accelerogram should be varied in accordance with frequency characteristics of an accelerogram from such a point of view that *SN* ratio should be kept higher than some constant level for every frequency component and at the same time the physically real signals should be preserved as much as possible. On the other hand, cut-off frequency of the filter should be kept constant for any accelerograms from such a point of view that the preserved real seismic signals should be filtered out by the same filter for the purpose of comparison between two or more velocities or displacements even if integrated errors are more or less included in them.

In order to satisfy a wide range of applications of the strong-motion records from the various view points, the authors proposed two methods of correction of an accelerogram to obtain velocities and displacements; one is a method with a fixed filter and another is a method with a variable filter.

(a) Fixed Filter

This filter is defined by

$$H_1(f) = \frac{1}{1 - (\frac{f_0}{f})^2 - 2h(\frac{f_0}{f})\,i} \cdot \frac{1}{\sqrt{1 + (\frac{f_1}{f})^2}} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots \quad (16)$$

where $f_0 = 1/6$ (Hz), $h = 0.552$ and $f_1 = 0.1$ (Hz)

This filter is designed to make it easy to compare the integrated displacement with records obtained by the one magnification strong-motion seismometer (T = 6 s. and h =

0.552) deployed by the Japan Meteorological Agency of Ministry of Transport. Cut-off frequency (3 dB down) of this filter is 0.154 Hz.

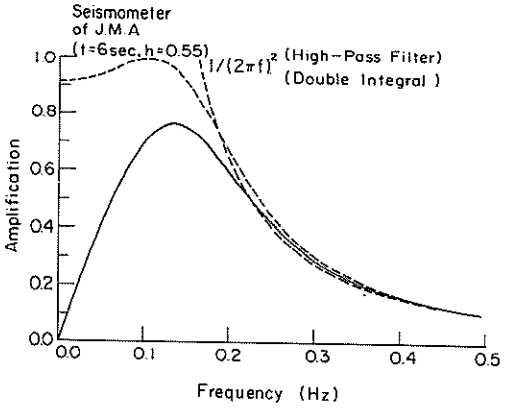


Fig. 26 Combined Frequency Characteristics of the Fixed Filter and Double Integral

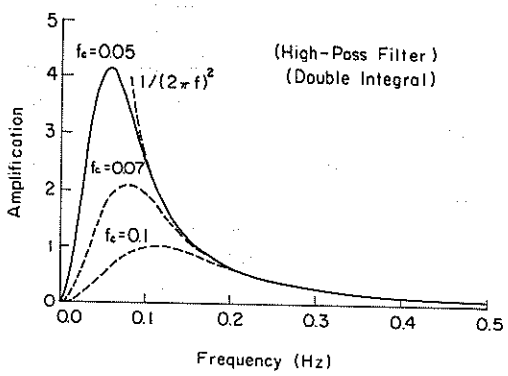


Fig. 27 Combined Frequency Characteristics of the Variable Filter and Double Integral

(b) Variable Filter

This filter is defined by

$$H_2(f) = [\,1 - \exp\left\{-\left(\frac{f}{f_C}\right)^2\right\}\,]^2 \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (17)$$

The parameter f_C in the equation varies so as to make σ equal to E, where σ is defined by

$$\sigma^2 = \frac{1}{M}\int_{-\infty}^{\infty} |X(f)|^2 \cdot [\,1 - \exp\left\{-(fT)^2\right\}\,]^4 \cdot [\,1 - H_2(f)\,]^2\, df \quad \cdots\cdots (18)$$

where M is length of whole digitized portion
T is a minimum length of a section of accelerogram
$X(f)$ is Fourier Transform of the original acceleration

and E is the value listed below;

$E = 0.5$ (Gal) for a record by the SMAC-B2 accelerograph
$E = 0.05p$ (Gal) for a record by the ERS-B/C accelerograph
where p (Gal/mm) is the sensitivity of ERS-B/C accelerograph.

Cut-off frequency (3 dB down) of this filter is $1.36 f_C$.

Decision procedure of f_C is simply illustrated in Fig. 28. f_C is fundamentally determined so as to filter out some constant amount of low frequency components of an accelerogram higher than about $1/T$. The greater low frequency components of an accelerogram are, the lower f_C should be. Because the greater low frequency components of an accelerogram are, the higher SN ratio of these components are. Low frequency components lower than about $1/T$ are eliminated for the decision procedure of f_C because they are possible to be contaminated by the errors at sectional base-line location and the relation between the SN ratio and the quantity of a frequency component of an accelerogram is afraid no longer remaining valid.

This decision procedure of f_C is, however, a compromise between such a view point as

to keep *SN* ratio over some constant level for every frequency component and such a view point as to keep f_C to be a constant. The reason why we proposed such a compromised method is that the compromise makes decision procedure of f_C more stable against possible fluctuation of the relation between quantity of a frequency component of an accelerogram and the *SN* ratio. The relation may, to some extent, depend on frequency characteristics of an accelerogram to be digitized, digitized length of an accelerogram non-stationarity of an accelerogram, etc. and the relation itself if valid only in a stochastic sense.

The reason why the authors proposed a fixed low pass supplementary filter instead of a variable one for a record by the SMAC-B2 accelerograph was that the possible fluctuation of the relation is expected to be greater for high frequency components.

Slope of both of the high pass filters proposed here are disigned to be mild in order to lessen an artificial predominant frequency component around the cut-off frequency.

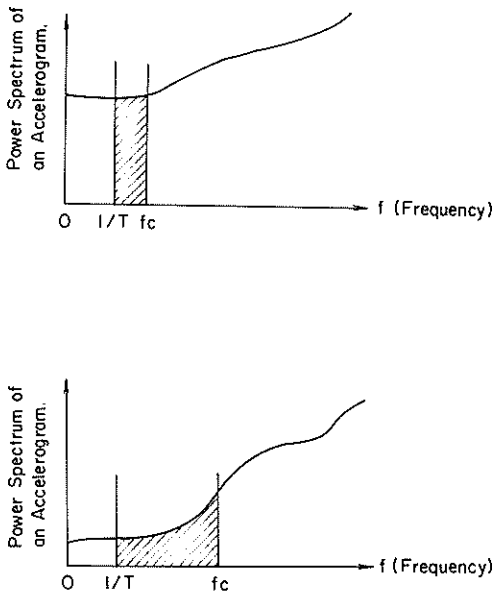


Fig. 28 Simplified illustration of decision procedure of f_C

(2) Corrected Acceleration, SMAC-B2 Equivalent Acceleration, Integrated Velocities and Integrated Displacement

A portion of first one second of the original acceleration of the SMAC-B2 accelerograph is omitted for the instrument correction and the integration because even a slight difference of start up of recording paper drive between SMAC-B2 accelerographs and even a small difference of selection of starting point of digitization may sensitively affect accuracy of the portion of first short section processed through the correction of start up of the recording paper drive. In the case of the original acceleration of the ERS-B, C, D accelerograph, no data is omitted. These accelerations are processed by the methods of correction and integration described previously. The calculated results are shown in figures and their maximum values are listed in a table.

"Corrected acceleration" denotes acceleration processed through the variable filter. "SMAC-B2 equivalent acceleration" denotes acceleration obtained by the SMAC-B2 equivalent filter. Integrated velocities and displacements are calculated with the fixed filter and the variable filter. The parameter f_C of the variable filter is also shown on the figures and the table.

The corrected acceleration of the different types of accelerographs can not necessarily be compared with each other freely because the difference of the supplementary filters produces difference mainly on the high frequency components over 10 Hz of the filtered accelerations. Instead of comparison of the corrected accelerations, "SMAC-B2 equivalent acceleration" can be freely compared with the original acceleration of the SMAC-B2 accelerograph except for the low frequency components lower than about 0.1 Hz.

(3) Response Spectra

Response spectra are calculated for the corrected acceleration, which is an acceleration processed through the variable filter as described previously.

The response spectra in the previous annual reports before 1968 were calculated from the digitized records by a digital computer using the Runge-Kuta-Gill method to integrate numerically the equation of motion of the oscillator. The response spectra in the present report were calculated with a step by step calculation of the exact solution to the governing differential equation.[27] No significant difference was seen in the results calculated by the both methods, according to the trial calculations.

The time interval of each step of the calculation is 0.01 second for the oscillators of natural periods longer than 0.2 second. For the oscillators of shorter periods, the small time intervals are selected so that one cycle of the undamped free oscillation of the oscillator is covered at least by 20 steps of the numerical calculation to maintain the necessary accuracy. In these calculation, the digitized records at smaller time intervals are made by means of the interpolation in the computer. The response spectra are provided in numerical tables as well as in the figures.

To calculate the response spectrum, entire length of the record is not necessary; the last part of the record after the maximum response have appeared is practically meaningless in the response calculation. Besides, the shorter record is more preferable from view point of the calculation time. On some long records, their beginning parts of small acceleration are not used in the calculation so far as it is thought that the neglected parts do not affect the results of the calculation. The length of the record used for the calculation and the length of the beginning part which is not used are shown in the numerical table as the time length and the skipped length respectively.

Response spectra of the period longer than about $1/f_C$ is influenced by the high pass filter ($1.36/f_C$ is the period of 3 dB down of the filter.); i.e., calculated response spectra is true if real seismic signals do not exist on the period longer than about $1/f_C$ and calculated response spectra are smaller than the true value if real seismic signals do exist. In the case of the corrected acceleration by the SMAC-B2 accelerograph, response spectra of the period shorter than about 0.1 sec is also influenced by the low pass filter. Users of the response spectra should be careful about these characteristics of the response spectra calculated for the corrected acceleration and difference between the response spectra for the corrected acceleration and those for the uncorrected acceleration which had been calculated so far.

(4) Fourier Spectrum

The Fourier spectrum was not included in the preceding annual report. In this report, however, the Fourier spectrum is newly included. Although the velocity response spectrum is approximately equivalent with the Fourier spectrum, the response spectrum curve in this report is a plot against period in a linear scale and it is not suitable for showing the frequency characteristics of a record in a short period range. Therefore, it is convenient for the purpose if the Fourier spectrum is plotted against frequency. That is the major reason that the Fourier spectrum is decided to the included in this report.

Whole length of the record is used for the calculation of the Fourier spectra presented in this report, which are directly obtained at the filtering process with the variable filter. The spectra are then smoothed with the parzen window of 1 Hz band width.

6. Summary of Observation

Since 1962, 1963 records were obtained in the network of the Port and Harbour Research Institute, and most of the important records were analysed by the authors. In Table 8, a statistical summary of the observation is given. In the table, record numbers of accelerograms of which the digitized records and the spectra have been published are shown. The number in the parentheses behind each record number is showing the number of the Technical Note of the Port and Harbour Research Institute in which the digitized record appeared.

Table 8 Statistical summary of the obtain records

Station	Total number of records	Number of records exceeding 20 gals in max.	Number of records exceeding 50 gals in max.	Records which have been digitized (Ref.No.*)
Hanasaki-M	18	8	3	M-106(No.287),M-262(No.338),M-496(No.426)
Kushiro-S	45	14	6	S-98(No.62),S-239(No.98),S-634(No.136),S-674 (No.160),S-733(No.181),S-741(No.181)
Tokachi-M	40	14	7	M-125(No.287),M-145(No.287),M-247(No.338),M-260 (No.338),M-340(No.338),M-341(No.374),M-439(No.426)
Tomakomai-S	19	3	2	S-877(No.202),S-1418(No.426)
Muroran-S	41	8	3	S-234(No.80),S-241(No.80),S-399(No.80),S-1425 (No.426)
Otaru-S	6	0	0	
Hakodate-M	31	6	1	M-357(No.374)
Aomori-S	31	10	3	S-235(No.80),S-264(No.80),S-304(No.80),S-400 (No.80),S-670(No.160)
Hachinohe-S	104	13	4	S-252(No.80),S-310(No.80),S-401(No.80),S-669 (No.160),S-1202(No.319),S-1453(No.426)
Miyako-S	25	6	11	S-236(No.80),S-271(No.80),S-312(No.80),S-273 (No.98),S-420(No.98),S-537(No.116),S-1204(No.319), S-1104(No.338),S-1317(No.338)
Kamaishi-M	6	0	0	
Kamaishi-MB	6	0	0	
Ofunato-bochi-S	20	4	6	S-554(No.116),S-786(No.181),S-1022(No.287),S-1210 (No.319),S-1120(No.338)
Ofunato-bo-S	55	12	10	
Shiogama-kojyo-S	67	2	3	S-782(No.181),S-1118(No.338),S-1201(No.319)
Sendai-M	13	3	0	
Sendai-MB	13	0	0	
Onahama-ji-S	2	1	1	S-1330(No.338)
Kashime-zokan-S	49	5	1	S-1397(No.374)
Chiba-S	40	5	1	S-1378(No.374)
Shinagawa-S	31	10	2	S-192(No.64),S-340(No.98),S-1394(No.374)
Shinagawa-M	1	1	0	
Kawasaki-dai5-chi-M	40	5	1	M-186(No.317),M-406(No.374)
Kawasaki-dai5-ko-M	40	11	2	M-410(No.374)
Keihin-ji-S	76	8	1	S-1390(No.374)
Yamashita-hen-S	91	12	4	S-412(No.98),S-658(No.160),S-1058(No.317),S-1189 (No.319),S-1362(No.374),S-1386(No.374)
Yamashita-hen-M	64	3	1	M-403(No.374)
Yamashita-dai6-S	76	12	7	S-1365(No.374),S-1382(No.374)
Yamashita-dai7-M	30	2	1	M-413(No.374)
Koken-S	20	3	0	S-1046(No.317)
Koken-M	44	4	0	
Tagonoura-S	58	7	0	
Okitsu-S	20	4	0	S-1071(No.317)
Shimizu-kojyo-S	17	3	3	S-1063(No.317)
Shimizu-miho-S	15	3	1	S-1066(No.317)
Shimizu-sekitan-M	14	3	1	
Omaezaki-M	8	0	0	
Kinuura-ji-S	4	0	0	
Nagoya-zokan-S	18	4	1	S-1(No.55),S-20(No.55),S-578(No.136)
Nagoya-inae-S	11	3	0	
Inae-sanbashi-M	7	2	0	
Inae-yaita-M	9	2	0	
Yokkaichi-chitose-S	4	1	1	S-577(No.136)
Yokkaichi-dai2-M	5	0	0	
Yokkaichi-sekitan-M	16	2	0	
Wakayama-S	12	5	3	S-945(No.236),S-1028(No.287)
Wakayama-ganpeki-S	6	1	0	
Osaka-ji-S	7	0	0	
Osaka-chuo-S	5	1	0	
Amagasaki-S	0	0	0	
Kobe-ji-S	8	3	0	
Kobe-dai6-S	7	1	0	
Kobe-dai8-S	10	0	0	
Kobe-maya-M	3	0	0	

Station	Total number of records	Number of records exceeding 20 gals in max.	Number of records exceeding 50 gals in max.	Records which have been digitized (Ref.No.*)
Kobe-maya-dai1-M	7	3	1	
Kobe-maya-dai2-M	3	0	0	
Komatsujima-S	5	1	0	
Kochi-ji-S	4	1	0	
Matsuyama-S	14	2	1	S-1303(No.338)
Hiroshima-S	7	3	3	S-364(No.98),S-1306(No.338)
Oita-S	7	2	1	S-924(No.236)
Hososhima-S	42	10	5	S-213(No.98),S-453(No.100),S-544(No.116),S-545 (No.116),S-1231(No.338)
Miyazaki-M	2	1	1	M-228(No.338)
Shibushi-S				
Kagoshima-S	21	3	0	
Minamata-M	1	0	0	
Sakaiminato-ji-S	2	0	0	
Tsuruga-S	16	1	0	
Kanazawa-S	4	1	0	
Toyama-S	1	0	0	
Niigata-ji-S	2	1	0	S-1203(No.319)
Sakata-S	22	5	0	
Akita-S	20	4	1	S-635(No.160),S-1200(No.319)
Naha-zokan-S	0	0	0	
Hirara-S	1	0	0	
Ishigaki-S	2	1	0	
Ofunato-S	21	3	2	S-140(No.64),S-282(No.98),S-361(No.98)
Shiogama-S	19	1	0	S-138(No.64)
Kashima-S	32	9	3	S-196(No.64),S-612(No.136),S-647(No.136)
Kashima-ji-S	28	2	3	S-770(No.181),S-813(No.202),S-845(No.202),S-882 (No.202)
Shimizu-sekitan-S	10	4	2	
Kinuura-S	8	4	2	S-166(No.64)
Wakayama-ji-S	12	4	3	S-187(No.64),S-265(No.98),S-266(No.98),S-788 (No.181)
Wakayama-sumikin-S				
Kochi-S	21	3	1	S-211(No.98)
Sakaiminato-S	0	0	0	
Niigata-S	12	1	0	
Naha-S	0	0	0	
Onahama-S	66	9	4	S-111(No.62),S-1043(No.287),S-1191(No.317)
Yokkaichi-ji-S	5	2	0	

Although the annual report is compiled with careful preparation, sometimes, important additional information or error is found on the record presented in the previous report. Such information should be notified systematically all the persons who have possibility to utilize the record. From the view point of certainty of systematic distribution and filing, the best way is that the information is included in the annual report of the earliest publication after the information has found. In the annual report such information is presented in the appendix.

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Observation Results

and

Preliminary Analyses

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 05:45 January 5, 1981 Location of Hypocenter Epicentral Region Ise Bay Region Latitude 35.08°N Longitude 136.78°E Depth 10 Km Class Magnitude 4.1	Intensities III. Nagoya I. Gifu

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Nagoya-inae-S	on structure	10	S-1405	4	15	3

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 03:17 January 19, 1981 Location of Hypocenter Epicentral Region E off Mid-Tohoku Latitude 38.60°N Longitude 142.97°E Depth 0 Km Class Magnitude 7.0	Intensities IV. Sendai,Morioka,Miyako III. Ofunato,Hachinohe,Ishinomaki, Akita,Sakata,Fukushima, Onahama,Utsunomiya,Ichinoseki II. Tokyo,Urakawa,Yokohama I. Mito,Niigata,Mishima,Kushiro, Fukui,Nemuro,Wajima,Muroran

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	369	S-1407	4	4	1
Ofunato-bochi-S	on ground	147	S-1408	6	9	4
Ofunato-bo-S	on structure	147	S-1409	13	38	8
Sakata-S	on ground	304	S-1410	14	13	5
Hachinohe-S	on ground	276	S-1414	13	6	3
Shiogama-Kojyo-S	on ground	197	S-1415	13	13	3
Sendai-M	on ground	199	M- 433	16	9	5
Sendai-MB	in ground	199	M- 434	7	4	3
Kamaishi-M	on ground	148	M- 435	11	10	11
Kamaishi-MB	in ground	148	M- 436	18	6	9
Ofunato-mound-M	on structure	123	M- 437	24	37	25

(To be continued)

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 10:14 January 19, 1981 Location of Hypocenter Epicentral Region E off N Honshu Latitude 38.60°N Longitude 143.08°E Depth 0 Km Class Magnitude 6.0	Intensities II. Morioka,Sakata I. Ofunato,Ishinomaki,Miyako, Onahama,Fukushima,Sendai, Aomori,Hakodate,Iida, Shirakawa

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Ofunato-bo-S	on structure	135	S-1411	3	10	1
Ofunato-bochi-S	on ground	135	S-1412	1	1	1
Shiogama-Kojyo-S	on ground	190	S-1416	23	20	15
Ofunato-mound-M	on structure	135	M- 438	3	7	3

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 04:34 January 23, 1981 Location of Hypocenter Epicentral Region E off N Honshu Latitude 38.23°N Longitude 143.05°E Depth 0 Km Class Magnitude 6.6	Intensities III. Fukushima,Shirakawa II. Ofunato,Ishinomaki,Morioka, Onahama,Mito,Sendai I. Akita,Kofu,Sakata,Hachinohe, Tateyama,Utsunomiya,Kushiro, Iida,Kumagaya,Yokohama, Yamagata

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Shiogama-Kojyo-S	on ground	153	S-1417	---	---	---
Ofunato-bochi-S	on ground	129	S-1422	19	31	8
Ofunato-bo-S	on structure	129	S-1421	5	13	1
Sendai-M	on ground	155	M- 440	6	7	4
Sendai-MB	in ground	155	M- 441	2	3	1
Ofunato-mound-M	on structure	129	M- 448	9	8	8
Aomori-S	on ground	331	S-1427	4	4	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 13:58 January 23, 1981 Location of Hypocenter Epicentral Region S coast of Hokkaido Latitude 42.42°N Longitude 142.20°E Depth 130 Km Class Magnitude 7.1	Intensities V. Urakawa IV. Obihiro,Morioka,Kushiro, Hachinohe,Aomori,Otaru, Muroran,Mutsu,Iwamizawa, Hiroo,Tomakomai III. Hakodate,Nemuro,Sapporo,Mori, Ofunato,Onahama,Sendai,

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Sakata-S	on ground	447	S-1413	8	8	---
Tomakomai-S	on ground	50	S-1418	161	115	20
Ofunato-bo-S	on structure	391	S-1423	1	1	1
Ofunato-bochi-S	on ground	390	S-1424	8	6	3
Muroran-S	on ground	103	S-1425	130	155	44
Tokachi-M	on ground	95	M- 439	96	127	54
Sendai-M	on ground	480	M- 442	8	8	4
Sendai-MB	in ground	480	M- 443	2	3	1
Hakodate-M	on ground	145	M- 444	33	41	19
Hanasaki-M	on ground	290	M- 445	11	10	5
Kamaishi-M	on ground	360	M- 446	14	13	13
Kamaishi-MB	in ground	360	M- 447	9	7	8

To be continued

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 13:58 January 23, 1981 Location of Hypocenter Epicentral Region S coast of Hokkaido Latitude 42.42°N Longitude 142.20°E Depth 130 Km Class Magnitude 7.1	Intensities Fukaura,Miyako,Hirosaki II. Tokyo,Esashi,Choshi,Abashiri, Asahikawa,Ishinomaki,Monbetsu, Mito,Chiba,Miyakejima I. Akita,Sakata,Yamagata,Ajiro, Oshima,Tateyama,Yokohama, Maebashi,Hachijojima,Kumagaya

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Ofunato-mound-M	on structure	391	M- 449	28	25	21
Kashima-zokan-S	on ground	743	S-1420	3	3	1
Hachinohe-S	on ground	225	S-1419	24	19	12
Aomori-S	on ground	219	S-1428	36	32	15
Miyako-S	on ground	320	S-1426	28	24	10

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 12:47 January 28, 1981 Location of Hypocenter Epicentral Region Northern Kanto Latitude 36.17°N Longitude 139.85°E Depth 60 Km Class Magnitude 5.0	Intensities IV. Utsunomiya III. Kumagaya,Shirakawa,Chichibu II. Tokyo,Chiba,Maebashi,Onahama, Yokohama,Fukushima,Choshi I. Ajiro,Oshima,Sendai,Kofu, Tateyama

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	85	S-1429	5	5	1
Onahama-ji-S	on ground	129	S-1430	15	20	5
Yamashita-hen-M	on ground	74	M- 450	2	2	1
Yamashita-dai 7-M	on structure	74	M- 454	1	1	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 21:16 January 31, 1981 Location of Hypocenter Epicentral Region Tokyo Bay Region Latitude 35.60° N Longitude 140.08° E Depth 80 Km Class Magnitude 4.0	Intensities II. Chiba I. Ajiro

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kawasaki-dai 5 -ko-M	on structure	31	M- 452	10	---	
Kawasaki-dai 5 -chi-M	on ground	31	M- 453	5	7	
Yamashita-dai 7-M	on structure	36	M- 455	1	1	
Yamashita-hen-M	on ground	36	M- 451	4	4	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 08:23 February 22, 1981 Location of Hypocenter Epicentral Region E coast of Kanto Latitude 36.45°N Longitude 140.68°E Depth 50 Km Class Magnitude 4.7	Intensities III. Mito II. Onahama,Utsunomiya,Shirakawa I. Tokyo,Maebashi,Choshi, Kumagaya,Chichibu

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	71	S-1431	5	4	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 04:16 March 12, 1981 Location of Hypocenter Epicentral Region Southern Kanto Latitude 35.90°N Longitude 140.27°E Depth 60 Km Class Magnitude 4.7	Intensities II. Tokyo,Mito,Choshi,Kakioka, Ajiro,Utsunomiya,Chiba,Nikko I. Kumagaya,Maebashi,Shirakawa, Chichibu

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	46	M- 458	7	11	2

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 20:08 March 12, 1981 Location of Hypocenter Epicentral Region SW Hokkaido Region Latitude 42.33°N Longitude 140.92°E Depth 0 Km Class Magnitude 3.0	Intensities II. Muroran

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Muroran-S	on ground	37	S-1432	3	3	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 17:00 March 22, 1981 Location of Hypocenter Epicentral Region Southern Chubu Latitude 35.32°N Longitude 138.32°E Depth 30 Km Class Magnitude 4.4	Intensities III. Shizuoka II. Kofu,Kawaguchiko I. Ajiro,Iida,Irozaki

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Shimizu-sekitan-M	on structure	64	M- 456	9	7	---
Omaezaki-M	on ground	100	M- 457	3	3	1
Okitsu-S	on ground	60	S-1433	1	1	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	12:04 April 13, 1981
Location of Hypocenter	
Epicentral Region	E off S Tohoku
Latitude	37.27°N
Longitude	142.35°E
Depth	30 Km
Class	
Magnitude	5.7

Intensities
III. Fukushima
II. Tokyo,Mito,Maebashi,Kumagaya, Utsunomiya,Sendai,Shirakawa, Onahama
I. Chiba,Choshi,Yokohama,Kofu, Morioka,Sakata,Tateyama, Ofunato,Ishinomaki,Karuizawa

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	219	S-1434	1	1	1
Yamashita-dai 7-M	on structure	320	M- 460	2	1	---
Yamashita-hen-M	on ground	320	M- 459	2	2	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	05:30 April 27, 1981
Location of Hypocenter	
Epicentral Region	Ise Bay Region
Latitude	34.85°N
Longitude	136.90°E
Depth	40 Km
Class	
Magnitude	4.4

Intensities
II. Nara,Tsu,Yokkaichi
I. Nagoya,Gifu,Ueno,Ajiro

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kinuura-ji-S	on ground	4	S-1435	3	3	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 03:30 May 23, 1981 Location of Hypocenter Epicentral Region E off S Tohoku Latitude 37.07°N Longitude 141.68°E Depth 50 Km Class Magnitude 5.3	Intensities II. Fukushima,Utsunomiya, Shirakawa I. Onahama,Sendai,Ofunato, Morioka,Ishinomaki,Mito, Choshi

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Sendai-M	on ground	134	M- 461	6	8	2
Sendai-MB	in ground	134	M- 462	2	2	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 19:33 June 4, 1981 Location of Hypocenter Epicentral Region Tokyo Bay Region Latitude 34.97°N Longitude 139.72°E Depth 60 Km Class Magnitude 3.9	Intensities I. Yokohama

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	99	M- 463	2	2	1
Kawasaki-dai 5 -ko-M	on structure	107	M- 464	5	---	
Kawasaki-dai 5 -chi-M	on ground	107	M- 465	10	8	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 02:59 June 13, 1981 Location of Hypocenter Epicentral Region S coast of Kii Pen Latitude 34.22°N Longitude 135.13°E Depth 10 Km Class Magnitude 3.3	Intensities II. Wakayama

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Wakayama-S	on ground	9	S-1448	2	2	2

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 19:12 June 25, 1981 Location of Hypocenter Epicentral Region Chubu-Kinki Border Latitude 35.30°N Longitude 136.42°E Depth 20 Km Class Magnitude 3.3	Intensities I. Ueno

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	298	M- 466	7	5	2
Yamashita-dai 7-M	on structure	298	M- 467	1	1	
Kawasaki-dai 5 -ko-M	on structure	307	M- 468	18	---	
Kawasaki-dai 5 -chi-M	on ground	307	M- 469	9	17	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 15:34 July 11, 1981 Location of Hypocenter Epicentral Region E off N Tohoku Latitude 41.45°N Longitude 142.10°E Depth 60 Km Class Magnitude 5.3	Intensities III. Hachinohe,Mutsu II. Aomori,Urakawa,Miyako I. Hiroo,morioka,Mito,Kushiro, Mori,Hakodate

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hachinohe-S	on ground	112	S-1436	4	4	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 0:46 July 17, 1981 Location of Hypocenter Epicentral Region W Setonaikai Region Latitude 33.38°N Longitude 132.22°E Depth 60 Km Class Magnitude 5.0	Intensities III. Matsuyama,Oita,Uwajima II. Yamaguchi,Fukuyama I. Nobeoka,Kochi,Hamada, Miyazaki,Sumoto

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Matsuyama-S	on ground	61	S-1437	14	9	4
Oita-S	on ground	53	S-1439	9	6	3

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 02:00 July 29, 1981 Location of Hypocenter Epicentral Region SW Hokkaido Region Latitude 41.63°N Longitude 140.23°E Depth 190 Km Class Magnitude 5.6	Intensities II. Urakawa,Hachinohe,Miyako I. Aomori,Morioka,Sakata,Hiroo

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hachinohe-S	on ground	167	S-1438	3	4	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 16:56 August 7, 1981 Location of Hypocenter Epicentral Region E off Kanto Latitude 36.43°N Longitude 141.08°E Depth 40 Km Class Magnitude 4.5	Intensities I. Mito,Choshi,Shirakawa

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	49	S-1440	5	3	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	12:18 August 8, 1981	Intensities
Location of Hypocenter		III. Hiroo
Epicentral Region	S off Hokkaido	II. Obihiro,Urakawa,Hachinohe
Latitude	42.38°N	I. Kushiro,Nemuro,Morioka
Longitude	143.78°E	
Depth	100 Km	
Class		
Magnitude	5.2	

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Tokachi-M	on ground	67	M- 470	26	26	16

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	18:05 August 14, 1981	Intensities
Location of Hypocenter		I. Tokyo,Yokohama,Chiba
Epicentral Region	Tokyo Bay Region	
Latitude	35.53°N	
Longitude	139.87°E	
Depth	60 Km	
Class		
Magnitude	4.2	

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	20	M- 477	2	3	1
Kawasaki-dai 5 -chi-M	on structure	30	M- 480	4	10	
Kawasaki-dai 5 -ko-M	on ground	30	M- 482	25	---	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 11:54 August 15, 1981 Location of Hypocenter Epicentral Region S coast of Chubu Latitude 34.80°N Longitude 138.05°E Depth 40 Km Class Magnitude 4.8	Intensities III. Shizuoka II. Hamamatsu,Iida,Ajiro I. Tokyo,Kofu,Nagoya,Mishima, Kawaguchiko,Omaezaki,Oshima

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Shimizu-sekitan-M	on structure	42	M- 471	23	8	---
Omaezaki-M	on ground	25	M- 472	15	11	6

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 23:08 August 18, 1981 Location of Hypocenter Epicentral Region Southern Chubu Latitude 35.28°N Longitude 137.58°E Depth 50 Km Class Magnitude 5.0	Intensities III. Nagoya,Iida II. Shizuoka,Tsu,Kofu,Hikone, Mishima,Ajiro,Kawaguchiko I. Gifu,Kumagaya,Yokohama,Kyoto, Tateyama,Hamamatsu,Takayama, Osaka,Omaezaki,Tsuruga, Maebashi,Irozaki,Nara

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Okitsu-S	on ground	89	S-1441	1	1	1
Nagoya-inae-S	on structure	71	S-1442	3	4	1
Kinuura-ji-S	on ground	75	S-1443	1	---	1
Inae-yaita-M	on ground	71	M- 473	2	3	
Shimizu-sekitan-M	on structure	89	M- 474	4	3	
Omaezaki-M	on ground	96	M- 475	4	4	2
Yamashita-hen-M	on ground	188	M- 476	7	6	3
Yamashita-dai 7-M	on structure	188	M- 478	1	1	
Kawasaki-dai 5 -chi-M	on ground	197	M- 479	12	14	
Kawasaki-dai 5 -ko-M	on structure	197	M- 481	17	---	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	18:24 September 2, 1981
Location of Hypocenter	
Epicentral Region	E off Kanto
Latitude	35.80°N
Longitude	141.13°E
Depth	40 Km
Class	
Magnitude	5.8

Intensities

IV. Choshi
III. Mito,Tokyo,Fukushima
II. Tateyama,Utsunomiya,Onahama, Yokohama,Katsuura
I. Chiba,Maebashi,Kumagaya, Iida,Shirakawa

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	40	S-1445	40	23	8
Chiba-S	on ground	100	S-1444	7	8	1
Yamashita-hen-M	on ground	135	M- 487	3	3	1
Yamashita-dai 7-M	on structure	135	M- 489	1	1	
Kawasaki-dai 5 -ko-M	on ground	126	M- 491	16	---	
Kawasaki-dai 5 -chi-M	on structure	126	M- 492	16	17	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	14:35 September 3, 1981
Location of Hypocenter	
Epicentral Region	SE off Hokkaido
Latitude	43.47°N
Longitude	146.82°E
Depth	30 Km
Class	
Magnitude	6.5

Intensities

IV. Nemuro
III. Ichinoseki,Kushiro
II. Hiroo,Urakawa,Morioka, Hachinohe,Ofunato,Abashiri
I. Sakata,Mito,Utsunomiya, Asahikawa,Obihiro,Aomori, Onahama,Hakodate,Tokyo,Akita

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hanasaki-M	on ground	106	M- 483	33	29	16
Kushiro-S	on ground	210	S-1446	13	13	13

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 04:39 September 4, 1981 Location of Hypocenter Epicentral Region E off Kanto Latitude 35.28°N Longitude 141.00°E Depth 40 Km Class Magnitude 5.4	Intensities II. Choshi,Tokyo I. Utsunomiya,Kofu,Tateyama, Fukushima,Akita,Oshima,Chiba, Onahama,Maebashi

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	125	M- 488	3	3	1
Yamashita-dai 7-M	on structure	125	M- 490	1	1	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 23:51 September 12, 1981 Location of Hypocenter Epicentral Region Southern Hokkaido Latitude 42.68°N Longitude 143.30°E Depth 130 Km Class Magnitude 5.9	Intensities III. Kushiro,Hachinohe,Obihiro II. Hiroo,Iwamizawa,Urakawa, Morioka I. Aomori,Nemuro,Tomakomai, Miyako,Ofunato

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Tokachi-M	on ground	37	M- 484	21	23	15

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 10:20 September 13, 1981 Location of Hypocenter Epicentral Region E off Kanto Latitude 36.12°N Longitude 141.15°E Depth 40 Km Class Magnitude 5.0	Intensities III. Mito,Choshi II. Utsunomiya,Tokyo,Shirakawa I. Maebashi,Fukushima,Onahama

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Kashima-zokan-S	on ground	43	S-1447	3	3	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 01:35 October 12, 1981 Location of Hypocenter Epicentral Region Miyagiken-Oki Latitude 38.10°N Longitude 142.02°E Depth 40 Km Class Magnitude (Jishin Kazan Gaikyo)	Intensities II. Morioka,Ofunato,Miyako Ishinomaki I. Sendai

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Sendai-M	on ground	100	M- 485	10	3	3
Sendai-MB	in ground	100	M- 486	4	4	2

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 10:48 October 15, 1981 Location of Hypocenter Epicentral Region Iwateken-Oki Latitude 40.05°N Longitude 142.05°E Depth 40 Km Class Magnitude (Jishin Kazan Gaikyo)	Intensities III. Ofunato,Miyako,Hachinohe, Morioka,Aomori II. Kushiro,Sendai,Ichinoseki I. Hiroo,Ishinomaki,Fukushima, Urakawa,Nemuro,Obihiro, Hakodate,Shirakawa,Sakata, Rumoi,Yokohama

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Aomori-S	on ground	138	S-1449	13	6	4
Hachinohe-S	on ground	75	S-1450	6	6	3

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 13:34 November 6, 1981 Location of Hypocenter Epicentral Region Miyagiken-Oki Latitude 38.00°N Longitude 141.08°E Depth 40 Km Class Magnitude (Jishin Kazan Gaikyo)	Intensities III. Ishinomaki II. Morioka,Fukushima,Ofunato, Miyako,Sendai I. Mito,Utsunomiya,Shirakawa

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Sendai-M	on ground	52	M- 493	21	10	6
Sendai-MB	in ground	52	M- 494	6	5	3

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 07:51 November 19, 1981 Location of Hypocenter Epicentral Region Hyuganada Latitude 31.13°N Longitude 132.03°E Depth 40 Km Class Magnitude (Jishin Kazan Gaikyo)	Intensities III. Miyazaki,Aburatsu II. Oita,Hitoyoshi,Nobeoka I. Kumamoto,Kagoshima

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hososhima-S	on ground	90	S-1451	2	2	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time 19:17 November 23, 1981 Location of Hypocenter Epicentral Region SE of Hokkaido Latitude 43.02°N Longitude 146.05°E Depth 40 Km Class Magnitude 6.3 (Jishin Kazan Gaikyo)	Intensities IV. Nemuro III. Kushiro II. Akita I. Hiroo,Morioka,Obihiro, Urakawa,Monbetsu,Ofunato, Hakodate,Hachinohe

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hanasaki-M	on ground	60	M- 496	57	47	21

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	20:51 November 25, 1981	Intensities	
Location of Hypocenter		II.	Hakodate
Epicentral Region	Hakodate-Fukin		
Latitude	41.13 N		
Longitude	140.13°E		
Depth	40 Km		
Class			
Magnitude	(Jishin Kazan Gaikyo)		

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hakodate-M	on ground	480	M- 495	14	16	9

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	09:27 November 30, 1981	Intensities	
Location of Hypocenter		III.	Utsunomiya
Epicentral Region	Ibaragiken-Nanseibu	II.	Nikko,Choshi,Mito,Kumagaya, Tokyo
Latitude	36.02°N	I.	Yokohama,Maebashi,Shirakawa, Tateyama,Ajiro
Longitude	139.15°E		
Depth	60 Km		
Class			
Magnitude	(Jishin Kazan Gaikyo)		

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Yamashita-hen-M	on ground	75	M- 504	4	5	2
Kawasaki-dai 5 -ko-M	on structure	68	M- 505	6	---	
Kawasaki-dai 5 -chi-M	on ground	68	M- 506	4	7	

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	15:25 December 2, 1981	Intensities	
Location of Hypocenter		IV.	Miyako,Urakawa,Ofunato, Morioka,Hachinohe,Mutsu
Epicentral Region	E off N Tohoku	III.	Iwamizawa,Kushiro,Hakodate
Latitude	40.13°N	II.	Esashi,Ishinomaki,Tomakomai, Nemuro,Sapporo,Muroran
Longitude	142.05°E	I.	Yokohama,Onahama,Otaru,Akita, Rumoi,Fukaura,Sendai
Depth	40 Km		
Class			
Magnitude	6.6 (Jishin Kazan Gaikyo)		

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Hakodate-M	on ground	171	M- 497	26	45	11
Sendai-MB	in ground	301	M- 498	10	8	5
Sendai-M	on ground	301	M- 499	6	4	2
Tokachi-M	on ground	185	M- 500	7	6	3
Ofunato-mound-M	on structure	206	M- 501	16	13	16
Kamaishi-M	on ground	173	M- 502	14	16	12
Kamaishi-MB	in ground	173	M- 503	9	7	6
Aomori-S	on ground	125	S-1452	20	19	7
Hachinohe-S	on ground	75	S-1453	53	42	17
Muroran-S	on ground	202	S-1454	11	15	2
Ofunato-bo-S	on structure	206	S-1455	9	13	4
Ofunato-bochi-S	on ground	205	S-1456	9	6	1

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

EARTHQUAKE DATA

Date and Time	16:32 December 28, 1981	Intensities	
Location of Hypocenter		III.	Wakayama
Epicentral Region	Wakayamashi-Fukin	I.	Sumoto
Latitude	34.03°N		
Longitude	135.03°E		
Depth	10 Km		
Class			
Magnitude	(Jishin Kazan Gikyo)		

STRONG-MOTION ACCELEROGRAPH RESULTS

Station			Record Number	Max. Acceleration (gal)		
Abbreviated Name	Installation Condition	Epicentral Distance(km)		NS	EW	UD
Wakayama-S	on ground	7	S-1457	13	19	4

RECORD NUMBER	S-1418
STATION	TOMAKOMAI-S

EARTHQUAKE DATA

****

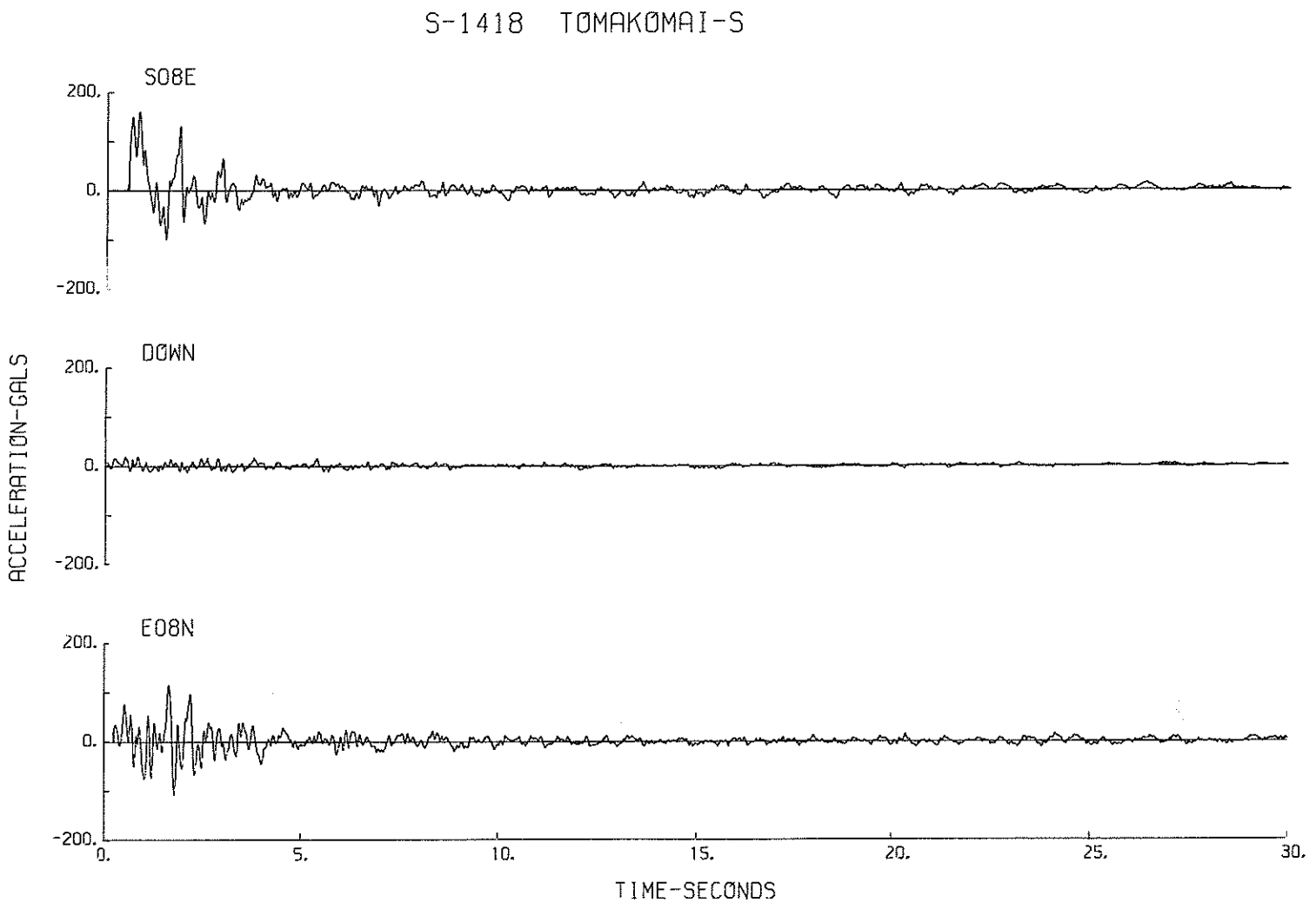
DATA AND TIME	13:58 JANUARY 23, 1981
LOCATION OF HYPOCENTER	
EPICENTRAL REGION	S COAST OF HOKKAIDO
LATITUDE	42.42°N
LONGITUDE	142.20°E
DEPTH	130 KM
MAGNITUDE	7.1

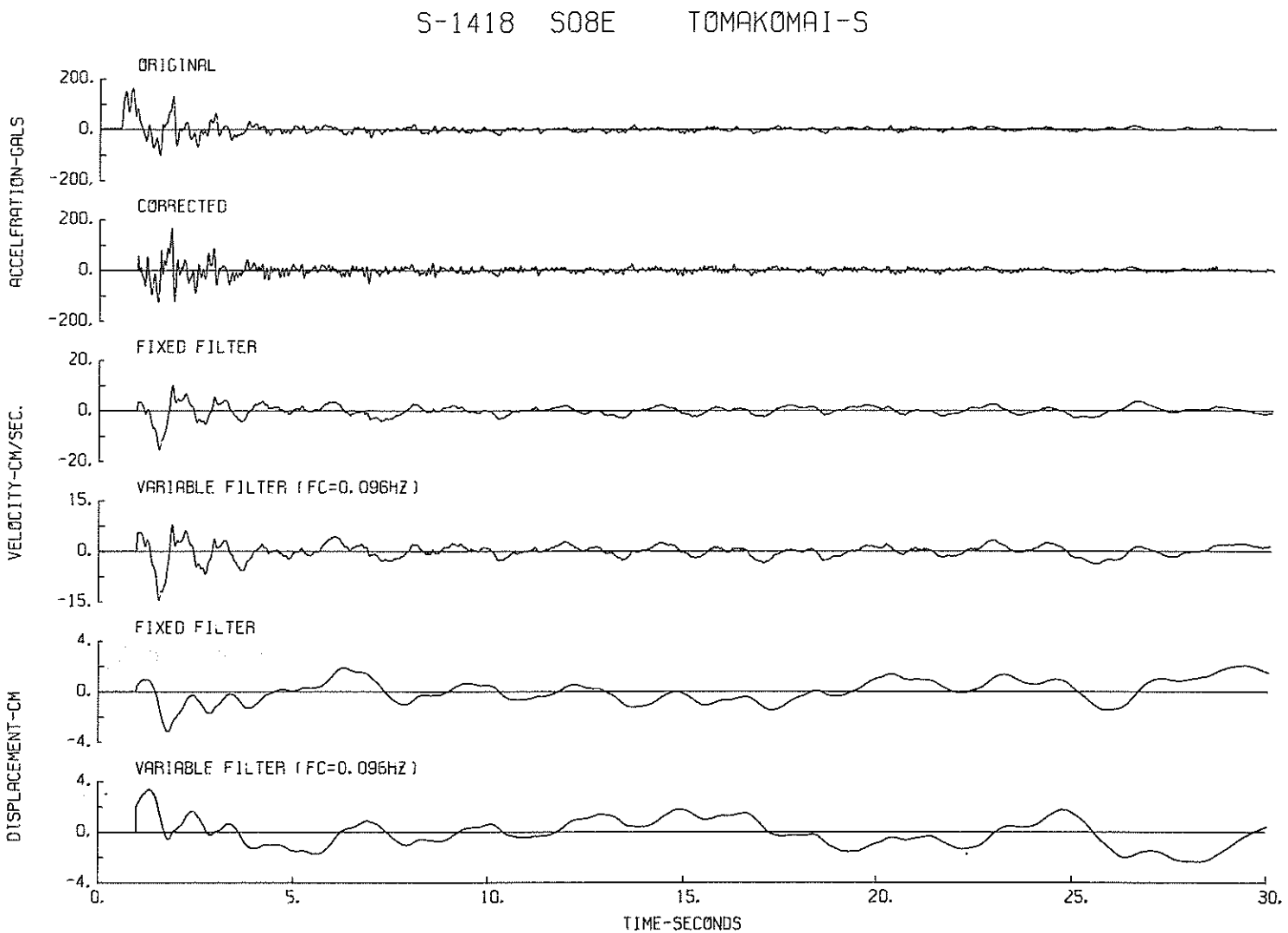
****

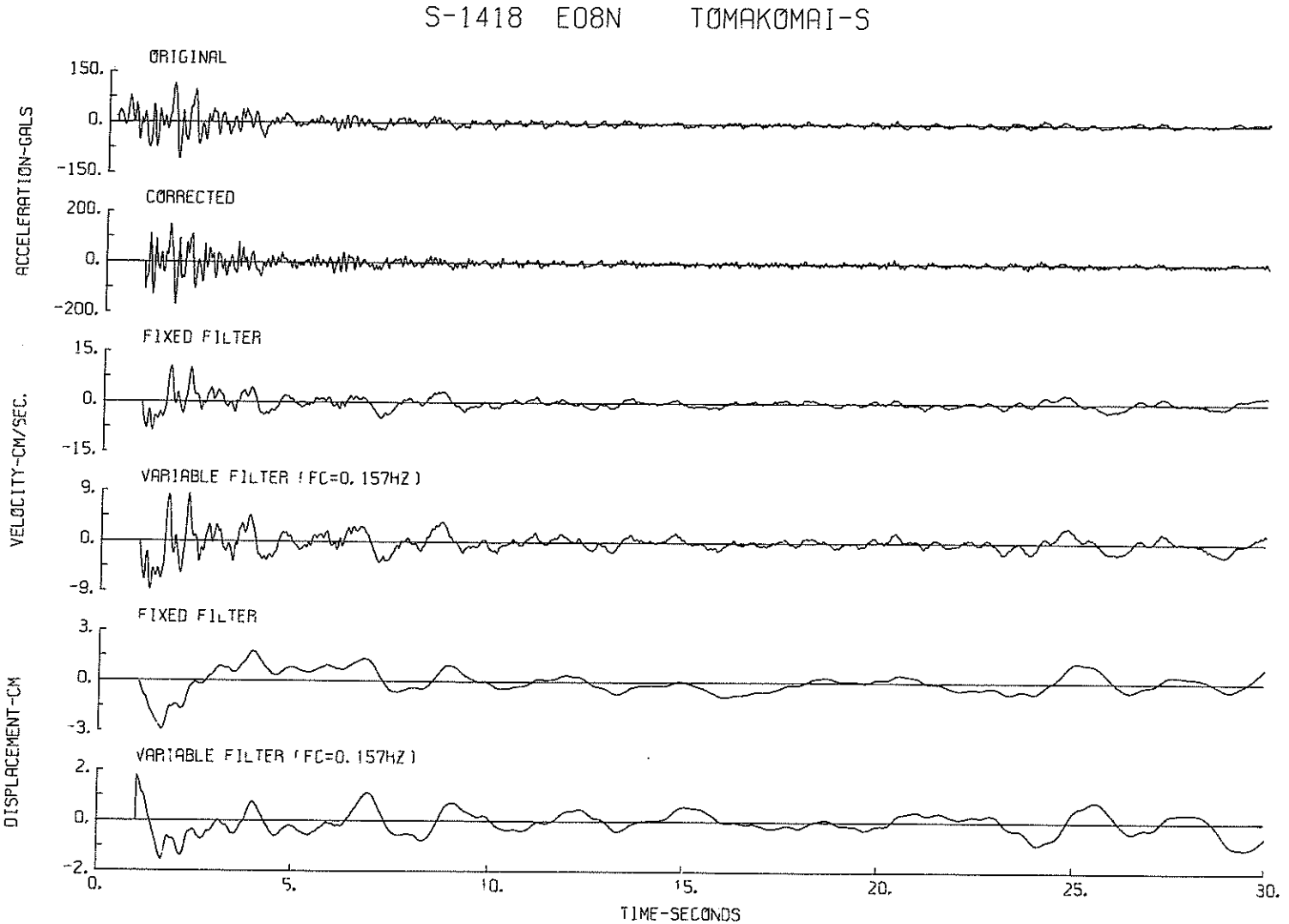
	COMPONENT		
	S08E	E08N	DOWN
PARAMETER OF THE VARIABLE FILTER			
FC (HZ)	0.096	0.157	0.243
MAXIMUM ACCELERATION (GAL)			
ORIGINAL	161.2	114.5	19.5
SMAC-B2 EQUIVALENT			
CORRECTED	167.	169.	25.1
MAXIMUM VELOCITY (CM/SEC.)			
FIXED FILTER	15.2	10.4	2.13
VARIABLE FILTER	14.4	8.6	1.67
MAXIMUM DISPLACEMENT (CM)			
FIXED FILTER	3.15	2.87	0.914
VARIABLE FILTER	3.38	1.79	0.374

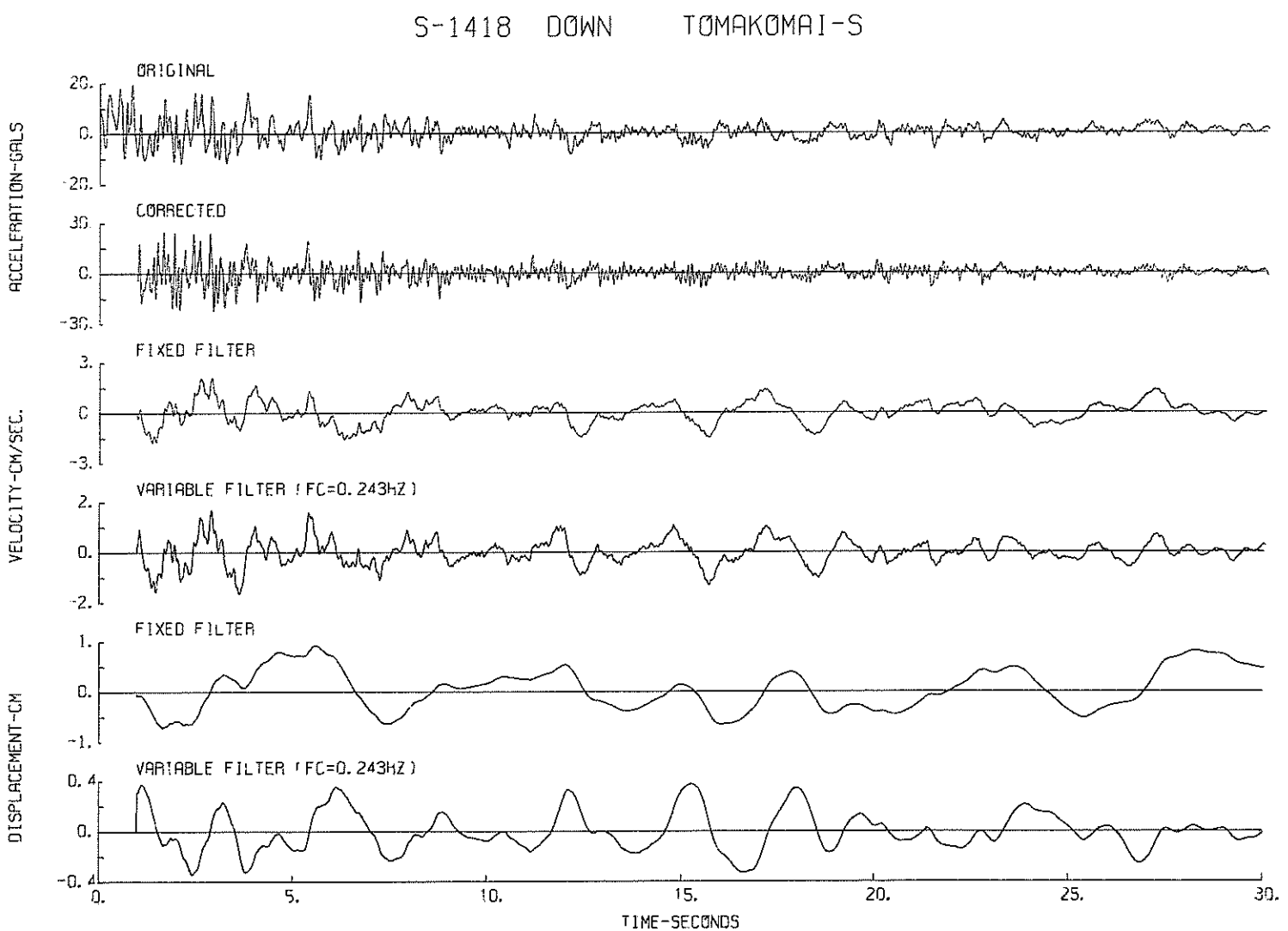
Remarks

The SMAC-B2 accelerograph was triggered by the auxiliary starter to leave the record S-1418. Normally, the SMAC-B2 accelerograph is triggered by the starter of which threshold level 8 or 10gals. The threshold level of the auxiliary starter is 100 gals. Because that the recording paper started when the acceleration was high, the traces of the S08E and E08N components are not sufficiently clear for the digitization in their beginning. Then, the fist 56 data for the S08E components and the fist 25 data for the E08N components were substituted with dummy values in the time history figures and the digitized records.


S-1418 TØMAKØMAI-S
S08E
200.
0.
-200.
DØWN
200.
0.
-200.
E08N
200.
0.
-200.
ACCELERATION-GALS
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

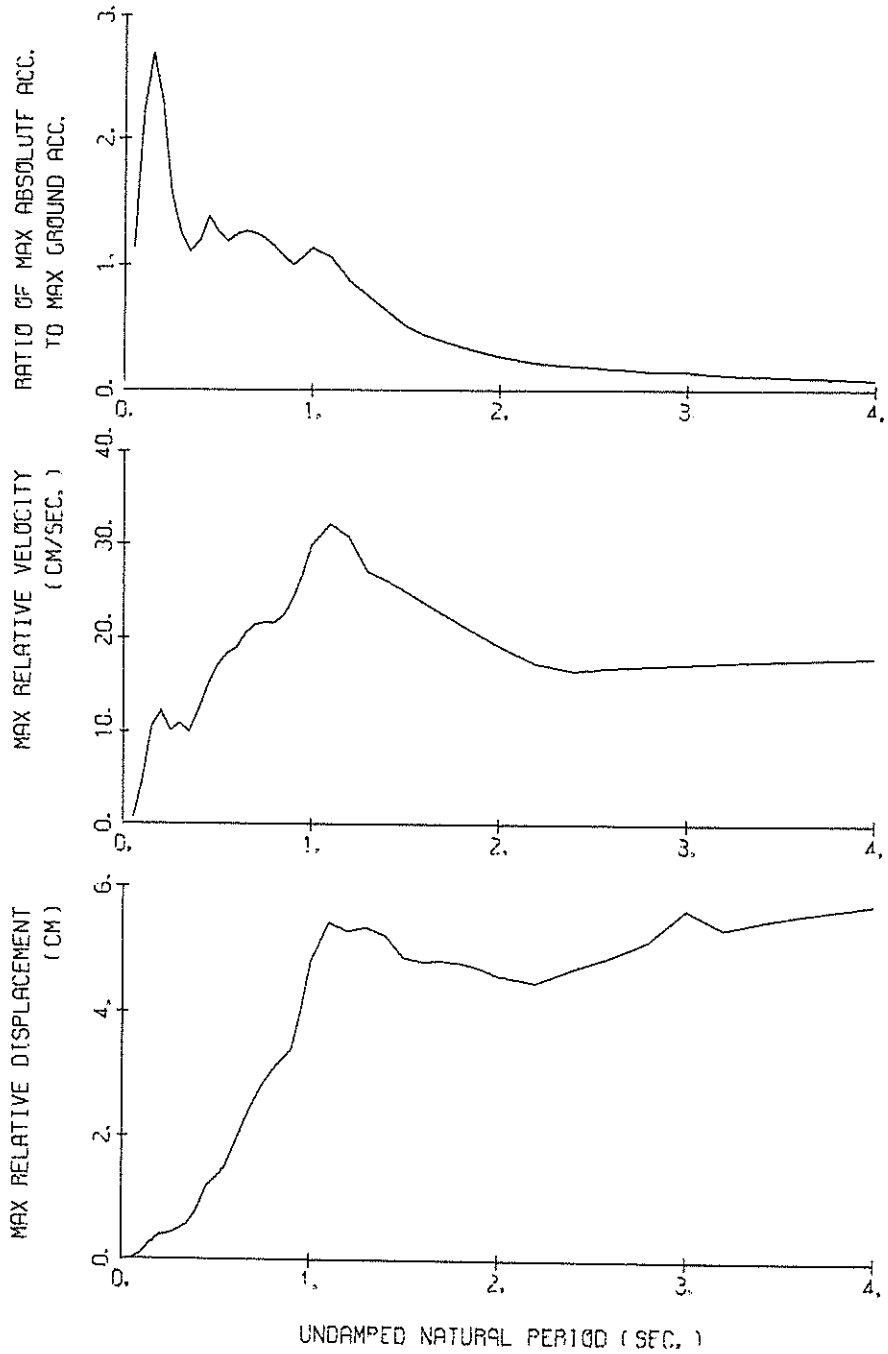

S-1418 S08E TOMAKOMAI-S
ORIGINAL
CORRECTED
FIXED FILTER
VARIABLE FILTER (FC=0.096HZ)
FIXED FILTER
VARIABLE FILTER (FC=0.096HZ)
ACCELERATION-GALS
VELOCITY-CM/SEC.
DISPLACEMENT-CM
TIME-SECONDS
200.
0.
-200.
20.
-20.
15.
-15.
4.
-4.
5.
10.
15.
20.
25.
30.


S-1418 E08N TØMAKØMAI-S
ØRIGINAL
150.
0.
-150.
ACCELERATION-GALS
CORRECTED
200.
0.
-200.
FIXED FILTER
15.
0.
-15.
VELOCITY-CM/SEC.
VARIABLE FILTER (FC=0.157HZ)
9.
0.
-9.
FIXED FILTER
3.
0.
-3.
DISPLACEMENT-CM
VARIABLE FILTER (FC=0.157HZ)
2.
0.
-2.
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1418 DOWN TOMAKOMAI-S
ORIGINAL
CORRECTED
FIXED FILTER
VARIABLE FILTER (FC=0.243HZ)
FIXED FILTER
VARIABLE FILTER (FC=0.243HZ)
ACCELERATION-GALS
VELOCITY-CM/SEC.
DISPLACEMENT-CM
TIME-SECONDS
20.
0.
-20.
30.
0.
-30.
3.
0
-3.
2.
0.
-2.
1.
0.
-1.
0.4
0.
-0.4
0.
5.
10.
15.
20.
25.
30.

S-1418 S08E TOMAKOMAI-S

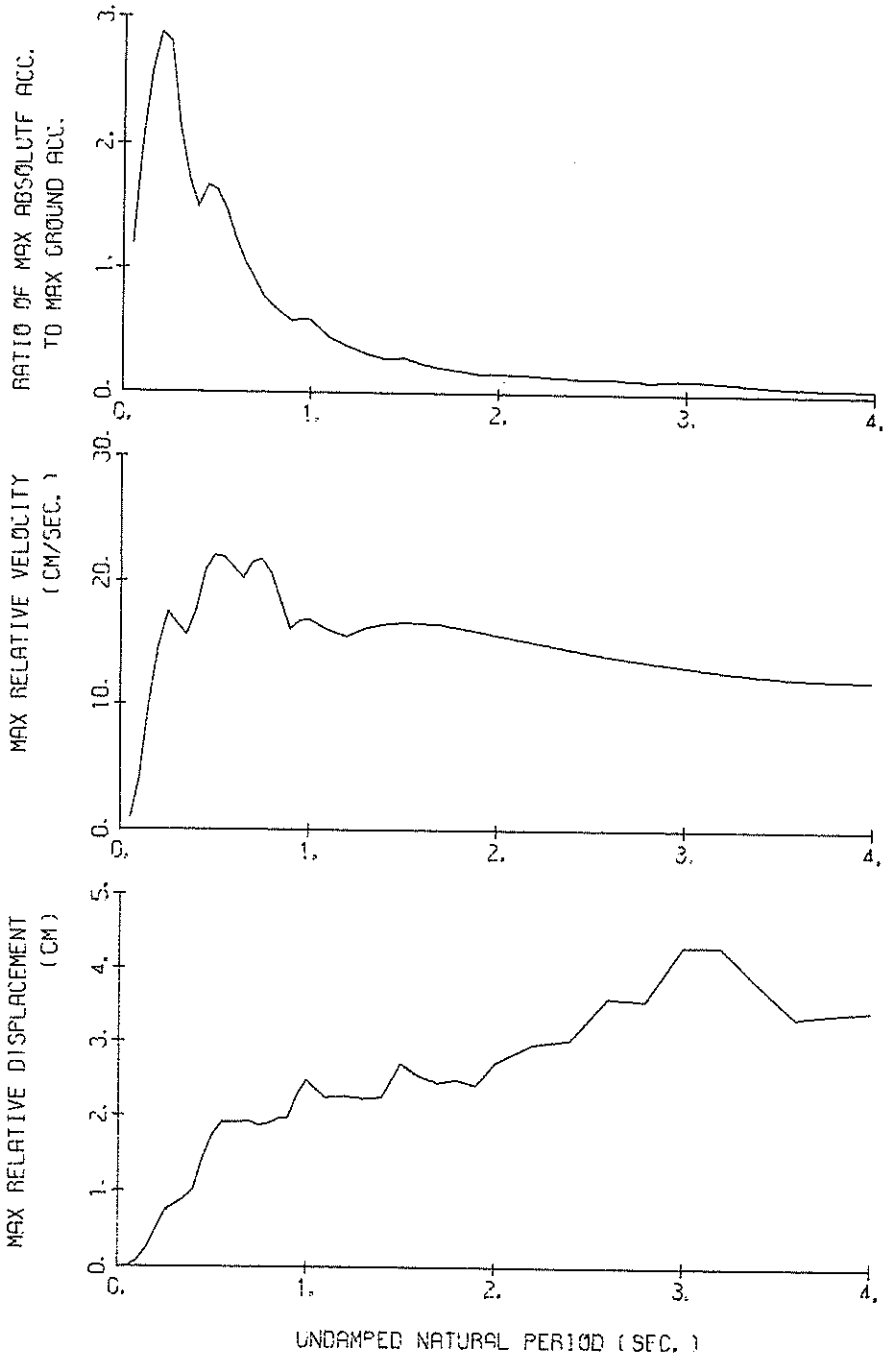
(1/FC = 10.42 sec.)



RESPONSE SPECTRA (h=0.05)

S-1418 E08N TOMAKOMAI-S

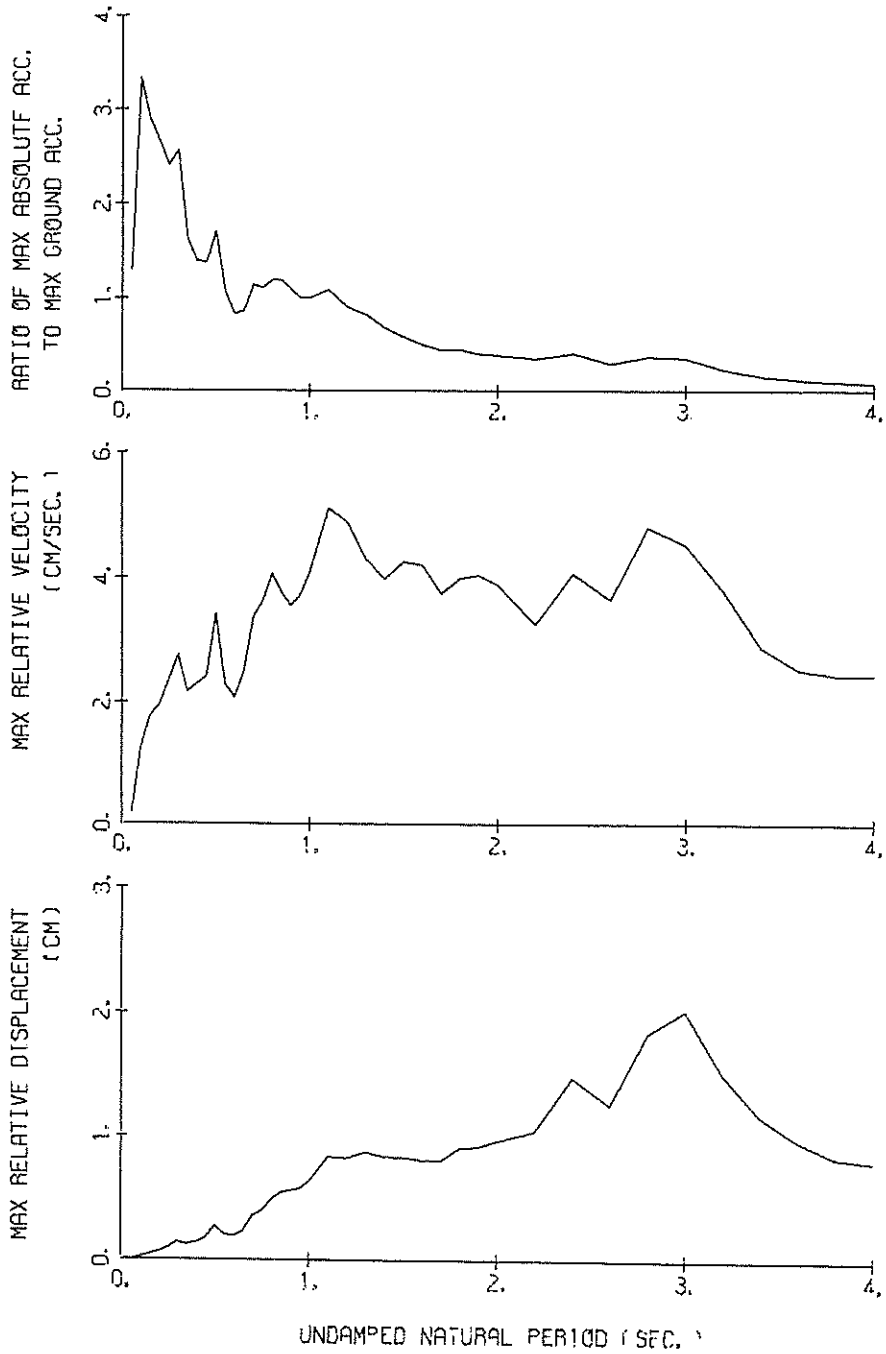
(1/FC = 6.37 sec.)



RESPONSE SPECTRA (H=0.05)

S-1418 DØWN TØMAKØMAI-S

(1/FC = 4.12 sec.)



RESPØNSE SPECTRA (H=0.05)

RESPONSE SPECTRUM

RECORD = S-1418 COMPONENT = S08E SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 167.04 (GAL)
TIME LENGTH = 29.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	266.8	1.15	0.017	192.7	0.56	0.012	185.3	0.49	0.012	182.9	0.46	0.012	179.7	0.45	0.011
0.10	1252.5	19.90	0.317	425.3	5.45	0.107	371.1	4.71	0.093	293.7	3.60	0.074	208.2	2.30	0.050
0.15	915.7	21.79	0.522	579.7	13.57	0.329	451.1	10.59	0.257	338.3	7.41	0.186	229.2	4.15	0.118
0.20	860.9	26.28	0.872	474.3	15.50	0.479	385.7	12.27	0.387	294.0	8.77	0.290	205.3	5.67	0.186
0.25	365.0	13.46	0.578	275.7	10.40	0.436	262.6	10.15	0.414	233.7	9.51	0.363	175.0	7.21	0.241
0.30	345.4	15.66	0.787	264.5	11.91	0.602	209.9	10.91	0.478	166.2	9.63	0.371	146.4	7.72	0.302
0.35	311.6	16.41	0.967	238.5	12.83	0.741	184.3	9.99	0.569	141.0	8.03	0.428	129.5	8.14	0.366
0.40	356.8	22.74	1.446	235.8	14.42	0.954	198.0	12.40	0.801	145.4	10.58	0.584	131.3	9.16	0.496
0.45	335.3	23.14	1.720	276.5	18.15	1.415	231.5	15.07	1.180	169.9	13.47	0.856	142.7	10.33	0.683
0.50	360.0	26.76	2.280	255.7	18.79	1.615	211.2	17.22	1.332	171.3	15.23	1.071	153.8	11.16	0.896
0.55	387.8	33.65	2.972	246.2	21.96	1.885	197.6	18.39	1.505	184.5	16.08	1.390	161.2	11.46	1.111
0.60	288.7	26.34	2.633	222.5	20.73	2.026	207.9	18.99	1.883	192.3	16.20	1.713	164.3	11.19	1.324
0.65	255.1	25.72	2.730	222.8	22.64	2.381	211.9	20.59	2.251	194.3	17.23	2.023	163.8	10.56	1.520
0.70	255.1	27.46	3.166	221.3	23.68	2.745	209.7	21.48	2.582	191.0	17.91	2.299	160.7	10.94	1.691
0.75	228.7	26.70	3.258	214.5	24.00	3.047	202.3	21.67	2.858	183.6	17.88	2.531	154.7	12.38	1.833
0.80	217.7	26.69	3.529	203.4	24.00	3.294	191.3	21.62	3.081	173.1	18.16	2.714	147.0	14.03	1.946
0.85	204.6	27.61	3.745	190.7	23.65	3.488	178.9	22.40	3.255	161.0	20.21	2.858	138.4	15.53	2.031
0.90	340.0	48.26	6.977	195.0	25.54	3.996	166.8	24.15	3.408	148.3	21.84	2.975	128.9	16.82	2.093
0.95	494.4	74.80	11.302	228.0	33.54	5.206	178.0	26.66	4.048	137.4	23.08	3.096	119.2	17.88	2.141
1.00	411.5	65.13	10.424	243.3	38.78	6.155	189.5	29.85	4.777	131.6	24.08	3.270	109.7	18.74	2.198
1.10	308.1	54.05	9.444	222.1	39.49	6.799	177.7	32.16	5.417	123.7	25.24	3.714	91.5	20.04	2.306
1.20	281.2	53.36	10.257	171.9	35.13	6.258	145.8	30.71	5.285	114.2	25.50	4.098	75.2	20.78	2.378
1.30	168.6	35.29	7.216	140.5	29.51	6.005	125.7	27.07	5.343	103.2	25.27	4.285	65.7	21.07	2.454
1.40	133.2	31.25	6.613	118.2	27.26	5.858	105.7	26.10	5.214	86.9	24.70	4.191	60.9	21.04	2.608
1.50	107.3	28.29	6.117	95.7	25.88	5.441	86.0	25.01	4.861	73.9	23.91	4.095	57.1	20.79	2.755
1.60	85.9	26.91	5.572	79.8	24.37	5.167	74.6	23.82	4.803	66.6	22.99	4.174	53.6	20.45	2.849
1.70	188.2	49.99	13.776	71.2	23.10	5.209	66.2	22.62	4.809	59.2	22.02	4.190	50.4	20.02	2.930
1.80	95.3	27.39	7.824	62.7	21.60	5.135	58.5	21.44	4.775	52.3	21.04	4.161	47.5	19.52	3.082
1.90	119.6	36.47	10.935	61.6	20.40	5.627	51.9	20.31	4.708	46.1	20.09	4.109	44.8	18.99	3.227
2.00	123.0	38.73	12.466	51.5	19.26	5.212	45.7	19.25	4.581	40.9	19.17	4.020	42.4	18.45	3.362
2.20	79.9	28.59	9.798	41.2	17.42	5.046	37.1	17.33	4.474	36.3	17.48	4.224	38.2	17.36	3.609
2.40	34.5	17.78	5.027	33.3	16.98	4.831	32.8	16.60	4.696	32.4	16.02	4.446	34.6	16.33	3.825
2.60	32.8	17.48	5.615	29.5	17.19	5.023	29.1	16.90	4.889	29.1	16.36	4.639	31.6	15.38	4.016
2.80	64.4	30.43	12.785	35.3	17.71	6.993	26.0	17.15	5.135	26.2	16.64	4.808	29.0	15.22	4.186
3.00	60.1	29.38	13.694	33.4	17.61	7.616	24.9	17.36	5.628	23.7	16.87	4.958	26.8	15.52	4.339
3.20	32.9	18.02	8.536	23.6	17.77	6.099	21.1	17.53	5.333	21.6	17.07	5.091	24.8	15.78	4.476
3.40	24.2	18.14	7.092	19.2	17.91	5.573	19.1	17.68	5.445	19.7	17.23	5.209	23.2	16.00	4.599
3.60	18.4	18.24	6.052	17.4	18.02	5.669	17.4	17.80	5.546	18.1	17.38	5.313	21.7	16.20	4.713
3.80	20.2	18.33	7.399	16.1	18.12	5.864	15.9	17.91	5.634	16.6	17.50	5.407	20.3	16.37	4.816
4.00	17.4	18.40	7.036	14.5	18.20	5.829	14.6	18.00	5.711	15.4	17.61	5.491	19.2	16.53	4.910

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-1418 COMPONENT = EO8N SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 169.47 (GAL)
TIME LENGTH = 29.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	282.9	1.52	0.018	199.6	0.86	0.013	199.2	0.75	0.013	195.5	0.66	0.012	190.0	0.55	0.012
0.10	1391.0	22.08	0.352	398.1	5.17	0.101	339.9	4.03	0.085	278.7	2.85	0.070	222.7	1.76	0.054
0.15	1056.2	23.63	0.602	621.9	13.85	0.352	438.1	9.94	0.248	345.4	7.50	0.192	230.8	4.51	0.121
0.20	896.2	26.96	0.908	632.7	19.10	0.636	487.5	14.73	0.490	325.0	9.96	0.327	241.0	5.83	0.224
0.25	985.3	39.13	1.560	624.2	23.85	0.984	474.6	17.46	0.751	334.7	13.40	0.519	247.1	8.25	0.354
0.30	432.1	20.46	0.985	392.4	18.07	0.893	362.8	16.47	0.825	315.4	13.68	0.703	231.2	9.70	0.466
0.35	331.6	16.80	1.029	312.4	16.25	0.964	293.8	15.63	0.902	260.7	14.39	0.788	197.4	10.98	0.528
0.40	313.7	20.68	1.271	279.9	19.03	1.134	253.7	17.65	1.021	215.7	15.53	0.850	162.2	11.60	0.548
0.45	461.9	33.86	2.369	336.2	24.15	1.720	283.1	20.97	1.444	210.7	16.57	1.063	143.3	11.70	0.668
0.50	563.3	44.72	3.567	337.7	27.50	2.132	275.9	22.08	1.738	211.4	17.72	1.307	150.5	11.49	0.836
0.55	394.6	34.06	3.023	299.4	25.74	2.289	250.3	21.97	1.906	197.5	16.48	1.468	145.3	11.17	0.944
0.60	321.4	29.97	2.930	247.2	24.75	2.253	210.0	21.08	1.906	175.9	15.72	1.555	132.3	11.03	0.992
0.65	311.7	31.89	3.336	226.4	22.99	2.422	179.0	20.24	1.905	152.4	17.48	1.579	116.4	11.94	0.987
0.70	300.6	32.79	3.731	209.7	23.39	2.601	154.9	21.56	1.913	126.6	18.59	1.524	98.3	12.68	0.986
0.75	247.8	29.06	3.531	168.3	23.61	2.395	131.7	21.79	1.867	108.7	18.76	1.500	91.7	12.92	1.089
0.80	262.4	33.64	4.255	128.7	22.29	2.082	117.7	20.64	1.894	101.2	17.87	1.584	89.4	12.71	1.189
0.85	131.4	21.04	2.404	118.5	19.60	2.165	107.7	18.34	1.956	91.7	16.32	1.621	86.8	12.19	1.284
0.90	150.3	21.14	3.085	109.5	17.43	2.244	96.2	16.12	1.955	89.1	14.19	1.734	83.9	11.38	1.370
0.95	261.0	40.16	5.966	144.0	20.88	3.290	99.9	16.74	2.273	85.2	14.50	1.846	80.7	10.43	1.440
1.00	331.4	53.24	8.394	154.0	24.15	3.897	98.5	16.88	2.482	80.8	14.77	1.928	77.3	10.39	1.501
1.10	106.3	19.57	3.257	81.5	17.03	2.493	74.2	16.07	2.241	70.9	14.34	2.031	70.0	11.36	1.579
1.20	90.4	16.94	3.296	65.4	16.17	2.380	62.8	15.56	2.262	60.6	14.50	2.058	62.9	12.11	1.615
1.30	58.5	17.42	2.506	54.8	16.79	2.345	52.5	16.21	2.224	51.2	15.14	2.029	56.2	12.72	1.611
1.40	88.0	18.80	4.368	54.6	17.08	2.707	45.5	16.52	2.240	42.8	15.53	1.988	49.9	13.15	1.578
1.50	94.2	22.58	5.370	64.5	17.16	3.671	47.5	16.65	2.696	36.2	15.71	1.996	44.4	13.46	1.524
1.60	93.1	22.64	6.035	47.1	17.07	3.049	39.3	16.62	2.534	31.8	15.77	1.967	39.5	13.68	1.469
1.70	57.2	17.27	4.189	40.2	16.87	2.934	33.7	16.48	2.438	27.7	15.73	1.910	35.2	13.79	1.455
1.80	42.1	16.93	3.451	35.6	16.59	2.912	30.6	16.26	2.484	24.1	15.61	1.863	31.5	13.84	1.424
1.90	36.2	16.56	3.309	30.8	16.28	2.807	26.7	16.00	2.405	24.1	15.44	2.007	28.3	13.84	1.421
2.00	62.3	19.06	6.310	33.7	15.95	3.406	26.8	15.71	2.707	23.5	15.23	2.157	25.5	13.82	1.544
2.20	40.8	15.46	5.002	29.7	15.28	3.633	24.3	15.12	2.959	21.3	14.78	2.339	22.5	13.70	1.717
2.40	28.9	14.78	4.222	25.3	14.66	3.687	20.8	14.54	3.020	18.6	14.31	2.419	21.0	13.51	1.814
2.60	33.0	14.16	5.642	26.5	14.10	4.522	21.3	14.02	3.594	15.9	13.87	2.465	19.2	13.29	1.858
2.80	43.7	20.84	8.680	24.8	13.59	4.923	18.0	13.55	3.549	14.0	13.46	2.687	17.5	13.06	1.885
3.00	41.2	19.51	9.400	23.8	13.14	5.424	19.1	13.13	4.303	14.6	13.09	3.188	15.9	12.84	1.888
3.20	32.8	17.96	8.504	20.1	12.74	5.216	16.7	12.75	4.304	12.7	12.75	3.145	14.5	12.62	1.865
3.40	18.5	13.47	5.411	15.4	12.47	4.497	13.1	12.42	3.795	10.1	12.45	2.856	13.2	12.42	1.821
3.60	18.5	12.64	6.066	12.2	12.41	4.012	10.2	12.19	3.321	8.6	12.19	2.637	12.1	12.22	1.856
3.80	14.1	12.52	5.150	10.8	12.32	3.942	9.4	12.12	3.385	7.6	11.95	2.558	11.1	12.05	1.913
4.00	11.3	12.37	4.568	9.7	12.20	3.936	8.5	12.03	3.414	6.8	11.73	2.622	10.2	11.88	1.963

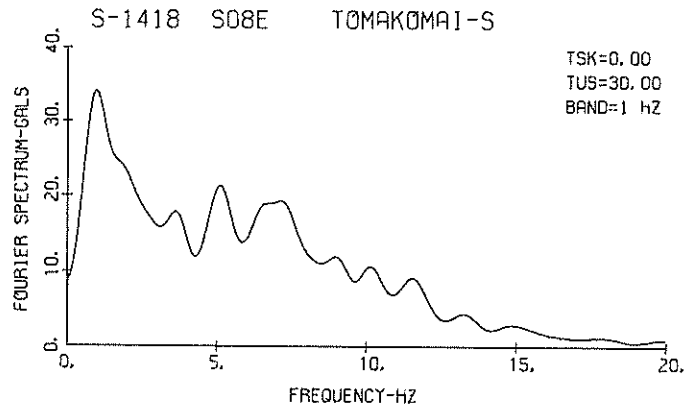
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-1418 COMPONENT = DOWN SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 25.06 (GAL)
TIME LENGTH = 29.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	42.9	0.31	0.003	32.8	0.16	0.002	31.7	0.15	0.002	32.2	0.14	0.002	31.6	0.12	0.002
0.10	317.5	5.02	0.080	97.3	1.53	0.025	83.6	1.25	0.021	63.4	0.92	0.016	40.1	0.57	0.009
0.15	304.9	7.17	0.174	104.3	2.37	0.059	72.4	1.78	0.042	52.8	1.28	0.029	35.6	0.74	0.018
0.20	209.4	6.68	0.212	88.9	2.66	0.091	66.6	1.96	0.067	48.0	1.30	0.047	31.9	0.94	0.029
0.25	107.1	4.26	0.170	76.2	3.02	0.121	60.2	2.36	0.095	44.2	1.65	0.069	28.5	1.19	0.040
0.30	137.3	6.51	0.313	87.8	3.93	0.201	64.2	2.76	0.146	41.3	1.82	0.093	25.3	1.19	0.050
0.35	41.4	2.36	0.128	43.4	2.38	0.134	40.8	2.17	0.126	33.7	1.77	0.102	23.4	1.22	0.066
0.40	94.5	5.92	0.383	43.0	2.72	0.174	34.8	2.30	0.140	28.1	1.86	0.112	21.6	1.27	0.079
0.45	51.3	3.71	0.263	39.9	2.89	0.204	34.4	2.41	0.176	27.9	1.92	0.141	19.6	1.23	0.090
0.50	113.4	8.99	0.718	58.9	4.68	0.373	42.8	3.42	0.270	27.6	2.15	0.171	17.2	1.21	0.096
0.55	48.5	4.52	0.372	32.3	2.82	0.248	26.8	2.28	0.204	20.2	1.82	0.152	15.4	1.19	0.103
0.60	64.9	6.13	0.592	26.8	2.40	0.245	20.7	2.08	0.188	16.8	1.80	0.150	14.3	1.35	0.114
0.65	40.2	3.88	0.430	28.2	2.97	0.301	21.6	2.51	0.229	17.8	2.06	0.187	13.8	1.46	0.130
0.70	85.1	9.62	1.056	42.2	4.61	0.523	28.6	3.37	0.353	20.0	2.32	0.243	13.7	1.52	0.152
0.75	61.9	7.46	0.883	35.6	4.35	0.507	27.8	3.63	0.395	21.6	2.78	0.306	14.5	1.57	0.187
0.80	48.6	6.22	0.788	34.3	4.76	0.557	29.9	4.06	0.483	23.6	3.07	0.375	15.3	1.66	0.217
0.85	82.1	10.68	1.503	34.0	4.34	0.622	29.7	3.76	0.540	23.4	2.91	0.420	15.2	1.75	0.239
0.90	52.3	7.66	1.072	31.3	4.23	0.642	27.4	3.55	0.558	21.9	2.90	0.436	14.4	1.79	0.251
0.95	44.5	6.80	1.018	30.2	4.49	0.689	25.0	3.73	0.569	19.2	2.80	0.426	13.2	1.85	0.253
1.00	71.1	11.36	1.801	32.2	5.07	0.814	25.0	4.09	0.632	18.5	2.96	0.460	12.5	1.90	0.292
1.10	62.7	11.03	1.922	32.2	6.11	0.985	27.3	5.10	0.832	20.8	3.75	0.626	13.1	2.07	0.361
1.20	64.6	12.39	2.355	28.4	6.09	1.035	22.6	4.88	0.822	18.7	3.47	0.658	12.9	2.30	0.399
1.30	31.3	6.54	1.338	24.0	5.10	1.027	20.5	4.29	0.869	15.4	3.22	0.638	11.9	2.39	0.411
1.40	24.7	5.77	1.224	19.3	4.73	0.958	16.8	3.98	0.832	13.3	3.17	0.639	10.6	2.40	0.417
1.50	52.7	12.72	3.005	22.8	5.23	1.300	14.6	4.25	0.826	11.2	3.46	0.619	9.3	2.38	0.418
1.60	19.9	5.35	1.289	15.6	4.71	1.011	12.5	4.20	0.807	10.2	3.42	0.644	8.1	2.38	0.427
1.70	21.3	5.71	1.558	13.0	4.23	0.953	11.1	3.75	0.802	9.3	3.33	0.659	7.2	2.41	0.469
1.80	27.0	8.35	2.218	15.1	4.42	1.234	11.1	3.99	0.907	8.7	3.49	0.687	7.2	2.47	0.510
1.90	24.2	7.32	2.208	12.9	4.36	1.176	10.0	4.04	0.913	8.7	3.51	0.767	7.1	2.50	0.546
2.00	12.2	4.53	1.239	10.6	4.19	1.069	9.6	3.89	0.966	8.5	3.41	0.831	6.9	2.48	0.577
2.20	13.3	4.96	1.631	9.5	3.53	1.157	8.6	3.25	1.044	7.7	2.93	0.893	6.3	2.32	0.611
2.40	21.0	8.27	3.060	13.5	5.28	1.963	10.2	4.07	1.479	7.3	3.02	1.034	5.6	2.21	0.607
2.60	11.3	4.83	1.938	8.5	3.59	1.461	7.4	3.65	1.255	6.3	3.28	1.065	4.8	2.16	0.650
2.80	18.9	8.71	3.748	11.8	6.14	2.335	9.3	4.80	1.833	6.8	3.47	1.322	4.2	2.10	0.711
3.00	16.4	8.30	3.738	11.6	5.80	2.641	8.9	4.52	2.022	6.2	3.15	1.376	3.9	2.15	0.723
3.20	8.4	4.99	2.190	6.9	4.30	1.798	5.8	3.79	1.508	4.5	2.94	1.131	3.4	2.14	0.690
3.40	4.2	2.96	1.243	4.2	3.00	1.238	4.0	2.88	1.165	3.4	2.57	0.978	3.2	2.11	0.632
3.60	3.5	2.68	1.139	3.2	2.60	1.034	3.0	2.52	0.965	2.7	2.36	0.856	2.9	2.08	0.593
3.80	2.6	2.60	0.958	2.4	2.50	0.873	2.3	2.43	0.831	2.2	2.33	0.756	2.7	2.09	0.575
4.00	2.3	2.61	0.919	2.1	2.52	0.830	2.0	2.43	0.795	2.0	2.31	0.729	2.5	2.10	0.568

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)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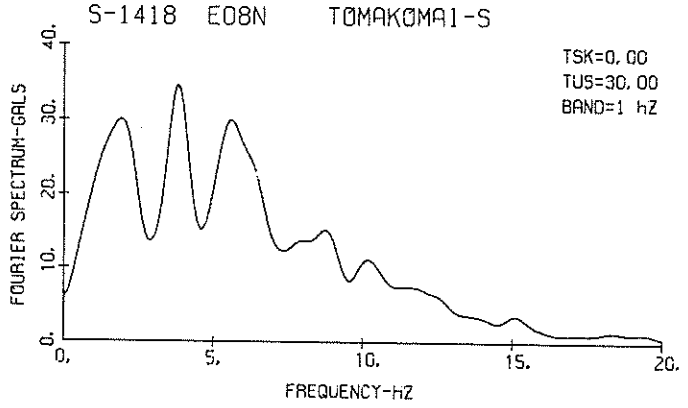
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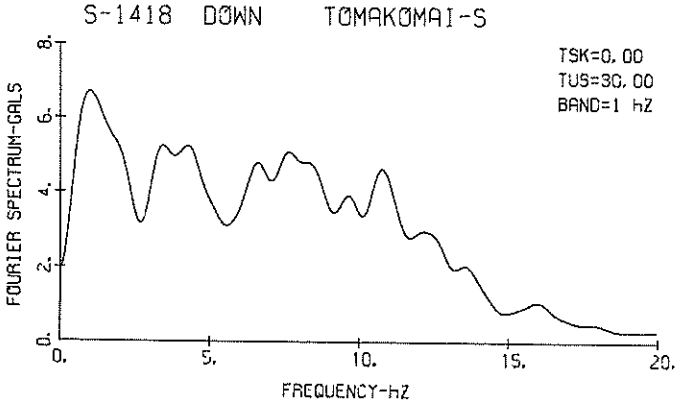
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20.
FREQUENCY-HZ

RECORD NUMBER S-1425

STATION MURORAN-S

EARTHQUAKE DATA

****

DATE AND TIME 13:58 JANUARY 23, 1981

LOCATION OF HYPOCENTER

EPICENTRAL REGION S COAST OF HOKKAIDO

LATITUDE 42.42°N

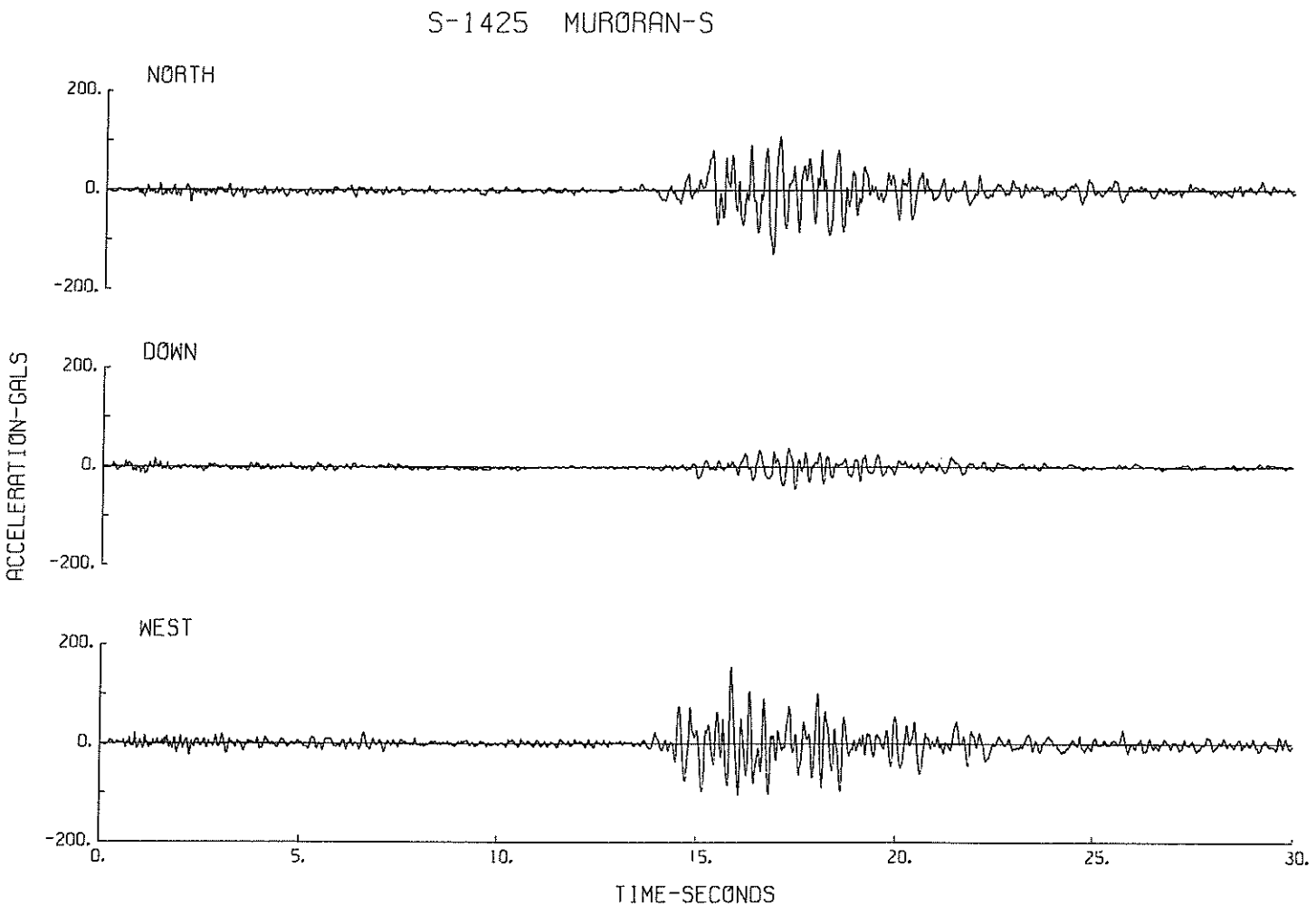
LONGITUDE 142.20°E

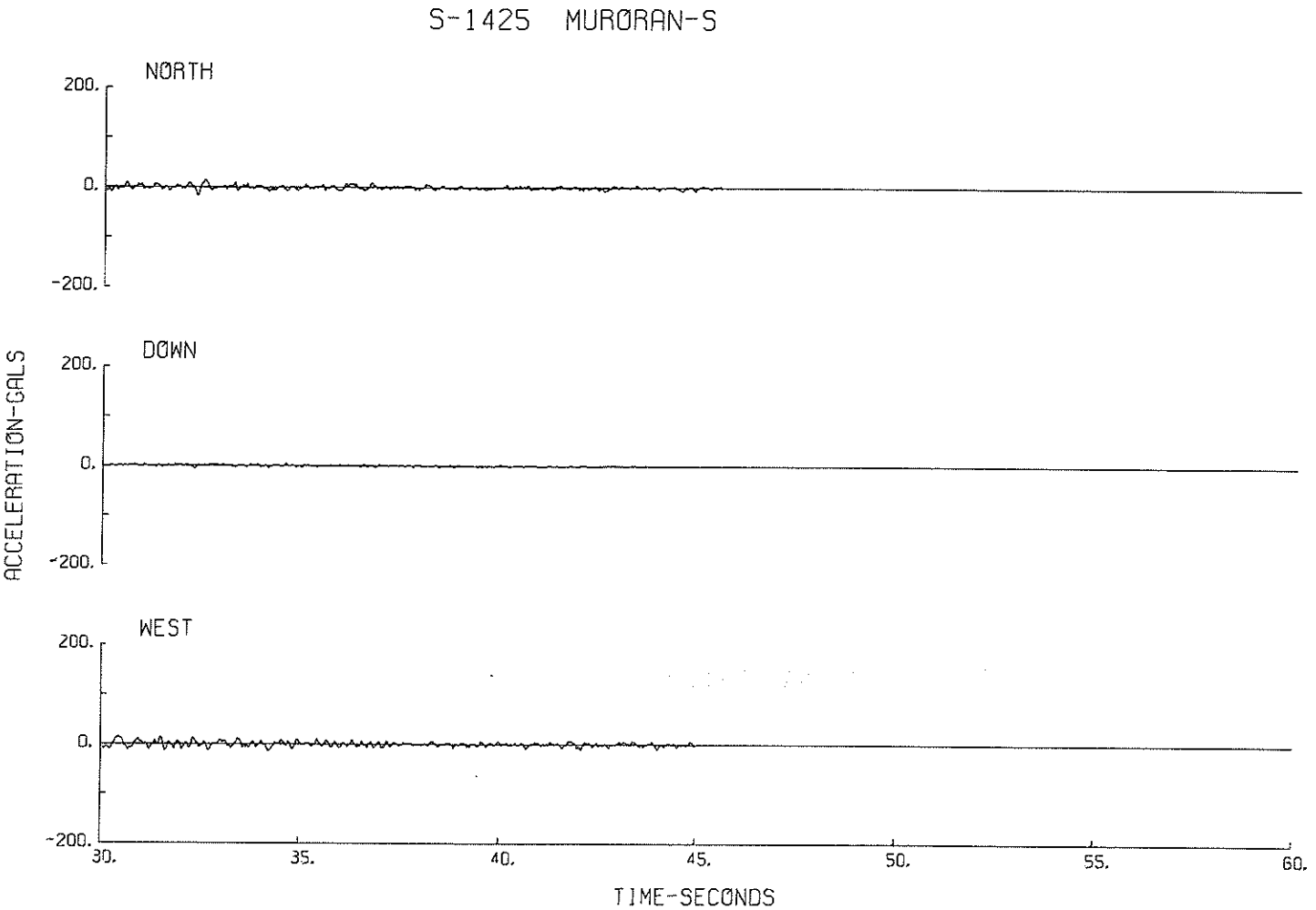
DEPTH 130 KM

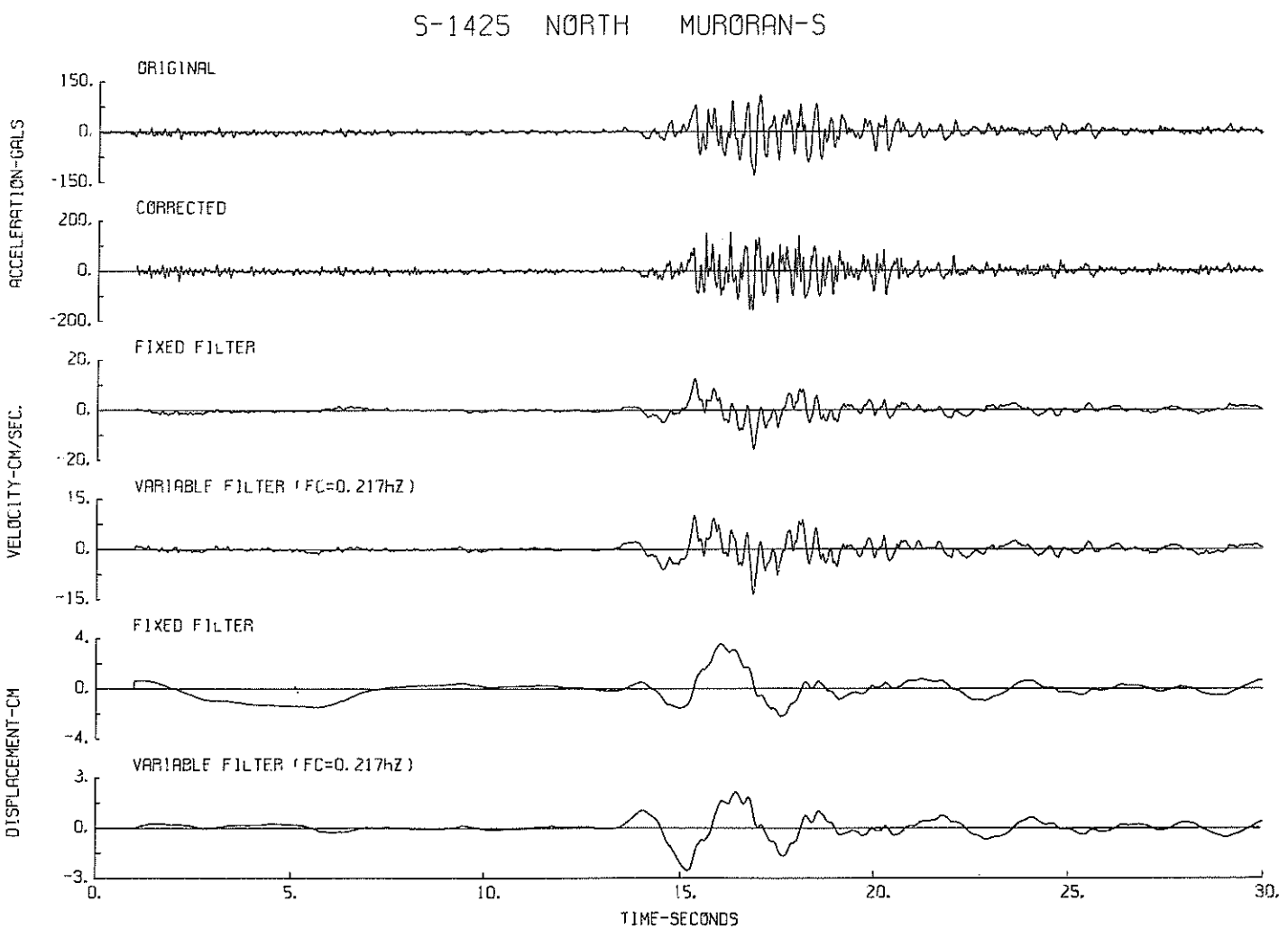
MAGNITUDE 7.1

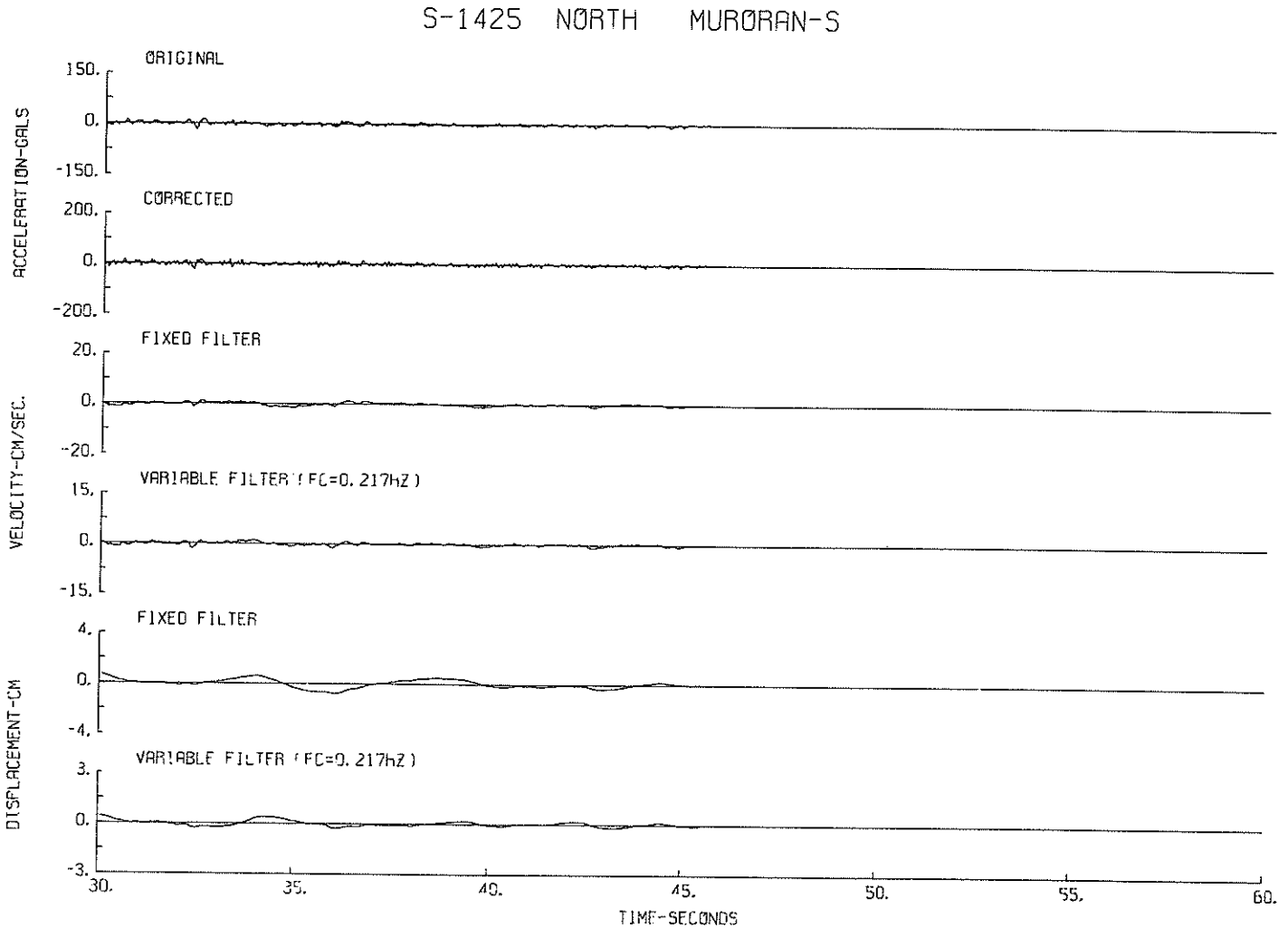
****

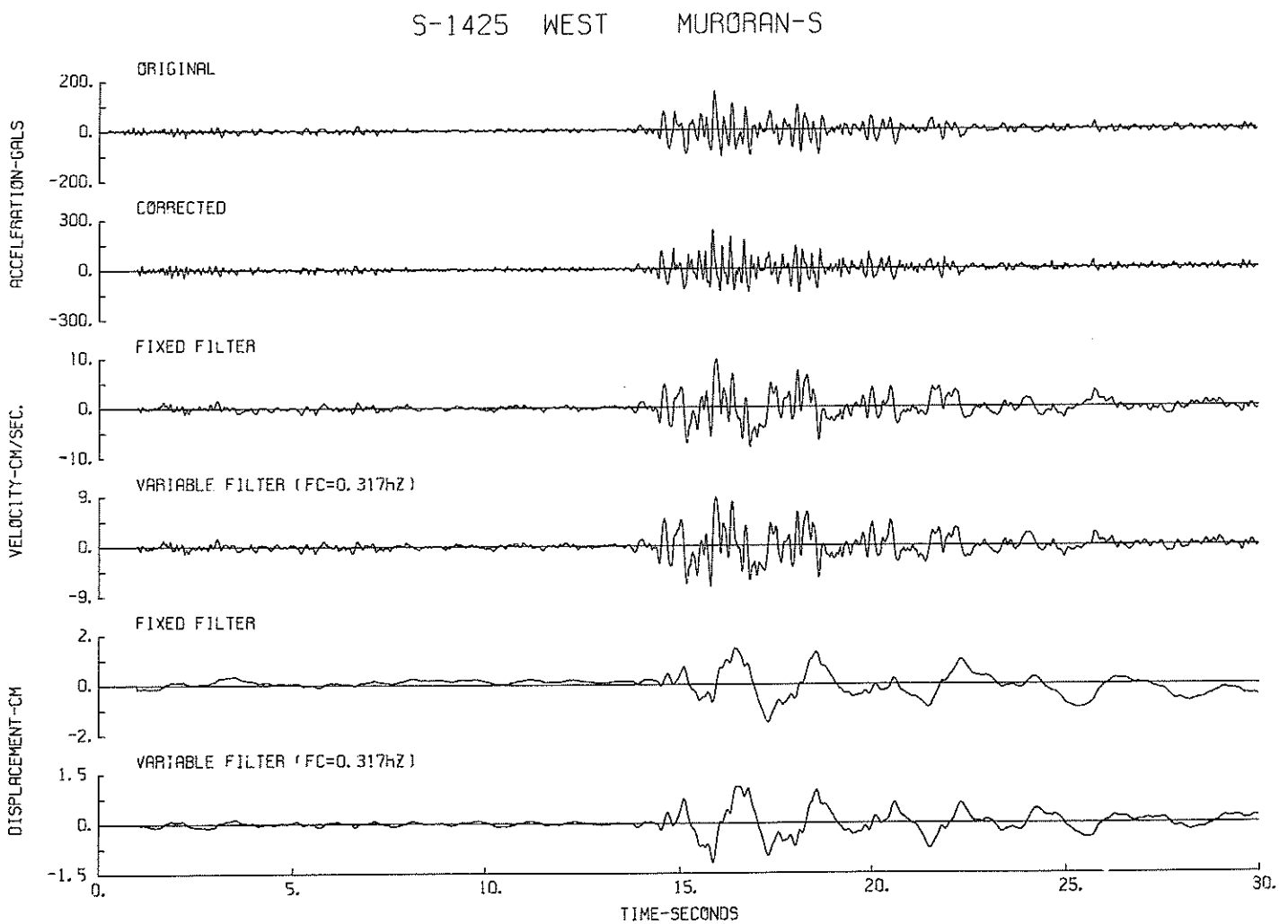
	COMPONENT		
	NORTH	WEST	DOWN
PARAMETER OF THE VARIABLE FILTER			
FC (HZ)	0.217	0.317	0.290
MAXIMUM ACCELERATION (GAL)			
ORIGINAL	129.5	155.3	44.1
SMAC-B2 EQUIVALENT CORRECTED	156.	236.	71.2
MAXIMUM VELOCITY (CM/SEC.)			
FIXED FILTER	15.6	9.68	3.91
VARIABLE FILTER	13.4	8.74	3.00
MAXIMUM DISPLACEMENT (CM)			
FIXED FILTER	3.58	1.50	1.78
VARIABLE FILTER	2.54	1.17	0.544

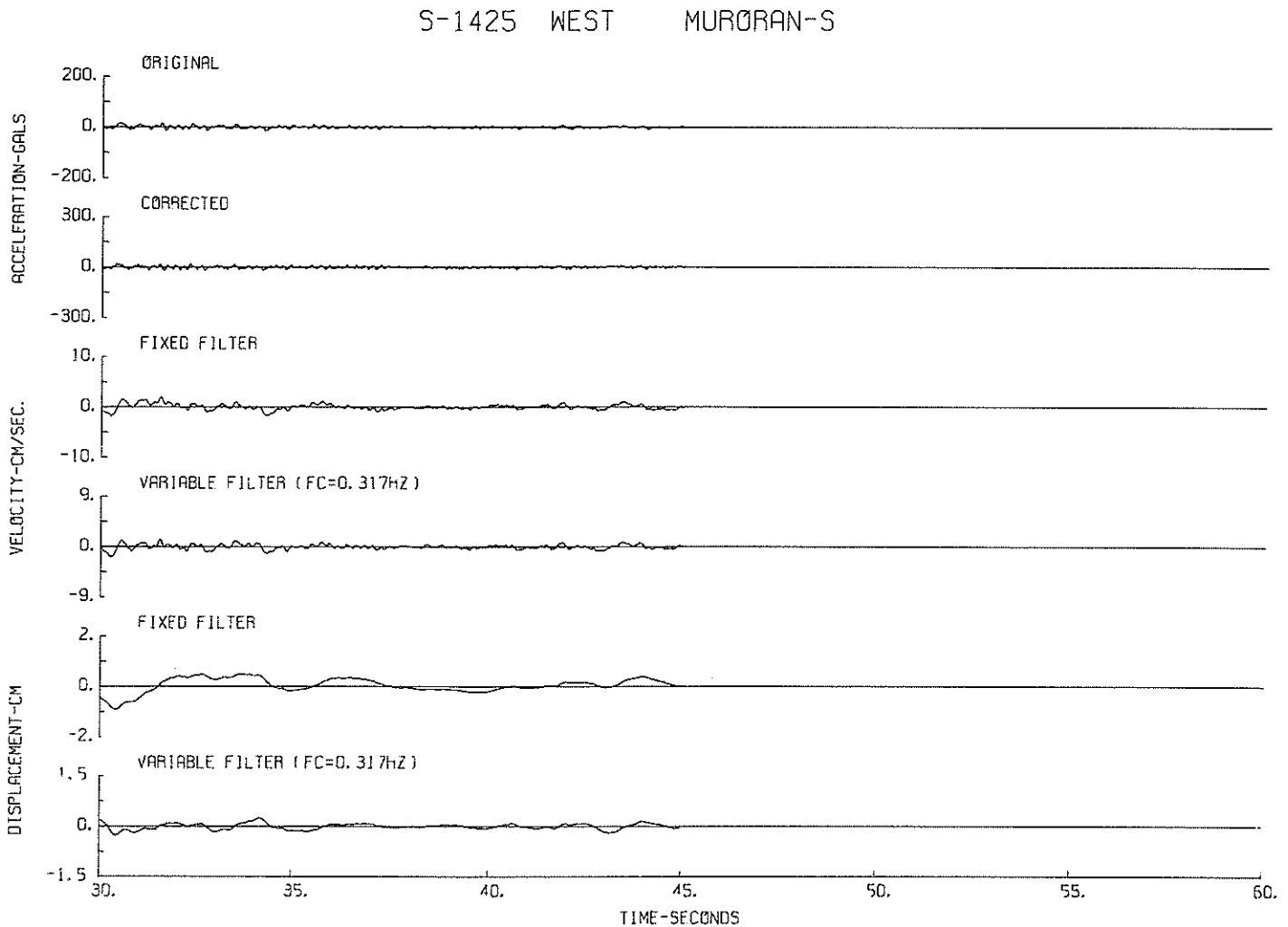

S-1425 MURØRAN-S
NØRTH
200.
0.
-200.
DØWN
200.
0.
-200.
WEST
200.
0.
-200.
ACCELERATION-GALS
0.
5.
10.
15.
20.
25.
30.
TIME-SECØNDS

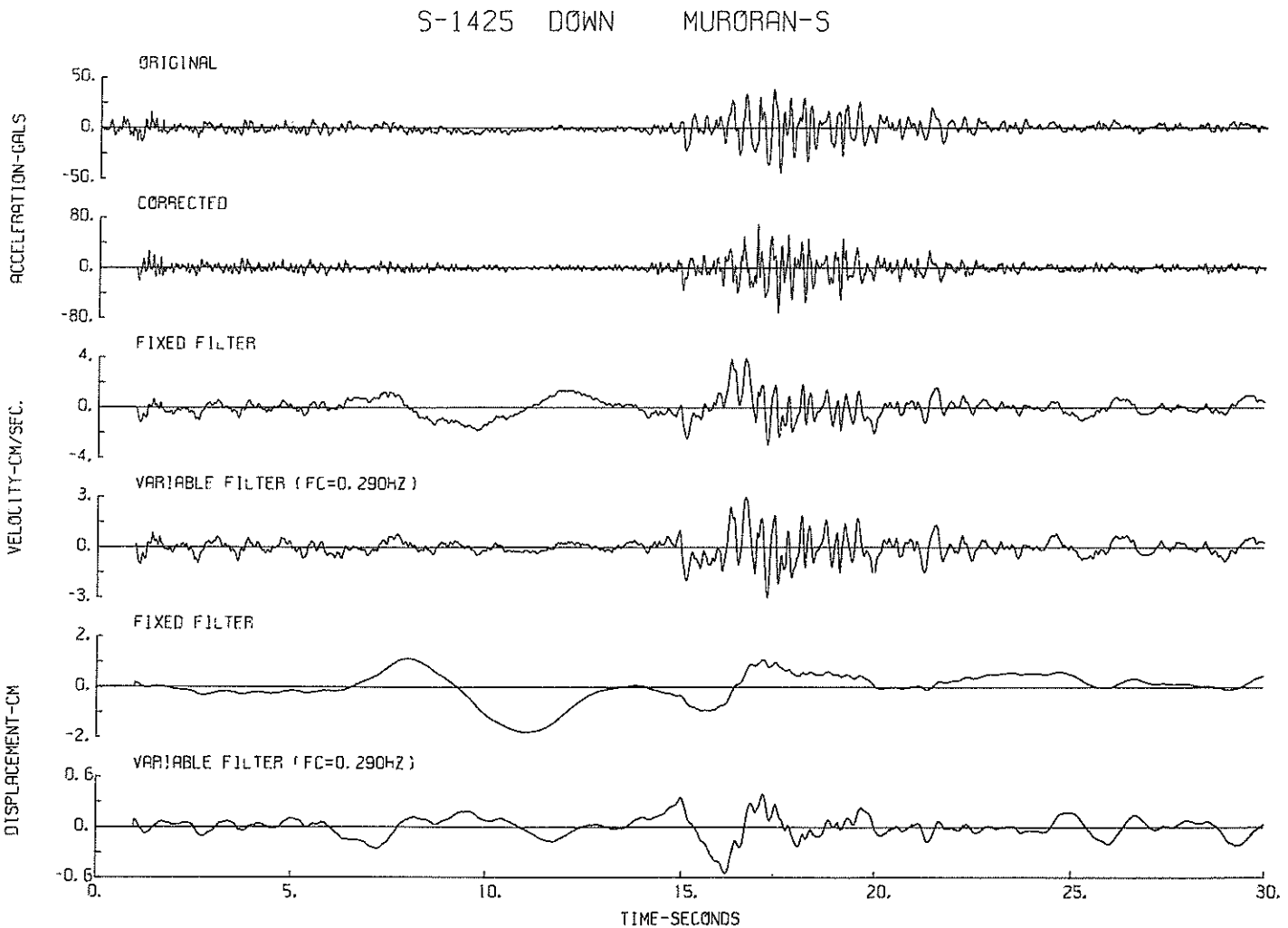

S-1425 MURØRAN-S
NØRTH
200.
0.
-200.
DØWN
200.
0.
-200.
WEST
200.
0.
-200.
ACCELERATION-GALS
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS

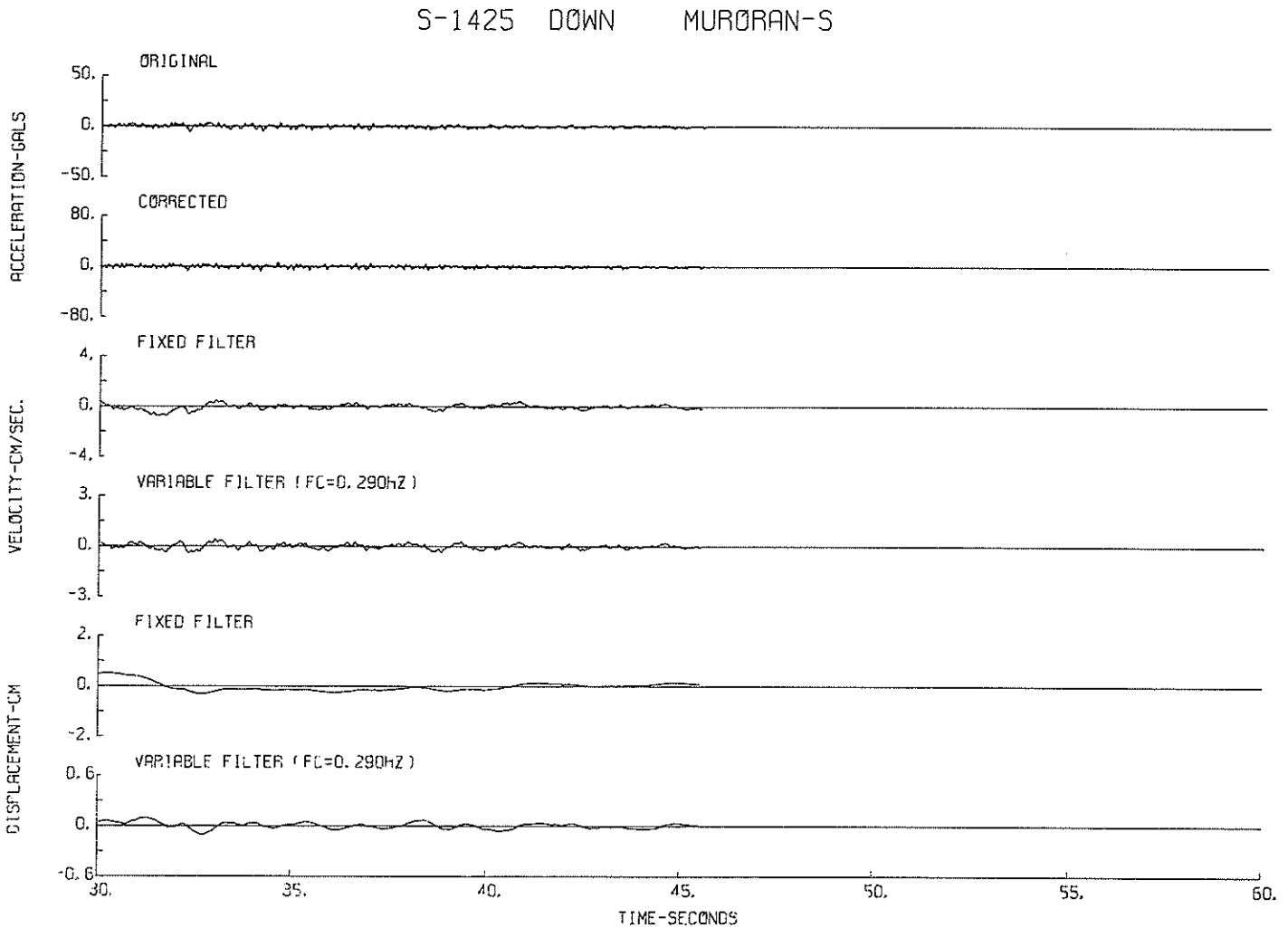

S-1425 NORTH MURORAN-S
ORIGINAL
150.
0.
-150.
CORRECTED
200.
0.
-200.
ACCELERATION-GALS
FIXED FILTER
20.
0.
-20.
VARIABLE FILTER (FC=0.217HZ)
15.
0.
-15.
VELOCITY-CM/SEC.
FIXED FILTER
4.
0.
-4.
VARIABLE FILTER (FC=0.217HZ)
3.
0.
-3.
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

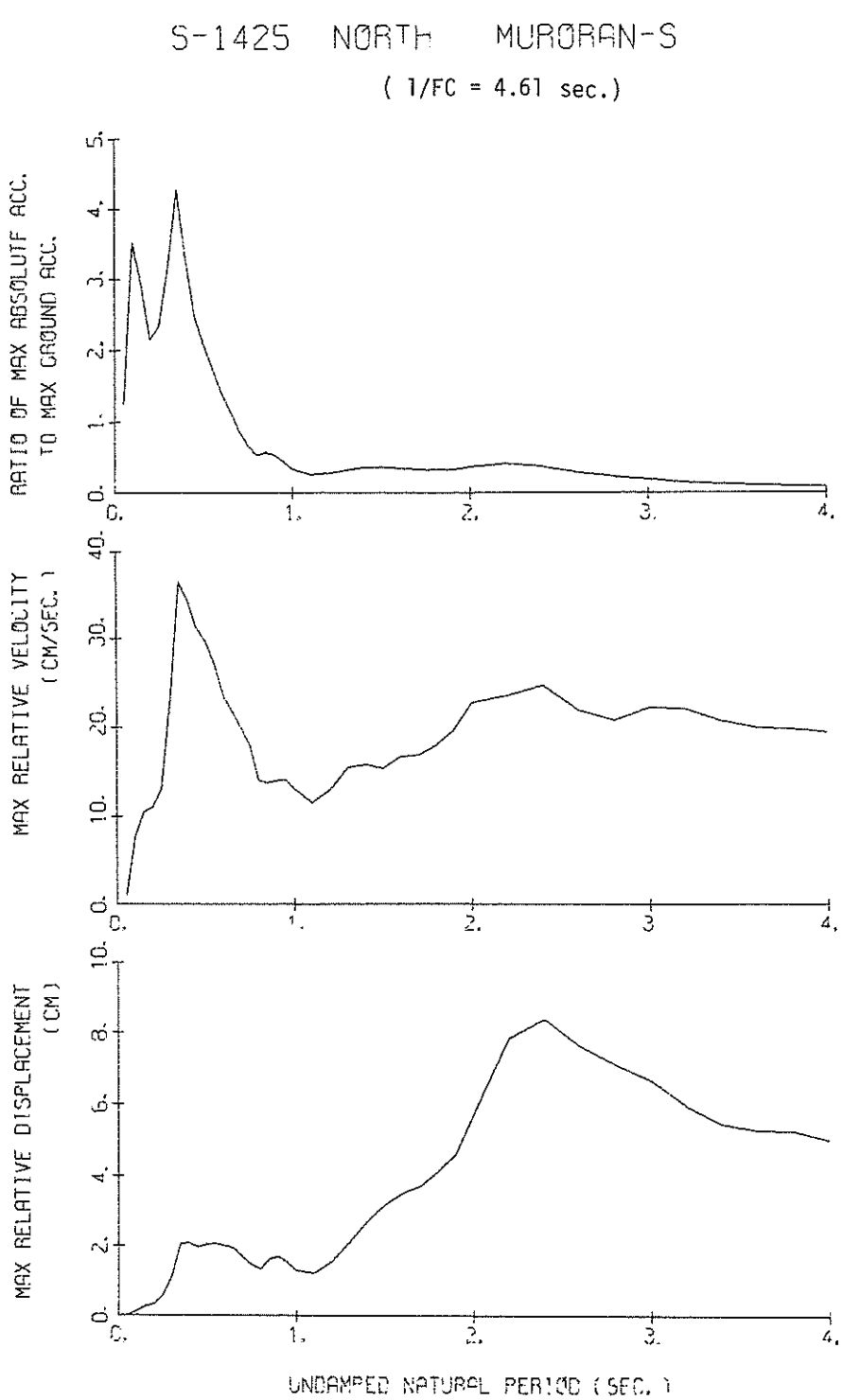

S-1425 NORTH MURORAN-S
ORIGINAL
CORRECTED
FIXED FILTER
VARIABLE FILTER(FC=0.217HZ)
FIXED FILTER
VARIABLE FILTER(FC=0.217HZ)
ACCELERATION-GALS
VELOCITY-CM/SEC.
DISPLACEMENT-CM
150.
0.
-150.
200.
0.
-200.
20.
0.
-20.
15.
0.
-15.
4.
0.
-4.
3.
0.
-3.
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS


S-1425 WEST MURORAN-S
ORIGINAL
200.
0.
-200.
ACCELERATION-GALS
CORRECTED
300.
0.
-300.
FIXED FILTER
10.
0.
-10.
VELOCITY-CM/SEC.
VARIABLE FILTER (FC=0.317HZ)
9.
0.
-9.
FIXED FILTER
2.
0.
-2.
DISPLACEMENT-CM
VARIABLE FILTER (FC=0.317HZ)
1.5
0.
-1.5
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1425 WEST MURØRAN-S
ORIGINAL
200.
0.
-200.
CORRECTED
300.
0.
-300.
ACCELERATION-GALS
FIXED FILTER
10.
0.
-10.
VARIABLE FILTER (FC=0.317HZ)
9.
0.
-9.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.317HZ)
1.5
0.
-1.5
DISPLACEMENT-CM
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS

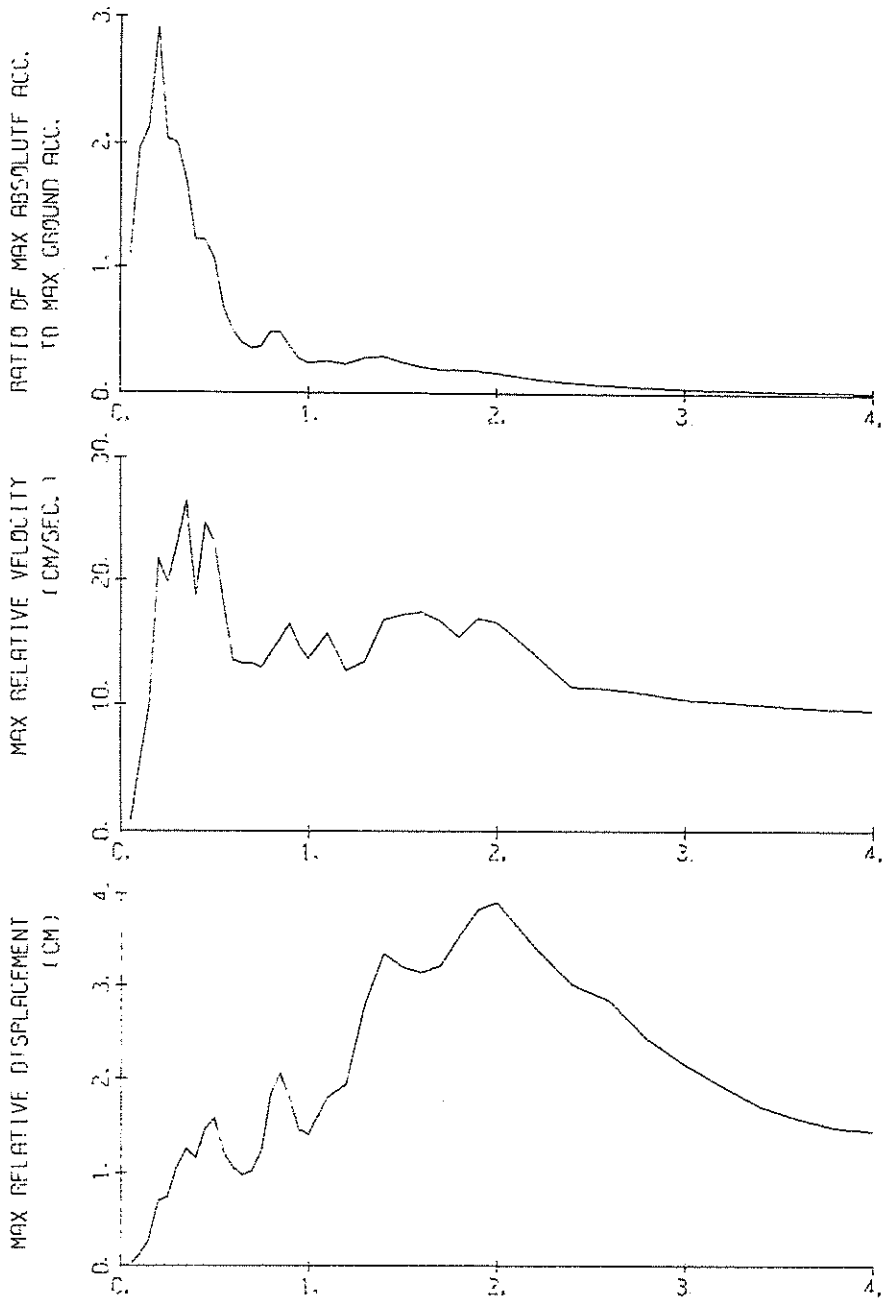

S-1425 DØWN MURØRAN-S
ØRIGINAL
50.
0.
-50.
CORRECTED
80.
0.
-80.
ACCELERATION-GALS
FIXED FILTER
4.
0.
-4.
VARIABLE FILTER (FC=0.290HZ)
3.
0.
-3.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.290HZ)
0.6
0.
-0.6
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1425 DOWN MURORAN-S
ORIGINAL
50.
0.
-50.
CORRECTED
80.
0.
-80.
ACCELERATION-GALS
FIXED FILTER
4.
0.
-4.
VARIABLE FILTER (FC=0.290HZ)
3.
0.
-3.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.290HZ)
0.6
0.
-0.6
DISPLACEMENT-CM
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS


S-1425 NORTH MURORAN-S
(1/FC = 4.61 sec.)
RATIO OF MAX ABSOLUTE ACC.
TO MAX GROUND ACC.
MAX RELATIVE VELOCITY
(CM/SEC.)
MAX RELATIVE DISPLACEMENT
(CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (H=0.05)

S-1425 WEST MURORAN-S

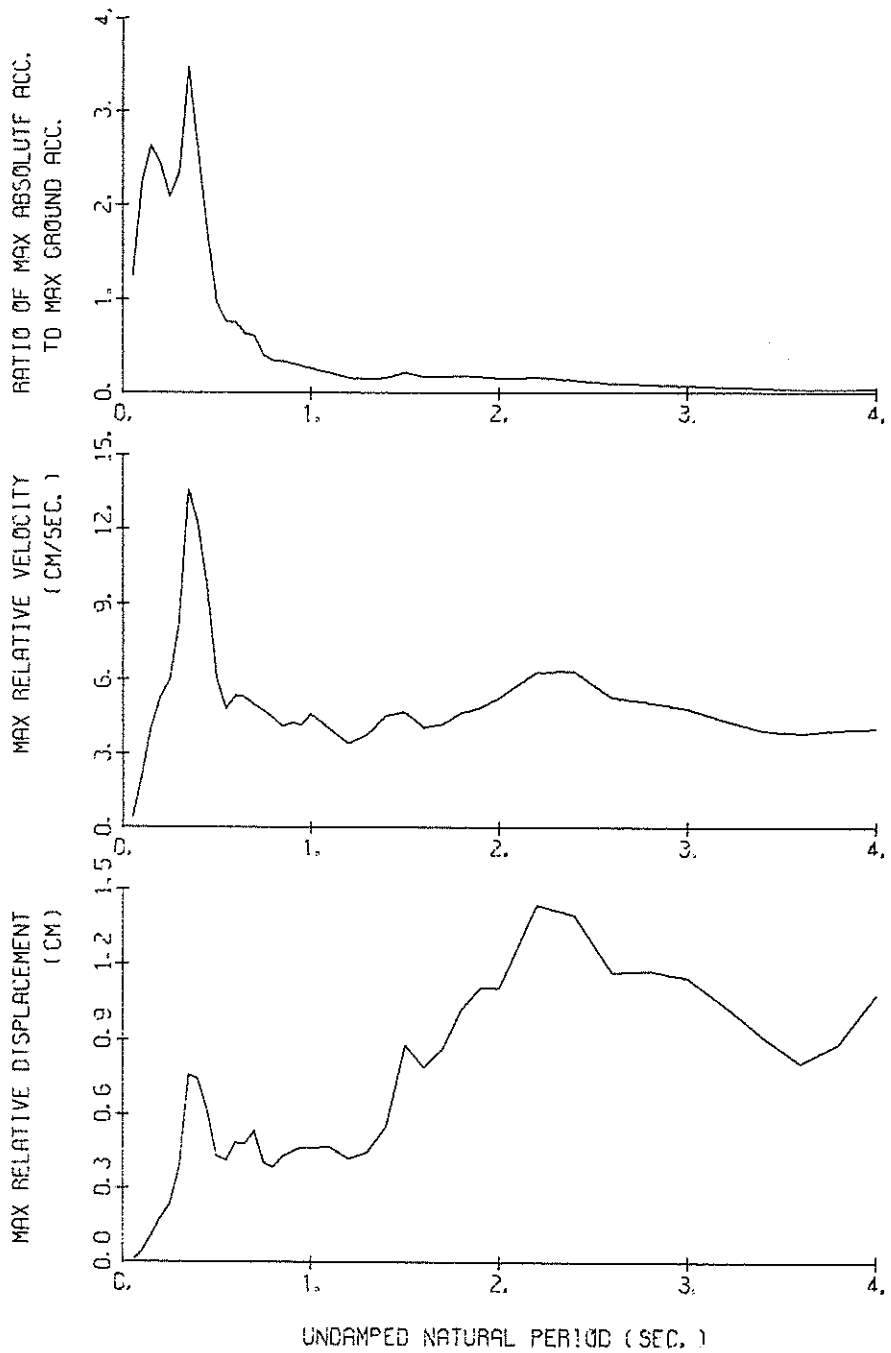
(1/FC = 3.15 sec.)



RESPONSE SPECTRA (H=0.05)

S-1425 DOWN MURORAN-S

(1/FC = 3.45 sec.)



RESPONSE SPECTRA (H=0.05)

RESPONSE SPECTRUM

RECORD = S-1425 COMPONENT = NORTH SIGNAL = GR. ACC. CORRECTION = STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 155.95 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	261.4	1.34	0.017	191.2	0.78	0.012	189.9	0.78	0.012	188.4	0.76	0.012	183.8	0.64	0.011
0.10	1771.7	27.09	0.449	754.5	10.75	0.191	550.3	7.66	0.139	363.6	4.75	0.090	238.1	2.37	0.057
0.15	1337.2	30.94	0.762	644.2	13.86	0.369	456.8	10.47	0.261	330.2	7.16	0.183	232.7	4.27	0.124
0.20	756.3	24.08	0.766	394.5	12.30	0.399	332.1	11.06	0.337	290.7	8.27	0.293	228.7	5.24	0.217
0.25	472.7	19.51	0.748	411.7	15.78	0.653	365.1	12.97	0.578	330.5	10.84	0.516	246.7	8.42	0.368
0.30	818.1	38.01	1.865	602.7	27.77	1.377	492.3	23.17	1.120	401.8	17.55	0.903	277.7	11.34	0.580
0.35	2363.4	130.54	7.334	1033.5	55.06	3.196	667.6	36.55	2.068	470.0	25.97	1.432	276.7	13.31	0.771
0.40	712.3	47.24	2.887	598.9	40.86	2.428	514.4	34.37	2.075	397.5	25.52	1.575	244.5	14.53	0.856
0.45	1047.7	74.67	5.374	468.3	37.47	2.404	385.4	31.23	1.962	287.7	23.31	1.439	198.0	14.02	0.841
0.50	550.9	50.02	3.489	408.8	37.22	2.585	323.8	29.64	2.042	223.9	20.74	1.387	146.2	12.45	0.736
0.55	456.5	41.32	3.498	337.7	32.39	2.583	271.3	27.10	2.069	195.9	20.24	1.469	115.6	11.54	0.773
0.60	356.7	36.09	3.252	254.5	26.78	2.317	219.7	23.47	1.995	169.4	18.64	1.521	104.2	11.52	0.819
0.65	401.8	44.25	4.300	238.1	25.85	2.543	181.9	21.73	1.934	143.1	16.69	1.492	95.9	11.59	0.842
0.70	428.7	47.80	5.321	179.7	24.99	2.225	137.0	19.86	1.686	113.3	14.72	1.349	88.2	11.21	0.843
0.75	147.4	21.31	2.100	111.1	20.11	1.581	103.9	17.94	1.470	91.2	14.82	1.260	78.3	11.09	0.901
0.80	99.0	16.93	1.605	90.3	15.25	1.461	83.2	14.03	1.336	82.1	13.02	1.287	73.3	10.96	0.955
0.85	117.8	17.65	2.156	101.3	14.65	1.850	90.3	13.75	1.636	78.6	12.33	1.386	68.6	10.70	1.001
0.90	116.7	17.31	2.395	91.9	15.35	1.880	83.6	14.00	1.698	72.3	12.17	1.421	63.5	10.47	1.047
0.95	111.5	17.45	2.550	73.1	15.47	1.667	68.3	14.16	1.541	62.5	12.42	1.361	60.0	10.31	1.093
1.00	85.4	16.95	2.164	50.4	13.67	1.271	51.8	13.03	1.295	53.0	12.16	1.270	57.1	10.23	1.143
1.10	39.9	11.36	1.222	38.5	11.43	1.174	40.3	11.51	1.214	42.5	11.55	1.227	52.9	10.52	1.271
1.20	60.4	15.38	2.202	45.4	13.61	1.649	43.1	12.96	1.547	43.0	12.25	1.484	50.8	10.89	1.450
1.30	77.8	19.94	3.332	59.8	17.13	2.555	49.5	15.45	2.112	46.8	13.55	1.900	50.0	11.23	1.667
1.40	117.1	25.75	5.812	68.2	17.57	3.381	55.2	15.80	2.723	49.5	13.65	2.334	49.3	11.41	1.892
1.50	92.0	21.80	5.241	61.6	16.95	3.501	56.6	15.38	3.184	51.4	13.44	2.776	48.4	11.47	2.101
1.60	68.0	21.93	4.411	59.3	18.94	3.830	54.9	16.75	3.519	50.3	13.70	3.087	46.9	11.58	2.274
1.70	60.2	20.78	4.406	54.2	18.77	3.958	51.4	16.88	3.717	47.4	13.88	3.280	44.8	11.90	2.402
1.80	80.1	24.77	6.573	58.4	20.56	4.789	50.5	17.97	4.127	43.7	14.76	3.402	42.5	12.36	2.486
1.90	109.2	33.71	9.989	61.6	22.06	5.624	51.0	19.70	4.610	42.7	16.77	3.753	39.9	12.79	2.535
2.00	116.1	36.63	11.765	67.8	25.28	6.863	56.8	22.71	5.703	43.2	18.69	4.190	37.2	13.04	2.577
2.20	96.0	32.92	11.775	77.7	27.54	9.508	64.6	23.50	7.835	47.6	18.28	5.586	35.9	13.64	3.195
2.40	92.8	36.07	13.542	67.1	28.78	9.754	58.2	24.68	8.375	46.6	18.99	6.463	35.5	14.18	3.689
2.60	74.6	31.68	12.768	48.9	24.22	8.351	45.2	21.84	7.623	39.5	18.54	6.281	33.2	14.38	3.802
2.80	56.2	25.51	11.169	40.5	22.33	8.015	36.3	20.73	7.102	30.3	18.92	5.570	30.0	14.91	3.609
3.00	39.9	26.33	9.087	33.7	23.72	7.643	29.8	22.19	6.657	24.9	19.95	5.289	26.7	15.83	3.366
3.20	28.8	24.73	7.471	25.6	23.23	6.611	23.4	22.03	5.938	20.0	20.13	4.957	23.6	16.40	3.392
3.40	19.5	20.85	5.698	19.4	20.95	5.662	19.0	20.67	5.438	17.8	19.71	4.816	20.8	16.70	3.363
3.60	17.2	20.05	5.653	16.8	20.10	5.491	16.4	19.94	5.260	15.8	19.27	4.717	18.4	16.82	3.358
3.80	17.1	20.86	6.240	15.6	20.24	5.673	14.7	19.76	5.252	14.1	18.96	4.614	16.4	16.82	3.336
4.00	14.7	20.62	5.978	13.4	19.91	5.414	12.6	19.38	4.993	12.3	18.59	4.405	14.7	16.74	3.301

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-1425 COMPONENT = WEST SIGNAL = GR. ACC. CORRECTION = STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 236.19 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	319.7	1.55	0.020	250.3	0.85	0.016	252.4	0.75	0.016	258.5	0.69	0.016	261.6	0.66	0.016
0.10	906.5	13.21	0.230	494.4	6.14	0.125	463.5	5.34	0.117	433.0	4.37	0.108	349.6	2.68	0.084
0.15	876.9	20.13	0.500	558.9	12.91	0.319	501.8	9.75	0.284	438.7	7.46	0.250	366.2	4.97	0.194
0.20	2458.4	78.17	2.491	914.1	29.46	0.930	689.0	21.77	0.701	491.2	13.79	0.486	352.2	8.29	0.326
0.25	1027.8	41.08	1.627	566.6	22.62	0.895	480.4	19.79	0.751	355.2	15.51	0.547	285.6	9.32	0.407
0.30	673.2	33.00	1.535	485.7	24.69	1.107	473.8	22.93	1.069	399.1	17.90	0.887	256.8	10.60	0.521
0.35	1414.5	78.76	4.389	629.9	35.15	1.957	404.2	26.43	1.252	298.5	19.27	0.906	212.7	11.20	0.580
0.40	530.4	33.90	2.150	338.0	21.85	1.371	287.8	18.74	1.160	237.8	14.84	0.943	170.7	11.73	0.598
0.45	593.6	42.80	3.045	379.9	32.13	1.949	287.6	24.73	1.469	211.3	17.56	1.052	150.8	11.93	0.659
0.50	715.1	57.15	4.528	301.7	28.60	1.908	251.2	23.11	1.580	188.4	16.55	1.165	131.3	11.44	0.697
0.55	391.8	33.72	3.002	222.6	19.65	1.706	158.9	17.94	1.211	131.3	15.08	0.971	106.5	10.86	0.670
0.60	454.3	43.45	4.142	180.5	17.14	1.644	116.1	13.51	1.053	90.7	11.98	0.782	85.3	9.96	0.613
0.65	213.1	22.47	2.281	103.6	14.12	1.107	91.9	13.25	0.976	80.2	11.76	0.826	72.1	8.97	0.599
0.70	151.7	17.00	1.883	96.9	14.21	1.200	83.2	13.25	1.018	71.6	11.84	0.839	68.7	8.72	0.670
0.75	159.0	20.01	2.265	94.4	13.72	1.343	87.7	12.96	1.239	79.3	11.52	1.084	68.9	8.71	0.761
0.80	181.3	25.80	2.940	136.8	16.39	2.211	114.4	14.15	1.836	89.2	11.56	1.383	67.9	8.61	0.833
0.85	157.7	22.17	2.886	137.1	17.49	2.505	112.8	15.23	2.052	85.2	12.20	1.495	64.5	8.62	0.866
0.90	180.7	25.85	3.708	103.9	19.48	2.130	87.8	16.52	1.792	70.4	13.11	1.406	59.2	8.99	0.862
0.95	126.3	19.24	2.887	69.6	15.38	1.589	64.0	14.71	1.459	56.8	13.13	1.269	53.0	9.47	0.843
1.00	95.8	17.76	2.427	63.8	13.38	1.612	56.1	13.65	1.405	49.5	13.00	1.216	48.1	9.72	0.931
1.10	152.6	27.13	4.677	76.3	17.69	2.336	58.8	15.68	1.793	48.2	13.15	1.408	46.7	9.64	1.083
1.20	96.4	19.26	3.517	63.2	14.76	2.300	53.7	12.69	1.932	46.1	11.02	1.623	44.2	9.04	1.218
1.30	110.0	25.29	4.707	76.8	17.10	3.285	65.6	13.46	2.794	53.6	10.86	2.235	41.1	9.47	1.402
1.40	88.9	22.44	4.414	77.7	19.61	3.846	68.1	16.86	3.341	54.8	13.35	2.598	37.6	9.98	1.511
1.50	64.3	19.53	3.666	61.4	18.55	3.492	56.4	17.23	3.192	48.0	14.83	2.585	34.9	10.64	1.516
1.60	69.6	21.68	4.513	56.4	19.04	3.656	48.5	17.47	3.133	38.9	15.18	2.407	31.2	11.04	1.496
1.70	69.2	21.52	5.066	53.0	17.83	3.873	44.0	16.73	3.206	35.7	14.77	2.503	28.1	11.08	1.624
1.80	89.2	25.96	7.322	59.0	17.29	4.839	43.4	15.41	3.524	32.8	13.74	2.567	25.8	10.86	1.700
1.90	104.8	31.72	9.586	58.1	19.98	5.306	42.0	16.93	3.818	30.1	14.10	2.703	23.9	10.90	1.738
2.00	83.6	27.22	8.474	51.9	17.99	5.251	38.6	16.64	3.892	28.2	14.33	2.773	22.5	10.91	1.789
2.20	44.2	16.71	5.419	34.7	14.70	4.238	28.2	14.11	3.411	22.8	12.98	2.662	19.4	10.85	1.891
2.40	26.1	12.95	3.809	22.8	11.73	3.324	20.8	11.42	3.007	18.5	11.28	2.519	16.4	10.74	1.905
2.60	24.4	11.77	4.176	18.2	11.38	3.091	16.8	11.24	2.833	14.9	11.05	2.420	14.6	10.60	1.863
2.80	12.5	11.08	2.491	12.7	10.98	2.489	12.5	10.90	2.421	12.0	10.77	2.222	13.4	10.45	1.794
3.00	9.9	10.18	2.262	9.8	10.34	2.201	9.8	10.42	2.145	9.7	10.46	2.023	12.2	10.30	1.718
3.20	7.6	10.09	1.978	7.6	10.14	1.944	7.7	10.18	1.915	8.0	10.22	1.844	11.2	10.16	1.645
3.40	5.7	10.04	1.655	5.9	10.02	1.679	6.2	10.02	1.700	7.1	10.04	1.689	10.3	10.03	1.579
3.60	4.7	9.71	1.553	4.9	9.77	1.564	5.1	9.82	1.572	6.3	9.88	1.569	9.6	9.92	1.520
3.80	4.1	9.45	1.495	4.1	9.57	1.475	4.5	9.65	1.471	5.7	9.74	1.470	8.9	9.82	1.468
4.00	3.6	9.43	1.461	3.6	9.50	1.449	4.1	9.56	1.438	5.2	9.65	1.418	8.3	9.74	1.422

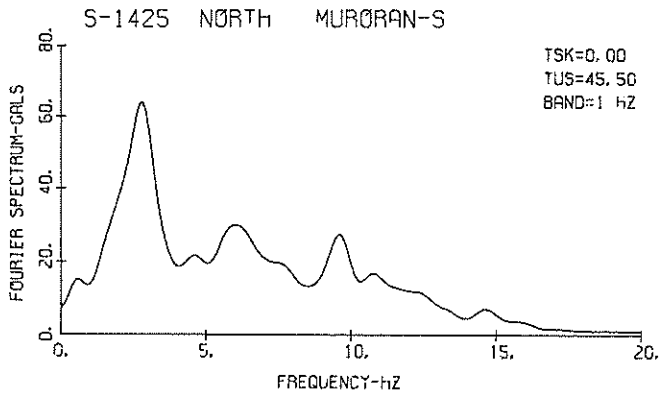
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

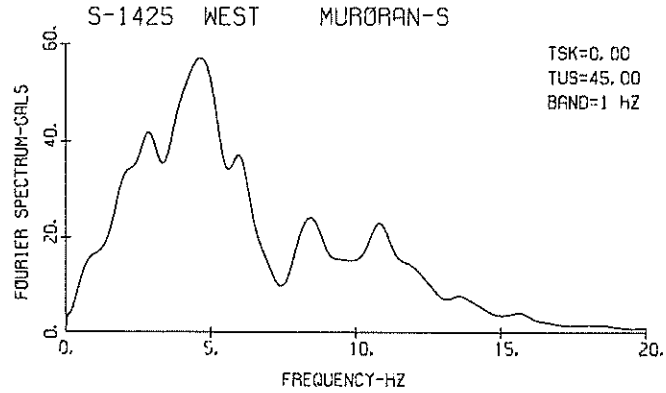
RESPONSE SPECTRUM

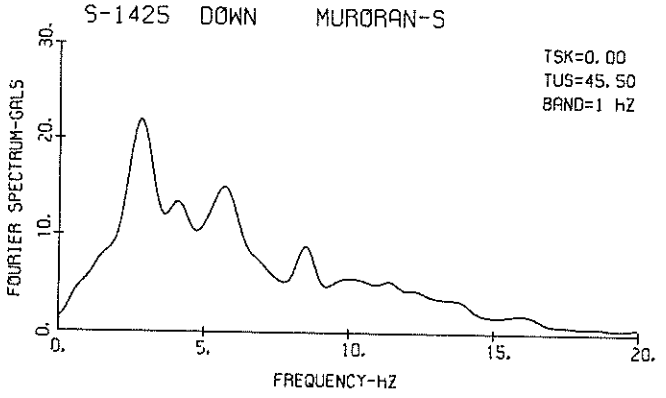
RECORD = S-1425 COMPONENT = DOWN SIGNAL = GR. ACC. CORRECTION = STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 71.19 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 0.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	119.5	0.71	0.008	88.5	0.32	0.006	86.2	0.32	0.005	87.2	0.32	0.005	84.5	0.26	0.005
0.10	338.9	5.34	0.086	197.2	2.75	0.050	158.7	2.08	0.040	124.2	1.50	0.031	97.1	1.05	0.024
0.15	258.6	6.16	0.147	243.4	5.35	0.139	187.0	4.04	0.105	136.2	2.91	0.076	92.5	1.90	0.048
0.20	653.9	20.79	0.663	225.0	7.08	0.227	173.6	5.30	0.176	129.8	3.90	0.129	85.5	2.48	0.081
0.25	372.3	14.51	0.589	196.2	7.83	0.311	147.9	5.97	0.233	117.7	4.92	0.184	92.5	3.23	0.133
0.30	366.6	17.56	0.836	192.9	9.84	0.438	166.8	8.31	0.376	142.9	6.68	0.319	99.4	3.78	0.199
0.35	636.1	35.21	1.974	329.1	18.36	1.020	247.4	13.61	0.761	164.3	9.47	0.498	87.4	5.08	0.231
0.40	336.6	21.39	1.364	225.9	14.92	0.914	184.6	12.26	0.744	130.7	8.93	0.517	72.5	5.10	0.255
0.45	200.0	15.63	1.026	143.7	11.68	0.735	121.0	9.67	0.617	92.3	7.18	0.463	55.7	4.24	0.258
0.50	116.4	9.92	0.737	75.2	6.84	0.476	68.6	6.05	0.431	62.9	5.18	0.383	48.1	3.63	0.259
0.55	110.3	9.71	0.845	67.2	6.15	0.514	54.1	4.83	0.412	43.1	4.20	0.316	39.5	3.41	0.244
0.60	145.7	13.84	1.329	67.6	6.71	0.615	53.6	5.36	0.486	40.0	4.11	0.357	32.3	3.18	0.223
0.65	93.3	9.48	0.999	56.0	6.25	0.599	45.1	5.26	0.480	33.5	4.20	0.352	26.5	3.10	0.204
0.70	115.4	12.70	1.433	58.8	6.74	0.727	43.3	4.98	0.533	29.7	4.02	0.358	22.5	3.15	0.206
0.75	52.2	7.27	0.743	32.7	5.15	0.466	28.3	4.73	0.401	21.5	4.12	0.300	20.0	3.17	0.220
0.80	53.2	7.65	0.863	29.3	4.44	0.474	24.0	4.46	0.386	21.0	4.00	0.334	18.6	3.12	0.235
0.85	55.7	7.74	1.020	31.3	4.09	0.572	23.7	4.11	0.430	20.1	3.66	0.357	17.7	3.00	0.245
0.90	71.4	11.70	1.464	30.9	5.65	0.632	22.2	4.26	0.450	17.7	3.32	0.349	16.9	2.95	0.248
0.95	31.3	5.18	0.716	26.0	4.49	0.593	20.5	4.16	0.466	15.8	3.64	0.338	16.0	3.04	0.247
1.00	58.7	9.41	1.486	25.3	5.30	0.640	18.5	4.63	0.465	13.8	3.92	0.341	15.0	3.12	0.248
1.10	18.3	3.81	0.561	16.1	4.14	0.490	15.4	3.99	0.466	13.1	3.76	0.383	13.9	3.21	0.294
1.20	24.3	6.96	0.887	13.1	3.92	0.477	11.6	3.40	0.420	10.4	3.53	0.343	13.4	3.24	0.337
1.30	18.4	4.06	0.786	11.7	3.61	0.499	10.6	3.77	0.447	10.3	3.71	0.400	13.1	3.25	0.386
1.40	25.4	5.93	1.262	16.0	4.87	0.793	11.2	4.56	0.553	11.6	4.00	0.529	13.0	3.22	0.442
1.50	31.2	8.90	1.776	20.0	5.71	1.132	15.7	4.71	0.879	13.0	3.95	0.684	12.8	3.30	0.496
1.60	24.3	6.16	1.575	14.3	3.98	0.927	12.5	4.09	0.791	12.5	4.01	0.739	12.5	3.44	0.541
1.70	24.6	6.83	1.800	13.7	4.21	1.001	12.1	4.20	0.866	12.0	4.10	0.794	12.1	3.54	0.574
1.80	18.2	6.55	1.492	14.2	5.04	1.159	12.8	4.68	1.022	11.6	4.30	0.862	11.6	3.62	0.593
1.90	27.2	8.39	2.491	14.2	5.42	1.289	12.3	4.88	1.106	10.9	4.49	0.890	11.0	3.84	0.598
2.00	19.7	6.78	1.994	13.0	5.52	1.317	11.1	5.26	1.106	9.9	4.86	0.887	10.2	4.05	0.586
2.20	20.2	8.09	2.477	14.5	6.87	1.769	11.8	6.31	1.435	8.9	5.55	1.056	8.6	4.37	0.647
2.40	18.3	7.45	2.667	12.1	6.80	1.763	9.6	6.32	1.392	7.8	5.63	1.064	7.0	4.51	0.727
2.60	10.0	4.75	1.711	7.2	5.15	1.226	6.9	5.28	1.168	6.5	5.20	1.021	6.4	4.50	0.771
2.80	9.4	5.36	1.866	6.4	5.17	1.274	6.0	5.07	1.173	5.6	4.92	1.006	6.0	4.42	0.792
3.00	6.4	5.08	1.460	5.6	4.93	1.268	5.1	4.82	1.146	4.9	4.67	0.992	5.5	4.32	0.801
3.20	4.9	4.28	1.278	4.3	4.32	1.094	4.1	4.34	1.035	4.3	4.36	0.956	5.1	4.19	0.802
3.40	4.2	4.09	1.239	3.3	3.84	0.961	3.2	3.94	0.911	3.6	4.09	0.893	4.7	4.07	0.797
3.60	2.6	3.46	0.857	2.4	3.69	0.758	2.6	3.83	0.806	3.2	3.95	0.860	4.3	3.96	0.793
3.80	2.8	4.11	1.021	2.4	4.01	0.847	2.5	3.96	0.885	3.0	3.91	0.894	4.0	3.85	0.788
4.00	3.2	4.52	1.286	2.9	4.20	1.166	2.8	4.01	1.080	2.9	3.84	0.964	3.7	3.75	0.781

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)


S-1425 NØRTh MURØRAN-S
TSK=0.00
TUS=45.50
BAND=1 hZ
FOURIER SPECTRUM-GALS
0.
20.
40.
60.
80.
0.
5.
10.
15.
20.
FREQUENCY-hZ


S-1425 WEST MURØRAN-S
TSK=0.00
TUS=45.00
BAND=1 hZ
FOURIER SPECTRUM-GALS
0.
20.
40.
60.
0.
5.
10.
15.
20.
FREQUENCY-hZ


S-1425 DØWN MURØRAN-S
TSK=0.00
TUS=45.50
BAND=1 hZ
FOURIER SPECTRUM-GALS
0.
10.
20.
30.
0.
5.
10.
15.
20.
FREQUENCY-hZ

RECORD NUMBER M- 439

STATION TOKACHI-M

EARTHQUAKE DATA

****

DATE AND TIME 13:58 JANUARY 23, 1981

LOCATION OF HYPOCENTER

EPICENTRAL REGION S COAST OF HOKKAIDO

LATITUDE 42.42°N

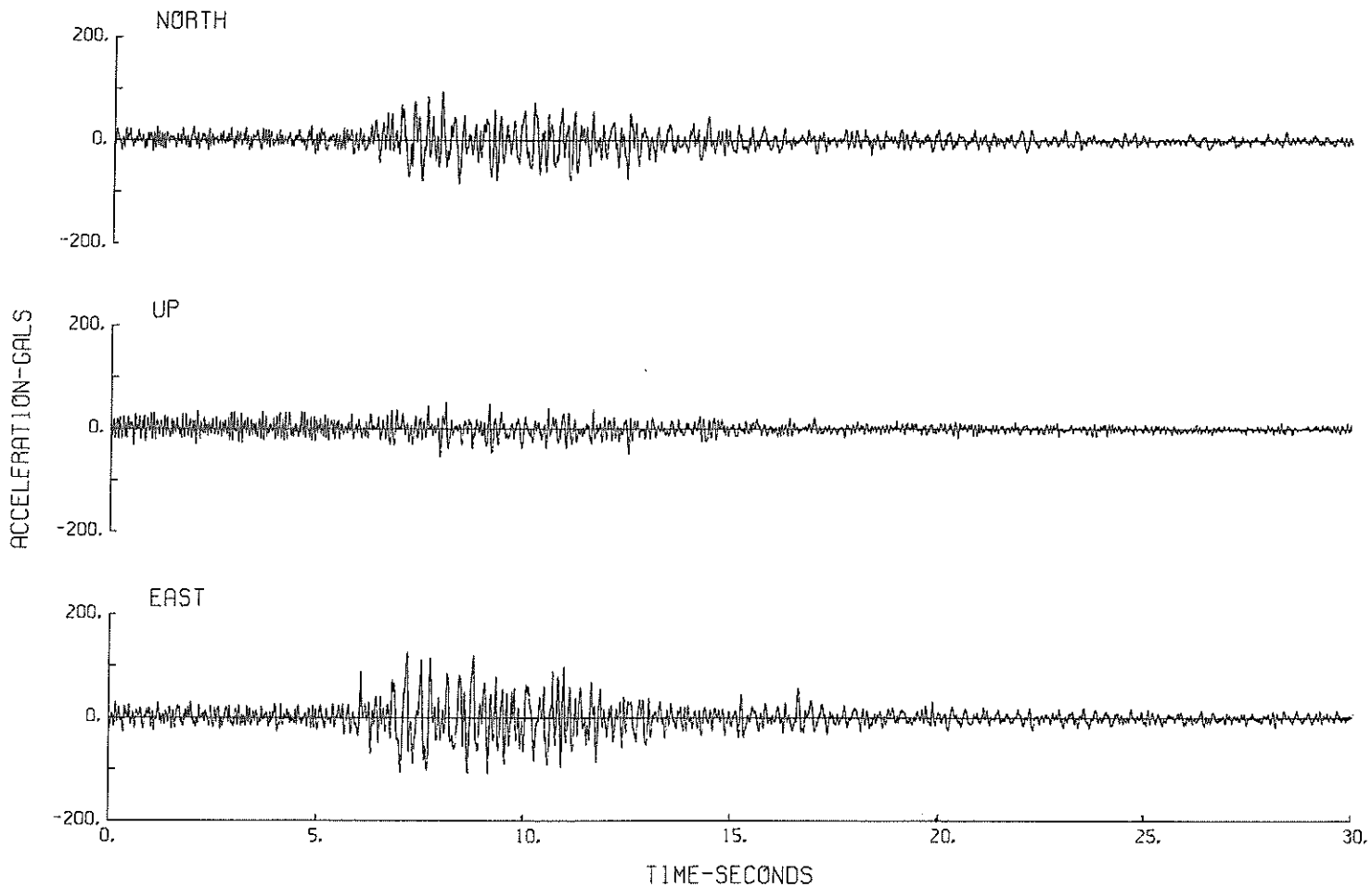
LONGITUDE 142.20°E

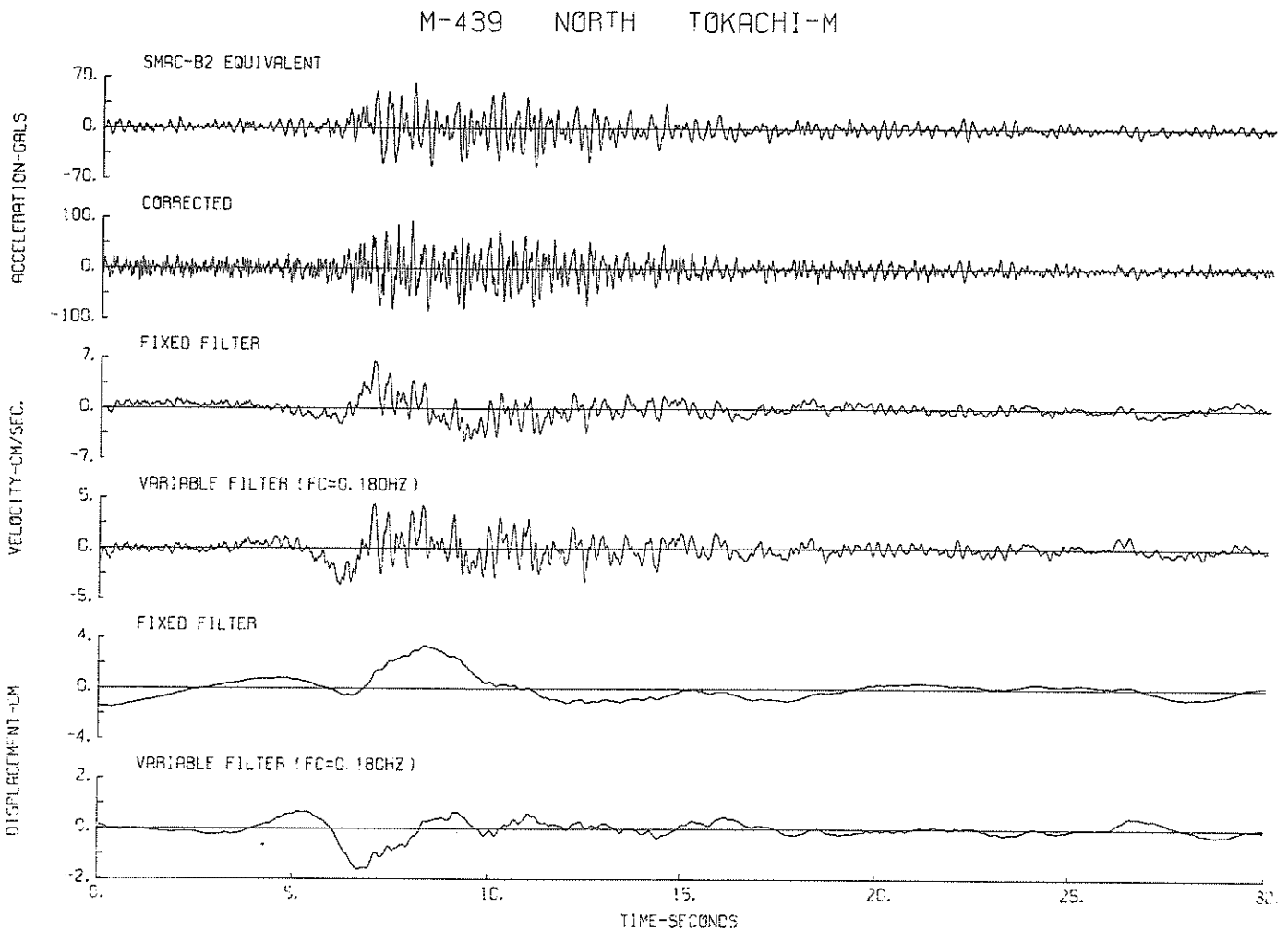
DEPTH 130 KM

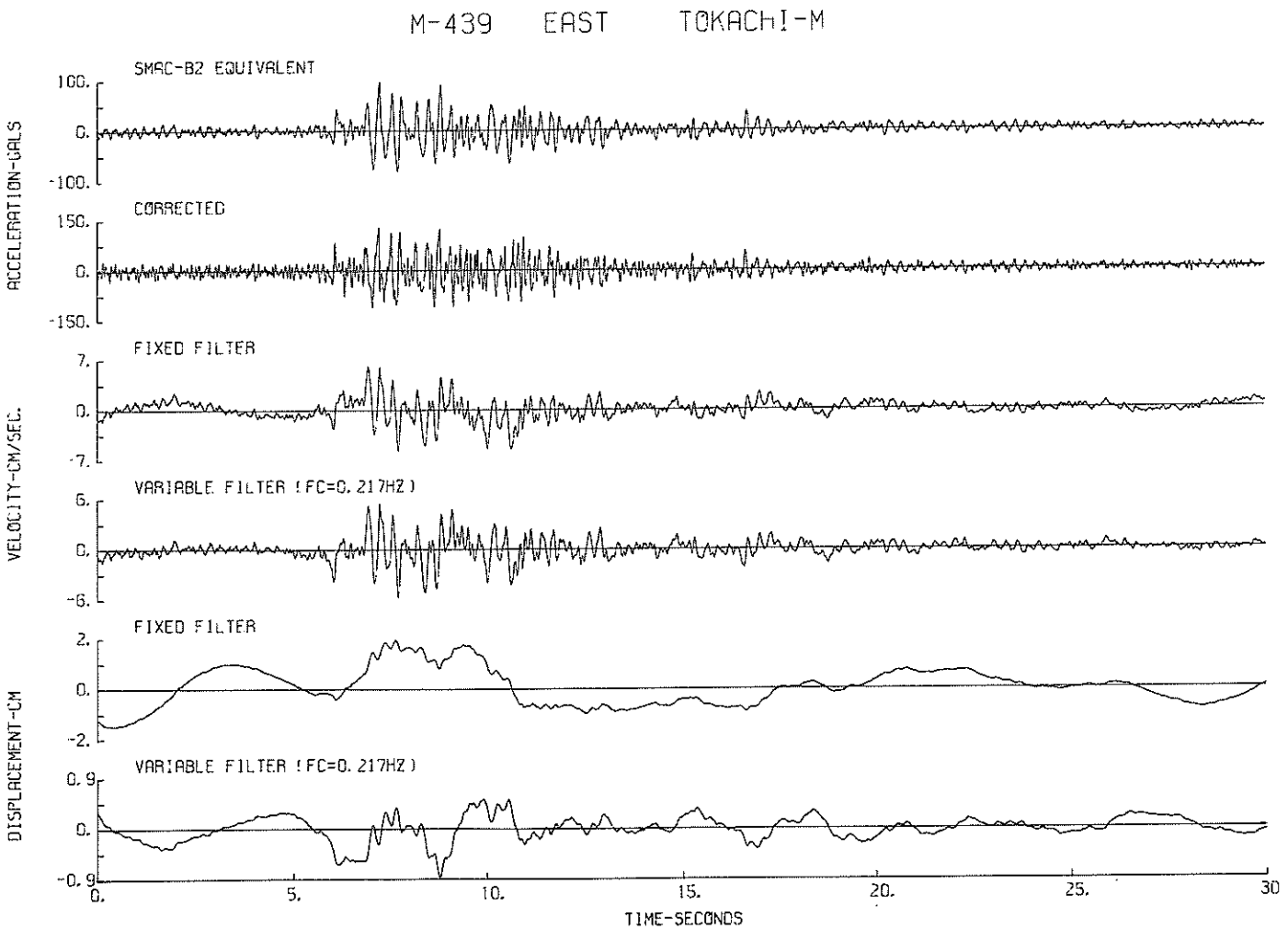
MAGNITUDE 7.1

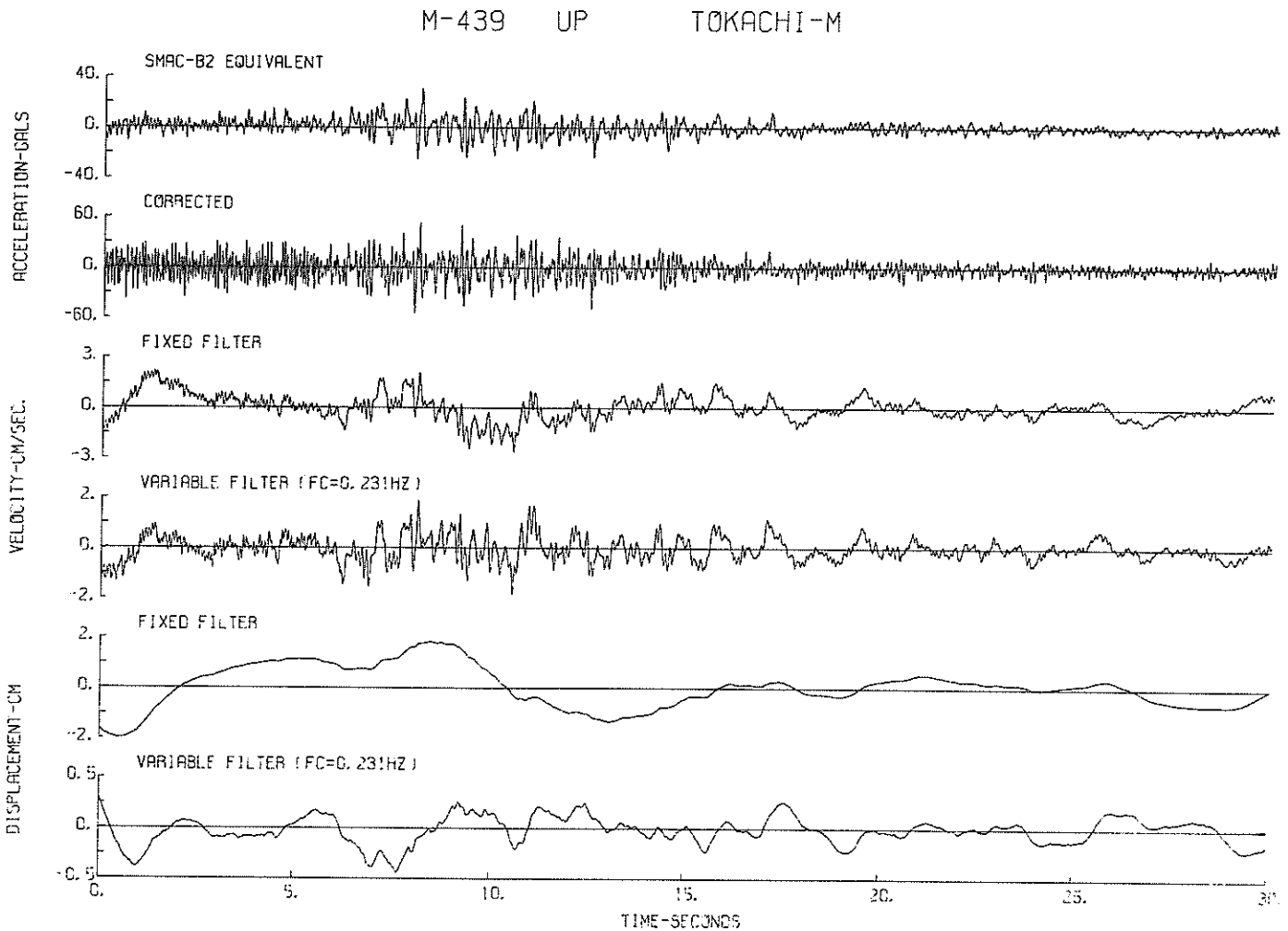
****

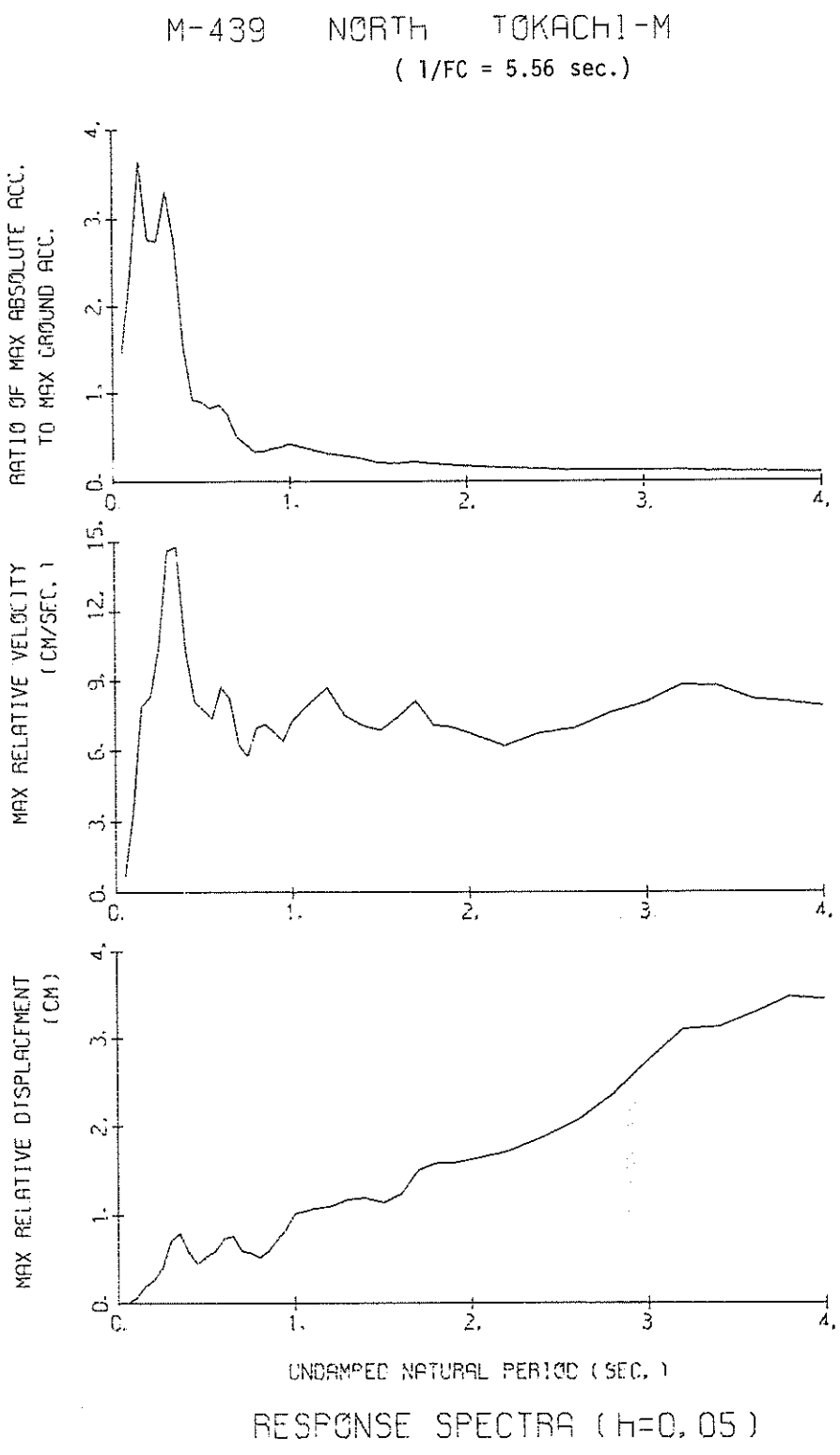
	COMPONENT		
	NORTH	EAST	UP
PARAMETER OF THE VARIABLE FILTER			
FC (HZ)	0.180	0.217	0.231
MAXIMUM ACCELERATION (GAL)			
ORIGINAL	95.6	127.4	53.5
SMAC-B2 EQUIVALENT	62.6	98.3	30.9
CORRECTED	95.1	131.	53.8
MAXIMUM VELOCITY (CM/SEC.)			
FIXED FILTER	6.61	6.15	2.59
VARIABLE FILTER	4.38	5.59	1.88
MAXIMUM DISPLACEMENT (CM)			
FIXED FILTER	3.43	1.96	1.98
VARIABLE FILTER	1.60	0.864	0.436

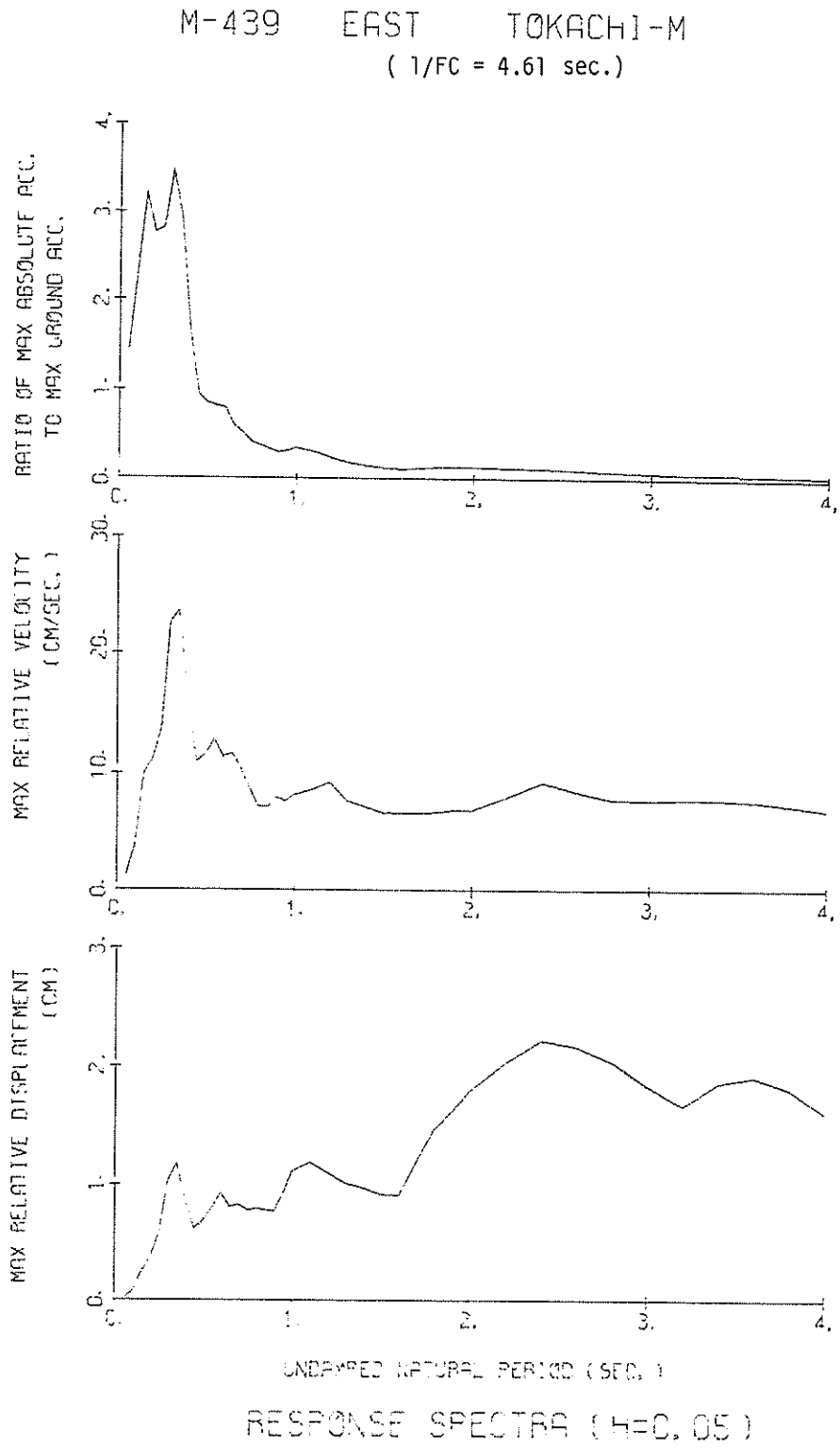

M-439 TOKACHI-M
NORTH
UP
EAST
200.
0.
-200.
ACCELERATION-GALS
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

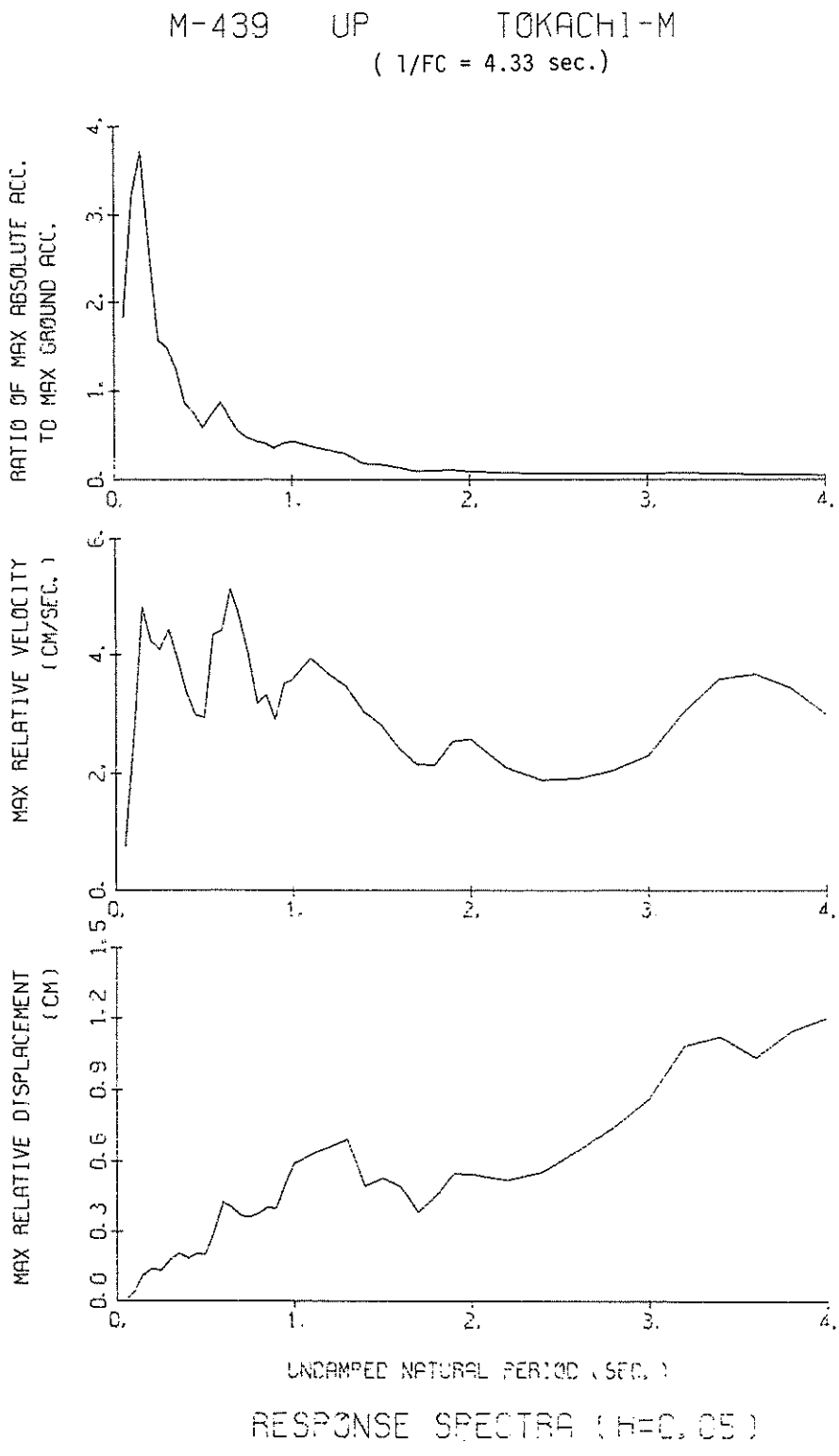

M-439 NORTH TOKACHI-M
SMAC-B2 EQUIVALENT
70.
0.
-70.
CORRECTED
100.
0.
-100.
ACCELERATION-GALS
FIXED FILTER
7.
0.
-7.
VARIABLE FILTER (FC=0.18HZ)
5.
0.
-5.
VELOCITY-CM/SEC.
FIXED FILTER
4.
0.
-4.
VARIABLE FILTER (FC=0.18CHZ)
2.
0.
-2.
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-439 EAST TOKACHI-M
SMAC-B2 EQUIVALENT
100.
0.
-100.
CORRECTED
150.
0.
-150.
ACCELERATION-GALS
FIXED FILTER
7.
0.
-7.
VARIABLE FILTER (FC=0.217HZ)
6.
0.
-6.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.217HZ)
0.9
0.
-0.9
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30
TIME-SECONDS


M-439 UP TOKACHI-M
SMAC-B2 EQUIVALENT
40.
0.
-40.
CORRECTED
60.
0.
-60.
ACCELERATION-GALS
FIXED FILTER
3.
0.
-3.
VARIABLE FILTER (FC=0.23HZ)
2.
0.
-2.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.23HZ)
0.5
0.
-0.5
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
TIME-SECONDS


M-439 NORTH TOKACHI-M
(1/FC = 5.56 sec.)
RATIO OF MAX ABSOLUTE ACC.
TO MAX GROUND ACC.
MAX RELATIVE VELOCITY
(CM/SEC.)
MAX RELATIVE DISPLACEMENT
(CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (h=0.05)


M-439 EAST TOKACHI-M
(1/FC = 4.61 sec.)
RATIO OF MAX ABSOLUTE ACC.
TO MAX GROUND ACC.
MAX RELATIVE VELOCITY
(CM/SEC.)
MAX RELATIVE DISPLACEMENT
(CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (H=0.05)


M-439 UP TOKACHI-M
(1/FC = 4.33 sec.)
RATIO OF MAX ABSOLUTE ACC.
TO MAX GROUND ACC.
MAX RELATIVE VELOCITY
(CM/SEC.)
MAX RELATIVE DISPLACEMENT
(CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (H=0.05)

RESPONSE SPECTRUM

RECORD = M-439 COMPONENT = NORTH SIGNAL = GR. ACC. CORRECTION = STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 95.10 (GAL)
TIME LENGTH = 30.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	665.2	5.20	0.042	140.8	0.72	0.009	135.6	0.58	0.009	127.7	0.51	0.008	114.6	0.39	0.007
0.10	843.2	13.28	0.214	280.7	4.23	0.071	225.2	3.36	0.057	207.1	2.36	0.052	159.7	1.53	0.038
0.15	1324.5	31.46	0.755	494.3	11.55	0.280	346.0	7.89	0.195	230.4	5.10	0.128	135.3	2.64	0.071
0.20	969.7	30.26	0.983	347.3	11.73	0.353	262.5	8.29	0.264	190.6	5.86	0.189	129.2	3.28	0.117
0.25	699.3	27.91	1.107	377.3	15.28	0.596	260.4	10.54	0.410	200.4	8.20	0.311	130.3	4.63	0.188
0.30	619.6	29.71	1.412	410.0	19.46	0.934	313.8	14.62	0.712	205.2	9.92	0.458	116.6	5.50	0.237
0.35	483.6	27.01	1.501	316.6	19.39	0.982	261.4	14.77	0.803	189.3	10.95	0.574	103.9	5.97	0.286
0.40	339.5	22.38	1.376	170.4	12.02	0.689	144.7	10.41	0.581	122.5	8.68	0.484	88.9	5.73	0.314
0.45	283.6	20.04	1.454	121.6	9.28	0.623	87.6	8.09	0.447	83.1	6.70	0.411	74.5	4.95	0.322
0.50	201.8	16.44	1.278	114.2	9.89	0.721	84.8	7.72	0.534	64.2	6.02	0.390	64.4	4.57	0.330
0.55	168.7	15.15	1.293	83.9	8.12	0.641	78.3	7.36	0.595	61.7	6.36	0.458	56.8	4.56	0.342
0.60	186.8	18.25	1.703	96.8	10.50	0.883	81.5	8.74	0.737	60.4	6.24	0.530	50.2	4.59	0.349
0.65	204.9	22.40	2.193	107.9	12.07	1.154	71.9	8.22	0.764	49.7	5.93	0.514	44.2	4.69	0.349
0.70	60.5	7.63	0.751	54.2	6.64	0.671	48.0	6.22	0.591	36.0	5.59	0.434	39.0	4.80	0.345
0.75	105.1	12.45	1.498	53.4	7.00	0.759	40.5	5.74	0.573	30.5	5.36	0.413	35.0	4.90	0.345
0.80	54.2	8.62	0.879	35.0	7.76	0.567	32.4	6.98	0.521	27.9	5.83	0.439	31.9	5.03	0.346
0.85	52.3	9.04	0.958	37.0	7.87	0.676	32.6	7.13	0.592	27.9	6.04	0.490	29.3	5.18	0.346
0.90	65.7	10.11	1.347	39.8	7.28	0.817	35.7	6.79	0.728	30.0	5.82	0.593	27.0	5.34	0.362
0.95	63.8	9.78	1.458	40.1	7.06	0.915	37.4	6.39	0.848	30.7	6.19	0.679	24.8	5.52	0.389
1.00	123.7	20.06	3.133	50.6	7.99	1.278	40.8	7.25	1.023	30.0	6.64	0.729	22.6	5.69	0.399
1.10	84.2	15.22	2.580	47.0	9.59	1.436	35.4	8.01	1.073	23.2	7.11	0.686	19.0	5.95	0.485
1.20	48.7	12.05	1.776	36.5	10.10	1.327	30.4	8.70	1.098	22.6	7.24	0.792	19.4	6.09	0.586
1.30	61.1	12.55	2.614	33.1	7.87	1.416	27.8	7.46	1.181	21.8	7.07	0.891	19.5	6.09	0.685
1.40	36.7	8.26	1.820	27.1	7.48	1.337	24.6	7.05	1.195	20.7	6.80	0.954	19.4	6.01	0.777
1.50	34.6	8.32	1.974	22.7	7.09	1.286	20.5	6.85	1.140	19.2	6.58	1.035	19.1	5.87	0.866
1.60	42.7	11.24	2.768	23.6	8.70	1.524	19.5	7.43	1.242	19.0	6.33	1.158	18.7	5.68	0.951
1.70	38.3	12.68	2.801	27.0	9.88	1.969	20.9	8.12	1.517	18.7	6.19	1.279	18.3	5.45	1.028
1.80	34.5	10.10	2.830	25.4	7.94	2.077	19.5	7.08	1.589	18.1	6.34	1.379	17.8	5.19	1.100
1.90	29.3	9.68	2.675	18.5	7.65	1.685	17.7	6.98	1.586	17.2	6.34	1.453	17.2	4.96	1.161
2.00	19.9	7.21	2.017	16.7	6.97	1.685	16.4	6.72	1.624	16.2	6.22	1.507	16.6	4.98	1.214
2.20	14.6	6.90	1.796	14.5	6.54	1.760	14.4	6.18	1.713	14.5	5.84	1.608	15.3	4.92	1.299
2.40	14.0	7.59	2.046	13.5	7.14	1.957	13.2	6.72	1.873	13.2	6.06	1.720	14.1	5.34	1.356
2.60	20.9	9.11	3.572	13.0	7.44	2.209	12.3	6.95	2.069	11.9	6.60	1.827	12.9	5.73	1.378
2.80	18.0	9.96	3.576	13.9	8.59	2.762	12.2	7.60	2.352	11.2	7.12	2.047	11.7	6.06	1.436
3.00	17.6	10.14	4.017	14.3	8.73	3.252	12.3	8.05	2.741	10.5	7.50	2.160	10.6	6.34	1.518
3.20	17.0	10.94	4.420	14.3	9.75	3.682	12.2	8.81	3.102	9.5	7.72	2.275	9.4	6.53	1.552
3.40	15.9	10.59	4.667	12.6	9.61	3.669	11.0	8.78	3.120	8.9	7.79	2.418	8.4	6.66	1.543
3.60	17.3	10.00	5.681	11.3	8.64	3.707	10.1	8.20	3.283	8.4	7.77	2.625	7.6	6.74	1.542
3.80	12.9	9.03	4.710	10.7	8.25	3.884	9.7	8.04	3.471	8.2	7.68	2.811	7.0	6.76	1.664
4.00	10.5	8.84	4.271	9.5	8.03	3.809	8.7	7.86	3.440	7.6	7.56	2.832	6.4	6.75	1.720

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-439 COMPONENT = EAST SIGNAL = GR. ACC. CORRECTION = STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 130.75 (GAL)
TIME LENGTH = 30.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	648.0	5.10	0.041	204.0	1.41	0.013	183.6	1.09	0.012	164.1	0.98	0.010	131.1	0.80	0.008
0.10	993.3	15.01	0.252	372.6	5.23	0.094	302.2	3.82	0.076	253.0	3.14	0.063	187.2	2.17	0.045
0.15	913.3	22.69	0.521	549.5	13.42	0.316	420.0	9.95	0.235	274.4	6.53	0.153	178.4	3.63	0.095
0.20	816.3	25.84	0.827	492.7	15.63	0.497	360.9	11.11	0.363	285.3	7.76	0.282	196.4	4.99	0.180
0.25	605.8	23.27	0.959	458.9	18.21	0.727	367.8	13.71	0.576	262.3	9.90	0.407	194.3	7.11	0.280
0.30	910.2	43.80	2.075	549.4	27.21	1.246	454.5	22.73	1.028	321.9	16.69	0.719	193.5	8.73	0.381
0.35	815.6	47.77	2.531	488.2	29.36	1.514	384.1	23.60	1.186	267.8	16.50	0.806	163.2	8.38	0.426
0.40	485.1	30.92	1.966	242.5	17.95	0.981	213.3	16.04	0.857	171.1	13.25	0.677	123.5	9.27	0.422
0.45	135.5	11.03	0.695	122.3	10.39	0.628	122.5	10.92	0.622	112.8	10.98	0.564	97.6	9.29	0.420
0.50	163.8	13.98	1.037	119.7	12.08	0.755	109.5	11.57	0.688	95.6	10.87	0.587	85.6	9.00	0.445
0.55	175.3	17.66	1.343	124.2	14.50	0.950	105.9	12.84	0.806	90.6	10.98	0.672	76.3	8.50	0.472
0.60	253.1	24.46	2.308	119.3	12.60	1.084	103.2	11.37	0.932	84.1	9.73	0.741	66.8	7.82	0.481
0.65	147.1	15.11	1.575	84.0	12.62	0.898	76.7	11.66	0.811	66.1	10.04	0.672	56.5	7.49	0.463
0.70	117.7	14.41	1.461	84.7	11.09	1.049	67.2	10.39	0.828	51.0	9.33	0.611	46.5	7.37	0.424
0.75	114.2	14.19	1.628	63.5	8.88	0.903	55.0	8.67	0.782	43.4	8.24	0.604	38.2	7.11	0.395
0.80	136.5	17.03	2.212	68.1	9.70	1.102	49.4	7.15	0.793	39.3	7.16	0.618	34.2	6.81	0.398
0.85	63.1	11.39	1.154	50.9	8.59	0.928	43.2	7.17	0.781	35.3	6.43	0.613	32.2	6.54	0.424
0.90	99.2	14.80	2.035	46.7	8.92	0.957	37.9	8.02	0.772	32.1	7.00	0.630	29.9	6.33	0.450
0.95	80.9	12.52	1.850	47.8	7.85	1.090	41.2	7.68	0.932	34.4	7.11	0.751	27.4	6.19	0.469
1.00	104.8	16.61	2.655	53.0	9.15	1.339	44.9	8.18	1.124	34.7	7.08	0.833	24.9	6.11	0.471
1.10	80.4	14.45	2.463	45.8	9.93	1.399	39.4	8.58	1.194	30.3	7.22	0.889	22.0	6.09	0.518
1.20	76.6	16.23	2.795	39.3	10.57	1.428	30.8	9.19	1.111	23.7	7.57	0.807	21.0	6.05	0.564
1.30	28.3	8.16	1.210	26.7	8.14	1.139	24.0	7.71	1.013	19.3	6.79	0.777	19.4	6.04	0.587
1.40	27.2	8.47	1.352	22.6	7.63	1.115	20.0	7.17	0.973	16.9	6.53	0.782	17.9	6.02	0.603
1.50	18.9	7.54	1.078	17.2	6.99	0.974	16.5	6.67	0.920	16.0	6.35	0.841	17.3	5.99	0.642
1.60	18.3	7.25	1.184	15.4	6.84	0.990	14.4	6.59	0.912	15.6	6.30	0.926	16.7	5.94	0.729
1.70	19.3	8.29	1.415	17.6	7.21	1.283	16.8	6.59	1.205	16.2	6.06	1.093	16.0	5.89	0.806
1.80	23.3	8.40	1.911	20.0	7.41	1.635	18.5	6.69	1.482	16.8	6.28	1.269	15.6	5.93	0.872
1.90	20.0	7.75	1.830	19.2	7.35	1.744	18.2	6.84	1.634	16.8	6.45	1.403	15.2	6.11	0.918
2.00	23.3	8.27	2.360	19.5	7.50	1.967	18.2	6.85	1.803	16.3	6.70	1.503	14.6	6.30	0.939
2.20	28.4	10.30	3.485	21.1	8.79	2.582	16.8	8.05	2.033	13.6	7.39	1.488	13.2	6.63	0.968
2.40	24.9	11.37	3.629	18.9	10.16	2.741	15.6	9.21	2.220	12.2	7.83	1.676	11.9	6.87	1.055
2.60	26.5	11.13	4.533	15.7	8.88	2.683	13.0	8.45	2.165	10.5	7.77	1.681	10.4	7.00	1.081
2.80	18.5	8.57	3.680	12.1	8.03	2.407	10.5	7.78	2.038	9.2	7.65	1.633	8.9	7.06	1.042
3.00	10.1	8.23	2.313	9.1	7.95	2.053	8.4	7.75	1.838	7.4	7.60	1.505	8.1	7.07	1.011
3.20	8.0	8.19	2.080	7.1	7.97	1.805	6.8	7.83	1.677	6.6	7.60	1.456	7.7	7.05	0.997
3.40	7.7	8.23	2.261	7.1	8.00	2.045	6.7	7.82	1.864	6.4	7.54	1.580	7.2	7.00	1.061
3.60	7.2	8.00	2.348	6.5	7.80	2.111	6.2	7.64	1.916	6.0	7.39	1.614	6.6	6.92	1.091
3.80	6.0	7.53	2.178	5.5	7.41	1.980	5.4	7.31	1.815	5.4	7.15	1.555	6.2	6.81	1.086
4.00	4.6	7.54	1.882	4.4	7.18	1.739	4.4	6.91	1.617	4.6	6.86	1.422	5.8	6.68	1.062

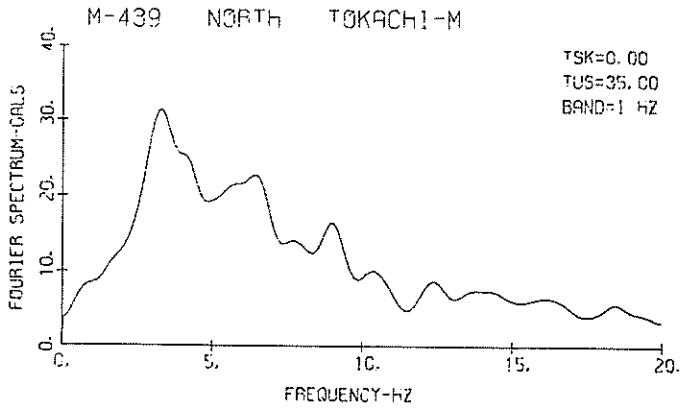
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-439 COMPONENT = UP SIGNAL = GR. ACC. CORRECTION = STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 53.76 (GAL)
TIME LENGTH = 30.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	428.5	3.34	0.027	120.7	0.88	0.008	96.3	0.70	0.006	74.3	0.48	0.005	67.7	0.29	0.004
0.10	519.3	8.24	0.132	226.7	3.44	0.057	172.2	2.51	0.043	135.1	1.76	0.034	93.6	1.11	0.022
0.15	645.7	15.09	0.368	294.6	6.90	0.168	200.1	4.82	0.115	131.3	3.03	0.074	83.9	1.80	0.043
0.20	402.2	13.04	0.408	162.6	4.84	0.164	139.1	4.23	0.140	106.6	3.35	0.107	63.4	2.00	0.058
0.25	196.3	7.85	0.311	119.2	5.33	0.188	84.3	4.08	0.132	60.2	2.80	0.092	52.5	1.99	0.072
0.30	196.2	9.30	0.447	110.9	5.88	0.253	79.4	4.43	0.180	56.7	3.01	0.126	43.0	1.90	0.082
0.35	185.1	10.41	0.574	86.5	5.07	0.268	67.5	3.92	0.207	49.9	3.00	0.149	36.5	2.11	0.091
0.40	145.2	9.39	0.588	62.7	4.37	0.254	46.7	3.36	0.189	36.0	2.74	0.143	28.3	2.24	0.095
0.45	58.1	4.78	0.298	48.0	3.69	0.246	40.3	2.98	0.205	32.3	2.50	0.160	25.1	2.26	0.112
0.50	84.3	6.60	0.534	41.6	3.37	0.263	32.0	2.93	0.201	27.8	2.83	0.170	24.1	2.34	0.127
0.55	112.5	9.79	0.862	47.2	4.91	0.361	40.3	4.35	0.306	31.6	3.49	0.234	22.6	2.35	0.139
0.60	106.4	9.74	0.970	61.2	5.41	0.557	47.2	4.42	0.427	32.3	3.28	0.286	20.0	2.19	0.143
0.65	101.0	10.59	1.081	46.8	6.11	0.498	38.0	5.14	0.405	28.9	3.94	0.301	17.6	2.47	0.161
0.70	59.6	6.73	0.740	31.8	4.88	0.394	29.9	4.64	0.369	24.5	3.93	0.298	16.3	2.60	0.168
0.75	45.1	5.83	0.643	29.7	4.37	0.423	25.7	3.99	0.364	20.8	3.49	0.288	14.3	2.57	0.172
0.80	55.0	7.08	0.892	31.2	4.19	0.504	23.5	3.18	0.380	18.4	2.87	0.288	12.9	2.44	0.175
0.85	57.9	7.85	1.059	28.3	4.16	0.518	22.2	3.33	0.405	16.7	2.46	0.298	12.2	2.28	0.181
0.90	20.9	3.29	0.429	20.6	3.15	0.422	19.8	2.91	0.404	15.9	2.28	0.319	11.1	2.12	0.201
0.95	39.2	6.09	0.897	27.7	4.43	0.633	22.3	3.51	0.507	16.8	2.52	0.376	10.8	1.98	0.219
1.00	61.3	9.63	1.554	29.4	4.91	0.744	23.6	3.59	0.592	17.2	2.64	0.422	10.8	1.87	0.231
1.10	45.5	8.17	1.395	28.6	5.15	0.875	20.8	3.94	0.632	14.6	2.80	0.435	10.3	1.92	0.239
1.20	56.3	10.72	2.054	27.8	5.47	1.011	18.3	3.68	0.663	11.5	2.97	0.412	9.3	1.88	0.267
1.30	34.6	7.43	1.483	22.1	4.79	0.944	16.3	3.47	0.695	11.1	2.70	0.465	8.3	1.85	0.287
1.40	15.1	3.97	0.751	12.0	3.40	0.597	10.1	3.04	0.498	8.7	2.52	0.422	7.7	1.80	0.302
1.50	15.4	3.99	0.879	11.1	3.12	0.634	9.4	2.81	0.531	7.5	2.35	0.418	7.2	1.83	0.312
1.60	14.5	3.75	0.943	9.0	2.73	0.585	7.7	2.42	0.496	6.4	2.18	0.398	6.7	1.86	0.318
1.70	10.6	3.01	0.776	6.6	2.44	0.482	5.3	2.15	0.386	5.2	2.02	0.359	6.2	1.88	0.324
1.80	11.0	3.46	0.905	6.3	2.48	0.515	5.7	2.14	0.455	5.1	1.99	0.384	5.8	1.90	0.330
1.90	10.9	3.84	0.993	7.7	2.99	0.706	6.1	2.54	0.551	5.1	2.10	0.420	5.4	1.92	0.337
2.00	15.5	4.93	1.572	6.9	2.98	0.701	5.5	2.58	0.546	4.6	2.22	0.435	5.1	1.93	0.341
2.20	7.4	2.69	0.913	5.4	2.24	0.646	4.4	2.10	0.523	3.3	2.03	0.370	4.5	1.95	0.354
2.40	7.1	3.23	1.038	4.7	2.23	0.685	3.8	1.89	0.558	3.1	1.90	0.415	4.1	1.96	0.378
2.60	5.4	2.72	0.922	4.4	2.21	0.753	3.8	1.91	0.647	3.1	1.95	0.474	3.8	2.01	0.410
2.80	8.6	3.93	1.717	5.1	2.56	1.006	3.8	2.05	0.745	3.2	2.05	0.572	3.6	2.09	0.443
3.00	8.9	4.66	2.031	5.0	2.93	1.131	3.9	2.30	0.864	3.4	2.34	0.716	3.4	2.20	0.465
3.20	6.7	4.10	1.729	5.0	3.23	1.297	4.3	3.03	1.088	3.4	2.75	0.813	3.1	2.31	0.464
3.40	6.4	4.52	1.868	4.7	3.98	1.382	3.9	3.59	1.125	3.0	3.07	0.796	2.8	2.39	0.448
3.60	5.3	4.61	1.754	3.9	4.06	1.284	3.2	3.67	1.037	2.7	3.14	0.758	2.7	2.42	0.464
3.80	5.5	4.11	2.007	3.7	3.74	1.350	3.3	3.44	1.146	2.7	2.98	0.865	2.6	2.40	0.495
4.00	4.5	3.62	1.815	3.5	3.12	1.389	3.0	2.99	1.203	2.6	2.75	0.933	2.4	2.33	0.542

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)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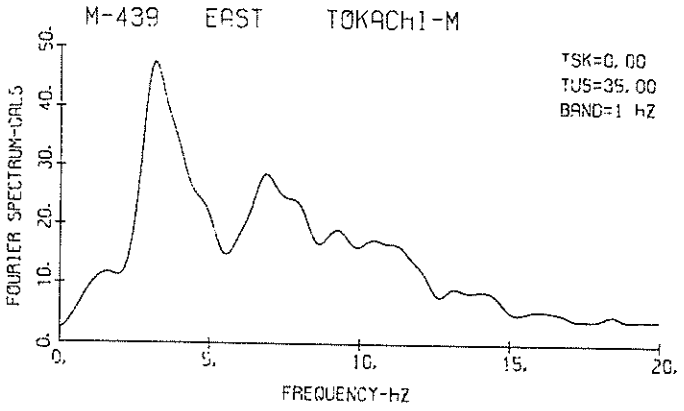
FREQUENCY-HZ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TUS=35.00
BAND=1 HZ
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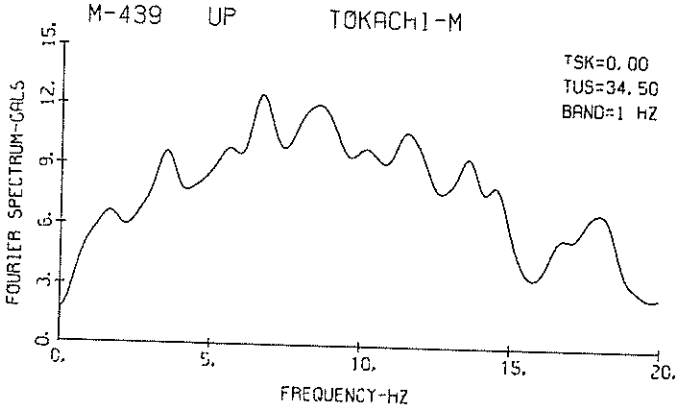
FREQUENCY-HZ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5.
10.
15.
20.
FREQUENCY-HZ

RECORD NUMBER M- 496

STATION HANASAKI-M

EARTHQUAKE DATA

****

DATE AND TIME 19:17 NOVEMBER 23, 1981

LOCATION OF HYPOCENTER

EPICENTRAL REGION SE OFF HOKKAIDO

LATITUDE 43.02°N

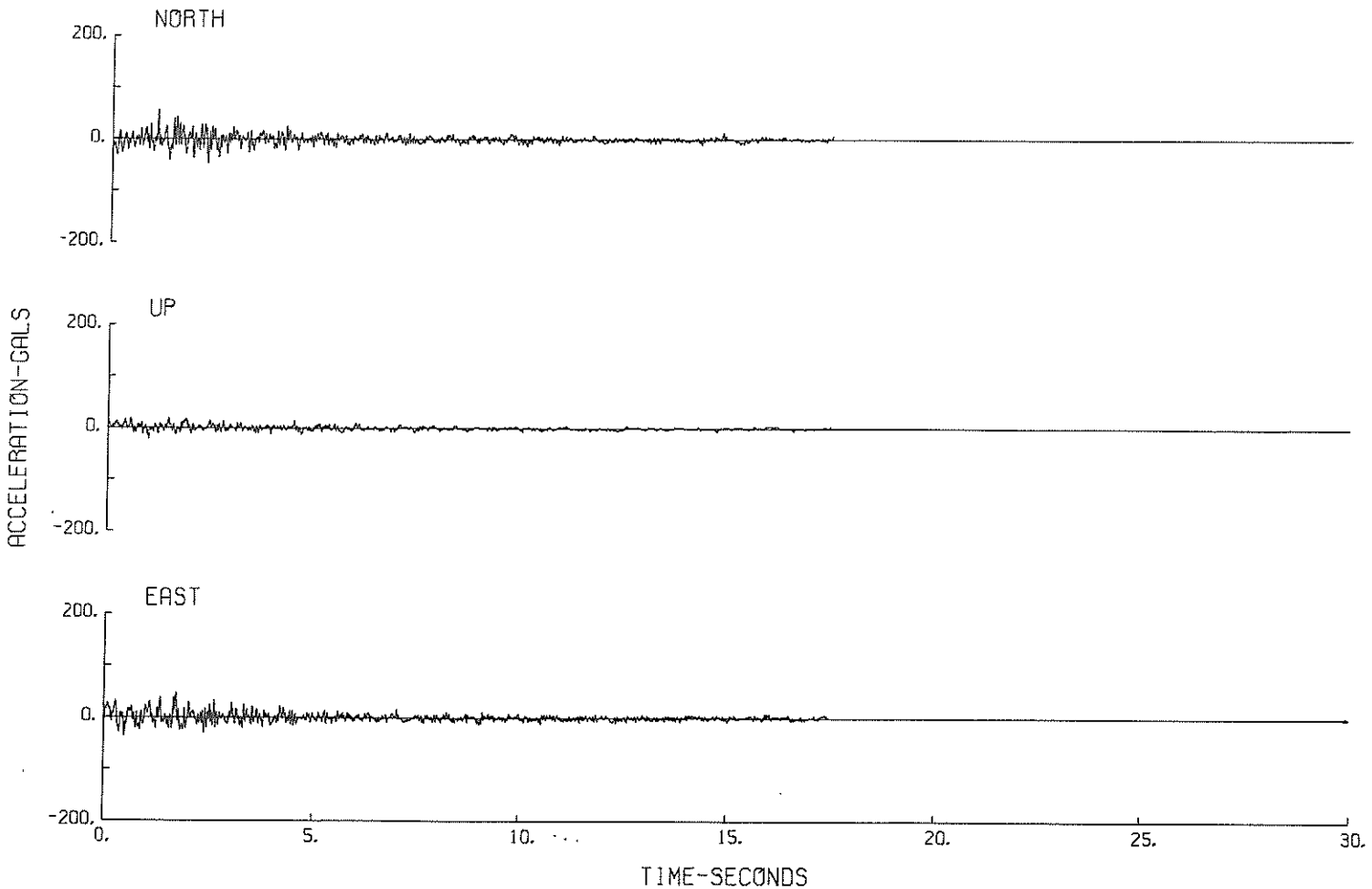
LONGITUDE 146.05°E

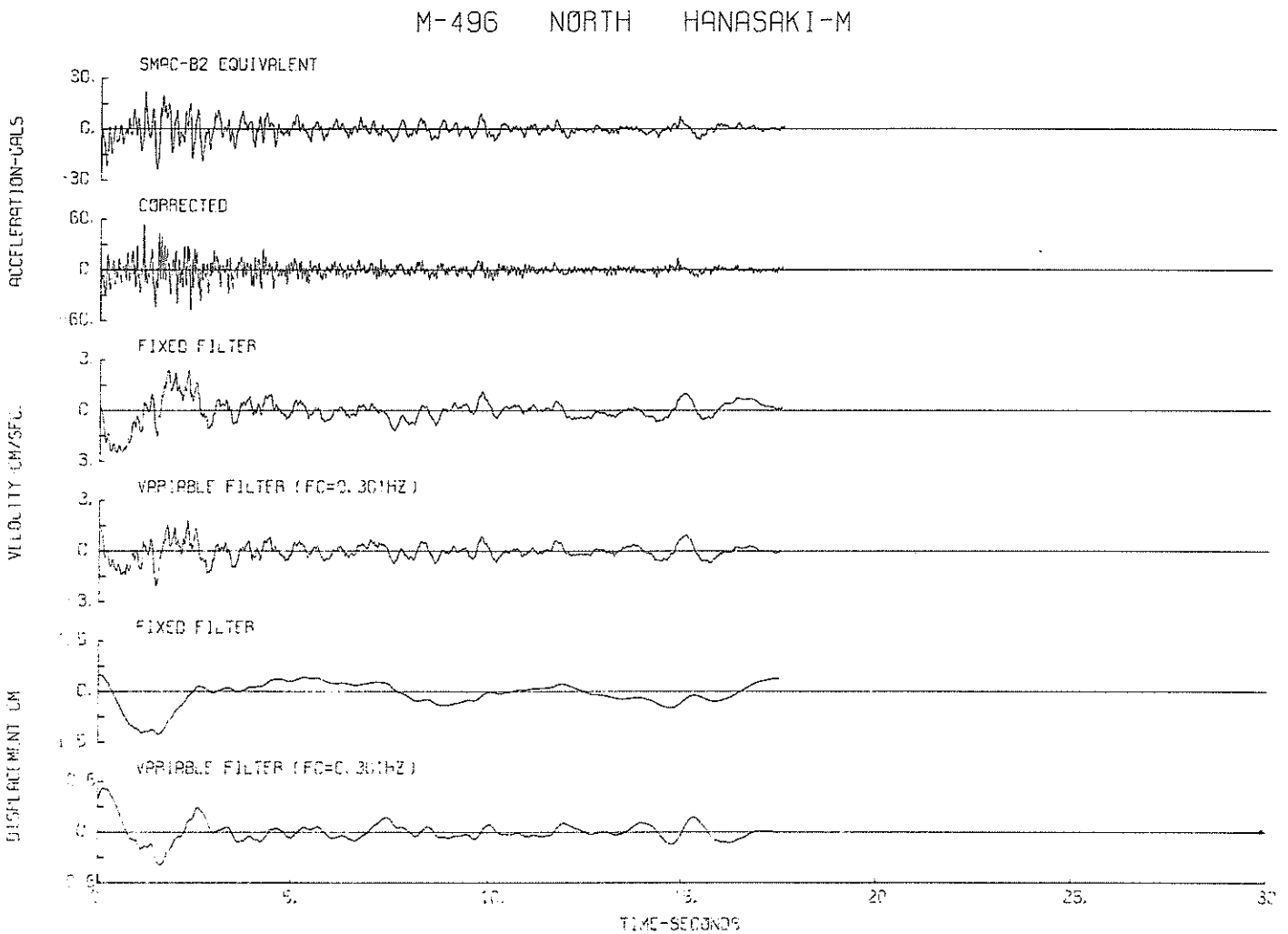
DEPTH 40 KM

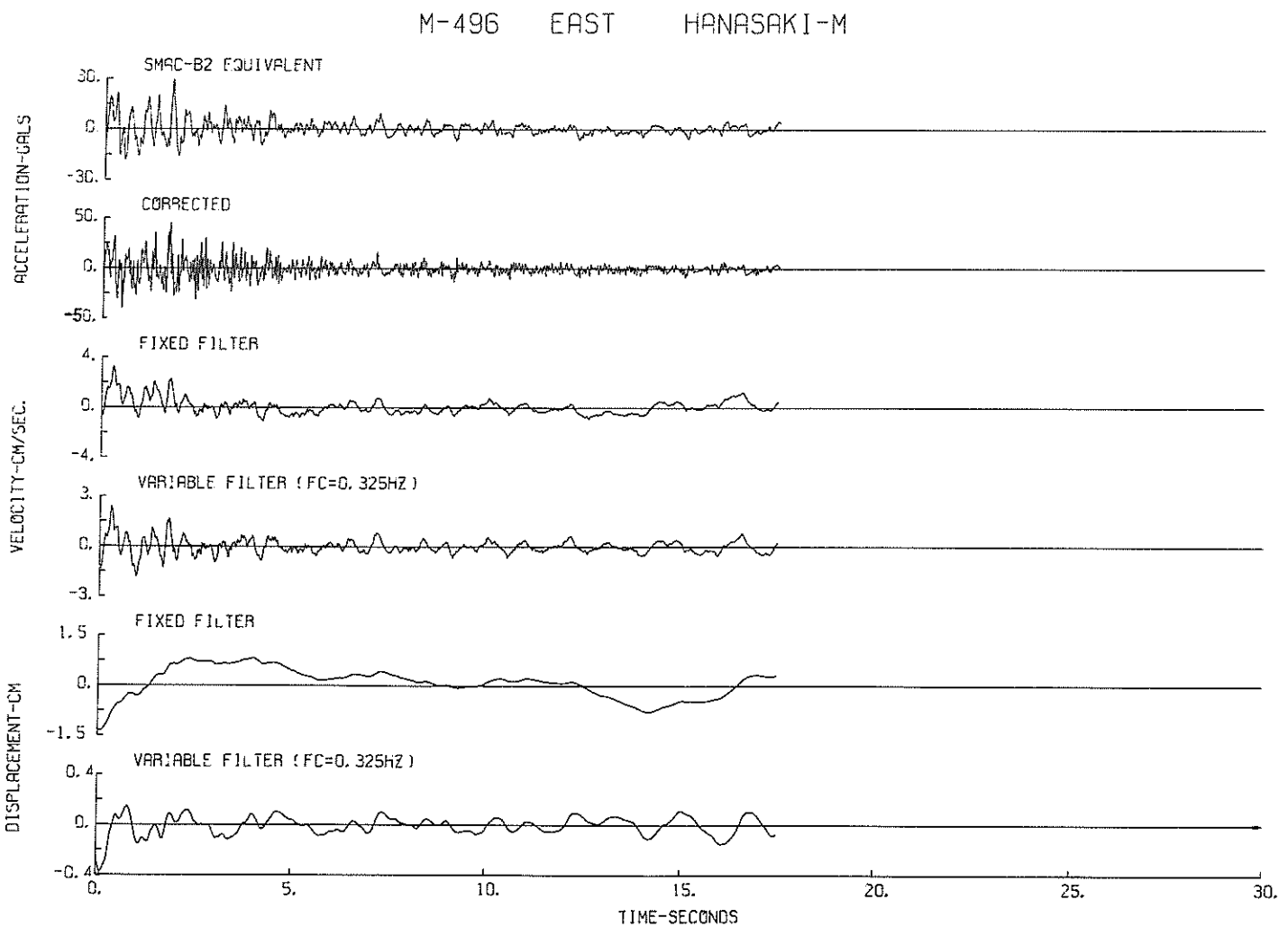
MAGNITUDE 6.3

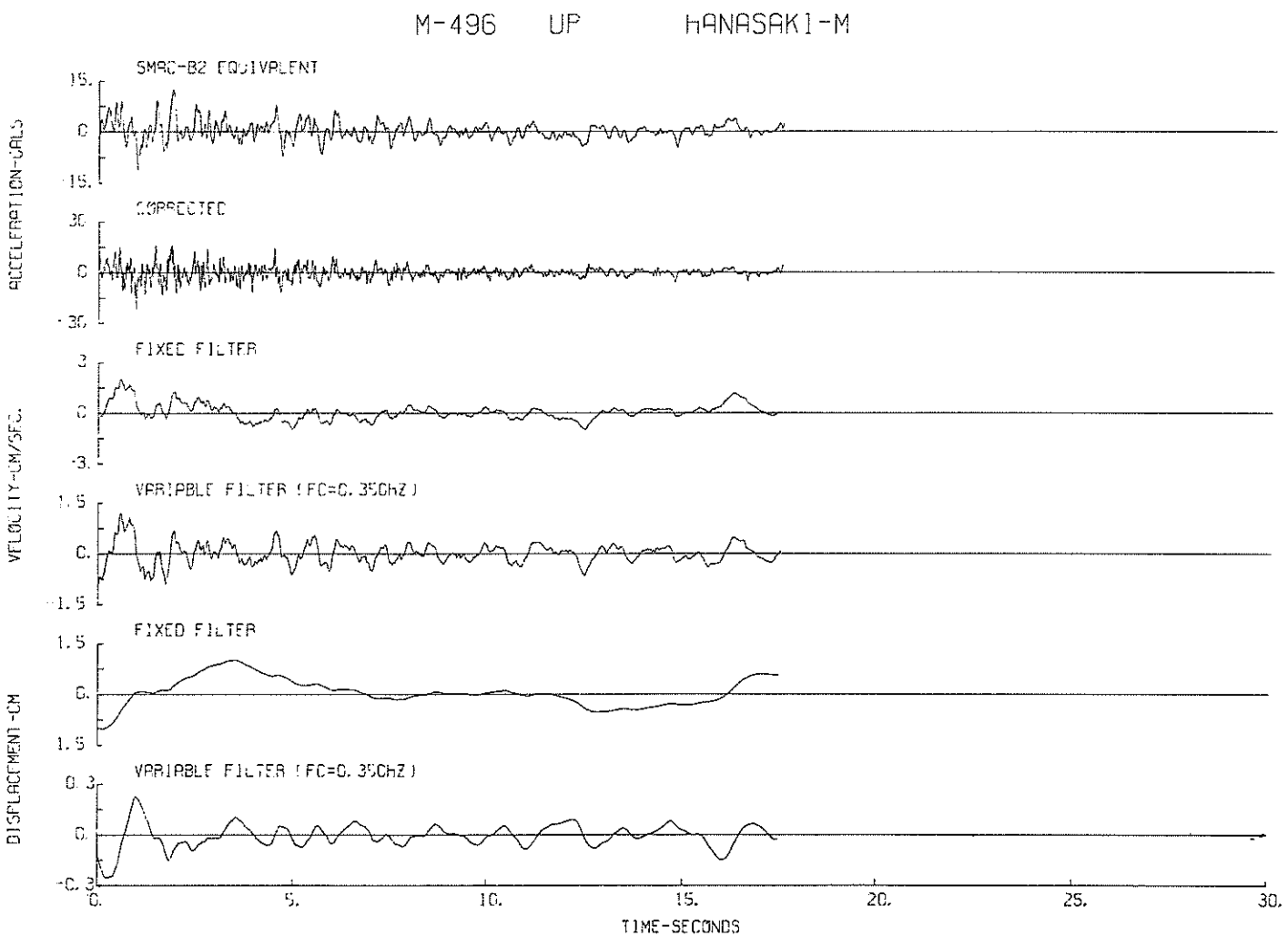
****

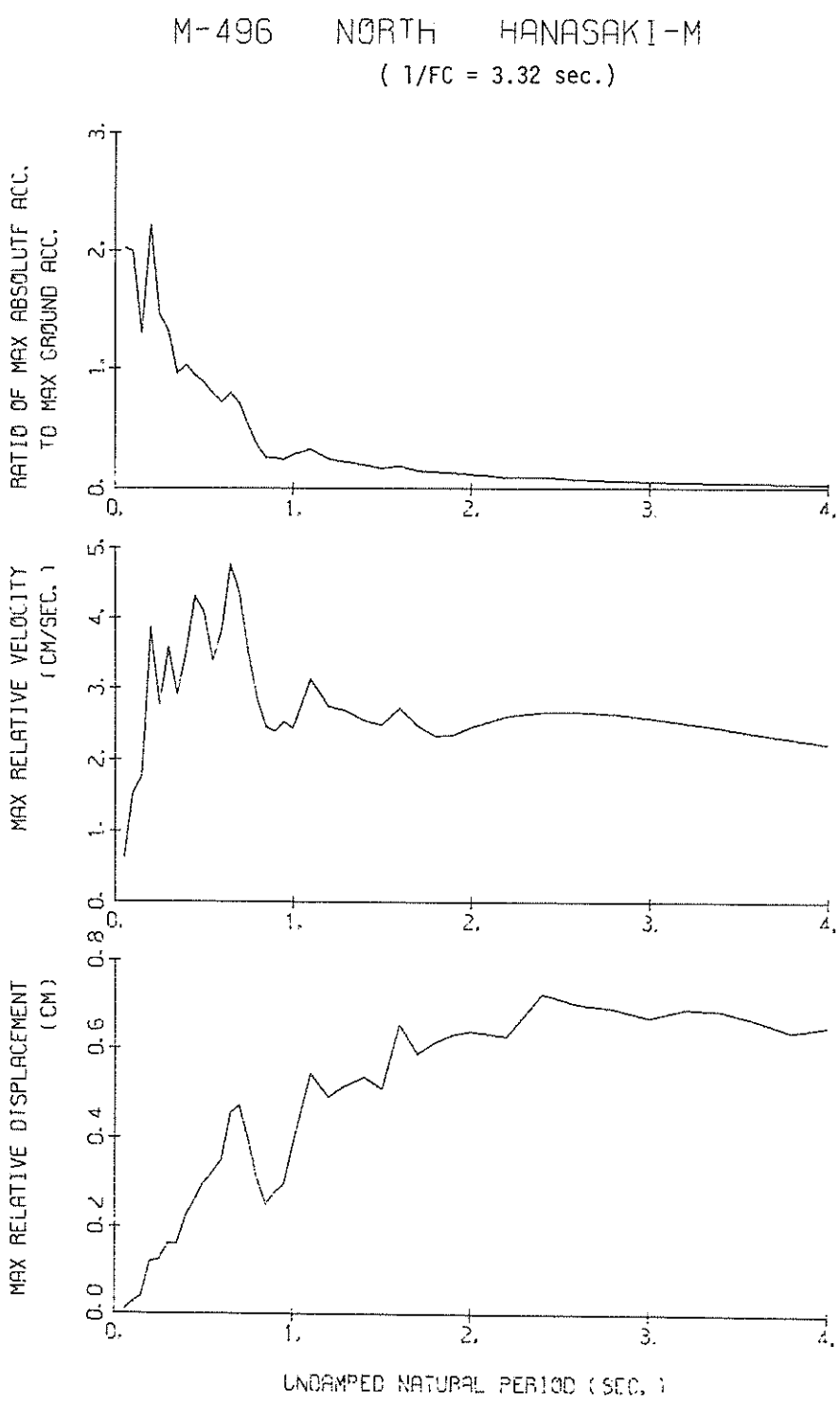
	COMPONENT		
	NORTH	EAST	UP
PARAMETER OF THE VARIABLE FILTER			
FC (HZ)	0.301	0.325	0.350
MAXIMUM ACCELERATION (GAL)			
ORIGINAL	56.5	46.5	20.7
SMAC-B2 EQUIVALENT	24.0	29.8	12.5
CORRECTED	53.7	45.4	20.7
MAXIMUM VELOCITY (CM/SEC.)			
FIXED FILTER	2.51	3.25	2.03
VARIABLE FILTER	2.09	2.40	1.20
MAXIMUM DISPLACEMENT (CM)			
FIXED FILTER	1.26	1.35	1.02
VARIABLE FILTER	0.522	0.369	0.252


M-496 HANASAKI-M
NORTH
200.
0.
-200.
UP
200.
0.
-200.
EAST
200.
0.
-200.
ACCELERATION-GALS
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-496 NORTH HANASAKI-M
SMAC-B2 EQUIVALENT
CORRECTED
FIXED FILTER
VARIABLE FILTER (FC=0.30HZ)
FIXED FILTER
VARIABLE FILTER (FC=0.30HZ)
ACCELERATION-GALS
VELOCITY-CM/SEC
DISPLACEMENT-CM
TIME-SECONDS

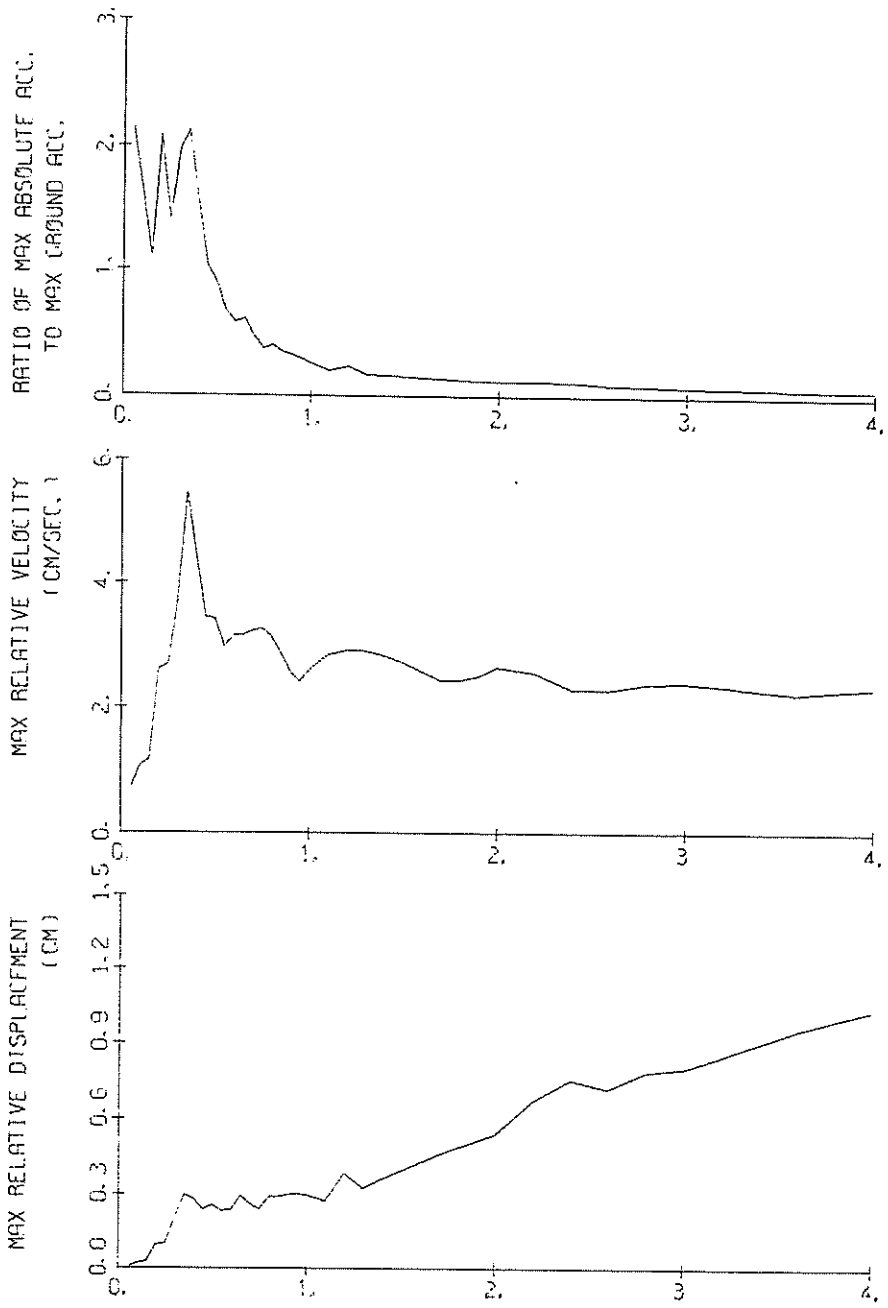

M-496 EAST HANASAKI-M
SMAC-B2 EQUIVALENT
30.
0.
-30.
CORRECTED
50.
0.
-50.
ACCELERATION-GALS
FIXED FILTER
4.
0.
-4.
VARIABLE FILTER (FC=0.325HZ)
3.
0.
-3.
VELOCITY-CM/SEC.
FIXED FILTER
1.5
0.
-1.5
VARIABLE FILTER (FC=0.325HZ)
0.4
0.
-0.4
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-496 UP HANASAKI-M
SMAC-B2 EQUIVALENT
15.
0
-15.
ACCELERATION-GALS
CORRECTED
30
0
-30
FIXED FILTER
3
0
-3.
VELOCITY-CM/SEC.
VARIABLE FILTER (FC=0.35Hz)
1.5
0.
-1.5
FIXED FILTER
1.5
0.
-1.5
DISPLACEMENT-CM
VARIABLE FILTER (FC=0.35Hz)
0.3
0.
-0.3
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

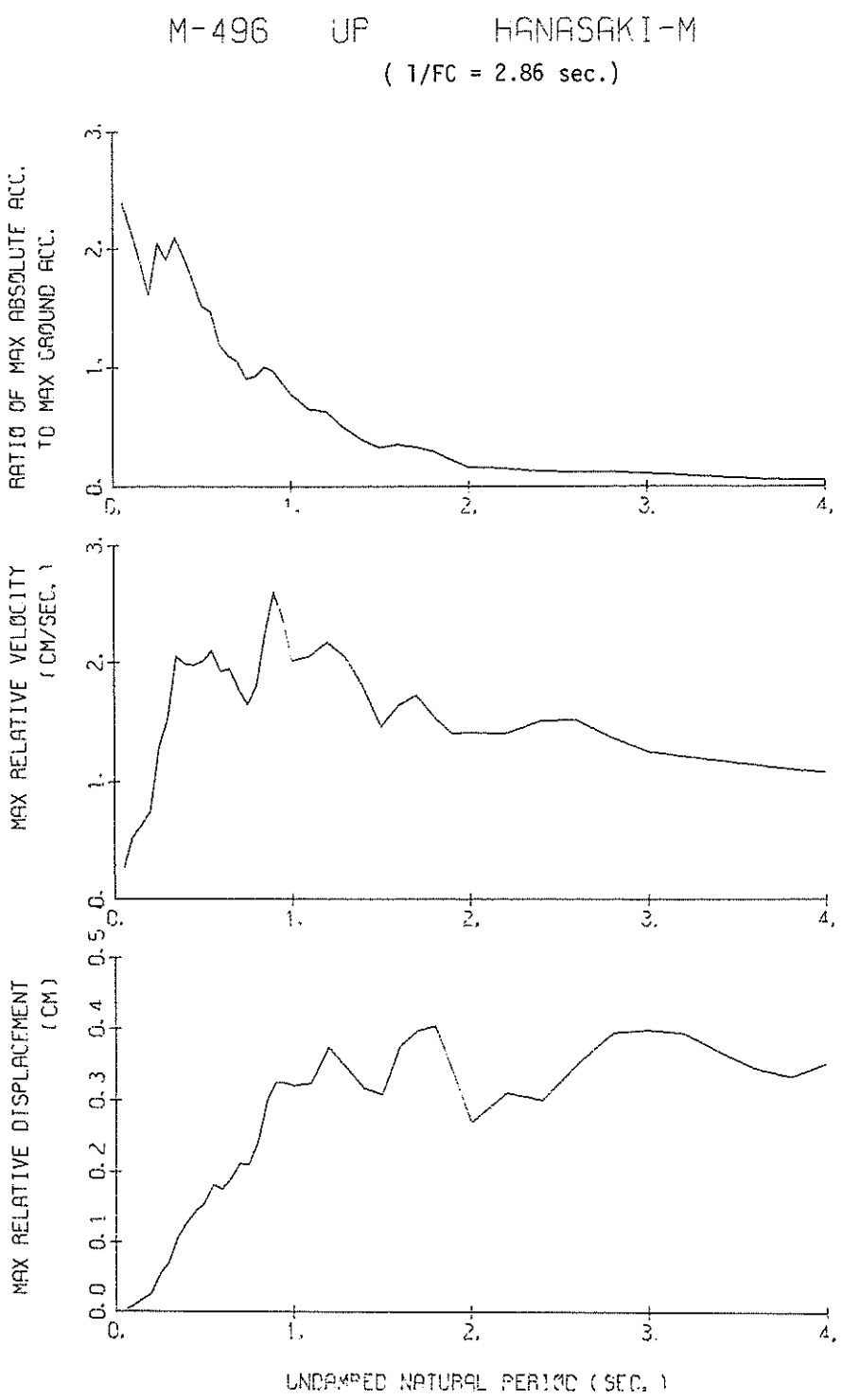

M-496 NORTH HANASAKI-M
(1/FC = 3.32 sec.)
RATIO OF MAX ABSOLUTE ACC. TO MAX GROUND ACC.
MAX RELATIVE VELOCITY (CM/SEC.)
MAX RELATIVE DISPLACEMENT (CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (H=0.05)

M-496 EAST HANASAKI-M

(1/FC = 3.08 sec.)



RESPONSE SPECTRA (h=0.05)


M-496 UP HANASAKI-M
(1/FC = 2.86 sec.)
RATIO OF MAX ABSOLUTE ACC. TO MAX GROUND ACC.
MAX RELATIVE VELOCITY (CM/SEC.)
MAX RELATIVE DISPLACEMENT (CM)
UNDAMPED NATURAL PERIOD (SEC.)
RESPONSE SPECTRA (H=0.05)

RESPONSE SPECTRUM

RECORD = M-496 COMPONENT = NORTH SIGNAL = GR. ACC. CORRECTION = STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 53.72 (GAL)
TIME LENGTH = 15.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	251.8	1.87	0.016	123.3	0.76	0.008	108.7	0.59	0.007	92.1	0.46	0.006	74.4	0.32	0.005
0.10	246.3	3.94	0.062	109.7	1.68	0.028	107.2	1.53	0.027	91.8	1.27	0.023	68.5	0.79	0.016
0.15	253.5	5.99	0.145	94.9	2.40	0.054	69.8	1.76	0.040	63.3	1.27	0.035	54.3	1.03	0.029
0.20	267.5	8.27	0.271	156.8	5.37	0.159	119.2	3.86	0.120	86.3	2.88	0.086	55.4	1.65	0.051
0.25	114.6	4.45	0.182	87.4	3.25	0.138	78.3	2.77	0.124	65.9	2.23	0.101	45.1	1.75	0.064
0.30	148.9	7.00	0.339	90.6	4.42	0.206	70.9	3.58	0.162	49.4	2.58	0.110	38.9	1.58	0.077
0.35	108.2	5.86	0.336	59.4	3.43	0.185	51.5	2.92	0.160	45.6	2.33	0.140	33.5	1.77	0.096
0.40	75.6	4.87	0.306	63.9	4.09	0.258	55.3	3.52	0.222	46.1	2.89	0.182	33.0	2.06	0.117
0.45	87.1	6.24	0.447	58.8	4.83	0.301	50.7	4.31	0.259	42.3	3.51	0.215	29.4	2.18	0.135
0.50	141.2	11.01	0.894	52.1	4.65	0.330	47.5	4.10	0.299	40.2	3.40	0.250	27.7	2.20	0.161
0.55	108.0	9.22	0.828	50.5	4.25	0.385	42.4	3.39	0.323	36.5	2.87	0.273	26.2	2.06	0.181
0.60	80.6	8.01	0.735	49.0	4.52	0.446	38.6	3.83	0.350	31.6	2.90	0.280	24.1	1.99	0.192
0.65	120.3	12.53	1.288	61.9	6.46	0.662	42.6	4.76	0.454	29.2	3.12	0.303	21.9	1.97	0.196
0.70	76.2	8.86	0.946	49.1	5.77	0.609	38.1	4.38	0.471	25.6	3.12	0.311	19.4	1.98	0.195
0.75	70.9	8.26	1.010	33.2	4.12	0.472	28.2	3.49	0.399	21.8	2.72	0.302	17.2	2.01	0.191
0.80	21.6	3.25	0.350	20.5	3.04	0.331	19.3	2.84	0.310	16.9	2.43	0.266	15.2	2.03	0.185
0.85	21.0	2.83	0.384	16.0	2.63	0.293	13.9	2.46	0.252	13.4	2.35	0.239	13.5	2.05	0.179
0.90	27.9	4.09	0.572	18.0	2.63	0.368	13.7	2.40	0.278	11.6	2.32	0.229	12.0	2.05	0.173
0.95	43.7	6.45	1.000	19.7	3.37	0.449	13.0	2.54	0.296	10.8	2.28	0.244	10.8	2.05	0.187
1.00	35.3	5.61	0.894	20.1	3.29	0.509	15.2	2.44	0.383	12.4	2.24	0.308	9.8	2.04	0.205
1.10	32.2	6.01	0.988	22.1	4.01	0.675	17.8	3.14	0.542	13.3	2.22	0.401	8.8	2.02	0.235
1.20	27.3	5.20	0.996	15.9	3.25	0.579	13.5	2.75	0.490	11.5	2.29	0.410	8.0	1.99	0.255
1.30	23.4	5.25	1.003	14.6	3.29	0.624	12.1	2.68	0.517	10.2	2.36	0.427	7.7	1.97	0.278
1.40	15.2	3.27	0.756	12.5	2.82	0.620	10.9	2.55	0.536	9.1	2.31	0.442	7.6	1.94	0.316
1.50	14.6	3.94	0.832	9.5	2.74	0.538	9.0	2.49	0.509	8.3	2.16	0.457	7.4	1.92	0.349
1.60	23.9	5.80	1.549	13.8	3.50	0.894	10.2	2.72	0.655	8.1	2.20	0.497	7.1	1.90	0.375
1.70	12.5	3.96	0.914	8.9	2.84	0.653	8.2	2.49	0.588	7.6	2.17	0.527	6.8	1.88	0.396
1.80	9.2	2.84	0.759	8.0	2.47	0.652	7.6	2.33	0.615	7.1	2.08	0.550	6.4	1.86	0.411
1.90	12.5	4.07	1.146	8.1	2.72	0.740	7.0	2.35	0.632	6.6	2.17	0.566	6.1	1.85	0.423
2.00	8.1	2.68	0.817	6.7	2.57	0.680	6.4	2.46	0.639	6.0	2.28	0.574	5.7	1.86	0.430
2.20	9.6	4.05	1.178	5.6	2.80	0.680	5.2	2.61	0.628	4.9	2.42	0.568	5.0	2.00	0.433
2.40	10.1	4.09	1.469	6.3	2.87	0.920	5.0	2.67	0.724	4.0	2.50	0.539	4.3	2.10	0.420
2.60	7.3	3.59	1.244	5.1	2.75	0.869	4.1	2.67	0.701	3.5	2.52	0.548	3.7	2.15	0.395
2.80	5.3	3.13	1.053	4.3	2.71	0.847	3.5	2.64	0.691	2.9	2.51	0.535	3.2	2.18	0.362
3.00	3.8	2.70	0.874	3.2	2.64	0.725	3.0	2.59	0.671	2.7	2.48	0.577	2.8	2.19	0.381
3.20	3.2	2.61	0.837	2.9	2.57	0.741	2.7	2.52	0.690	2.5	2.43	0.600	2.6	2.18	0.406
3.40	2.7	2.52	0.786	2.5	2.48	0.733	2.4	2.45	0.686	2.3	2.37	0.602	2.5	2.16	0.427
3.60	2.3	2.42	0.759	2.2	2.40	0.710	2.1	2.37	0.664	2.0	2.31	0.589	2.4	2.14	0.448
3.80	2.0	2.33	0.728	1.9	2.31	0.679	1.8	2.29	0.637	1.9	2.25	0.576	2.3	2.11	0.477
4.00	2.0	2.24	0.825	1.7	2.23	0.671	1.7	2.22	0.649	1.8	2.19	0.607	2.2	2.07	0.506

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-496 COMPONENT = EAST SIGNAL = GR. ACC. CORRECTION = STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 45.43 (GAL)
TIME LENGTH = 15.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	236.1	1.74	0.015	130.7	0.94	0.008	98.1	0.69	0.006	70.5	0.45	0.004	59.1	0.27	0.004
0.10	219.5	3.52	0.056	99.8	1.41	0.025	75.3	1.06	0.019	64.6	0.77	0.016	49.5	0.57	0.012
0.15	88.6	2.10	0.050	57.9	1.38	0.033	50.4	1.16	0.028	46.7	0.96	0.027	49.4	0.80	0.027
0.20	212.7	6.67	0.215	115.1	3.19	0.116	94.7	2.60	0.096	73.2	1.86	0.073	53.3	1.01	0.049
0.25	97.0	3.89	0.154	75.1	3.04	0.119	64.1	2.67	0.101	54.3	2.11	0.084	45.7	1.49	0.065
0.30	126.3	5.82	0.288	104.5	4.35	0.238	89.6	3.72	0.204	71.3	3.00	0.159	46.4	1.95	0.094
0.35	214.1	11.69	0.664	119.9	6.74	0.372	96.5	5.48	0.297	69.8	3.95	0.214	43.2	2.20	0.119
0.40	111.7	7.06	0.453	84.5	5.31	0.341	70.5	4.44	0.283	53.9	3.58	0.215	36.6	2.32	0.131
0.45	143.6	10.13	0.737	61.8	4.51	0.317	47.0	3.44	0.240	39.1	2.88	0.195	30.9	2.32	0.135
0.50	71.8	5.84	0.454	53.2	4.31	0.337	40.8	3.41	0.257	31.2	2.65	0.191	26.4	2.31	0.138
0.55	117.8	10.20	0.903	38.3	3.51	0.293	30.3	2.97	0.231	25.8	2.59	0.191	23.3	2.33	0.143
0.60	64.5	6.28	0.588	32.5	3.45	0.295	26.3	3.14	0.238	23.4	2.74	0.206	20.6	2.38	0.146
0.65	87.6	8.99	0.937	37.9	4.06	0.405	27.8	3.15	0.296	20.7	2.88	0.214	18.0	2.40	0.144
0.70	49.3	5.76	0.612	25.2	3.44	0.313	21.4	3.22	0.264	17.4	2.91	0.207	15.3	2.38	0.140
0.75	36.6	4.31	0.521	18.5	3.49	0.264	17.0	3.26	0.239	15.5	2.88	0.210	13.7	2.31	0.152
0.80	43.7	5.53	0.709	24.0	3.32	0.388	18.2	3.13	0.294	15.2	2.80	0.233	13.3	2.20	0.163
0.85	39.8	5.46	0.729	23.0	3.11	0.420	15.9	2.87	0.289	14.5	2.62	0.249	12.7	2.07	0.171
0.90	32.0	4.59	0.656	17.3	2.67	0.354	14.7	2.56	0.299	13.4	2.38	0.258	12.1	1.96	0.175
0.95	29.1	4.45	0.665	18.0	2.74	0.410	13.4	2.40	0.301	12.1	2.16	0.260	11.3	1.84	0.180
1.00	25.7	4.05	0.652	15.9	2.74	0.403	11.9	2.59	0.298	10.7	2.34	0.255	10.4	1.81	0.187
1.10	20.7	3.68	0.635	11.6	2.97	0.357	9.0	2.83	0.276	8.2	2.57	0.233	8.7	2.00	0.199
1.20	31.5	5.92	1.151	15.8	3.05	0.575	10.6	2.91	0.386	7.6	2.67	0.267	7.8	2.12	0.217
1.30	8.6	3.13	0.369	8.0	3.01	0.341	7.7	2.90	0.328	7.4	2.69	0.304	7.1	2.19	0.248
1.40	10.9	3.01	0.542	7.6	2.92	0.378	7.4	2.82	0.364	7.1	2.65	0.338	7.0	2.21	0.277
1.50	11.9	2.85	0.677	7.7	2.78	0.435	7.0	2.71	0.396	6.8	2.57	0.369	6.7	2.20	0.304
1.60	8.4	2.68	0.546	6.9	2.63	0.444	6.6	2.57	0.428	6.4	2.47	0.398	6.5	2.16	0.329
1.70	9.6	2.94	0.706	6.5	2.47	0.476	6.3	2.43	0.459	6.1	2.35	0.427	6.2	2.11	0.353
1.80	8.4	2.70	0.692	6.9	2.56	0.566	6.0	2.43	0.487	5.8	2.23	0.455	6.0	2.05	0.377
1.90	7.9	2.99	0.726	6.4	2.63	0.584	5.7	2.49	0.514	5.4	2.28	0.480	5.7	1.98	0.400
2.00	8.1	3.40	0.816	6.1	2.98	0.621	5.4	2.64	0.538	5.2	2.30	0.504	5.5	1.91	0.421
2.20	11.0	3.93	1.349	6.3	2.84	0.774	5.6	2.55	0.672	4.7	2.27	0.546	5.0	1.90	0.460
2.40	7.8	3.47	1.139	6.0	2.55	0.869	5.3	2.29	0.756	4.2	2.18	0.582	4.6	1.88	0.494
2.60	9.0	3.72	1.536	5.1	2.53	0.865	4.3	2.28	0.720	3.8	2.05	0.614	4.3	1.83	0.525
2.80	6.5	3.17	1.289	4.4	2.50	0.863	4.1	2.38	0.785	3.7	2.16	0.663	4.0	1.80	0.552
3.00	4.4	2.62	1.008	3.9	2.50	0.879	3.6	2.39	0.799	3.6	2.19	0.729	3.7	1.82	0.597
3.20	3.8	2.54	0.995	3.5	2.45	0.897	3.4	2.35	0.846	3.4	2.18	0.789	3.6	1.87	0.651
3.40	3.5	2.43	1.023	3.2	2.35	0.933	3.2	2.28	0.901	3.3	2.13	0.842	3.5	1.92	0.699
3.60	3.1	2.48	1.019	3.0	2.33	0.982	3.0	2.23	0.949	3.1	2.16	0.890	3.4	1.96	0.743
3.80	2.9	2.55	1.059	2.8	2.41	1.025	2.8	2.28	0.993	2.9	2.19	0.932	3.3	2.00	0.784
4.00	2.7	2.57	1.097	2.7	2.44	1.063	2.7	2.32	1.031	2.8	2.22	0.971	3.1	2.03	0.821

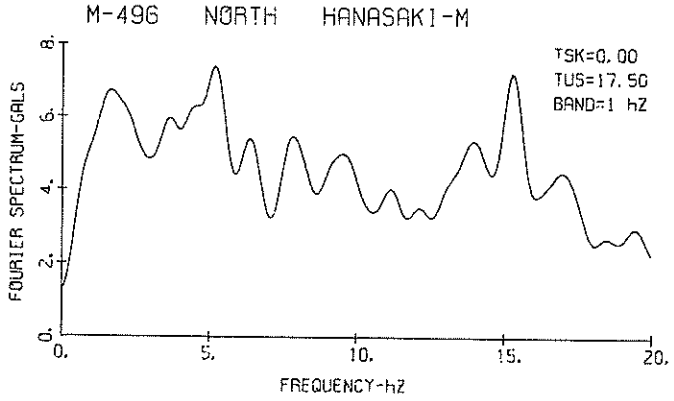
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

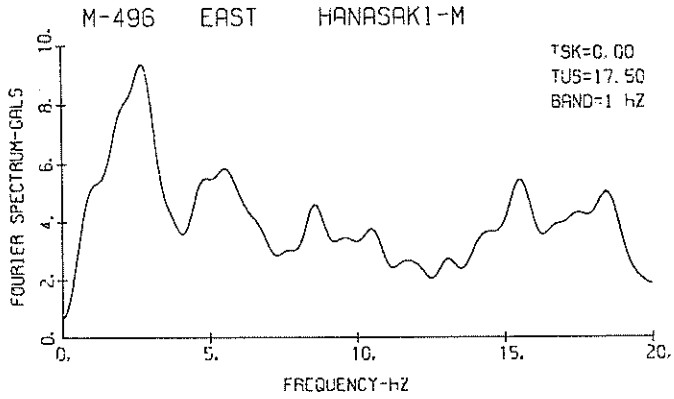
RESPONSE SPECTRUM

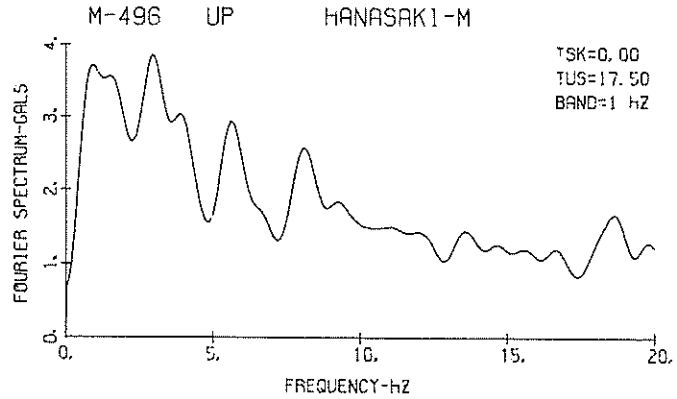
RECORD = M-496 COMPONENT = UP SIGNAL = GR. ACC. CORRECTION = STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 16.38 (GAL)
TIME LENGTH = 15.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	186.7	1.45	0.012	56.8	0.41	0.004	39.3	0.26	0.002	27.0	0.17	0.002	18.1	0.10	0.001
0.10	157.0	2.48	0.040	48.0	0.70	0.012	35.6	0.53	0.009	28.1	0.39	0.007	20.2	0.25	0.005
0.15	91.5	2.17	0.052	40.4	0.95	0.023	31.2	0.63	0.018	24.5	0.46	0.014	17.7	0.29	0.009
0.20	62.8	1.96	0.064	32.1	0.95	0.033	26.2	0.75	0.026	19.9	0.59	0.020	16.2	0.37	0.015
0.25	122.0	4.81	0.193	50.1	1.92	0.079	33.6	1.28	0.053	21.1	0.80	0.033	16.5	0.54	0.025
0.30	76.2	3.63	0.174	41.0	2.06	0.093	31.2	1.52	0.071	25.9	1.12	0.058	19.6	0.80	0.041
0.35	65.6	3.56	0.204	40.2	2.31	0.125	34.4	2.05	0.107	29.3	1.66	0.089	20.8	1.02	0.059
0.40	41.2	2.62	0.167	36.0	2.21	0.146	31.6	1.98	0.127	26.9	1.61	0.107	20.1	1.00	0.072
0.45	47.4	3.48	0.243	32.4	2.23	0.166	28.3	1.98	0.144	24.5	1.57	0.123	17.9	1.07	0.082
0.50	51.3	4.13	0.325	28.3	2.32	0.179	24.7	2.01	0.155	21.3	1.63	0.131	15.8	1.15	0.086
0.55	36.2	3.27	0.278	28.8	2.59	0.220	23.9	2.10	0.182	17.4	1.68	0.130	13.5	1.15	0.085
0.60	61.8	5.92	0.564	27.6	2.62	0.252	19.4	1.92	0.176	14.4	1.56	0.129	11.1	1.15	0.080
0.65	70.9	7.29	0.759	26.9	2.80	0.288	17.9	1.95	0.191	11.3	1.39	0.118	9.0	1.09	0.078
0.70	28.4	3.14	0.352	21.3	2.28	0.264	17.1	1.77	0.211	12.6	1.23	0.153	8.5	1.00	0.090
0.75	17.4	2.06	0.247	15.6	1.80	0.221	14.8	1.65	0.210	12.6	1.33	0.175	8.3	0.91	0.100
0.80	18.4	2.30	0.298	16.3	2.03	0.263	15.0	1.80	0.242	12.4	1.50	0.196	7.8	0.96	0.106
0.85	34.9	4.60	0.638	19.8	2.67	0.361	16.4	2.25	0.299	12.1	1.79	0.217	7.0	1.06	0.111
0.90	34.2	5.00	0.702	21.2	3.23	0.435	15.9	2.59	0.325	11.2	1.95	0.225	6.5	1.12	0.116
0.95	42.4	6.46	0.969	18.8	3.01	0.428	14.3	2.37	0.325	10.4	1.89	0.234	6.0	1.13	0.124
1.00	26.8	4.29	0.678	15.5	2.39	0.393	12.8	2.01	0.321	9.7	1.75	0.239	5.7	1.15	0.129
1.10	22.5	4.04	0.689	12.8	2.38	0.390	10.7	2.05	0.324	8.1	1.65	0.241	5.4	1.09	0.137
1.20	16.6	3.42	0.605	12.8	2.61	0.467	10.3	2.16	0.374	7.4	1.63	0.262	4.9	0.97	0.145
1.30	12.7	2.96	0.546	10.0	2.43	0.427	8.1	2.04	0.346	6.0	1.55	0.247	4.3	0.93	0.146
1.40	16.3	3.75	0.808	9.1	2.20	0.450	6.5	1.79	0.316	5.2	1.48	0.246	4.1	0.97	0.153
1.50	6.2	1.92	0.353	6.0	1.65	0.341	5.4	1.46	0.308	4.3	1.21	0.241	3.8	1.01	0.161
1.60	11.0	2.77	0.711	7.5	2.02	0.485	5.8	1.64	0.375	4.1	1.22	0.259	3.6	1.06	0.168
1.70	7.5	2.35	0.549	6.5	2.05	0.473	5.5	1.73	0.398	4.0	1.26	0.286	3.3	1.10	0.172
1.80	8.8	2.56	0.724	6.4	1.90	0.522	4.9	1.54	0.404	3.4	1.29	0.276	3.0	1.12	0.175
1.90	7.1	2.43	0.648	4.8	1.68	0.441	3.7	1.40	0.340	2.8	1.32	0.249	2.7	1.14	0.175
2.00	4.9	1.87	0.501	3.4	1.45	0.346	2.7	1.41	0.270	2.4	1.33	0.241	2.5	1.16	0.176
2.20	3.4	1.50	0.422	2.9	1.43	0.360	2.5	1.40	0.311	2.2	1.34	0.240	2.1	1.18	0.177
2.40	2.9	1.79	0.425	2.4	1.64	0.351	2.1	1.51	0.301	1.7	1.32	0.239	1.7	1.19	0.172
2.60	3.6	1.76	0.617	2.5	1.63	0.434	2.1	1.52	0.353	1.8	1.33	0.289	1.5	1.18	0.182
2.80	4.1	1.96	0.812	2.7	1.44	0.534	2.0	1.36	0.395	1.7	1.26	0.319	1.3	1.17	0.197
3.00	3.1	1.97	0.707	2.1	1.51	0.480	1.8	1.25	0.398	1.5	1.23	0.328	1.2	1.16	0.205
3.20	2.1	1.45	0.540	1.7	1.25	0.434	1.5	1.21	0.393	1.3	1.20	0.326	1.1	1.14	0.203
3.40	1.7	1.36	0.498	1.4	1.21	0.403	1.3	1.17	0.368	1.1	1.16	0.309	1.0	1.13	0.197
3.60	1.6	1.24	0.525	1.2	1.15	0.407	1.1	1.14	0.345	0.9	1.13	0.280	0.9	1.11	0.194
3.80	1.4	1.10	0.520	1.0	1.11	0.378	0.9	1.11	0.334	0.8	1.11	0.291	0.9	1.09	0.204
4.00	1.1	1.22	0.447	0.9	1.07	0.381	0.9	1.08	0.351	0.8	1.08	0.309	0.9	1.07	0.220

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)


M-496 NORTH HANASAKI-M
TSK=0.00
TUS=17.50
BAND=1 hZ
FOURIER SPECTRUM-GAL5
0.
2.
4.
6.
8.
0.
5.
10.
15.
20.
FREQUENCY-hZ


M-496 EAST HANASAKI-M
TSK=0.00
TUS=17.50
BAND=1 hZ
FOURIER SPECTRUM-GAL5
0.
2.
4.
6.
8.
10.
0.
5.
10.
15.
20.
FREQUENCY-hZ


M-496 UP HANASAKI-M
TSK=0.00
TUS=17.50
BAND=1 hZ
FOURIER SPECTRUM-GAL5
0.
1.
2.
3.
4.
0.
5.
10.
15.
20.
FREQUENCY-hZ

RECORD NUMBER S-1453

STATION HACHINOHE-S

EARTHQUAKE DATA

****

DATE AND TIME 15:25 DECEMBER 02, 1981

LOCATION OF HYPOCENTER

EPICENTRAL REGION E OFF N TOHOKU

LATITUDE 40.13°N

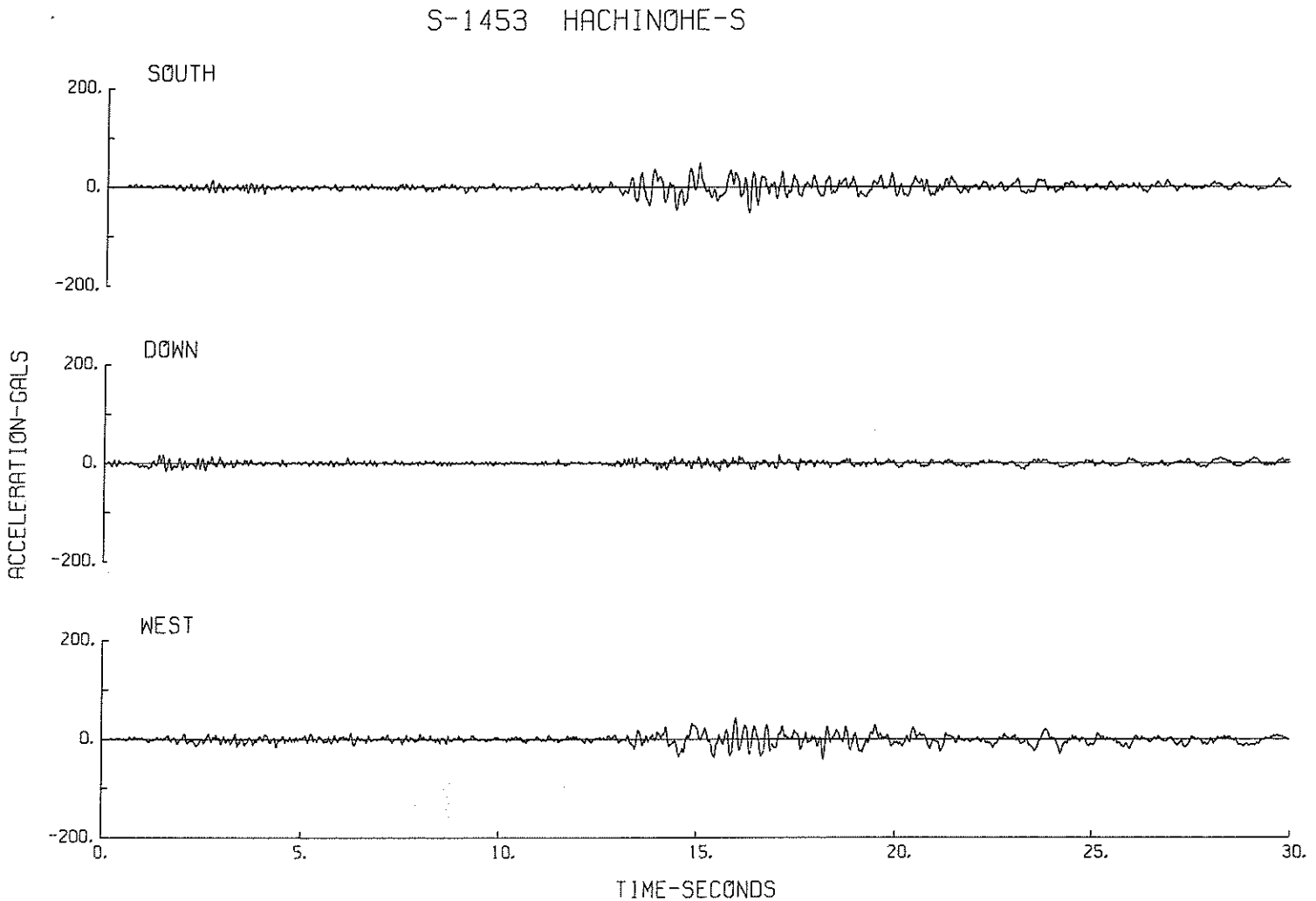
LONGITUDE 142.05°E

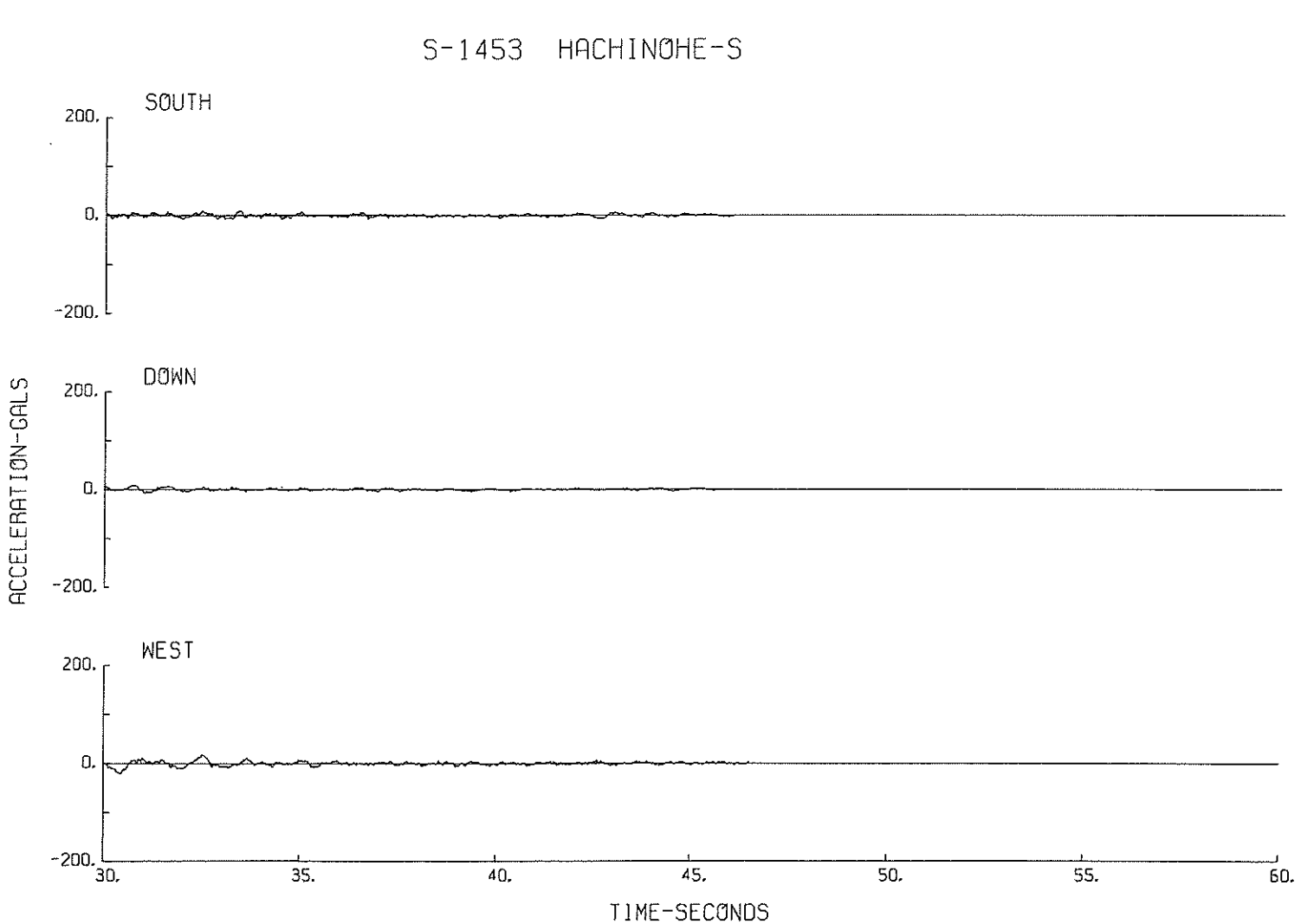
DEPTH 40 KM

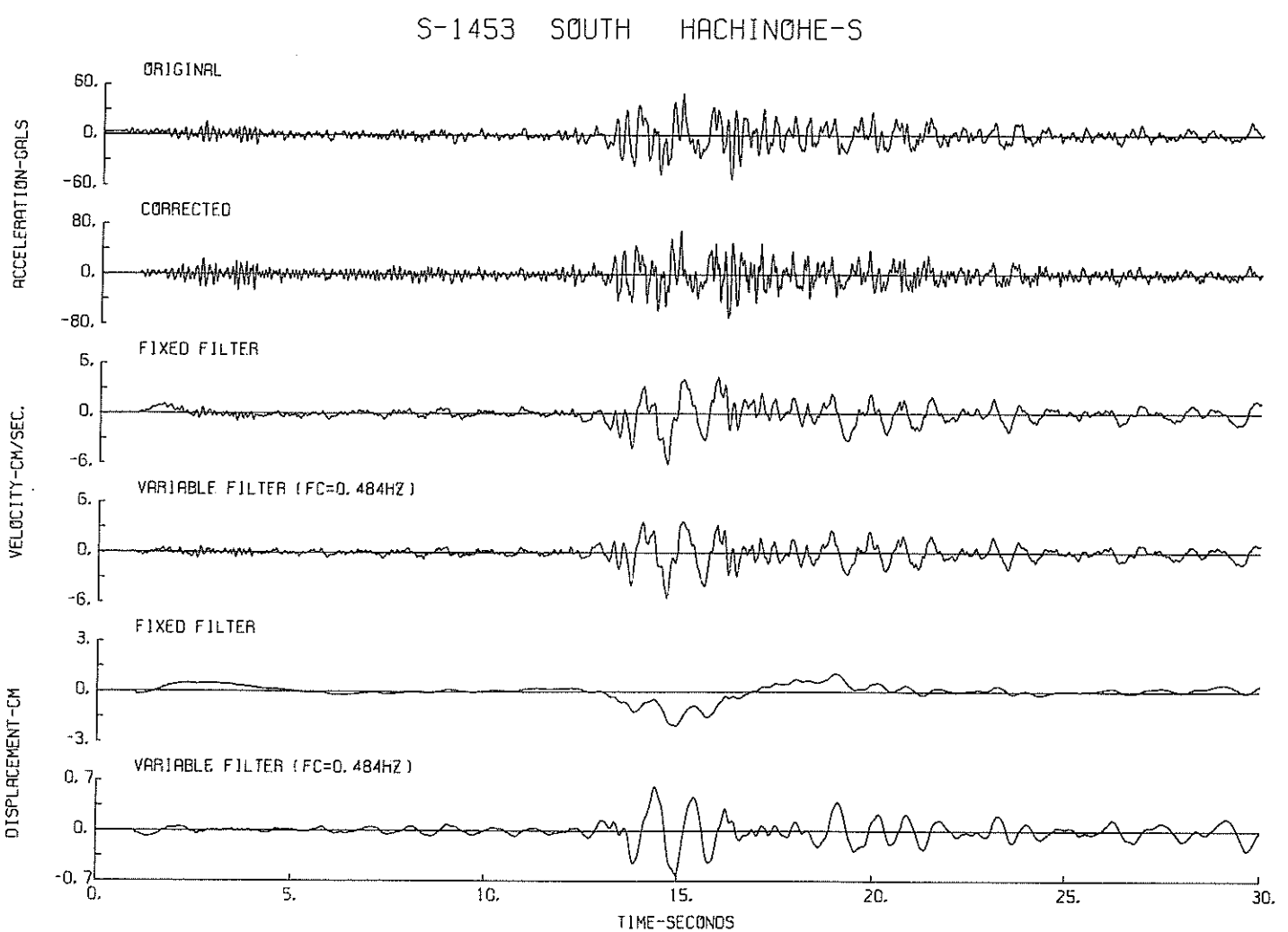
MAGNITUDE 6.6

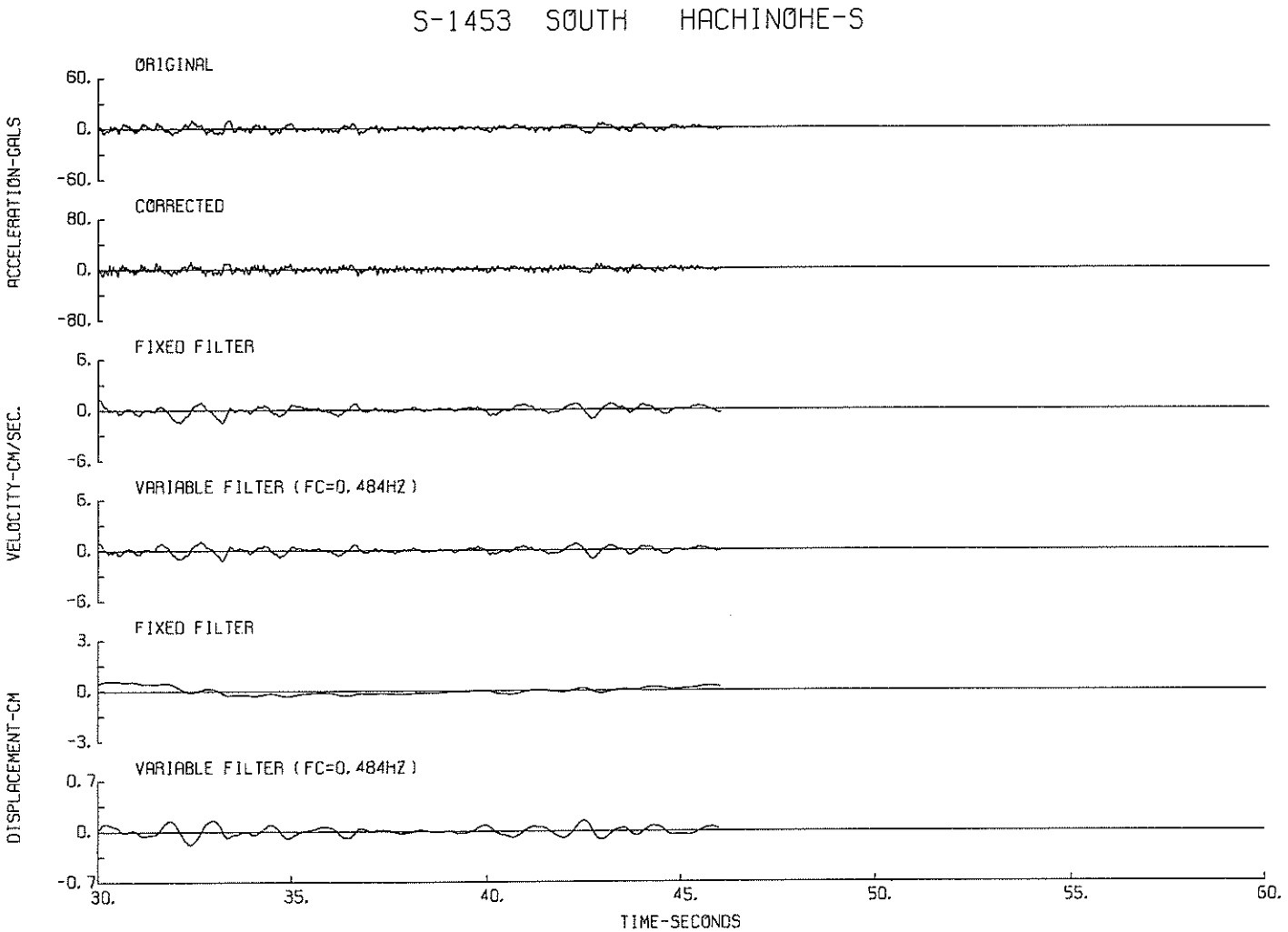
****

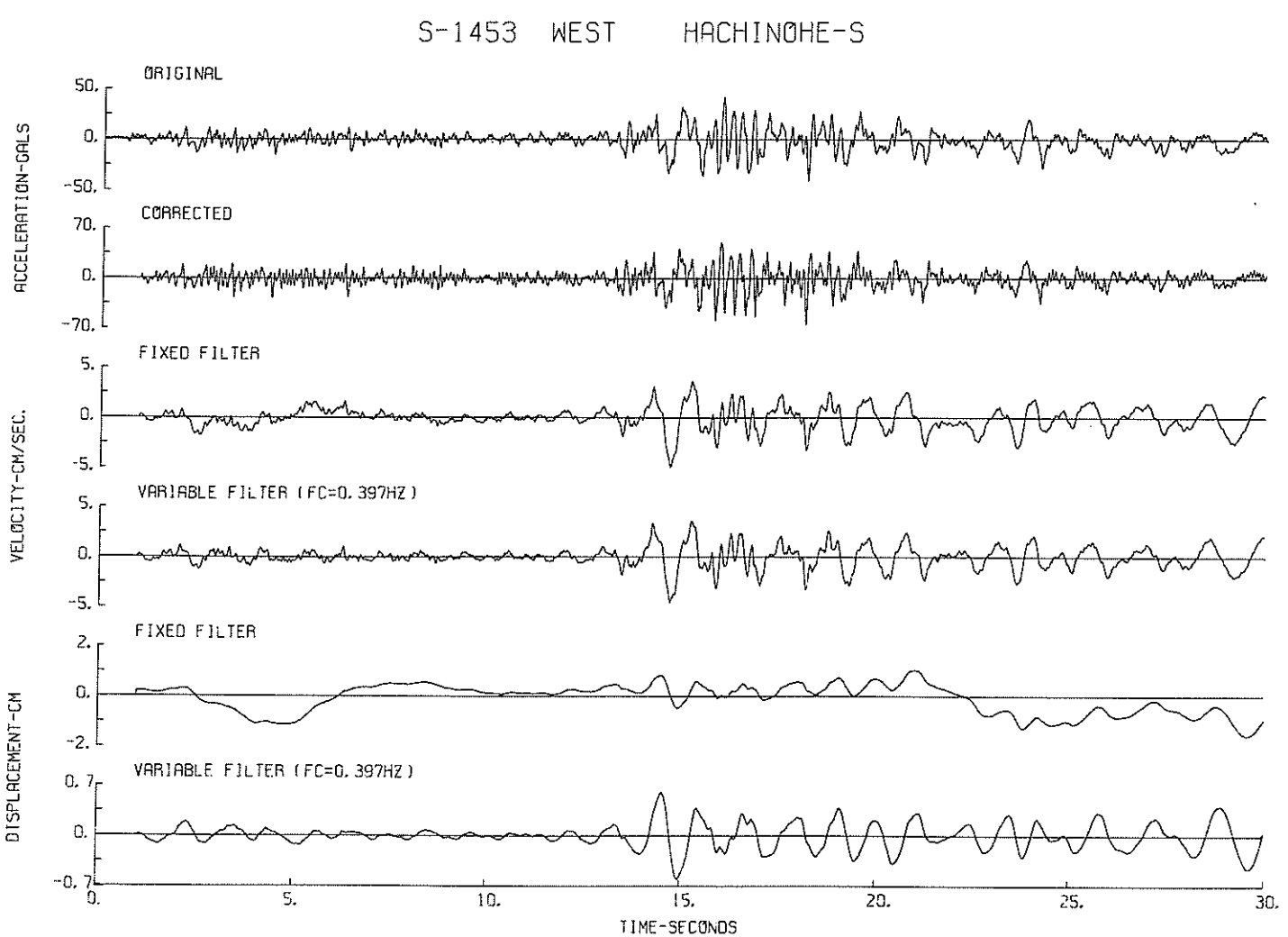
	COMPONENT		
	SOUTH	WEST	DOWN
PARAMETER OF THE VARIABLE FILTER			
FC (HZ)	0.484	0.397	0.545
MAXIMUM ACCELERATION (GAL)			
ORIGINAL	52.8	42.3	16.8
SMAC-B2 EQUIVALENT CORRECTED	70.9	64.2	36.4
MAXIMUM VELOCITY (CM/SEC.)			
FIXED FILTER	5.99	4.94	2.04
VARIABLE FILTER	5.41	4.55	1.41
MAXIMUM DISPLACEMENT (CM)			
FIXED FILTER	2.01	1.59	1.34
VARIABLE FILTER	0.620	0.615	0.195

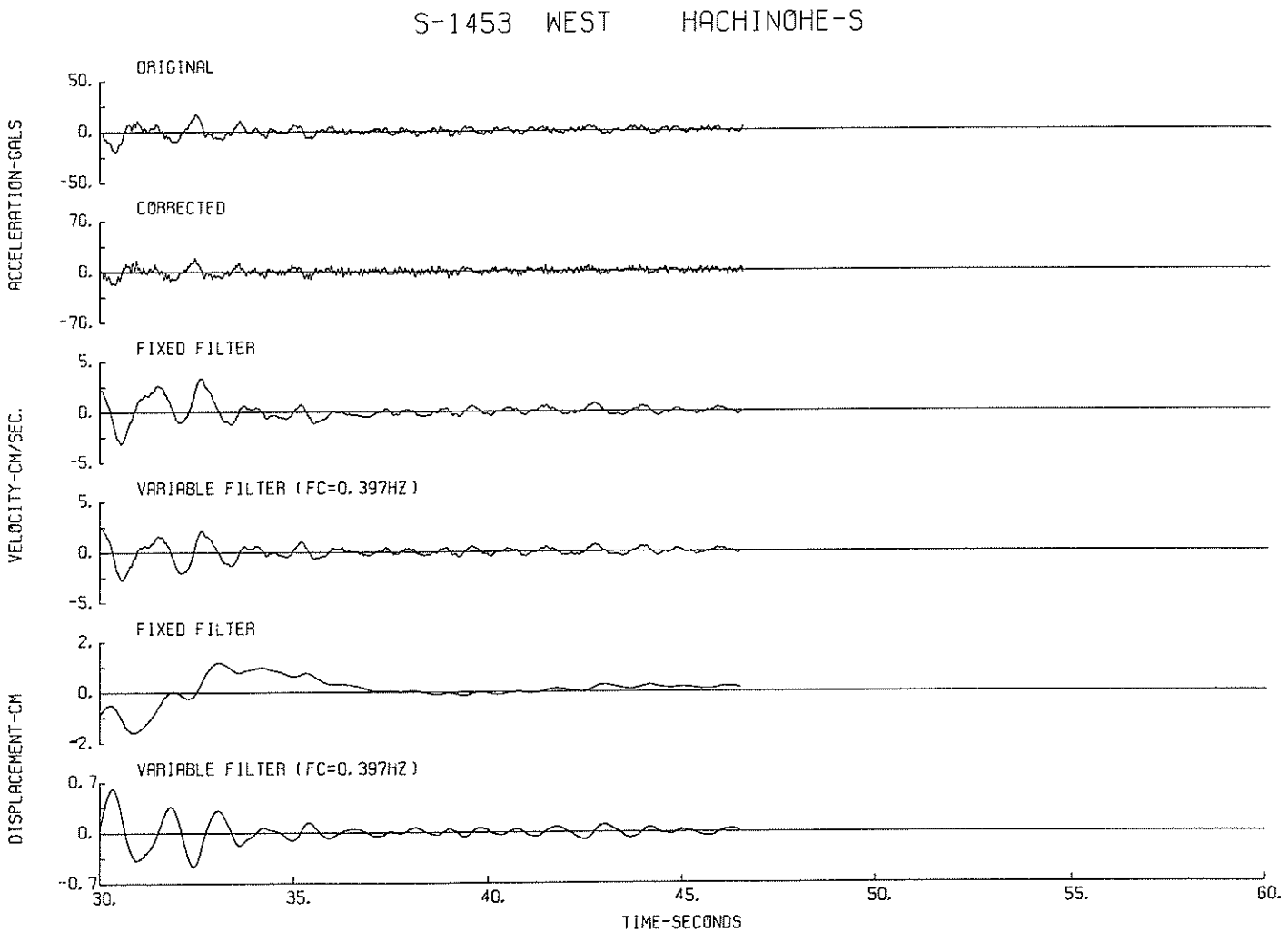

S-1453 HACHINOHE-S
SOUTH
DOWN
WEST
200.
0.
-200.
ACCELERATION-GALS
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

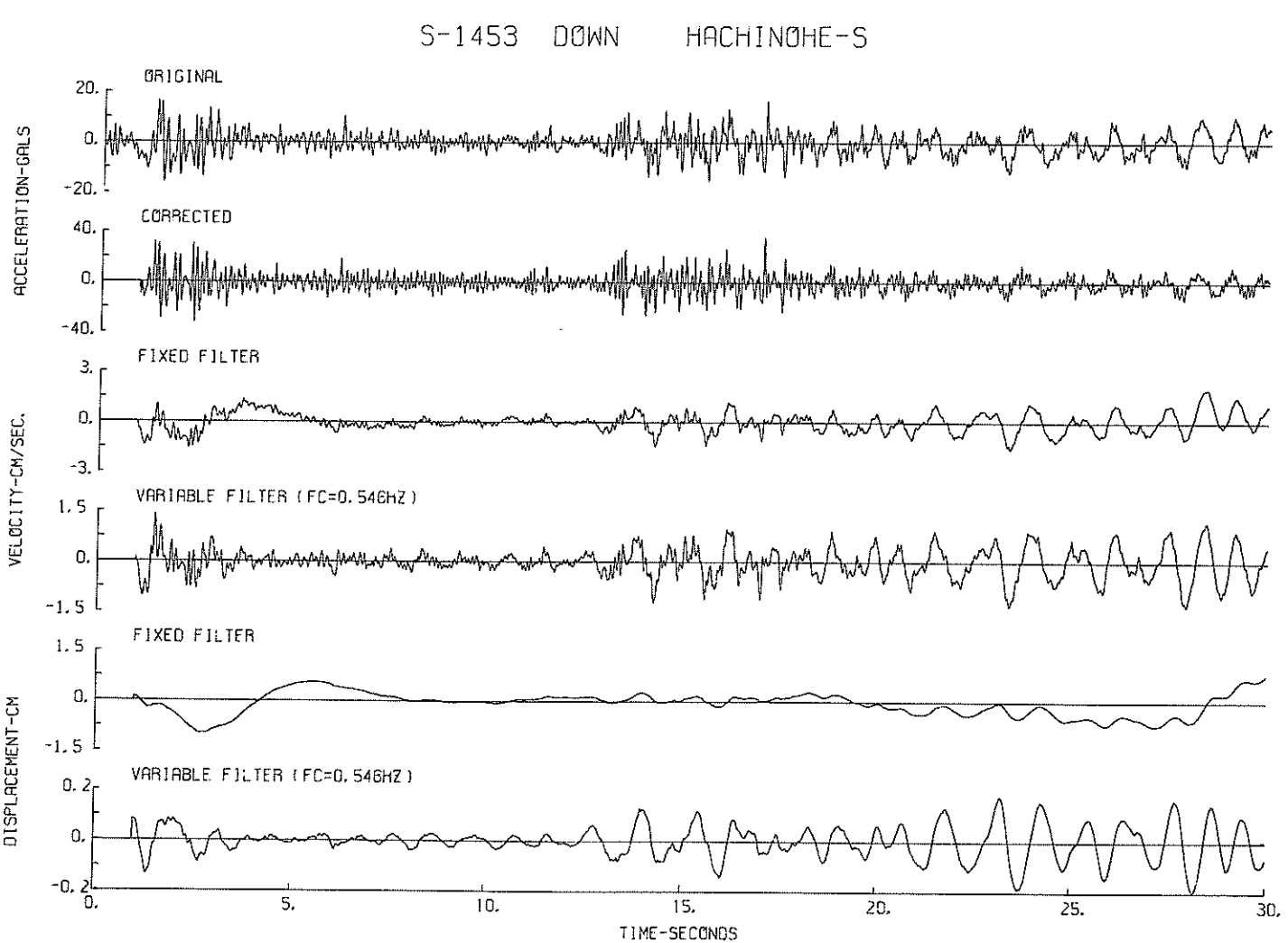

S-1453 HACHINOHE-S
SOUTH
DOWN
WEST
200.
0.
-200.
ACCELERATION-GALS
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS

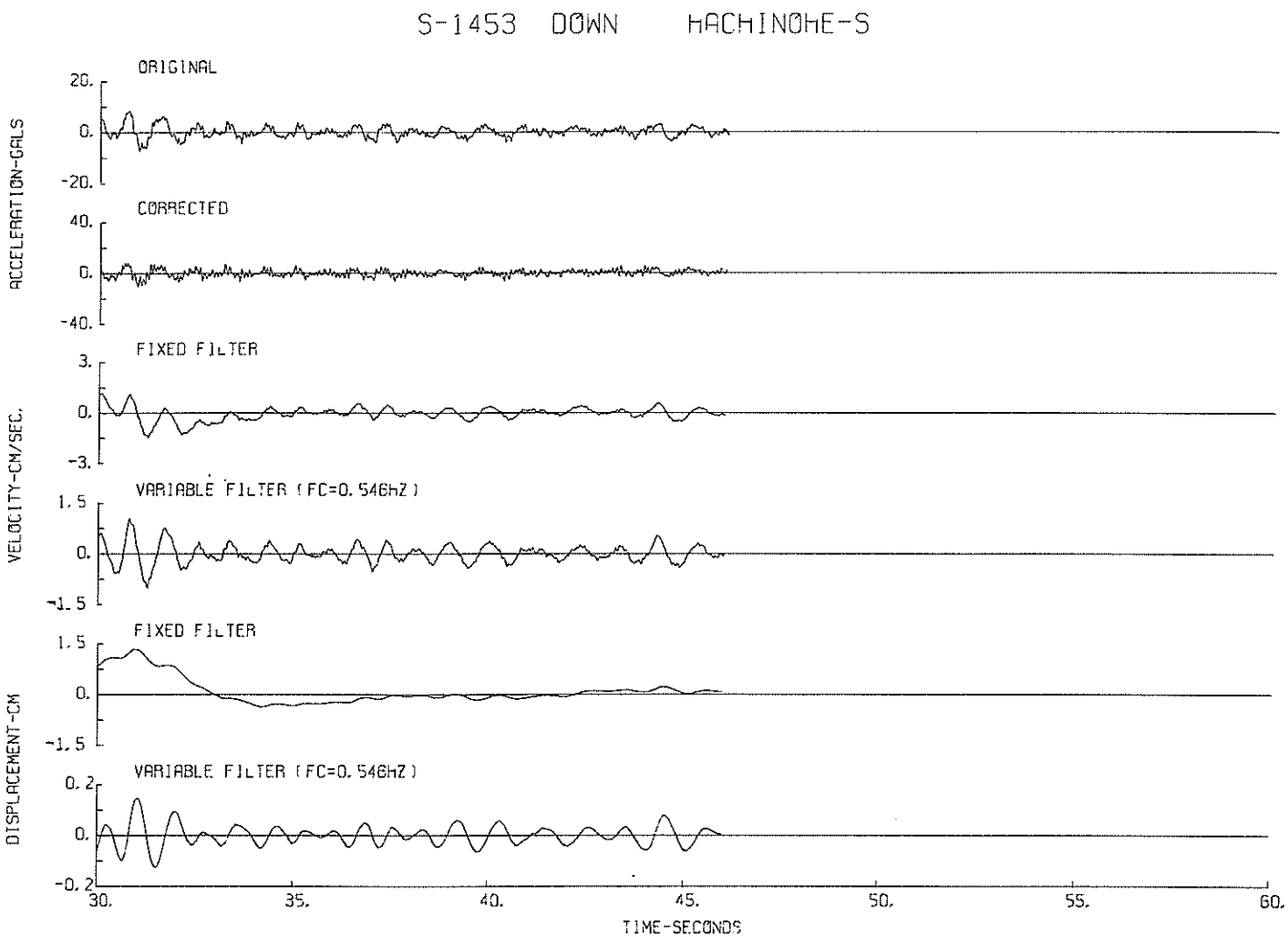

S-1453 SOUTH HACHINOHE-S
ORIGINAL
60.
0.
-60.
CORRECTED
80.
0.
-80.
ACCELERATION-GALS
FIXED FILTER
6.
0.
-6.
VARIABLE FILTER (FC=0.484HZ)
6.
0.
-6.
VELOCITY-CM/SEC.
FIXED FILTER
3.
0.
-3.
VARIABLE FILTER (FC=0.484HZ)
0.7
0.
-0.7
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1453 SØUTH HACHINØHE-S
ØRIGINAL
CØRRECTED
FIXED FILTER
VARIABLE FILTER (FC=0.484HZ)
FIXED FILTER
VARIABLE FILTER (FC=0.484HZ)
ACCELERATIØN-GALS
VELOCITY-CM/SEC.
DISPLACEMENT-CM
60.
0.
-60.
80.
0.
-80.
6.
0.
-6.
6.
0.
-6.
3.
0.
-3.
0.7
0.
-0.7
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS


S-1453 WEST HACHINOHE-S
ORIGINAL
50.
0.
-50.
CORRECTED
70.
0.
-70.
ACCELERATION-GALS
FIXED FILTER
5.
0.
-5.
VARIABLE FILTER (FC=0.397HZ)
5.
0.
-5.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.397HZ)
0.7
0.
-0.7
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

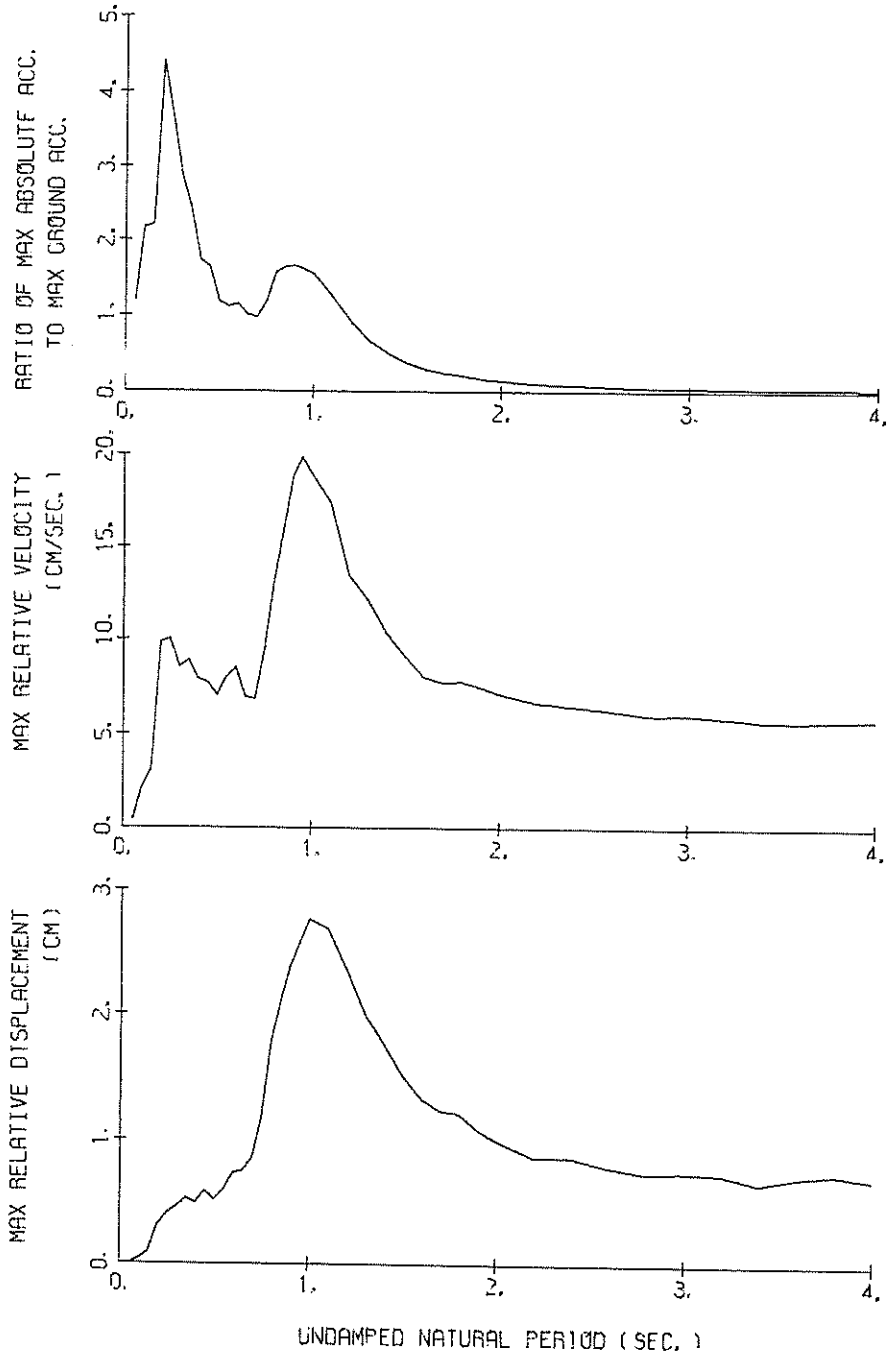

S-1453 WEST HACHINOHE-S
ORIGINAL
50.
0.
-50.
CORRECTED
70.
0.
-70.
ACCELERATION-GALS
FIXED FILTER
5.
0.
-5.
VARIABLE FILTER (FC=0.397HZ)
5.
0.
-5.
VELOCITY-CM/SEC.
FIXED FILTER
2.
0.
-2.
VARIABLE FILTER (FC=0.397HZ)
0.7
0.
-0.7
DISPLACEMENT-CM
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS


S-1453 DOWN HACHINOHE-S
ORIGINAL
20.
0.
-20.
CORRECTED
40.
0.
-40.
ACCELERATION-GALS
FIXED FILTER
3.
0.
-3.
VARIABLE FILTER (FC=0.546HZ)
1.5
0.
-1.5
VELOCITY-CM/SEC.
FIXED FILTER
1.5
0.
-1.5
VARIABLE FILTER (FC=0.546HZ)
0.2
0.
-0.2
DISPLACEMENT-CM
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1453 DOWN HACHINOHE-S
ORIGINAL
20.
0.
-20.
ACCELERATION-GALS
CORRECTED
40.
0.
-40.
FIXED FILTER
3.
0.
-3.
VELOCITY-CM/SEC.
VARIABLE FILTER (FC=0.546HZ)
1.5
0.
-1.5
FIXED FILTER
1.5
0.
-1.5
DISPLACEMENT-CM
VARIABLE FILTER (FC=0.546HZ)
0.2
0.
-0.2
30.
35.
40.
45.
50.
55.
60.
TIME-SECONDS

S-1453 SOUTH HACHINOHE-S

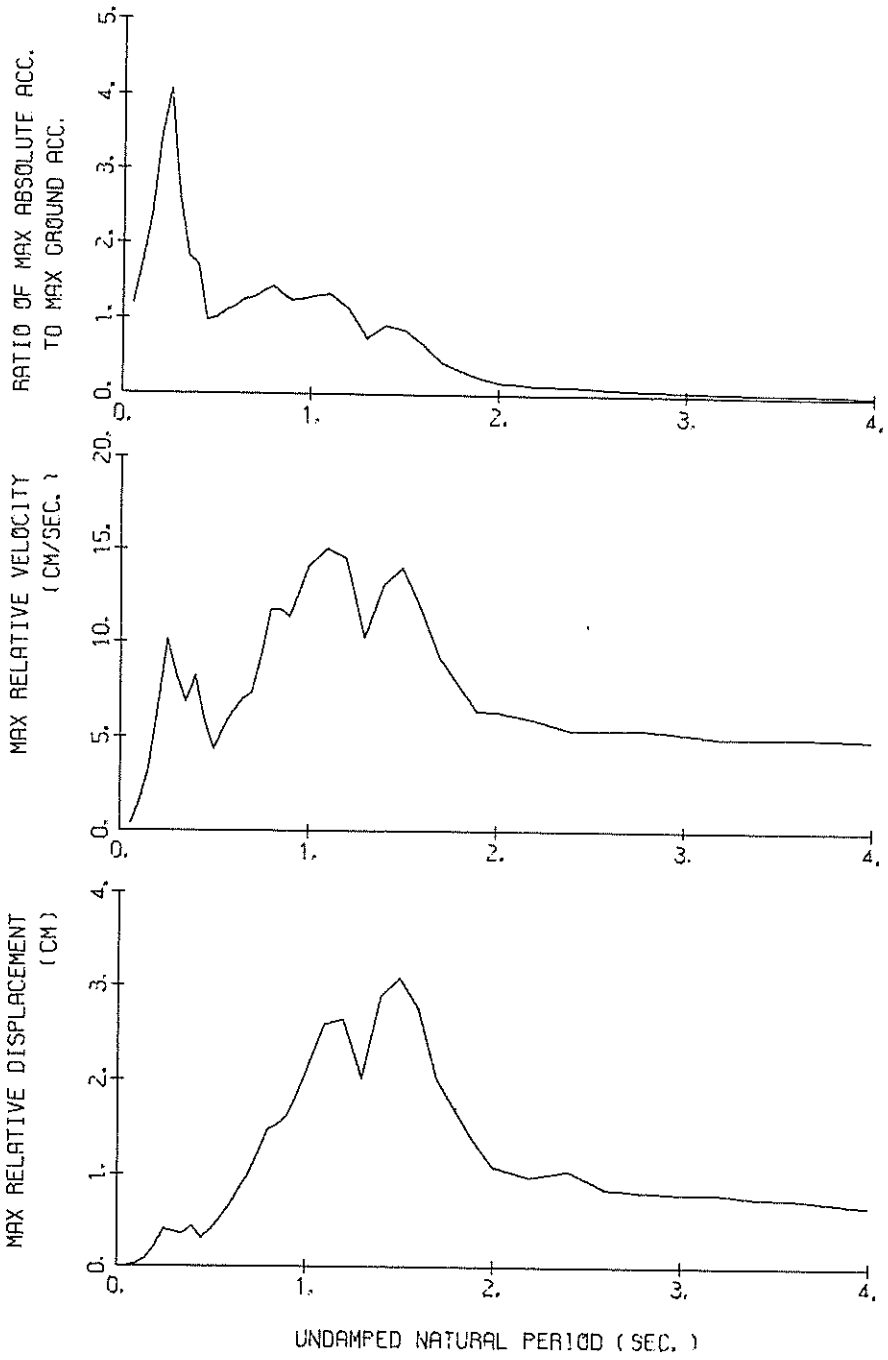
(1/FC = 2.07 sec.)



RESPONSE SPECTRA (H=0.05)

S-1453 WEST HACHINOHE-S

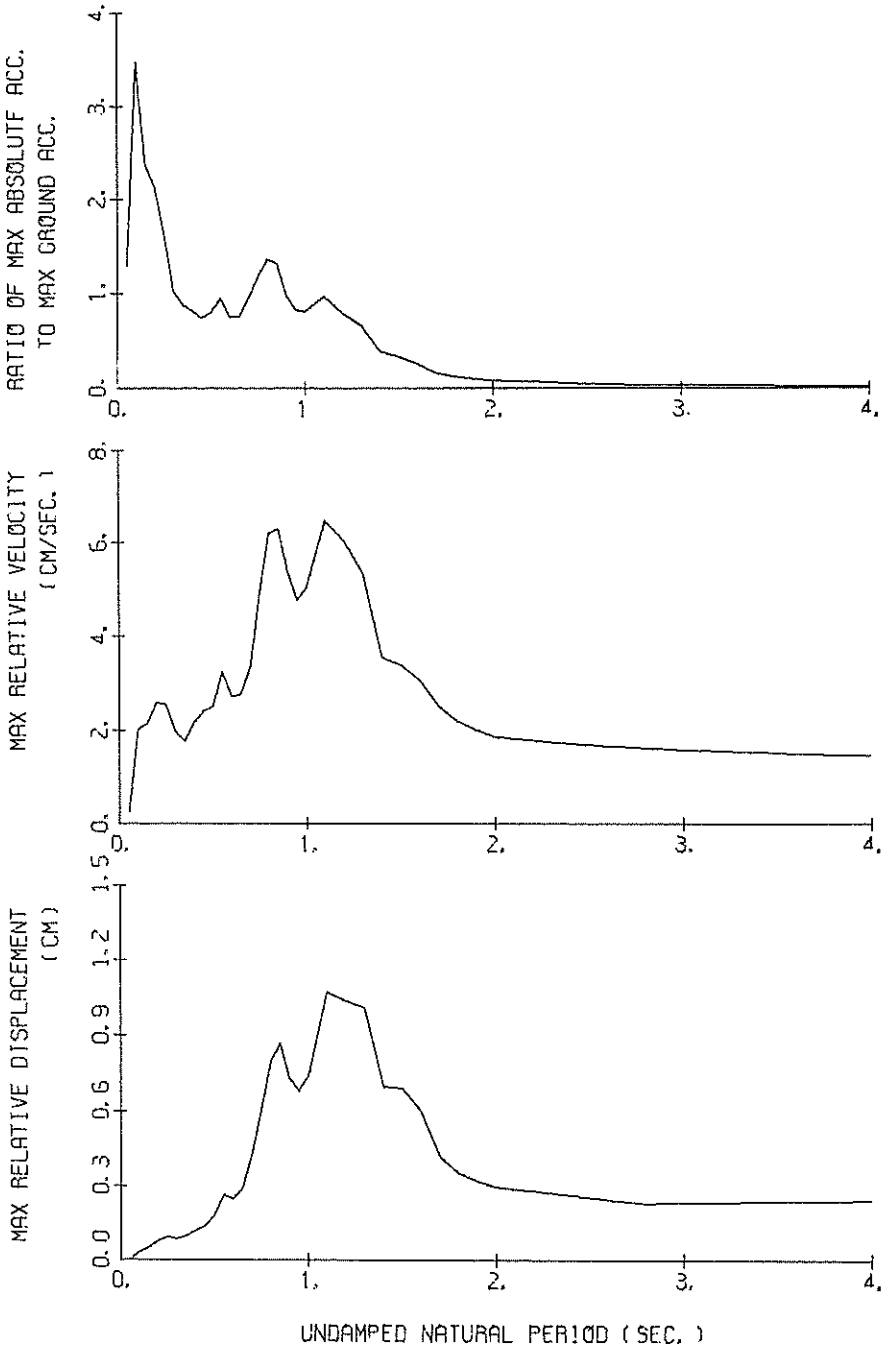
(1/FC = 2.52 sec.)



RESPONSE SPECTRA (H=0.05)

S-1453 DOWN HACHINOHE-S

(1/FC = 1.83 sec.)



RESPONSE SPECTRA (H=0.05)

RESPONSE SPECTRUM

RECORD = S-1453 COMPONENT = SOUTH SIGNAL = GR. ACC. CORRECTION = STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 70.87 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	111.2	0.57	0.007	82.7	0.32	0.005	81.5	0.28	0.005	80.4	0.25	0.005	77.9	0.21	0.005
0.10	598.4	9.47	0.152	193.1	2.79	0.049	154.0	2.10	0.039	120.8	1.50	0.030	98.4	0.79	0.024
0.15	443.3	10.39	0.253	158.2	3.20	0.090	156.0	3.05	0.089	142.9	2.63	0.080	112.0	2.00	0.060
0.20	702.7	21.66	0.712	420.5	13.05	0.426	312.7	9.88	0.317	210.4	6.49	0.211	117.7	3.40	0.109
0.25	671.7	26.61	1.063	362.5	14.02	0.571	261.2	10.03	0.411	167.0	6.29	0.259	93.5	3.56	0.135
0.30	450.2	21.43	1.026	237.7	10.07	0.541	203.1	8.54	0.461	155.5	6.53	0.349	93.0	3.71	0.193
0.35	431.4	23.89	1.339	219.9	11.55	0.682	171.2	8.87	0.530	127.7	6.75	0.388	82.3	4.14	0.227
0.40	377.4	23.45	1.530	172.3	10.64	0.696	122.0	7.90	0.493	93.5	5.84	0.372	66.2	4.04	0.240
0.45	182.2	13.11	0.934	138.5	9.28	0.710	115.4	7.72	0.589	87.7	5.83	0.440	57.7	3.90	0.266
0.50	247.0	19.58	1.564	102.5	8.84	0.647	82.9	7.03	0.522	65.5	5.96	0.406	51.8	4.27	0.305
0.55	169.8	14.94	1.301	94.4	8.80	0.723	78.5	7.99	0.598	66.1	6.66	0.499	49.7	4.41	0.349
0.60	280.0	26.70	2.554	99.8	10.04	0.909	81.2	8.51	0.736	66.2	6.77	0.593	47.4	4.35	0.391
0.65	187.5	19.86	2.007	81.0	9.10	0.866	70.9	6.97	0.753	59.4	5.89	0.619	50.0	4.21	0.445
0.70	95.1	10.96	1.180	79.0	7.66	0.979	68.6	6.83	0.848	61.3	6.08	0.737	51.5	4.68	0.535
0.75	174.4	19.98	2.484	108.2	11.88	1.540	83.5	9.42	1.181	72.6	7.89	1.000	52.0	5.20	0.648
0.80	348.9	44.58	5.656	134.6	17.06	2.178	110.6	13.14	1.780	82.4	9.54	1.294	52.1	6.11	0.767
0.85	172.3	25.02	3.153	139.7	19.55	2.552	115.9	15.98	2.109	87.3	11.86	1.572	53.1	7.12	0.873
0.90	294.7	43.31	6.047	142.8	22.17	2.925	116.9	18.79	2.384	90.4	14.21	1.809	53.2	7.87	0.946
0.95	279.9	43.82	6.399	149.1	23.26	3.405	113.4	19.82	2.576	87.2	15.00	1.940	51.1	8.16	0.976
1.00	229.0	36.66	5.801	133.9	22.58	3.387	109.4	18.97	2.759	80.2	14.17	1.986	47.2	8.02	1.055
1.10	124.7	22.90	3.823	101.5	20.03	3.106	88.1	17.35	2.682	69.4	13.31	2.069	42.6	7.65	1.148
1.20	113.6	22.55	4.143	73.0	14.82	2.660	64.9	13.41	2.349	53.6	11.13	1.891	37.4	7.44	1.133
1.30	52.3	13.94	2.239	50.6	13.28	2.164	46.8	12.11	1.991	40.5	10.14	1.679	31.3	7.52	1.109
1.40	56.9	12.99	2.824	39.3	11.09	1.946	35.7	10.33	1.762	31.4	9.23	1.507	28.3	7.36	1.062
1.50	36.9	9.73	2.105	28.5	9.42	1.621	26.8	9.10	1.512	24.6	8.42	1.330	25.3	7.04	1.041
1.60	29.4	9.53	1.908	21.7	8.56	1.409	20.6	8.01	1.329	20.2	7.64	1.234	22.5	6.66	1.011
1.70	17.6	7.52	1.291	17.2	7.77	1.261	16.9	7.70	1.235	16.8	7.21	1.153	20.0	6.29	0.975
1.80	19.2	9.06	1.579	16.3	8.22	1.337	14.9	7.77	1.217	14.0	7.16	1.085	17.9	5.95	0.936
1.90	12.1	7.82	1.104	12.0	7.70	1.096	12.0	7.48	1.084	11.6	7.03	1.018	16.1	5.85	0.897
2.00	10.2	7.17	1.034	10.1	7.21	1.014	10.0	7.13	0.998	9.8	6.85	0.956	14.5	5.87	0.861
2.20	7.1	6.58	0.875	6.9	6.66	0.839	7.2	6.65	0.867	7.4	6.52	0.865	12.1	5.85	0.798
2.40	7.0	6.74	1.026	6.3	6.57	0.916	6.1	6.47	0.865	6.0	6.32	0.820	10.4	5.80	0.751
2.60	5.5	6.37	0.935	5.0	6.31	0.841	4.9	6.25	0.792	5.1	6.14	0.764	9.1	5.74	0.720
2.80	3.7	5.78	0.736	3.7	5.93	0.737	3.8	5.99	0.739	4.3	5.98	0.737	8.1	5.69	0.702
3.00	3.8	6.29	0.869	3.5	6.12	0.790	3.4	6.02	0.752	3.8	5.91	0.722	7.3	5.65	0.688
3.20	3.3	5.99	0.866	3.1	5.93	0.781	3.1	5.88	0.735	3.3	5.82	0.692	6.6	5.61	0.678
3.40	2.4	5.49	0.695	2.3	5.63	0.655	2.5	5.69	0.660	3.0	5.72	0.680	6.1	5.57	0.671
3.60	2.4	5.58	0.784	2.3	5.64	0.739	2.3	5.67	0.715	2.8	5.68	0.693	5.7	5.55	0.666
3.80	2.4	5.90	0.862	2.2	5.80	0.785	2.1	5.74	0.741	2.6	5.68	0.699	5.3	5.53	0.663
4.00	1.9	5.95	0.751	1.8	5.83	0.706	1.9	5.75	0.695	2.4	5.66	0.683	5.0	5.51	0.659

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-1453 COMPONENT = WEST SIGNAL = GR. ACC. CORRECTION = STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 64.22 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	111.9	0.45	0.007	74.2	0.26	0.005	74.1	0.23	0.005	74.0	0.21	0.005	72.8	0.17	0.005
0.10	489.8	7.17	0.124	143.5	2.18	0.036	109.2	1.51	0.027	102.7	1.14	0.026	90.6	0.87	0.022
0.15	597.2	13.66	0.340	179.6	3.93	0.102	151.4	3.22	0.085	126.6	2.59	0.071	89.6	1.69	0.047
0.20	449.5	13.75	0.455	268.0	8.08	0.272	220.0	6.54	0.221	163.8	4.82	0.163	102.5	2.80	0.097
0.25	1170.8	46.11	1.853	378.1	14.55	0.596	261.0	10.11	0.409	163.5	6.35	0.254	94.3	3.47	0.135
0.30	600.0	28.05	1.368	230.4	10.73	0.524	167.1	8.24	0.378	123.8	6.13	0.275	76.5	3.49	0.152
0.35	266.7	15.95	0.828	148.3	8.91	0.458	116.9	6.82	0.362	90.7	4.90	0.274	66.0	3.53	0.172
0.40	298.0	19.08	1.208	154.9	10.67	0.627	109.0	8.20	0.440	75.6	6.10	0.297	54.0	3.70	0.192
0.45	214.4	15.29	1.100	73.5	6.85	0.376	62.0	5.82	0.316	54.3	4.58	0.276	45.6	3.45	0.221
0.50	124.0	9.64	0.785	77.4	5.72	0.490	64.3	4.32	0.404	54.7	3.78	0.342	47.8	3.04	0.283
0.55	130.3	11.28	0.998	93.0	7.58	0.713	70.3	5.48	0.537	57.8	4.28	0.437	49.7	2.87	0.354
0.60	196.2	18.57	1.790	83.3	7.57	0.759	74.4	6.33	0.676	65.3	5.07	0.588	51.3	3.36	0.432
0.65	141.0	13.92	1.509	85.6	8.49	0.914	80.2	6.96	0.855	70.2	5.55	0.740	52.3	4.01	0.512
0.70	139.1	15.32	1.726	85.4	8.79	1.058	82.1	7.34	1.014	72.0	6.33	0.876	52.6	4.57	0.583
0.75	285.1	33.96	4.063	101.8	11.19	1.449	87.3	9.23	1.238	71.6	7.16	0.996	51.5	5.02	0.643
0.80	322.5	41.06	5.228	113.2	14.55	1.833	91.7	11.73	1.477	71.8	8.66	1.137	49.4	5.35	0.691
0.85	160.4	21.66	2.935	101.8	14.09	1.862	84.3	11.76	1.536	69.3	9.18	1.239	46.5	5.80	0.732
0.90	204.7	29.53	4.200	108.0	15.42	2.212	79.4	11.36	1.621	65.9	9.85	1.328	43.2	6.46	0.775
0.95	172.2	26.15	3.936	103.4	16.13	2.361	80.2	12.64	1.827	64.2	10.77	1.443	39.8	6.94	0.822
1.00	156.5	24.10	3.965	100.5	16.85	2.542	82.3	14.06	2.073	62.6	11.37	1.554	37.5	7.19	0.891
1.10	321.0	56.64	9.840	129.6	23.00	3.967	84.9	15.08	2.588	55.9	10.99	1.675	36.5	7.12	1.004
1.20	169.3	33.09	6.177	103.0	20.29	3.751	72.7	14.54	2.639	49.1	9.54	1.756	33.7	6.68	1.057
1.30	75.2	15.03	3.219	55.1	11.83	2.355	47.4	10.24	2.021	39.7	8.19	1.636	29.6	6.37	1.070
1.40	104.1	24.03	5.167	76.2	17.39	3.777	58.4	13.06	2.885	39.0	8.51	1.893	25.2	5.89	1.044
1.50	94.4	23.06	5.381	71.0	17.82	4.042	54.4	14.04	3.082	35.3	9.50	1.968	22.0	5.70	1.065
1.60	79.0	20.71	5.120	55.4	14.64	3.586	42.8	11.82	2.760	29.6	8.60	1.874	19.5	5.77	1.062
1.70	25.9	8.40	1.894	30.3	9.71	2.214	27.7	9.23	2.014	23.0	7.69	1.639	17.1	5.77	1.023
1.80	31.3	10.36	2.571	23.8	8.58	1.951	20.6	7.80	1.683	17.3	6.84	1.378	15.3	5.73	0.964
1.90	20.4	7.38	1.864	15.8	6.26	1.445	15.0	6.40	1.357	13.6	6.33	1.210	13.9	5.68	0.918
2.00	14.3	6.71	1.451	11.2	6.49	1.129	10.8	6.38	1.087	10.8	6.19	1.061	12.6	5.61	0.892
2.20	11.3	6.02	1.391	9.0	6.02	1.101	8.0	5.97	0.975	8.0	5.86	0.919	10.5	5.47	0.845
2.40	10.2	5.81	1.490	8.2	5.26	1.195	7.3	5.39	1.050	6.6	5.50	0.921	8.9	5.34	0.809
2.60	6.2	5.36	1.068	5.2	5.37	0.891	5.1	5.38	0.853	5.6	5.38	0.838	7.8	5.24	0.784
2.80	4.5	5.75	0.900	4.3	5.56	0.848	4.3	5.45	0.818	4.8	5.33	0.790	6.9	5.16	0.763
3.00	4.0	5.21	0.916	3.7	5.23	0.837	3.6	5.22	0.803	4.0	5.21	0.771	6.1	5.10	0.744
3.20	3.1	4.78	0.814	3.2	4.93	0.822	3.2	5.01	0.800	3.5	5.08	0.760	5.5	5.04	0.729
3.40	2.9	4.91	0.846	2.7	4.95	0.777	2.7	4.98	0.751	3.2	5.02	0.727	5.1	4.99	0.717
3.60	2.5	5.10	0.818	2.4	5.05	0.770	2.4	5.02	0.745	2.9	5.00	0.721	4.7	4.95	0.707
3.80	1.9	5.08	0.712	2.0	5.04	0.711	2.1	5.00	0.708	2.6	4.97	0.703	4.3	4.92	0.698
4.00	1.8	4.95	0.723	1.7	4.95	0.691	1.8	4.94	0.669	2.4	4.93	0.680	4.0	4.89	0.688

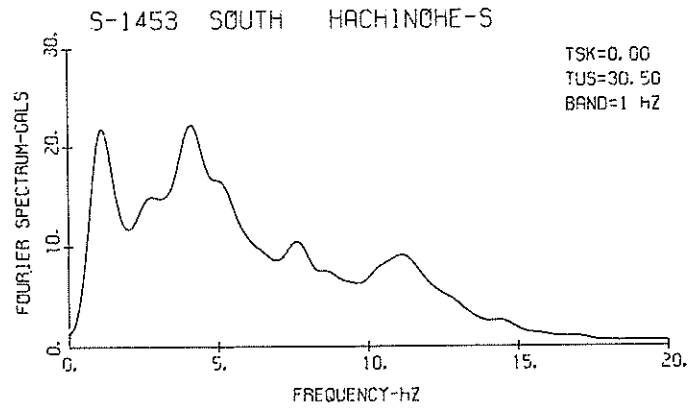
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-1453 COMPONENT = DOWN SIGNAL = GR. ACC. CORRECTION = STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 SAMPLING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 36.35 (GAL)
TIME LENGTH = 40.00 (SEC) SKIPPED LENGTH = 1.00 (SEC)

	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	79.8	0.45	0.005	48.1	0.23	0.003	45.4	0.20	0.003	44.2	0.18	0.003	42.7	0.16	0.003
0.10	555.1	8.83	0.141	163.9	2.56	0.041	126.5	2.02	0.032	96.0	1.40	0.024	59.5	0.82	0.014
0.15	204.0	4.86	0.116	99.8	2.53	0.057	86.1	2.15	0.049	70.8	1.61	0.038	46.9	0.95	0.024
0.20	359.1	11.33	0.364	99.0	3.20	0.100	77.0	2.59	0.077	54.2	1.89	0.054	36.8	1.16	0.032
0.25	256.1	10.04	0.405	82.2	3.48	0.131	58.8	2.55	0.092	38.6	1.67	0.060	28.9	1.15	0.038
0.30	113.5	5.22	0.259	53.6	2.51	0.122	37.0	1.97	0.084	27.2	1.41	0.060	22.1	1.27	0.040
0.35	122.4	6.63	0.380	46.7	2.38	0.145	31.7	1.77	0.098	24.6	1.59	0.074	18.0	1.40	0.049
0.40	134.5	8.54	0.545	35.0	2.29	0.142	29.6	2.17	0.119	23.5	1.96	0.093	18.6	1.53	0.069
0.45	103.1	7.33	0.529	30.2	2.58	0.155	26.9	2.41	0.138	22.7	2.14	0.114	19.9	1.62	0.091
0.50	73.1	5.43	0.463	40.5	3.09	0.256	29.0	2.52	0.183	24.0	2.10	0.147	20.4	1.59	0.113
0.55	95.2	8.08	0.729	50.9	4.67	0.390	34.3	3.24	0.262	23.6	2.24	0.174	20.2	1.47	0.131
0.60	90.3	8.56	0.823	36.2	3.34	0.330	27.4	2.71	0.249	22.1	2.04	0.194	19.4	1.39	0.145
0.65	85.1	8.49	0.911	33.5	3.72	0.358	27.3	2.78	0.291	20.6	2.07	0.218	18.2	1.45	0.155
0.70	95.5	10.07	1.185	39.9	4.06	0.495	34.5	3.37	0.426	25.4	2.41	0.311	16.8	1.50	0.183
0.75	88.5	10.42	1.261	56.6	6.52	0.805	43.0	4.92	0.609	28.7	3.27	0.401	17.1	1.76	0.219
0.80	132.8	16.74	2.153	71.1	8.84	1.151	49.4	6.20	0.797	30.5	3.91	0.485	17.4	1.96	0.251
0.85	161.1	22.10	2.948	71.2	9.50	1.301	47.6	6.30	0.868	29.5	3.99	0.528	16.9	2.12	0.275
0.90	58.0	8.41	1.191	43.6	6.48	0.893	35.7	5.36	0.729	27.2	3.93	0.547	16.2	2.26	0.299
0.95	64.8	10.22	1.482	34.3	5.44	0.783	30.0	4.76	0.682	24.8	3.94	0.555	15.6	2.31	0.317
1.00	37.7	6.70	0.954	33.0	5.69	0.835	29.4	5.03	0.741	23.2	4.14	0.573	15.0	2.32	0.328
1.10	83.3	15.02	2.552	47.1	8.79	1.441	35.2	6.46	1.072	23.0	4.42	0.686	12.7	2.36	0.347
1.20	37.9	7.66	1.382	38.3	7.95	1.395	28.6	6.03	1.037	18.2	3.90	0.646	11.1	2.27	0.348
1.30	63.6	13.24	2.722	33.8	7.47	1.443	23.7	5.34	1.011	15.7	3.47	0.657	9.2	2.03	0.341
1.40	12.7	3.60	0.632	14.0	3.49	0.695	14.2	3.54	0.698	12.2	3.08	0.591	8.1	1.96	0.340
1.50	29.5	7.22	1.684	15.2	4.03	0.867	12.2	3.39	0.692	9.8	2.83	0.539	7.2	1.94	0.337
1.60	15.2	4.85	0.984	11.1	3.60	0.721	9.4	3.06	0.601	7.6	2.46	0.478	6.3	1.92	0.328
1.70	8.8	2.89	0.645	6.0	2.43	0.437	5.8	2.51	0.421	5.8	2.31	0.407	5.5	1.90	0.313
1.80	6.4	2.39	0.522	4.4	2.23	0.361	4.4	2.19	0.352	4.5	2.11	0.352	4.8	1.87	0.296
1.90	5.2	2.37	0.476	3.7	2.06	0.338	3.6	2.02	0.320	3.7	1.96	0.319	4.2	1.85	0.283
2.00	4.3	2.15	0.436	3.0	1.86	0.308	2.9	1.86	0.294	3.1	1.86	0.297	3.8	1.82	0.272
2.20	3.2	1.90	0.393	2.5	1.78	0.302	2.4	1.79	0.279	2.4	1.79	0.271	3.0	1.77	0.254
2.40	2.6	1.92	0.386	2.1	1.71	0.297	1.9	1.72	0.263	1.8	1.73	0.241	2.5	1.73	0.240
2.60	1.5	1.65	0.253	1.5	1.66	0.249	1.5	1.67	0.244	1.6	1.68	0.231	2.2	1.70	0.229
2.80	1.3	1.60	0.250	1.2	1.61	0.234	1.3	1.62	0.231	1.4	1.64	0.223	1.9	1.66	0.222
3.00	1.2	1.56	0.275	1.1	1.57	0.245	1.1	1.59	0.234	1.3	1.60	0.226	1.7	1.64	0.218
3.20	0.9	1.53	0.242	1.0	1.54	0.239	1.0	1.55	0.235	1.2	1.57	0.228	1.6	1.61	0.214
3.40	0.8	1.51	0.244	0.9	1.52	0.241	0.9	1.53	0.237	1.0	1.55	0.231	1.5	1.59	0.213
3.60	0.9	1.48	0.300	0.8	1.49	0.252	0.8	1.51	0.239	1.0	1.53	0.233	1.4	1.57	0.216
3.80	0.9	1.60	0.335	0.7	1.50	0.264	0.8	1.49	0.240	0.9	1.51	0.235	1.3	1.55	0.218
4.00	0.7	1.45	0.270	0.6	1.46	0.245	0.7	1.47	0.242	0.8	1.49	0.236	1.2	1.53	0.220

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)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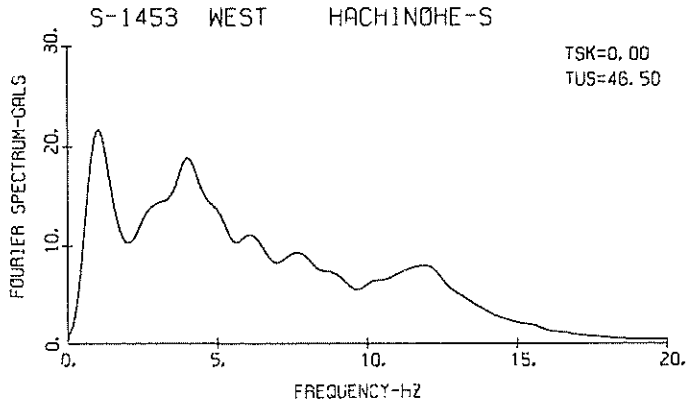
FREQUENCY-HZ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TUS=46.50
FOURIER SPECTRUM-GALS
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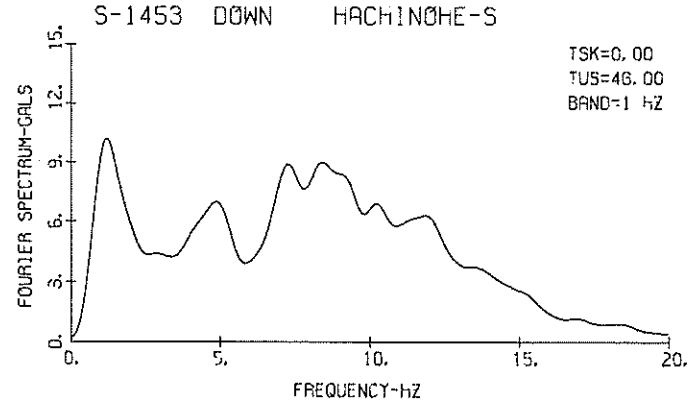
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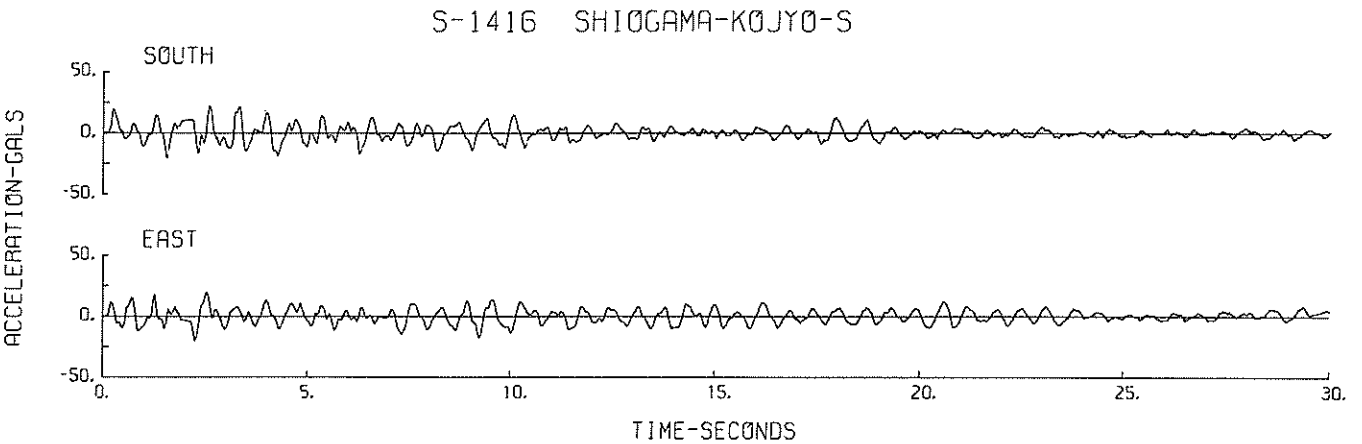
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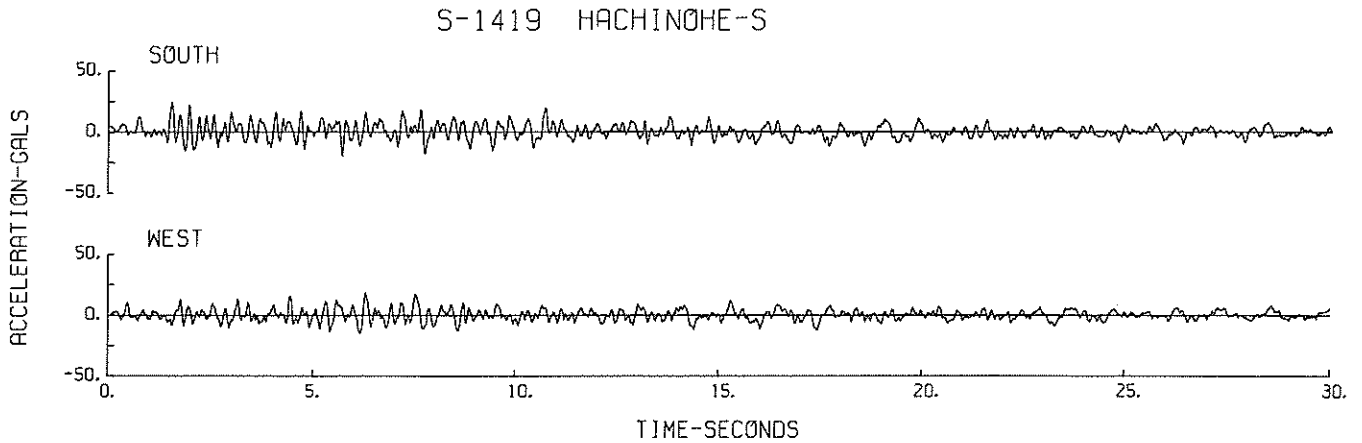
25.
30.
TIME-SECONDS


S-1419 HACHINOHE-S
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WEST
ACCELERATION-GALS
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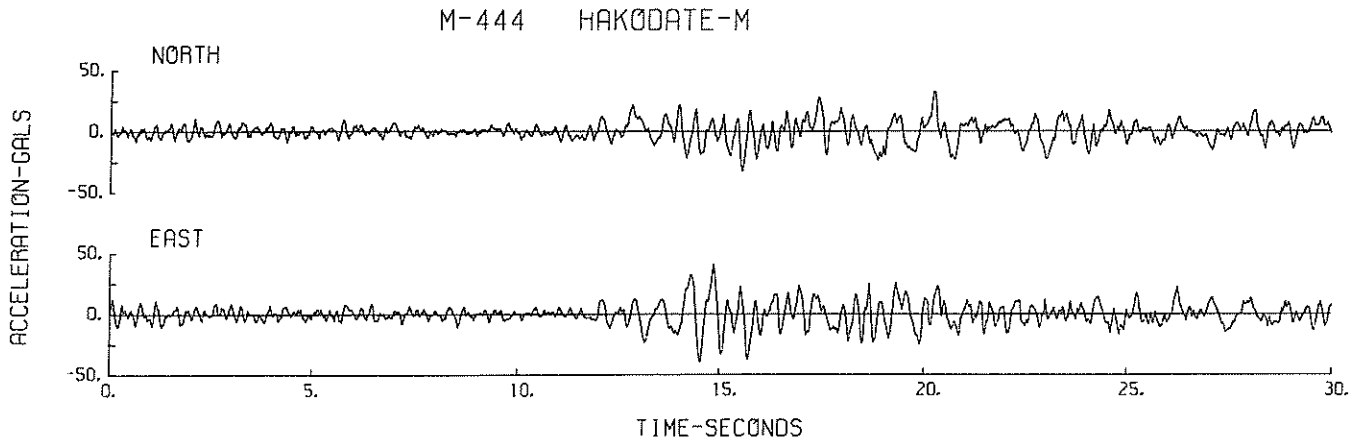
30.
TIME-SECONDS


M-444 HAKODATE-M
NORTH
EAST
ACCELERATION-GALS
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-50.
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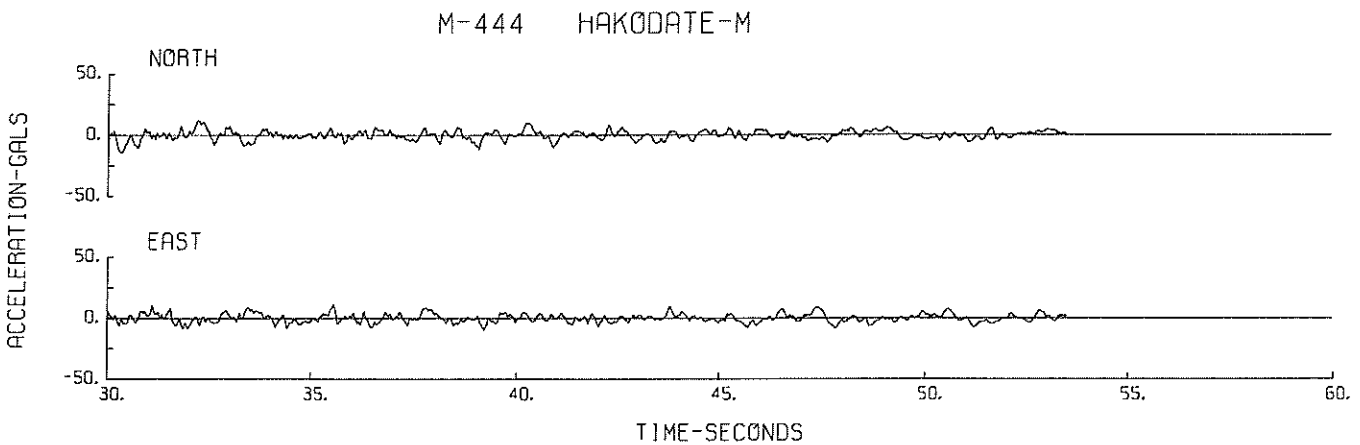
TIME-SECONDS


M-444 HAKODATE-M
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EAST
ACCELERATION-GALS
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-50.
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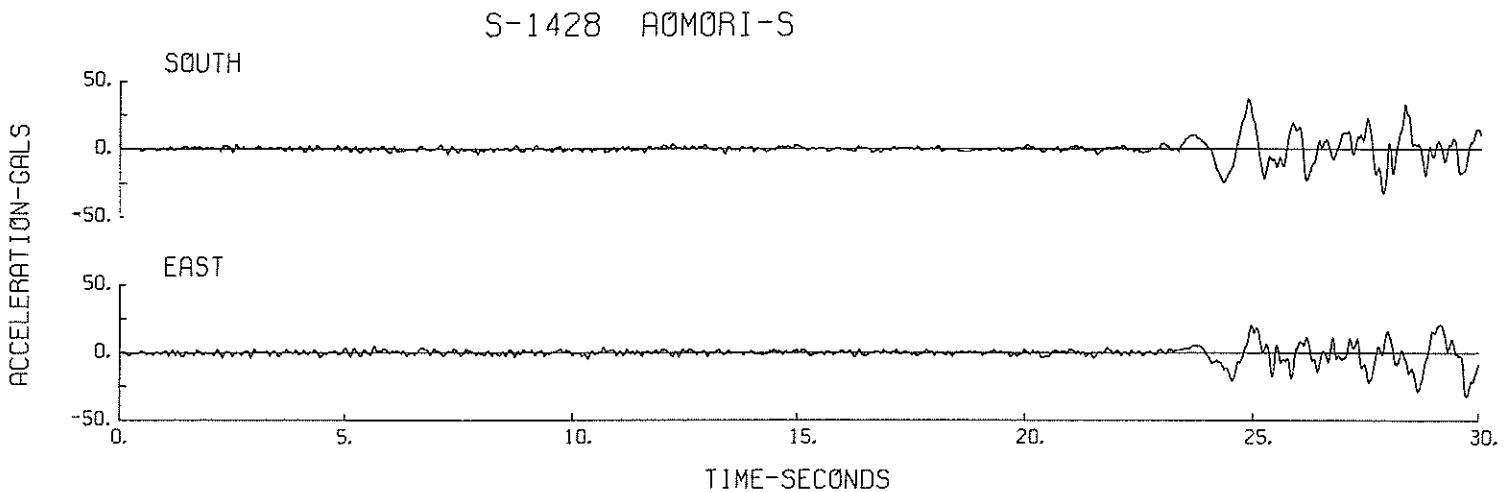
60.
TIME-SECONDS


S-1428 AØMØRI-S
SOUTH
EAST
ACCELERATION-GALS
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20.
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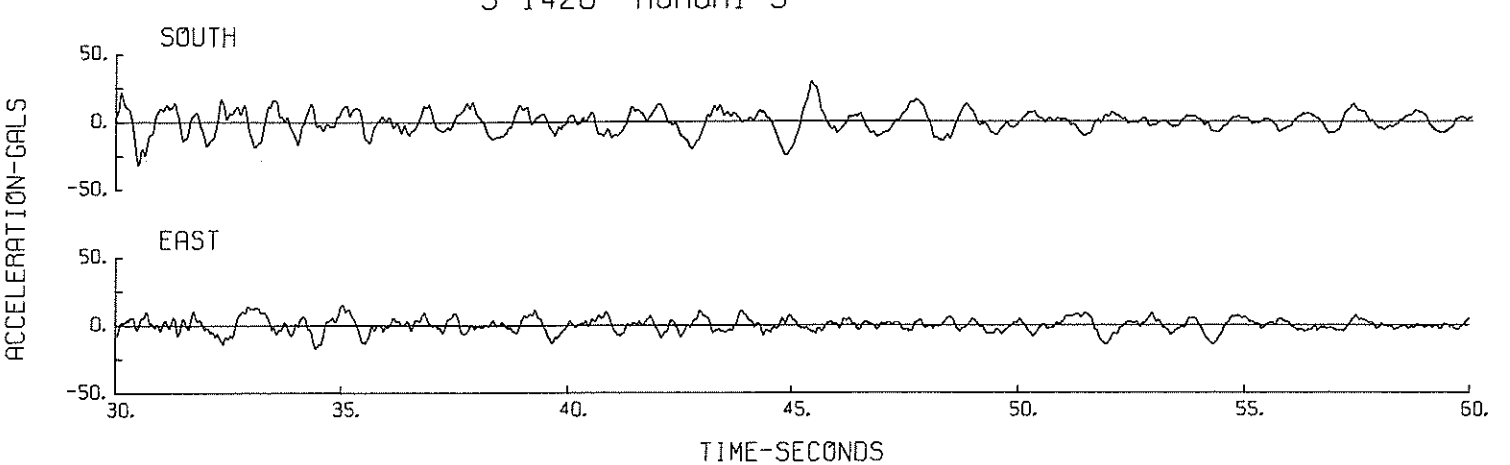
30.
TIME-SECONDS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SOUTH
EAST
ACCELERATION-GALS
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-50.
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35.
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45.
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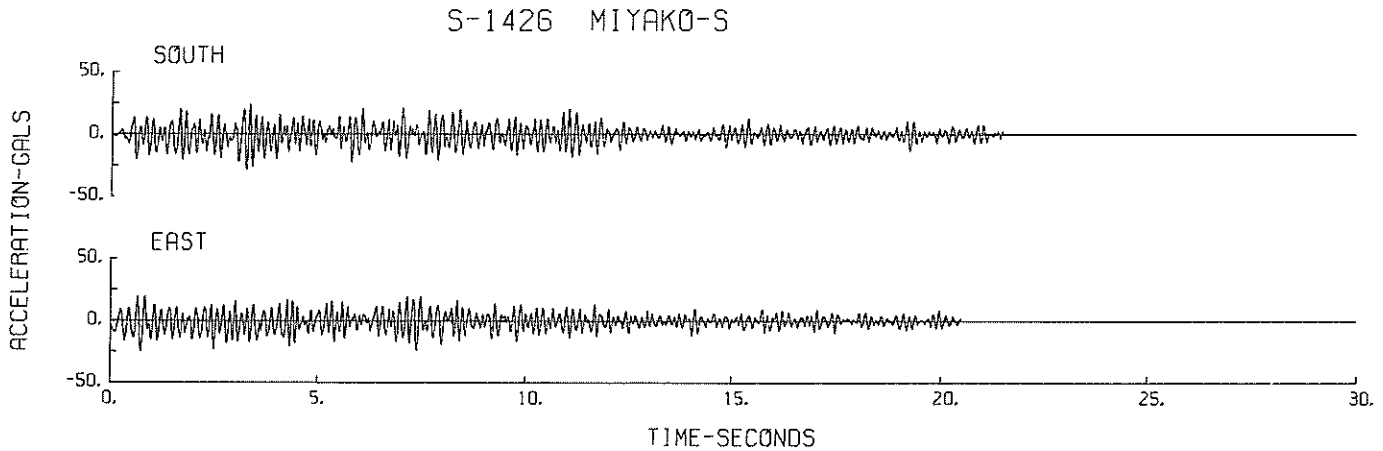
60.
TIME-SECONDS


S-1426 MIYAKO-S
SOUTH
EAST
ACCELERATION-GALS
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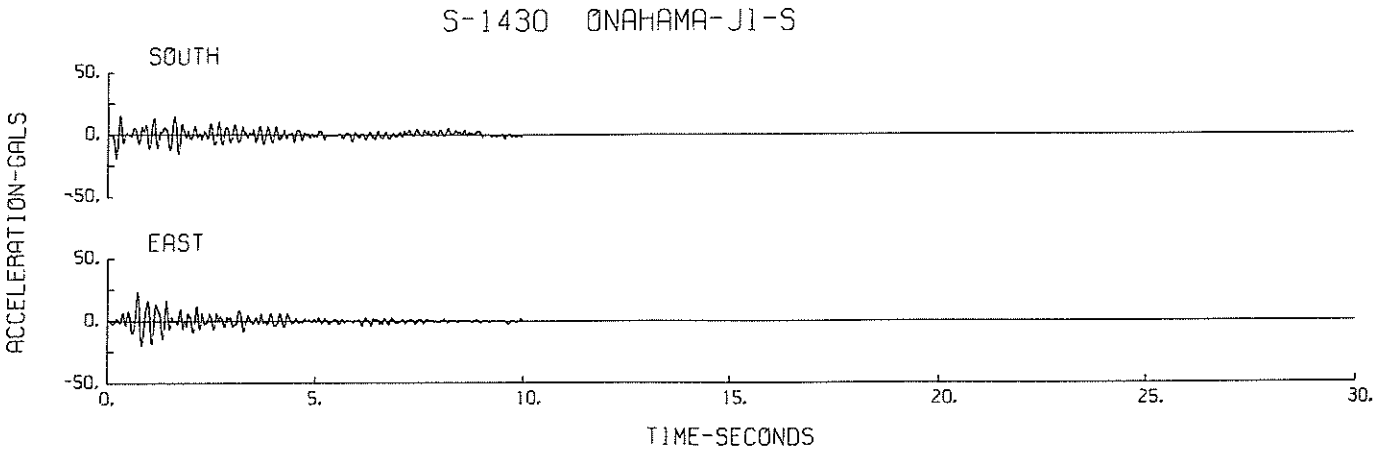
30.
TIME-SECONDS


S-1430 ONAHAMA-J1-S
SOUTH
EAST
ACCELERATION-GALS
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-50.
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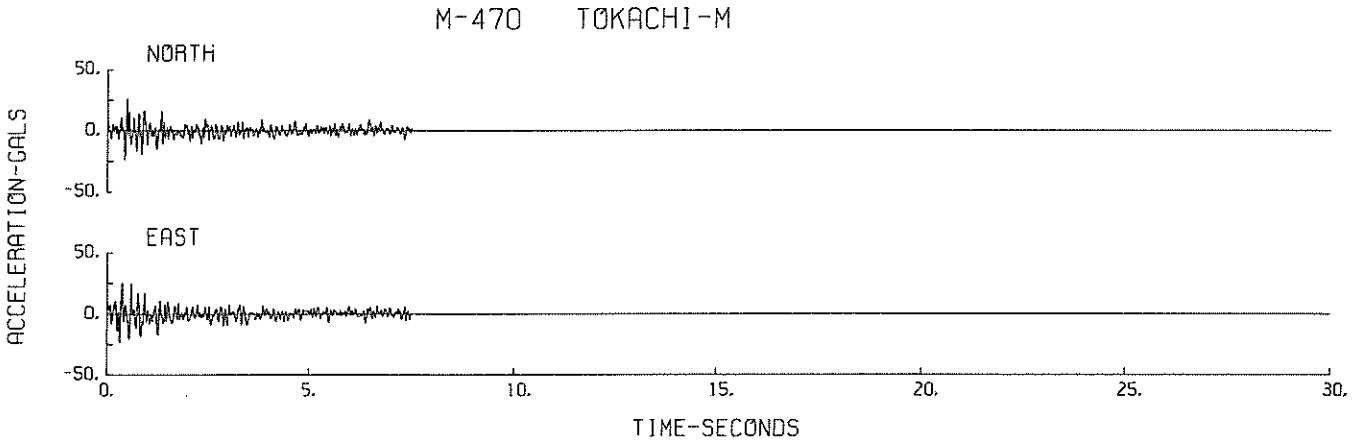
10.
15.
20.
25.
30.
TIME-SECONDS


M-470 TØKACHI-M
NORTH
EAST
ACCELERATION-GALS
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-50.
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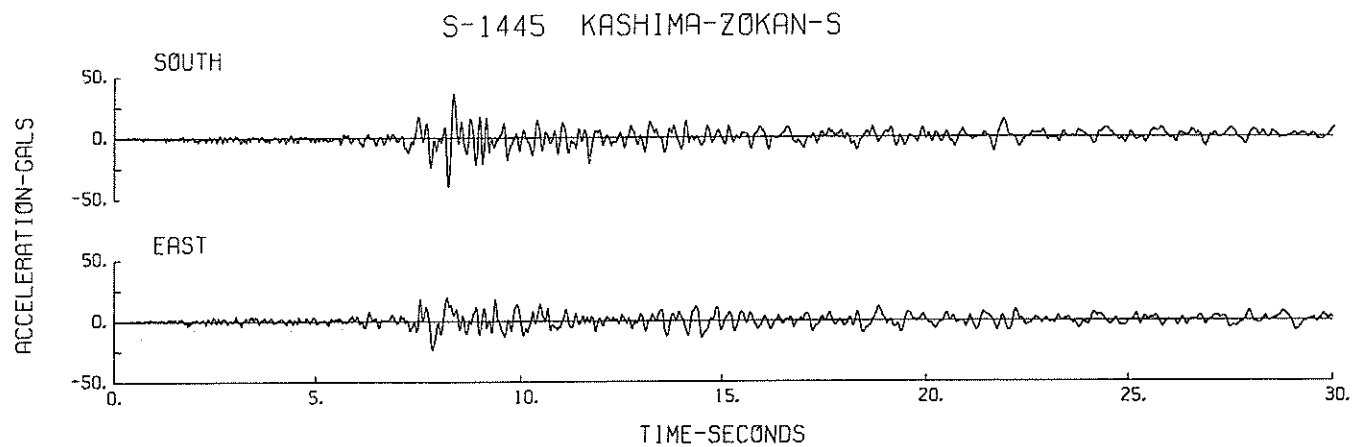
30.
TIME-SECONDS


S-1445 KASHIMA-ZØKAN-S
SOUTH
EAST
ACCELERATION-GALS
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-50.
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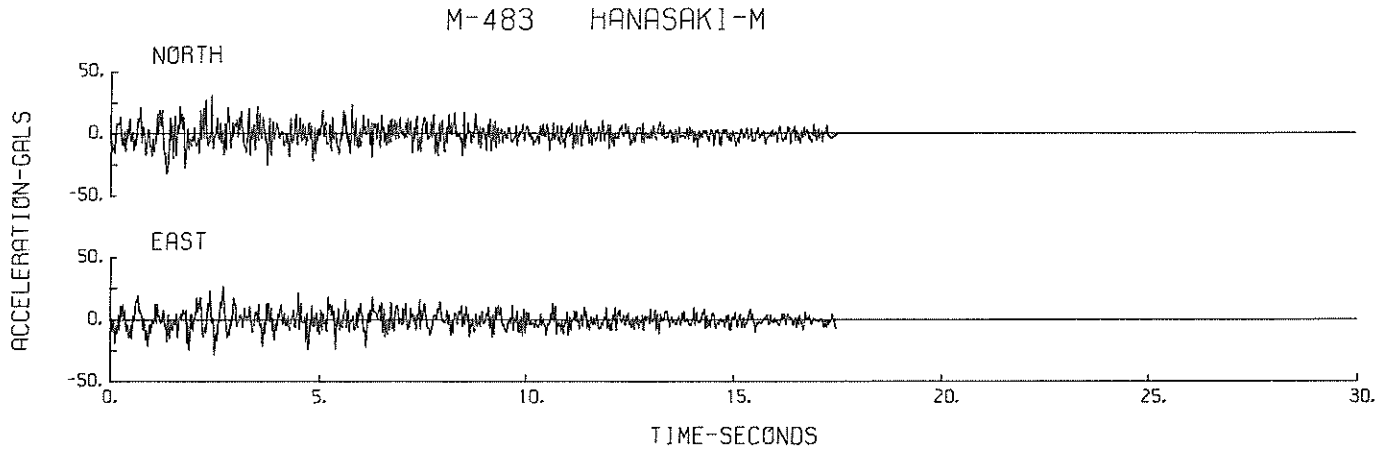
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-483 HANASAKI-M
NORTH
EAST
ACCELERATION-GALS
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-50.
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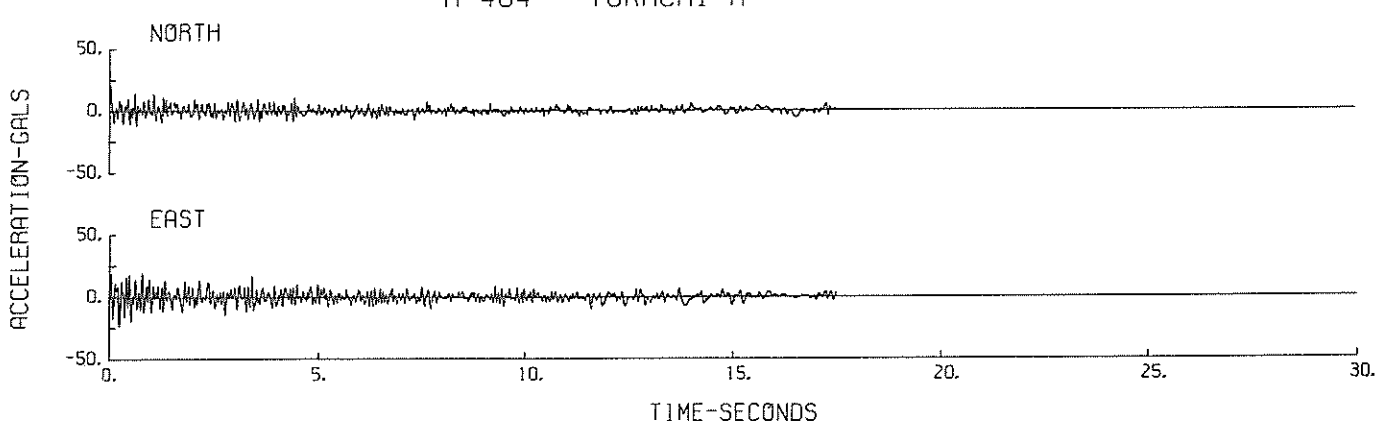
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-484 TOKACHI-M
NORTH
EAST
ACCELERATION-GALS
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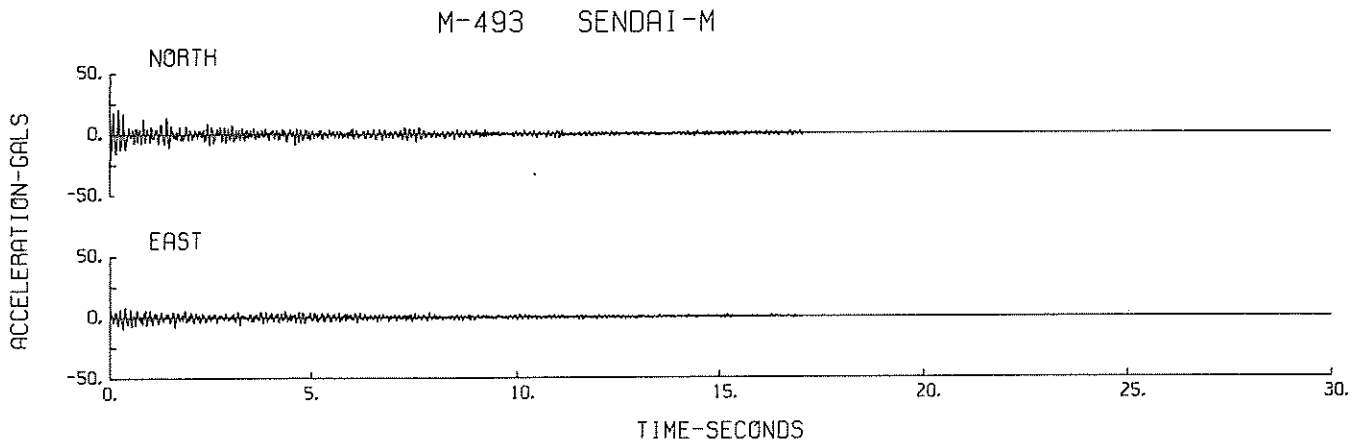
-50.
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-493 SENDAI-M
NORTH
EAST
ACCELERATION-GALS
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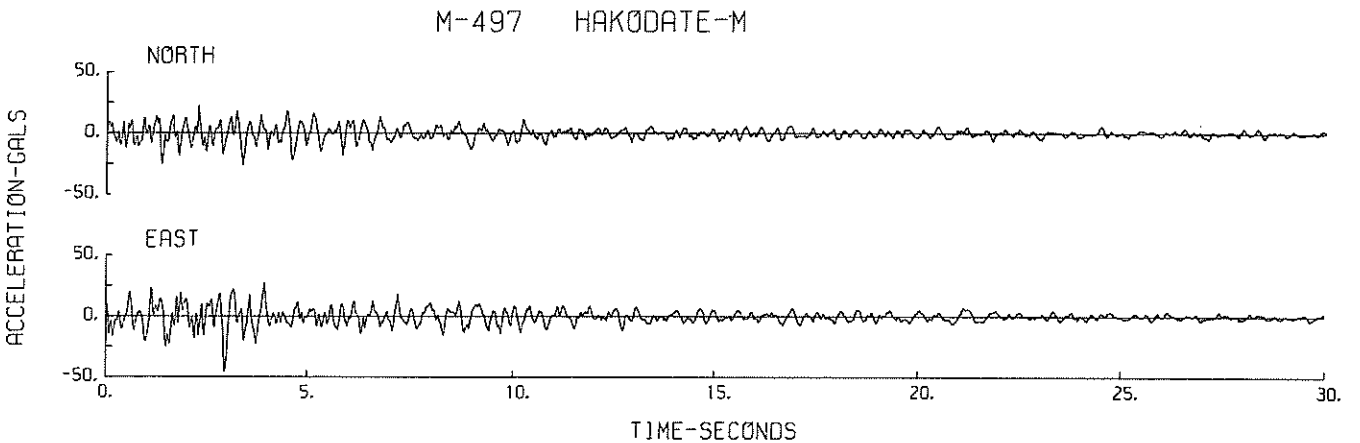
-50.
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS


M-497 HAKODATE-M
NORTH
EAST
ACCELERATION-GALS
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-50.
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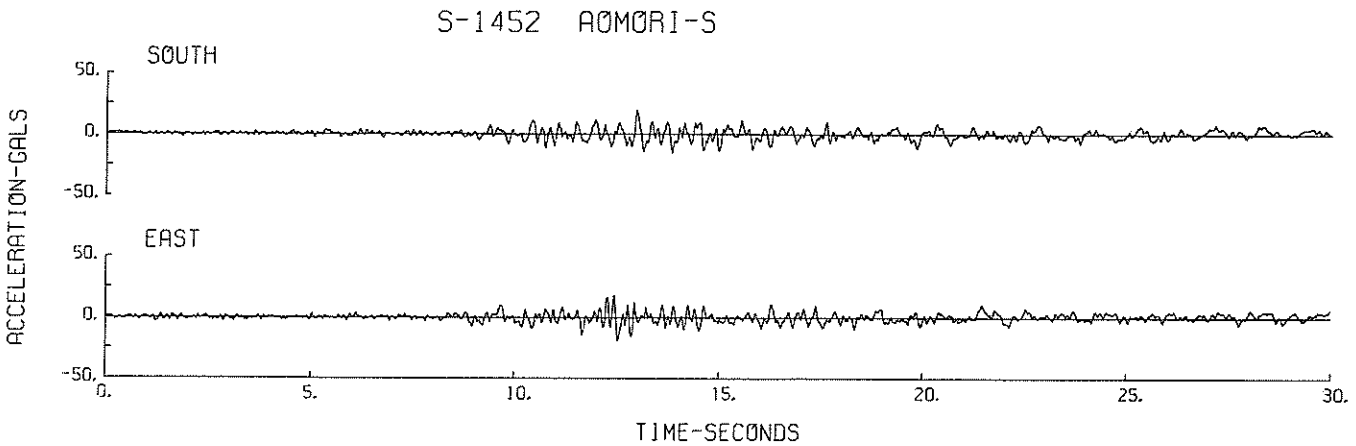
5.
10.
15.
20.
25.
30.
TIME-SECONDS


S-1452 AØMØRI-S
SØUTH
EAST
ACCELERATION-GALS
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0.
-50.
0.
5.
10.
15.
20.
25.
30.
TIME-SECONDS

RECORD = S-1418 COMPONENT = S08E STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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10	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	54	197	533	689
60	945	1090	1199	1265	1352	1453	1499	1502	1493	1381
70	1269	1158	1046	934	822	710	698	744	839	1012
80	1169	1389	1511	1598	1612	1596	1567	1455	1312	1168
90	1025	881	738	594	517	669	749	818	824	773
100	667	549	452	372	336	272	216	175	147	111
110	44	-2	-28	-64	-129	-166	-210	-246	-301	-355
120	-428	-446	-409	-332	-216	-43	71	150	179	134
130	57	-16	-95	-178	-268	-362	-490	-629	-691	-704
140	-682	-650	-606	-547	-472	-374	-318	-336	-433	-529
150	-599	-673	-771	-893	-958	-994	-948	-836	-657	-381
160	-109	123	209	160	126	94	97	132	171	218
170	238	241	246	255	279	326	413	529	584	654
180	694	728	722	727	747	800	919	1053	1171	1251
190	1310	1242	998	699	399	99	-239	-475	-596	-633
200	-598	-496	-313	-155	-27	51	68	51	21	-13
210	-45	-50	-22	19	37	42	47	56	84	128
220	178	230	275	292	294	289	272	238	184	88
230	1	-69	-179	-238	-301	-337	-355	-349	-332	-319
240	-303	-280	-249	-203	-138	-139	-180	-255	-338	-449
250	-560	-640	-663	-670	-644	-546	-417	-274	-144	-66
260	-27	-30	-50	-85	-116	-154	-178	-165	-130	-93
270	-61	-49	-63	-104	-147	-181	-215	-229	-211	-161
280	-93	16	181	306	369	396	394	369	348	324
290	296	272	275	304	348	424	524	606	644	641
300	600	504	347	155	-26	-137	-199	-235	-227	-203
310	-173	-106	-51	-24	-6	21	41	68	93	114
320	122	129	144	156	157	150	134	119	101	84
330	59	21	-2	-90	-144	-254	-324	-355	-386	-394
340	-385	-351	-306	-270	-222	-183	-193	-220	-251	-279
350	-286	-264	-223	-190	-185	-194	-206	-214	-216	-211
360	-200	-184	-165	-159	-167	-178	-180	-169	-152	-125
370	-92	-72	-67	-59	-44	-11	31	87	147	197
380	244	288	321	323	283	236	187	152	132	127
390	124	115	109	115	130	154	189	218	236	239
400	237	230	214	185	153	112	74	56	53	67
410	84	88	89	86	80	79	84	97	119	142
420	158	149	115	54	-44	-102	-134	-123	-89	-54
430	-38	-49	-64	-119	-164	-204	-217	-207	-155	-114
440	-48	1	11	3	-3	-4	7	24	38	41
450	37	34	32	30	27	28	35	44	45	40
460	22	-14	-58	-113	-151	-148	-117	-80	-53	-38
470	-49	-78	-108	-127	-128	-104	-73	-48	-24	-12
480	-15	-33	-65	-99	-127	-138	-131	-107	-82	-62

TO BE CONTINUED

CONTINUED(S-1418 S08E)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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500	150	139	130	122	101	82	75	65	56	43
510	24	7	12	24	51	79	104	143	152	140
520	104	56	-17	-92	-126	-149	-152	-137	-128	-110
530	-95	-87	-92	-95	-98	-98	-87	-66	-53	-50
540	-44	-34	-26	-13	2	22	41	54	71	88
550	104	125	127	121	109	91	68	36	8	-16
560	-16	-7	4	16	29	44	73	105	133	154
570	164	173	178	178	177	177	173	161	147	132
580	115	102	98	106	122	135	140	141	134	119
590	87	58	41	44	64	90	98	96	90	78
600	66	60	58	54	47	32	14	-5	-18	-33
610	-45	-47	-41	-34	-33	-39	-51	-80	-109	-149
620	-172	-169	-156	-148	-149	-168	-192	-191	-175	-163
630	-129	-102	-77	-55	-55	-62	-73	-91	-127	-152
640	-162	-152	-127	-81	-33	21	49	77	92	86
650	78	66	55	39	37	52	76	85	81	63
660	33	17	20	30	37	36	30	23	23	33
670	45	64	75	70	42	-4	-41	-75	-111	-125
680	-112	-83	-47	-9	9	-6	-63	-139	-217	-273
690	-304	-314	-289	-250	-179	-130	-86	-53	-27	-16
700	-7	4	16	27	33	31	20	3	-14	-30
710	-37	-46	-57	-71	-92	-128	-155	-162	-162	-146
720	-128	-115	-99	-90	-78	-65	-55	-48	-42	-8
730	17	48	67	69	54	33	4	-22	-53	-58
740	-52	-44	-42	-37	-32	-28	-19	-16	-9	-2
750	1	11	24	49	73	88	86	76	65	52
760	41	32	35	38	35	26	11	-3	-5	4
770	18	41	63	74	71	63	53	45	46	57
780	71	91	109	114	114	111	103	105	110	110
790	109	105	93	82	91	106	120	142	166	187
800	194	195	193	179	149	109	80	50	24	1
810	-2	1	4	11	6	1	-8	-38	-67	-96
820	-117	-125	-125	-124	-124	-118	-114	-110	-107	-103
830	-102	-93	-88	-92	-97	-104	-117	-135	-138	-121
840	-65	-34	-6	3	-8	-28	-46	-41	-24	1
850	34	71	120	157	172	151	101	53	-10	-63
860	-98	-101	-90	-80	-67	-54	-49	-48	-43	-34
870	-8	32	69	91	95	96	99	102	108	113
880	111	106	101	98	93	79	65	53	47	43
890	38	29	19	8	4	12	20	29	45	63
900	83	95	107	117	112	94	76	56	45	35
910	20	4	-15	-31	-41	-52	-64	-76	-82	-73
920	-58	-45	-34	-9	11	44	82	92	88	47
930	1	-32	-39	-49	-64	-83	-96	-104	-98	-89
940	-82	-78	-78	-83	-87	-97	-106	-108	-104	-98
950	-85	-61	-31	10	46	51	45	31	8	-13
960	-28	-42	-48	-48	-45	-45	-43	-42	-41	-39
970	-40	-42	-44	-42	-37	-32	-19	1	27	62
980	95	113	113	106	98	92	84	70	51	29
990	12	8	9	9	6	-4	-16	-25	-40	-50
1000	-47	-45	-41	-38	-39	-47	-57	-70	-80	-92
1010	-102	-108	-114	-126	-141	-149	-157	-167	-175	-183
1020	-192	-200	-204	-207	-201	-183	-162	-114	-65	-47

TO BE CONTINUED

CONTINUED(S-1418 SO8E)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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1050	45	54	62	71	82	95	96	88	83	81
1060	84	90	90	83	74	60	47	35	25	9
1070	-4	-20	-34	-46	-56	-60	-47	-23	2	31
1080	59	78	80	57	26	6	-5	-1	9	18
1090	24	22	19	17	13	7	5	5	3	0
1100	-3	-7	-12	-14	-14	-9	0	13	24	37
1110	51	59	53	43	38	49	67	77	88	87
1120	78	60	23	-27	-69	-108	-132	-132	-127	-122
1130	-113	-89	-69	-60	-33	-14	-4	-5	-8	-7
1140	0	11	24	36	46	43	47	53	47	36
1150	22	13	5	7	9	15	17	23	35	46
1160	55	60	59	51	40	26	11	2	8	30
1170	55	64	61	58	52	45	37	26	18	15
1180	25	42	55	56	53	48	40	40	53	65
1190	70	70	69	66	59	50	37	16	1	-2
1200	-12	-17	-25	-35	-46	-60	-74	-86	-92	-95
1210	-89	-83	-76	-64	-55	-53	-62	-72	-91	-102
1220	-107	-103	-93	-82	-70	-73	-73	-72	-70	-70
1230	-68	-65	-63	-60	-59	-56	-63	-76	-85	-95
1240	-92	-82	-71	-56	-25	-5	8	22	30	29
1250	24	21	24	33	43	58	73	69	59	43
1260	29	23	28	33	31	26	17	8	0	-6
1270	-2	5	13	20	23	19	6	-8	-17	-22
1280	-27	-33	-43	-49	-52	-58	-68	-79	-93	-116
1290	-138	-148	-144	-131	-118	-104	-98	-98	-93	-90
1300	-85	-74	-66	-47	-28	-18	-5	7	9	0
1310	-11	-18	-22	-20	-18	-14	-19	-36	-47	-71
1320	-94	-108	-105	-100	-98	-102	-108	-115	-110	-102
1330	-84	-68	-51	-42	-40	-47	-66	-90	-110	-118
1340	-108	-77	-51	-35	-23	-16	-11	-2	4	14
1350	26	41	53	70	80	82	83	90	102	122
1360	146	168	172	165	145	117	99	78	57	39
1370	24	11	0	-12	-23	-40	-53	-51	-41	-33
1380	-23	-13	-4	2	4	9	21	32	40	45
1390	44	37	31	24	13	-3	-17	-18	-11	-4
1400	4	14	25	33	41	51	45	34	23	13
1410	21	31	43	40	33	22	16	29	42	69
1420	80	88	95	93	85	73	59	50	42	46
1430	59	58	59	64	65	50	31	15	0	-4
1440	-2	-1	-6	-15	-24	-32	-43	-54	-60	-60
1450	-58	-51	-51	-53	-55	-57	-56	-54	-47	-32
1460	-13	1	7	6	0	-10	-23	-34	-34	-23
1470	-10	-1	-4	-21	-47	-78	-102	-117	-129	-134
1480	-128	-115	-103	-98	-97	-101	-112	-132	-150	-160
1490	-141	-104	-72	-39	-22	-25	-35	-56	-71	-80
1500	-75	-65	-54	-44	-44	-45	-44	-52	-58	-67
1510	-80	-100	-122	-136	-128	-111	-93	-70	-56	-43
1520	-38	-40	-37	-42	-47	-54	-53	-47	-37	-27
1530	-16	-1	17	24	26	21	11	0	-9	-6
1540	4	20	44	66	78	88	80	70	59	46
1550	41	46	51	56	62	73	84	89	91	91
1560	85	86	98	110	113	102	83	58	35	20

TO BE CONTINUED

CONTINUED(S-1418 SO8E)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	23	44	69	79	79	68	51	29	6	-16
1580	-29	-24	-13	-1	4	1	-9	-28	-48	-54
1590	-54	-39	-24	-20	-26	-30	-44	-60	-71	-69
1600	-66	-73	-78	-83	-91	-93	-96	-85	-71	-56
1610	-41	-29	-19	-12	-17	-18	-1	19	43	73
1620	97	117	118	111	93	63	34	19	11	16
1630	19	15	4	-1	-9	-14	-8	-3	-2	-5
1640	-9	-8	-5	-11	-14	-9	-10	-8	-1	6
1650	1	-4	-11	-19	-27	-36	-44	-48	-51	-58
1660	-67	-79	-92	-109	-134	-153	-166	-176	-173	-164
1670	-156	-145	-134	-118	-103	-97	-100	-106	-111	-110
1680	-105	-97	-88	-77	-65	-53	-48	-48	-48	-47
1690	-44	-43	-41	-36	-30	-26	-26	-31	-41	-51
1700	-54	-59	-58	-54	-45	-35	-24	-5	13	29
1710	47	54	54	48	41	32	23	21	44	54
1720	67	78	89	98	105	105	112	118	124	128
1730	129	129	127	120	106	90	75	62	46	25
1740	14	17	30	45	57	62	62	60	59	55
1750	47	42	36	32	33	32	37	49	60	66
1760	69	70	67	61	51	39	33	31	28	24
1770	22	20	17	15	12	9	8	7	5	2
1780	0	0	-2	-5	-11	-19	-24	-30	-37	-49
1790	-52	-43	-31	-16	-7	-3	-6	-12	-17	-22
1800	-28	-33	-33	-32	-29	-24	-14	0	9	24
1810	38	47	52	52	45	45	59	74	80	73
1820	72	60	47	39	35	31	27	27	25	20
1830	16	11	7	-8	-29	-43	-60	-67	-64	-70
1840	-76	-88	-103	-114	-115	-103	-98	-96	-107	-123
1850	-138	-156	-164	-162	-156	-145	-132	-125	-113	-88
1860	-55	-31	-16	-6	-2	-1	2	4	2	4
1870	11	21	32	42	45	47	55	65	76	80
1880	84	90	90	92	94	91	85	78	64	48
1890	31	20	13	15	18	20	24	25	22	14
1900	3	-5	-13	-5	10	34	61	76	82	74
1910	68	73	80	88	89	88	88	84	83	79
1920	77	75	82	85	78	62	44	30	21	24
1930	45	61	67	61	50	32	17	5	-7	-14
1940	-5	7	19	32	32	28	22	25	31	33
1950	40	53	73	84	97	108	113	110	104	100
1960	98	95	92	87	82	73	62	51	39	39
1970	44	42	37	33	25	14	4	4	11	18
1980	27	32	34	25	11	-1	-17	-28	-23	-16
1990	-13	-10	-5	0	-4	-9	-13	-22	-30	-34
2000	-42	-36	-29	-13	-1	12	20	30	31	31
2010	38	51	66	86	92	108	125	133	134	123
2020	103	68	31	9	-15	-33	-32	-29	-34	-40
2030	-48	-56	-64	-77	-93	-109	-119	-117	-104	-84
2040	-70	-59	-49	-52	-60	-66	-72	-79	-84	-81
2050	-69	-54	-41	-28	-17	-11	-11	-18	-28	-35
2060	-35	-29	-16	1	26	52	71	90	103	102
2070	95	90	90	88	84	80	81	89	94	97
2080	99	103	101	90	77	60	47	40	42	54
2090	61	62	63	61	52	36	15	0	-11	-16
2100	-9	0	8	9	1	-16	-26	-24	-15	-6

TO BE CONTINUED

CONTINUED(S-1418 S08E)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	6	16	36	50	50	42	33	26	20	24
2120	20	19	16	14	12	9	2	0	-2	0
2130	-5	-10	-16	-26	-36	-47	-58	-70	-75	-72
2140	-61	-51	-45	-48	-59	-73	-89	-103	-106	-92
2150	-73	-58	-42	-33	-34	-35	-39	-40	-36	-27
2160	-13	2	18	25	27	26	29	38	49	59
2170	68	73	71	60	48	38	29	26	22	18
2180	13	10	10	7	3	5	10	17	27	32
2190	34	33	27	17	6	10	22	31	38	48
2200	64	68	60	51	48	53	59	57	64	70
2210	74	77	78	79	83	85	90	94	105	113
2220	120	118	107	102	93	87	77	73	70	72
2230	72	69	65	55	46	36	22	9	0	2
2240	11	19	26	24	19	15	15	16	15	13
2250	16	22	26	33	42	48	60	72	88	102
2260	108	111	109	110	112	116	118	120	122	121
2270	119	118	116	111	106	102	100	96	93	90
2280	85	82	79	74	69	65	61	54	47	43
2290	40	35	32	27	9	-9	-25	-37	-44	-52
2300	-55	-62	-66	-71	-75	-74	-57	-45	-37	-28
2310	-17	-18	-18	-20	-25	-34	-40	-35	-32	-24
2320	-24	-32	-36	-44	-54	-66	-78	-81	-77	-74
2330	-74	-71	-63	-54	-47	-43	-34	-29	-30	-34
2340	-39	-45	-49	-54	-58	-54	-43	-33	-17	3
2350	18	25	21	11	1	-5	-6	-2	6	19
2360	28	37	43	44	44	40	39	43	52	61
2370	66	68	70	69	64	60	52	44	36	33
2380	34	38	39	38	38	42	47	49	53	54
2390	54	58	60	62	64	67	63	58	57	53
2400	52	55	58	62	67	72	75	91	102	110
2410	107	102	94	88	83	83	79	79	79	79
2420	79	78	73	70	64	58	48	40	43	43
2430	39	29	18	4	-9	-15	-15	-14	-9	-7
2440	-6	-3	-2	-1	1	4	3	-1	-5	-9
2450	-16	-26	-32	-33	-32	-29	-25	-25	-24	-19
2460	-15	-14	-14	-20	-25	-34	-44	-52	-58	-64
2470	-70	-72	-70	-63	-56	-50	-47	-48	-53	-64
2480	-78	-84	-81	-84	-91	-93	-90	-93	-93	-87
2490	-76	-70	-67	-57	-47	-38	-34	-35	-42	-43
2500	-40	-37	-26	-19	-11	0	9	19	30	39
2510	39	38	26	26	17	7	-4	-5	-4	-4
2520	-13	-19	-24	-27	-27	-29	-33	-36	-40	-40
2530	-40	-42	-41	-35	-27	-27	-29	-32	-32	-33
2540	-32	-26	-18	-10	-1	0	-2	-11	-21	-21
2550	-14	-4	6	14	17	13	8	6	9	14
2560	21	29	36	42	51	63	70	75	83	86
2570	83	82	83	84	83	83	83	76	68	66
2580	68	70	69	69	69	65	60	51	44	40
2590	39	39	33	27	20	3	-7	-5	4	17
2600	25	27	26	26	24	20	20	16	11	11
2610	17	26	31	32	43	50	58	62	67	69
2620	68	68	70	74	79	88	94	101	109	114
2630	120	127	127	137	143	144	141	137	145	153
2640	152	148	145	139	134	126	123	123	121	119

TO BE CONTINUED

CONTINUED(S-1418 S08E)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	115	109	107	107	105	100	90	80	72	68
2660	66	63	59	56	53	47	41	36	26	18
2670	22	26	27	23	17	1	-16	-26	-25	-20
2680	-14	-11	-9	-8	-11	-13	-18	-12	-6	0
2690	4	0	-2	-5	-11	-20	-20	-17	-13	-8
2700	-5	0	-4	-9	-12	-15	-17	-12	-5	4
2710	9	0	-7	-13	-19	-27	-32	-31	-23	-15
2720	-12	-8	-4	-6	-11	-17	-29	-32	-29	-26
2730	-29	-26	-24	-28	-27	-23	-20	-19	-17	-13
2740	-9	-8	-11	-16	-13	-3	5	10	19	27
2750	29	26	23	19	18	20	22	26	30	32
2760	33	34	37	42	47	54	59	65	74	79
2770	86	91	100	102	96	93	86	80	80	78
2780	77	76	71	62	56	57	53	50	50	44
2790	29	19	24	33	39	43	47	47	49	50
2800	48	47	44	44	43	45	50	52	47	40
2810	26	10	7	20	27	27	27	27	27	28
2820	32	34	39	43	48	52	53	45	35	21
2830	21	30	38	51	61	56	51	44	43	44
2840	52	68	84	97	104	104	97	87	81	90
2850	103	115	124	126	124	113	98	84	69	56
2860	48	45	45	42	41	43	43	42	41	39
2870	34	31	31	31	32	32	30	26	22	22
2880	29	37	41	39	34	27	21	12	12	18
2890	26	27	30	33	32	31	26	17	6	2
2900	6	4	5	12	21	31	43	42	33	39
2910	43	44	44	47	45	45	41	31	24	17
2920	16	14	18	24	21	21	20	19	16	13
2930	6	-2	0	11	15	15	11	5	-3	-14
2940	-15	-6	0	0	0	0	-3	-5	-8	-10
2950	-9	-9	-10	-10	-11	-9	-10	-10	-7	-3
2960	-1	0	3	6	6	3	-1	-6	-8	-7
2970	-5	-3	-1	-2	-6	-7	-8	-12	-21	-24
2980	-10	3	16	29	34	37	37	35	33	33
2990	32	32	31	29	26	26	26	26	26	26

END

RECORD = S-1418 COMPONENT = EO8N STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	205	238	271	304	337
30	344	340	335	301	264	226	193	159	104	22
40	-56	-67	-79	-58	-31	12	65	129	201	309
50	421	512	619	719	768	748	710	634	558	474
60	381	286	177	75	10	0	46	168	288	403
70	540	487	424	337	239	122	-112	-376	-504	-513
80	-428	-322	-166	-9	120	85	36	-12	-45	16
90	122	218	271	297	239	127	-1	-62	-200	-405
100	-488	-591	-642	-672	-720	-743	-730	-694	-640	-562
110	-469	-340	-101	204	430	530	520	444	360	241
120	-79	-408	-570	-689	-732	-690	-557	-391	-221	63
130	308	375	370	305	212	149	99	36	-52	-122
140	-138	-88	-17	43	113	169	164	109	36	-32
150	-95	-159	-196	-186	-116	-27	73	140	198	220
160	245	335	456	593	727	904	1058	1126	1145	1113
170	1059	988	880	760	622	458	276	61	-262	-629
180	-864	-985	-1078	-1072	-981	-815	-649	-510	-340	-142
190	282	343	321	217	87	-45	-177	-267	-329	-418
200	-475	-508	-544	-543	-489	-401	-307	-131	21	154
210	343	452	469	444	426	447	493	604	685	726
220	789	851	910	957	958	849	710	458	187	-37
230	-232	-480	-590	-646	-668	-644	-582	-494	-403	-324
240	-221	-126	-69	-59	-71	-106	-133	-183	-258	-356
250	-435	-490	-522	-496	-372	-167	90	178	220	204
260	162	111	55	17	10	60	135	220	299	353
270	380	374	344	306	281	278	292	296	284	241
280	173	76	-45	-154	-262	-352	-378	-322	-221	-104
290	0	78	146	204	249	266	267	241	247	205
300	142	69	-3	-73	-96	-71	-35	-21	-47	-103
310	-159	-229	-292	-347	-365	-344	-297	-231	-191	-177
320	-162	-151	-120	-53	49	94	122	142	151	146
330	118	65	16	-49	-117	-175	-205	-226	-255	-280
340	-284	-248	-164	38	230	340	375	364	313	232
350	162	123	117	181	252	331	383	387	367	323
360	277	242	222	202	189	179	158	112	43	-38
370	-105	-145	-162	-152	-109	-63	5	86	148	204
380	258	303	323	325	293	236	178	123	65	10
390	-44	-102	-155	-196	-224	-244	-256	-270	-290	-326
400	-361	-393	-420	-441	-445	-412	-371	-329	-269	-194
410	-149	-125	-119	-123	-125	-111	-93	-77	-53	-12
420	24	46	50	43	26	11	-24	-59	-68	-46
430	8	71	110	126	125	117	101	65	37	9
440	-18	-33	-30	-27	-6	23	69	101	126	128
450	121	103	84	91	133	175	223	270	281	276
460	261	244	229	218	206	198	186	171	163	154
470	137	116	92	69	48	32	31	36	35	29
480	8	-25	-60	-93	-106	-87	-57	-18	15	19

TO BE CONTINUED

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	5	-20	-46	-77	-107	-128	-137	-121	-99	-82
500	-71	-60	-57	-63	-68	-68	-65	-64	-65	-68
510	-72	-75	-76	-74	-70	-51	-24	2	21	32
520	35	46	62	73	89	91	84	75	57	36
530	3	-17	-24	11	35	73	104	106	95	54
540	0	-11	-7	30	64	108	157	203	207	200
550	186	166	140	114	73	34	1	-24	-24	0
560	22	49	61	61	59	54	51	46	40	32
570	18	-5	-39	-60	-61	-47	-21	7	56	102
580	124	129	125	117	95	62	25	-31	-95	-170
590	-231	-251	-244	-218	-190	-166	-143	-103	-62	-16
600	41	84	92	80	42	-18	-82	-136	-165	-159
610	-120	-49	50	129	193	220	232	205	151	80
620	-7	-87	-122	-117	-59	-6	68	108	151	170
630	184	209	211	204	205	207	201	198	192	166
640	132	75	5	-78	-89	-77	-39	17	60	104
650	123	138	124	81	31	-7	-27	-48	-60	-67
660	-61	-46	-23	2	28	46	64	86	98	97
670	85	69	46	24	12	4	-3	-17	-38	-59
680	-82	-97	-99	-99	-97	-94	-91	-87	-85	-87
690	-97	-130	-173	-196	-183	-162	-149	-146	-153	-168
700	-183	-197	-196	-188	-177	-168	-166	-172	-182	-197
710	-204	-204	-184	-162	-146	-128	-111	-66	-17	1
720	13	31	57	96	129	131	122	91	39	-4
730	-50	-69	-73	-55	-43	-29	-20	-21	-7	1
740	21	36	50	65	76	90	110	123	129	121
750	118	115	117	121	125	133	143	151	157	158
760	152	141	110	61	17	-5	-22	-7	31	76
770	125	146	149	136	110	88	63	44	26	7
780	0	14	39	57	73	85	88	82	74	59
790	32	2	-20	-46	-66	-79	-85	-87	-89	-85
800	-72	-54	-37	-23	-11	2	13	15	10	5
810	-1	-34	-65	-92	-110	-123	-123	-110	-99	-91
820	-79	-54	-22	10	53	73	90	98	103	100
830	104	114	131	154	174	202	213	204	168	116
840	80	55	62	96	111	130	156	169	169	166
850	161	143	107	68	40	27	44	70	95	104
860	99	83	60	38	30	32	40	54	63	71
870	79	85	83	77	68	52	33	16	2	-16
880	-35	-49	-59	-72	-82	-90	-97	-104	-117	-133
890	-158	-180	-188	-186	-171	-160	-130	-101	-86	-80
900	-89	-101	-114	-119	-109	-94	-75	-55	-38	-23
910	-15	-18	-26	-32	-54	-81	-101	-116	-112	-98
920	-93	-101	-105	-106	-117	-123	-124	-115	-95	-61
930	1	34	81	83	83	71	60	44	44	57
940	66	76	75	60	40	21	-2	-18	-13	2
950	10	21	25	30	30	28	19	6	-4	-13
960	-24	-27	-21	-10	-3	4	16	25	39	52
970	61	70	83	92	95	98	100	100	98	92
980	80	65	43	27	20	15	9	-8	-35	-60
990	-82	-102	-122	-134	-148	-148	-138	-124	-110	-96
1000	-80	-70	-63	-65	-69	-62	-51	-27	-11	3
1010	13	14	4	-12	-37	-55	-56	-37	-12	30
1020	78	108	115	115	103	92	77	75	72	67

TO BE CONTINUED

CONTINUED(S-1418 EO8N)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	56	51	46	38	30	20	11	10	14	16
1040	19	19	16	12	17	21	30	32	38	47
1050	47	40	33	42	57	70	79	89	85	66
1060	45	27	3	-24	-46	-56	-42	-26	-18	-22
1070	-34	-50	-63	-76	-84	-80	-68	-54	-39	-24
1080	-17	-15	-5	9	26	46	75	99	101	91
1090	82	77	73	68	63	58	56	53	53	52
1100	54	55	51	47	43	36	27	22	24	35
1110	50	68	79	93	95	92	77	53	16	-22
1120	-55	-81	-99	-114	-130	-125	-119	-103	-91	-81
1130	-71	-66	-61	-56	-51	-50	-49	-49	-54	-60
1140	-63	-62	-57	-41	-27	-14	-4	0	1	8
1150	17	34	49	65	85	93	94	82	70	55
1160	41	33	30	31	33	38	45	45	42	36
1170	28	16	1	-8	-2	11	26	44	61	79
1180	91	92	83	65	48	37	24	2	-20	-40
1190	-53	-52	-45	-38	-35	-40	-44	-50	-47	-40
1200	-41	-47	-53	-56	-52	-47	-48	-50	-56	-58
1210	-54	-47	-38	-34	-30	-30	-39	-45	-49	-45
1220	-31	-17	0	14	29	45	72	85	90	90
1230	86	69	34	-8	-43	-70	-85	-82	-81	-85
1240	-93	-84	-85	-90	-92	-90	-89	-83	-76	-78
1250	-77	-74	-72	-68	-63	-59	-55	-52	-49	-44
1260	-40	-34	-32	-29	-29	-26	-17	-6	5	20
1270	35	48	52	52	64	75	88	101	108	115
1280	115	100	71	38	17	2	-14	-27	-40	-50
1290	-50	-43	-34	-27	-25	-20	-18	-23	-30	-41
1300	-54	-66	-81	-96	-103	-100	-91	-82	-77	-69
1310	-60	-52	-51	-49	-45	-44	-28	-17	3	13
1320	29	38	36	32	31	36	51	73	88	100
1330	114	114	95	76	58	51	56	76	85	95
1340	104	110	105	104	94	86	73	60	54	46
1350	41	40	34	24	7	-3	3	20	37	46
1360	54	59	53	44	33	17	-7	-40	-61	-76
1370	-90	-98	-95	-81	-63	-47	-29	-9	6	9
1380	0	-17	-32	-42	-43	-41	-35	-23	-9	3
1390	6	-4	-21	-35	-43	-44	-42	-39	-39	-35
1400	-30	-25	-21	-22	-26	-28	-30	-21	-8	5
1410	25	31	31	30	21	6	-7	-15	-24	-25
1420	-23	-23	-23	-32	-39	-47	-49	-43	-26	-10
1430	-1	9	14	14	15	8	0	-8	-18	-19
1440	-7	6	18	18	18	16	20	16	16	15
1450	8	-1	-8	-1	16	33	46	53	53	46
1460	43	46	46	45	46	53	60	62	58	52
1470	42	30	19	14	24	38	45	49	41	25
1480	8	-14	-40	-61	-78	-79	-63	-45	-34	-38
1490	-47	-59	-76	-86	-87	-82	-73	-62	-51	-45
1500	-44	-44	-53	-65	-72	-74	-74	-70	-64	-59
1510	-51	-44	-35	-27	-16	-10	-17	-27	-43	-57
1520	-58	-35	-16	-3	11	11	4	0	-1	-6
1530	-4	-2	0	-4	-4	0	4	4	0	-5
1540	-1	-3	-5	-8	-9	-13	-19	-24	-28	-30
1550	-34	-39	-45	-58	-73	-83	-85	-80	-75	-72
1560	-66	-55	-43	-27	-7	5	9	7	0	-4

TO BE CONTINUED

CONTINUED(S-1418 EO8N)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-13	-21	-19	-12	-4	6	12	15	9	-2
1580	-16	-34	-58	-79	-84	-69	-49	-35	-17	-4
1590	2	7	10	21	34	40	50	59	63	66
1600	64	56	46	37	20	12	15	20	29	37
1610	41	50	59	57	52	42	30	15	4	5
1620	22	31	48	64	69	61	52	39	13	-11
1630	-39	-61	-73	-78	-75	-69	-58	-53	-46	-32
1640	-26	-27	-24	-30	-32	-28	-22	-21	-19	-9
1650	-3	3	14	24	34	40	33	21	7	-2
1660	-4	0	6	20	34	47	54	46	35	23
1670	6	-6	0	13	23	28	26	15	-2	-22
1680	-39	-56	-73	-81	-74	-62	-50	-38	-31	-35
1690	-42	-43	-43	-43	-37	-30	-18	-4	11	16
1700	26	30	23	16	7	-6	-17	-26	-32	-31
1710	-20	-5	8	24	34	35	26	13	1	1
1720	14	30	46	56	70	70	68	51	35	11
1730	-10	-20	-12	2	16	24	33	31	29	27
1740	31	34	35	29	18	9	0	-2	4	14
1750	24	33	42	51	51	46	28	6	-9	-22
1760	-30	-35	-35	-39	-52	-72	-95	-96	-77	-58
1770	-43	-31	-25	-26	-24	-20	-18	-15	-16	-21
1780	-26	-34	-41	-49	-47	-35	-23	-9	5	22
1790	32	32	27	21	14	14	22	37	57	75
1800	92	109	118	119	110	94	70	56	46	34
1810	30	25	28	29	15	7	0	-11	-18	-9
1820	-8	-1	4	13	23	23	23	20	13	5
1830	-9	-20	-27	-15	-15	-16	-20	-28	-37	-50
1840	-50	-48	-41	-30	-25	-27	-26	-27	-33	-31
1850	-30	-24	-6	13	24	36	42	42	32	21
1860	9	-4	-15	-24	-36	-43	-39	-33	-24	-17
1870	-17	-24	-31	-37	-43	-45	-47	-46	-46	-51
1880	-56	-56	-55	-57	-59	-58	-50	-38	-27	-15
1890	-3	5	12	13	5	-3	-11	-16	-7	7
1900	19	39	59	67	66	61	57	52	47	48
1910	48	45	39	36	31	29	24	17	16	14
1920	11	5	0	-7	-11	-15	-16	-15	-10	-4
1930	6	14	22	26	26	17	0	-11	-17	-13
1940	-8	-4	-7	-14	-21	-33	-47	-60	-73	-83
1950	-79	-60	-38	-19	-6	3	8	5	5	5
1960	1	0	0	5	13	20	29	39	51	66
1970	82	90	91	84	75	67	55	46	49	54
1980	57	60	64	66	66	63	60	54	46	38
1990	29	17	4	-17	-41	-60	-68	-72	-75	-71
2000	-66	-61	-59	-50	-36	-24	-11	4	14	16
2010	8	-6	-28	-48	-59	-59	-30	-9	6	33
2020	54	55	47	36	28	28	28	28	30	34
2030	46	67	81	107	125	135	132	116	91	73
2040	57	50	49	50	50	47	38	25	2	-22
2050	-38	-52	-63	-64	-69	-67	-63	-65	-74	-87
2060	-96	-102	-102	-95	-89	-78	-64	-53	-43	-40
2070	-37	-28	-16	-6	3	13	15	12	10	10
2080	14	19	20	19	15	8	0	-10	-21	-27
2090	-28	-28	-19	-5	6	20	26	19	5	-7
2100	-8	-11	-18	-26	-28	-32	-46	-57	-69	-75

TO BE CONTINUED

CONTINUED(S-1418 EO8N)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	-76	-76	-84	-89	-94	-98	-99	-86	-69	-44
2120	-16	4	30	49	40	34	29	22	25	36
2130	49	55	70	85	85	77	70	64	58	55
2140	55	55	54	49	40	33	22	11	1	0
2150	0	-3	-3	-6	-9	-17	-28	-35	-37	-35
2160	-32	-28	-27	-28	-37	-47	-60	-74	-80	-75
2170	-64	-51	-41	-40	-45	-48	-50	-53	-47	-35
2180	-21	-13	-10	-3	0	0	0	0	4	8
2190	10	15	20	19	15	13	10	6	2	5
2200	13	18	18	19	15	7	2	7	15	23
2210	23	29	40	54	58	56	55	49	46	45
2220	49	51	50	43	30	15	4	-5	14	22
2230	32	33	29	20	11	5	4	5	7	8
2240	8	4	-2	-14	-31	-42	-52	-57	-53	-49
2250	-47	-47	-50	-50	-49	-52	-54	-51	-39	-25
2260	-17	-9	0	6	11	19	34	47	62	73
2270	79	78	72	65	58	52	53	56	48	38
2280	29	19	13	10	0	-9	-15	-24	-34	-42
2290	-47	-53	-62	-69	-71	-63	-57	-48	-36	-33
2300	-33	-42	-53	-65	-74	-75	-69	-60	-54	-54
2310	-62	-69	-84	-100	-107	-98	-86	-79	-70	-61
2320	-48	-40	-28	-18	1	11	20	36	56	74
2330	86	95	96	96	92	82	75	64	43	37
2340	41	53	68	75	78	76	68	63	57	50
2350	48	54	59	61	58	56	55	52	46	40
2360	35	19	-5	-30	-51	-63	-63	-56	-55	-53
2370	-51	-55	-65	-81	-99	-111	-109	-95	-77	-56
2380	-37	-26	-27	-33	-40	-46	-51	-53	-51	-40
2390	-24	-12	2	16	21	27	44	62	74	76
2400	67	61	56	56	63	74	89	111	130	148
2410	149	142	134	126	115	110	110	111	110	104
2420	100	90	86	76	73	70	61	48	34	13
2430	-6	-19	-28	-27	-23	-30	-38	-51	-59	-56
2440	-44	-26	-11	0	7	20	34	41	44	40
2450	36	38	43	50	60	70	73	83	96	103
2460	108	108	111	113	109	105	105	103	101	100
2470	96	89	80	73	68	59	48	38	28	24
2480	27	33	36	36	36	33	25	14	3	-11
2490	-26	-44	-55	-58	-58	-55	-51	-46	-40	-43
2500	-48	-57	-69	-86	-96	-91	-82	-79	-71	-68
2510	-59	-50	-44	-41	-44	-50	-54	-62	-69	-72
2520	-60	-54	-48	-23	-17	-1	-5	0	9	17
2530	31	42	50	56	57	60	58	52	46	41
2540	26	10	-4	-17	-18	-11	-5	-3	-2	-6
2550	-6	-11	-22	-35	-51	-63	-70	-73	-77	-80
2560	-77	-70	-64	-54	-46	-44	-50	-55	-55	-61
2570	-68	-70	-70	-69	-64	-59	-58	-63	-61	-61
2580	-67	-70	-61	-48	-40	-32	-29	-24	-23	-21
2590	-16	-14	-5	0	-2	0	5	10	14	18
2600	19	15	12	11	10	2	-9	-19	-30	-37
2610	-35	-20	-9	0	10	21	23	20	24	21
2620	18	16	16	14	14	20	25	30	30	24
2630	22	25	30	36	40	47	55	59	63	65
2640	59	56	56	56	53	50	48	50	56	61

TO BE CONTINUED

CONTINUED(S-1418 EO8N)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	65	75	85	96	100	100	98	94	88	81
2660	73	72	76	78	78	77	74	66	56	45
2670	34	25	23	23	22	16	4	-5	-15	-25
2680	-38	-39	-41	-44	-45	-46	-46	-45	-43	-38
2690	-32	-25	-19	-11	-14	-18	-19	-14	-7	-3
2700	3	13	22	32	40	40	44	48	49	56
2710	65	73	83	93	99	98	93	85	81	75
2720	68	70	79	90	96	96	96	90	83	75
2730	61	40	20	8	-5	-17	-12	-8	-5	-2
2740	-2	-11	-22	-35	-49	-58	-61	-68	-65	-55
2750	-46	-40	-31	-31	-38	-45	-49	-49	-50	-51
2760	-53	-49	-42	-38	-33	-29	-28	-28	-28	-24
2770	-17	-6	3	9	13	23	35	37	32	24
2780	14	12	13	15	14	11	9	7	5	2
2790	-3	-7	-2	-1	-1	-1	-2	-5	-5	-1
2800	3	10	17	24	29	30	26	22	21	16
2810	10	8	6	0	-2	-4	0	6	9	6
2820	6	1	-5	-15	-28	-26	-14	-3	5	13
2830	19	18	11	5	-2	-15	-26	-39	-43	-29
2840	-16	-18	-11	-10	-18	-28	-36	-47	-55	-55
2850	-48	-37	-22	-6	7	9	6	-3	-16	-26
2860	-34	-38	-36	-30	-23	-12	-2	2	1	-4
2870	-9	-12	-17	-16	-11	-9	-8	-5	-7	-13
2880	-14	-13	-10	-9	-6	-6	-7	-9	-10	-11
2890	-9	-4	7	18	29	35	28	24	29	34
2900	40	46	51	59	68	78	84	86	86	84
2910	85	90	90	84	86	90	97	99	99	99
2920	99	96	91	81	76	71	65	58	49	43
2930	41	40	36	34	28	23	17	9	1	3
2940	13	22	33	40	36	34	30	27	31	34
2950	37	36	38	44	51	54	58	60	55	51
2960	51	53	53	53	53	52	51	54	62	68
2970	67	65	62	57	51	46	38	30	26	36
2980	44	48	56	64	69	68	59	45	33	18
2990	8	20	38	52	56	69	77	71	63	59

END

RECORD = S-1418 COMPONENT = DOWN STATION = TOMAKOMAI-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	100	94	89	83	78	73	67	62	49	28
10	7	-13	-35	-50	-50	-50	-50	-50	-3	42
20	88	121	133	145	156	156	156	155	144	134
30	122	105	88	76	73	69	65	60	55	48
40	40	30	19	18	19	29	43	58	74	96
50	121	150	180	176	169	148	130	124	117	107
60	56	-19	-54	-80	-96	-96	-86	-57	-22	23
70	82	127	127	74	16	7	15	30	41	40
80	41	52	115	158	182	195	189	165	126	73
90	36	9	-8	-10	-17	-36	-62	-78	-85	-78
100	-63	-47	-40	-16	8	47	77	74	44	1
110	-36	-63	-79	-88	-93	-101	-102	-102	-102	-101
120	-96	-86	-79	-68	-59	-50	-37	-24	-11	-2
130	0	-4	-12	-29	-51	-58	-72	-75	-84	-85
140	-79	-63	-34	-2	14	14	7	-9	-33	-58
150	-64	-44	3	57	73	76	76	71	56	43
160	32	27	20	-6	-15	-5	23	50	100	130
170	140	138	112	82	58	35	18	9	22	43
180	57	66	69	70	65	39	15	5	3	0
190	-23	-48	-71	-93	-110	-95	-48	23	70	77
200	64	28	-16	-40	-54	-58	-47	-24	-19	-32
210	-63	-97	-117	-109	-102	-89	-64	-42	-24	-6
220	9	13	24	40	63	81	99	96	61	33
230	22	16	12	-1	-21	-38	-47	-35	-18	-13
240	-15	-3	14	20	45	80	115	146	160	161
250	140	109	78	55	39	24	30	48	55	61
260	68	78	106	138	158	137	88	60	46	38
270	28	6	-29	-60	-72	-71	-66	-58	-49	-41
280	-31	-20	-23	-36	-32	-17	9	63	116	141
290	148	143	135	125	104	70	32	-26	-72	-92
300	-91	-73	-44	-26	-21	-28	-42	-60	-78	-96
310	-99	-82	-63	-35	6	30	40	45	47	48
320	45	40	26	-7	-42	-69	-99	-115	-116	-103
330	-92	-82	-77	-78	-77	-67	-50	-18	6	21
340	22	12	5	-8	-15	-11	2	12	24	39
350	45	52	44	23	-2	-35	-73	-85	-78	-58
360	-42	-43	-45	-43	-40	-36	-33	-28	-12	15
370	37	49	51	47	45	58	81	99	106	109
380	126	153	168	161	138	123	116	107	95	76
390	56	39	27	34	46	61	70	68	64	61
400	61	61	58	57	61	66	66	59	40	-14
410	-46	-56	-54	-45	-35	-27	-21	-10	-6	-4
420	-7	-16	-22	-23	-19	-14	-11	-15	-18	-25
430	-38	-46	-50	-50	-31	-15	13	39	54	68
440	71	73	71	74	77	77	76	64	44	31
450	18	9	0	-1	1	1	1	0	-3	-15
460	-30	-38	-31	-26	-24	-23	-31	-40	-48	-51
470	-59	-64	-65	-61	-43	-20	-2	6	4	1
480	2	5	6	9	13	17	23	29	34	38

TO BE CONTINUED

CONTINUED(S-1418 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	32	21	11	1	0	3	3	0	0	8
500	19	25	33	40	38	36	40	45	50	53
510	51	45	31	18	-1	-10	-15	-20	-22	-22
520	-18	-8	1	12	20	21	21	18	19	23
530	31	40	55	67	89	110	131	143	156	154
540	147	126	91	60	23	10	3	1	1	1
550	1	-5	-24	-58	-80	-89	-94	-79	-69	-59
560	-51	-45	-43	-44	-49	-59	-77	-100	-96	-74
570	-53	-22	-6	10	25	23	17	3	-11	-23
580	-25	-16	-7	1	10	21	27	22	18	19
590	25	31	39	49	55	53	48	44	41	37
600	28	14	-4	-31	-42	-43	-45	-46	-46	-50
610	-62	-71	-81	-82	-75	-68	-61	-53	-44	-30
620	-22	-10	0	14	9	-14	-41	-57	-62	-56
630	-50	-40	-27	-8	3	14	18	15	2	-8
640	-22	-35	-34	-15	-9	-13	-15	-10	-7	-1
650	10	22	25	17	14	6	-2	-8	-13	-19
660	-21	-16	0	22	51	69	74	75	77	65
670	26	-31	-61	-72	-61	-47	-41	-44	-48	-43
680	-35	-24	-11	0	7	5	-2	-9	-6	1
690	5	3	-3	-10	-21	-18	-4	10	19	29
700	39	40	41	42	38	33	28	25	16	8
710	-1	-17	-38	-65	-75	-65	-53	-43	-34	-33
720	-42	-49	-59	-51	-34	-3	13	46	73	74
730	73	79	77	66	54	42	33	36	36	38
740	40	35	30	19	-7	-17	-14	3	14	15
750	21	25	33	39	48	54	51	39	22	20
760	26	25	20	18	14	8	7	11	6	0
770	-3	-4	-1	-7	-15	-12	1	12	20	26
780	29	34	40	44	46	49	51	52	51	58
790	66	67	67	66	55	31	3	-15	-22	-33
800	-41	-45	-40	-29	-19	-2	9	16	16	10
810	3	-9	-20	-26	-31	-36	-41	-46	-52	-53
820	-39	-20	0	0	-7	-11	-18	-18	-15	-8
830	-5	0	8	11	21	31	42	54	66	66
840	68	71	69	48	20	2	-8	-17	-19	-10
850	-3	10	23	25	16	11	8	16	25	38
860	51	43	34	32	44	50	46	41	31	25
870	24	18	7	-18	-55	-74	-78	-78	-78	-68
880	-49	-33	-23	-15	-8	-6	-9	-14	-19	-27
890	-35	-37	-28	-17	-7	-6	-10	-16	-24	-33
900	-39	-39	-34	-31	-27	-20	-10	0	2	1
910	1	-1	0	6	15	25	26	20	13	16
920	21	25	27	28	22	16	8	0	-5	3
930	17	32	27	18	17	22	28	26	15	8
940	1	7	1	-1	-3	2	9	15	22	24
950	10	-5	3	14	24	32	30	23	15	7
960	2	0	1	4	8	15	23	20	11	0
970	-8	-12	-13	-9	-4	0	6	14	16	9
980	2	-3	-1	5	11	20	32	30	18	6
990	-3	-9	-15	-17	-10	-3	0	9	18	23
1000	22	22	23	26	30	28	26	23	26	24
1010	23	22	23	19	17	14	11	5	8	19
1020	21	27	31	24	14	2	-10	-18	-15	-6

TO BE CONTINUED

CONTINUED(S-1418 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-7	0	12	12	9	3	-5	-8	-5	2
1040	5	1	-1	-6	-11	-12	-13	-16	-22	-28
1050	-33	-37	-44	-53	-59	-48	-33	-17	-4	4
1060	12	23	28	32	36	42	43	36	23	14
1070	8	5	0	-3	-8	-11	-8	0	5	4
1080	-2	-6	-9	-14	-15	-7	6	23	34	31
1090	24	18	17	15	11	7	8	10	11	10
1100	7	4	-1	-10	-14	-8	-3	-8	-16	-20
1110	-14	-5	5	14	26	35	47	75	78	65
1120	49	38	34	32	34	26	23	17	11	7
1130	0	-12	-12	-7	0	2	3	9	16	20
1140	18	16	14	14	12	8	0	-8	-11	-2
1150	9	13	11	7	6	4	-2	-11	-22	-25
1160	-18	-4	6	13	17	25	28	39	48	55
1170	57	52	39	33	29	27	30	32	32	30
1180	24	14	1	-13	-25	-16	6	20	20	15
1190	10	0	-9	-16	-24	-21	-11	-3	2	3
1200	-3	-11	-26	-39	-54	-63	-70	-77	-78	-81
1210	-80	-82	-81	-78	-76	-67	-57	-42	-24	-16
1220	-9	-15	-21	-30	-38	-42	-48	-51	-51	-45
1230	-45	-41	-34	-40	-41	-33	-28	-23	-24	-31
1240	-35	-34	-22	-12	-6	-2	-1	4	11	9
1250	1	-3	-12	-15	-3	8	17	11	9	13
1260	18	27	41	46	42	35	29	28	30	30
1270	33	34	34	33	31	29	26	27	30	32
1280	35	39	42	42	37	28	20	2	-18	-32
1290	-39	-34	-20	-9	-10	-14	-15	-16	-19	-21
1300	-21	-17	-10	-6	-4	-5	-10	-14	-18	-25
1310	-24	-18	-3	12	9	2	-1	2	5	7
1320	8	4	-10	-21	-32	-37	-27	-16	-11	-11
1330	-13	-20	-23	-17	-14	-20	-19	-3	4	10
1340	1	-7	-11	-13	-15	-12	3	12	27	32
1350	34	32	27	22	18	17	18	17	11	2
1360	3	1	-3	-7	-2	10	21	23	12	7
1370	8	8	8	8	10	10	10	11	8	2
1380	-3	-7	-4	0	5	9	8	6	12	19
1390	23	23	20	15	10	7	10	12	16	17
1400	9	8	7	4	1	-4	-11	-15	-8	-8
1410	-7	-3	-1	1	3	6	9	11	15	20
1420	23	23	16	9	6	-1	-10	-16	-16	-17
1430	-15	-11	-5	-2	-1	-2	-3	-5	-7	-6
1440	-4	2	7	11	11	10	6	5	2	0
1450	-3	0	10	19	27	26	21	24	26	26
1460	25	21	16	13	13	11	9	7	8	11
1470	13	15	13	5	4	14	25	35	32	19
1480	5	-5	-11	-16	-20	-25	-26	-21	-23	-26
1490	-29	-33	-38	-48	-56	-51	-43	-35	-24	-17
1500	-16	-17	-20	-23	-29	-38	-46	-44	-43	-39
1510	-29	-14	0	1	-11	-21	-31	-41	-47	-47
1520	-22	-9	0	-2	-5	-11	-20	-32	-40	-46
1530	-45	-37	-31	-28	-25	-26	-29	-31	-27	-23
1540	-17	-13	-11	-19	-37	-46	-57	-62	-54	-45
1550	-43	-36	-28	-25	-24	-28	-34	-43	-52	-61
1560	-60	-53	-46	-40	-39	-40	-36	-32	-32	-34

TO BE CONTINUED

CONTINUED(S-1418 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-31	-24	-12	3	14	13	10	11	11	11
1580	11	10	8	12	21	29	32	34	39	41
1590	48	50	45	37	29	25	30	38	38	33
1600	26	24	21	14	15	20	26	31	27	27
1610	27	23	17	2	-5	-12	-21	-21	-21	-21
1620	-21	-20	-7	-5	-3	-6	-2	3	9	10
1630	0	-7	-15	-18	-11	2	10	23	25	23
1640	18	12	8	5	2	0	-1	0	1	8
1650	13	17	22	23	19	15	12	11	18	30
1660	38	42	38	30	27	24	17	12	5	-2
1670	-2	5	9	10	10	11	11	11	9	5
1680	0	-4	-9	-12	-9	-3	8	20	29	35
1690	40	40	31	35	45	51	53	57	50	46
1700	40	33	25	15	8	7	12	24	33	40
1710	36	27	18	10	12	26	26	18	16	9
1720	6	2	-2	-8	-13	-6	-10	-13	-18	-21
1730	-25	-28	-28	-30	-31	-32	-32	-32	-32	-32
1740	-32	-30	-25	-18	-14	-10	-7	-7	-7	-5
1750	4	9	7	0	-10	-18	-14	-7	-1	1
1760	0	-3	-3	0	2	2	-1	-6	-4	0
1770	0	0	0	2	2	0	0	4	3	-1
1780	-6	-12	-17	-24	-28	-30	-33	-30	-27	-27
1790	-26	-26	-26	-27	-30	-33	-35	-38	-37	-33
1800	-31	-30	-30	-32	-36	-44	-42	-39	-34	-32
1810	-38	-40	-40	-38	-33	-32	-32	-32	-36	-40
1820	-45	-46	-41	-30	-15	-3	-8	-22	-31	-36
1830	-36	-33	-30	-26	-27	-27	-26	-26	-27	-29
1840	-34	-36	-24	-16	-10	-6	-4	-7	-9	-13
1850	-16	-17	-18	-19	-17	-17	-16	-9	0	10
1860	18	17	9	6	8	13	17	15	19	26
1870	22	17	22	33	38	38	39	36	34	33
1880	32	29	25	24	22	22	21	21	22	19
1890	17	15	14	16	17	17	16	18	20	23
1900	26	28	30	32	34	34	25	19	12	13
1910	15	20	25	29	32	28	27	18	12	4
1920	1	-3	-3	-2	-6	-11	-17	-24	-28	-30
1930	-30	-28	-27	-23	-23	-22	-17	-12	-9	-16
1940	-19	-22	-27	-28	-30	-26	-20	-19	-15	-13
1950	-13	-13	-15	-11	-13	-15	-15	-13	-12	-9
1960	-6	-4	-4	-5	-8	-15	-24	-28	-29	-31
1970	-32	-32	-32	-32	-32	-31	-28	-21	-13	-8
1980	-7	-10	-17	-24	-26	-22	-18	-16	-17	-18
1990	-17	-14	-11	-8	-2	6	16	22	39	46
2000	47	40	32	25	20	20	16	22	28	31
2010	34	34	28	18	7	1	-6	-16	-22	-27
2020	-30	-21	-18	-20	-26	-33	-42	-43	-47	-53
2030	-54	-45	-34	-19	-7	2	6	1	0	1
2040	2	6	13	10	6	4	10	12	12	15
2050	18	15	10	7	5	4	9	18	28	30
2060	26	22	16	11	6	0	-1	5	11	16
2070	23	30	32	29	21	10	-1	-10	-9	-1
2080	5	10	13	15	13	9	4	0	-2	-5
2090	-3	-1	0	4	8	15	22	28	27	24
2100	22	18	12	9	9	12	15	18	19	19

TO BE CONTINUED

CONTINUED(S-1418 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	16	12	8	3	-3	-8	-1	7	18	21
2120	22	18	18	18	16	12	7	4	3	14
2130	19	22	16	11	-4	-22	-35	-44	-48	-54
2140	-59	-63	-58	-50	-43	-36	-26	-19	-15	-16
2150	-19	-23	-27	-25	-18	-11	-7	-4	0	8
2160	20	22	16	14	19	25	33	42	47	45
2170	38	28	21	17	21	26	25	23	23	23
2180	21	19	17	13	12	13	14	13	11	9
2190	6	4	3	3	5	7	7	6	7	8
2200	12	15	17	19	21	22	21	13	2	-12
2210	-20	-17	-13	-7	-3	2	1	8	13	14
2220	12	7	7	18	27	32	32	26	29	34
2230	31	27	25	23	24	22	19	15	18	16
2240	16	12	12	12	12	16	25	33	37	35
2250	38	36	33	24	16	12	6	1	-1	-3
2260	-2	0	5	4	-2	-16	-31	-41	-43	-37
2270	-29	-26	-28	-30	-25	-22	-23	-26	-27	-27
2280	-26	-23	-21	-22	-27	-31	-31	-25	-16	-9
2290	-7	-6	-1	0	2	6	8	13	14	13
2300	13	12	16	18	22	25	28	31	31	34
2310	37	41	46	44	51	54	46	44	41	38
2320	34	33	28	27	31	29	26	20	16	12
2330	6	0	0	0	0	1	4	3	0	-2
2340	-4	-5	-4	-2	-1	-2	-3	-3	-3	-2
2350	-4	-6	-7	-8	-7	-6	-7	-9	-11	-12
2360	-13	-14	-16	-19	-21	-21	-20	-16	-8	-2
2370	-3	-12	-19	-22	-21	-15	-8	-6	-7	-7
2380	-8	-11	-17	-22	-23	-23	-23	-23	-23	-23
2390	-25	-26	-24	-21	-16	-11	-10	-13	-19	-26
2400	-32	-39	-30	-22	-20	-12	-3	7	12	9
2410	9	8	8	8	8	9	12	11	11	7
2420	6	4	2	0	0	-1	-1	1	2	3
2430	2	0	-1	-3	-4	-7	-8	-5	-2	1
2440	8	13	11	9	11	8	5	0	-3	-6
2450	-6	-8	-14	-17	-19	-19	-18	-17	-18	-18
2460	-15	-10	-2	0	-3	-10	-16	-18	-16	-16
2470	-15	-12	-8	-6	-6	-4	0	4	11	7
2480	6	7	8	10	8	3	1	1	0	-1
2490	-1	0	0	0	0	2	0	-2	-1	-1
2500	-1	-1	-2	-3	-5	-5	-3	-1	1	4
2510	7	4	3	3	2	1	-3	-6	-6	-5
2520	-3	-1	0	0	2	6	7	7	7	9
2530	14	15	13	12	12	14	19	23	26	28
2540	27	27	28	32	38	38	35	41	40	36
2550	31	25	20	17	18	18	15	14	16	16
2560	16	15	11	7	4	2	4	10	15	19
2570	20	15	14	14	16	17	15	10	3	-3
2580	-6	-6	-7	-9	-12	-14	-13	-6	0	2
2590	0	0	1	3	7	8	8	10	8	2
2600	-3	-5	-1	1	1	2	4	7	1	-1
2610	-5	-6	-8	-10	-15	-16	-16	-12	-11	-8
2620	-2	0	2	8	12	17	16	13	7	3
2630	7	6	4	5	3	2	2	2	2	1
2640	-1	0	4	5	1	0	0	-1	-2	0

TO BE CONTINUED

CONTINUED(S-1418 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	1	1	3	7	8	10	11	12	10	12
2660	20	25	27	27	30	30	27	23	20	23
2670	26	30	32	32	31	31	31	32	35	36
2680	35	35	41	45	44	45	43	38	34	35
2690	40	42	45	47	48	44	39	34	29	30
2700	33	36	38	34	34	32	29	27	27	33
2710	38	43	46	44	44	44	43	41	36	33
2720	33	33	26	25	23	22	22	20	16	12
2730	6	-4	-6	-5	2	9	13	14	13	11
2740	8	6	1	-4	-11	-23	-27	-27	-27	-25
2750	-20	-12	-9	-14	-16	-17	-19	-21	-23	-20
2760	-12	-3	0	-1	-1	0	1	1	4	4
2770	4	6	9	12	18	22	25	26	26	26
2780	26	22	16	12	18	26	34	40	35	34
2790	35	34	32	28	23	19	18	17	20	23
2800	26	26	23	22	19	14	16	17	18	14
2810	13	12	9	7	6	4	-1	-3	-2	0
2820	1	0	-1	-2	-4	-7	-7	-7	-7	-7
2830	-7	-6	-3	-2	-1	1	3	2	0	-1
2840	0	2	6	7	9	11	12	14	16	16
2850	15	15	17	18	17	17	19	21	22	23
2860	22	19	16	15	13	13	14	17	20	22
2870	22	22	22	22	21	18	15	14	12	12
2880	11	9	7	5	2	3	6	7	7	7
2890	6	7	7	7	6	4	3	2	0	-3
2900	-6	-6	-6	-7	-10	-12	-12	-15	-16	-15
2910	-15	-13	-13	-13	-10	-6	-5	-2	-1	0
2920	0	0	1	8	17	22	22	23	27	25
2930	23	23	26	26	26	26	25	23	22	21
2940	20	23	25	29	31	30	28	26	25	23
2950	21	18	16	12	11	10	8	5	2	1
2960	0	0	2	2	2	2	2	2	2	2
2970	2	2	2	3	5	6	7	8	9	10
2980	12	13	15	16	17	18	18	19	20	21
2990	21	21	21	21	21	17	16	14	12	11

END

RECORD = S-1425 COMPONENT = NORTH STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 4550
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3051,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	-15	-16	-17	-18	-19	-20	-21	-22	-24	-28
10	-31	-34	-38	-41	-43	-45	-47	-48	-47	-45
20	-44	-43	-43	-43	-42	-39	-36	-32	-19	-6
30	6	11	17	19	16	14	11	7	2	-2
40	-8	-12	-17	-19	-22	-20	-18	-16	-13	-12
50	-12	-13	-15	-20	-26	-31	-37	-42	-46	-46
60	-44	-43	-41	-38	-26	-19	-16	-23	-24	-9
70	11	26	0	-11	-13	4	14	20	20	7
80	-13	-42	-62	-46	0	-9	-43	-73	-79	-43
90	-25	-26	-49	-79	-108	-130	-134	-92	-69	-61
100	-51	-25	11	63	93	78	30	-6	-39	-47
110	-28	-7	-3	-16	-36	-44	-16	0	-2	-21
120	-44	-58	-71	-59	-49	-49	-55	-64	-73	-68
130	-41	-7	7	19	73	126	90	11	-61	-105
140	-114	-101	-94	-99	-99	-81	-46	-4	0	-46
150	-85	-62	-4	0	-12	-21	-16	-22	-41	-56
160	-72	-84	-77	-82	-87	-60	-16	42	71	80
170	96	71	23	-41	-90	-104	-107	-101	-58	-36
180	-32	-54	-70	-90	-123	-132	-79	-24	0	-8
190	-12	0	7	10	1	-10	-16	-7	6	26
200	47	86	99	114	92	63	44	43	21	-22
210	-117	-189	-232	-218	-161	-85	-41	13	22	7
220	-17	-33	-49	-58	-55	-48	-49	-45	-40	-23
230	-11	-1	-9	-45	-75	-81	-50	-2	19	19
240	7	7	15	9	-10	-42	-76	-102	-118	-113
250	-86	-54	-28	-16	-11	-11	-15	-22	-26	-28
260	-36	-49	-61	-58	-39	-21	-8	0	-4	-19
270	-39	-60	-83	-98	-89	-61	-26	17	38	41
280	33	30	38	41	38	34	27	29	35	32
290	26	13	-4	-22	-28	-36	-37	-42	-45	-51
300	-56	-56	-49	-46	-24	16	63	113	131	125
310	90	46	10	-37	-80	-107	-123	-131	-135	-121
320	-90	-77	-66	-65	-39	-20	2	20	25	14
330	3	-9	-19	-30	-40	-28	-10	17	36	39
340	14	-25	-77	-117	-150	-161	-156	-133	-99	-64
350	-38	-17	-5	3	3	-3	-11	-20	-33	-44
360	-48	-48	-39	-27	-17	-13	-17	-20	-25	-26
370	-20	-8	5	9	-3	-22	-38	-49	-55	-62
380	-70	-75	-77	-75	-69	-61	-58	-61	-65	-66
390	-61	-49	-32	-6	28	60	74	71	48	12
400	-30	-67	-85	-85	-56	-29	-13	-4	-8	-16
410	-17	-11	-10	-16	-28	-43	-64	-72	-56	-47
420	-34	-36	-36	-27	-1	27	44	54	26	-7
430	-32	-49	-56	-49	-43	-37	-24	-13	0	15
440	29	26	11	-9	-23	-38	-52	-63	-81	-94
450	-105	-122	-119	-107	-110	-108	-93	-75	-53	-22
460	13	23	19	6	-4	-16	-30	-29	-19	-10
470	0	0	-2	-10	-17	-27	-31	-36	-46	-55
480	-60	-61	-52	-37	-17	-6	-7	-16	-25	-25

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-13	-5	0	-2	-7	-11	-11	-8	-10	-21
500	-44	-70	-92	-107	-105	-84	-53	-24	-5	2
510	5	17	33	46	50	29	-4	-32	-52	-67
520	-70	-65	-61	-60	-57	-49	-36	-21	-8	-8
530	-12	-16	-27	-35	-43	-52	-64	-75	-89	-92
540	-80	-64	-54	-39	-23	-9	-1	-8	-10	-6
550	-3	-9	-16	-27	-37	-50	-56	-41	-29	-3
560	-5	-13	-17	-23	-30	-23	-31	-39	-56	-68
570	-80	-69	-33	37	58	66	63	50	50	56
580	54	50	42	35	29	22	9	-2	-9	-10
590	0	0	2	5	1	-10	-22	-40	-49	-50
600	-44	-36	-31	-24	-15	-3	13	30	39	46
610	45	28	10	1	2	21	47	75	98	99
620	81	47	5	-27	-47	-61	-69	-87	-108	-124
630	-139	-135	-100	-53	-8	27	51	66	64	60
640	55	50	41	32	34	43	46	40	39	45
650	40	43	33	14	-5	-31	-52	-69	-81	-71
660	-52	-31	-13	2	10	16	33	49	56	57
670	32	14	6	-6	-15	-21	-37	-48	-45	-41
680	-42	-47	-53	-57	-57	-40	-20	-5	10	15
690	7	0	1	-4	-10	-19	-32	-55	-74	-84
700	-78	-73	-68	-50	-27	0	49	72	71	50
710	19	-11	-26	-40	-38	-35	-33	-35	-40	-35
720	-25	-18	-10	0	12	14	10	6	-3	-4
730	0	-3	-11	-16	-15	-3	15	35	47	52
740	49	51	57	61	55	40	12	-21	-54	-85
750	-99	-99	-90	-81	-73	-63	-55	-49	-41	-30
760	-19	-12	-8	-4	-6	-10	-5	0	-1	-1
770	6	14	23	28	23	18	9	-2	-13	-7
780	4	14	22	11	-1	-10	-19	-27	-20	-10
790	0	10	15	1	-6	-8	0	14	28	20
800	8	-8	-29	-45	-52	-39	-29	-18	-8	-4
810	-5	-13	-17	-26	1	33	75	84	78	33
820	1	-14	-15	-3	10	20	23	13	-2	-20
830	-37	-47	-48	-58	-61	-47	-31	-11	0	0
840	-7	-12	-1	9	16	14	8	0	-3	4
850	15	21	24	16	3	-9	-22	-23	-11	-3
860	2	10	19	19	7	-10	-19	-26	-28	-22
870	-17	-16	-13	-9	-8	-5	0	11	23	33
880	38	31	18	9	0	3	13	11	7	3
890	-3	-12	-13	-6	8	24	34	37	32	23
900	5	-12	-31	-41	-46	-23	-15	-14	-16	-19
910	-18	-9	2	14	28	39	33	29	23	16
920	18	24	16	5	-2	-7	-1	1	10	9
930	11	18	27	32	39	44	50	39	18	1
940	1	0	-16	-28	-49	-64	-74	-80	-71	-65
950	-59	-60	-62	-65	-78	-88	-97	-96	-83	-72
960	-51	-41	-29	-14	-2	9	21	31	36	38
970	30	30	37	45	54	49	37	27	20	14
980	9	0	-12	-26	-40	-49	-51	-49	-45	-41
990	-42	-51	-53	-41	-24	-7	1	3	7	8
1000	3	1	1	1	4	6	17	39	56	68
1010	70	61	49	37	31	27	19	9	2	-2
1020	-3	0	0	-3	-6	-9	-9	-8	-1	4

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	12	18	20	17	6	10	17	28	42	53
1040	52	50	47	41	33	18	3	-14	-35	-49
1050	-46	-37	-28	-10	-10	-10	-17	-23	-15	-7
1060	-5	-3	-3	-9	-7	-3	0	5	1	0
1070	0	-6	-16	-24	-28	-22	-15	-9	-4	-3
1080	-3	6	19	33	40	34	22	8	8	25
1090	29	26	29	27	20	14	8	8	-9	-22
1100	-35	-46	-50	-52	-49	-43	-43	-49	-44	-26
1110	-9	12	34	45	50	50	53	58	55	48
1120	43	37	27	17	12	6	10	21	27	28
1130	25	17	5	-7	-22	-36	-43	-46	-37	-22
1140	-12	-14	-17	-20	-27	-36	-41	-42	-41	-38
1150	-32	-17	0	21	37	45	50	46	38	30
1160	16	0	-14	-20	-8	1	9	15	17	6
1170	-8	-17	-11	-16	-29	-38	-48	-63	-83	-95
1180	-73	-41	-16	-7	1	5	0	-8	-14	-17
1190	-21	-15	-17	-19	-7	9	17	28	41	52
1200	55	50	37	27	15	11	12	-2	-11	-21
1210	-29	-17	-12	-9	-6	-1	1	5	9	10
1220	13	10	8	5	6	11	14	11	1	-7
1230	-15	-14	-5	7	14	7	-1	0	7	13
1240	14	6	-8	-19	-24	-18	-9	-9	-12	-14
1250	-15	-16	-14	-10	-4	2	4	0	0	2
1260	4	5	6	3	-1	-8	-18	-25	-19	-22
1270	-27	-33	-40	-50	-50	-43	-31	-23	-17	-17
1280	-17	-16	-25	-26	-23	-19	-16	-14	-10	-8
1290	-5	1	8	16	36	51	69	75	64	52
1300	31	15	7	5	11	17	16	9	2	-7
1310	-7	-15	-9	-7	-3	-10	-16	-17	-11	3
1320	15	21	15	10	2	-6	-9	-2	11	18
1330	31	40	47	48	39	32	23	26	28	24
1340	19	10	1	3	17	30	49	72	94	111
1350	118	124	124	114	96	83	64	46	37	30
1360	22	20	19	18	16	19	27	29	25	19
1370	15	11	5	-1	-6	-3	5	13	21	31
1380	44	38	22	20	18	15	11	2	-11	-22
1390	-31	-26	-18	-10	-8	-35	-77	-114	-131	-136
1400	-137	-142	-154	-170	-189	-195	-189	-180	-174	-173
1410	-182	-192	-201	-203	-183	-155	-129	-82	-46	-18
1420	3	15	21	34	51	73	86	90	41	-3
1430	-22	-43	-58	-31	-17	-8	-17	-55	-95	-143
1440	-163	-174	-179	-172	-169	-174	-171	-179	-196	-221
1450	-242	-252	-252	-225	-170	-119	-75	-57	-33	-8
1460	29	69	135	190	208	225	239	252	269	292
1470	321	335	319	254	150	48	-21	-68	-114	-144
1480	-154	-144	-111	-70	-39	-28	-32	-29	-17	0
1490	27	46	36	9	-15	-29	-14	32	91	147
1500	191	227	226	195	155	116	94	83	62	51
1510	51	55	60	65	80	127	172	219	283	352
1520	382	380	376	423	480	555	612	637	651	654
1530	663	695	740	791	808	755	648	496	324	188
1540	-4	-246	-392	-483	-598	-647	-680	-692	-625	-511
1550	-379	-243	-91	-59	-60	-120	-176	-264	-357	-426
1560	-495	-536	-532	-459	-293	5	563	667	593	504

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	397	292	225	193	167	148	133	100	83	131
1580	306	479	595	684	718	682	601	470	350	214
1590	56	-86	-200	-289	-359	-410	-404	-332	-189	26
1600	189	147	3	-138	-291	-475	-523	-566	-602	-636
1610	-671	-700	-698	-640	-534	-402	-288	-197	-122	-64
1620	-34	-50	-116	-170	-193	-171	-12	230	484	801
1630	891	919	851	709	556	392	218	54	-72	-185
1640	-220	-219	-206	-207	-253	-363	-478	-618	-732	-805
1650	-857	-858	-798	-705	-544	-363	-169	-72	-107	-161
1660	-189	-132	-20	83	200	331	500	604	704	772
1670	820	864	839	759	620	481	298	8	-405	-686
1680	-824	-900	-933	-999	-1019	-1077	-1142	-1231	-1294	-1280
1690	-1207	-1096	-898	-523	-149	215	440	539	629	750
1700	816	875	970	1059	1097	1064	987	886	783	653
1710	466	290	117	-63	-256	-463	-608	-673	-723	-751
1720	-757	-739	-669	-552	-301	-78	73	140	142	126
1730	129	151	181	196	187	180	214	278	403	473
1740	489	419	332	232	131	43	-48	-138	-229	-344
1750	-471	-611	-735	-817	-844	-750	-442	-59	184	269
1760	303	345	380	433	478	501	498	464	412	343
1770	265	210	204	261	381	492	601	648	638	600
1780	544	472	395	333	257	187	126	23	-146	-326
1790	-445	-540	-638	-665	-635	-517	-333	-58	192	255
1800	252	186	133	114	195	389	601	768	821	774
1810	677	492	329	199	57	31	84	192	227	179
1820	79	-112	-322	-506	-607	-714	-783	-850	-892	-898
1830	-906	-843	-790	-735	-675	-628	-579	-331	-92	78
1840	142	194	257	364	497	601	685	730	781	818
1850	828	793	695	569	424	213	18	-124	-291	-478
1860	-627	-719	-784	-821	-816	-758	-694	-555	-322	-108
1870	26	64	16	-75	-165	-245	-303	-323	-260	-192
1880	-156	-91	21	155	254	345	385	396	384	353
1890	310	280	198	34	-128	-328	-445	-489	-479	-413
1900	-303	-188	-149	-155	-187	-219	-235	-238	-151	20
1910	142	290	410	462	493	486	456	415	380	362
1920	352	338	323	287	225	128	34	-48	-95	-85
1930	-7	81	109	87	36	-2	-33	-35	-1	29
1940	56	71	63	32	-3	-37	-73	-105	-142	-168
1950	-180	-179	-155	-114	-69	-47	-50	-67	-118	-170
1960	-210	-231	-223	-191	-158	-131	-121	-93	-45	4
1970	61	162	293	369	371	343	302	249	194	146
1980	127	157	213	267	300	314	309	288	245	198
1990	149	70	-17	-65	-93	-137	-206	-289	-376	-481
2000	-557	-583	-567	-524	-413	-238	-36	158	230	238
2010	205	158	127	109	110	127	151	161	153	139
2020	125	96	117	179	344	441	462	419	253	54
2030	-171	-360	-471	-535	-578	-585	-552	-509	-468	-428
2040	-385	-308	-242	-186	-104	-46	7	49	73	133
2050	190	231	251	264	263	263	289	325	353	372
2060	348	293	193	89	-1	-44	-3	71	145	216
2070	254	244	196	121	78	46	31	28	37	44
2080	41	30	18	-5	-36	-86	-135	-175	-187	-175
2090	-160	-153	-158	-158	-152	-143	-131	-121	-116	-107
2100	-92	-73	-41	2	40	69	89	99	108	131

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	183	232	256	257	218	163	105	35	-39	-100
2120	-139	-169	-191	-200	-207	-199	-184	-169	-139	-117
2130	-92	-69	-33	-5	11	24	47	62	41	8
2140	-15	-21	-10	9	15	11	3	-6	-12	-6
2150	0	12	10	0	0	-6	0	16	32	49
2160	74	97	132	175	196	210	194	150	103	33
2170	-13	-65	-107	-167	-191	-205	-236	-269	-284	-282
2180	-259	-246	-224	-204	-187	-179	-167	-160	-150	-135
2190	-120	-95	-59	-49	-54	-70	-86	-97	-73	-5
2200	95	229	279	313	310	277	227	167	98	47
2210	22	10	8	8	-14	-38	-66	-90	-114	-134
2220	-138	-126	-122	-126	-133	-142	-147	-135	-115	-92
2230	-75	-75	-81	-89	-96	-103	-94	-64	-23	9
2240	23	30	38	43	46	52	64	85	108	133
2250	144	133	119	102	102	112	116	110	95	75
2260	62	57	52	40	20	7	-8	-31	-61	-79
2270	-89	-82	-53	-31	-40	-53	-65	-76	-74	-56
2280	-41	-25	3	45	87	129	195	225	224	208
2290	185	151	116	86	75	74	57	49	52	57
2300	72	80	74	75	58	37	-28	-62	-104	-127
2310	-136	-128	-107	-97	-84	-69	-46	-1	49	97
2320	135	147	136	95	73	67	62	42	25	6
2330	-7	-16	-11	4	32	52	66	74	78	72
2340	67	61	49	35	24	26	36	56	77	91
2350	91	79	66	53	51	59	57	52	47	48
2360	54	53	47	40	24	-4	-41	-74	-98	-116
2370	-116	-96	-75	-66	-66	-66	-70	-78	-89	-99
2380	-96	-81	-44	-11	2	-4	-21	-46	-62	-67
2390	-45	-8	43	83	78	61	28	-2	-23	-50
2400	-78	-91	-95	-88	-92	-93	-102	-111	-125	-136
2410	-154	-170	-172	-154	-148	-143	-133	-123	-110	-117
2420	-117	-112	-100	-80	-42	12	27	41	34	16
2430	10	3	17	33	57	77	97	111	120	107
2440	93	78	66	63	82	111	133	148	145	135
2450	117	93	78	67	55	39	15	-7	-47	-103
2460	-135	-159	-183	-215	-240	-256	-262	-247	-211	-174
2470	-144	-125	-121	-115	-107	-89	-59	-12	59	134
2480	195	229	230	213	191	176	177	178	173	167
2490	150	114	76	47	10	-24	-49	-64	-68	-67
2500	-60	-47	-36	-27	-23	-23	-27	-30	-35	-40
2510	-44	-53	-70	-83	-95	-107	-106	-94	-77	-62
2520	-53	-44	-35	-28	-18	-10	0	5	18	33
2530	48	60	75	85	87	77	65	50	38	32
2540	48	64	86	121	150	180	200	205	194	195
2550	202	205	198	178	158	123	81	37	0	-49
2560	-82	-107	-125	-150	-174	-208	-217	-220	-218	-208
2570	-199	-185	-153	-104	-80	-63	-63	-72	-64	-40
2580	-23	12	51	70	78	80	80	92	93	79
2590	66	56	38	22	9	-2	-4	11	27	32
2600	36	38	43	47	44	35	28	23	26	35
2610	43	54	70	84	87	81	69	56	42	29
2620	27	40	49	53	54	48	40	32	21	9
2630	14	19	17	7	-4	-15	-33	-59	-85	-100
2640	-109	-115	-126	-134	-133	-129	-132	-131	-127	-110

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	-90	-81	-64	-45	-19	0	22	43	48	64
2660	66	56	45	46	32	22	9	-3	-15	-20
2670	-7	14	34	44	55	53	44	25	1	-9
2680	-22	-32	-38	-31	-33	-32	-28	-32	-34	-38
2690	-47	-56	-59	-63	-63	-63	-61	-55	-49	-39
2700	-34	-27	-22	-14	-1	12	19	24	21	-2
2710	-44	-71	-89	-104	-101	-82	-56	-28	-13	-13
2720	-9	-8	-4	-2	-1	-1	0	-1	-9	-14
2730	-6	3	24	72	115	135	135	110	74	41
2740	24	24	37	44	54	72	82	73	64	64
2750	69	74	68	61	55	48	37	21	8	5
2760	6	13	26	34	46	54	60	64	66	54
2770	43	29	16	5	-5	-13	-2	8	15	17
2780	11	2	-8	-26	-35	-37	-36	-47	-37	-28
2790	-25	-26	-38	-56	-70	-91	-106	-106	-99	-77
2800	-62	-50	-43	-38	-26	-15	-14	-26	-36	-44
2810	-60	-82	-76	-57	-38	-24	-12	3	7	0
2820	-12	-25	-29	-22	-29	-33	-40	-49	-60	-71
2830	-73	-69	-63	-67	-82	-95	-105	-116	-113	-89
2840	-60	-20	29	57	69	60	35	12	1	8
2850	16	23	30	37	50	67	83	99	107	94
2860	40	-8	-36	-64	-91	-92	-67	-36	-9	5
2870	17	24	26	29	30	26	20	13	7	16
2880	27	41	56	70	74	72	64	54	34	15
2890	-3	-13	-14	-14	-11	-18	-33	-41	-41	-41
2900	-22	0	13	29	44	51	58	70	87	89
2910	106	129	154	189	189	191	170	150	114	64
2920	28	1	-12	-4	2	16	12	11	2	-15
2930	-23	-31	-41	-48	-56	-61	-58	-30	-10	22
2940	53	69	82	93	85	61	47	42	38	24
2950	10	0	-7	-14	-8	14	27	31	32	25
2960	17	5	-1	3	6	3	1	7	14	13
2970	3	-8	-20	-28	-25	-14	3	28	48	60
2980	66	50	30	20	14	12	5	-9	-19	-28
2990	-38	-46	-61	-76	-72	-66	-63	-56	-57	-62
3000	-65	-61	-58	-59	-62	-74	-74	-62	-56	-41
3010	-33	-49	-67	-78	-89	-96	-96	-77	-56	-44
3020	-33	-22	-15	-8	0	14	20	6	-7	-22
3030	-37	-50	-57	-51	-28	-19	-20	-18	-16	-13
3040	-12	-5	-4	-3	-12	-21	-22	-18	-11	12
3050	46	46	74	88	93	86	77	64	47	26
3060	9	0	-15	-28	-32	-46	-57	-54	-47	-37
3070	-28	-21	-10	-3	3	7	2	5	16	30
3080	42	47	54	59	54	49	42	38	40	50
3090	56	54	49	36	7	-21	-42	-50	-39	-25
3100	-15	-9	-11	-11	-11	-16	-21	-25	-31	-38
3110	-36	-30	-25	-17	-11	-12	-19	-17	-7	1
3120	18	43	55	58	54	48	50	59	65	65
3130	59	53	44	31	21	13	12	10	-1	-12
3140	-25	-39	-47	-48	-41	-32	-22	-14	-6	4
3150	11	15	15	6	0	-5	-19	-32	-42	-54
3160	-62	-62	-54	-43	-30	-19	-12	-7	-13	-19
3170	-23	-23	-22	-18	-12	0	5	12	21	31
3180	36	26	15	4	-2	9	24	27	25	15

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	3	-10	-20	-24	-22	-18	-15	-18	-23	-24
3200	-20	-8	6	20	31	42	49	61	70	78
3210	86	87	86	82	71	50	23	0	-8	1
3220	15	16	13	-1	-28	-51	-64	-77	-94	-120
3230	-149	-164	-168	-158	-138	-113	-89	-45	2	31
3240	47	57	63	70	80	91	103	116	125	132
3250	137	135	127	119	107	92	81	71	58	36
3260	9	-15	-32	-39	-39	-47	-52	-52	-52	-46
3270	-32	-17	-2	0	-7	-25	-29	-24	-11	-3
3280	10	10	1	-2	2	9	17	11	7	6
3290	2	0	-2	-3	0	4	10	16	20	26
3300	23	14	-2	-17	-36	-42	-29	-6	9	26
3310	29	31	23	13	3	12	20	23	20	20
3320	21	30	46	64	76	88	84	63	22	-20
3330	-45	-59	-65	-62	-52	-39	-28	-16	-3	5
3340	4	0	0	13	23	32	39	39	33	22
3350	9	-1	3	26	51	66	72	65	43	18
3360	3	-4	-4	0	2	-1	-7	-6	-4	-5
3370	-10	-17	-22	-28	-28	-21	-12	-4	7	22
3380	22	14	7	7	16	25	30	28	27	25
3390	25	25	25	21	16	7	-2	-15	-21	-20
3400	-18	-19	-22	-25	-27	-32	-33	-38	-42	-52
3410	-54	-62	-68	-75	-69	-60	-44	-30	-29	-39
3420	-45	-52	-42	-37	-36	-41	-44	-48	-54	-54
3430	-49	-41	-33	-26	-17	-6	0	5	5	2
3440	5	11	16	20	26	29	24	13	2	-5
3450	-11	-22	-30	-39	-50	-54	-56	-57	-55	-56
3460	-51	-46	-39	-29	-19	-7	4	8	6	6
3470	5	8	14	15	12	5	-1	-8	-16	-25
3480	-31	-33	-39	-48	-53	-54	-53	-50	-45	-37
3490	-31	-28	-24	-22	-20	-15	-9	-3	0	0
3500	7	17	26	44	56	54	36	23	25	26
3510	23	20	12	0	-16	-30	-35	-30	-27	-23
3520	-20	-24	-25	-29	-36	-29	-20	-11	-3	3
3530	9	14	17	14	4	-9	-14	-5	9	17
3540	19	17	14	15	15	24	29	37	46	50
3550	49	36	1	-24	-45	-62	-57	-36	-25	-13
3560	-7	-7	-16	-20	-24	-21	-12	-1	9	20
3570	27	20	15	14	22	27	29	24	17	8
3580	-5	-19	-32	-44	-51	-51	-50	-52	-51	-49
3590	-52	-57	-61	-64	-61	-55	-49	-45	-38	-30
3600	-23	-13	1	26	55	74	80	76	63	47
3610	35	30	35	43	55	63	66	64	61	63
3620	69	76	76	75	73	65	55	47	43	49
3630	55	52	50	42	29	15	0	-11	-20	-19
3640	-22	-26	-22	-24	-24	-27	-29	-31	-33	-38
3650	-48	-57	-61	-58	-53	-45	-38	-30	-27	-32
3660	-28	-23	-19	-11	3	20	51	66	78	86
3670	90	85	75	66	51	38	40	42	32	26
3680	21	11	-2	-11	-17	-12	-6	-3	-3	-8
3690	-13	-20	-28	-31	-30	-34	-36	-33	-26	-17
3700	-11	-4	2	6	9	11	12	11	10	6
3710	0	-2	-5	-12	-22	-29	-33	-34	-30	-21
3720	-10	-1	11	22	28	24	11	-1	-12	-14

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	0	19	31	34	30	21	7	-7	-17	-11
3740	-1	6	10	12	4	-2	-7	-7	-3	6
3750	15	21	15	11	15	21	27	32	31	29
3760	22	22	26	33	33	31	28	22	13	6
3770	5	5	2	-1	-6	-12	-20	-33	-41	-35
3780	-29	-24	-18	-13	-8	-16	-24	-36	-54	-42
3790	-29	-19	-7	0	1	-3	-6	-9	-7	0
3800	12	19	31	44	53	62	60	61	57	53
3810	51	47	43	38	42	44	39	35	25	14
3820	0	-12	-23	-28	-26	-26	-37	-44	-45	-38
3830	-25	-14	-4	-2	-9	-15	-20	-21	-13	-3
3840	4	15	25	22	22	32	42	47	41	32
3850	22	8	-3	-1	1	0	-2	0	0	-2
3860	-6	-10	-16	-21	-19	-12	-4	0	0	-5
3870	-11	-12	-11	-13	-17	-22	-26	-30	-30	-28
3880	-23	-20	-14	-8	-1	4	11	20	29	39
3890	49	47	42	37	26	14	-2	-12	-8	-3
3900	9	3	0	-2	-7	-13	-14	-8	-8	-12
3910	-18	-27	-36	-36	-27	-18	-7	3	3	3
3920	3	0	0	-3	-6	-7	-1	6	12	14
3930	20	16	5	-6	-20	-28	-34	-32	-26	-19
3940	-18	-17	-12	-6	-2	-2	-2	-7	-16	-27
3950	-34	-35	-39	-44	-49	-46	-40	-33	-19	-14
3960	-19	-23	-29	-32	-27	-20	-16	-12	-9	-6
3970	-3	-6	-12	-18	-21	-25	-27	-19	-10	-2
3980	7	12	12	9	4	0	-9	-6	9	16
3990	10	0	-10	-12	-8	3	11	17	27	30
4000	23	16	15	28	44	55	53	47	35	20
4010	1	-7	-12	-17	-13	-8	-2	5	-1	-7
4020	-16	-27	-27	-19	-8	0	10	16	22	17
4030	13	12	10	5	5	5	12	18	28	38
4040	30	22	11	0	-8	-10	-1	11	14	27
4050	27	21	14	10	7	9	23	34	39	46
4060	45	37	24	9	-6	-17	-28	-28	-28	-28
4070	-27	-25	-26	-27	-26	-29	-28	-20	-25	-27
4080	-29	-31	-34	-32	-27	-22	-15	-4	2	5
4090	2	0	1	7	15	23	24	21	18	10
4100	0	-13	-25	-25	-16	-9	-4	-3	-3	-3
4110	-6	-7	-4	2	0	-1	-3	-7	-15	-26
4120	-39	-50	-48	-40	-34	-23	-18	-18	-14	-6
4130	4	15	24	21	17	16	21	26	29	35
4140	43	46	42	40	37	31	26	20	11	2
4150	7	12	15	6	3	1	-3	-8	-11	-4
4160	-3	-7	-7	-11	-19	-27	-29	-28	-23	-19
4170	-12	-7	-1	7	14	21	25	21	20	18
4180	18	17	18	17	14	8	0	-8	-16	-27
4190	-28	-15	-3	-1	-7	-15	-23	-32	-43	-41
4200	-29	-22	-16	-9	0	6	11	14	17	12
4210	3	-4	-12	-20	-24	-23	-20	-18	-18	-15
4220	-9	-5	-1	3	9	11	11	15	19	21
4230	19	14	9	-1	-10	-16	-23	-27	-28	-36
4240	-42	-37	-28	-21	-14	-9	-7	-7	-11	-18
4250	-26	-38	-46	-53	-56	-59	-59	-57	-52	-49
4260	-44	-39	-37	-41	-35	-28	-23	-20	-15	-9

TO BE CONTINUED

CONTINUED(S-1425 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	-4	2	12	20	26	25	27	36	36	30
4280	27	20	23	28	30	21	16	11	1	-6
4290	-3	-2	3	12	18	27	35	31	27	24
4300	22	23	22	20	18	16	12	9	5	0
4310	0	6	11	13	10	0	-14	-13	2	12
4320	10	7	6	3	3	4	0	-2	0	6
4330	11	21	29	37	45	45	44	40	36	30
4340	26	22	12	2	0	-3	-4	-3	0	2
4350	1	1	2	4	6	7	6	3	0	-6
4360	-16	-16	-7	2	10	19	19	14	11	8
4370	7	7	4	3	5	10	16	20	25	26
4380	17	4	-3	-2	-2	-5	-4	-2	-2	-12
4390	-31	-46	-42	-35	-28	-19	-14	-5	4	6
4400	8	5	0	-3	0	-2	-3	-7	-2	-2
4410	2	2	6	7	12	13	13	15	16	15
4420	11	6	8	6	2	0	9	17	22	27
4430	25	20	16	11	7	0	-4	-8	-12	-12
4440	-13	-16	-21	-28	-34	-37	-38	-42	-50	-55
4450	-60	-59	-55	-49	-41	-34	-25	-17	-3	11
4460	15	8	-3	-15	-14	-1	9	16	18	14
4470	10	10	14	18	20	15	6	-3	-10	-23
4480	-38	-48	-52	-50	-39	-30	-24	-17	-10	-5
4490	0	2	8	11	14	17	21	23	27	34
4500	37	36	32	31	28	26	21	13	4	7
4510	8	10	12	15	15	13	10	4	-1	-6
4520	-16	-25	-28	-28	-20	-12	-6	-1	5	12
4530	21	21	22	16	10	3	5	7	11	10
4540	12	16	20	23	27	32	31	15	2	-5

END

RECORD = S-1425 COMPONENT = WEST STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 4500
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3034,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	10	8	5	3	0	-1	-3	-6	-9	-13
10	-17	-20	-24	-27	-28	-30	-31	-32	-25	-18
20	-11	-2	12	27	41	49	57	65	66	67
30	67	57	48	37	24	12	3	-5	-10	-10
40	-8	2	14	24	34	39	44	37	24	16
50	9	8	10	9	8	3	0	5	18	46
60	61	66	45	14	-43	-74	-80	-19	29	34
70	23	9	4	34	81	109	82	30	-24	-43
80	-37	-6	7	0	-28	-50	9	108	199	141
90	63	-7	-49	-85	-77	-64	-60	-52	-34	7
100	50	71	65	36	7	-20	-48	-72	-90	-98
110	-88	-51	39	163	148	61	22	26	39	32
120	2	-33	-67	-73	-62	-38	-23	-17	-22	-38
130	-48	-28	11	70	67	29	-2	-2	0	-3
140	-14	-12	13	54	88	82	36	4	-1	10
150	16	14	-1	-13	0	33	71	61	14	-24
160	-4	50	115	108	65	36	60	102	142	126
170	75	22	-10	-52	-80	-56	0	32	-1	-35
180	-65	-89	-95	-65	6	75	95	100	78	37
190	-65	-126	-168	-181	-153	-109	-65	-56	-45	-15
200	16	70	158	163	108	38	-20	-64	-86	-62
210	-28	-1	30	44	52	63	84	98	91	48
220	0	-63	-134	-215	-231	-188	-136	-41	40	49
230	34	10	-17	-45	-59	-58	-21	28	51	64
240	74	76	78	83	88	86	73	53	29	3
250	-21	-44	-48	-30	-8	7	18	26	36	54
260	74	85	82	67	35	-4	-44	-73	-75	-51
270	-6	34	50	44	24	3	-5	-2	-4	-5
280	-11	-23	-36	-47	-39	-16	14	52	109	150
290	162	137	91	49	-4	-46	-65	-58	-57	-42
300	-18	17	61	104	171	190	191	170	136	99
310	48	4	-29	-69	-123	-175	-194	-190	-172	-135
320	-87	-28	34	73	88	69	48	33	39	44
330	39	29	15	2	-7	-18	-34	-52	-63	-65
340	-59	-31	1	35	53	61	54	40	31	27
350	27	21	-3	-26	-48	-76	-92	-118	-143	-142
360	-125	-95	-61	-40	-31	-32	-27	-4	19	39
370	50	52	48	41	32	26	32	43	47	44
380	35	24	23	25	19	12	9	3	-4	-3
390	7	25	60	88	100	78	36	-17	-61	-87
400	-102	-101	-100	-93	-88	-85	-74	-56	-38	-13
410	19	43	80	116	129	128	111	85	63	49
420	46	48	50	43	31	12	-2	-20	-20	-2
430	19	25	12	0	-20	-34	-29	-26	-32	-45
440	-55	-54	-65	-76	-71	-56	-43	-34	-21	-3
450	17	38	58	72	80	93	95	88	87	79
460	68	49	36	26	18	1	-12	-27	-51	-66
470	-64	-53	-36	-15	-8	-15	-16	-13	-1	13
480	25	33	34	23	2	-19	-32	-27	-18	-8

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	5	12	13	20	40	58	64	53	38	24
500	14	15	24	29	32	24	13	2	-12	-28
510	-43	-51	-50	-53	-53	-50	-49	-49	-52	-62
520	-76	-91	-104	-112	-97	-66	-21	23	55	81
530	98	112	121	129	131	126	123	118	112	92
540	53	18	-45	-80	-93	-94	-68	-46	-29	-11
550	0	7	0	-9	-10	-14	-36	-68	-106	-127
560	-131	-114	-56	-12	50	71	72	83	93	102
570	111	106	106	100	91	86	91	97	105	104
580	97	88	76	55	37	8	-14	-35	-45	-46
590	-44	-45	-49	-52	-54	-50	-40	-30	-31	-27
600	-28	-35	-45	-54	-53	-41	-26	-3	22	50
610	61	63	65	62	53	26	-19	-70	-106	-124
620	-104	-63	-34	-13	-1	3	0	7	24	45
630	68	84	84	63	30	-5	-35	-49	-41	-19
640	2	16	14	12	11	10	6	3	-1	-11
650	-27	-56	-91	-110	-114	-105	-84	-47	-5	36
660	87	141	174	196	214	222	216	189	149	99
670	53	17	-11	-42	-55	-61	-68	-81	-95	-104
680	-121	-115	-87	-51	-16	31	50	70	92	93
690	77	51	47	31	15	9	-3	-11	-16	-16
700	-14	-3	6	20	42	59	70	66	58	39
710	17	-12	-50	-79	-120	-150	-164	-157	-130	-89
720	-44	-24	-2	15	35	49	54	57	55	40
730	25	11	0	-16	-29	-34	-24	-1	21	45
740	64	62	49	37	21	5	4	9	7	1
750	-18	-43	-58	-60	-51	-27	10	41	59	69
760	73	75	73	70	68	63	48	36	34	35
770	36	34	32	29	20	12	4	9	16	17
780	12	1	-9	-18	-14	-2	5	7	1	-5
790	-11	-4	27	56	92	101	87	65	43	19
800	1	-14	-19	-26	-30	-31	-26	-21	-26	-31
810	-44	-45	-26	-14	-16	-25	-34	-40	-45	-37
820	-36	-31	-22	-22	-27	-30	-24	-20	-16	-14
830	-12	-2	11	23	35	50	47	42	38	30
840	21	18	23	29	37	46	44	38	31	23
850	10	-6	-18	-15	0	16	27	20	5	-7
860	-16	-16	-9	-1	7	11	18	24	23	18
870	13	5	0	1	5	14	24	33	37	25
880	9	-4	-13	-4	5	9	8	2	-4	-12
890	-18	-26	-36	-36	-31	-34	-36	-42	-43	-29
900	-13	4	21	33	39	33	20	7	-6	-2
910	8	24	39	47	44	41	38	34	31	37
920	38	41	46	50	56	56	60	55	43	32
930	14	-4	-12	-26	-26	-10	-1	7	17	22
940	11	-3	-15	-24	-30	-38	-48	-42	-40	-36
950	-31	-26	-21	-17	-14	-4	5	15	33	45
960	54	50	39	33	39	42	37	34	30	23
970	14	4	-9	-26	-44	-45	-28	-4	12	19
980	15	-2	-15	-24	-21	-14	-15	-14	-17	-22
990	-27	-25	-17	-10	-1	6	9	5	-1	-5
1000	-11	-19	-27	-32	-28	-25	-20	-2	10	13
1010	16	16	13	11	5	3	0	-4	-8	-17
1020	-28	-35	-46	-54	-40	-18	2	26	58	71

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	67	54	42	36	43	54	63	68	66	69
1040	63	58	56	44	31	19	6	-4	-9	-15
1050	-23	-33	-50	-65	-66	-46	-21	13	42	72
1060	85	76	65	57	46	50	41	34	25	6
1070	-7	-12	-16	-4	6	15	30	44	39	36
1080	36	31	28	26	13	-1	-18	-20	-24	-35
1090	-55	-62	-61	-45	-16	0	18	41	57	62
1100	63	63	59	50	38	20	1	-25	-47	-53
1110	-49	-41	-35	-35	-34	-24	-6	14	35	46
1120	30	1	-18	-35	-51	-58	-45	-27	-18	-18
1130	-21	-13	0	10	23	30	28	24	19	16
1140	12	8	2	-8	-18	-29	-37	-48	-61	-74
1150	-80	-70	-54	-21	5	30	53	68	82	83
1160	77	73	64	54	46	41	30	24	19	16
1170	11	1	-6	-7	-9	2	14	27	44	42
1180	23	-4	-22	-39	-32	-22	-17	-22	-25	-18
1190	0	18	40	63	74	64	54	39	15	8
1200	12	12	11	17	28	36	37	36	40	41
1210	34	26	17	0	-6	-14	-29	-46	-65	-78
1220	-76	-57	-33	-18	1	20	45	66	73	53
1230	24	2	-14	-24	-26	-26	-40	-56	-69	-75
1240	-78	-82	-66	-33	-8	12	35	51	56	47
1250	31	18	14	18	21	21	18	11	0	-8
1260	-20	-28	-21	-8	9	32	52	52	36	15
1270	0	-1	0	-7	-25	-44	-53	-50	-26	-1
1280	20	37	32	22	16	-1	-7	0	9	12
1290	12	9	8	9	11	10	16	16	20	25
1300	20	17	12	10	17	25	33	42	41	27
1310	17	10	-2	-16	-24	-5	9	25	27	29
1320	20	15	12	15	9	11	12	12	8	5
1330	10	13	19	25	30	32	29	20	5	-18
1340	-38	-42	-34	-32	-36	-32	-20	-15	-7	2
1350	5	3	7	7	1	-8	-16	-26	-36	-41
1360	-41	-29	-7	20	38	51	57	53	53	60
1370	62	51	28	9	-4	-24	-48	-64	-77	-81
1380	-82	-84	-92	-99	-104	-99	-82	-60	-28	5
1390	36	63	101	145	185	207	215	200	181	158
1400	136	111	92	76	72	58	33	1	-31	-59
1410	-90	-122	-137	-139	-134	-120	-106	-80	-36	1
1420	15	41	62	68	52	20	-10	-53	-111	-132
1430	-126	-88	-54	-24	-2	13	27	17	15	15
1440	4	-7	-33	-85	-166	-257	-324	-363	-363	-296
1450	-137	89	312	463	652	701	747	760	714	637
1460	564	425	266	118	26	-79	-254	-413	-512	-608
1470	-687	-736	-748	-714	-644	-547	-441	-354	-263	-183
1480	-110	-13	123	326	595	725	712	634	521	404
1490	315	262	241	231	214	191	151	133	143	163
1500	192	233	269	270	217	162	84	-17	-117	-225
1510	-384	-606	-733	-836	-916	-959	-961	-934	-874	-790
1520	-704	-447	-119	110	224	270	263	235	237	261
1530	317	354	377	369	334	276	197	111	45	-43
1540	-111	-178	-227	-257	-316	-384	-411	-390	-287	17
1550	271	389	505	600	638	603	560	479	374	259
1560	124	-39	-147	-257	-270	-206	-100	65	378	498

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	433	292	120	-34	-237	-416	-499	-572	-659	-742
1580	-795	-838	-801	-580	-191	211	717	973	1428	1506
1590	1553	1477	1308	1140	972	804	621	413	226	58
1600	-81	-207	-332	-414	-516	-703	-802	-920	-1022	-1041
1610	-742	-346	49	322	438	500	431	340	233	120
1620	14	-57	-125	-219	-290	-386	-513	-589	-639	-600
1630	-491	-314	0	348	829	982	1063	1056	971	838
1640	662	440	120	-170	-425	-642	-750	-791	-735	-628
1650	-520	-432	-397	-373	-352	-306	-219	-158	-121	-99
1660	-158	-249	-315	-411	-517	-582	-530	-383	-160	161
1670	589	812	904	887	783	629	473	293	44	-248
1680	-423	-602	-772	-923	-988	-1013	-954	-721	-488	-222
1690	88	156	138	109	105	139	168	172	140	72
1700	-15	-107	-217	-292	-325	-267	-152	-2	209	268
1710	217	153	117	73	40	12	-14	-48	-98	-129
1720	-110	-71	-60	-74	-84	-74	-14	93	208	307
1730	388	428	449	534	632	718	768	739	680	637
1740	557	332	156	26	-57	-112	-155	-168	-145	-99
1750	-14	67	127	191	195	147	11	-115	-242	-393
1760	-549	-621	-612	-534	-429	-401	-399	-370	-278	-174
1770	-36	198	351	424	438	393	349	288	236	186
1780	147	119	96	102	116	149	174	195	163	121
1790	26	-125	-332	-498	-626	-690	-656	-543	-413	-278
1800	-128	8	169	359	574	777	890	990	1010	961
1810	847	683	420	133	-268	-532	-647	-831	-889	-779
1820	-637	-352	-60	228	392	515	618	646	586	526
1830	473	430	394	354	317	252	153	35	-148	-262
1840	-330	-404	-461	-511	-546	-484	-346	-116	144	291
1850	301	231	141	54	-23	-71	-107	-185	-307	-444
1860	-583	-695	-814	-910	-961	-904	-790	-578	-333	1
1870	294	475	537	534	482	447	384	306	219	149
1880	83	8	-66	-152	-195	-217	-242	-212	-173	-140
1890	-106	-97	-107	-119	-113	-66	-2	46	71	45
1900	4	-42	-75	-118	-133	-98	-70	-56	-20	6
1910	40	69	103	112	60	16	-30	-37	22	125
1920	180	178	74	15	-95	-192	-219	-190	-58	121
1930	180	196	191	185	188	190	184	168	119	72
1940	24	-34	-85	-152	-190	-217	-248	-267	-241	-164
1950	-50	69	130	171	177	182	174	163	152	143
1960	138	119	92	62	28	2	-24	-43	-48	-62
1970	-81	-90	-78	-37	13	84	158	212	254	271
1980	241	185	99	-10	-111	-198	-271	-355	-402	-436
1990	-450	-429	-330	-141	107	331	434	479	518	535
2000	527	501	462	417	293	175	17	-152	-256	-318
2010	-372	-421	-448	-475	-488	-458	-416	-383	-355	-287
2020	-200	-117	-68	-29	11	71	151	245	336	359
2030	362	315	221	141	76	13	-26	-34	0	30
2040	54	67	84	115	161	218	345	408	430	410
2050	352	278	175	51	-53	-173	-265	-355	-448	-516
2060	-570	-598	-609	-572	-529	-480	-428	-352	-253	-172
2070	-126	-80	-24	48	155	220	217	176	147	120
2080	119	127	128	113	83	48	12	-43	-87	-69
2090	-22	18	44	44	29	3	-21	-30	-38	-42
2100	-37	-21	15	69	113	137	131	93	47	8

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	-30	-63	-70	-50	-29	-23	-33	-68	-108	-147
2120	-178	-191	-175	-109	-26	17	24	19	2	-8
2130	-11	-16	-23	-34	-54	-77	-93	-108	-121	-124
2140	-97	-55	-7	42	100	171	225	258	305	333
2150	347	386	411	434	443	423	383	325	239	150
2160	80	17	-12	-10	4	2	4	12	24	54
2170	100	133	151	141	70	16	-36	-95	-182	-260
2180	-336	-414	-447	-444	-418	-377	-286	-110	106	173
2190	229	258	256	223	198	185	176	169	157	142
2200	112	67	22	-22	-59	-71	-49	-7	26	76
2210	128	179	214	212	191	158	119	83	52	33
2220	23	4	-33	-86	-152	-228	-296	-333	-354	-343
2230	-325	-315	-305	-295	-287	-281	-281	-267	-238	-212
2240	-179	-145	-110	-78	-53	-23	2	7	2	-7
2250	-14	-21	-26	-28	-12	9	33	58	74	93
2260	116	140	157	160	147	123	101	78	80	78
2270	72	54	32	13	1	-13	-28	-33	-23	-15
2280	-10	2	16	27	46	57	79	95	101	91
2290	62	23	1	-26	-68	-101	-120	-119	-102	-95
2300	-89	-81	-89	-87	-94	-96	-90	-84	-75	-71
2310	-78	-90	-96	-97	-78	-60	-49	-39	-36	-46
2320	-57	-68	-71	-53	-34	-11	13	20	23	46
2330	71	102	120	136	154	169	179	187	184	177
2340	164	145	123	95	46	-9	-46	-92	-132	-141
2350	-124	-78	-30	10	47	55	52	47	37	27
2360	9	-28	-76	-113	-131	-144	-159	-172	-159	-133
2370	-102	-63	-18	6	11	18	25	28	33	44
2380	55	67	81	97	108	121	140	151	158	158
2390	149	135	120	108	100	93	88	82	73	48
2400	29	15	-4	-7	2	9	13	10	3	-8
2410	-23	-56	-75	-86	-95	-101	-112	-129	-140	-156
2420	-165	-167	-174	-170	-157	-149	-140	-136	-150	-160
2430	-167	-153	-138	-119	-104	-90	-84	-84	-85	-77
2440	-64	-54	-38	-23	-7	8	30	49	66	81
2450	91	82	68	51	39	33	23	9	-2	-12
2460	-21	-33	-48	-44	-14	24	81	141	155	127
2470	73	22	-30	-67	-82	-94	-103	-113	-127	-138
2480	-148	-143	-130	-114	-95	-76	-58	-44	-38	-41
2490	-49	-59	-65	-71	-88	-107	-121	-125	-109	-81
2500	-20	27	60	83	102	101	104	118	124	108
2510	82	49	18	-9	-26	-25	-25	-32	-27	-21
2520	-18	-22	-25	-16	-11	2	18	34	46	63
2530	68	68	59	49	29	7	-8	-19	-17	-7
2540	-7	-16	-21	-24	-20	-4	10	25	40	51
2550	55	52	65	68	63	62	56	52	55	56
2560	45	25	10	1	-10	-18	-18	1	23	39
2570	55	76	115	166	227	266	276	256	211	174
2580	132	88	51	9	-16	-40	-75	-116	-148	-174
2590	-182	-158	-116	-76	-40	-25	-22	-21	-9	2
2600	9	1	-17	-35	-52	-68	-80	-88	-92	-74
2610	-35	-5	10	19	23	15	9	21	46	66
2620	83	91	78	53	22	-9	-62	-117	-148	-151
2630	-142	-140	-144	-145	-149	-143	-136	-121	-89	-59
2640	-5	43	79	98	101	91	72	51	23	3

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	-21	-49	-69	-84	-78	-64	-53	-40	-39	-39
2660	-48	-59	-66	-79	-93	-101	-101	-84	-61	-40
2670	-41	-25	-15	0	8	7	21	38	62	72
2680	89	97	90	86	72	49	35	23	9	5
2690	6	5	-13	-33	-51	-67	-89	-98	-82	-59
2700	-33	3	30	31	32	35	44	45	37	31
2710	18	1	-18	-35	-47	-63	-82	-101	-117	-130
2720	-130	-121	-113	-99	-81	-60	-31	8	47	81
2730	99	86	54	24	1	-16	-18	-18	-28	-34
2740	-40	-47	-45	-29	-9	5	23	34	42	50
2750	53	46	31	8	-21	-48	-76	-101	-120	-137
2760	-153	-143	-131	-108	-102	-113	-116	-111	-99	-90
2770	-70	-50	-32	-18	-20	-21	-25	-27	-23	-25
2780	-15	0	18	44	64	108	134	136	121	111
2790	118	123	123	111	95	73	48	13	-13	-52
2800	-85	-102	-116	-124	-122	-109	-97	-73	-60	-60
2810	-60	-56	-43	-15	2	23	31	30	21	9
2820	0	-7	8	25	49	73	86	101	112	110
2830	88	70	46	23	-9	-43	-61	-54	-25	-1
2840	8	18	22	21	14	3	-6	-13	-25	-30
2850	-44	-63	-70	-74	-68	-55	-30	-2	15	29
2860	46	63	74	76	82	93	93	88	74	49
2870	22	-23	-67	-92	-90	-75	-57	-39	-33	-27
2880	-22	-14	2	26	54	62	52	32	10	-9
2890	-20	-30	-39	-49	-45	-33	-15	7	44	77
2900	102	106	84	43	13	-12	-28	-53	-60	-65
2910	-81	-93	-114	-140	-161	-155	-145	-135	-128	-105
2920	-86	-64	-30	-18	-1	0	10	23	31	48
2930	66	66	60	50	39	20	-2	-21	-31	-36
2940	-40	-44	-41	-46	-47	-49	-50	-50	-50	-48
2950	-49	-56	-64	-71	-81	-97	-115	-126	-130	-123
2960	-98	-47	18	66	118	145	145	134	116	88
2970	59	34	-5	-50	-77	-84	-65	-28	10	46
2980	79	97	100	88	65	45	22	-2	-32	-60
2990	-81	-96	-103	-107	-105	-101	-93	-83	-68	-53
3000	-36	-23	-21	-28	-36	-47	-61	-74	-84	-93
3010	-87	-67	-58	-47	-46	-49	-50	-48	-54	-63
3020	-72	-83	-90	-94	-94	-78	-64	-53	-34	-10
3030	8	4	4	10	32	63	81	99	116	126
3040	126	126	127	142	148	148	146	140	129	119
3050	116	116	110	105	98	84	60	30	4	-17
3060	-28	-35	-41	-43	-48	-57	-77	-95	-109	-105
3070	-93	-81	-74	-72	-68	-66	-67	-69	-67	-60
3080	-49	-36	-17	3	20	31	45	56	61	59
3090	62	73	86	99	105	103	88	63	44	37
3100	39	49	54	50	43	32	19	10	5	5
3110	10	16	20	19	15	7	-9	-31	-57	-76
3120	-90	-102	-103	-98	-80	-52	-39	-21	-6	-3
3130	-6	2	17	34	46	58	61	56	43	33
3140	24	14	2	0	6	20	32	67	96	116
3150	136	138	131	108	91	63	34	-5	-49	-75
3160	-102	-117	-122	-122	-113	-93	-64	-37	12	26
3170	41	45	45	35	31	21	10	-12	-23	-27
3180	-27	-32	-46	-69	-84	-81	-60	-23	0	13

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	24	38	46	53	50	49	45	38	28	7
3200	-23	-49	-73	-90	-96	-90	-71	-51	-37	-28
3210	-23	-17	-1	13	22	22	19	12	1	-20
3220	-46	-65	-74	-72	-64	-46	-19	10	49	89
3230	115	124	124	119	106	94	81	69	54	37
3240	29	27	24	14	-2	-26	-47	-55	-54	-50
3250	-40	-30	-25	-24	-25	-20	-13	-2	21	38
3260	45	46	41	25	-1	-24	-42	-60	-82	-101
3270	-119	-125	-119	-107	-93	-78	-56	-43	-32	-23
3280	-7	4	15	15	11	4	-2	-6	-3	1
3290	3	11	18	21	25	32	39	49	61	76
3300	93	86	78	64	48	41	47	56	67	62
3310	66	66	63	59	53	47	33	7	-16	-35
3320	-39	-27	-12	-16	-24	-37	-58	-72	-65	-47
3330	-37	-35	-38	-39	-40	-31	-18	1	22	34
3340	39	45	59	73	90	109	114	110	102	91
3350	82	77	69	48	17	-12	-37	-53	-54	-44
3360	-32	-21	-22	-35	-51	-65	-60	-37	-22	-24
3370	-33	-43	-54	-66	-59	-46	-32	-16	-2	10
3380	16	27	32	45	46	42	39	34	19	0
3390	-21	-43	-57	-52	-47	-39	-32	-25	-18	-7
3400	5	15	23	33	48	60	57	50	39	23
3410	8	1	-8	-6	-7	-17	-28	-44	-64	-80
3420	-102	-118	-119	-121	-122	-124	-123	-117	-105	-92
3430	-76	-64	-63	-55	-47	-39	-26	-9	17	31
3440	31	24	20	13	7	9	17	20	19	17
3450	18	26	37	49	64	78	77	69	62	56
3460	46	38	32	21	9	-2	-16	-22	-13	0
3470	22	43	57	55	48	42	34	16	-13	-39
3480	-54	-68	-80	-84	-83	-74	-65	-56	-39	-14
3490	11	38	56	68	82	90	90	86	70	53
3500	41	33	20	7	0	-2	-2	-3	-5	-11
3510	-16	-17	-10	-4	5	14	26	33	33	27
3520	19	24	25	27	27	26	24	16	3	-12
3530	-26	-38	-45	-41	-34	-26	-13	-2	-3	-3
3540	3	11	28	47	69	86	100	98	75	57
3550	48	38	31	26	20	7	-7	-28	-39	-36
3560	-29	-27	-20	-12	-4	11	25	43	56	63
3570	71	70	67	64	60	54	44	26	1	-21
3580	-42	-54	-54	-53	-48	-43	-36	-21	-10	1
3590	22	43	52	45	38	24	3	-17	-31	-39
3600	-42	-46	-52	-57	-62	-61	-53	-45	-31	-12
3610	5	18	22	21	20	18	14	8	2	-6
3620	-15	-27	-36	-37	-31	-27	-19	-17	-13	-10
3630	-7	0	24	48	71	82	76	54	35	23
3640	14	5	-2	-11	-21	-28	-37	-38	-34	-32
3650	-36	-40	-42	-42	-38	-20	2	32	57	59
3660	50	34	17	6	-4	-4	-4	-9	-18	-32
3670	-48	-58	-63	-36	-13	-3	8	14	22	32
3680	39	41	37	31	19	6	-16	-41	-55	-66
3690	-63	-53	-44	-34	-21	-12	-7	0	12	25
3700	37	46	44	36	25	1	-34	-61	-78	-83
3710	-75	-64	-57	-53	-47	-37	-24	-9	10	35
3720	52	57	52	47	36	17	-2	-20	-33	-37

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	-36	-31	-27	-20	-10	2	15	28	34	34
3740	34	34	33	30	25	21	15	6	-5	-17
3750	-21	-21	-22	-26	-26	-23	-21	-21	-17	-12
3760	-1	11	23	28	23	25	22	21	21	21
3770	21	20	17	13	13	12	10	8	15	21
3780	26	21	13	7	-5	-16	-27	-31	-21	-11
3790	-9	-9	-13	-16	-12	-9	-7	-6	-4	-4
3800	-4	-4	-6	-8	-19	-24	-25	-21	-20	-17
3810	-12	-8	-4	1	4	6	7	8	6	0
3820	-6	-13	-21	-30	-33	-20	-2	18	23	26
3830	29	40	52	58	60	57	50	40	29	19
3840	11	8	4	-3	-14	-25	-35	-45	-45	-40
3850	-36	-32	-28	-22	-17	-14	-12	-4	-4	-10
3860	-14	-19	-16	-10	-5	2	10	16	14	15
3870	24	33	35	34	33	33	29	22	13	7
3880	0	-9	-19	-29	-43	-56	-68	-63	-50	-34
3890	-15	4	10	7	1	-2	-7	-12	-20	-22
3900	-17	-9	0	11	18	30	22	13	5	2
3910	21	27	26	20	12	2	-6	-19	-31	-37
3920	-30	-23	-23	-23	-28	-36	-40	-37	-27	-12
3930	-2	6	12	14	17	13	13	12	11	5
3940	-1	-10	-17	-28	-35	-38	-39	-37	-32	-25
3950	-14	-2	17	38	52	53	47	43	38	33
3960	29	24	16	4	-10	-26	-38	-42	-39	-33
3970	-22	-13	-3	7	19	28	29	27	26	24
3980	17	10	5	0	-6	-10	-12	-13	-16	-12
3990	-6	0	7	12	18	28	37	46	56	53
4000	45	37	26	14	-2	-10	-5	5	10	13
4010	9	4	0	-1	2	12	15	20	23	25
4020	16	5	-9	-29	-33	-27	-13	-1	6	1
4030	-1	-3	-8	-13	-12	-6	-3	1	4	14
4040	21	21	16	7	-2	-11	-17	-19	-24	-24
4050	-22	-16	-7	2	10	21	32	33	31	22
4060	12	-2	-11	-21	-33	-48	-61	-77	-86	-77
4070	-67	-57	-42	-37	-37	-35	-27	-17	-7	1
4080	5	0	1	2	4	9	16	23	31	36
4090	30	27	29	32	33	32	32	32	30	23
4100	17	12	6	0	-8	-15	-20	-22	-16	-7
4110	3	13	16	10	3	-5	-15	-14	-9	2
4120	10	5	-3	-9	-11	-3	8	23	36	44
4130	46	42	36	32	27	26	23	19	14	8
4140	1	0	2	7	11	19	27	31	31	27
4150	17	9	-2	-15	-23	-32	-42	-44	-56	-58
4160	-66	-66	-57	-42	-30	-15	-9	-8	-4	-4
4170	-2	4	19	35	50	60	58	52	57	61
4180	71	76	74	68	62	56	44	36	35	35
4190	32	27	21	14	2	-15	-35	-53	-63	-58
4200	-46	-40	-42	-52	-62	-73	-84	-88	-83	-68
4210	-51	-35	-21	-9	3	20	31	37	40	40
4220	39	36	29	23	22	25	29	32	35	35
4230	33	26	16	0	-14	-25	-34	-36	-34	-33
4240	-29	-23	-15	-3	7	19	31	35	32	24
4250	6	-9	-23	-27	-24	-23	-19	-17	-17	-18
4260	-18	-19	-20	-22	-23	-24	-24	-15	-4	5

TO BE CONTINUED

CONTINUED(S-1425 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	14	11	1	-6	-12	-22	-35	-41	-47	-54
4280	-46	-37	-29	-17	-11	0	1	-2	-2	1
4290	3	-1	2	8	10	6	3	1	2	8
4300	11	13	21	28	36	46	56	57	48	44
4310	36	26	24	28	34	36	38	45	49	51
4320	49	43	39	32	22	11	11	19	22	17
4330	10	3	0	5	13	21	32	43	53	61
4340	62	60	56	53	53	51	45	38	30	18
4350	7	-3	-10	-14	-17	-23	-30	-35	-37	-31
4360	-19	-7	2	5	-4	-14	-25	-37	-44	-39
4370	-26	-16	-14	-12	-12	-16	-18	-11	0	10
4380	20	25	18	15	19	23	29	34	46	53
4390	51	40	29	18	11	1	-12	-23	-33	-46
4400	-57	-68	-78	-92	-84	-81	-74	-59	-42	-28
4410	-20	-10	-2	3	2	1	-7	-16	-23	-31
4420	-36	-27	-17	-15	-10	-3	1	4	9	14
4430	16	20	20	16	12	8	3	-2	-4	-7
4440	-1	5	13	19	23	24	22	9	-2	-17
4450	-31	-38	-38	-36	-32	-29	-28	-22	-12	-3
4460	4	4	0	-5	-10	-7	-1	5	12	10
4470	7	4	-1	-7	-13	-17	-14	-10	-5	0
4480	6	13	19	27	37	45	52	54	52	50
4490	45	36	28	17	5	-8	-18	-19	-13	-9

END

RECORD = S-1425 COMPONENT = DOWN STATION = MURORAN-S
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 4550
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL.
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3042,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
20	0	0	-8	1	12	33	55	77	66	54
30	42	21	0	-20	-43	-65	-71	-76	-69	-51
40	-34	-30	-26	-30	-34	-28	-18	-7	4	3
50	-3	-11	-19	-21	-21	0	28	76	103	89
60	73	54	38	27	51	68	81	77	67	50
70	39	32	37	20	-12	-70	-80	-65	-45	-41
80	-44	-49	-80	-87	-64	-29	-9	-2	-10	-31
90	-32	-26	-24	-32	-94	-131	-118	-82	-33	-17
100	-25	-35	-42	-48	-92	-130	-139	-134	-126	-121
110	-113	-95	-65	-32	-18	0	32	67	83	66
120	26	-3	-16	-10	-8	-16	-28	-17	13	77
130	156	139	100	67	60	48	41	29	6	-10
140	-4	35	73	88	89	66	21	-21	-41	-47
150	-34	-23	-21	-21	-19	-20	-33	-50	-55	-36
160	-9	71	71	15	-20	-37	-39	-34	-33	-37
170	-47	-61	-60	-50	-48	-41	-34	-28	-23	-20
180	-16	-19	-19	-13	-16	-21	-6	0	8	26
190	14	-15	-34	-38	-34	-29	-30	-30	-14	15
200	21	17	12	20	33	34	29	20	3	1
210	0	-7	-14	-20	-14	-4	6	12	12	13
220	10	4	10	15	6	-4	-12	-22	-30	-26
230	-3	11	1	-15	-28	-38	-47	-48	-46	-40
240	-28	-8	4	2	-8	-21	-22	-22	-24	-34
250	-54	-72	-92	-95	-73	-48	-34	-32	-34	-37
260	-41	-44	-33	-20	9	45	57	55	54	50
270	46	43	40	32	25	21	28	39	43	54
280	55	51	45	36	25	19	22	23	23	16
290	6	-5	-19	-26	-29	-23	-20	-13	-7	9
300	16	14	10	5	-2	1	12	18	32	34
310	33	28	15	5	-1	-6	-17	-25	-34	-40
320	-49	-59	-63	-65	-59	-47	-38	-21	-10	3
330	10	8	3	-3	-10	-19	-32	-35	-21	-12
340	-1	-6	-24	-36	-45	-50	-49	-37	-23	-7
350	4	4	-2	-11	-23	-32	-28	-27	-39	-53
360	-66	-74	-74	-73	-61	-44	-23	10	45	65
370	74	72	64	52	36	17	2	-6	-15	-19
380	-7	14	42	65	70	65	59	55	55	55
390	48	31	11	-15	-41	-44	-34	-29	-28	-28
400	-35	-42	-45	-38	-30	-30	-30	-30	-21	-5
410	9	18	31	36	31	21	-2	-16	-22	-27
420	-38	-47	-50	-49	-48	-43	-34	-30	-17	-15
430	-25	-34	-39	-37	-29	-23	-10	1	13	19
440	5	-2	-8	-15	-20	-22	-20	-5	13	31
450	30	34	32	28	13	-1	-11	-12	0	6
460	3	0	4	7	9	10	8	1	-2	2
470	22	54	71	60	44	30	22	19	11	5
480	-5	-17	-26	-32	-33	-32	-35	-39	-47	-42

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-26	-8	10	18	13	3	-7	-19	-29	-40
500	-48	-56	-54	-41	-28	-13	-3	-4	-15	-29
510	-42	-48	-39	-29	-22	-14	-4	8	16	17
520	15	9	-5	-29	-56	-71	-70	-70	-67	-59
530	-46	-36	-22	-6	3	12	12	25	41	64
540	76	82	78	67	52	41	38	46	44	36
550	30	30	24	14	0	-16	-28	-34	-38	-54
560	-57	-63	-59	-44	-32	-16	5	27	33	33
570	45	48	40	38	38	31	22	15	3	-8
580	-29	-54	-66	-71	-65	-64	-60	-56	-49	-42
590	-36	-27	-11	1	7	5	2	2	4	4
600	4	4	2	-3	-11	-16	-12	-17	-22	-22
610	-13	6	21	34	45	40	30	22	16	10
620	3	-6	-15	-23	-33	-38	-32	-18	7	40
630	56	59	61	64	66	68	69	60	44	23
640	5	-5	-9	-9	-7	-5	-2	0	3	10
650	14	20	25	30	32	29	26	20	13	5
660	1	4	9	10	10	6	-1	-9	-5	1
670	6	4	-1	-5	-10	0	0	3	4	5
680	5	5	8	10	12	12	2	-4	-22	-33
690	-34	-30	-23	-17	-11	-1	5	13	25	30
700	29	35	37	37	37	36	31	23	13	3
710	4	11	19	17	10	2	-3	-4	2	21
720	41	60	66	62	55	46	39	40	41	40
730	39	36	30	26	21	15	8	1	-15	-38
740	-40	-29	-11	7	27	43	52	56	50	41
750	31	19	11	12	12	6	1	-9	-17	-21
760	-21	-11	-2	8	22	27	25	21	22	19
770	17	13	0	-12	-25	-34	-37	-30	-29	-35
780	-45	-53	-58	-59	-51	-33	-25	-17	-12	-6
790	-1	-2	-7	-15	-21	-28	-36	-44	-38	-26
800	-6	11	18	1	-12	-21	-28	-33	-30	-25
810	-24	-22	-12	-12	-14	-15	-21	-28	-45	-54
820	-49	-47	-48	-48	-47	-36	-23	-15	-5	-7
830	-12	-13	-15	-18	-24	-24	-23	-19	-14	-9
840	1	15	16	11	1	-17	-44	-43	-37	-34
850	-32	-33	-36	-40	-44	-42	-41	-43	-46	-49
860	-49	-49	-46	-40	-32	-25	-11	7	20	23
870	21	19	16	13	13	10	4	-2	-9	-5
880	-1	0	2	2	-1	-7	-14	-22	-33	-35
890	-29	-27	-28	-28	-31	-36	-41	-51	-58	-55
900	-43	-39	-29	-22	-12	0	2	3	-7	-16
910	-22	-33	-41	-42	-36	-24	-10	-1	-5	-11
920	-19	-24	-24	-30	-34	-34	-33	-37	-42	-48
930	-57	-53	-49	-47	-49	-43	-47	-49	-49	-42
940	-43	-49	-53	-55	-54	-48	-33	-21	-21	-23
950	-25	-29	-27	-22	-21	-23	-29	-36	-44	-51
960	-58	-58	-56	-53	-50	-48	-48	-47	-46	-49
970	-51	-57	-61	-64	-63	-59	-56	-50	-43	-43
980	-40	-32	-26	-24	-26	-25	-19	-12	-7	-3
990	0	-1	-6	-14	-19	-22	-22	-28	-36	-39
1000	-35	-21	-12	-8	-5	-7	-13	-20	-24	-30
1010	-35	-36	-33	-28	-22	-17	-13	-8	-2	1
1020	6	8	8	2	-4	-9	-19	-25	-31	-44

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-46	-41	-34	-32	-32	-31	-30	-28	-25	-23
1040	-22	-32	-39	-47	-55	-66	-64	-63	-63	-61
1050	-50	-40	-34	-28	-23	-22	-16	-11	-15	-19
1060	-19	-22	-24	-28	-32	-32	-30	-25	-23	-20
1070	-15	-12	-16	-22	-22	-23	-28	-28	-27	-26
1080	-26	-11	-18	-23	-21	-16	-13	-16	-17	-19
1090	-22	-22	-22	-19	-19	-18	-16	-14	-11	-9
1100	-5	0	1	-2	-5	-10	-14	-17	-17	-19
1110	-22	-23	-24	-24	-25	-24	-23	-19	-9	0
1120	0	-3	-7	-10	-10	-10	-12	-19	-23	-23
1130	-25	-28	-28	-24	-19	-13	-5	0	3	5
1140	5	6	7	5	4	1	-3	-6	-9	-6
1150	-1	-2	-4	-4	-5	-5	-5	-1	5	13
1160	18	19	10	3	-3	-9	-15	-14	-14	-12
1170	-11	-10	-10	-10	-10	2	11	21	26	28
1180	28	23	20	24	27	24	18	11	2	-5
1190	-10	-12	-10	0	2	-1	-5	-13	-16	-10
1200	-7	-5	-3	2	-2	-7	-12	-12	-3	3
1210	8	13	10	2	-2	-7	-9	-5	-2	0
1220	0	-5	-12	-18	-19	-14	-18	-24	-27	-19
1230	-8	1	9	11	4	-2	-4	-5	-6	-9
1240	-17	-28	-33	-28	-20	-13	-6	0	1	0
1250	-3	-8	-10	-11	-15	-17	-13	-7	-5	-9
1260	-11	-7	-1	-1	-8	-11	-19	-27	-28	-28
1270	-31	-34	-34	-28	-19	-6	-2	-1	11	11
1280	4	3	0	-8	-11	-16	-22	-28	-30	-29
1290	-29	-29	-25	-23	-20	-12	-10	-6	-4	-10
1300	-12	-19	-22	-24	-24	-24	-22	-17	-16	-4
1310	5	4	-2	-5	-4	-5	-12	-16	-18	-22
1320	-24	-29	-28	-21	-9	2	17	17	13	7
1330	0	-5	-4	0	1	8	14	14	11	4
1340	0	-6	-18	-27	-32	-27	-21	-18	-13	-10
1350	-6	-2	2	3	7	12	12	11	9	9
1360	10	7	2	-2	-7	-7	-4	-3	0	0
1370	-3	-12	-20	-23	-20	-14	-8	-1	2	2
1380	0	-7	-13	-19	-27	-33	-37	-38	-38	-40
1390	-40	-33	-25	-14	-10	-10	-10	-10	-15	-21
1400	-25	-28	-32	-37	-41	-44	-52	-58	-60	-60
1410	-59	-58	-52	-46	-32	-23	-7	3	17	35
1420	39	34	19	9	10	3	2	8	16	25
1430	24	18	2	-11	-33	-48	-53	-44	-28	-13
1440	8	27	19	12	-3	-22	-30	-28	-25	-23
1450	-28	-28	-27	-20	-9	1	9	6	11	20
1460	30	42	48	45	33	11	-8	-18	-22	-26
1470	-35	-44	-52	-55	-52	-49	-47	-41	-30	-23
1480	-26	-32	-35	-30	-17	1	30	49	57	62
1490	63	64	63	63	62	54	29	-12	-78	-144
1500	-188	-212	-217	-221	-216	-206	-193	-178	-173	-173
1510	-155	-130	-106	-64	-24	2	36	73	97	109
1520	124	129	140	142	128	112	92	80	59	32
1530	3	-28	-38	-43	-40	-15	-3	-5	-15	-20
1540	-29	-29	-28	-34	-39	-43	-48	-55	-46	-19
1550	26	73	107	119	117	123	116	92	66	25
1560	-8	-19	-21	-24	-31	-46	-62	-63	-53	-37

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-29	-21	-8	-2	2	16	33	56	79	81
1580	61	33	9	7	17	32	48	72	100	114
1590	113	108	90	64	40	31	21	12	3	-15
1600	-50	-89	-121	-145	-154	-131	-58	16	45	56
1610	77	101	122	137	131	136	160	184	209	234
1620	263	276	271	262	258	237	208	130	40	-11
1630	-26	-23	-14	-7	-5	-11	-35	-65	-113	-172
1640	-229	-261	-265	-254	-232	-209	-188	-155	-71	18
1650	71	86	96	121	165	210	328	334	340	339
1660	328	302	267	243	210	140	68	53	43	31
1670	-17	-66	-134	-162	-168	-178	-188	-191	-206	-223
1680	-224	-233	-235	-230	-215	-186	-165	-166	-171	-159
1690	-125	-48	171	286	310	293	240	177	121	88
1700	88	121	149	166	156	140	121	94	56	7
1710	-62	-155	-224	-271	-323	-348	-357	-362	-364	-360
1720	-338	-293	-238	-165	-56	37	105	216	277	329
1730	383	389	369	335	288	251	236	228	215	194
1740	163	117	69	12	-99	-265	-354	-426	-440	-435
1750	-401	-323	-239	-114	6	85	133	155	162	150
1760	95	14	-45	-64	-69	-65	-57	-20	1	10
1770	37	117	263	297	298	267	219	155	97	16
1780	-87	-193	-264	-292	-290	-274	-229	-147	-59	-23
1790	6	22	36	47	58	50	72	91	102	98
1800	85	77	69	79	99	157	231	258	280	294
1810	295	251	176	104	23	-80	-183	-276	-311	-332
1820	-321	-264	-169	1	103	174	200	212	217	208
1830	190	174	137	79	9	-48	-130	-162	-180	-195
1840	-207	-202	-175	-122	-52	-5	21	40	57	68
1850	70	61	55	46	34	31	38	49	53	54
1860	57	59	59	62	67	71	75	82	100	120
1870	140	160	167	156	127	87	49	6	-46	-100
1880	-134	-147	-152	-153	-154	-163	-173	-184	-187	-177
1890	-146	-109	-62	14	80	116	131	137	147	155
1900	161	159	153	137	107	17	-69	-128	-204	-260
1910	-278	-263	-192	-13	106	135	168	195	182	185
1920	208	230	228	203	146	77	20	-19	-46	-59
1930	-91	-100	-99	-106	-114	-115	-113	-113	-118	-125
1940	-123	-110	-83	-65	-40	11	56	82	112	159
1950	203	230	244	257	249	222	180	141	96	51
1960	5	-42	-82	-115	-146	-165	-172	-165	-153	-136
1970	-122	-115	-107	-89	-58	-26	-4	14	23	25
1980	24	17	4	-4	-10	-16	-21	-29	-39	-49
1990	-62	-77	-98	-121	-140	-143	-127	-95	-59	-26
2000	1	27	57	106	134	131	126	116	100	89
2010	73	64	62	58	52	53	54	47	59	76
2020	99	118	111	95	77	53	32	16	6	5
2030	0	-6	5	21	38	51	53	39	12	-13
2040	-17	-17	-20	-24	-24	-24	-20	-15	-9	3
2050	14	25	39	67	87	80	41	15	-19	-57
2060	-94	-106	-111	-99	-84	-57	-35	-18	-6	0
2070	1	23	48	71	96	113	109	102	89	75
2080	64	52	38	23	17	19	28	41	48	48
2090	45	37	29	21	15	7	-3	-24	-45	-64
2100	-72	-60	-34	-1	44	75	71	56	43	31

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	11	-11	-23	-33	-44	-57	-68	-78	-92	-106
2120	-113	-112	-109	-109	-99	-81	-63	-46	-29	-8
2130	18	42	72	104	149	187	206	209	196	184
2140	161	153	145	129	117	103	100	93	91	91
2150	91	90	82	75	65	56	45	36	25	2
2160	-29	-50	-81	-110	-129	-144	-153	-145	-135	-130
2170	-128	-115	-98	-87	-60	-24	-7	29	51	51
2180	49	52	62	70	70	74	81	79	75	73
2190	68	66	62	52	28	15	9	7	-1	-9
2200	-16	-26	-34	-30	-17	-5	9	7	3	0
2210	-3	2	15	27	43	67	86	103	113	109
2220	106	104	96	81	62	35	-1	-29	-37	-32
2230	-22	-8	0	0	-8	-21	-35	-45	-50	-52
2240	-53	-57	-62	-68	-67	-59	-49	-37	-25	-10
2250	4	25	45	76	96	91	82	76	68	64
2260	60	55	48	51	51	51	53	51	55	57
2270	57	61	66	65	53	38	22	15	24	26
2280	22	16	8	1	-4	-12	-21	-29	-21	-15
2290	-13	-11	-9	-12	-10	-7	-3	4	4	0
2300	-3	-5	-13	-14	-18	-19	-13	-8	7	25
2310	37	44	47	54	61	62	67	71	76	76
2320	72	50	26	4	-9	-18	-30	-35	-32	-11
2330	2	14	25	24	22	26	29	28	22	16
2340	7	-1	-5	-1	8	16	26	41	51	42
2350	30	19	9	1	-4	-9	-20	-33	-43	-53
2360	-55	-51	-50	-45	-34	-20	-3	16	31	38
2370	49	64	80	89	94	88	80	74	62	49
2380	39	35	32	25	18	7	-1	1	9	19
2390	21	14	7	6	4	1	0	0	-3	-5
2400	-5	-7	-8	3	9	18	24	28	27	31
2410	35	35	26	20	9	-3	-3	-5	-5	-7
2420	-7	-7	-4	1	6	5	6	9	14	15
2430	17	19	22	31	40	49	51	52	52	54
2440	54	54	56	57	60	65	63	58	52	45
2450	38	33	31	27	22	13	4	7	16	22
2460	27	34	31	23	15	1	-13	-19	-22	-31
2470	-37	-37	-32	-32	-34	-36	-37	-37	-37	-31
2480	-20	-9	3	10	2	-7	-10	-6	-2	2
2490	1	-5	-15	-21	-14	-2	9	15	21	31
2500	35	29	18	8	1	-9	-18	-13	-9	-8
2510	-8	-6	-3	-5	-8	-12	-18	-22	-26	-33
2520	-34	-34	-26	-14	-11	-10	-13	-18	-16	-13
2530	-4	11	18	19	19	19	10	10	11	14
2540	18	12	9	7	14	17	21	25	26	26
2550	26	25	19	15	10	0	-11	-12	2	16
2560	27	45	53	60	66	65	57	42	29	18
2570	9	0	-4	-3	4	20	33	42	41	35
2580	34	31	28	25	18	9	3	-1	-6	-15
2590	-19	-12	-2	2	11	20	25	33	36	40
2600	50	58	66	74	80	83	80	70	65	62
2610	57	55	53	51	48	43	41	40	36	32
2620	24	16	9	4	0	-3	-1	0	1	0
2630	4	8	14	22	24	26	27	25	18	9
2640	7	10	18	20	24	29	26	17	12	7

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	4	0	-7	-13	-19	-25	-29	-24	-13	-1
2660	5	11	12	14	4	-10	-14	-23	-29	-35
2670	-53	-54	-50	-50	-40	-29	-24	-20	-15	-18
2680	-19	-25	-18	-12	-3	3	-3	-1	-4	-3
2690	1	2	6	8	7	7	8	4	7	11
2700	14	7	7	10	12	15	15	16	16	13
2710	11	12	17	19	22	25	24	21	22	33
2720	47	49	44	40	37	36	37	39	37	35
2730	33	31	33	40	46	49	45	36	25	12
2740	1	-9	-21	-29	-31	-24	-20	-20	-19	-15
2750	-6	0	-1	-3	-5	-9	-13	-17	-18	-16
2760	-6	3	17	27	33	28	21	13	9	17
2770	21	23	32	39	45	49	49	45	37	23
2780	15	7	7	10	9	6	5	4	4	9
2790	7	7	10	10	10	7	5	0	-4	-10
2800	-14	-20	-23	-23	-23	-23	-23	-14	-10	-5
2810	1	6	5	0	0	0	1	-2	-3	-3
2820	-3	0	0	-1	-4	-5	-1	9	18	27
2830	33	33	29	25	21	22	26	24	18	11
2840	4	4	10	20	28	34	42	52	55	51
2850	47	38	16	-5	-15	-22	-28	-29	-25	-24
2860	-25	-25	-26	-30	-33	-34	-32	-23	-9	8
2870	19	26	31	28	26	26	25	18	6	-4
2880	-16	-20	-25	-29	-28	-19	-6	9	14	9
2890	5	2	-2	-7	-12	-17	-20	-22	-21	-18
2900	-7	-1	3	12	21	34	39	43	45	45
2910	50	59	68	69	69	67	59	45	36	31
2920	22	16	8	0	-3	-2	4	7	17	34
2930	45	54	52	53	51	46	41	33	33	39
2940	40	40	40	41	41	43	39	36	39	42
2950	44	40	36	34	33	29	24	20	15	17
2960	23	28	30	24	19	19	23	26	25	22
2970	20	17	15	13	8	-2	-18	-29	-36	-35
2980	-29	-20	-10	-1	8	17	20	20	20	20
2990	20	17	14	12	12	11	8	0	-3	-1
3000	0	0	0	0	-3	-4	-5	-7	-8	-12
3010	-7	-3	0	0	-5	-7	-12	-14	-13	-4
3020	5	9	7	4	4	5	5	2	0	0
3030	0	-7	-12	-19	-22	-14	-9	-4	0	4
3040	7	14	5	10	17	17	15	13	5	0
3050	-1	-4	-9	-9	0	6	16	16	14	8
3060	3	0	-10	-13	-6	0	4	9	16	17
3070	17	15	14	17	18	16	17	19	22	23
3080	23	22	23	20	17	14	9	4	0	-2
3090	-5	-13	-14	-10	-8	-5	-7	-10	-10	-10
3100	-10	-6	1	11	22	21	15	15	12	7
3110	5	4	-2	-14	-18	-15	-10	-5	-7	-10
3120	-11	-12	-14	-16	-16	-17	-16	-15	-14	-12
3130	-14	-18	-22	-25	-19	-12	-3	3	9	12
3140	11	10	8	6	0	-7	-15	-24	-22	-17
3150	-12	-11	-13	-8	-4	-5	-6	-10	-10	-10
3160	-5	0	5	7	7	8	8	5	-2	-10
3170	-10	-15	-14	-10	-10	-9	-10	-5	0	6
3180	15	28	30	22	16	15	10	6	13	23

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	25	22	22	21	20	19	16	14	12	12
3200	12	12	10	10	13	13	10	10	14	22
3210	25	22	16	13	11	8	4	1	-1	-7
3220	-11	-16	-18	-17	-19	-26	-32	-40	-49	-53
3230	-51	-48	-43	-34	-27	-25	-22	-11	-1	4
3240	7	11	15	12	5	1	-2	-3	-1	0
3250	4	3	7	15	19	18	17	16	15	7
3260	-1	-4	-5	-4	1	5	9	16	24	25
3270	24	21	20	24	25	26	26	30	27	27
3280	27	27	26	25	25	24	22	19	17	15
3290	10	4	4	1	0	-7	-5	-2	5	8
3300	17	22	29	30	25	21	11	2	-2	-6
3310	-14	-12	-2	0	1	6	12	12	11	9
3320	6	1	-3	-6	-8	-10	-12	-12	-15	-18
3330	-20	-22	-23	-25	-29	-30	-30	-29	-22	-9
3340	0	2	0	-1	1	2	3	5	3	2
3350	3	3	5	6	3	0	-3	-13	-18	-19
3360	-22	-23	-23	-21	-16	-10	-4	-4	-3	3
3370	10	20	25	21	14	11	8	7	5	3
3380	2	4	7	9	10	13	14	16	21	24
3390	26	26	23	20	15	6	-1	-10	-20	-26
3400	-27	-25	-22	-18	-10	-8	-4	2	7	11
3410	10	4	-5	-9	-13	-22	-37	-45	-47	-40
3420	-33	-25	-19	-12	-13	-16	-7	-6	0	3
3430	9	12	14	15	15	15	12	10	10	10
3440	10	10	8	7	9	7	5	3	-2	-9
3450	-12	-12	-15	-18	-16	-13	-11	-3	10	23
3460	31	36	35	31	24	17	9	1	0	2
3470	2	0	-3	-1	3	6	9	11	11	11
3480	10	8	6	0	-8	-19	-25	-26	-24	-21
3490	-16	-8	-1	1	5	6	4	-1	-8	-18
3500	-29	-30	-25	-21	-16	-7	0	8	14	17
3510	13	8	6	0	4	9	13	17	17	16
3520	13	10	9	5	-1	-3	-12	-14	-12	-8
3530	-3	-2	0	0	0	0	0	-4	-8	-17
3540	-27	-35	-33	-27	-18	-15	-13	-9	-8	-7
3550	-10	-9	-8	-8	-9	-8	-6	-3	0	0
3560	-3	-8	-10	-13	-13	-11	-7	-6	-8	-7
3570	-6	-2	0	2	5	4	4	2	7	12
3580	18	17	8	0	-6	-16	-19	-17	-17	-16
3590	-14	-11	-11	-12	-6	-2	0	5	13	13
3600	11	11	12	13	13	11	11	10	10	7
3610	5	2	1	-1	-2	-2	0	3	6	9
3620	13	18	17	15	11	9	6	4	4	4
3630	4	4	3	1	4	7	10	14	15	15
3640	13	11	6	3	-2	-6	-9	-19	-24	-20
3650	-15	-14	-10	-5	0	7	11	20	24	25
3660	25	19	12	6	-2	-8	-23	-23	-18	-14
3670	-13	-10	-10	-9	-9	-6	0	2	6	4
3680	-1	-7	-10	-15	-24	-30	-30	-30	-30	-28
3690	-23	-17	-11	-4	5	13	25	24	15	8
3700	4	2	4	6	0	-2	-2	-2	-2	-2
3710	-2	-3	-3	-1	0	0	-1	-2	-4	-7
3720	-10	-8	-5	-3	0	2	4	4	4	5

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	8	10	10	8	8	10	12	13	12	8
3740	6	5	5	2	-2	-6	-8	-5	1	5
3750	7	9	11	12	12	11	7	5	0	-6
3760	-12	-14	-13	-10	-4	0	3	9	14	16
3770	15	12	10	6	2	6	2	-2	-7	-12
3780	-22	-23	-22	-14	-7	4	9	9	9	11
3790	7	10	9	9	11	12	16	19	14	6
3800	-2	-8	-11	-18	-17	-15	-15	-14	-9	-6
3810	-5	-4	-2	-4	-3	-1	2	2	1	-2
3820	-5	-9	-10	-10	-10	-8	-7	-7	-11	-15
3830	-17	-17	-16	-10	0	7	12	13	10	8
3840	3	-6	-18	-26	-29	-28	-23	-15	-13	-14
3850	-14	-14	-14	-14	-16	-19	-19	-17	-14	-13
3860	-10	-8	-8	-8	-6	-5	-4	-2	-1	3
3870	9	13	18	17	12	6	-2	-5	-8	-12
3880	-18	-23	-23	-12	-4	3	9	15	16	17
3890	17	17	19	19	17	15	14	15	15	15
3900	10	5	0	0	2	4	6	7	10	12
3910	17	12	12	15	17	17	17	15	12	9
3920	6	6	4	4	4	0	2	4	7	12
3930	13	16	13	9	5	1	-6	-13	-16	-20
3940	-22	-21	-15	-8	-6	-5	-4	-5	-10	-13
3950	-14	-14	-14	-15	-12	-8	-4	-1	3	2
3960	-5	-10	-14	-17	-15	-8	0	7	9	6
3970	0	-3	-3	-2	-3	-4	-6	-8	-9	-9
3980	-11	-12	-7	-3	-1	1	3	5	5	1
3990	-1	-1	3	9	14	20	25	23	20	18
4000	16	16	17	16	14	13	11	10	9	6
4010	3	2	4	3	0	-2	-3	-4	-5	-12
4020	-16	-18	-13	-9	-4	3	2	2	1	1
4030	2	4	7	11	16	16	16	19	20	22
4040	19	15	14	12	9	5	5	11	14	14
4050	12	10	4	-3	-5	-10	-14	-14	-9	-3
4060	4	10	14	15	15	14	14	14	14	13
4070	11	8	4	4	4	4	6	10	12	15
4080	17	17	18	18	14	11	6	0	-2	-3
4090	-6	-9	-9	-8	-8	-8	-8	-9	-9	-9
4100	-9	-9	-9	-9	-9	-8	-8	-8	-9	-11
4110	-12	-12	-10	-6	-3	0	5	8	10	14
4120	15	12	13	13	9	5	3	-1	-3	-3
4130	-3	-2	-2	0	2	-1	-2	-2	1	5
4140	9	6	3	0	-2	-4	-5	-7	-10	-10
4150	-10	-9	-7	-9	-10	-7	-7	-4	-2	2
4160	-3	0	0	0	0	-2	-3	-3	-5	-2
4170	1	5	9	12	11	12	11	11	11	7
4180	5	4	2	1	0	0	-2	-3	-5	-5
4190	-8	-10	-10	-12	-12	-14	-13	-7	-1	4
4200	7	11	12	14	15	19	22	21	16	17
4210	20	18	15	13	8	3	-1	-7	-11	-10
4220	-9	-9	-11	-12	-12	-7	-2	-2	-2	-2
4230	-2	-3	-4	-4	-6	-8	-8	-11	-12	-14
4240	-15	-15	-15	-14	-13	-7	-3	3	7	6
4250	5	0	-1	-3	-4	-5	-1	5	7	9
4260	9	9	9	9	9	10	11	11	9	9

TO BE CONTINUED

CONTINUED(S-1425 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	9	9	9	9	7	6	5	5	5	5
4280	6	4	4	4	4	4	4	4	4	4
4290	4	4	5	9	9	10	11	11	9	9
4300	4	5	1	-3	-1	5	10	10	7	7
4310	5	3	-3	-7	-14	-19	-23	-18	-12	-8
4320	-3	1	4	5	5	5	5	4	2	6
4330	11	15	13	9	8	11	11	12	14	16
4340	16	14	9	1	-6	-9	-9	-8	-8	-8
4350	-8	-8	-8	-4	-6	-11	-12	-12	-12	-11
4360	-8	-5	-3	-1	2	5	6	9	8	7
4370	9	11	11	10	10	9	9	9	9	10
4380	10	11	11	10	10	9	6	2	-1	-3
4390	-5	-7	-7	-9	-9	-5	-3	4	5	6
4400	6	7	7	10	12	14	14	10	10	9
4410	7	7	6	4	4	4	-2	-2	0	5
4420	7	7	7	9	9	9	9	6	2	0
4430	-2	-3	-5	-4	-4	-3	-1	3	4	6
4440	10	11	11	13	14	14	14	13	11	10
4450	9	7	7	8	7	8	9	9	8	6
4460	3	1	0	-2	-3	-3	-3	-4	-6	-9
4470	-11	-12	-15	-15	-13	-12	-10	-6	-2	2
4480	5	6	6	5	1	0	-1	-2	-4	-4
4490	-5	-4	-1	0	0	-1	-3	-4	-5	-7
4500	-9	-10	-9	-4	-3	-4	-7	-9	-10	-10
4510	-7	-3	0	2	5	5	6	6	5	4
4520	0	0	4	5	2	0	0	2	2	2
4530	2	2	2	1	0	2	5	6	6	7
4540	7	7	1	-3	-10	-13	-10	-9	-7	-3

END

RECORD = M-439 COMPONENT = NORTH STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 1773,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	84	79	-79	-46	76	202	223	142	127	122
10	49	4	8	12	0	-31	-115	-183	-181	-59
20	19	64	20	-62	-140	-64	87	161	237	190
30	77	-7	43	126	105	57	87	187	227	146
40	75	30	-11	-34	-58	-83	-117	-102	8	5
50	-57	-59	36	72	41	9	-14	57	193	200
60	145	97	46	65	47	-5	-37	-29	35	94
70	104	53	-40	-148	-154	-72	30	-7	-126	-58
80	14	89	133	72	15	29	91	136	119	61
90	53	107	-49	-214	-168	29	153	123	-24	-145
100	-138	40	190	256	156	-1	-105	24	164	101
110	-9	-117	-111	13	129	141	9	-112	-150	-14
120	118	36	-94	-157	-54	64	147	158	118	84
130	30	-24	-49	30	77	72	69	61	65	62
140	59	42	68	35	34	51	1	-57	-140	-130
150	-26	95	118	23	-28	4	1	-8	115	111
160	-23	-65	41	153	242	227	123	12	0	39
170	68	10	-107	-63	25	52	77	-54	-144	-21
180	0	-47	-141	-82	37	89	85	121	202	263
190	261	183	85	43	67	54	4	-92	-92	28
200	121	137	19	-156	-162	-44	31	31	-16	-33
210	19	78	125	111	86	95	106	87	27	-16
220	-64	-29	54	95	-43	-181	-85	105	225	68
230	-60	-113	-25	67	96	118	96	2	-84	-30
240	58	32	2	2	20	51	55	12	-30	-52
250	-27	-1	1	-10	42	131	129	18	-54	52
260	153	177	76	-47	-10	19	-54	-42	26	56
270	53	-2	-38	107	129	75	-10	0	48	143
280	241	193	94	31	22	-2	-63	-161	-43	61
290	72	-12	-83	35	127	167	97	-3	-34	2
300	69	121	144	150	98	-18	-84	-75	-42	13
310	61	132	48	-47	55	163	249	100	-76	-61
320	24	92	71	-31	-131	-185	-103	20	74	-31
330	-154	-131	0	75	108	84	60	46	48	46
340	59	88	126	170	194	179	118	26	-28	-16
350	-4	-44	-110	-166	-172	-7	149	226	214	82
360	-48	-21	51	131	202	132	-35	-72	2	85
370	196	192	17	-122	-119	64	151	170	150	91
380	15	-44	-89	-108	-64	-34	-31	-38	-37	-4
390	51	118	86	9	-74	-90	11	80	199	184
400	-1	-75	-55	63	104	29	-51	-79	-58	-9
410	46	82	52	7	1	-5	-65	-45	52	75
420	56	39	114	145	147	95	-10	-109	-58	6
430	-32	-74	-109	-48	22	52	81	91	46	20
440	55	93	58	60	127	198	208	124	50	75
450	67	5	-45	-20	40	48	-59	-84	-34	-2
460	-48	-128	-193	-191	-89	0	63	112	140	190
470	196	106	43	22	86	287	172	-65	-98	-62
480	-11	30	15	-101	-237	-254	-147	0	119	108

TO BE CONTINUED

CONTINUED(M-439 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-48	-199	-124	6	150	132	-36	-77	50	182
500	232	182	122	97	117	146	159	110	31	-42
510	-129	-160	-174	-191	-191	-144	-76	4	38	-14
520	10	73	80	57	42	37	63	101	122	117
530	96	62	23	-115	-104	31	78	127	62	-96
540	-168	-138	-25	54	84	15	-70	-165	-139	-63
550	13	-31	-151	-25	161	241	96	-103	-165	-7
560	103	203	194	31	-44	66	134	102	46	10
570	16	90	165	197	211	161	44	-60	-199	-268
580	-246	-181	-102	-8	87	146	112	42	-56	-112
590	-168	-182	-49	112	204	234	205	124	31	-59
600	-73	-11	95	131	75	-66	-158	-182	-188	-174
610	-130	-118	-157	-116	-39	49	68	9	-35	-69
620	-17	106	218	306	246	131	13	-75	-32	65
630	151	252	353	399	389	303	181	56	48	129
640	54	-100	-299	-443	-375	-252	-157	-54	62	143
650	222	282	350	334	211	13	-92	-166	-115	55
660	193	382	483	543	340	129	57	-74	-172	-49
670	148	344	484	523	434	212	9	-202	-169	-122
680	-64	-13	63	149	180	72	-71	-140	-58	-19
690	-95	-256	-234	-41	188	614	695	567	447	449
700	572	617	546	377	187	-18	-26	66	39	-133
710	-269	-387	-512	-584	-670	-713	-661	-554	-436	-232
720	-63	-250	-403	-495	-226	163	459	688	752	761
730	683	548	356	152	-30	-12	132	274	406	460
740	436	261	55	-197	-379	-522	-632	-773	-779	-590
750	-441	-241	-124	-118	-177	-180	-11	171	422	651
760	853	806	400	30	-112	-243	-310	-290	-210	-83
770	59	181	364	475	288	153	38	-39	-126	-236
780	-384	-307	-123	-15	83	-14	-227	-390	-511	-505
790	-336	-186	215	709	866	955	892	782	550	341
800	226	129	29	-98	-255	-386	-511	-452	-288	-198
810	-253	-375	-341	-236	-138	-30	203	305	198	89
820	86	201	315	410	454	464	464	408	237	63
830	-81	-84	-89	-195	-429	-637	-832	-836	-736	-625
840	-460	-272	-99	19	133	233	337	429	488	353
850	119	-71	-207	-252	-180	-134	-147	-139	-21	84
860	131	83	21	60	92	6	-124	-222	-268	-207
870	-124	-31	45	141	238	316	309	161	-11	-144
880	-237	-359	-415	-317	-141	38	191	30	-204	-338
890	-288	-156	-68	64	177	271	324	310	232	157
900	208	325	432	424	338	335	356	288	50	-232
910	-404	-523	-618	-699	-692	-595	-464	-274	-13	283
920	452	610	396	23	-247	-408	-554	-787	-717	-550
930	-307	-62	117	254	442	436	480	453	153	-44
940	-190	-290	-376	-433	-371	-284	-205	-104	-8	87
950	187	269	295	133	-25	37	110	47	-64	-205
960	-252	-184	-122	-50	39	132	216	313	389	364
970	263	135	27	-110	-238	-321	-344	-343	-359	-393
980	-448	-379	-111	59	194	316	261	329	355	390
990	469	539	581	553	422	208	36	-66	-189	-332
1000	-306	-220	-188	-256	-354	-441	-527	-523	-501	-481
1010	-545	-410	-122	147	482	720	737	675	549	474
1020	492	489	430	344	178	-36	-177	-352	-475	-656

TO BE CONTINUED

CONTINUED(M-439 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-559	-346	-224	-58	100	141	25	22	83	196
1040	167	-64	-241	-407	-533	-611	-460	-290	-55	456
1050	508	245	65	22	156	252	322	306	275	209
1060	213	56	-230	-452	-424	-487	-504	-433	-426	-400
1070	-326	-270	-394	-365	-157	-5	198	324	339	375
1080	526	603	643	506	223	35	-107	-258	-329	-197
1090	-83	46	167	156	104	156	232	292	244	-110
1100	-526	-680	-725	-766	-747	-649	-532	-374	-124	134
1110	275	367	457	519	559	261	-23	-273	-522	-594
1120	-620	-543	-415	-274	-116	25	185	277	296	221
1130	17	59	126	197	233	236	120	-13	-81	-18
1140	112	206	274	151	13	-68	-133	-229	-314	-415
1150	-485	-352	-197	-43	134	289	488	578	410	251
1160	99	-27	-111	-176	-219	-217	-129	-53	-15	-42
1170	-120	-120	-11	47	63	-78	-267	-374	-257	-66
1180	46	198	305	263	123	-2	-110	-194	-256	-305
1190	-341	-313	-201	-71	41	30	7	74	126	180
1200	221	245	264	280	300	324	348	367	344	215
1210	90	-36	-156	-74	-32	-86	-229	-340	-473	-524
1220	-422	-218	-19	80	256	221	37	-114	-92	62
1230	145	133	31	-68	-202	-307	-318	-315	-366	-430
1240	-624	-747	-582	-349	-60	289	518	529	436	315
1250	264	325	326	244	120	2	-137	-59	85	167
1260	258	340	277	116	11	-128	-254	-340	-421	-491
1270	-415	-317	-215	-96	29	154	101	61	68	152
1280	206	244	250	200	151	115	88	63	64	83
1290	76	-45	-198	-305	-367	-241	-133	-39	17	61
1300	74	17	-45	-97	-134	-152	-183	-274	-384	-399
1310	-269	-149	-30	126	155	168	263	244	146	65
1320	7	-47	-112	-172	-151	-61	-13	18	-16	-110
1330	-211	-216	-102	-58	-40	-92	-22	101	204	234
1340	183	198	269	299	319	316	292	253	176	77
1350	-33	-144	-210	-153	-115	-91	-165	-241	-233	-155
1360	-68	-4	48	105	111	16	-76	-120	-124	-115
1370	-113	-112	-104	-97	-91	-93	-73	-24	23	49
1380	70	51	-23	-91	-101	-87	-82	-127	-182	-223
1390	-184	-129	-29	97	174	203	160	112	113	203
1400	303	332	281	173	27	-104	-71	13	47	53
1410	-21	-65	32	154	224	64	-125	-239	-321	-367
1420	-361	-339	-344	-356	-284	-208	-118	17	91	11
1430	-112	-194	-176	-22	93	189	277	338	389	435
1440	473	472	366	193	55	-22	-88	-102	-81	-58
1450	-35	-4	-36	-127	-212	-236	-180	-124	-78	-30
1460	14	72	134	188	160	77	11	-38	-63	-57
1470	25	152	184	107	-27	-68	-65	-154	-287	-269
1480	-54	123	238	196	105	-15	-91	-103	-29	70
1490	162	202	158	66	-16	-73	-29	-25	-63	-116
1500	-169	-193	-197	-196	-189	-184	-190	-202	-228	-136
1510	20	140	234	304	303	194	103	55	83	137
1520	98	-9	-82	-139	-169	-136	-118	-102	-110	-140
1530	-170	-160	-110	-95	-129	-185	-224	-179	-116	-30
1540	61	38	-12	-75	-5	145	222	264	210	120
1550	23	-18	-66	-143	-200	-187	-137	-100	-55	-25
1560	-5	-43	-98	-143	-90	7	43	60	71	85

TO BE CONTINUED

CONTINUED(M-439 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	104	145	180	224	267	289	263	210	172	148
1580	116	56	-10	-72	-60	-12	-9	-38	-93	-138
1590	-158	-170	-173	-167	-153	-138	-98	-54	0	59
1600	95	86	45	45	86	70	8	-66	-117	-92
1610	-92	-146	-223	-231	-192	-167	-152	-146	-133	-106
1620	-62	-6	66	120	174	233	238	137	17	-60
1630	-59	-34	-14	-13	-8	-1	-7	-26	-41	-50
1640	-69	-105	-149	-104	-52	-14	47	65	9	-46
1650	-87	-82	-49	-27	-20	-29	-34	-42	-41	-42
1660	-19	13	33	42	40	52	69	89	111	107
1670	61	43	41	43	35	11	-21	-50	-59	-62
1680	-4	101	158	206	174	124	81	35	-5	-4
1690	30	56	63	67	80	85	79	32	-35	-101
1700	-181	-235	-229	-233	-255	-188	-92	-17	69	107
1710	84	53	42	43	26	20	46	121	167	155
1720	98	49	-13	-80	-146	-197	-179	-95	2	52
1730	30	-12	-53	-60	-51	-34	-10	4	17	23
1740	18	10	15	27	49	62	48	21	-14	-77
1750	-128	-131	-76	-14	4	18	9	-3	-5	43
1760	44	3	-36	-51	-3	30	32	25	22	53
1770	96	157	218	213	207	166	92	-25	-148	-126
1780	-104	-83	-50	3	71	148	184	144	42	-19
1790	-65	-97	-122	-131	-89	32	124	171	203	199
1800	176	130	88	42	-7	-50	-90	-125	-146	-39
1810	12	22	9	-11	-12	-5	18	35	148	212
1820	113	74	76	83	90	69	8	-50	-87	-51
1830	11	11	-76	-205	-276	-222	-95	-14	22	40
1840	35	1	-39	-71	-50	1	96	130	98	66
1850	31	-2	-33	-68	-121	-155	-156	-155	-130	-130
1860	-70	-28	-79	-137	-140	16	125	187	182	140
1870	109	88	77	69	57	41	24	22	37	46
1880	54	70	59	24	-20	-47	-49	-2	57	82
1890	67	32	-25	-25	-11	-30	-81	-131	-136	-85
1900	-12	45	105	152	189	211	216	206	165	78
1910	-30	-153	-179	-122	-37	29	82	116	123	100
1920	36	-33	-67	-65	-67	-91	-143	-169	-116	-27
1930	38	82	85	74	53	67	125	180	161	109
1940	68	33	-2	-33	-9	31	40	-5	-58	-123
1950	-123	-42	-5	4	4	-12	-34	-58	-56	9
1960	66	74	34	-15	13	87	119	130	112	52
1970	18	58	67	53	6	-40	-81	-135	-178	-206
1980	-206	-163	-113	-80	-42	16	77	119	136	113
1990	72	96	162	195	215	176	89	33	-7	-52
2000	-108	-163	-170	-155	-154	-165	-148	-86	7	32
2010	-8	-68	-60	48	131	146	124	92	103	148
2020	179	168	129	75	25	-19	-80	-139	-159	-121
2030	-75	-50	-103	-123	-51	-11	-13	-47	-74	-27
2040	38	93	118	125	113	85	62	65	72	81
2050	84	84	82	71	55	33	3	-53	-123	-153
2060	-138	-91	-42	-32	-47	-52	-33	-11	-11	-32
2070	-34	8	44	74	57	21	-10	9	53	150
2080	218	214	191	120	26	-21	-20	-24	-55	-120
2090	-170	-133	-48	22	69	68	22	-34	-63	-51
2100	-14	19	55	45	49	70	80	117	109	37

TO BE CONTINUED

CONTINUED(M-439 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	-43	-94	-67	-49	-65	-117	-210	-208	-60	-3
2120	-17	-49	-59	-2	33	72	140	154	127	90
2130	81	105	60	-27	-97	-87	-23	21	55	62
2140	0	-65	-34	25	38	30	-1	-9	8	2
2150	-19	-60	-96	-127	-138	-93	-38	21	69	59
2160	39	2	-9	35	53	21	-24	-23	27	95
2170	124	108	76	33	-7	-45	-72	-97	-110	-121
2180	-118	-91	-52	10	25	8	-18	-28	1	25
2190	39	55	81	117	160	189	201	200	198	171
2200	136	90	41	-5	-44	-89	-138	-171	-202	-218
2210	-213	-193	-162	-125	-92	-48	-10	42	72	139
2220	214	210	198	171	120	69	40	26	14	-1
2230	-18	-37	-50	-42	-21	-23	-60	-101	-120	-124
2240	-111	-75	-37	-8	9	19	27	33	27	6
2250	-15	-13	19	50	65	56	43	23	-7	-48
2260	-73	-91	-86	-66	-50	-31	-19	-28	-46	-61
2270	-44	-5	33	77	85	82	74	74	73	80
2280	76	48	13	-20	-55	-88	-91	-93	-82	-62
2290	-27	4	23	58	63	56	26	-7	-23	17
2300	58	118	187	226	211	171	98	31	-17	-61
2310	-89	-111	-107	-89	-69	-48	-36	-28	-36	-57
2320	-83	-110	-123	-114	-86	-54	-15	24	72	118
2330	162	191	184	174	165	156	140	115	78	39
2340	-17	-82	-142	-166	-123	-60	2	21	-7	-37
2350	-35	-17	-36	-66	-79	-39	-6	30	64	73
2360	74	72	65	60	52	41	15	-15	-42	6
2370	50	77	114	113	68	21	2	0	-20	-48
2380	-39	-15	3	12	11	21	20	1	-21	-43
2390	-62	-50	-13	23	28	-9	-7	21	22	11
2400	-10	-25	-31	-42	-66	-85	-59	-16	-8	-9
2410	-10	-29	-65	-112	-116	-95	-83	-64	-44	-20
2420	16	53	64	63	54	17	-15	3	40	42
2430	43	37	9	-30	-65	-71	-75	-84	-93	-103
2440	-111	-126	-80	-10	50	110	159	166	146	102
2450	66	52	30	1	-39	-68	-75	-45	-5	26
2460	20	-20	-39	-41	-29	-10	15	39	68	96
2470	103	118	149	155	111	28	-70	-106	-100	-67
2480	-41	-32	-32	-53	-60	-31	-7	-43	-43	11
2490	56	100	103	90	64	53	42	26	-17	-43
2500	-12	0	-43	-104	-63	41	69	47	7	-10
2510	-11	-1	6	8	7	8	0	-11	-13	-12
2520	-18	-26	-44	-66	-91	-105	-82	-65	-76	-52
2530	-19	7	18	16	17	16	16	24	27	25
2540	14	-12	-35	-52	-57	-67	-44	5	23	32
2550	38	6	-18	9	26	8	-48	-66	-33	-8
2560	13	13	18	33	44	40	-5	-36	-6	19
2570	24	1	-29	-12	13	22	23	20	9	-11
2580	-41	-61	-43	-18	6	11	16	23	21	22
2590	20	2	-31	-69	-78	-56	-31	2	11	9
2600	17	57	94	123	136	119	103	79	47	26
2610	26	54	70	66	39	12	-16	-36	-51	-67
2620	-74	-79	-86	-78	-41	-31	-67	-100	-106	-75
2630	-23	8	34	39	39	48	51	69	79	80
2640	79	80	58	23	-10	-40	-76	-115	-142	-150

TO BE CONTINUED

CONTINUED(M-439 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	-158	-160	-160	-148	-126	-108	-94	-84	-66	-41
2660	-12	21	54	50	23	-7	-31	-27	-5	14
2670	43	48	47	37	7	-27	-60	-78	-65	-40
2680	-34	-37	-47	-56	-44	-24	-13	-14	-13	-14
2690	-13	-23	-40	-45	-16	17	30	37	39	36
2700	20	8	26	51	83	100	70	36	32	56
2710	90	54	-54	-115	-116	-92	-67	-52	-52	-64
2720	-85	-94	-73	-24	12	0	-31	-56	-20	50
2730	76	64	34	-8	-17	5	14	-2	-19	-18
2740	3	32	14	-11	-19	-12	-7	-28	-72	-102
2750	-23	17	23	13	-7	-16	-13	0	21	27
2760	27	50	71	79	65	42	13	6	7	6
2770	7	7	7	-2	-31	-61	-61	-29	-1	10
2780	-16	-63	-70	-39	-4	25	38	41	56	100
2790	143	126	54	12	16	27	33	29	16	2
2800	-10	-24	-37	-49	-49	-50	-49	-50	-31	3
2810	36	53	55	54	44	46	28	-8	-32	-38
2820	-37	-37	-44	-62	-82	-98	-112	-97	-60	-33
2830	-7	12	30	64	123	170	172	167	136	89
2840	44	17	-11	-37	-46	-54	-56	-55	-53	-25
2850	15	40	49	37	10	-31	-46	-39	-24	-7
2860	8	34	64	80	72	40	17	25	25	-13
2870	-47	-27	5	31	39	38	31	27	34	53
2880	69	61	30	0	-13	-12	-12	-13	-26	-41
2890	-52	-59	-49	4	45	46	21	-8	-33	-19
2900	22	61	71	59	63	79	102	109	90	63
2910	42	38	39	49	37	4	-29	-54	-55	-66
2920	-60	-55	-51	-26	-8	-6	-31	-59	-62	-26
2930	6	35	53	67	68	70	78	79	74	44
2940	11	-19	-24	-27	-36	-51	-50	-36	-29	-23
2950	-28	-42	-63	-89	-99	-96	-82	-62	-29	11
2960	41	48	42	34	22	11	0	-5	3	26
2970	62	76	55	30	6	-14	-33	-57	-82	-81
2980	-41	6	45	61	54	13	-26	-63	-87	-89
2990	-59	-6	26	42	46	46	29	-3	-35	-52

END

RECORD = M-439 COMPONENT = EAST STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 1772,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	-18	-91	-209	-178	-80	-15	48	82	43	9
10	24	-37	-124	-151	-26	209	306	193	148	118
20	-63	1	163	201	194	122	15	-36	-48	-7
30	-13	-19	-24	-101	-255	-265	-12	156	212	149
40	89	73	112	114	83	25	18	50	250	207
50	40	5	-70	-122	-67	-55	-46	6	93	118
60	46	-19	-108	-192	-106	41	140	92	95	126
70	98	60	43	40	64	106	155	184	142	45
80	-18	-101	-159	-191	-198	-83	19	47	23	0
90	64	117	157	144	75	81	137	191	187	154
100	45	-82	-147	-176	-63	88	119	24	-116	-242
110	-197	-16	8	1	-47	3	83	159	244	286
120	259	151	0	-44	31	69	-15	-107	-69	41
130	79	77	13	-68	-124	-20	113	126	113	67
140	59	20	-83	10	152	211	201	176	110	19
150	-69	-198	-211	8	138	112	31	-106	-182	-186
160	-93	30	94	151	186	208	230	218	190	200
170	203	59	-77	-61	-23	-4	-60	-142	-160	-116
180	26	54	-37	2	98	161	131	52	-1	66
190	208	176	97	29	44	194	301	282	187	55
200	16	-19	-43	-113	-114	-49	-73	-125	-167	-146
210	-44	0	-42	-87	-90	44	214	239	129	43
220	-16	-17	19	50	74	68	87	67	10	-61
230	-21	99	141	135	86	43	22	17	-20	-78
240	-140	-145	-52	99	231	223	113	-10	-68	-111
250	-150	-175	-115	90	188	166	101	-4	-81	-48
260	57	160	197	209	192	137	-92	-204	-158	-32
270	11	-35	-120	-150	-92	-44	-14	9	21	72
280	148	175	178	209	195	124	30	-82	85	235
290	220	90	-21	-71	-102	-98	-84	-90	-119	-157
300	-148	-79	31	113	162	179	167	43	-84	-118
310	-6	187	232	205	83	-52	-95	-142	-60	57
320	67	-2	-107	-91	0	49	0	-82	-143	-112
330	25	155	224	176	-19	-83	24	132	185	146
340	2	-102	-137	-112	-66	35	118	125	78	26
350	-47	-32	84	125	138	126	28	-79	-126	-135
360	-79	-33	-11	-75	-72	-15	108	216	110	22
370	-26	-22	47	59	29	8	59	85	75	84
380	95	31	-52	-114	-161	-161	-42	112	66	-77
390	-58	9	-22	8	110	85	38	107	193	254
400	261	194	41	-82	-191	-252	-194	-133	-108	-110
410	-130	-97	23	203	261	93	-44	-116	-117	-58
420	-2	56	72	52	14	-4	23	67	116	162
430	145	19	-2	77	102	13	-90	-66	32	45
440	-27	-63	-36	-18	-14	-40	-66	-94	23	155
450	87	-19	-123	-58	114	210	237	173	87	14
460	-41	-35	-10	-33	-79	-105	-75	-41	-20	-20
470	0	53	78	86	69	-1	-97	-157	-74	0
480	78	156	182	159	94	-46	-135	-191	-87	36

TO BE CONTINUED

CONTINUED(M-439 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	149	236	102	-74	-184	-94	24	132	166	30
500	-75	-144	-225	-207	-114	-34	63	148	126	180
510	240	194	117	65	50	24	-13	-49	-95	-141
520	-181	-194	-70	76	144	173	110	27	-21	-38
530	-11	2	1	-26	-52	-88	-95	-26	57	176
540	263	269	154	-11	-134	-174	-103	-35	18	45
550	36	2	32	107	172	213	232	185	116	61
560	13	-15	34	160	225	248	82	-92	-228	-322
570	-247	-183	-118	-56	8	54	109	207	252	227
580	141	26	-69	-181	-301	-247	-158	-24	52	86
590	96	54	3	-67	-133	-121	-109	-112	-143	-182
600	-243	-291	-341	-283	-100	65	333	731	889	792
610	580	292	106	48	32	41	85	176	251	272
620	256	165	56	-2	-37	-13	73	188	295	205
630	5	-120	-417	-690	-652	-253	-19	123	140	76
640	-89	-127	-15	156	320	414	408	301	192	76
650	-147	-394	-469	-378	-181	121	395	416	212	34
660	-119	-56	83	137	194	133	8	-105	-180	-256
670	-198	-9	125	206	257	170	84	157	163	-40
680	-234	-385	-321	107	552	686	738	562	518	593
690	672	638	452	319	41	-203	-345	-390	-421	-415
700	-410	-436	-508	-643	-801	-1022	-1050	-905	-708	-442
710	-209	7	208	455	570	527	495	624	932	1067
720	1104	1222	1273	1098	-73	-645	-549	-414	-203	-74
730	-60	-141	-250	-416	-580	-706	-878	-777	-454	-405
740	-357	-356	-248	26	84	134	136	73	53	95
750	252	378	514	746	909	1119	1095	742	299	-137
760	-307	-559	-816	-720	-581	-552	-663	-811	-920	-1007
770	-949	-859	-601	-196	505	737	970	1158	1160	932
780	584	361	180	65	-80	-96	-11	85	167	215
790	156	-169	-424	-382	-413	-260	-9	173	386	255
800	63	-208	-433	-382	-264	-152	-54	60	160	-31
810	-226	-287	-271	-175	-4	152	390	680	857	802
820	719	782	501	-48	-287	-407	-453	-445	-450	-358
830	-323	-387	-480	-554	-600	-601	-575	-543	-487	-389
840	-186	-158	-118	42	239	510	712	797	823	811
850	758	670	546	293	-161	-411	-546	-325	216	497
860	430	266	60	-139	-439	-743	-901	-1037	-1074	-706
870	-357	-190	-76	136	476	657	765	818	923	1088
880	1148	1215	986	518	124	-327	-441	-481	-506	-509
890	-523	-637	-632	-425	-224	61	231	263	241	124
900	4	-110	-63	62	221	420	541	619	680	668
910	465	300	-52	-309	-438	-801	-1070	-1000	-722	-349
920	17	348	444	457	343	86	-128	-267	-361	-429
930	-322	-127	306	409	505	794	245	-43	-230	-481
940	-621	-626	-502	-362	-107	0	77	180	283	379
950	489	550	490	-162	-587	-882	-889	-670	-341	63
960	336	473	409	38	-258	-408	-533	-451	-271	-165
970	-26	210	390	497	177	3	153	337	542	572
980	120	-183	-304	-428	-392	-273	-146	28	189	86
990	-192	-315	-462	-588	-430	-222	-128	-72	-214	-413
1000	-535	-645	-399	-244	167	536	562	639	586	486
1010	502	597	608	545	411	289	233	173	153	148
1020	69	-25	-143	-333	-516	-726	-827	-671	-462	-285

TO BE CONTINUED

CONTINUED(M-439 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-148	-103	-137	-115	-40	-76	-42	168	360	406
1040	335	241	105	24	33	88	170	281	387	597
1050	505	-394	-456	-374	-383	-634	-712	-786	-908	-875
1060	-581	-592	-472	-31	116	117	163	230	196	348
1070	909	393	18	208	22	-279	-488	-519	-333	-8
1080	182	497	764	793	663	406	296	26	-283	-538
1090	-891	-954	-367	263	419	777	934	995	617	55
1100	-228	-398	-480	-427	-287	-169	-100	8	163	261
1110	435	598	492	286	-51	-390	-551	-638	-602	-581
1120	-499	-398	-171	27	171	366	381	113	-158	-345
1130	-316	-154	54	220	364	466	569	584	417	244
1140	80	-61	-145	-201	-120	-153	-148	-3	-66	-241
1150	-443	-517	-339	-147	-306	-237	-230	-371	-423	-150
1160	353	472	613	706	639	287	126	116	66	161
1170	237	243	9	-381	-742	-859	-704	-560	-377	-142
1180	85	224	283	427	559	478	310	89	-63	-142
1190	-175	-91	53	149	67	-36	-87	-104	-155	-254
1200	-363	-281	-169	-84	30	174	176	58	13	49
1210	149	240	141	-73	-225	-334	-463	-447	-295	-175
1220	-106	-2	132	165	91	26	-27	0	32	63
1230	98	179	266	323	-31	-307	-389	-549	-564	-355
1240	119	400	292	137	28	-135	-287	-234	-13	174
1250	291	315	298	270	252	260	275	290	303	289
1260	215	97	-24	-169	-221	-216	-238	-311	-375	-301
1270	-321	-454	-314	-204	-88	38	134	219	279	350
1280	338	235	123	39	114	213	295	354	337	224
1290	17	-240	-446	-482	-476	-488	-519	-482	-337	-211
1300	-48	192	377	295	32	-182	-336	-356	-338	-169
1310	0	58	49	5	-7	19	78	110	119	110
1320	75	29	-11	-40	-68	-29	86	189	275	323
1330	300	210	131	65	3	-67	-108	-62	-2	-29
1340	-169	-339	-381	-298	-179	-1	95	163	119	13
1350	-87	-141	-123	-41	131	235	277	248	170	85
1360	6	-34	-63	-75	-50	-55	-106	-152	-198	-188
1370	-145	-11	117	145	132	87	63	101	173	205
1380	168	63	-30	-100	-152	-184	-244	-102	15	110
1390	214	82	-53	-124	-244	-153	59	186	236	183
1400	61	-31	-65	-13	34	9	-56	-133	-199	-167
1410	-71	8	74	112	129	122	94	37	-46	-120
1420	-193	-203	-141	-11	86	131	139	61	-208	-312
1430	-338	-337	-275	-148	-37	37	100	152	170	199
1440	191	150	92	18	-17	-53	-73	-88	-80	-47
1450	4	72	160	145	76	-8	-98	-209	-243	-108
1460	31	89	151	183	195	165	111	49	7	10
1470	37	86	124	148	119	57	-32	-77	-41	17
1480	74	127	164	164	134	59	-78	-188	-305	-327
1490	-271	-141	-63	-63	-68	-91	29	108	122	103
1500	60	-2	-57	-133	-163	-127	-98	-45	4	28
1510	30	46	76	91	130	138	102	65	8	-66
1520	-194	-317	-382	-364	-175	69	232	350	454	452
1530	291	68	-76	-301	-373	-315	-294	-258	-226	-188
1540	-152	-136	-82	7	39	58	34	-19	-80	-81
1550	-50	8	52	73	142	219	206	179	150	120
1560	96	97	124	124	113	81	12	-41	-102	-163

TO BE CONTINUED

CONTINUED(M-439 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-202	-249	-257	-191	-56	16	70	99	61	19
1580	-80	-130	-196	-143	79	200	267	282	250	191
1590	134	46	-9	-62	-106	-97	-65	-37	-14	0
1600	-45	-83	-123	-46	37	39	6	-36	-64	-81
1610	-79	-79	-17	30	77	133	173	203	213	208
1620	164	110	6	-86	-88	-48	-13	-17	-44	-114
1630	-285	-277	-129	-36	113	290	289	193	72	-32
1640	-77	-32	10	30	49	29	-9	-54	-85	-128
1650	-173	-209	-243	-251	-220	-175	-118	-63	-11	-6
1660	-32	-82	-68	233	397	518	578	561	490	353
1670	230	117	-14	-156	-274	-228	-164	-179	-227	-261
1680	-286	-221	-99	29	145	133	95	56	26	23
1690	52	81	123	159	208	284	323	337	307	255
1700	196	126	23	-86	-184	-243	-264	-245	-179	-75
1710	-87	-131	-160	-95	-29	16	59	71	46	60
1720	111	212	258	273	272	219	161	81	43	50
1730	62	43	1	-72	-176	-257	-322	-259	-190	-110
1740	-26	33	86	119	74	39	2	17	62	62
1750	26	-18	-64	-97	-110	-121	-120	-107	-85	-37
1760	39	75	8	-41	-105	-121	-95	-63	-24	-6
1770	0	6	7	25	87	135	180	237	224	187
1780	78	-19	-116	-164	-166	-152	-104	-37	-16	-11
1790	-13	-21	-33	-18	17	45	85	118	134	134
1800	142	179	185	152	147	164	139	96	28	-8
1810	-9	-2	-21	-95	-159	-218	-253	-131	-20	99
1820	177	182	130	11	-80	-122	-118	-70	-24	57
1830	141	135	88	26	-4	-66	-151	-189	-181	-148
1840	-90	-91	-122	-138	-100	-49	-8	49	79	70
1850	21	-44	-97	-69	10	54	48	28	25	47
1860	77	105	120	107	55	-8	-77	-135	-195	-195
1870	-69	12	25	-21	-80	-113	-118	-92	-45	56
1880	121	152	171	168	132	79	47	46	65	103
1890	141	180	203	179	132	77	21	-26	-54	-73
1900	-90	-82	-19	53	4	-69	-89	-44	20	93
1910	136	128	112	109	149	152	129	127	128	121
1920	106	88	68	36	-3	-55	-94	-78	-57	-60
1930	-87	-92	-71	-25	-16	-53	-91	-106	-122	-117
1940	-98	-54	8	31	19	-13	-59	-56	38	98
1950	131	134	102	57	31	31	27	0	-38	6
1960	99	157	163	128	49	-32	-87	-73	17	147
1970	230	207	124	42	-28	-70	-75	-61	-52	-70
1980	-107	-133	-134	-32	110	218	317	281	164	85
1990	19	-52	-100	-135	-127	-42	10	34	54	81
2000	104	95	89	97	71	12	-46	-85	-70	-43
2010	-19	6	27	44	60	74	81	76	34	-72
2020	-151	-201	-227	-233	-215	-172	-110	-47	4	56
2030	104	146	188	214	224	195	152	109	64	42
2040	29	41	58	69	63	25	-27	-66	-87	-99
2050	-76	-47	-58	-110	-150	-164	-145	-106	-77	-25
2060	23	64	99	133	152	170	171	153	126	88
2070	35	-24	-68	-93	-108	-115	-124	-131	-126	-119
2080	-111	-109	-107	-76	-53	21	78	74	45	16
2090	0	0	29	70	98	67	33	-4	-33	-60
2100	-79	-89	-79	-53	-29	-6	20	33	69	155

TO BE CONTINUED

CONTINUED(M-439 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	207	211	134	48	1	-15	31	85	127	140
2120	108	41	-22	-78	-113	-135	-81	-1	20	16
2130	-6	-24	-29	-19	-9	-8	-19	-45	-11	43
2140	60	64	66	81	106	132	148	140	101	51
2150	-9	-62	-88	-84	-47	-6	-9	-33	-48	-32
2160	-13	-38	-61	-38	7	44	67	80	84	76
2170	49	23	19	20	16	-12	-66	-97	-88	-84
2180	-85	-84	-91	-69	-24	6	9	5	-1	-2
2190	10	44	82	125	162	175	121	76	70	71
2200	69	59	32	0	-21	-54	-113	-155	-155	-125
2210	-82	-44	-10	10	17	17	3	-12	-21	-20
2220	16	74	132	184	182	181	30	-113	-135	-165
2230	-183	-228	-223	-149	-92	-41	-6	8	15	18
2240	25	29	27	28	25	7	-37	-96	-117	-95
2250	-42	9	35	38	20	21	40	9	-52	-48
2260	-12	13	38	55	59	66	56	25	2	-3
2270	7	21	16	-25	-78	-117	-89	-23	33	73
2280	92	81	47	11	-23	-21	-2	40	71	53
2290	25	-7	-8	43	105	145	176	152	48	-5
2300	-74	-52	-8	-7	-81	-148	-173	-185	-151	-65
2310	-5	32	32	-1	-40	-66	-76	-56	-12	45
2320	84	90	70	52	50	66	93	116	122	106
2330	61	3	-46	-103	-114	-66	-27	-16	-37	-74
2340	-125	-168	-190	-129	-44	23	48	48	45	15
2350	-29	-29	26	88	136	177	195	182	145	78
2360	10	-31	-62	-78	-88	-82	-75	-100	-152	-186
2370	-184	-148	-107	-65	-27	-6	-5	-26	-35	-15
2380	42	92	125	148	153	146	132	99	33	-34
2390	-67	-78	-64	-36	0	22	17	-7	-32	-82
2400	-99	-74	-39	-8	15	37	55	79	99	119
2410	118	102	82	56	46	56	70	48	12	-34
2420	-103	-138	-139	-140	-130	-112	-93	-75	-58	-32
2430	6	42	73	79	59	48	66	88	88	41
2440	-17	-66	-84	-33	16	48	54	44	-2	-53
2450	-103	-92	-40	-5	-14	-44	-66	-72	-56	-31
2460	-2	16	16	-11	-73	-75	7	72	116	160
2470	172	147	89	38	23	13	6	2	-11	-29
2480	-40	-73	-54	2	27	37	31	7	-17	-34
2490	-31	-17	-3	15	72	124	97	21	-34	-81
2500	-88	-72	-59	-59	-80	-108	-138	-75	36	104
2510	171	162	111	23	-47	-106	-114	-66	-11	41
2520	77	102	107	92	61	18	-19	-48	-74	-93
2530	-78	-38	0	32	56	73	71	54	38	17
2540	-2	-26	-57	-93	-129	-133	-116	-77	-37	-31
2550	-31	-37	-55	-68	-78	-69	-35	-3	37	66
2560	72	55	26	30	42	49	51	43	28	19
2570	9	15	33	11	-39	-73	-59	-25	-1	19
2580	37	55	81	91	84	33	0	39	85	107
2590	112	103	82	50	5	-44	-105	-134	-96	-75
2600	-73	-96	-119	-71	-16	13	27	23	7	-18
2610	-46	-39	6	58	49	0	-68	-101	-90	-55
2620	-11	3	-3	-24	-46	-62	-75	-80	-66	-39
2630	-23	0	10	0	24	49	75	95	120	134
2640	141	91	0	-86	-131	-147	-155	-121	-54	7

TO BE CONTINUED

CONTINUED(M-439 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	30	-13	-71	-97	-91	-52	-22	-21	-40	-66
2660	-92	-86	-59	-2	58	94	107	115	104	82
2670	64	22	-15	-39	-37	-28	-36	-62	-83	-70
2680	-45	-19	-7	-12	-24	-29	-29	-25	-11	4
2690	24	33	23	-6	-48	-98	-109	-58	15	80
2700	85	24	0	9	24	46	58	43	13	-10
2710	-47	-90	-98	-52	3	28	9	-3	19	38
2720	7	-27	-15	11	33	36	6	-31	-47	-41
2730	-25	-36	-46	0	30	76	54	-2	-14	14
2740	48	71	67	12	-60	-116	-133	-112	-70	-13
2750	18	7	-18	-12	14	31	31	13	3	37
2760	77	95	79	45	7	-6	-8	0	0	-29
2770	-42	-21	-8	-13	-39	-58	-53	-34	-27	-37
2780	-51	-79	-99	-100	-82	-43	-5	30	47	48
2790	31	32	50	40	16	4	26	54	72	79
2800	62	11	-48	-81	-106	-93	-40	12	53	89
2810	117	111	73	23	-53	-140	-172	-140	-24	56
2820	84	64	40	19	3	-21	-16	-9	-10	-10
2830	-27	-48	-71	-58	-19	74	138	147	146	121
2840	87	54	24	6	1	1	8	12	23	42
2850	39	13	-14	-32	-44	-56	-68	-81	-93	-83
2860	-35	2	12	17	34	72	102	128	141	129
2870	100	60	24	6	3	1	-6	-15	-30	-44
2880	-63	-79	-99	-99	-75	-40	-20	4	15	13
2890	11	-3	11	39	64	98	108	106	96	75
2900	51	22	-2	-32	-74	-101	-95	-72	-38	-27
2910	-28	-20	-6	22	45	80	93	50	7	-31
2920	-51	-35	7	92	140	135	100	30	-50	-90
2930	-88	-56	-15	15	50	65	44	21	4	0
2940	16	54	87	84	40	0	-30	-39	-20	22
2950	52	52	36	17	11	11	11	8	-23	-57
2960	-78	-80	-37	14	48	95	130	136	112	78
2970	56	52	52	52	31	-5	-48	-61	-48	-39
2980	-22	3	26	32	29	15	-10	-40	-52	-48
2990	-32	-25	-17	-4	2	8	16	21	28	32

END

RECORD = M-439 COMPONENT = UP STATION = TOKACHI-M
DATE AND TIME = 1981-01-23-13-58 TOTAL NUMBER OF DATA = 3000
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 1773,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	47	-118	-177	-92	-12	94	163	183	12	-175
10	-165	-84	70	142	126	181	119	-111	-184	101
20	221	147	27	23	-82	-187	-162	34	148	232
30	209	99	9	-159	-86	126	75	-139	-172	-17
40	165	233	193	102	-30	65	122	109	86	64
50	74	123	71	-102	-317	-238	-34	87	255	291
60	135	-31	8	83	59	27	7	122	229	232
70	97	-21	-191	-182	104	149	74	-8	44	216
80	249	69	-124	-232	-167	-15	71	167	205	136
90	66	48	28	-41	40	244	301	259	127	-89
100	-191	6	163	313	194	0	-159	-196	37	136
110	167	152	147	80	2	-80	-101	-22	45	102
120	162	149	60	61	-29	-152	-44	90	178	250
130	116	-2	-115	-102	99	216	155	-17	-35	0
140	-106	-160	-77	-63	-103	68	194	58	-113	-30
150	147	121	65	10	-13	-55	45	201	205	77
160	42	-17	59	59	-115	-109	18	35	-74	-170
170	38	280	279	140	-51	-157	-137	-72	107	288
180	263	75	73	53	-89	-129	19	100	132	189
190	118	-67	-171	-134	42	128	153	46	-83	17
200	107	153	-37	-297	-228	-48	203	341	188	112
210	29	31	-92	-193	55	144	69	-13	-36	-60
220	-75	-48	133	218	136	-81	-28	112	47	12
230	77	-16	-116	70	122	77	26	-12	-58	78
240	-20	-82	71	161	186	77	-8	12	-23	-106
250	-47	180	233	98	-6	-8	-82	-112	-41	10
260	91	153	97	-17	-114	-146	36	112	117	103
270	-29	-64	60	143	152	81	23	-45	-99	-52
280	115	209	54	-85	-206	-111	179	277	329	317
290	12	-215	-137	4	204	328	56	-27	-8	-39
300	-53	70	207	166	137	65	-173	-245	-144	-40
310	130	304	290	58	-265	-99	65	123	85	-10
320	77	159	145	61	-82	-62	66	184	218	126
330	0	-82	-125	-90	-29	57	171	71	-37	-102
340	41	106	61	43	92	-16	-101	64	112	7
350	-91	-120	-149	-25	52	135	185	201	79	-120
360	-181	4	213	328	340	173	-121	-209	-89	22
370	159	257	170	-28	-142	-5	44	5	-25	-81
380	-3	98	83	9	72	58	-41	-42	-4	-6
390	153	210	58	-77	-192	-137	11	176	244	93
400	-99	-137	-6	73	177	267	323	82	-84	-178
410	-145	30	129	181	19	-174	-215	2	142	316
420	147	-20	-58	-160	-182	-96	32	139	273	321
430	269	152	39	-55	-130	-97	30	67	-22	-147
440	-107	14	82	98	-41	-25	91	43	-45	-50
450	-88	-140	-64	60	63	-58	-58	174	315	328
460	216	93	-19	-109	111	327	206	-1	-162	-137
470	48	147	182	121	34	-8	-30	-58	-158	-113
480	77	219	232	-123	-215	-153	-70	20	161	242

TO BE CONTINUED

CONTINUED(M-439 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	86	-202	-220	-21	108	165	50	-83	-64	11
500	80	51	22	151	195	53	-77	-92	37	100
510	88	18	-134	-124	181	271	181	-30	-170	-135
520	-24	86	209	57	-135	-219	-113	18	67	103
530	120	140	157	118	32	-52	-90	58	168	85
540	-192	-186	22	101	132	74	-17	26	100	149
550	27	-130	-191	-96	45	95	31	91	41	-58
560	-88	-103	-83	-55	-8	53	32	0	34	4
570	-74	-18	90	114	130	17	-33	8	-22	97
580	199	289	209	23	-77	-187	-132	-85	-80	-6
590	79	57	7	95	31	-78	-18	127	181	72
600	92	85	9	-45	-85	-115	-177	-126	-53	-23
610	8	30	15	-50	-123	-141	51	138	29	-69
620	-60	-168	-115	47	109	137	139	293	276	217
630	140	56	-16	-23	44	64	39	-7	10	5
640	0	7	32	23	69	197	226	167	56	35
650	-28	-146	-213	-77	-57	-110	71	176	130	29
660	46	16	-33	-57	-192	-158	56	207	267	235
670	92	-108	-154	-210	-223	-306	-58	284	344	356
680	234	4	-152	-167	-211	-308	-254	-144	30	181
690	315	367	261	147	88	27	5	14	32	56
700	60	27	39	123	223	278	295	212	90	58
710	75	-74	-101	-7	37	89	101	89	40	-46
720	-176	-237	-145	-107	-33	45	54	-102	-199	-292
730	-273	-129	-68	-67	10	134	248	247	156	63
740	-89	-177	-131	-57	-74	107	193	114	116	202
750	87	-98	-202	-128	-42	27	108	150	106	3
760	-77	-157	-125	-44	101	243	396	443	313	131
770	27	20	7	35	50	91	76	-26	-117	-119
780	-14	35	72	61	1	-69	-58	-22	8	39
790	107	166	201	113	-85	-318	-505	-534	-427	-260
800	-84	133	244	251	199	163	99	87	265	400
810	530	374	85	-89	-212	-330	-375	-284	-219	-178
820	-131	-52	59	164	108	-17	-129	-129	-24	24
830	41	42	9	6	43	58	58	36	-15	-42
840	-8	34	72	80	72	-12	-124	-213	-295	-305
850	-220	-113	-20	96	158	153	102	116	101	23
860	-28	-72	-68	30	171	189	100	77	121	131
870	79	-7	-60	-334	-372	-212	-89	-109	-157	-88
880	-11	48	109	186	138	65	79	107	41	-58
890	-56	-7	111	153	102	7	-127	-95	-12	-53
900	-127	-14	120	91	-53	-198	-267	-314	-320	-318
910	-222	22	180	331	467	493	283	77	-162	-435
920	-461	-465	-415	-294	-108	79	174	153	178	198
930	26	-153	-120	-51	-153	-301	-307	-258	-104	57
940	175	262	336	296	199	107	38	0	53	106
950	104	46	-48	-135	-177	-129	-77	-95	-178	-177
960	-174	-171	-116	-67	-27	19	68	86	101	99
970	42	-79	-180	-126	-75	-22	6	39	133	125
980	71	142	196	167	115	110	81	-13	-155	-240
990	-286	-327	-364	-321	-239	-144	-26	80	153	222
1000	229	139	77	75	41	5	-9	-37	-59	-81
1010	-100	-127	-123	-57	-13	-102	-221	-253	-249	-148
1020	-27	72	131	159	90	2	-24	10	97	65

TO BE CONTINUED

CONTINUED(M-439 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	39	118	104	48	-56	-118	-67	-48	-156	-198
1040	-155	-145	-87	-18	27	62	77	-31	-184	-290
1050	-385	-333	-133	95	309	399	218	46	-62	-137
1060	-95	-74	-10	69	130	209	220	201	70	54
1070	114	151	193	184	136	-13	-132	-182	-260	-273
1080	-188	-90	-33	-69	-188	-75	40	116	192	238
1090	276	305	284	207	88	-54	-198	-291	-364	-250
1100	-108	0	186	311	280	150	31	-56	-76	-143
1110	-229	-299	-288	-249	-167	-73	12	79	140	186
1120	48	-99	-200	-249	-216	-141	-53	-19	-40	-79
1130	-97	-62	-13	2	-3	-81	-141	-78	11	27
1140	-44	-89	-67	-27	18	66	90	86	32	18
1150	49	72	40	-55	-172	-227	-143	-207	-290	-116
1160	68	204	273	364	119	-101	-163	-184	-156	-104
1170	-1	82	8	-74	15	30	-21	-40	-4	61
1180	102	87	-34	-218	-248	-178	-112	-7	102	221
1190	226	107	6	-92	-200	-190	-76	9	74	114
1200	172	153	109	144	153	92	-26	-141	-225	-200
1210	-62	98	211	221	73	-74	-147	-173	-119	-21
1220	25	36	32	6	-92	-236	-224	-151	-70	18
1230	16	-62	-110	-115	-102	-67	-3	84	141	121
1240	108	142	169	114	23	-81	-221	-389	-491	-404
1250	-208	-28	128	214	166	-52	-201	-230	-128	-24
1260	79	126	151	148	105	43	-29	-5	83	134
1270	154	108	14	-105	-155	-77	-29	-22	-40	-33
1280	-15	-12	-22	-22	-5	-1	-2	-19	-151	-188
1290	-133	-47	65	121	149	133	37	-31	1	-63
1300	-185	-186	-114	0	109	184	213	202	166	115
1310	57	28	26	-6	-112	-171	-93	-23	24	48
1320	53	38	21	21	-14	-34	-26	-36	65	131
1330	138	40	-61	-7	23	22	16	-32	-102	-131
1340	-129	-95	-47	-28	-47	-92	-124	-121	-96	-91
1350	-65	54	126	157	148	134	107	52	6	-50
1360	-110	-129	-136	-65	-10	-18	-26	-24	75	157
1370	183	150	70	0	-49	-53	-44	-22	-17	-42
1380	-70	-101	-119	-116	-119	-103	-56	-15	32	90
1390	108	71	11	38	108	86	34	-1	2	2
1400	-13	-10	-40	-90	-91	-58	-108	34	143	126
1410	94	38	7	-18	-20	-22	-9	23	68	115
1420	158	197	236	210	50	-46	-198	-250	-78	110
1430	169	187	183	100	-13	-108	-178	-220	-239	-236
1440	-233	-204	-138	-48	58	144	177	119	29	-103
1450	-165	-163	-150	-76	36	124	179	205	207	169
1460	68	-65	-161	-210	-170	-59	110	177	156	100
1470	47	14	5	17	52	127	176	168	121	36
1480	-57	-56	33	66	27	-80	-117	-31	5	47
1490	54	37	-61	-137	-105	-62	-33	4	40	2
1500	-6	8	36	62	87	86	58	19	-13	-41
1510	-102	-142	-135	-129	-129	-139	-139	-22	88	108
1520	85	44	2	-17	-25	-24	-26	-24	-48	-60
1530	-24	14	-61	-86	65	153	163	106	28	-26
1540	-60	-66	-79	-89	-55	-25	85	82	44	-20
1550	-67	94	110	123	110	85	41	26	28	29
1560	84	160	190	176	151	112	81	89	61	42

TO BE CONTINUED

CONTINUED(M-439 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	48	26	2	-68	-116	-105	-71	-32	26	80
1580	90	81	63	35	9	-39	-95	-117	-123	-88
1590	-55	-29	-1	16	34	47	58	58	33	-32
1600	-70	-29	13	19	1	-39	-60	-22	23	33
1610	15	-36	-78	-114	-144	-123	-40	41	41	-38
1620	-106	-135	-25	70	59	32	-44	-87	-68	-30
1630	25	58	73	74	60	17	-21	-75	-133	-38
1640	74	170	217	190	120	22	-77	-123	-116	-106
1650	-15	82	121	116	62	1	-16	-17	2	19
1660	28	35	5	-37	-68	-61	-50	-35	-25	-27
1670	-26	-26	-27	-11	21	33	17	0	-4	13
1680	39	47	45	26	-34	-10	35	66	94	98
1690	78	49	10	-20	-40	-56	-26	26	79	122
1700	155	198	213	146	91	73	54	-17	-75	-78
1710	-65	-70	-31	31	36	34	6	-45	-85	-74
1720	-50	-44	-62	-78	-57	-30	2	28	37	21
1730	-3	-26	-36	-27	2	35	66	74	35	-11
1740	-60	-84	-81	-66	-53	-41	-33	-8	18	27
1750	18	4	-9	-29	-43	-59	-88	-102	-82	-40
1760	-16	-1	12	17	14	8	22	26	26	21
1770	3	-23	-39	-56	-113	-170	-99	2	57	73
1780	71	71	58	36	-16	-14	4	20	17	-1
1790	-90	-85	15	47	79	78	40	-3	-61	-63
1800	-18	6	41	83	110	137	82	15	-21	-30
1810	-25	-5	64	76	34	22	25	24	52	43
1820	-31	-107	-72	20	63	85	96	83	95	66
1830	-37	-16	-21	-20	-47	19	-13	-70	-2	45
1840	52	20	-34	-22	11	31	43	44	6	-59
1850	-58	-9	18	29	13	37	48	30	8	-58
1860	-100	-81	-24	19	43	57	58	56	16	-34
1870	-60	-67	-43	23	91	76	36	-6	-37	-60
1880	-71	-48	5	55	68	62	43	32	17	0
1890	-32	-29	20	32	39	30	18	-8	90	148
1900	105	62	14	20	17	27	3	-43	-22	8
1910	34	70	99	92	74	26	-45	-77	-91	9
1920	91	52	7	47	121	119	63	-2	0	28
1930	-1	-18	-15	5	49	95	111	53	-40	17
1940	91	73	51	40	78	108	64	6	6	-24
1950	-40	-27	-18	-9	1	-10	-74	-100	-105	-70
1960	21	44	24	-2	19	50	66	-16	-90	-101
1970	-99	-67	-17	0	-39	-48	-5	49	80	77
1980	54	68	94	70	2	-41	-60	-63	-61	-59
1990	-24	-26	-72	-39	5	35	12	-13	-43	-46
2000	1	56	95	103	99	76	46	13	-19	-25
2010	-4	52	103	84	8	-49	-67	-74	-62	-37
2020	-21	-19	-7	9	40	81	93	74	42	20
2030	-3	-34	-67	-89	-124	-83	28	94	135	130
2040	107	53	16	-42	-115	-174	-157	-60	3	73
2050	100	96	53	4	-10	17	9	-10	30	62
2060	71	44	30	47	42	12	-28	-36	-3	33
2070	59	77	79	58	23	16	73	92	81	46
2080	-13	-90	-126	-82	-21	34	58	68	53	6
2090	-59	-119	-133	-93	-26	71	89	2	-54	-53
2100	-11	51	71	51	-36	-66	0	4	-25	-37

TO BE CONTINUED

CONTINUED(M-439 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	-29	-5	27	63	47	12	-9	-17	-25	-8
2120	11	13	-21	-20	-7	-27	-73	-94	-37	-7
2130	39	81	46	-18	-49	-44	-41	-22	77	79
2140	36	-11	-58	-73	-41	-18	-3	12	9	3
2150	49	54	54	53	55	46	29	16	-2	-38
2160	-69	-72	-73	-27	23	33	4	4	2	-6
2170	20	-6	-62	-63	-11	25	42	53	49	35
2180	12	-28	-39	-10	51	128	76	-1	5	8
2190	26	40	35	-22	-63	-67	-101	-113	-92	-47
2200	-4	0	0	9	25	45	56	62	61	62
2210	61	62	60	75	79	39	6	-1	0	0
2220	-1	0	-19	-87	-73	-26	-22	-12	11	28
2230	28	15	4	-1	18	24	8	-3	4	41
2240	52	-3	-53	-95	-83	-37	-3	21	30	25
2250	17	-1	-34	-71	-85	-83	-84	-67	-43	6
2260	55	77	93	85	61	34	-6	-43	-64	-19
2270	38	67	78	38	-19	-53	-66	-19	45	70
2280	70	34	9	11	32	51	60	104	109	68
2290	25	-68	-133	-86	-32	-6	8	8	17	18
2300	7	-16	-34	-41	-43	-42	-43	-43	-36	-24
2310	-21	-22	-22	-22	-22	-22	-21	-22	-3	21
2320	36	56	79	76	46	-3	-59	-73	-40	2
2330	20	18	20	12	9	19	18	19	10	8
2340	8	14	20	29	37	11	-21	-50	-43	-2
2350	43	67	20	-16	8	41	35	19	-28	-79
2360	-93	-95	-87	-42	-10	7	28	39	32	4
2370	-21	-46	-72	-120	-117	-58	-11	43	89	115
2380	68	-22	-95	-135	-117	-44	8	18	19	15
2390	-5	-22	-15	19	56	61	48	20	-3	5
2400	47	69	70	54	16	37	80	68	3	-77
2410	-127	-69	2	41	91	88	52	7	-43	-61
2420	15	70	88	71	27	-20	-44	-8	42	50
2430	36	5	-19	-31	-27	2	35	56	61	57
2440	34	0	-33	-64	-67	-63	-58	-44	-24	-3
2450	9	2	-20	-37	-4	48	60	41	12	-11
2460	-23	-20	10	37	30	11	-2	0	16	1
2470	-25	-32	-44	-78	-99	-2	73	79	62	32
2480	0	-25	-18	-10	-2	5	9	17	16	18
2490	12	5	-2	-22	-41	-58	-38	-25	-19	-4
2500	44	84	52	11	-15	15	37	28	-12	-43
2510	-46	-43	-28	-13	7	22	45	59	34	-40
2520	-94	-60	-20	10	-2	-12	29	53	56	49
2530	28	15	12	33	63	65	43	-27	-65	-44
2540	12	37	6	-16	16	44	54	52	33	-22
2550	-80	-61	-18	15	39	42	29	11	-5	-9
2560	-9	-9	-11	-30	-60	-84	-91	-65	-18	22
2570	60	65	16	-27	-31	-31	-34	-64	-78	-69
2580	-23	17	18	9	-16	-49	-71	-74	-67	-56
2590	-42	-31	-20	-7	-3	1	5	-3	-10	-29
2600	-41	-53	-50	-39	-29	-18	-6	3	8	18
2610	27	24	-2	-44	-56	-28	14	33	7	-26
2620	-34	-9	30	60	78	61	10	-36	-59	-44
2630	16	41	44	20	-40	-79	-60	-27	-15	-29
2640	-35	-16	0	-22	-43	-34	2	25	43	54

TO BE CONTINUED

CONTINUED(M-439 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	28	-5	-49	-66	-48	-29	-5	0	-12	-40
2660	-72	-89	-89	-67	-19	4	29	38	14	-19
2670	-39	-38	-28	8	32	13	2	29	49	12
2680	-27	-16	1	3	-18	-38	-29	-17	-6	44
2690	58	37	19	5	4	4	4	4	5	4
2700	20	41	56	10	-25	-15	-4	6	4	6
2710	0	-10	-21	-23	0	19	31	36	16	-3
2720	-21	-9	9	25	29	20	2	-11	-11	11
2730	16	-30	-54	-31	-14	-11	-10	-20	-34	-15
2740	14	-33	-85	-57	-22	19	51	42	21	0
2750	3	11	11	12	11	19	34	30	-1	-46
2760	-50	-27	-5	5	-2	-15	-17	-15	1	25
2770	51	58	30	-12	-30	-38	-18	20	42	26
2780	-8	-10	5	16	17	13	-1	-21	-42	-56
2790	-65	-60	-27	13	52	71	60	38	11	-11
2800	-20	-22	-16	1	20	37	32	5	-49	-86
2810	-64	-21	0	0	0	-7	-17	-20	-12	25
2820	59	63	35	-20	-59	-67	-15	61	113	118
2830	67	7	-45	-62	-41	-15	-45	-70	-66	-49
2840	-25	0	28	53	66	64	57	44	31	17
2850	14	13	15	-4	-54	-92	-77	-40	-10	13
2860	32	33	25	18	-1	-19	-26	-17	-9	-4
2870	-5	-5	-5	-6	-15	-15	-16	-12	-4	4
2880	5	5	5	5	4	12	25	26	25	26
2890	24	33	55	57	48	30	9	-10	-23	-26
2900	-23	-15	-15	-6	-5	-13	12	35	36	32
2910	24	28	51	68	51	4	14	66	55	18
2920	-12	-21	-15	-16	-16	-16	-18	5	63	78
2930	61	36	8	-7	0	19	39	46	42	29
2940	26	60	69	24	-2	-7	24	54	36	0
2950	-23	-39	-50	-20	17	45	65	64	63	42
2960	9	-24	-20	12	42	63	62	33	-4	-36
2970	-61	-69	-70	-42	9	44	62	62	48	31
2980	18	-1	-15	-29	-57	-55	-18	24	75	108
2990	117	83	37	-12	-40	-51	-38	-27	20	79

END

RECORD = M-496 COMPONENT = NORTH STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 TOTAL NUMBER OF DATA = 1750
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	0	-17	-49	-108	-144	-137	-99	-80	-121	-178
10	-241	-295	-301	-286	-161	-49	21	99	154	154
20	62	-51	-152	-229	-254	-208	-161	-110	-52	-15
30	24	57	84	105	81	4	-78	-154	-197	-107
40	-1	-5	-52	-98	-66	1	51	113	126	52
50	-18	-56	-93	-138	-156	-100	-44	10	44	38
60	0	-34	16	64	48	-30	-127	-36	114	194
70	197	83	-75	-134	-79	-49	-36	12	75	137
80	182	213	215	168	5	-67	32	83	0	-166
90	-182	-11	180	287	151	-39	-91	-84	-43	-112
100	-182	-245	-211	-65	29	38	-34	-47	0	187
110	494	564	336	49	-127	-80	35	63	-3	-138
120	-122	-47	-26	-36	-66	-61	-3	71	125	138
130	164	247	203	57	-43	-145	-149	-159	-221	-292
140	-410	-352	-184	-117	-93	-154	-199	-66	114	200
150	405	393	109	-50	-120	117	355	426	310	119
160	-43	-115	72	236	309	141	-104	-55	57	157
170	238	252	206	73	43	77	46	-63	-184	-252
180	-279	-236	-131	-46	14	73	120	130	130	103
190	0	1	109	173	238	105	-122	-348	-360	-152
200	-26	112	113	78	-73	-157	-94	-29	4	5
210	-29	-156	-213	-19	139	259	284	189	60	-46
220	-166	-91	86	190	276	220	99	117	216	206
230	-178	-383	-471	-355	-155	-69	98	149	-150	-209
240	-40	146	258	161	-14	10	105	195	203	119
250	47	-32	-118	-211	-188	-122	22	-141	-346	-338
260	-222	-109	63	5	-149	-62	46	80	56	-17
270	-65	-80	-39	10	63	52	-44	-132	-233	-281
280	-115	39	100	61	-43	-71	67	103	25	-28
290	15	127	230	212	94	3	-8	50	114	156
300	170	143	128	110	-11	-43	19	64	52	-49
310	-176	-183	-31	42	55	51	37	24	7	0
320	-17	-33	-28	-12	20	79	122	122	71	-81
330	-252	-229	-107	71	162	87	-50	-137	-71	-46
340	-67	-161	-213	-147	-78	-35	-9	1	13	23
350	35	44	9	-72	-9	85	108	114	92	69
360	72	107	147	157	154	91	11	-42	-80	10
370	103	81	42	-2	-30	-52	-63	2	74	96
380	73	39	34	34	39	43	30	62	60	-65
390	-147	-178	-114	-62	-68	-111	-177	-138	23	150
400	118	49	-48	-108	-45	32	96	123	131	136
410	90	15	-131	-48	44	-78	-162	-214	-96	72
420	204	262	156	-22	-11	81	136	172	128	71
430	17	-30	-54	-40	-7	32	68	86	73	9
440	-12	-2	21	46	36	-20	-104	-170	-216	-174
450	-101	-42	-2	21	40	92	118	57	-5	-47
460	-63	-66	-54	-14	19	18	-9	-39	-63	-64
470	-48	-7	13	-3	-10	-1	9	-32	-66	-39
480	29	65	-33	-151	-97	25	68	76	17	-38

TO BE CONTINUED

CONTINUED(M-496 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-29	26	73	100	88	41	8	-13	-6	54
500	115	133	128	103	85	73	67	47	-22	-85
510	-109	-68	10	78	64	16	-26	36	118	28
520	-84	-106	0	21	23	-7	-42	-62	-46	-14
530	24	0	-80	-139	-77	-5	-10	-57	-142	-162
540	-47	78	118	82	21	-20	-14	0	25	33
550	37	45	53	57	55	56	47	22	-31	-54
560	-55	-22	32	72	69	4	-44	-84	-95	-59
570	-54	-83	-108	-84	-36	-4	0	-2	-6	-42
580	-90	-63	0	38	44	40	24	5	-1	0
590	9	5	-6	-21	-17	23	67	71	28	14
600	36	66	84	97	92	46	-17	-64	-36	-2
610	37	49	-9	-56	-11	64	82	72	27	-4
620	5	19	17	-16	-74	-58	-11	-2	-13	-30
630	-14	-17	-53	-106	-93	-46	16	70	58	-20
640	-80	-67	-15	-54	-22	54	70	41	7	-4
650	14	27	9	-11	-19	-14	-36	-62	0	44
660	44	37	83	116	115	107	58	4	-28	-28
670	-13	7	14	14	3	4	18	50	29	-15
680	-31	-42	-39	-32	-21	-27	-41	-38	-27	-18
690	-20	-5	42	69	65	48	52	69	65	32
700	-10	-40	-58	-65	-47	-20	13	37	11	-45
710	-108	-101	1	37	8	-51	-83	-77	9	92
720	120	57	-56	-67	-15	22	12	-48	-67	-1
730	52	24	-30	-61	-62	-3	11	-21	-44	-54
740	-36	-33	-49	-65	-83	-86	-86	-81	-69	-64
750	-57	-52	-42	-28	-11	-17	-57	-64	-42	-6
760	32	61	48	26	13	21	39	57	70	69
770	69	59	59	53	46	38	34	15	-16	-37
780	-49	-43	-40	-51	-51	-51	-51	-50	-31	3
790	9	-26	-55	-63	-50	-23	3	32	39	31
800	10	-4	-13	-17	-22	-36	-38	-38	-19	18
810	43	67	93	91	64	39	63	94	84	66
820	44	15	-21	13	78	114	62	-4	-8	8
830	-6	-40	-41	-21	-7	4	8	8	2	-10
840	-34	-62	-89	-112	-101	-66	-40	-22	-37	-53
850	-55	-28	-11	-15	-40	-67	-65	-57	-35	-21
860	-32	-82	-87	4	64	64	45	32	32	32
870	32	44	81	90	80	36	20	60	78	69
880	25	-1	1	-3	-23	-53	-17	29	-3	-36
890	-60	5	42	13	-7	-10	-11	0	13	21
900	33	41	45	44	44	35	44	56	51	29
910	3	-23	-47	-60	-65	-66	-56	-30	21	34
920	11	-16	-6	38	35	2	-29	-12	21	36
930	45	32	10	1	-5	-11	-6	21	46	30
940	-2	-23	-40	-39	-30	-38	-50	-62	-85	-78
950	-32	-2	1	1	-4	-23	-43	-35	0	34
960	44	36	24	26	56	90	104	111	111	110
970	98	87	91	52	-5	-20	35	96	97	56
980	2	-19	-23	-19	-47	-89	-81	-62	-45	-42
990	-5	31	31	-10	-73	-91	-73	-17	1	-9
1000	-63	-64	-19	-12	-42	-93	-127	-93	-36	-11
1010	-26	-63	-54	-7	18	11	-33	-68	-50	21
1020	80	64	47	39	31	31	31	21	26	49

TO BE CONTINUED

CONTINUED(M-496 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	59	27	-1	27	53	54	19	-14	-19	15
1040	38	42	37	8	-55	-57	-24	0	9	-5
1050	-29	-28	23	63	57	26	-10	-18	-5	20
1060	53	25	6	23	29	-2	-56	-42	5	30
1070	24	16	19	30	-9	-52	-43	-27	-9	-5
1080	-25	-67	-95	-79	-32	5	-17	-17	53	71
1090	64	16	-21	-29	-23	-12	7	31	48	61
1100	52	4	-27	-9	10	26	36	37	37	36
1110	37	29	17	-1	-19	-28	-30	-29	-30	-30
1120	-40	-41	-39	-25	-6	3	2	3	0	-8
1130	-6	16	34	27	-6	-30	-27	-10	4	13
1140	22	36	47	35	20	5	-8	-5	10	13
1150	13	2	-11	-20	-19	-21	-13	0	2	-1
1160	-11	-7	35	77	91	78	63	57	51	42
1170	28	14	12	11	1	-11	-27	-32	-31	-31
1180	-31	-23	-2	13	9	-10	-35	-42	-51	-54
1190	-53	-54	-53	-54	-53	-54	-50	-42	-43	-43
1200	-34	-10	24	32	14	-3	-17	-26	-32	-32
1210	-23	-9	-14	-27	-24	-4	21	41	44	16
1220	-17	-20	-21	-18	-7	9	13	12	12	1
1230	-8	-10	-7	1	13	24	19	0	-25	-29
1240	0	7	-19	-38	-14	19	25	12	-16	-21
1250	2	23	23	-2	-13	20	19	-9	-26	-8
1260	-9	-21	-43	-26	16	33	39	45	34	26
1270	23	24	23	24	23	24	15	10	2	1
1280	5	14	0	-19	-20	-20	-11	0	5	14
1290	6	-6	-19	-11	22	0	-32	-32	8	27
1300	12	-37	-66	-36	-9	-8	-16	-20	-6	12
1310	39	45	10	-43	-67	-47	-8	21	24	0
1320	-18	-4	24	17	-36	-52	-50	-16	27	45
1330	48	46	25	-1	-3	19	26	25	23	2
1340	-8	-2	12	25	26	27	24	15	15	16
1350	2	-11	-17	-4	13	15	20	28	26	18
1360	3	-21	-39	-19	7	27	24	0	-25	-7
1370	32	49	43	0	-27	-20	0	9	-3	-34
1380	-29	-3	7	6	8	1	-10	-18	-26	-25
1390	-26	-22	-13	-14	-19	-29	-36	-36	-33	-23
1400	-26	-18	-12	-14	-12	-3	-1	-2	-1	-4
1410	-14	-7	0	8	7	-4	-13	-14	16	28
1420	-3	-33	-46	-40	-9	0	-17	-52	-78	-92
1430	-24	42	41	11	-39	-24	1	16	23	11
1440	2	-1	-9	-10	-6	6	13	11	13	12
1450	37	55	28	3	1	2	0	-12	-23	-29
1460	-10	42	67	46	38	34	38	46	48	43
1470	36	31	21	8	-3	-8	6	33	37	38
1480	80	129	140	105	40	-11	16	66	70	49
1490	24	15	16	15	25	28	27	27	28	19
1500	16	17	16	17	8	6	6	7	3	-4
1510	-7	-16	-28	-38	-35	-28	-20	-14	-15	-15
1520	-27	-46	-59	-69	-69	-60	-50	-46	-47	-47
1530	-47	-51	-75	-71	-36	-11	-2	7	-5	-28
1540	-43	-47	-44	-31	-15	-12	-14	-24	-19	-3
1550	19	32	31	18	1	-1	-1	-1	8	19
1560	21	20	20	1	-19	-40	-33	6	10	9

TO BE CONTINUED

CONTINUED(M-496 NORTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-1	1	11	34	51	56	51	41	33	32
1580	25	10	6	32	58	66	3	27	15	10
1590	15	24	34	44	43	31	15	11	12	31
1600	34	34	28	13	10	1	0	1	11	12
1610	11	13	5	0	0	6	12	20	21	8
1620	0	5	19	22	13	11	33	50	59	29
1630	7	42	65	59	21	3	0	1	1	1
1640	1	1	0	8	13	9	1	-8	-9	0
1650	8	13	11	12	12	12	11	13	5	0
1660	3	26	36	23	8	0	9	31	35	24
1670	3	-14	-25	-13	0	10	13	12	11	0
1680	-8	-14	-15	-7	0	1	1	-8	-21	-19
1690	-22	-16	-9	-4	8	12	4	-4	3	14
1700	8	-7	-10	-9	-10	-6	2	11	12	12
1710	4	0	2	12	12	13	6	1	-1	-10
1720	-9	-1	18	23	8	-8	-9	-14	-22	-10
1730	7	10	-4	-23	-24	-5	17	34	33	17
1740	12	7	0	1	1	0	5	27	43	56

END

RECORD = M-496 COMPONENT = EAST STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 TOTAL NUMBER OF DATA = 1750
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2).	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	-70	-75	41	132	203	204	166	194	249	274
10	273	229	187	156	183	177	69	-2	-72	-5
20	74	78	102	96	140	192	240	283	323	311
30	164	46	-68	-131	-148	-191	-245	-279	-230	-27
40	67	89	89	0	-5	45	70	1	-152	-344
50	-363	-266	-114	-63	-119	-54	25	133	171	125
60	111	149	137	113	121	146	205	198	93	1
70	-47	15	89	17	-86	-155	-199	-63	71	88
80	-87	-172	-183	-147	-133	-176	-235	-136	7	79
90	102	-26	-87	-119	-121	-105	-59	0	97	185
100	214	224	197	146	96	77	77	125	224	288
110	293	262	166	87	11	41	59	-17	-74	-109
120	-91	-52	-43	-66	-128	-199	-124	50	142	186
130	142	25	-8	118	257	353	387	219	60	-54
140	-85	-31	-40	-51	-82	-96	-63	17	50	21
150	-19	-55	-90	-135	-81	-12	-89	-155	-202	-88
160	25	44	12	-91	-209	-199	-51	138	270	386
170	265	154	256	395	464	421	197	-19	-59	71
180	161	51	-40	-105	-240	-242	-170	-133	-127	-139
190	-174	-224	-190	-72	111	168	-2	-192	-208	-112
200	-31	-31	-15	80	192	298	252	118	8	-16
210	86	104	111	89	95	116	131	120	74	25
220	-12	-32	-47	-48	-85	-124	-62	57	46	-61
230	-106	-57	7	86	38	-53	-112	21	130	-23
240	-172	-290	-189	77	168	20	-60	-189	-107	91
250	100	19	-45	44	243	243	55	-87	-33	119
260	98	11	-140	-104	32	194	331	188	0	-186
270	-35	107	106	45	-37	-136	-100	38	95	90
280	49	8	-25	-26	3	35	52	53	45	18
290	-8	-37	-59	-70	-83	-93	-101	-109	-115	-98
300	-30	32	88	101	65	13	112	229	270	232
310	101	27	10	42	2	-83	-115	37	116	171
320	121	47	-22	-16	31	20	-18	-100	-140	-107
330	-36	9	-31	-176	-191	55	250	258	107	-14
340	-82	-11	78	132	160	95	5	8	33	50
350	50	25	-33	-102	-121	9	153	215	126	-55
360	-78	-13	13	21	-4	7	94	162	162	64
370	-23	-102	-65	40	69	67	-21	-54	-48	-43
380	-74	-142	-179	-13	122	129	27	11	67	83
390	71	29	4	12	38	60	82	50	-36	-90
400	-141	-161	-137	-122	-105	-87	-67	-39	-55	-47
410	11	26	31	0	-46	-98	-97	1	54	3
420	-64	87	218	203	195	118	55	-7	-16	44
430	127	183	118	54	72	84	35	-44	-92	-71
440	-11	26	4	-72	-19	92	119	30	-85	-127
450	4	96	137	21	-133	-125	-34	51	66	-22
460	-108	-127	-80	-57	-25	-3	0	0	0	0
470	0	-6	-17	-28	-31	-30	-28	-15	13	41
480	24	-8	-33	-43	-35	-8	41	83	83	14

TO BE CONTINUED

CONTINUED(M-496 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-3	45	65	9	-53	-98	-62	49	82	85
500	70	30	1	10	6	-13	-37	-37	-29	-39
510	-75	-76	-11	54	96	79	41	11	0	18
520	24	-4	-48	-68	-8	50	69	34	67	126
530	118	33	-88	-109	-15	64	87	41	-7	-22
540	-10	1	10	8	-10	-41	-80	-103	-80	-27
550	-3	0	-8	-4	24	26	-8	-72	-64	36
560	95	131	104	18	-24	16	41	52	40	12
570	0	35	86	84	26	-5	21	41	26	-22
580	-60	-52	9	66	84	50	-1	11	54	72
590	47	3	-22	2	31	34	-12	-53	-36	-2
600	-2	-30	-52	-46	-15	5	25	28	27	10
610	29	57	67	48	13	-11	-23	-24	-33	-35
620	-41	-50	-56	-40	-37	-27	20	45	68	76
630	26	-17	2	46	83	95	99	97	77	64
640	51	-18	-67	-16	14	25	16	5	-9	-17
650	-15	-6	-8	-24	-40	-54	-64	-71	-52	-18
660	-1	-10	-45	-61	-49	-38	-39	-37	-40	-20
670	31	44	31	7	-11	-16	-2	17	33	54
680	43	-12	-65	-83	-46	-19	-2	2	1	2
690	11	23	38	57	69	76	71	65	57	33
700	21	33	24	13	80	126	161	127	14	-12
710	24	45	24	-3	-7	-5	-10	-9	-17	-33
720	-50	-52	-61	-64	-73	-66	-70	-67	-42	-41
730	-57	-61	-52	-40	-29	-33	-47	-51	-50	-42
740	-31	-21	-16	-1	0	-13	-19	-19	-10	8
750	25	36	44	41	34	27	21	32	43	54
760	27	-4	-36	-29	8	43	20	-52	-70	-52
770	-18	-34	-73	-89	-41	33	50	7	-7	9
780	41	53	45	30	2	-15	5	19	-12	-29
790	3	21	9	-23	-60	-79	4	53	53	22
800	-37	-63	-6	57	63	34	-3	-26	-13	0
810	1	-20	-40	-78	-79	-15	25	14	0	-19
820	35	72	41	15	-17	33	92	112	98	41
830	6	-4	45	79	54	24	-12	-34	-33	-44
840	-58	-67	-32	3	-24	-60	-74	-76	-57	-13
850	0	-5	-14	-25	-44	-26	0	-9	-31	-32
860	-17	-2	11	19	-1	-27	-44	-36	-7	20
870	29	8	27	69	77	16	-68	0	56	57
880	41	18	1	1	19	30	30	31	28	18
890	1	11	37	34	15	0	0	-9	-35	-67
900	-91	-92	-59	-29	-41	-75	-117	-101	-27	-25
910	-45	-86	2	115	80	21	-28	32	51	41
920	40	29	17	5	0	3	29	54	68	62
930	0	-18	4	38	37	6	0	18	37	49
940	44	-11	-55	-13	11	-3	-27	-31	-12	0
950	0	-5	-10	20	25	0	-18	-8	12	19
960	18	-18	-41	-35	-6	15	14	-14	-49	-69
970	-35	-10	-17	-33	-22	15	46	64	73	61
980	40	24	19	20	20	14	8	3	-6	-11
990	-10	0	20	30	29	28	10	21	48	69
1000	81	77	46	5	-25	-33	-32	-26	-14	-11
1010	-27	-49	-57	-78	-63	-4	35	39	16	-3
1020	7	28	13	-25	-59	-64	-66	-32	18	0

TO BE CONTINUED

CONTINUED(M-496 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-25	-44	-44	-38	-27	-21	-14	-8	-9	-16
1040	-27	-36	-30	-20	-9	5	0	-35	-63	-67
1050	-27	1	-43	-100	-90	-5	48	54	26	-4
1060	-2	39	66	62	16	-15	-23	16	57	53
1070	27	5	5	4	20	47	57	48	38	25
1080	5	-17	-26	17	47	44	31	-2	-42	-42
1090	-2	33	46	40	28	7	-17	-9	11	14
1100	0	-20	-35	-46	-49	-38	-31	-47	-67	-55
1110	-22	-5	0	-15	-34	-51	-34	-28	-29	-38
1120	-21	16	32	32	7	-28	-40	-39	-33	-27
1130	-22	-8	10	13	3	-16	-46	-25	16	-11
1140	-22	15	23	35	0	-55	-80	5	37	29
1150	28	-7	-31	18	34	25	-4	-22	-12	1
1160	28	51	51	22	-15	-39	-35	-18	-5	0
1170	6	20	21	21	3	-22	-30	-17	1	21
1180	0	-48	-59	5	64	53	15	-27	-53	-33
1190	0	0	0	0	0	0	5	22	40	49
1200	43	27	16	4	-10	-19	-17	2	19	33
1210	43	32	19	13	5	0	0	-14	-24	-39
1220	-51	-61	-61	-66	-73	-71	-72	-72	-61	-31
1230	5	-3	-49	-90	-60	-5	19	20	-12	-45
1240	-51	-41	-25	-20	-13	-18	-30	-39	-40	-23
1250	-10	-1	4	21	12	-18	-45	-59	-73	-45
1260	19	39	37	20	11	2	0	1	-7	-1
1270	2	10	12	4	-15	-20	-9	16	30	28
1280	2	-46	-60	-33	6	27	32	10	-15	-20
1290	-10	1	-3	-11	7	44	54	50	25	-2
1300	-12	6	23	9	-20	-41	-24	25	39	6
1310	-28	-24	0	14	1	-23	-44	-51	-47	-34
1320	-27	-36	-40	-33	3	14	5	-9	-22	-38
1330	-26	15	29	2	-29	-49	-44	-25	-9	1
1340	3	0	-15	-27	-25	-7	2	10	-1	-33
1350	-57	-37	1	23	21	0	-15	-16	11	34
1360	30	5	-22	-18	20	21	2	-24	-3	26
1370	12	-16	-43	-27	17	20	-8	-33	-54	-31
1380	8	24	19	4	-10	-26	-47	-59	-67	-58
1390	-28	0	7	6	2	-10	-14	-9	7	-10
1400	-18	25	50	20	-25	-19	12	37	38	39
1410	39	39	39	36	28	29	28	30	38	40
1420	39	30	19	26	30	28	34	41	35	22
1430	7	0	14	27	41	29	5	0	22	30
1440	1	-21	-5	18	20	-1	-32	-43	-13	27
1450	30	20	3	-14	-25	-38	-36	-29	-29	-30
1460	-23	-18	-10	-8	-4	2	7	17	24	33
1470	30	19	6	-9	-20	-7	23	41	43	33
1480	20	12	14	13	13	14	9	0	-6	-12
1490	-31	-24	9	22	0	-31	-49	-41	-17	-5
1500	-11	-33	-51	-75	-80	-46	-35	-50	-41	-3
1510	25	38	33	17	5	5	6	5	6	-9
1520	29	50	42	13	-15	-25	-17	-13	-14	-13
1530	-14	-13	-14	-13	-14	-11	-2	-2	6	7
1540	-1	-3	-2	-2	-2	6	7	8	7	14
1550	19	17	20	29	28	29	28	33	41	37
1560	29	29	29	28	18	5	-12	-27	-35	-12

TO BE CONTINUED

CONTINUED(M-496 EAST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	28	57	45	17	-3	-12	-2	5	18	20
1580	13	8	9	10	4	-10	-23	-38	-43	-39
1590	-28	-12	5	32	50	64	73	47	20	13
1600	48	82	75	46	35	53	71	68	36	5
1610	-13	-20	-2	15	29	31	31	31	31	31
1620	31	31	31	31	30	22	20	21	20	21
1630	20	12	2	-7	1	9	17	24	31	31
1640	31	32	24	20	21	20	21	20	23	32
1650	30	38	52	48	33	12	-8	-31	-41	-50
1660	-51	-51	-42	-40	-41	-40	-41	-31	-30	-29
1670	-20	-20	-20	-20	-20	-19	-6	1	0	-7
1680	-28	-15	5	20	17	-17	-47	-41	-15	0
1690	-2	-32	-45	-25	-3	0	0	0	0	-9
1700	-9	-10	-4	1	0	0	0	0	0	0
1710	0	0	7	21	37	42	39	18	-5	-9
1720	-10	-1	0	0	-15	-21	-3	5	14	21
1730	30	32	30	36	42	41	42	42	51	52
1740	52	52	52	43	41	32	32	27	20	21

END

RECORD = M-496 COMPONENT = UP STATION = HANASAKI-M
DATE AND TIME = 1981-11-23-19-17 TOTAL NUMBER OF DATA = 1750
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	19	44	88	116	84	55	36	30	11	-2
10	1	23	51	67	55	39	50	84	106	93
20	77	104	116	83	66	71	77	50	26	7
30	10	23	30	38	3	-22	10	39	63	89
40	113	137	150	117	73	41	12	-9	-8	2
50	18	29	32	76	147	167	145	95	40	27
60	30	-35	-89	-59	-3	18	-49	-83	-62	-43
70	-4	43	60	27	65	40	24	54	42	15
80	43	87	97	-31	-116	-37	17	14	-24	-16
90	13	41	38	6	-101	-101	-39	-99	-173	-207
100	-96	-38	-15	-5	-29	-36	-15	-6	-2	-28
110	-73	-51	26	74	63	29	11	26	24	-2
120	-50	-104	-96	-29	46	72	47	49	73	24
130	12	38	42	4	-39	-61	-62	-17	22	52
140	51	13	-7	37	80	97	150	183	140	68
150	47	49	59	54	50	9	-55	-2	50	70
160	42	-15	-61	-74	-95	-120	-47	2	4	-34
170	-14	-3	-2	-24	-72	-91	4	93	105	84
180	21	55	113	128	106	92	157	142	147	179
190	124	69	143	106	1	10	61	59	3	-66
200	-92	-106	-31	39	65	21	-46	14	46	22
210	-52	-63	-23	-6	-5	-4	-7	15	26	29
220	48	29	1	-3	24	35	20	1	-37	-38
230	-18	-15	-45	-33	2	-15	-27	-18	-4	4
240	17	28	45	69	79	115	144	115	66	17
250	33	50	58	77	83	78	16	47	58	-22
260	-59	-81	-69	40	58	-8	-50	16	74	74
270	29	-43	-72	-60	-36	20	44	63	138	145
280	61	20	-15	-48	-61	-52	-34	-16	-40	-50
290	-49	-31	0	14	36	59	63	54	32	17
300	6	0	0	1	0	-3	-19	-5	-28	-52
310	11	85	95	71	9	14	37	4	61	99
320	96	70	38	10	-41	-57	-32	-13	9	28
330	31	31	22	12	1	0	-10	-45	-48	-12
340	9	-6	-35	-26	-27	-46	7	43	34	20
350	28	1	-61	-57	-33	-58	-86	-26	30	19
360	-14	-57	-90	-62	0	36	51	42	16	-14
370	-40	-39	-15	-8	-11	-6	0	5	20	19
380	-1	-2	34	60	49	-2	2	44	46	-2
390	-20	-39	-106	-72	-15	8	5	-10	31	51
400	51	41	9	-9	-9	-10	-6	7	21	31
410	30	22	10	-5	-10	20	48	13	-37	-30
420	0	22	42	51	48	30	18	-2	-19	-32
430	-28	-7	12	27	31	30	31	22	20	20
440	26	32	30	31	30	36	51	81	137	133
450	58	-11	-29	22	42	24	0	-43	-68	-26
460	12	19	-30	-79	-99	-111	-110	-98	-63	-28
470	-7	8	10	10	10	12	21	4	-16	3
480	-23	-47	-1	31	10	-33	-41	-40	-40	-40

TO BE CONTINUED

CONTINUED(M-496 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-40	-40	-40	-63	-59	-6	12	15	43	38
500	-5	40	58	14	24	66	68	42	41	80
510	61	31	33	12	-40	-67	-5	31	6	0
520	6	23	43	52	42	40	40	42	48	13
530	28	68	82	38	-10	-26	-31	-29	-31	-29
540	-20	-13	4	35	62	72	67	34	-25	-45
550	4	40	32	4	-16	-40	-51	-51	-51	-52
560	-61	-69	-79	-72	-72	-82	-76	-56	-39	-22
570	-3	9	31	24	-8	22	27	0	-13	2
580	19	18	5	-9	-21	-40	-41	-33	-32	-32
590	-21	-3	20	32	50	74	98	87	68	67
600	46	3	25	50	36	71	77	51	29	7
610	-6	-19	-23	-31	-31	-22	-24	-24	-36	-16
620	-3	-3	-5	-1	-17	-31	14	26	20	2
630	-8	-16	-14	-16	-8	-7	-16	-14	-7	-4
640	-12	-32	-33	0	21	25	24	24	8	-4
650	-12	-17	-16	-17	-16	-25	-42	-48	-37	-16
660	-26	-49	-38	-27	-27	-27	-35	-33	-10	2
670	14	26	33	30	20	7	1	2	1	9
680	6	0	6	-15	-56	-67	-37	-12	3	13
690	-1	-33	-58	-55	-46	-37	-20	2	5	-19
700	-7	3	20	41	56	64	60	78	68	26
710	15	10	11	12	22	21	21	21	21	23
720	31	32	30	21	16	-2	-9	-9	-5	3
730	12	22	17	10	11	11	0	-23	-51	-64
740	-70	-69	-71	-59	-28	-36	-30	6	19	-18
750	-45	-5	11	-6	29	39	7	-2	25	-9
760	-20	55	42	16	1	26	33	32	30	21
770	23	14	-8	-31	-38	-33	-19	-7	23	33
780	33	29	19	14	22	37	41	43	64	65
790	42	23	22	12	4	4	0	-6	-7	-16
800	-16	-27	-48	-49	-34	-25	-26	-21	-14	-14
810	0	5	4	5	4	5	-1	-14	-8	-2
820	-9	-15	-23	-18	-2	5	-12	-24	-8	4
830	16	11	-13	-22	-17	15	43	48	47	39
840	37	46	48	42	25	10	-6	-13	-12	-12
850	-12	-12	-12	-11	-1	-7	-19	-28	-11	2
860	5	-7	-21	-31	-21	-24	-38	-50	-60	-60
870	-38	-30	-21	-11	-11	-10	-11	-10	-13	-21
880	-20	-21	-13	-9	0	9	9	10	19	20
890	19	19	19	19	20	19	20	15	1	-8
900	4	10	9	10	10	9	10	3	0	0
910	0	1	-4	-11	-18	-9	1	-5	-38	-37
920	-4	22	23	11	3	0	0	-6	-33	-40
930	13	20	-8	-13	20	31	29	13	-6	-16
940	-30	-30	-31	-24	-18	-10	-10	-10	-10	-10
950	-10	-9	-10	-7	1	9	10	10	9	18
960	20	20	19	21	14	8	-5	-10	0	10
970	20	19	21	6	-15	3	21	8	-1	7
980	18	19	22	30	22	10	22	42	33	30
990	24	19	15	3	-3	-11	-22	-33	-26	-10
1000	-21	-44	-52	-38	-17	-6	0	-2	-1	-2
1010	0	8	7	9	3	-3	2	21	29	23
1020	15	7	8	6	-6	-20	-23	-21	0	17

TO BE CONTINUED

CONTINUED(M-496 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	14	-10	-24	-17	-8	-3	0	8	4	-3
1040	-3	-6	-21	-24	-24	-24	-32	-43	-45	-44
1050	-45	-43	-34	-34	-34	-26	-16	-12	2	0
1060	-9	-16	-25	-19	7	23	26	22	14	15
1070	14	15	9	-1	-10	-22	-26	-26	-23	-15
1080	-16	-15	-16	-8	-4	2	12	13	16	24
1090	23	24	23	23	23	23	23	11	2	3
1100	9	28	33	33	28	21	21	37	44	42
1110	29	7	1	4	12	12	12	2	-7	-8
1120	-7	-8	-7	-8	-6	1	2	0	-8	-8
1130	-8	-8	-8	-9	-7	-12	-20	-27	-30	-26
1140	-19	-12	-7	-15	-23	-30	-25	-18	-19	-19
1150	-18	-20	-14	7	12	4	0	1	0	0
1160	1	-2	-13	-21	-29	-30	-29	-30	-23	-19
1170	-10	1	0	0	0	-4	-13	-20	-19	-19
1180	-19	-20	-9	7	10	10	10	11	5	0
1190	1	-7	-9	-9	-9	-10	-2	1	0	0
1200	0	-9	-19	-20	-17	-9	-3	6	10	11
1210	6	-7	-17	-20	-20	-12	-8	-10	-9	-10
1220	-18	-20	-19	-20	-19	-20	-20	-29	-29	-37
1230	-40	-40	-40	-41	-36	-29	-30	-30	-24	-18
1240	-24	-30	-30	-28	-19	-19	0	27	22	2
1250	16	47	52	44	26	20	20	21	20	22
1260	31	30	32	27	20	21	12	10	11	9
1270	16	21	20	21	21	18	6	3	20	31
1280	30	32	25	20	21	21	18	10	11	10
1290	1	1	-1	-10	-7	-14	-20	-18	-19	-18
1300	-19	-12	-3	6	14	21	21	21	21	21
1310	22	21	22	21	22	14	11	12	12	5
1320	0	-6	-10	-18	-18	-18	-17	-18	-15	-7
1330	-7	1	11	12	12	12	13	12	13	6
1340	2	0	-12	-17	-25	-28	-26	-28	-26	-34
1350	-27	-15	-17	-16	-17	-16	-17	-10	-5	-6
1360	-5	-6	-5	-6	-5	-5	-5	2	11	23
1370	25	23	15	15	15	15	16	25	24	15
1380	15	15	15	16	15	21	27	26	25	16
1390	17	13	5	6	6	6	6	6	6	6
1400	6	7	6	7	6	8	4	-2	-2	5
1410	8	8	5	-2	-9	-13	-11	-12	0	9
1420	17	9	-1	-11	-7	8	26	29	29	18
1430	4	-5	-12	-6	0	0	8	10	9	10
1440	9	11	5	0	0	0	0	7	11	10
1450	11	10	11	11	11	11	11	12	7	0
1460	2	-5	-9	-7	-9	-7	-15	-18	-23	-32
1470	-42	-49	-53	-45	-32	-19	-7	-2	4	1
1480	6	13	13	13	13	13	13	13	13	14
1490	13	17	24	24	19	13	14	14	14	15
1500	24	25	22	13	6	-3	-5	-4	-5	-4
1510	-5	3	4	10	16	15	15	20	27	25
1520	27	21	15	16	16	16	16	15	21	27
1530	26	27	26	27	20	16	18	13	4	-3
1540	-3	-12	-13	-12	-3	-2	3	8	1	-6
1550	-13	-11	-13	-8	-1	-2	-1	-2	-1	-1
1560	-1	0	15	36	39	39	38	31	22	18

TO BE CONTINUED

CONTINUED(M-496 UP)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	10	8	9	17	19	19	19	19	19	19
1580	19	19	19	19	19	19	19	19	19	20
1590	19	25	31	28	36	41	40	40	40	40
1600	40	40	40	40	40	39	30	30	30	30
1610	30	30	30	31	29	35	41	40	41	40
1620	41	40	40	30	21	13	9	10	10	10
1630	9	1	0	0	0	0	0	0	0	0
1640	0	0	0	0	0	9	10	10	10	10
1650	10	10	11	6	0	-2	-14	-23	-34	-41
1660	-32	-17	-8	0	0	0	0	0	0	0
1670	0	0	0	0	0	0	0	0	0	0
1680	0	0	0	-8	-10	-9	-9	-12	-21	-10
1690	-10	-3	1	0	0	0	0	0	0	0
1700	0	0	0	0	0	0	0	0	-7	-9
1710	-10	-4	1	0	0	0	0	0	0	0
1720	0	0	0	0	0	7	11	10	10	10
1730	10	10	11	20	20	28	31	30	30	22
1740	13	10	8	0	1	8	18	30	39	41

END

RECORD = S-1453 COMPONENT = SOUTH STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 TOTAL NUMBER OF DATA = 4600
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3071,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
50	17	18	22	27	34	39	40	39	35	30
60	25	21	16	12	11	11	17	25	38	47
70	54	58	54	47	30	18	10	4	4	8
80	13	21	29	35	40	43	41	35	26	17
90	7	2	1	3	7	11	15	20	24	27
100	28	28	28	29	30	30	31	31	30	24
110	15	6	-5	-15	-15	-6	5	19	27	32
120	34	31	21	12	-1	-2	4	13	21	29
130	35	40	46	49	51	52	49	41	33	27
140	21	14	9	15	20	24	29	38	40	36
150	30	21	20	26	29	16	15	20	21	18
160	17	19	26	35	44	49	46	35	17	2
170	-11	-24	-38	-43	-29	-15	-6	6	18	29
180	42	56	57	44	32	12	-10	-26	-40	-53
190	-58	-54	-49	-40	-26	-12	6	26	32	27
200	19	10	-2	-14	-13	1	26	52	68	73
210	60	32	-1	-34	-56	-67	-66	-59	-46	-32
220	-15	7	34	46	33	11	-14	-25	-28	-31
230	-31	-30	-23	-13	-4	-3	-16	-30	-41	-44
240	-28	-7	15	32	47	62	74	78	71	54
250	28	-7	-51	-78	-92	-80	-51	-7	37	77
260	121	146	152	137	92	39	-15	-55	-76	-89
270	-86	-69	-49	-30	-2	20	52	77	88	69
280	54	45	46	43	25	6	-25	-64	-92	-73
290	-36	-3	29	50	40	23	3	-22	-49	-43
300	-27	-15	0	17	23	23	23	16	12	3
310	-5	-13	-27	-29	-28	-22	-12	-5	5	15
320	22	33	43	58	64	52	32	11	-8	-24
330	-35	-37	-36	-31	-21	-9	5	20	39	51
340	39	-11	-49	-57	-34	15	58	77	37	-4
350	-50	-89	-102	-93	-71	-32	9	45	76	89
360	87	81	68	53	25	-1	-29	-65	-85	-75
370	-45	0	39	65	65	39	0	-33	-56	-59
380	-35	-9	11	24	25	32	45	66	81	77
390	45	3	-44	-87	-116	-118	-89	-46	-1	35
400	50	45	35	26	22	23	23	19	10	-1
410	-13	-20	-15	-4	3	3	0	-6	-16	-26
420	-29	-15	0	12	20	14	3	-5	-7	5
430	20	34	48	56	47	33	11	-6	-21	-30
440	-20	-8	8	15	15	18	22	25	29	30
450	30	30	29	22	6	3	14	24	33	33
460	27	14	-10	-50	-68	-70	-56	-42	-32	-29
470	-29	-28	-29	-31	-26	-12	7	25	32	43
480	40	37	25	19	10	2	-7	-15	-32	-42

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	-39	-23	-11	5	21	18	7	-4	-9	-4
500	5	15	23	21	20	5	-8	-23	-27	-20
510	-14	-4	5	3	-5	-13	-34	-48	-57	-45
520	-34	-20	0	18	23	28	30	33	35	36
530	33	29	23	9	-8	-19	-21	-14	-2	4
540	9	14	15	12	5	3	10	24	40	45
550	31	15	-3	-2	8	19	21	16	8	-4
560	-9	-9	-14	-26	-36	-36	-24	-15	-13	-10
570	-5	1	12	19	27	39	51	52	43	14
580	-20	-36	-38	-37	-43	-56	-65	-70	-62	-51
590	-50	-55	-61	-58	-44	-22	0	15	25	27
600	23	18	11	11	17	19	16	11	4	0
610	-1	2	5	7	9	12	17	23	33	43
620	48	46	41	36	29	21	13	3	-12	-33
630	-36	-15	4	21	26	22	14	2	-11	-32
640	-46	-43	-29	-12	4	16	28	26	18	10
650	10	18	26	35	38	37	29	13	-3	-20
660	-33	-38	-37	-31	-15	-3	3	15	28	41
670	52	47	38	29	23	5	-8	-17	-5	5
680	10	6	5	1	-12	-19	-21	-21	-18	-9
690	1	15	22	23	18	11	-1	-23	-23	-23
700	-21	-14	-7	-3	4	11	11	3	-4	-37
710	-46	-37	-14	3	12	4	-8	-23	-40	-44
720	-34	-25	-19	-12	-3	0	0	-3	-8	-17
730	-26	-36	-47	-52	-52	-50	-47	-39	-28	-18
740	0	21	37	42	43	40	44	59	63	54
750	26	0	-18	-22	-5	23	44	57	70	67
760	56	36	23	14	4	-15	-34	-43	-44	-32
770	-15	14	42	60	52	31	14	-1	-14	-28
780	-34	-34	-26	-12	4	20	27	26	19	10
790	7	5	3	4	9	18	29	37	37	35
800	38	39	34	23	2	-24	-45	-63	-69	-53
810	-31	-16	-11	-16	-20	-21	-18	-13	-8	-6
820	-15	-32	-51	-73	-82	-66	-45	-23	-10	-6
830	-5	-7	-9	-9	-3	13	19	13	2	-16
840	-41	-51	-39	-8	12	30	45	49	45	29
850	16	18	38	51	60	50	37	20	5	0
860	3	7	7	4	-2	-4	-1	2	7	14
870	25	42	57	68	62	41	22	7	12	27
880	41	48	40	27	-2	-20	-33	-31	-17	-3
890	5	15	22	23	23	18	18	16	16	16
900	12	5	-3	-17	-43	-66	-81	-102	-102	-98
910	-92	-84	-68	-49	-12	8	10	5	-3	-9
920	0	5	18	22	22	22	18	9	2	-8
930	-29	-49	-67	-69	-69	-63	-49	-33	-16	2
940	18	29	31	29	23	10	0	0	8	17
950	20	20	20	11	-6	-16	-18	-12	-4	1
960	2	2	-5	-1	4	8	8	4	2	2
970	2	10	20	27	42	61	78	82	73	60
980	46	30	17	7	-4	-16	-37	-47	-38	-19
990	2	17	22	21	21	20	15	6	0	-3
1000	-5	-8	-9	-2	8	9	5	1	-3	-10
1010	-11	-4	5	16	22	23	18	5	-8	-23
1020	-41	-58	-60	-43	-27	-14	-5	-2	-1	-3

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-8	-13	-15	-20	-22	-16	-7	6	15	15
1040	14	13	15	19	16	10	0	-12	-25	-39
1050	-44	-43	-38	-38	-36	-33	-26	-13	2	13
1060	21	11	6	3	1	-3	-6	-7	-6	0
1070	11	21	23	21	15	14	7	4	-1	5
1080	25	44	60	73	75	79	81	81	81	80
1090	62	38	15	-4	-20	-35	-49	-37	-23	-9
1100	-1	1	-2	-11	-19	-22	-22	-21	-26	-26
1110	-29	-24	-10	0	9	13	10	6	-2	-9
1120	-17	-18	-19	-24	-24	-17	-5	5	14	16
1130	12	8	-1	-11	-22	-51	-59	-54	-48	-37
1140	-25	-12	5	11	18	17	2	-17	-42	-48
1150	-38	-27	-11	-3	-1	-1	-2	-2	0	2
1160	4	10	16	13	5	0	2	10	16	20
1170	26	32	43	55	62	63	50	37	22	7
1180	-15	-33	-38	-43	-48	-49	-49	-42	-15	15
1190	31	44	55	57	46	19	-11	-34	-44	-47
1200	-46	-36	-20	-5	1	-2	-8	-9	-9	-7
1210	-7	-12	-19	-18	-4	19	44	66	83	89
1220	80	55	10	-37	-64	-89	-95	-88	-74	-55
1230	-44	-40	-28	-9	14	24	28	28	23	6
1240	-18	-45	-63	-74	-82	-92	-99	-99	-95	-77
1250	-58	-47	-40	-34	-30	-25	-17	-7	8	13
1260	12	10	3	-3	-4	-4	-5	-8	0	14
1270	39	64	83	106	115	107	85	60	37	24
1280	12	10	12	16	20	22	23	23	21	10
1290	1	3	7	12	15	5	-18	-43	-59	-69
1300	-81	-92	-115	-130	-144	-156	-158	-133	-114	-95
1310	-78	-72	-72	-79	-89	-97	-101	-104	-114	-113
1320	-85	-45	-15	-1	30	59	108	155	194	202
1330	203	190	167	138	66	-21	-138	-194	-240	-257
1340	-273	-288	-291	-291	-262	-228	-180	-108	-25	45
1350	125	192	226	252	287	303	304	221	158	79
1360	9	-28	-54	-83	-127	-175	-220	-240	-252	-254
1370	-265	-285	-317	-346	-365	-360	-337	-292	-215	-127
1380	-29	77	167	234	287	336	353	357	358	350
1390	326	294	258	216	169	130	124	149	180	200
1400	210	213	212	204	190	172	155	141	123	89
1410	26	-52	-142	-232	-284	-298	-283	-264	-240	-213
1420	-181	-143	-96	-38	12	61	85	83	67	47
1430	28	21	27	39	47	50	43	21	-35	-154
1440	-234	-316	-386	-431	-460	-465	-426	-378	-323	-254
1450	-188	-151	-128	-103	-85	-66	-48	-36	-39	-70
1460	-117	-199	-279	-331	-351	-337	-305	-289	-284	-284
1470	-273	-240	-195	-103	6	89	218	294	349	381
1480	391	390	376	347	312	264	223	159	110	64
1490	10	-30	-44	-49	-44	2	39	96	118	221
1500	303	411	464	498	478	431	362	264	221	177
1510	146	146	114	91	64	41	17	-7	-39	-66
1520	-88	-94	-94	-79	-64	-46	-42	-47	-74	-109
1530	-137	-161	-183	-201	-209	-209	-186	-130	-81	-59
1540	-48	-47	-59	-80	-120	-171	-226	-261	-269	-269
1550	-259	-239	-220	-197	-169	-163	-170	-183	-185	-176
1560	-169	-165	-163	-151	-133	-125	-118	-111	-108	-94

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-65	-21	39	88	131	182	227	258	271	289
1580	320	340	343	343	302	256	210	151	102	75
1590	75	122	209	284	304	298	281	259	236	213
1600	192	176	162	135	82	-11	-118	-183	-201	-188
1610	-169	-156	-144	-121	-92	-59	9	100	167	194
1620	182	158	107	11	-114	-237	-364	-424	-465	-495
1630	-528	-501	-443	-316	-150	7	111	192	261	306
1640	300	274	236	195	131	36	-59	-175	-235	-271
1650	-328	-362	-339	-270	-174	-74	32	85	162	206
1660	216	216	211	207	208	208	209	208	204	187
1670	150	92	15	15	16	13	-11	-72	-129	-138
1680	-96	-23	26	59	52	46	37	32	39	54
1690	71	88	92	84	58	-9	-98	-182	-219	-232
1700	-227	-182	-125	-67	-5	27	42	59	77	153
1710	241	278	315	319	283	203	121	36	-36	-76
1720	-116	-161	-189	-209	-216	-176	-148	-120	-77	-71
1730	-83	-100	-113	-114	-96	-65	-16	32	92	143
1740	202	234	236	236	205	166	150	145	137	131
1750	111	73	8	-83	-136	-154	-157	-159	-165	-172
1760	-182	-192	-174	-133	-91	-53	-21	2	24	38
1770	42	42	55	72	87	98	87	68	52	47
1780	46	40	33	20	3	-12	-18	11	71	129
1790	192	230	240	229	208	174	142	116	91	59
1800	11	-44	-83	-101	-116	-123	-135	-152	-173	-180
1810	-172	-165	-164	-172	-181	-185	-171	-136	-87	-29
1820	37	96	121	119	116	127	150	172	190	209
1830	221	209	172	96	-17	-107	-125	-119	-101	-84
1840	-69	-84	-105	-122	-125	-110	-96	-83	-83	-80
1850	-65	-29	15	62	98	116	100	79	59	50
1860	45	48	62	92	110	121	127	135	150	170
1870	179	171	148	100	49	16	0	-17	-20	2
1880	14	27	42	49	61	69	78	91	123	156
1890	190	207	198	168	124	87	67	40	14	-15
1900	-60	-110	-176	-207	-205	-184	-155	-116	-98	-86
1910	-101	-127	-146	-146	-146	-147	-156	-167	-179	-184
1920	-187	-194	-197	-197	-188	-175	-153	-135	-127	-120
1930	-105	-85	-70	-60	-57	-52	-39	-18	5	48
1940	82	113	121	116	111	103	101	97	87	70
1950	55	45	50	66	84	125	159	191	220	229
1960	224	204	177	140	94	45	0	-25	-29	-15
1970	2	13	10	-3	-22	-31	-30	-22	0	9
1980	16	32	47	72	108	164	222	265	283	286
1990	253	217	174	134	83	20	-26	-71	-119	-158
2000	-181	-191	-182	-157	-132	-110	-80	-44	-6	25
2010	49	63	57	38	8	-35	-83	-116	-138	-154
2020	-158	-147	-133	-131	-141	-158	-178	-182	-178	-172
2030	-159	-143	-129	-105	-67	-38	-7	17	37	55
2040	64	71	81	94	117	150	183	203	211	196
2050	171	146	125	116	111	106	97	83	71	76
2060	93	118	139	155	152	137	110	53	-33	-68
2070	-84	-61	-19	28	67	112	147	149	125	70
2080	25	-16	-48	-78	-97	-127	-152	-172	-176	-165
2090	-152	-136	-123	-125	-140	-163	-172	-167	-149	-115
2100	-83	-47	-32	-37	-64	-94	-92	-62	-28	6

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	36	26	11	-23	-40	-56	-57	-59	-53	-29
2120	-13	20	43	73	94	133	156	177	177	168
2130	147	106	63	42	47	86	122	167	197	215
2140	215	203	189	160	144	125	105	102	105	109
2150	103	90	64	27	-19	-45	-58	-61	-63	-70
2160	-86	-105	-123	-130	-129	-121	-115	-107	-96	-72
2170	-40	-7	17	23	-3	-30	-38	-38	-38	-45
2180	-58	-76	-98	-113	-109	-81	-55	-35	-9	10
2190	14	7	-2	-11	-8	3	21	34	35	28
2200	24	28	39	48	48	40	26	7	-15	-38
2210	-48	-50	-51	-42	-21	-4	8	26	43	57
2220	70	84	100	111	108	101	93	88	89	89
2230	83	71	57	40	17	-11	-43	-58	-68	-64
2240	-44	-11	9	31	39	25	3	-14	-34	-41
2250	-44	-38	-24	-10	0	0	-3	-3	-2	4
2260	20	37	49	68	82	90	91	91	90	80
2270	54	21	-7	-40	-62	-74	-74	-74	-74	-75
2280	-75	-68	-62	-49	-32	-23	-13	3	11	18
2290	26	30	35	41	41	37	43	52	63	77
2300	78	77	77	77	87	106	130	146	163	168
2310	166	152	140	118	81	39	-1	-39	-76	-87
2320	-92	-93	-96	-98	-98	-102	-106	-111	-116	-125
2330	-137	-146	-127	-107	-86	-67	-56	-58	-72	-98
2340	-108	-101	-93	-81	-73	-82	-91	-100	-110	-111
2350	-103	-95	-76	-57	-34	-2	35	64	93	127
2360	145	148	145	138	135	133	139	145	142	135
2370	128	120	118	126	137	144	146	140	124	94
2380	63	35	10	-10	-29	-50	-70	-66	-40	-18
2390	-7	-5	-10	-19	-26	-29	-30	-28	-21	-18
2400	-20	-27	-39	-62	-86	-100	-104	-96	-85	-74
2410	-67	-64	-64	-61	-60	-57	-45	-29	-8	7
2420	4	-17	-43	-55	-58	-37	0	34	62	79
2430	78	68	64	64	68	69	64	58	51	44
2440	43	55	69	88	104	109	109	102	92	79
2450	65	51	36	24	9	-9	-17	-15	-3	5
2460	16	20	16	9	4	3	7	7	7	5
2470	0	-1	0	5	9	17	27	35	37	27
2480	8	-19	-54	-72	-69	-62	-47	-25	-6	4
2490	0	-7	-11	-8	-6	2	7	4	-2	-10
2500	-21	-19	-8	12	36	45	50	52	56	55
2510	47	35	13	1	0	-11	-30	-46	-44	-25
2520	-13	-8	-3	-3	-11	-16	-25	-29	-40	-46
2530	-53	-54	-54	-53	-41	-29	-6	20	48	70
2540	83	98	106	107	102	90	79	68	58	45
2550	31	25	23	14	1	-21	-42	-56	-58	-58
2560	-50	-36	-18	-5	5	13	13	13	14	15
2570	22	37	48	51	48	42	37	32	27	25
2580	27	35	42	43	37	23	4	-9	-13	-13
2590	-13	-13	-8	0	1	5	18	34	43	52
2600	60	61	53	38	26	18	11	0	-13	-23
2610	-27	-12	16	38	53	56	39	17	0	-9
2620	-14	-28	-48	-67	-82	-80	-77	-75	-74	-75
2630	-82	-95	-107	-112	-106	-96	-81	-69	-62	-48
2640	-34	-13	3	18	30	29	25	22	13	6

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	4	1	1	7	25	43	53	65	75	86
2660	98	100	93	81	74	62	48	34	23	17
2670	14	10	4	-3	-11	-11	-2	25	45	58
2680	73	90	108	122	134	126	114	102	98	84
2690	68	44	27	18	18	22	20	17	18	16
2700	10	1	-8	-19	-31	-41	-54	-69	-83	-71
2710	-57	-42	-22	-14	-11	-11	-11	-11	-11	-4
2720	-1	-2	-2	-2	5	19	31	40	51	48
2730	41	28	10	0	6	15	29	26	22	18
2740	17	11	6	-7	-13	-25	-39	-53	-56	-49
2750	-39	-29	-17	-14	-16	-20	-25	-30	-29	-19
2760	-6	0	2	-1	-3	-4	-11	-23	-38	-42
2770	-37	-33	-32	-33	-33	-35	-28	-13	5	28
2780	34	30	25	20	13	7	1	-2	-5	-6
2790	-2	4	13	22	34	46	56	63	71	76
2800	82	94	101	102	96	84	71	58	47	48
2810	56	64	69	72	75	75	74	70	63	55
2820	48	42	36	27	19	12	3	-7	-16	-19
2830	-17	-11	-9	-11	-21	-37	-46	-57	-64	-64
2840	-59	-49	-45	-47	-51	-53	-50	-39	-23	-7
2850	11	25	27	34	40	41	46	49	53	57
2860	59	65	69	75	77	77	77	74	64	50
2870	39	30	23	17	12	9	4	1	-3	-8
2880	-11	0	12	21	32	33	32	25	14	5
2890	-2	-8	-14	-18	-21	-25	-29	-32	-31	-23
2900	-12	-2	3	8	11	10	3	-3	-11	-16
2910	-26	-31	-38	-47	-64	-63	-62	-57	-47	-40
2920	-34	-32	-37	-39	-41	-38	-30	-28	-31	-36
2930	-39	-43	-47	-49	-51	-50	-44	-30	-16	-2
2940	5	3	2	1	0	-3	-11	-12	-12	-6
2950	3	10	15	23	25	31	37	43	49	58
2960	73	84	99	112	128	139	151	160	166	162
2970	147	133	116	103	93	90	90	93	95	91
2980	84	78	73	67	62	57	51	44	39	33
2990	26	19	10	0	-6	-7	-3	3	11	16
3000	17	17	17	18	21	24	24	17	7	-3
3010	-14	-23	-34	-47	-58	-64	-62	-58	-50	-38
3020	-30	-27	-27	-28	-29	-31	-34	-38	-38	-35
3030	-19	9	26	23	13	-1	-13	-18	-8	4
3040	14	20	25	25	24	20	15	12	8	0
3050	-10	-16	-26	-38	-51	-56	-44	-25	-5	6
3060	8	2	3	20	40	50	53	52	51	50
3070	46	42	32	42	48	40	35	23	20	29
3080	32	25	7	-9	0	5	3	-1	-8	-18
3090	-10	-5	-2	-7	-26	-45	-41	-30	-17	-21
3100	-32	-44	-39	-23	-7	-9	-17	-17	-7	2
3110	2	7	9	30	40	58	62	50	39	31
3120	49	53	53	47	41	36	28	19	9	-1
3130	8	16	11	9	6	0	-4	-2	-5	0
3140	0	-2	-2	-2	0	-3	-5	-5	0	7
3150	24	35	48	58	73	71	64	50	34	22
3160	30	40	46	43	37	32	23	12	6	1
3170	-5	-13	-19	-24	-29	-31	-33	-33	-27	-22
3180	-24	-31	-38	-35	-28	-30	-36	-42	-48	-54

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	-58	-63	-69	-71	-69	-62	-56	-51	-46	-42
3200	-38	-36	-36	-38	-39	-41	-42	-41	-38	-31
3210	-18	-10	-13	-19	-22	-19	-12	-7	-1	8
3220	17	27	33	34	36	42	50	52	49	42
3230	34	27	21	16	13	17	30	42	47	52
3240	58	70	86	96	98	89	81	72	63	57
3250	49	50	56	57	48	37	26	31	34	36
3260	36	32	32	32	31	29	30	35	40	37
3270	20	8	0	-7	-15	-19	-17	-17	-23	-36
3280	-46	-56	-63	-58	-51	-44	-34	-26	-30	-30
3290	-31	-24	-24	-22	-20	-25	-19	-17	-21	-31
3300	-47	-55	-55	-49	-50	-52	-54	-55	-47	-47
3310	-54	-60	-62	-54	-44	-34	-39	-44	-49	-54
3320	-60	-65	-65	-61	-53	-46	-37	-25	1	26
3330	40	51	60	72	73	77	82	89	92	89
3340	87	87	90	93	93	80	60	40	26	11
3350	-3	-23	-35	-39	-33	-30	-31	-33	-28	-17
3360	-4	9	14	13	14	18	23	21	18	21
3370	17	11	8	1	-7	-4	0	0	-4	-9
3380	-18	-25	-30	-26	-13	-3	5	7	5	0
3390	-9	-19	-30	-39	-46	-44	-37	-29	-18	-8
3400	5	21	28	26	23	27	34	45	48	43
3410	37	33	29	27	25	33	45	44	34	23
3420	14	7	2	1	5	6	0	-9	-11	1
3430	17	33	36	29	22	14	4	-2	-5	-5
3440	-5	-6	-9	-15	-25	-35	-45	-52	-59	-69
3450	-74	-65	-53	-43	-39	-46	-46	-42	-35	-28
3460	-19	-11	-1	-4	-14	-27	-35	-38	-42	-45
3470	-49	-47	-37	-28	-21	-6	6	14	18	18
3480	18	16	13	10	11	20	31	40	43	43
3490	47	50	50	50	50	45	43	49	57	62
3500	63	58	53	47	31	18	17	17	13	10
3510	5	-2	-12	-24	-30	-17	-7	-4	-2	0
3520	0	2	4	5	2	-1	-4	-6	-11	-12
3530	-16	-20	-21	-24	-24	-16	-6	4	8	7
3540	3	-3	-6	-7	-7	-5	-5	-6	-6	-6
3550	-6	-6	0	10	12	8	5	0	-3	-4
3560	-5	-5	-5	-4	-1	3	7	9	12	13
3570	9	4	-4	-13	-23	-33	-40	-40	-34	-30
3580	-24	-18	-14	-9	-6	-1	0	6	7	1
3590	-3	-12	-23	-34	-33	-21	-8	0	0	-4
3600	-11	-20	-27	-30	-28	-27	-26	-23	-24	-26
3610	-25	-23	-23	-24	-26	-28	-30	-35	-39	-37
3620	-27	-13	-1	7	11	12	13	11	9	13
3630	23	32	39	42	38	34	30	26	26	31
3640	32	31	28	22	15	10	13	20	25	33
3650	42	52	54	58	60	59	54	52	49	45
3660	37	32	21	12	7	1	-2	-13	-25	-37
3670	-53	-64	-61	-49	-38	-31	-32	-36	-39	-40
3680	-42	-42	-38	-35	-33	-30	-27	-23	-19	-12
3690	-9	-7	-7	-6	-6	-6	-6	0	9	20
3700	25	25	23	19	17	13	9	4	4	10
3710	13	22	28	31	31	30	23	8	-10	-33
3720	-41	-42	-35	-29	-21	-10	-5	3	12	17

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	17	14	8	-5	-19	-21	-17	-16	-10	-5
3740	-1	-1	-4	-10	-19	-28	-23	-18	-12	-6
3750	-4	-2	-1	-1	0	0	0	-3	-8	-11
3760	-13	-16	-19	-23	-24	-13	0	8	22	27
3770	22	16	6	2	6	11	16	15	11	10
3780	7	4	1	2	10	17	23	25	21	15
3790	7	-1	-8	-5	1	7	6	0	-1	0
3800	0	1	5	9	11	16	21	23	23	20
3810	18	14	9	5	3	-2	-9	-15	-20	-23
3820	-26	-22	-13	-6	-1	1	0	-5	-13	-22
3830	-30	-35	-31	-22	-20	-19	-17	-18	-15	-6
3840	2	9	14	20	22	21	15	3	-9	-12
3850	-7	-4	-5	-3	3	4	3	3	3	4
3860	5	9	13	15	8	1	-6	-12	-6	-3
3870	1	7	14	13	16	18	18	18	17	14
3880	7	1	-3	-9	-20	-23	-13	-8	0	4
3890	4	3	3	3	3	3	3	3	3	7
3900	7	7	7	9	2	-1	-5	-6	-10	-14
3910	-22	-29	-30	-27	-22	-22	-20	-15	-15	-4
3920	-1	0	3	9	17	22	24	24	24	19
3930	14	10	5	7	11	14	14	10	8	4
3940	0	-6	-7	-4	-1	2	8	13	16	17
3950	15	15	14	14	14	12	7	3	2	2
3960	0	-4	-10	-15	-13	-6	2	3	2	2
3970	2	6	9	16	23	24	17	11	0	-12
3980	-16	-15	-15	-12	-13	-15	-19	-21	-24	-26
3990	-27	-27	-26	-23	-21	-18	-15	-18	-23	-29
4000	-36	-43	-47	-47	-48	-50	-51	-47	-40	-33
4010	-25	-15	-5	1	9	14	9	0	-7	-13
4020	-16	-16	-15	-12	-6	0	9	20	24	23
4030	22	20	20	20	20	20	20	20	19	19
4040	19	21	23	22	17	13	8	3	-1	-7
4050	-10	-8	-4	0	1	-3	-6	-10	-10	-7
4060	0	9	16	18	19	18	20	22	25	30
4070	36	38	40	40	40	40	38	35	32	30
4080	27	19	12	12	9	10	13	15	15	15
4090	18	18	18	18	20	22	20	14	3	-3
4100	-9	-9	-11	-12	-14	-14	-16	-22	-27	-27
4110	-19	-11	-2	4	8	7	4	0	-2	-9
4120	-17	-26	-36	-42	-45	-37	-32	-27	-22	-16
4130	-10	-4	-2	-1	2	4	8	9	10	10
4140	5	0	-6	-13	-20	-29	-22	-12	-9	-11
4150	-16	-19	-20	-13	-7	-13	-19	-25	-31	-35
4160	-34	-32	-23	-12	0	8	16	19	16	14
4170	7	0	-1	-1	0	2	4	5	5	5
4180	5	5	4	3	0	-3	-6	-3	5	12
4190	18	22	25	25	23	20	10	8	15	25
4200	35	37	38	37	34	32	32	32	31	31
4210	31	31	30	30	30	30	30	27	24	21
4220	20	19	18	18	21	26	28	27	25	24
4230	22	18	12	9	4	0	-2	-5	-8	-13
4240	-19	-26	-32	-36	-36	-34	-33	-35	-37	-41
4250	-45	-48	-52	-56	-58	-55	-54	-54	-55	-58
4260	-59	-56	-51	-51	-56	-60	-61	-62	-60	-55

TO BE CONTINUED

CONTINUED(S-1453 SOUTH)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	-50	-47	-41	-37	-28	-19	-11	-7	-5	-4
4280	-1	5	14	26	37	42	49	55	55	52
4290	46	42	40	41	46	52	61	63	62	57
4300	51	45	42	40	40	38	37	36	36	30
4310	28	30	33	37	36	36	37	38	38	33
4320	29	22	14	12	12	9	3	3	0	-2
4330	-8	-14	-19	-17	-17	-19	-20	-24	-27	-34
4340	-24	-18	-13	-5	0	4	8	9	12	15
4350	11	6	-1	-8	-16	-19	-21	-20	-16	-13
4360	-15	-21	-28	-35	-40	-44	-43	-43	-44	-43
4370	-37	-31	-24	-11	0	8	19	30	34	32
4380	30	28	22	19	26	32	34	35	35	38
4390	41	41	45	50	52	51	49	47	45	39
4400	34	30	26	22	16	10	3	-1	-5	-9
4410	-12	-11	-9	-6	-5	-2	0	0	3	3
4420	3	3	1	0	-4	-8	-14	-20	-23	-27
4430	-31	-35	-39	-44	-47	-44	-36	-26	-16	-7
4440	-3	-2	-2	-3	-7	-12	-18	-21	-21	-22
4450	-24	-28	-33	-36	-32	-22	-15	-9	-4	-4
4460	-4	-4	-5	-6	-4	-2	0	5	12	18
4470	24	29	30	33	37	36	32	30	27	26
4480	30	33	34	31	29	28	22	18	14	12
4490	9	8	3	-1	-2	-3	4	13	17	17
4500	11	2	-6	-12	-10	-5	-1	3	5	4
4510	5	5	7	8	8	7	5	5	4	4
4520	5	12	15	22	25	25	30	30	28	25
4530	20	15	8	4	3	3	8	14	19	24
4540	28	28	25	18	14	6	8	5	5	4
4550	3	2	0	0	0	0	0	-1	-1	-1
4560	-5	-8	-7	-9	-11	-14	-16	-18	-20	-14
4570	-11	-15	-18	-20	-17	-18	-12	-5	-1	-3
4580	-9	-11	-14	-18	-21	-25	-29	-28	-26	-25
4590	-21	-18	-16	-14	-11	-10	-8	-7	-7	-9

END

RECORD = S-1453 COMPONENT = WEST STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 TOTAL NUMBER OF DATA = 4650
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3095,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	7	7	7	7	7	7	7	7	6	5
10	4	4	3	2	1	1	0	0	2	4
20	6	8	9	10	12	12	12	12	11	11
30	10	9	9	9	9	9	9	11	12	12
40	12	12	13	13	13	13	13	12	8	5
50	1	-1	-6	-6	1	7	12	11	6	-3
60	-14	-19	-23	-25	-25	-25	-20	-12	1	19
70	36	41	40	36	30	19	4	-1	1	12
80	17	25	33	38	38	36	33	28	22	14
90	5	6	13	22	25	21	19	18	16	13
100	16	20	24	28	32	29	21	6	-9	-9
110	-1	-9	-16	-18	-20	-28	-38	-46	-55	-63
120	-60	-46	-37	-30	-23	-23	-21	-19	-18	-18
130	-22	-26	-13	-4	-3	-4	0	7	22	37
140	43	40	28	11	-1	-14	-7	0	8	18
150	12	8	0	-14	-10	0	9	10	11	16
160	23	32	41	46	53	63	68	66	60	44
170	20	0	-15	-32	-36	-25	-16	-8	0	8
180	18	21	31	34	32	22	-3	-24	-43	-68
190	-84	-76	-65	-54	-45	-35	-24	-14	-4	0
200	2	5	17	35	55	77	98	111	110	95
210	65	23	-21	-56	-72	-78	-74	-62	-48	-44
220	-42	-41	-39	-37	-35	-32	-33	-34	-36	-40
230	-45	-62	-78	-92	-105	-123	-137	-135	-129	-124
240	-115	-107	-99	-84	-65	-47	-30	-19	-8	-1
250	4	2	-9	-33	-60	-79	-81	-64	-48	-35
260	-10	3	20	41	60	73	98	112	104	74
270	47	25	-1	-35	-51	-33	5	19	35	43
280	41	29	27	12	43	69	82	70	39	8
290	-2	7	17	28	19	0	-32	-72	-92	-92
300	-69	-41	-23	-3	19	48	44	9	-18	-41
310	-56	-57	-50	-32	-20	-5	5	-2	-16	-41
320	-65	-83	-93	-84	-67	-51	-33	-17	-2	7
330	24	47	75	98	102	62	16	-41	-109	-140
340	-130	-100	-85	-75	-74	-67	-40	-22	-3	7
350	13	15	11	-2	-36	-74	-112	-117	-103	-84
360	-78	-76	-72	-66	-49	-32	-14	1	16	28
370	35	35	24	8	-7	-16	-33	-59	-87	-105
380	-100	-76	-46	-23	-17	-30	-51	-61	-55	-37
390	-20	-4	12	29	46	56	57	52	45	34
400	16	-3	-19	-23	-7	13	33	54	73	88
410	96	91	88	83	77	69	50	24	4	-17
420	-46	-67	-71	-62	-48	-32	-18	-14	-13	-10
430	0	11	22	15	-9	-48	-99	-142	-160	-147
440	-112	-75	-49	-35	-31	-33	-33	-32	-25	-19
450	-19	-16	5	39	45	52	50	38	10	-26
460	-61	-64	-38	-10	0	-6	-20	-33	-37	-23
470	-4	22	40	41	12	3	-10	-31	-36	-22
480	9	14	3	-18	-35	-38	-14	11	33	34

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	28	12	-15	-32	-27	-5	12	22	17	8
500	5	-2	-3	6	17	27	29	29	33	37
510	56	73	73	64	37	5	-21	-43	-58	-45
520	-19	3	30	60	80	99	103	103	98	86
530	65	47	7	-23	-32	-12	3	15	17	9
540	-4	-29	-49	-30	0	26	45	54	51	44
550	40	36	30	28	20	8	-4	-19	-37	-54
560	-58	-48	-44	-47	-50	-50	-55	-57	-52	-36
570	-7	25	41	41	12	-25	-50	-66	-72	-73
580	-64	-49	-32	-13	7	40	63	72	65	39
590	13	-1	-13	-33	-49	-48	-36	-21	-5	9
600	22	37	44	44	38	32	31	36	48	56
610	54	50	41	23	11	9	17	28	40	40
620	31	20	7	-7	-6	16	42	68	95	116
630	109	78	21	-36	-90	-115	-130	-130	-123	-111
640	-87	-62	-38	-12	13	35	56	58	45	31
650	16	3	-9	-14	-1	11	21	23	17	7
660	2	-8	-17	-8	-2	1	-7	-31	-56	-67
670	-52	-28	2	26	63	80	60	28	8	-9
680	-24	-35	-35	-32	-25	-24	-18	-9	-4	5
690	8	2	-3	-8	-17	-19	-14	-5	0	-5
700	-9	-15	-18	-12	-4	6	18	24	33	49
710	54	58	53	40	38	34	24	22	27	40
720	53	72	84	92	84	46	25	8	4	-6
730	-13	-26	-40	-53	-57	-50	-40	-29	-21	-7
740	3	6	8	7	7	7	9	12	16	25
750	37	36	30	22	9	-5	-22	-46	-67	-84
760	-74	-55	-32	-22	-20	-8	7	22	37	59
770	76	73	50	17	-16	-39	-38	-24	-3	15
780	28	35	32	31	33	31	23	13	0	-20
790	-35	-39	-29	-20	-19	-22	-24	-26	-28	-21
800	-4	24	55	83	99	90	67	45	29	19
810	25	40	53	55	41	25	13	4	5	9
820	10	2	-9	-21	-27	-25	-10	14	33	50
830	61	54	34	15	1	-10	-15	-13	-7	-6
840	-17	-27	-33	-42	-48	-36	-16	-1	9	7
850	-1	-20	-43	-63	-68	-48	-23	0	25	24
860	21	13	9	13	11	3	-11	-36	-58	-80
870	-85	-51	-5	32	59	63	43	9	-11	-29
880	-26	-13	-5	-18	-23	-27	-20	-12	7	23
890	22	19	13	7	6	5	5	13	19	32
900	40	55	58	43	35	14	7	19	36	28
910	13	-4	-23	-41	-49	-35	-20	-2	6	1
920	0	-2	0	1	5	7	9	7	-1	-11
930	-13	3	28	47	65	75	77	77	71	60
940	46	26	14	14	16	18	17	13	2	-11
950	-22	-25	-21	-22	-20	-16	-11	-9	-6	-5
960	-5	-7	-8	-6	-4	-7	-13	-22	-30	-35
970	-37	-38	-38	-33	-23	-16	-6	3	7	0
980	-12	-25	-26	-16	-5	0	0	4	7	14
990	24	34	40	40	36	30	27	32	40	41
1000	36	26	18	12	7	7	6	5	3	0
1010	-4	-6	-9	-11	-13	-13	-9	-5	-8	-21
1020	-41	-46	-28	-4	13	23	18	2	-13	-25

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	-14	2	20	31	35	36	34	31	26	21
1040	22	33	45	53	53	55	56	47	24	10
1050	17	29	36	43	46	45	41	25	9	-8
1060	-31	-43	-35	-24	-21	-29	-42	-61	-73	-60
1070	-35	-10	5	0	-6	-17	-17	-1	6	6
1080	4	-4	-10	-9	4	8	11	6	1	-4
1090	-12	-4	7	23	40	47	59	55	48	39
1100	33	29	24	15	0	-15	-23	-28	-33	-34
1110	-34	-33	-19	-9	-8	-15	-24	-30	-32	-21
1120	-14	5	23	37	62	74	70	63	49	40
1130	33	32	25	24	20	11	0	-13	-27	-24
1140	-16	-3	6	12	9	0	-11	-21	-32	-45
1150	-55	-59	-50	-38	-30	-19	-6	2	0	-7
1160	-9	-3	1	4	5	4	4	6	14	30
1170	47	60	66	65	60	49	27	12	18	32
1180	39	39	32	19	16	26	42	59	67	56
1190	36	25	29	40	51	56	49	29	9	-6
1200	-6	4	16	27	26	18	9	0	-6	-13
1210	-21	-31	-42	-50	-58	-68	-69	-55	-36	-17
1220	5	21	22	17	12	2	-7	-17	-29	-43
1230	-51	-55	-59	-58	-52	-42	-33	-19	-5	0
1240	0	0	1	6	14	24	21	16	17	24
1250	32	33	33	33	35	39	36	26	18	12
1260	8	8	10	15	21	24	20	11	0	-9
1270	-8	3	16	36	59	68	75	72	62	55
1280	44	41	32	22	16	25	33	42	43	54
1290	64	72	83	85	79	69	58	39	24	2
1300	-14	-38	-52	-63	-52	-43	-40	-34	-27	-23
1310	-18	-17	-15	-13	-13	-13	-9	-3	-11	-17
1320	-26	-19	-2	19	56	70	73	66	45	3
1330	-33	-59	-78	-84	-75	-78	-87	-97	-103	-109
1340	-124	-137	-159	-182	-171	-140	-95	-37	12	70
1350	124	161	180	186	179	162	139	113	81	50
1360	9	-29	-68	-110	-127	-103	-65	-23	-11	-29
1370	-52	-42	-11	35	69	63	29	-6	-32	-45
1380	-30	-11	1	17	35	46	47	58	75	91
1390	92	77	56	34	14	-4	-17	-18	-4	32
1400	79	149	142	138	116	102	103	110	114	96
1410	58	29	17	31	62	84	97	103	103	109
1420	131	177	225	251	245	207	147	76	19	-34
1430	-85	-122	-133	-121	-106	-95	-98	-101	-97	-81
1440	-66	-55	-65	-67	-55	-42	-24	-20	-42	-70
1450	-101	-145	-183	-232	-276	-305	-330	-340	-324	-299
1460	-284	-276	-265	-248	-233	-208	-192	-200	-228	-246
1470	-246	-203	-133	-74	-12	0	24	35	50	69
1480	81	68	53	33	41	74	120	156	216	258
1490	297	319	315	298	275	279	286	290	281	263
1500	241	232	232	231	216	180	136	80	39	20
1510	2	-8	0	21	38	58	76	88	104	117
1520	136	163	191	215	223	207	183	145	99	62
1530	28	-9	-39	-51	-45	-30	-25	-37	-79	-156
1540	-224	-281	-315	-318	-322	-345	-365	-364	-311	-247
1550	-161	-106	-93	-92	-85	-60	-25	24	63	84
1560	72	49	26	11	0	-30	-57	-78	-93	-87

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	-70	-46	-20	20	56	110	144	165	184	194
1580	178	143	69	-56	-187	-268	-323	-338	-320	-309
1590	-290	-262	-199	-114	-11	86	168	251	317	369
1600	398	422	410	363	305	222	101	-39	-145	-192
1610	-217	-213	-186	-154	-121	-93	-59	-15	35	89
1620	131	171	207	238	262	285	283	264	243	221
1630	189	109	-9	-104	-202	-268	-292	-287	-259	-219
1640	-171	-111	-46	26	80	133	202	227	249	265
1650	260	233	191	142	93	72	63	56	29	-6
1660	-57	-167	-250	-294	-320	-335	-329	-317	-307	-299
1670	-279	-254	-222	-164	-48	51	131	201	254	276
1680	291	288	254	214	164	63	-79	-189	-228	-241
1690	-198	-159	-112	-95	-100	-119	-138	-148	-163	-177
1700	-172	-172	-173	-176	-162	-112	-59	6	41	79
1710	103	109	103	99	98	139	193	234	253	262
1720	232	207	155	89	66	58	68	69	64	49
1730	32	31	38	46	41	31	5	-15	-18	-11
1740	6	25	35	37	37	49	68	108	141	166
1750	168	156	139	130	123	114	103	100	90	69
1760	41	-8	-79	-150	-188	-206	-204	-177	-146	-103
1770	-58	-37	-33	-28	-12	13	52	101	132	105
1780	56	9	-32	-59	-65	-58	-52	-46	-47	-52
1790	-51	-39	-11	26	52	48	24	-2	-6	13
1800	36	44	26	-10	-60	-105	-134	-140	-120	-94
1810	-66	-25	10	26	32	11	-43	-130	-247	-330
1820	-385	-411	-373	-287	-205	-133	-36	52	110	185
1830	228	248	248	214	166	126	71	-1	-44	-67
1840	-52	-15	10	33	42	44	49	54	59	66
1850	76	102	128	143	166	182	171	153	142	134
1860	122	94	57	25	0	-18	-11	0	-2	-17
1870	-38	-50	-23	16	60	130	173	232	248	246
1880	221	167	128	94	52	-18	-74	-160	-206	-219
1890	-197	-165	-135	-104	-93	-75	-32	-1	40	73
1900	90	102	109	98	75	40	1	-85	-120	-155
1910	-199	-233	-242	-234	-229	-228	-234	-250	-260	-252
1920	-228	-197	-178	-152	-129	-107	-86	-58	-29	-1
1930	1	-6	-31	-56	-69	-52	-22	22	62	95
1940	120	137	146	130	115	97	96	121	165	208
1950	253	277	273	246	213	176	148	124	89	59
1960	40	41	57	76	90	108	107	86	52	18
1970	-1	2	20	36	41	37	30	24	23	32
1980	46	60	72	77	71	56	30	0	-25	-53
1990	-89	-116	-134	-140	-136	-129	-119	-108	-95	-83
2000	-66	-55	-60	-71	-78	-72	-61	-58	-63	-78
2010	-97	-104	-97	-85	-73	-66	-73	-88	-108	-127
2020	-133	-124	-114	-103	-91	-80	-70	-53	-23	6
2030	25	43	55	56	48	37	11	-22	-49	-58
2040	-41	10	68	108	138	163	189	216	235	232
2050	217	201	183	160	129	88	54	41	52	62
2060	70	72	72	86	101	109	116	103	84	69
2070	70	74	79	87	90	88	78	68	60	48
2080	35	12	-21	-41	-59	-91	-111	-142	-160	-177
2090	-194	-192	-177	-154	-115	-112	-68	-45	-38	-28
2100	-18	-21	-29	-35	-38	-38	-46	-51	-50	-50

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	-54	-58	-69	-85	-129	-184	-219	-236	-242	-225
2120	-215	-198	-193	-170	-159	-136	-118	-70	-26	36
2130	81	111	123	114	95	80	74	73	73	70
2140	68	62	61	61	65	60	52	45	29	25
2150	32	41	37	8	-18	-42	-53	-59	-68	-77
2160	-69	-44	-8	23	50	62	57	43	24	9
2170	-2	-15	-23	-26	-26	-22	-19	-23	-31	-41
2180	-42	-35	-31	-23	-10	2	11	9	2	-7
2190	-19	-30	-41	-51	-51	-47	-45	-44	-39	-34
2200	-31	-28	-23	-18	-17	-16	-14	-10	-5	-1
2210	7	18	25	32	29	15	-2	-16	-24	-33
2220	-42	-49	-56	-49	-28	-12	1	6	8	5
2230	-2	-15	-33	-50	-65	-77	-79	-70	-58	-49
2240	-48	-57	-68	-78	-83	-77	-74	-78	-93	-117
2250	-137	-156	-168	-162	-149	-135	-122	-107	-92	-86
2260	-86	-85	-77	-67	-51	-39	-16	-1	19	36
2270	34	21	7	-4	-8	-6	6	28	57	74
2280	94	101	90	82	74	67	62	53	47	43
2290	43	37	30	25	18	4	-6	-15	0	9
2300	19	28	38	44	43	41	44	54	73	78
2310	43	18	-3	-20	-5	14	32	23	1	-22
2320	-44	-67	-88	-89	-89	-86	-81	-76	-66	-64
2330	-64	-64	-64	-53	-37	-22	-14	-1	-3	-17
2340	-32	-61	-81	-100	-117	-119	-119	-119	-129	-139
2350	-153	-158	-162	-169	-183	-200	-217	-232	-234	-227
2360	-216	-203	-185	-173	-157	-137	-110	-76	-52	-39
2370	-35	-27	-17	-2	14	42	64	89	113	126
2380	143	159	167	174	189	200	203	200	195	190
2390	183	167	149	122	89	56	26	3	1	13
2400	25	38	41	34	26	21	25	29	24	13
2410	-2	-20	-37	-56	-85	-110	-122	-132	-152	-182
2420	-214	-255	-280	-278	-266	-239	-204	-172	-149	-135
2430	-122	-105	-91	-79	-62	-46	-44	-56	-63	-71
2440	-69	-52	-33	-13	0	4	1	-5	-13	-16
2450	-4	16	35	52	60	50	34	16	19	33
2460	47	56	47	38	32	24	16	2	-7	-18
2470	-28	-38	-45	-37	-24	-8	7	21	32	29
2480	22	18	17	12	18	6	-7	-26	-56	-77
2490	-91	-104	-114	-117	-125	-127	-130	-123	-107	-86
2500	-89	-97	-106	-115	-116	-115	-111	-104	-86	-74
2510	-58	-37	-7	30	58	92	110	114	110	108
2520	100	94	75	56	41	31	39	49	55	58
2530	60	55	44	23	6	-6	-8	-1	4	17
2540	26	30	27	20	11	1	-1	4	13	18
2550	19	13	6	-1	-15	-27	-34	-34	-23	-9
2560	4	17	11	-11	-48	-71	-75	-75	-75	-72
2570	-64	-62	-70	-83	-104	-117	-119	-120	-126	-135
2580	-145	-154	-158	-152	-129	-104	-87	-78	-77	-83
2590	-100	-126	-145	-163	-178	-184	-184	-173	-149	-133
2600	-121	-109	-91	-64	-42	-24	-5	11	30	47
2610	57	63	65	65	64	59	49	35	18	2
2620	-7	-13	-17	-6	11	26	38	47	47	38
2630	26	17	15	17	15	10	0	-8	-2	3
2640	2	-8	-22	-35	-44	-44	-43	-44	-47	-48

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	-41	-31	-22	-12	-2	8	24	41	42	32
2660	25	16	9	5	8	23	40	56	59	37
2670	27	20	22	19	13	4	-5	-15	-21	-23
2680	-32	-36	-36	-33	-34	-40	-48	-45	-30	-17
2690	0	8	7	3	0	9	18	25	30	33
2700	36	28	14	-1	-21	-35	-46	-50	-60	-69
2710	-76	-86	-100	-114	-128	-124	-118	-105	-95	-84
2720	-76	-71	-60	-46	-31	-27	-25	-34	-63	-95
2730	-118	-134	-147	-158	-159	-154	-153	-146	-135	-125
2740	-115	-106	-93	-80	-74	-63	-34	-19	-2	21
2750	46	51	44	35	28	34	34	29	23	7
2760	-11	-14	-5	0	6	8	12	16	13	8
2770	7	4	1	-2	-7	-15	-35	-55	-70	-84
2780	-88	-86	-78	-70	-66	-68	-74	-82	-94	-108
2790	-114	-109	-97	-82	-69	-56	-38	-22	-6	5
2800	3	-6	-17	-29	-42	-57	-69	-69	-56	-44
2810	-35	-26	-16	-5	3	16	28	37	40	34
2820	28	26	23	22	27	38	45	40	28	10
2830	5	18	32	47	59	62	58	50	43	34
2840	27	29	33	35	44	52	54	52	45	34
2850	23	14	9	2	-3	-6	-9	-16	-22	-15
2860	-4	3	4	-3	-16	-37	-54	-75	-92	-101
2870	-101	-100	-100	-100	-101	-107	-112	-115	-123	-131
2880	-134	-135	-132	-124	-119	-116	-114	-109	-103	-95
2890	-89	-79	-82	-91	-101	-111	-120	-120	-119	-115
2900	-114	-111	-108	-106	-106	-106	-106	-108	-111	-114
2910	-116	-121	-115	-101	-93	-85	-72	-73	-76	-79
2920	-84	-84	-76	-65	-51	-40	-25	-14	-21	-22
2930	-13	-6	1	2	-4	-3	-3	0	14	27
2940	36	29	23	14	9	2	-2	-3	1	13
2950	24	32	36	37	34	34	40	47	54	62
2960	73	76	71	65	60	54	60	71	80	83
2970	80	70	54	51	56	63	69	67	60	54
2980	50	55	59	58	54	44	31	20	16	20
2990	28	34	33	28	23	13	3	-4	-7	-7
3000	-3	0	-1	-1	-2	-2	-4	-9	-16	-26
3010	-35	-47	-62	-77	-83	-80	-72	-69	-72	-82
3020	-96	-103	-103	-103	-103	-102	-100	-102	-108	-116
3030	-123	-134	-148	-162	-174	-179	-181	-184	-187	-190
3040	-194	-195	-195	-196	-199	-200	-196	-184	-170	-154
3050	-138	-125	-122	-126	-130	-130	-127	-116	-103	-87
3060	-80	-61	-35	-17	-6	1	3	8	19	29
3070	45	57	57	64	63	62	61	62	63	65
3080	60	53	37	25	15	26	43	51	69	81
3090	82	81	71	65	51	43	72	88	104	103
3100	100	86	76	71	65	63	56	49	41	33
3110	18	14	1	13	18	38	38	36	26	25
3120	20	13	9	0	-9	-8	-8	-9	-8	2
3130	10	22	28	38	40	39	36	35	33	31
3140	28	21	21	21	39	54	67	68	68	65
3150	61	57	54	48	37	28	18	4	0	-3
3160	-3	1	3	4	1	-3	-11	-22	-36	-51
3170	-65	-69	-60	-54	-44	-40	-43	-52	-65	-65
3180	-60	-53	-50	-55	-62	-75	-87	-93	-94	-95

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	-97	-99	-99	-99	-99	-99	-99	-99	-100	-100
3200	-100	-100	-100	-97	-94	-89	-85	-79	-70	-62
3210	-52	-38	-28	-25	-19	-16	-14	-7	-3	0
3220	1	6	13	21	26	27	25	26	26	26
3230	29	37	47	57	68	74	75	80	87	95
3240	102	111	119	123	125	128	128	130	140	156
3250	167	173	171	165	162	158	149	141	136	130
3260	123	115	109	103	97	81	69	62	51	37
3270	27	11	-7	-24	-40	-48	-54	-50	-45	-38
3280	-32	-27	-18	-18	-20	-25	-28	-28	-24	-23
3290	-26	-30	-31	-39	-47	-56	-70	-70	-68	-61
3300	-60	-60	-56	-56	-60	-64	-64	-66	-66	-65
3310	-63	-60	-65	-68	-66	-59	-66	-68	-75	-81
3320	-79	-75	-71	-73	-73	-67	-55	-45	-29	-28
3330	-28	-25	-22	-18	-10	1	-2	-7	-22	-28
3340	-29	-32	-34	-34	-27	-19	-11	-5	1	13
3350	25	32	34	33	33	43	55	68	67	66
3360	66	71	80	89	97	102	103	99	91	80
3370	65	61	61	59	56	48	41	36	32	27
3380	19	9	0	-15	-21	-21	-20	-19	-11	-5
3390	-3	-2	-1	-6	-13	-11	-4	7	17	16
3400	8	9	17	25	29	32	34	33	31	24
3410	15	8	8	8	3	-5	-13	-17	-22	-26
3420	-34	-33	-23	-21	-25	-29	-34	-36	-41	-48
3430	-57	-64	-65	-59	-51	-41	-23	-9	2	12
3440	21	28	29	28	24	21	16	9	7	17
3450	24	19	13	11	13	9	3	-7	-10	-3
3460	-5	-12	-18	-18	-20	-21	-19	-11	0	7
3470	-3	-10	-15	-16	-13	-9	-2	0	-4	-9
3480	-16	-21	-21	-20	-15	-8	-3	0	5	16
3490	22	29	29	24	21	19	26	40	54	63
3500	62	54	60	58	58	56	56	56	56	51
3510	40	34	38	39	45	53	54	48	44	48
3520	51	43	38	24	20	6	-2	-9	-14	-30
3530	-42	-53	-64	-65	-64	-60	-54	-53	-60	-69
3540	-70	-68	-65	-57	-47	-49	-62	-76	-78	-68
3550	-61	-56	-55	-52	-46	-40	-32	-19	-3	6
3560	12	13	11	5	-1	-5	-1	4	9	11
3570	12	14	17	19	19	19	16	7	3	3
3580	3	0	-3	0	8	17	26	32	36	38
3590	38	42	43	39	33	30	29	39	50	54
3600	51	42	29	17	11	12	11	8	0	-7
3610	-14	-21	-18	-9	0	4	6	6	1	-1
3620	-2	-7	-5	12	28	27	18	4	-10	-24
3630	-31	-30	-29	-27	-25	-24	-24	-27	-24	-11
3640	0	8	12	17	9	-3	-13	-20	-17	-8
3650	-5	-5	-5	-6	-8	-8	-7	-5	-2	0
3660	-2	-4	-6	-8	-7	-5	-10	-17	-24	-25
3670	-24	-15	-2	6	3	-3	-11	-23	-31	-31
3680	-16	-4	-1	1	0	-1	-3	-3	-5	-10
3690	-17	-21	-20	-13	-2	5	6	6	6	6
3700	6	9	9	13	18	26	24	16	6	6
3710	16	28	29	25	18	13	13	20	24	19
3720	14	5	-4	-9	-8	-4	0	6	11	18

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	20	25	30	37	38	39	40	30	20	15
3740	4	-2	-9	-17	-23	-27	-29	-30	-30	-31
3750	-31	-34	-36	-38	-39	-34	-34	-35	-35	-24
3760	-4	1	0	0	-5	-10	-11	-13	-13	-6
3770	9	22	31	35	36	36	36	36	33	26
3780	18	9	2	0	3	11	21	24	19	16
3790	9	4	7	9	8	6	3	-4	-13	-19
3800	-23	-24	-24	-16	-6	1	8	8	2	-5
3810	-17	-30	-42	-48	-48	-48	-47	-43	-37	-31
3820	-23	-12	-9	-13	-20	-26	-30	-26	-16	-5
3830	0	0	-2	-8	-16	-18	-11	-3	0	1
3840	0	-1	0	6	13	11	4	-1	-8	-15
3850	-15	-4	6	18	31	36	36	33	28	23
3860	19	14	8	1	-7	-15	-21	-23	-15	-3
3870	10	19	27	35	41	43	42	37	27	19
3880	11	2	0	7	15	11	8	4	8	5
3890	6	11	14	10	5	-4	-13	-36	-53	-53
3900	-50	-41	-39	-41	-43	-48	-48	-49	-40	-28
3910	-19	-16	-9	-1	6	5	5	1	-8	-23
3920	-29	-34	-38	-38	-36	-29	-22	-10	0	10
3930	15	20	21	24	29	38	43	47	46	41
3940	35	27	26	28	30	31	33	35	34	34
3950	33	33	34	33	26	22	26	30	26	18
3960	11	1	-4	-10	-10	-10	-10	-13	-18	-24
3970	-23	-16	-14	-17	-20	-26	-32	-30	-26	-22
3980	-19	-19	-23	-31	-39	-41	-41	-37	-31	-25
3990	-21	-17	-14	-8	-2	-1	-1	-3	-7	-12
4000	-16	-20	-24	-30	-32	-29	-28	-25	-18	-8
4010	0	10	18	20	20	20	22	29	35	36
4020	35	32	23	11	4	1	1	1	1	2
4030	3	3	4	7	10	11	11	12	15	17
4040	20	19	19	19	19	21	22	23	27	26
4050	24	18	10	1	-5	-7	0	6	8	3
4060	-2	-12	-22	-23	-23	-22	-17	-8	1	6
4070	6	6	6	6	6	4	-4	-17	-32	-38
4080	-34	-32	-28	-26	-27	-35	-42	-47	-41	-25
4090	-23	-18	-13	-11	-13	-14	-14	-15	-20	-14
4100	-4	1	7	16	24	31	25	21	21	18
4110	20	25	26	26	26	25	20	15	11	6
4120	1	1	3	5	5	4	10	15	19	18
4130	19	20	20	24	25	29	31	31	30	26
4140	33	38	28	16	3	-7	-8	-1	9	25
4150	30	30	21	8	0	-9	-17	-20	-21	-20
4160	-16	-16	-20	-25	-22	-8	3	13	14	8
4170	2	-7	-10	-10	-11	-11	-11	-13	-15	-21
4180	-23	-23	-23	-20	-14	-14	-16	-18	-20	-25
4190	-29	-29	-29	-29	-27	-21	-16	-7	-2	0
4200	0	-2	-7	-10	-11	-11	-7	1	8	13
4210	16	16	16	17	18	16	11	10	13	10
4220	1	-8	-17	-21	-19	-14	-10	-5	0	8
4230	17	19	18	14	10	1	-6	-10	-8	-2
4240	4	14	23	26	23	18	11	7	10	18
4250	23	25	30	33	34	33	34	38	47	54
4260	54	49	42	34	28	24	22	21	24	30

TO BE CONTINUED

CONTINUED(S-1453 WEST)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	36	39	34	29	24	21	19	18	18	15
4280	10	4	-2	-10	-9	-3	3	2	0	-4
4290	-11	-26	-28	-29	-31	-36	-36	-36	-35	-35
4300	-35	-35	-29	-23	-20	-20	-21	-26	-29	-35
4310	-40	-40	-36	-33	-25	-21	-18	-14	-10	-5
4320	0	0	-1	0	0	1	1	0	-1	-4
4330	0	7	12	14	6	1	-1	-5	-9	-9
4340	-13	-16	-15	-11	-10	-9	-12	-11	-9	-4
4350	-1	0	1	7	10	13	15	19	20	24
4360	21	18	23	35	40	37	28	20	13	17
4370	26	33	35	33	30	22	18	18	14	13
4380	13	13	13	13	10	7	6	12	22	32
4390	37	36	34	31	27	23	20	19	15	12
4400	7	3	0	-8	-11	-5	7	15	12	3
4410	-5	-15	-24	-29	-31	-33	-33	-33	-33	-33
4420	-34	-35	-36	-36	-36	-34	-30	-27	-24	-20
4430	-16	-18	-22	-24	-26	-26	-23	-17	-8	0
4440	6	10	12	16	19	19	19	19	19	19
4450	17	17	22	29	31	30	26	17	5	-5
4460	-15	-19	-18	-14	-8	-2	6	9	13	14
4470	18	21	23	23	23	23	23	26	29	29
4480	29	29	28	23	20	16	14	12	9	2
4490	-1	-6	-9	-9	-12	-15	-4	0	-1	-10
4500	-17	-27	-34	-35	-29	-26	-23	-23	-21	-16
4510	-9	-3	9	10	6	4	0	0	8	10
4520	11	6	0	-5	-9	-8	-4	-5	-8	-9
4530	-8	-17	-27	-22	-16	-10	-5	-1	1	1
4540	1	9	20	29	25	20	12	-1	-5	-3
4550	-1	3	8	10	7	6	9	16	23	30
4560	32	31	26	18	8	0	-5	-10	-11	-5
4570	1	9	16	22	25	21	15	13	16	19
4580	23	23	24	26	25	26	26	26	23	16
4590	7	1	0	-2	-4	-4	-4	-4	-3	-2
4600	-1	-1	0	-2	-4	-7	-6	-1	0	0
4610	-5	-15	-26	-30	-30	-26	-16	-7	0	3
4620	3	4	5	2	-3	-8	-14	-17	-12	-6
4630	-2	-6	-12	-18	-21	-21	-21	-21	-23	-25
4640	-25	-20	-13	-9	-3	3	9	18	25	23

END

RECORD = S-1453 COMPONENT = DOWN STATION = HACHINOHE-S
DATE AND TIME = 1981-12-02-15-25 TOTAL NUMBER OF DATA = 4600
SAMPLING INTERVAL = 0.010 (SEC) UNIT = 0.1 GAL
SIGNAL = GR. ACC.
CONECTION POINT IN DATA NUMBER = 3083,

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0	-11	-12	-12	-13	-14	-15	-16	-16	-12	-1
10	9	20	30	35	17	0	-18	-36	-45	-52
20	-60	-61	-33	-5	22	39	52	66	41	2
30	-36	-47	-52	-55	-39	-24	0	29	54	48
40	42	32	20	10	0	-6	-9	-12	-16	-20
50	-23	-25	-21	-13	0	11	17	16	11	1
60	-9	-12	-11	-3	7	18	26	31	31	23
70	12	0	-4	-3	-7	-14	-23	-34	-31	-20
80	-9	-8	-11	-13	-19	-27	-37	-52	-65	-71
90	-66	-63	-59	-55	-51	-45	-41	-42	-48	-53
100	-59	-66	-69	-63	-58	-54	-52	-56	-65	-76
110	-89	-98	-105	-105	-97	-88	-83	-78	-70	-52
120	-25	0	21	33	38	38	25	-1	-24	-34
130	-40	-47	-45	-27	0	51	107	148	165	162
140	138	81	25	24	47	87	125	158	157	135
150	81	26	-37	-104	-144	-159	-151	-115	-69	-17
160	31	68	87	88	68	29	-10	-52	-96	-123
170	-128	-110	-89	-73	-60	-55	-52	-52	-55	-65
180	-74	-82	-80	-69	-51	-26	5	47	85	104
190	93	66	26	-20	-68	-109	-131	-127	-86	-27
200	16	40	45	25	-7	-41	-67	-81	-83	-71
210	-58	-45	-33	-23	-12	-3	-1	-1	-2	-7
220	-14	-16	-19	-26	-34	-42	-50	-62	-80	-95
230	-100	-76	-13	56	100	105	81	18	-73	-107
240	-112	-84	-25	40	73	86	92	86	66	15
250	-40	-80	-123	-134	-118	-78	-38	-5	28	44
260	42	29	-6	-18	-8	23	49	80	111	135
270	130	103	60	19	-10	-20	-1	-1	-14	-39
280	-58	-66	-55	-20	2	15	39	64	93	124
290	122	98	73	58	50	40	23	-4	-32	-53
300	-68	-72	-64	-43	-22	7	11	5	-2	-10
310	-13	-17	-21	-21	-10	11	37	56	45	10
320	-54	-72	-73	-76	-73	-68	-58	-39	-14	9
330	31	52	67	64	45	27	8	3	16	32
340	32	25	12	1	-4	-10	-12	-14	-8	12
350	33	54	56	54	50	46	46	56	53	26
360	-9	-28	-21	-3	21	43	61	72	65	51
370	35	19	8	0	0	3	5	2	-3	-12
380	-24	-33	-26	-13	0	13	21	22	19	15
390	10	12	20	20	11	-2	-16	-26	-37	-46
400	-45	-29	-12	9	31	33	28	23	12	5
410	9	21	29	26	21	15	6	-2	-8	-11
420	-8	2	16	25	27	25	22	21	22	23
430	19	15	13	14	17	18	17	12	4	-5
440	-20	-39	-46	-41	-19	10	43	68	66	53
450	29	5	-6	-13	-17	-26	-40	-52	-39	-15
460	1	13	19	18	14	5	-3	-7	-11	-14
470	-14	-10	-1	10	21	21	21	16	13	10
480	10	10	4	4	1	-1	-6	-5	5	20

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
490	29	29	25	21	14	4	-10	-22	-23	-9
500	14	16	13	11	14	25	35	35	34	34
510	25	19	14	7	-4	-19	-34	-48	-51	-31
520	-26	-20	-12	-5	5	16	29	38	39	32
530	20	15	7	-2	2	3	-8	-16	-29	-37
540	-25	4	29	33	32	33	34	38	40	31
550	13	-5	-20	-26	-24	-19	-13	-3	4	13
560	13	7	1	-7	-18	-26	-32	-34	-20	5
570	30	46	49	48	43	34	23	0	-33	-57
580	-65	-44	-22	-7	3	14	25	33	34	28
590	16	-4	-22	-33	-34	-26	-19	-13	-10	-12
600	-16	-20	-28	-35	-37	-32	-22	-15	-12	-10
610	-11	-6	12	45	77	100	107	94	69	42
620	16	-3	-19	-29	-31	-30	-24	-10	10	29
630	42	44	31	17	0	-16	-33	-34	-11	7
640	15	11	8	4	1	4	16	22	17	14
650	7	-1	-6	-7	1	14	33	41	29	3
660	-11	-16	-20	-27	-31	-31	-25	-20	-15	-6
670	7	27	45	58	48	33	8	-4	-15	-25
680	-31	-28	6	25	37	28	14	-7	-37	-51
690	-50	-29	-19	-4	0	3	0	0	3	1
700	1	1	1	0	4	15	26	20	6	-11
710	-21	-1	27	44	36	25	6	-7	-8	-8
720	-6	-4	-1	0	-2	-7	-12	-22	-30	-18
730	-8	0	8	11	22	41	56	55	44	24
740	12	3	3	6	8	11	5	-5	-15	-22
750	-10	16	33	49	48	38	10	-12	-27	-33
760	-27	-17	-8	0	2	-1	-4	-7	-9	-14
770	-19	-22	-23	-25	-26	-22	-12	-2	8	24
780	23	9	-5	-15	-16	-14	-10	-4	2	8
790	11	11	5	-9	-24	-16	10	28	29	21
800	10	-2	-7	-4	-7	-11	-15	-20	-22	-19
810	-4	17	40	52	46	40	32	24	17	10
820	6	8	16	27	29	28	22	14	0	-2
830	9	28	44	49	46	34	24	16	8	0
840	-10	-21	-32	-34	-32	-23	-10	3	16	23
850	15	1	-24	-51	-45	-30	-5	12	14	14
860	13	13	11	9	1	-8	-24	-38	-34	-10
870	7	26	25	13	-7	-21	-39	-36	-8	5
880	5	5	0	-6	-11	-17	-17	-17	-10	0
890	18	13	6	0	-9	-4	5	8	6	1
900	-4	-11	-5	3	10	13	13	6	1	-4
910	-8	-8	0	6	20	28	30	28	22	19
920	18	14	4	-8	-16	-6	18	31	38	43
930	43	41	35	26	0	-19	-35	-32	-21	-8
940	-2	-4	-5	-3	6	14	11	2	-9	-19
950	-22	-13	0	7	9	6	4	-3	-9	-13
960	-14	-5	9	20	23	22	11	-4	-19	-29
970	-16	3	19	25	26	26	19	3	-8	-12
980	-19	-26	-38	-47	-49	-35	-11	9	28	35
990	26	11	-3	-7	0	8	13	12	7	5
1000	4	3	4	4	2	0	-2	-7	-15	-25
1010	-32	-25	-7	8	16	17	14	9	2	-6
1020	-13	-14	-10	-2	6	16	22	23	21	16

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1030	15	13	9	8	11	19	27	32	30	24
1040	14	10	9	8	10	15	19	26	23	18
1050	15	6	-2	-5	1	10	20	25	22	15
1060	12	10	15	16	14	9	0	-11	-11	-11
1070	-9	-5	-1	0	1	-5	-11	-19	-19	-17
1080	-13	-7	-12	-12	-12	-8	0	7	13	12
1090	2	-13	-27	-36	-10	3	10	4	-5	-16
1100	-22	-2	12	27	36	28	17	-17	-31	-13
1110	12	32	49	45	32	15	-8	-18	-14	-10
1120	-3	2	5	7	7	9	10	10	10	5
1130	1	-1	8	17	24	25	23	15	-1	-18
1140	-22	3	27	43	55	70	65	43	14	-5
1150	-14	-8	-6	-3	1	6	8	1	-11	-21
1160	-29	-34	-36	-36	-36	-36	-35	-32	-27	-19
1170	-15	-16	-19	-23	-15	2	18	27	27	20
1180	15	11	9	12	12	10	9	9	9	8
1190	7	5	1	-2	2	14	22	24	15	5
1200	-3	-7	-3	5	12	16	13	4	-7	-17
1210	-15	-6	0	2	-1	-7	-13	-15	-13	-8
1220	-3	2	8	16	21	27	33	27	14	3
1230	-7	-6	3	12	13	6	0	3	13	19
1240	17	13	7	3	2	0	0	1	6	12
1250	19	27	30	24	12	-2	-14	-23	-13	-4
1260	-1	-2	-6	-10	-15	-15	-1	16	25	16
1270	7	-6	-18	-28	-36	-28	-21	-20	-24	-27
1280	-31	-35	-39	-40	-42	-40	-30	-20	-14	-16
1290	-53	-39	-13	10	27	36	31	31	28	25
1300	18	21	16	-9	-35	-56	-47	-32	-11	-17
1310	-22	-14	12	50	79	72	52	21	2	-17
1320	-28	-29	-7	40	68	85	79	64	39	13
1330	-6	-17	-7	27	74	99	76	24	-41	-68
1340	-64	-38	5	59	102	122	106	55	18	3
1350	-9	-18	-27	-34	-40	-36	-24	-16	-8	-2
1360	7	15	25	23	22	20	15	12	34	58
1370	85	90	83	72	54	38	26	19	12	2
1380	-8	-9	0	10	16	19	12	-17	-43	-50
1390	-40	-24	-8	5	10	-2	-49	-105	-131	-134
1400	-102	-53	-21	-3	4	1	-10	-36	-72	-87
1410	-77	-49	-19	-15	-25	-41	-42	-19	8	21
1420	-15	-72	-114	-127	-118	-96	-74	-58	-38	-3
1430	22	40	56	66	70	61	47	35	32	40
1440	65	92	121	128	102	39	-10	-24	-4	14
1450	25	23	15	3	-14	-9	13	24	27	29
1460	36	52	70	88	91	60	26	15	15	14
1470	6	-11	-36	-45	-51	-56	-21	11	26	32
1480	40	40	27	-8	-55	-89	-108	-113	-90	-60
1490	-4	28	42	43	40	35	23	13	15	0
1500	-15	23	73	95	118	122	107	81	47	21
1510	-10	-69	-93	-80	-63	-48	-40	-31	-13	13
1520	27	21	-8	-28	-1	41	92	97	87	44
1530	14	-20	-42	-51	-59	-52	-38	-30	-19	-2
1540	18	41	37	2	-56	-83	-73	-44	-29	-45
1550	-66	-79	-76	-67	-72	-95	-125	-150	-140	-96
1560	-26	32	51	38	13	-4	6	44	68	69

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1570	64	59	58	57	45	5	-50	-71	-68	-55
1580	-37	-31	-36	-43	-36	-7	8	3	4	25
1590	76	106	87	57	39	38	43	40	37	38
1600	36	24	-2	-27	-26	23	97	135	131	104
1610	75	65	82	104	106	97	88	66	36	22
1620	18	17	16	8	-3	-11	-9	4	16	21
1630	17	8	-3	-18	-43	-73	-108	-120	-103	-82
1640	-63	-46	-41	-46	-65	-97	-121	-118	-85	-30
1650	18	29	33	33	33	33	29	10	-19	-31
1660	-13	7	-1	-8	-15	0	36	57	54	45
1670	41	48	50	47	42	37	26	9	4	-9
1680	-41	-57	-69	-70	-62	-44	-28	-6	-5	-6
1690	-6	14	34	22	6	-20	-38	-65	-85	-97
1700	-110	-112	-111	-96	-69	-24	80	139	168	161
1710	107	67	48	27	16	25	35	31	26	10
1720	-17	-26	-15	-1	0	-1	-4	0	16	42
1730	61	61	62	61	58	51	42	29	16	1
1740	-4	2	13	15	11	-2	-13	-4	-1	-5
1750	-18	-44	-93	-117	-129	-133	-125	-102	-63	5
1760	49	68	67	59	42	27	23	30	43	47
1770	46	43	38	24	6	-22	-43	-36	-7	19
1780	26	26	26	26	31	41	50	53	50	37
1790	21	13	8	2	-12	-37	-64	-76	-65	-35
1800	-7	11	32	40	36	34	29	19	6	-8
1810	-14	-14	-12	-8	0	14	27	38	46	44
1820	27	4	-21	-30	-20	-2	17	23	14	0
1830	-20	-33	-38	-46	-58	-73	-90	-92	-71	-47
1840	-30	-23	-18	-12	-5	-2	-1	0	0	-2
1850	-9	-21	-34	-46	-48	-34	-24	-16	-17	-20
1860	-20	-17	-4	8	27	33	33	29	27	39
1870	61	64	58	47	27	33	64	87	90	67
1880	42	33	34	48	61	73	71	57	19	-13
1890	-38	-29	-20	-30	-43	-66	-86	-78	-65	-41
1900	-25	-20	-21	-29	-34	-27	-25	-15	-15	-27
1910	-36	-47	-65	-64	-59	-40	-20	-5	9	14
1920	10	6	-5	-18	-33	-49	-70	-59	-38	-21
1930	-8	-2	6	7	5	-1	-9	-19	-25	-26
1940	-25	-18	-9	-2	4	8	19	29	47	75
1950	79	57	28	2	-17	-33	-38	-22	-4	7
1960	1	-15	-32	-51	-43	-31	-24	-22	-22	-22
1970	-22	-22	-21	-8	5	20	26	24	22	28
1980	41	59	75	78	71	64	57	47	36	25
1990	17	12	10	16	26	36	42	39	25	2
2000	-15	-27	-35	-44	-51	-59	-67	-74	-82	-91
2010	-98	-93	-78	-65	-59	-66	-81	-82	-63	-43
2020	-31	-26	-12	2	11	19	16	15	21	34
2030	43	48	47	46	42	35	24	6	-8	-18
2040	-15	-2	12	21	22	22	20	19	12	2
2050	5	27	47	54	25	0	-14	-14	-12	-5
2060	3	11	2	-8	-28	-55	-74	-79	-65	-52
2070	-39	-51	-61	-75	-78	-70	-58	-47	-50	-54
2080	-54	-54	-55	-56	-55	-49	-46	-35	-8	19
2090	37	48	58	63	62	58	52	30	7	-5
2100	-5	-4	-1	4	10	14	15	21	22	21

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2110	17	15	18	16	22	26	13	1	-2	-8
2120	-16	-21	-22	-7	6	21	32	39	38	33
2130	29	27	25	39	51	62	70	68	63	56
2140	45	33	33	37	42	43	38	25	7	-11
2150	-20	-20	-28	-37	-49	-55	-55	-51	-47	-42
2160	-39	-34	-30	-30	-30	-34	-39	-45	-53	-61
2170	-49	-35	-22	-12	-11	-14	-19	-25	-41	-62
2180	-79	-84	-79	-72	-67	-56	-42	-39	-43	-51
2190	-66	-79	-67	-40	-19	-15	-20	-22	-20	-19
2200	-14	-7	-3	-1	0	-3	-14	-25	-23	-16
2210	-17	-20	-27	-36	-29	-4	14	25	31	32
2220	31	31	28	28	37	50	55	43	23	7
2230	-1	-1	-3	-2	0	-1	0	4	15	27
2240	43	54	49	34	26	20	24	42	40	29
2250	21	14	3	0	4	8	13	17	23	32
2260	33	29	19	7	0	11	13	14	10	7
2270	4	2	0	-2	-10	-21	-33	-40	-34	-20
2280	-11	-12	-17	-24	-25	-28	-25	-21	-15	-8
2290	0	6	26	32	26	16	5	4	18	28
2300	35	23	15	12	3	-6	-21	-32	-46	-56
2310	-56	-57	-52	-47	-45	-42	-45	-56	-69	-81
2320	-95	-102	-102	-100	-96	-94	-98	-105	-114	-117
2330	-112	-112	-88	-62	-44	-46	-53	-56	-57	-56
2340	-47	-34	-22	-4	6	12	15	15	14	13
2350	19	30	41	54	59	62	62	59	57	48
2360	31	14	9	25	64	78	73	64	55	49
2370	40	34	32	32	33	41	52	62	65	62
2380	54	47	47	51	61	67	62	52	37	24
2390	16	10	5	0	-1	-3	-2	-3	-8	-10
2400	-10	-10	-12	-17	-20	-23	-25	-28	-30	-30
2410	-26	-14	0	8	5	-9	-29	-47	-62	-73
2420	-72	-68	-70	-72	-71	-73	-81	-89	-89	-80
2430	-72	-66	-61	-58	-57	-54	-54	-55	-57	-58
2440	-57	-54	-49	-41	-31	-20	-13	-18	-23	-27
2450	-31	-35	-37	-40	-47	-55	-52	-37	-28	-21
2460	-21	-23	-19	-12	-1	8	10	10	7	0
2470	-1	0	5	8	11	16	15	11	2	-3
2480	-9	-8	17	35	46	47	52	53	48	44
2490	36	30	24	42	47	41	32	23	15	18
2500	37	53	47	25	-7	-31	-46	-52	-52	-39
2510	-31	-21	-17	-19	-19	-21	-22	-25	-25	-27
2520	-27	-27	-8	0	19	29	36	37	28	21
2530	15	10	0	-6	-4	3	0	-5	-13	-16
2540	-20	-26	-27	-30	-41	-49	-53	-54	-46	-34
2550	-23	-21	-27	-35	-43	-49	-55	-58	-59	-61
2560	-61	-59	-56	-53	-51	-46	-42	-40	-37	-39
2570	-41	-43	-39	-30	-20	-8	-4	-4	-5	-9
2580	-13	-16	-17	-18	-16	-6	7	23	41	59
2590	78	90	87	80	76	72	67	61	56	56
2600	64	77	81	74	62	50	42	46	48	42
2610	33	25	20	15	12	11	10	7	1	-2
2620	-8	-16	-26	-35	-46	-58	-68	-72	-66	-57
2630	-47	-39	-39	-46	-48	-50	-52	-54	-55	-55
2640	-49	-40	-34	-29	-27	-27	-30	-32	-37	-44

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2650	-57	-65	-50	-32	-17	-9	-9	-9	-10	-14
2660	-14	-14	-16	-18	-20	-21	-21	-20	-13	0
2670	17	26	34	43	48	45	29	9	-21	-37
2680	-45	-44	-41	-39	-36	-35	-40	-46	-55	-65
2690	-64	-52	-30	-19	-14	-19	-20	-20	-17	-15
2700	-17	-17	-17	-14	-1	12	16	16	16	16
2710	16	18	20	22	25	27	31	31	36	36
2720	35	33	33	28	25	21	18	18	16	13
2730	12	9	16	27	35	44	62	71	79	81
2740	74	69	56	43	35	23	20	20	20	18
2750	16	17	16	11	22	18	11	5	-3	-20
2760	-36	-45	-56	-61	-49	-38	-31	-37	-46	-54
2770	-60	-70	-79	-82	-82	-80	-73	-61	-49	-48
2780	-52	-57	-66	-78	-90	-92	-82	-70	-60	-50
2790	-36	-24	-16	-13	-12	-9	-7	-4	3	16
2800	30	40	48	56	60	62	62	63	66	68
2810	68	67	64	62	67	76	83	91	99	101
2820	102	101	103	104	101	95	87	82	80	75
2830	73	73	75	76	70	66	62	59	54	48
2840	43	38	34	37	42	43	41	34	27	18
2850	9	-2	-15	-31	-43	-47	-45	-40	-40	-43
2860	-48	-52	-54	-56	-60	-62	-62	-64	-64	-65
2870	-65	-66	-66	-65	-65	-64	-57	-43	-34	-25
2880	-25	-24	-24	-24	-23	-18	-8	4	17	28
2890	27	27	25	22	24	34	49	58	52	52
2900	53	57	67	82	93	98	106	108	103	98
2910	92	85	78	88	85	82	81	73	64	54
2920	47	46	41	34	19	5	-8	-9	-7	-2
2930	2	-1	-5	-19	-38	-40	-36	-34	-36	-44
2940	-51	-58	-60	-48	-37	-26	-17	-12	-18	-28
2950	-31	-36	-37	-33	-27	-19	-13	-18	-27	-37
2960	-44	-35	-23	-12	-5	5	9	14	20	29
2970	38	53	64	66	62	59	58	66	80	87
2980	84	76	65	54	45	40	37	40	46	53
2990	54	52	53	53	58	62	65	63	57	56
3000	53	50	56	56	52	50	48	47	43	38
3010	32	25	16	8	4	1	-1	-4	-5	-6
3020	-6	-8	-13	-17	-21	-23	-25	-24	-21	-17
3030	-13	-9	-4	0	0	-5	-3	-1	-1	-2
3040	-6	-12	-19	-23	-19	-16	-13	-7	-1	1
3050	6	12	15	15	15	14	13	17	27	41
3060	51	51	51	52	55	66	76	75	75	76
3070	76	76	76	77	81	82	82	80	76	70
3080	66	67	63	64	42	21	10	-4	-4	-5
3090	-5	-5	-5	-6	-10	-18	-32	-46	-42	-60
3100	-68	-71	-69	-69	-57	-46	-40	-47	-57	-62
3110	-61	-59	-56	-57	-57	-55	-56	-57	-64	-64
3120	-52	-37	-25	-22	-17	-17	-19	-19	-19	-21
3130	-21	-12	6	21	38	40	35	30	25	26
3140	33	46	49	50	48	45	44	40	39	44
3150	49	50	48	48	48	48	51	54	58	58
3160	61	64	63	60	56	47	48	53	55	53
3170	49	45	41	33	26	22	16	8	3	-3
3180	-9	-11	-14	-15	-14	-13	-10	-8	-6	-8

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3190	-8	-11	-20	-30	-30	-26	-32	-38	-41	-45
3200	-40	-27	-23	-29	-39	-48	-49	-45	-42	-41
3210	-42	-39	-37	-38	-40	-41	-40	-32	-21	-11
3220	-4	0	2	1	0	0	0	-1	-6	-13
3230	-11	-1	8	15	17	18	18	18	17	16
3240	15	15	14	12	9	10	16	26	35	37
3250	38	35	30	30	30	28	21	15	9	11
3260	18	24	24	22	15	-4	-16	-21	-16	-16
3270	-16	-12	-10	-7	-11	-16	-21	-21	-21	-20
3280	-17	-15	-14	-12	-12	-12	-7	-6	-2	1
3290	9	17	14	12	2	-2	-5	-5	0	0
3300	-1	-2	-3	-7	-9	-9	-9	-7	-5	5
3310	3	2	-1	-4	-4	-2	0	2	2	2
3320	14	26	42	43	43	43	38	30	23	13
3330	12	21	29	31	32	32	27	24	19	14
3340	8	4	0	-2	-6	-11	-20	-25	-17	-11
3350	-14	-15	-16	-16	-15	-15	-16	-21	-30	-39
3360	-45	-35	-19	-7	-4	-1	0	0	-4	-8
3370	-16	-20	-13	-5	-6	-7	-10	-14	-15	-15
3380	-10	0	3	4	4	2	0	-6	-11	-12
3390	-12	-12	-12	-12	-9	-7	-7	-7	-7	-6
3400	-5	-4	-4	-3	0	0	0	0	0	0
3410	2	3	6	10	13	13	13	14	19	28
3420	35	37	35	31	26	21	20	25	27	28
3430	25	21	16	8	4	7	17	24	24	23
3440	19	10	2	-3	-5	-7	-11	-11	-11	-11
3450	-12	-15	-16	-16	-15	-15	-15	-15	-16	-18
3460	-19	-19	-19	-17	-17	-15	-16	-17	-21	-23
3470	-25	-26	-21	-17	-14	-11	-7	-12	-9	-5
3480	-4	0	1	0	0	-1	-5	-7	-12	-15
3490	-16	-16	-12	-6	-4	0	7	9	19	25
3500	39	39	37	24	22	18	13	14	18	19
3510	23	25	28	29	28	23	14	5	4	8
3520	7	0	-12	-22	-24	-25	-26	-26	-26	-26
3530	-22	-21	-22	-22	-22	-12	-3	-4	-6	-6
3540	-6	-6	-6	-6	-6	-6	-5	-7	-7	-7
3550	-6	-2	2	-1	-4	-7	-9	-9	-2	9
3560	8	1	0	-3	-3	-1	0	0	-5	-5
3570	-1	5	12	17	19	17	17	10	7	7
3580	5	1	-3	-6	-4	3	13	15	14	9
3590	7	4	0	-2	-2	-1	0	2	3	3
3600	0	-8	-15	-17	-17	-14	-12	-11	-11	-14
3610	-16	-16	-18	-20	-17	-15	-13	-12	-10	-6
3620	-3	-4	-7	-12	-15	-16	-16	-11	-1	5
3630	7	7	3	-5	-9	-8	-2	8	17	20
3640	23	24	25	27	28	29	30	30	29	27
3650	25	22	20	19	25	30	34	33	30	26
3660	23	23	21	15	8	6	2	-1	-4	-8
3670	-14	-21	-26	-31	-33	-24	-15	-10	-6	-7
3680	-11	-15	-18	-21	-22	-23	-27	-25	-23	-26
3690	-25	-23	-25	-28	-31	-31	-33	-36	-40	-41
3700	-41	-41	-29	-12	-4	3	7	9	13	13
3710	13	13	13	15	15	17	23	31	34	33
3720	33	33	29	24	19	23	28	34	32	32

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3730	28	24	24	28	29	31	29	25	18	11
3740	7	-1	-6	-10	-11	-11	-8	-6	-7	-11
3750	-14	-21	-30	-39	-40	-37	-36	-35	-31	-30
3760	-26	-22	-20	-13	-11	-7	-5	-7	-10	-12
3770	-14	-16	-13	-5	0	6	8	4	0	-4
3780	-10	-15	-10	-1	9	13	11	11	13	15
3790	15	15	16	18	18	13	9	6	4	4
3800	4	7	9	12	15	14	11	8	1	-4
3810	-6	-6	-7	-7	-6	-3	-1	2	5	6
3820	6	3	3	1	0	-3	-6	-9	-14	-18
3830	-15	-3	-1	-4	-9	-13	-15	-16	-15	-13
3840	-15	-15	-14	-15	-17	-15	-16	-18	-20	-20
3850	-20	-13	-10	-10	-10	-10	-10	-9	-6	-4
3860	4	7	10	14	14	16	20	23	23	23
3870	25	25	24	22	23	22	18	18	18	17
3880	14	14	15	17	17	17	17	17	17	13
3890	12	7	7	7	8	7	6	5	5	5
3900	5	4	3	2	1	0	-4	-7	-12	-15
3910	-17	-19	-20	-20	-21	-22	-22	-22	-20	-13
3920	-12	-14	-15	-15	-22	-24	-24	-25	-21	-13
3930	-8	-12	-16	-21	-30	-37	-35	-27	-22	-21
3940	-18	-17	-17	-17	-17	-17	-17	-17	-16	-15
3950	-9	-5	-3	-1	0	3	7	8	9	9
3960	13	14	17	18	17	11	10	6	5	13
3970	22	27	29	26	22	16	13	19	26	31
3980	32	32	32	28	27	25	23	19	17	17
3990	15	15	15	13	12	12	12	10	8	8
4000	7	8	12	13	9	3	-5	-11	-9	-4
4010	-1	-1	-4	-6	-8	-10	-10	-9	-10	-11
4020	-11	-12	-13	-15	-16	-16	-15	-11	-7	-6
4030	-9	-13	-20	-30	-37	-38	-32	-25	-20	-16
4040	-13	-13	-16	-16	-18	-23	-30	-35	-33	-21
4050	-12	-4	-4	-4	-2	-2	-2	-2	-1	-1
4060	-1	0	4	11	13	13	14	14	15	17
4070	18	18	18	23	27	25	18	14	14	14
4080	19	24	28	28	27	21	14	7	0	0
4090	0	0	0	0	0	0	-1	-1	-1	-1
4100	-1	5	7	10	12	9	3	0	0	0
4110	3	7	12	12	7	0	-2	-10	-10	-14
4120	-14	-12	-11	-11	-8	-3	-1	11	13	12
4130	12	12	12	12	7	7	3	2	0	0
4140	-1	-1	-10	-11	-15	-17	-19	-21	-22	-22
4150	-14	-8	-1	3	4	4	4	2	0	0
4160	0	-2	-4	-3	-2	-6	-7	-7	-7	-7
4170	-7	-7	-4	0	1	0	-3	-6	-11	-16
4180	-16	-13	-8	-2	1	5	7	7	7	8
4190	9	10	10	10	11	15	17	18	19	19
4200	19	20	15	12	10	11	14	18	21	23
4210	23	24	23	20	18	15	12	9	7	7
4220	7	7	8	9	13	15	14	10	9	10
4230	12	13	15	15	10	10	8	1	-1	-4
4240	-4	-1	4	9	11	5	-1	-8	-13	-14
4250	-14	-14	-13	-10	-6	-5	-5	-6	-10	-12
4260	-12	-12	-15	-19	-13	-6	-2	0	-1	-2

TO BE CONTINUED

CONTINUED(S-1453 DOWN)

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4270	-4	-7	-7	-8	-11	-12	-16	-16	-11	-6
4280	0	5	8	11	8	7	6	2	-2	-1
4290	3	4	4	3	2	0	-1	-1	-1	0
4300	3	7	8	8	6	3	0	5	5	9
4310	15	14	15	15	12	3	4	4	4	8
4320	13	15	18	22	23	17	9	-2	-7	-6
4330	6	17	21	18	18	12	12	5	5	3
4340	3	3	-3	-6	-11	-15	-15	-13	-8	-7
4350	-2	0	-2	-4	-5	-9	-14	-15	-20	-26
4360	-27	-30	-27	-25	-18	-11	-10	-10	-10	-10
4370	-8	-4	0	4	7	8	8	8	8	8
4380	10	12	12	10	5	1	-3	-12	-8	0
4390	12	20	23	22	19	16	13	16	22	25
4400	23	21	18	15	9	7	10	13	17	21
4410	25	26	25	27	27	25	26	27	28	30
4420	32	32	33	32	31	31	30	28	23	15
4430	10	6	3	1	-2	-8	-11	-11	-13	-17
4440	-21	-23	-24	-25	-27	-29	-29	-29	-29	-29
4450	-29	-31	-35	-36	-36	-35	-30	-25	-22	-22
4460	-22	-22	-23	-26	-26	-26	-25	-20	-16	-10
4470	-5	-2	-4	-10	-10	-10	-7	-5	-4	2
4480	5	4	0	0	-2	-6	-15	-14	-6	-2
4490	0	7	7	9	12	13	13	14	15	18
4500	24	23	25	31	29	30	28	25	25	24
4510	23	24	24	24	23	23	19	19	19	19
4520	15	15	14	14	15	15	15	14	14	14
4530	15	19	18	14	10	4	0	-4	-4	-3
4540	-1	0	0	1	2	3	-2	-2	-2	-5
4550	-10	-14	-19	-20	-24	-23	-21	-16	-15	-12
4560	-11	-8	-7	-7	-3	-2	-2	-4	-5	-7
4570	-9	-10	-10	-7	-3	-2	0	1	2	-2
4580	-4	-6	-9	-8	-3	2	6	10	12	12
4590	10	7	7	2	0	-3	-6	-9	-10	-7

END

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