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SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT, NOVAYA ZEMLYA, 21 OCTOBER 1975

K. J. Hill, et al

Teledyne Geotech

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SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Novaya Zemlya, 21 October 1975

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January 1976

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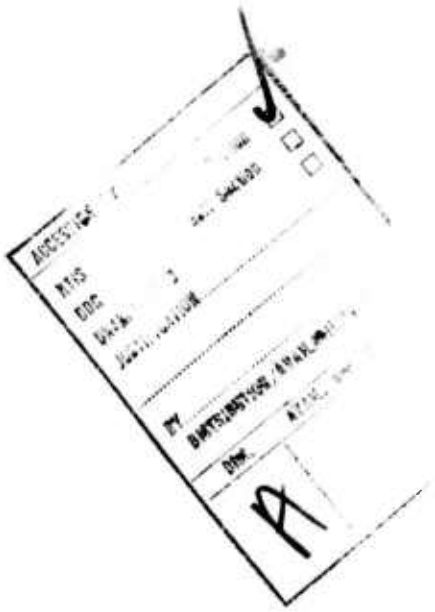

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SDCS EVENT REPORT NO. 55

Novaya Zemlya, 21 October 1975

This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

	"P" Arrival	Origin Time	Lat.	Long.	m_b	M_s
NORSAR	12:04:37.3	11:59:59	74 N	055 E	6.9	N/A
Hagfors	12:04:34.9	12:00:07	75 N	050 E	N/A	5.3

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become

11:59:57.4	72.9N	055.4E	6.5	4.8

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at all SDCS stations, LASA and NORSAR. Horizontal SP channels at HN-ME, FN-WV, CPSO and WH2YK were rotated. At RK-ON, horizontal SP channels were not rotated because the SP transverse channel was inoperative.

Long-period signals were recorded at WH2YK, CPSO, HN-ME, FN-WV, ALPA, LASA and NORSAR. Horizontal LP channels at HN-ME, FN-WV, CPSO and WH2YK were rotated. At RK-ON the analog tape ended before arrival of the LP signal. Validity of the ALPA and NORSAR long-period vertical beams is uncertain and horizontal beams were not included because of program recovery problems. LASA long-period data are recoverable in segment lengths of 6 minutes 40 seconds; two segments are included in this report.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA and NORSAR short-period plots. LASA SP scaling factors are millimicrons per inch. Scaling factors are not reported for NORSAR short-period.

STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES DEG MN SECS	ELEVATION METERS	INSTRUMENTATION SHORT-PERIOD	LONG-PERIOD
ALPA	Alaska	65 14 00.0 N 147 44 36.0 W	626	None	31300
CPSO	McMinnville, Tennessee	35 35 41.4 N 085 34 13.5 W	574	6480 V 7515 H	SL210 V SL220 H
FN-WV	Franklin, West Virginia	38 32 58.0 N 079 30 47.0 W	910	KS36000	KS36000
LASA	Billings, Montana	46 41 19.0 N 106 13 20.0 W	744	HS10	7505A V 8700C H
HN-ME	Houlton, Maine	46 09 43.0 N 067 59 09.0 W	213	18300	SL210 V SL220 H
NORSAR	Kjeller, Norway	60 49 25.4 N 010 49 56.5 E	379	HS10	7505A V 8700C H
RK-ON	Red Lake, Ontario	50 50 20.0 N 093 40 20.0 W	366	18300	SL210 V SL220 H
WH2YK	White Horse, Yukon	60 41 41.0 N 134 58 02.0 W	853	18300	SL210 V SL220 H

Note: The orientation of the radial instruments at FN-WV is assumed to be 316° ± 5° based on empirical data (event recordings). Rotation, where performed, is referenced to this azimuth and may be questionable.

HYPOCENTER DETERMINATION

INPUT FOR EVENT 21 OCT 75
12:00:00.0 73.001N 54.000E 0KM.

STA.	ARRIVAL	RESIDUALS CALC	RESIDUALS REST	DIST. REST	AZ. REST
NAO	12 04 37.3	-0.0	0.0	20.6	257.6
WH2YK	12 08 24.8	-0.1	0.0	46.5	7.0
RK-CN	12 09 26.6	-0.3	-0.2	54.7	336.5
HN-HE	12 09 29.0	-0.0	0.0	55.0	314.9
LAC	12 10 04.8	0.4	0.4	60.0	345.5
FN-WV	12 10 35.8	0.7	0.6	64.6	322.1
CPC	12 10 59.4	-0.8	-1.0	68.5	326.6

67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
12:00:01.0	72.748N	55.727E	34. CALC	0.5	3	7
11:59:57.4	72.912N	55.436E	0. REST	0.5	3	7

CALC

```
    2 . 1
  3   .   0
0    0. 0   0
. . . . . . .
0    1. 0   0
  0   .   0
    0 . 0
```

REST

```
    2 . 1
  3   .   0
0    0. 0   0
. . . . . . .
0    1. 0   0
  0   .   0
    0 . 0
```

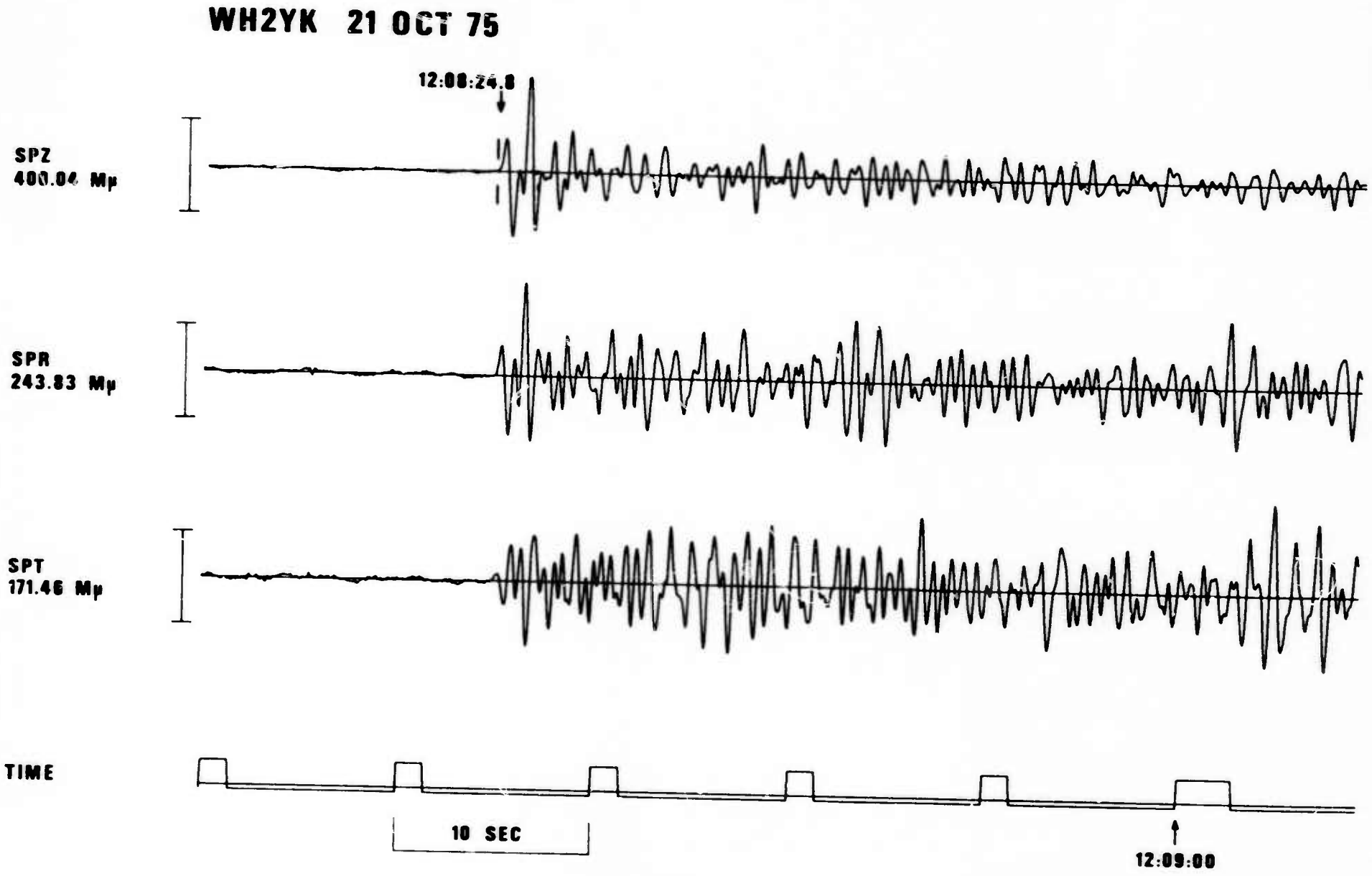
CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.16
MAJOR 173.1KM. MINOR 26.4KM. AZ= 137 AREA= 14368 SQ.KM. REST

DATA SUMMARY

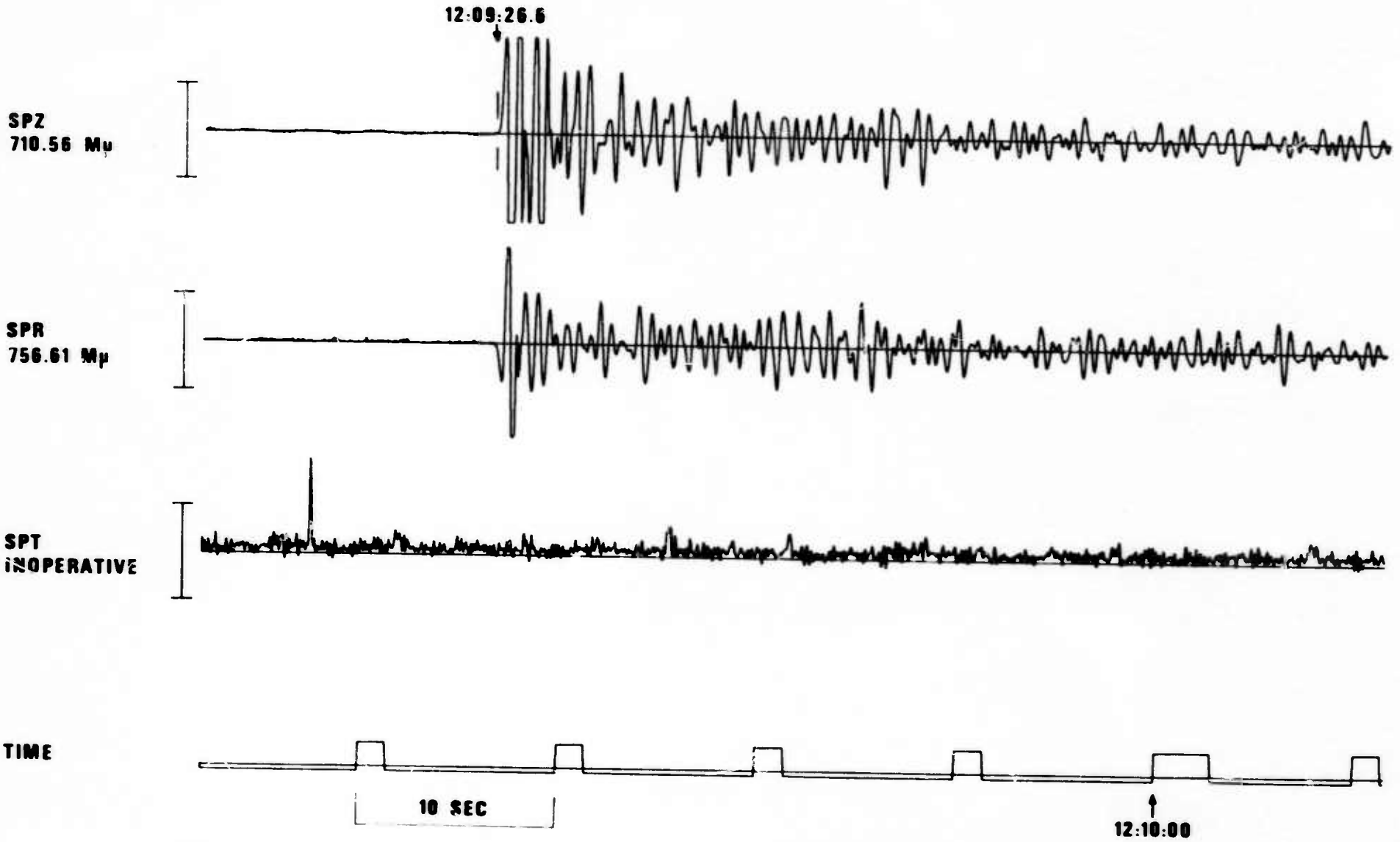
INPUT FOR EVENT 21 OCT 75
12:00:00.0 73.001N 54.000E 0KM.

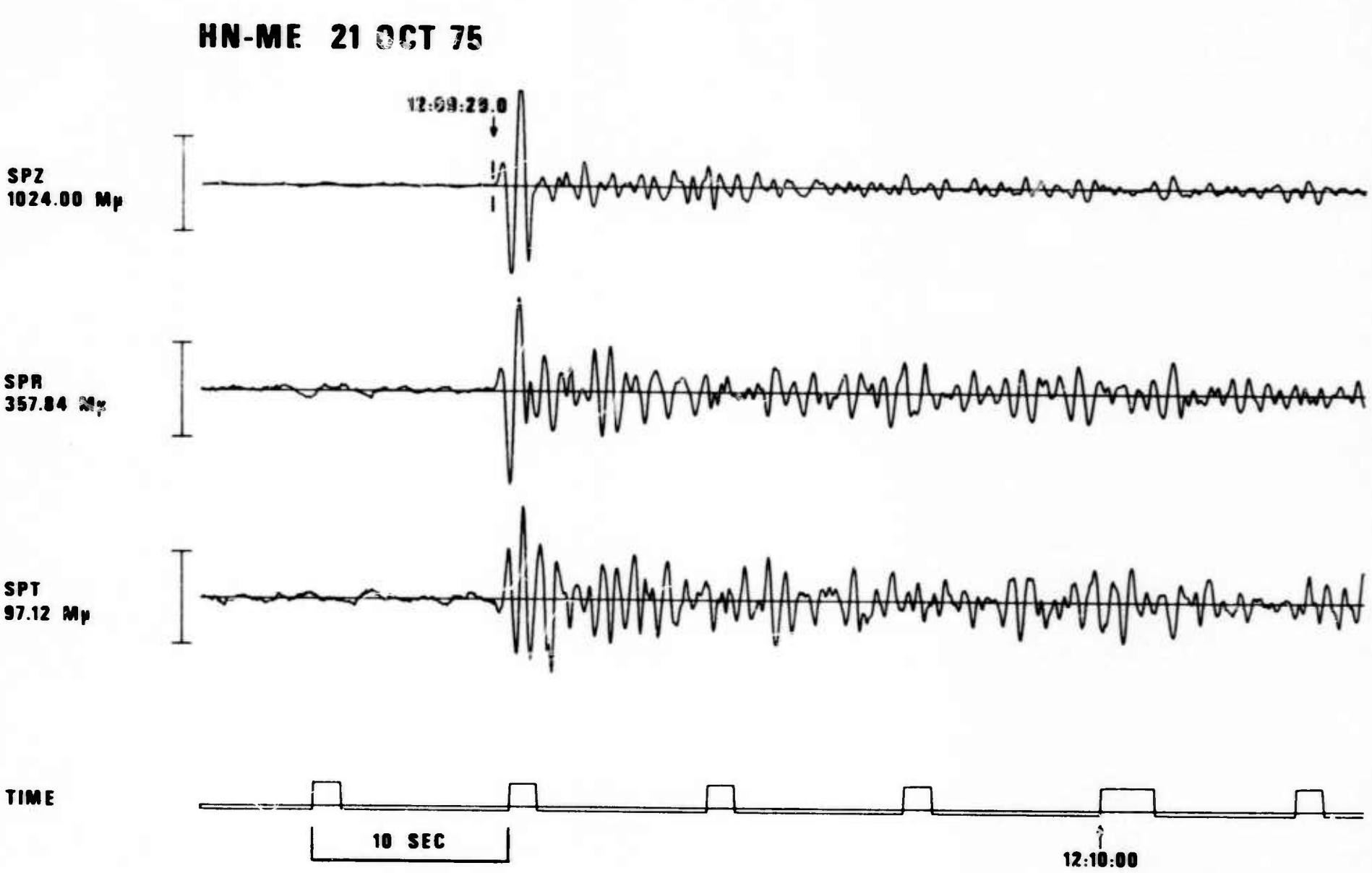
STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIR	DIST
NAO	EP	12 04 37.3	AB	0.7	9565.	6.74			20.6
NAO	LR	12 14 49.0	LPZ	15.0	1428.		5.59		20.6
AIPA	LR	12 25 56.0	LPZ	18.0	35.		4.28		41.2
WH2YK	EP	12 08 24.8	SPZ	0.7	423.	6.17			46.5
WH2YK	LR	12 29 50.0	LPZ	21.0	23.		4.15		46.5
BK-CN	EP	12 09 26.6	SPZ	0.7	9999.				
HN-ME	EP	12 09 29.0	SPZ	0.9	9999.				
HN-ME	LQ	12 32 32.0	LPT	22.0	125.				
HN-ME	LR	12 35 11.0	LPZ	20.0	83.		4.78		55.0
LAC	EP	12 10 04.8	SAB	1.0	9999.				
LAC	LR	12 38 33.0	LPZ	17.0	240.		5.28		60.0
FN-WV	EP	12 10 35.8	SPZ	0.9	9999.				
FN-WV	LQ	12 33 52.0	LPT	32.0	39.				
FN-WV	LR	12 40 36.0	LPZ	17.0	185.		5.20		64.6
CPC	EP	12 10 59.4	SPZ	0.8	9999.				
CPC	LQ	12 38 24.0	LPT	24.0	42.				
CPC	LR	12 42 15.0	LPZ	20.0	95.		4.93		68.5

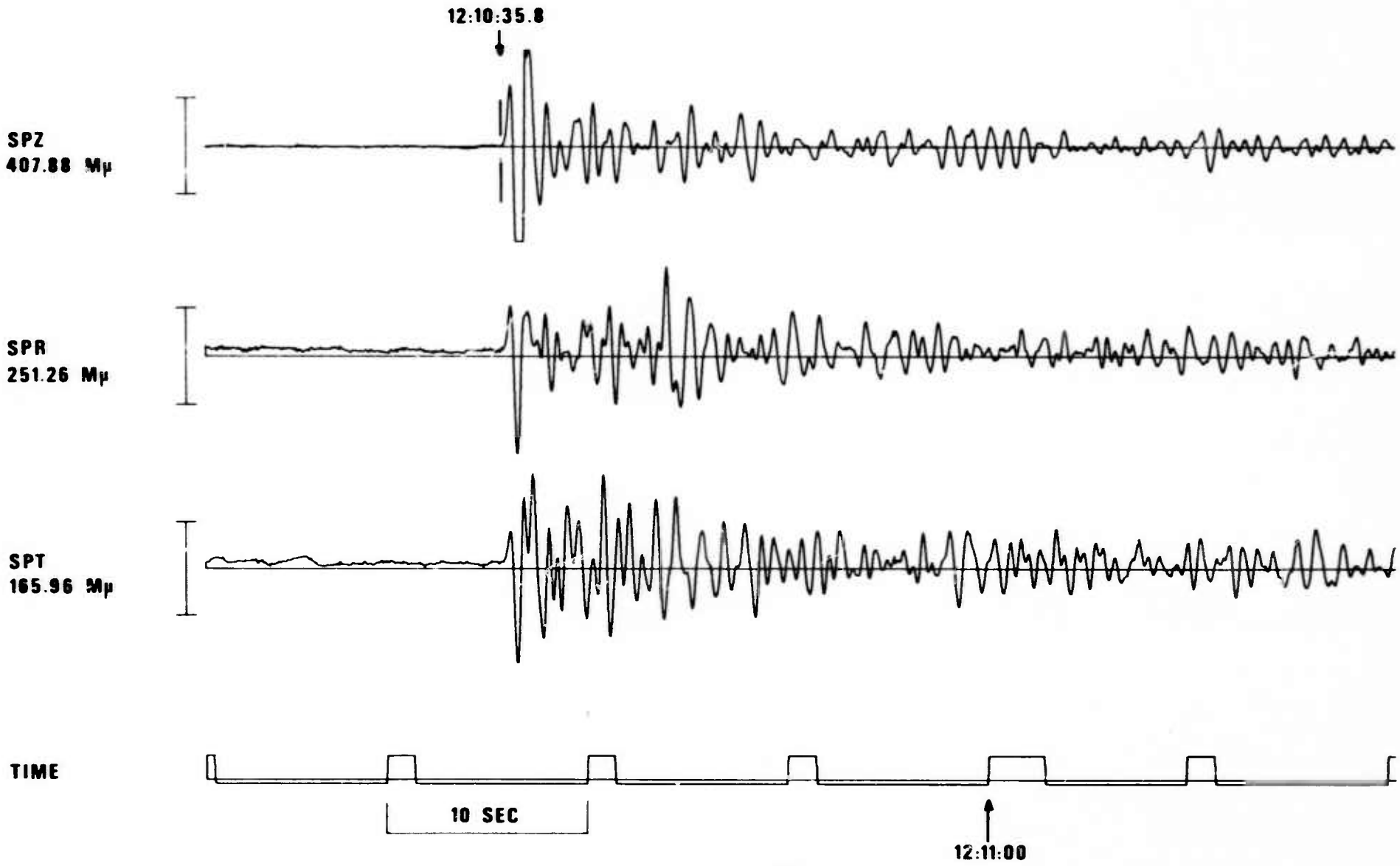
ORIGIN	LAT.	LONG.	DEPTH	(KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
12:00:01.0	72.748N	55.727E	34.	CALC	6.43	0.47	2	4.77	0.5	6
11:59:57.4	72.912N	55.436E	0.	REST	6.46	0.40	2	4.77	0.5	6


WH2YK 21 OCT 75
12:08:24.8
SPZ
400.04 Mμ
SPR
243.83 Mμ
SPT
171.46 Mμ
TIME
10 SEC
12:09:00

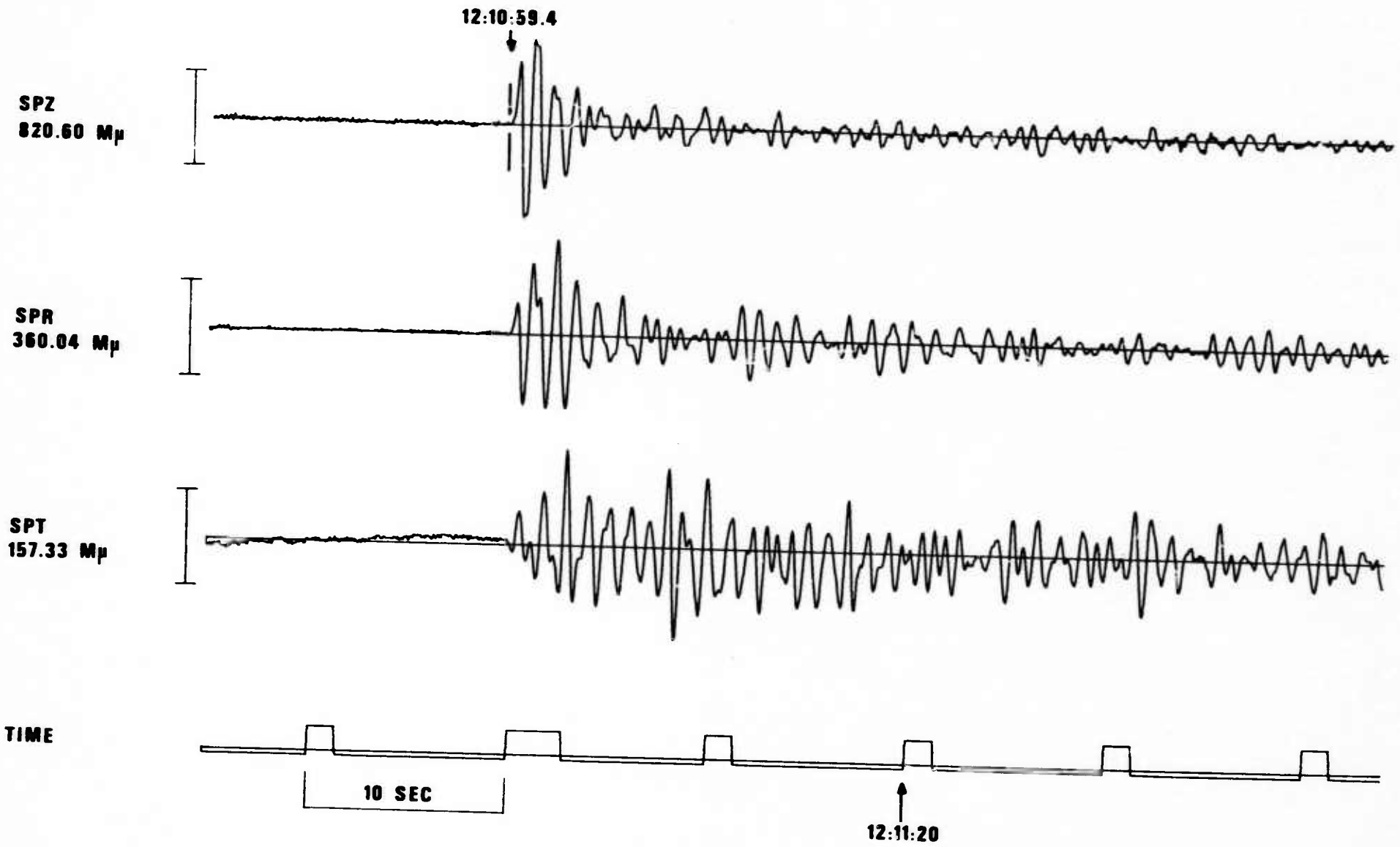
RK-ON 21 OCT 75




HN-ME 21 OCT 75
12:09:23.0
SPZ
1024.00 Mμ
SPR
357.84 Mμ
SPT
97.12 Mμ
TIME
10 SEC
12:10:00


FN-WV 21 OCT 75
12:10:35.8
SPZ
407.88 Mμ
SPR
251.26 Mμ
SPT
165.96 Mμ
TIME
10 SEC
12:11:00

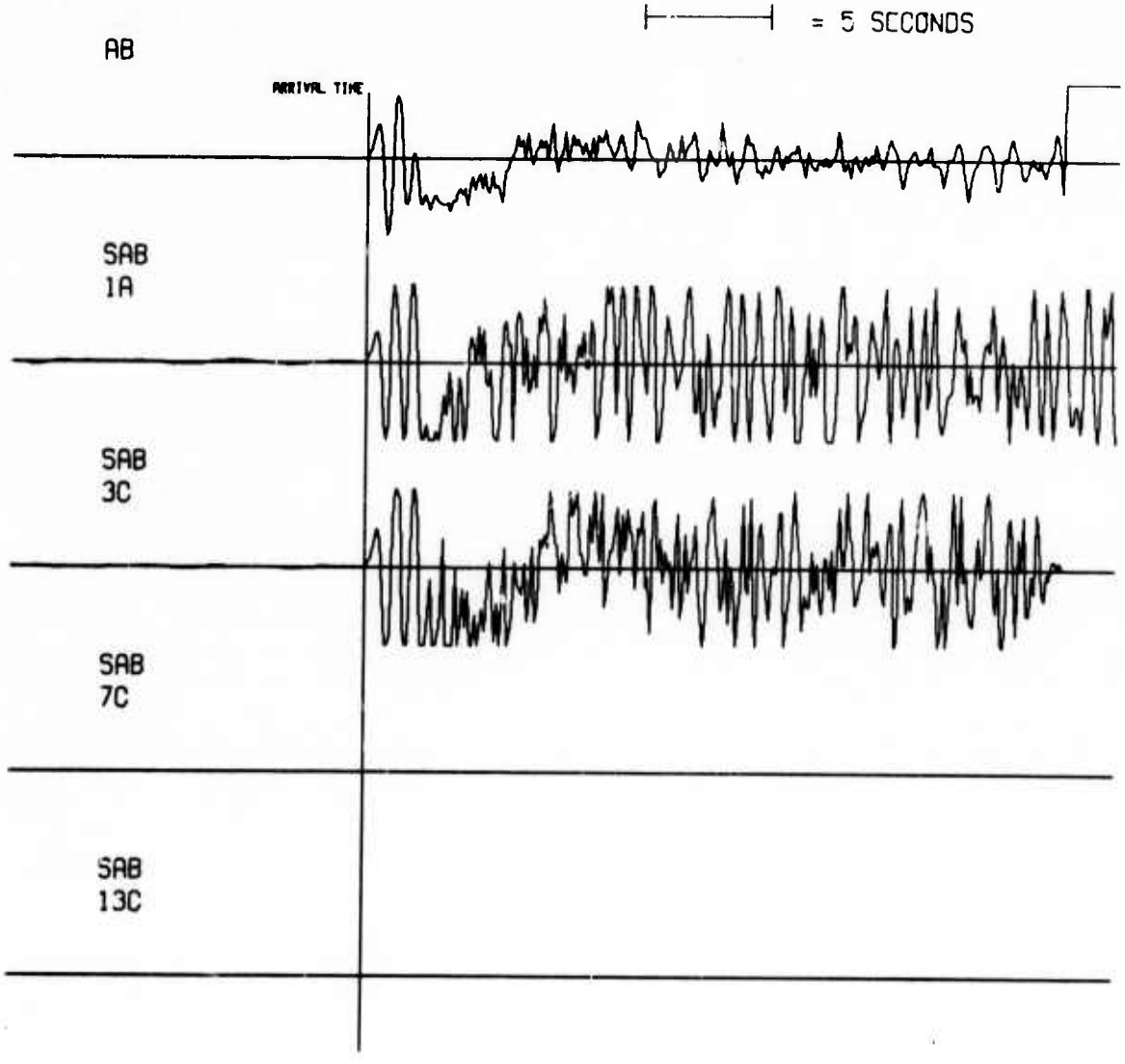
8<

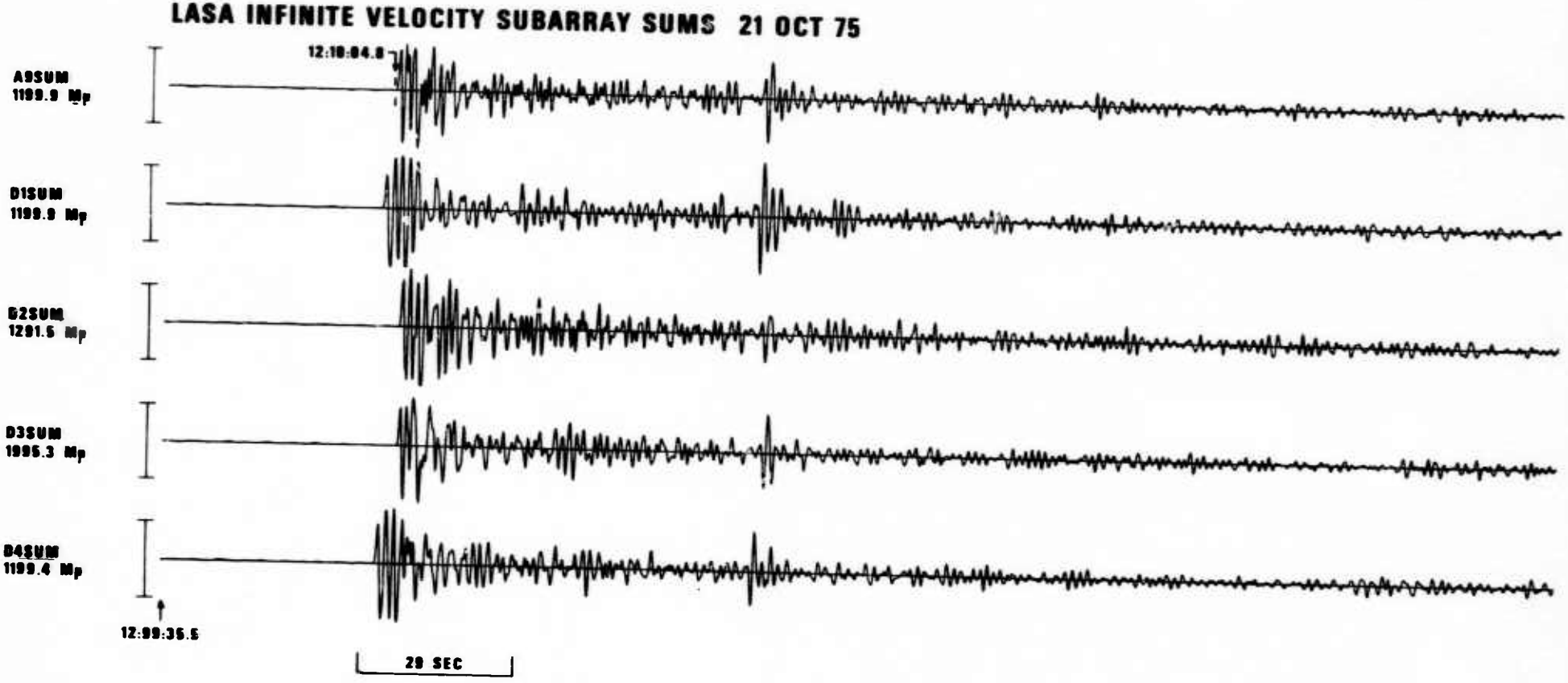

CPSO 21 OCT 75
12:10:59.4
SPZ
820.60 Mμ
SPR
360.04 Mμ
SPT
157.33 Mμ
TIME
10 SEC
12:11:20

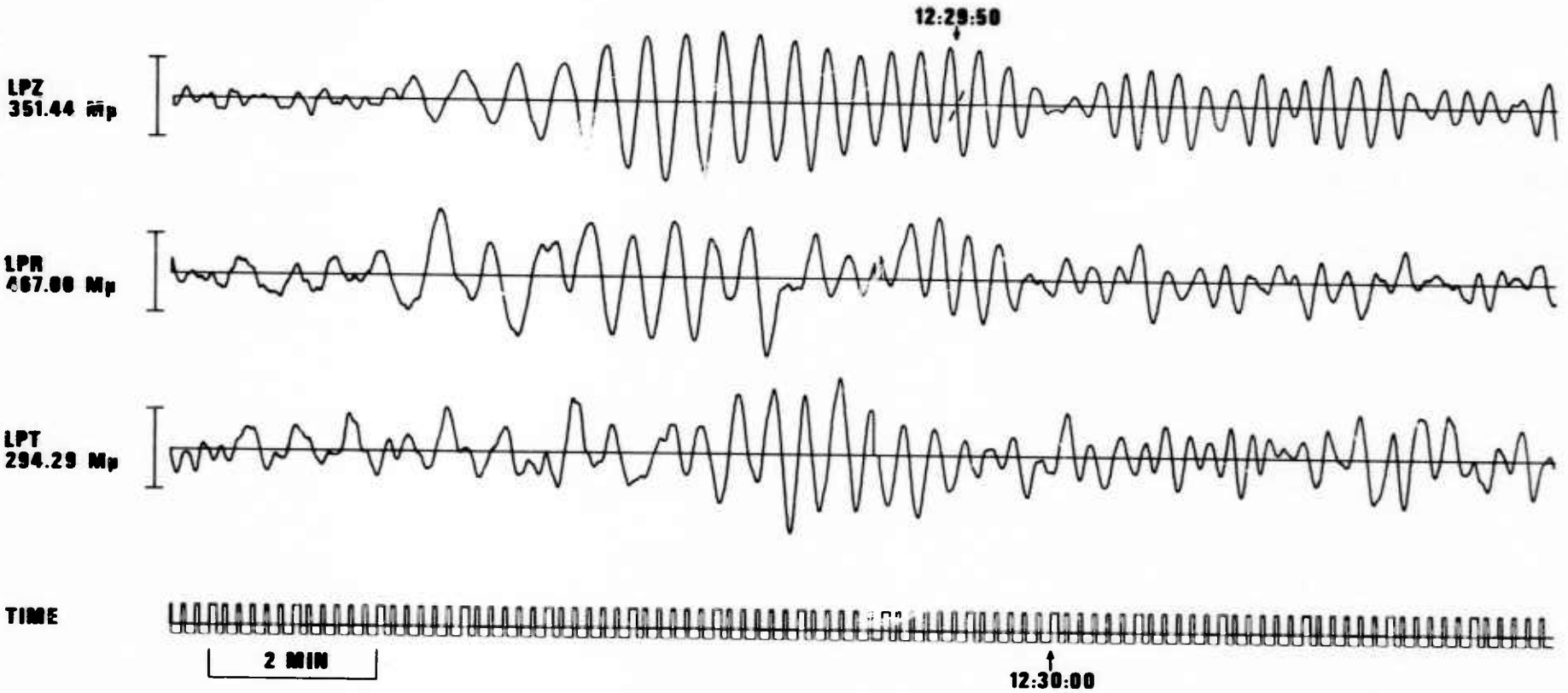
NORSAR EVENT FILE 1975 OCT 21

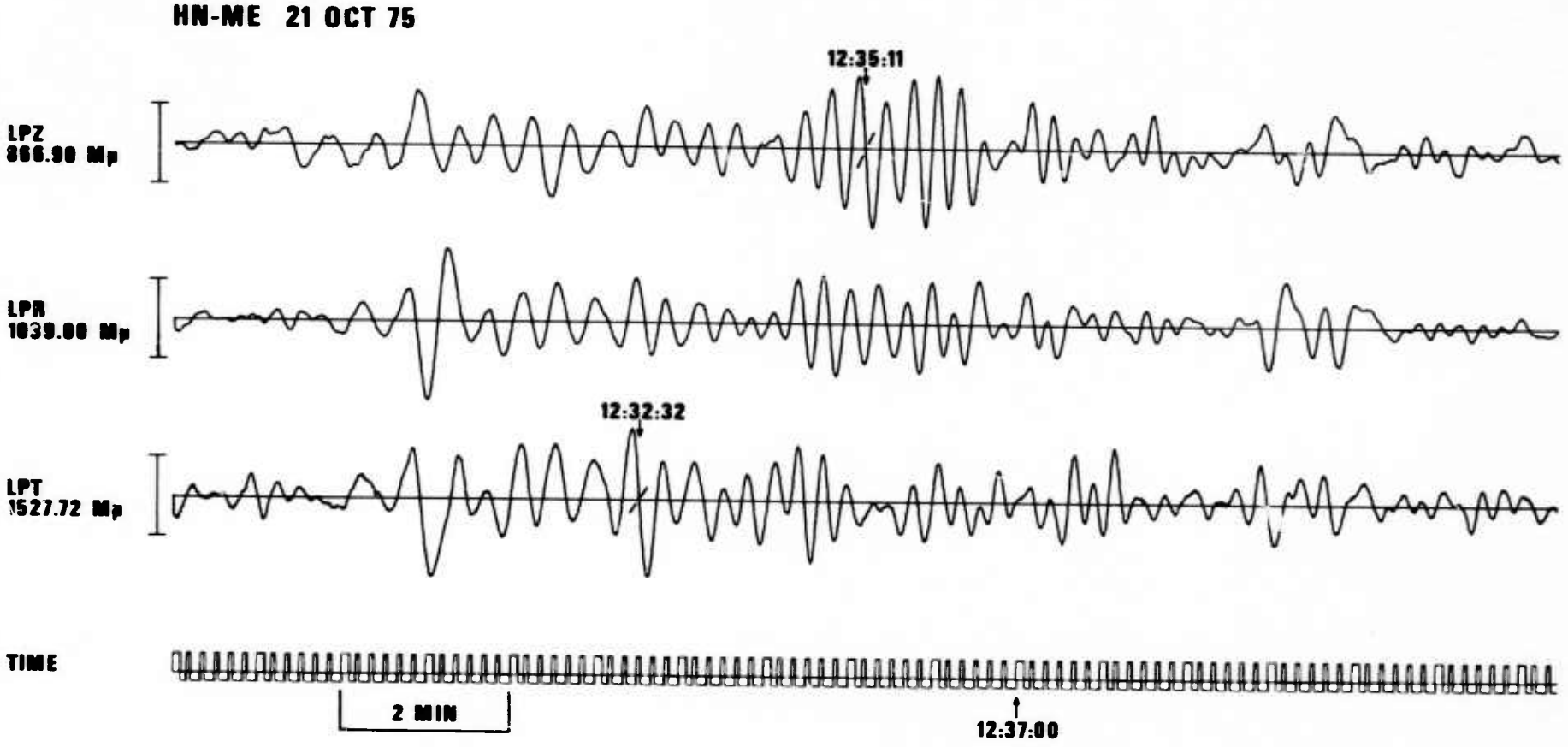
EPX NO. 26000 ARR. 12.4.37.4 73.4N 53.7E 5.2MB 33KM

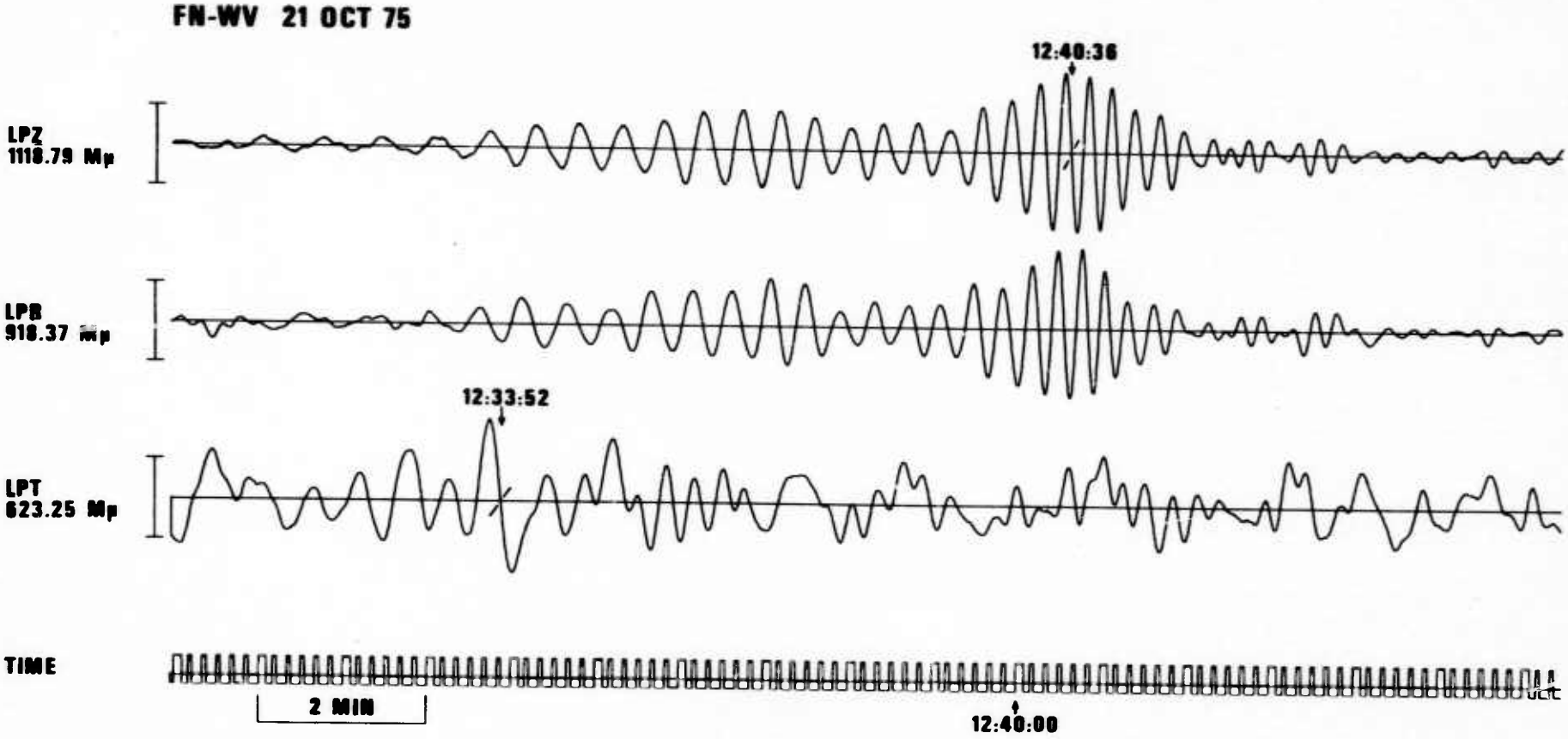
DIST = 20.2 AZI = 34.4 AMP = 119.9 PER = 0.8

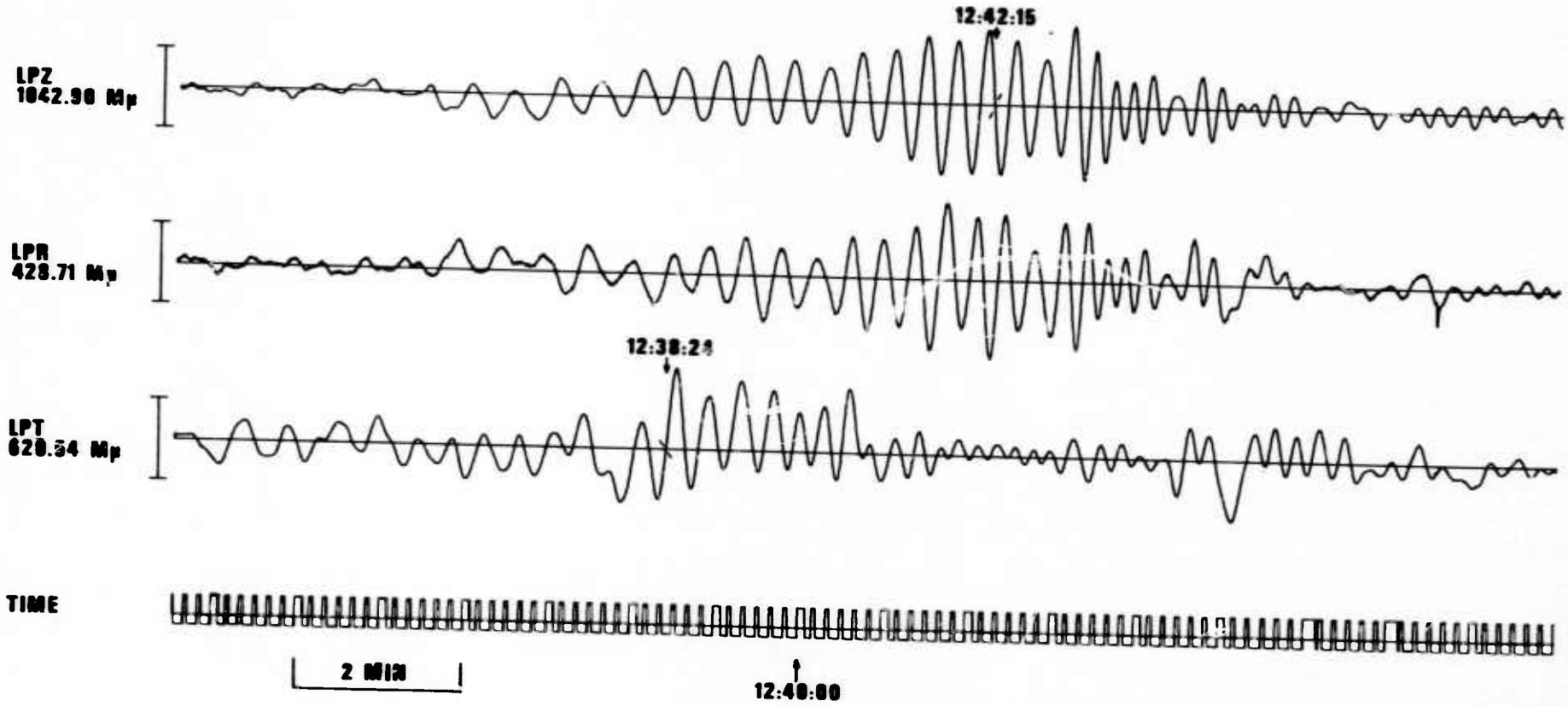



LASA INFINITE VELOCITY SUBARRAY SUMS 21 OCT 75
12:10:04.8
A0SUM
1199.9 Mp
D1SUM
1199.9 Mp
B2SUM
1291.5 Mp
D3SUM
1995.3 Mp
B4SUM
1199.4 Mp
12:09:35.5
20 SEC

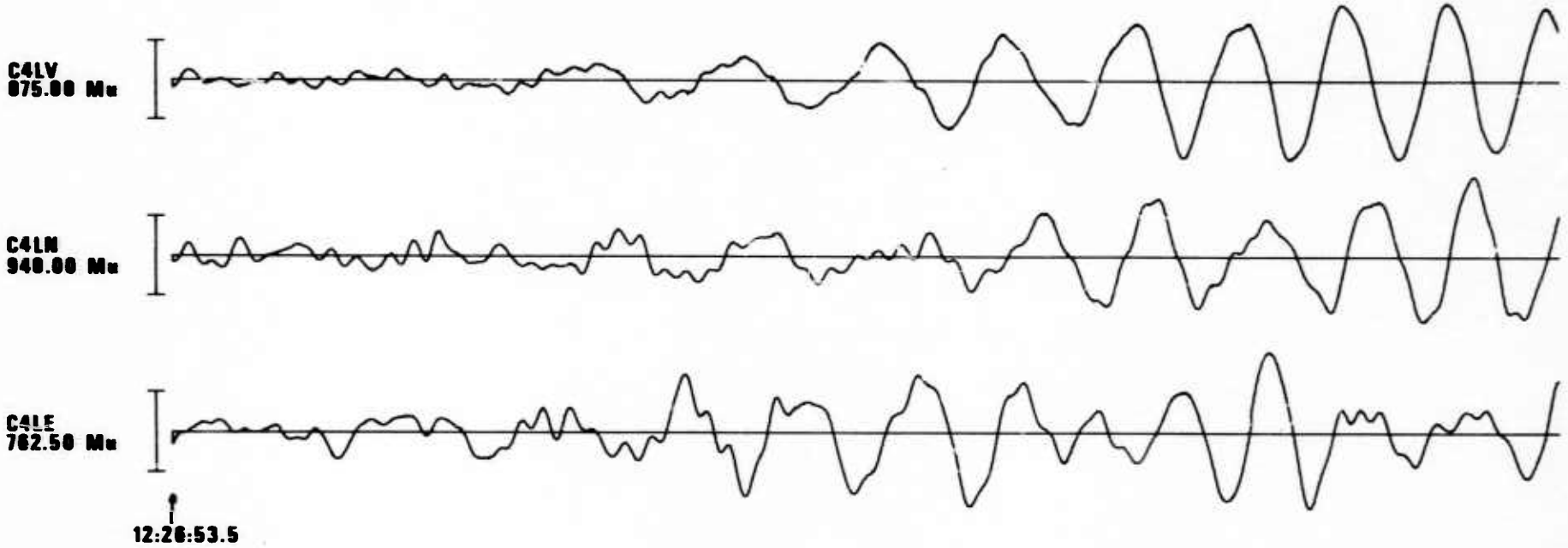

WH2YK 21 OCT 75
12:29:50
LPZ
351.44 Mμ
LPR
467.00 Mμ
LPT
294.29 Mμ
TIME
2 MIN
12:30:00


HN-ME 21 OCT 75
12:35:11
LPZ
866.90 Mp
LPR
1039.80 Mp
12:32:32
LPT
1527.72 Mp
TIME
2 MIN
12:37:00

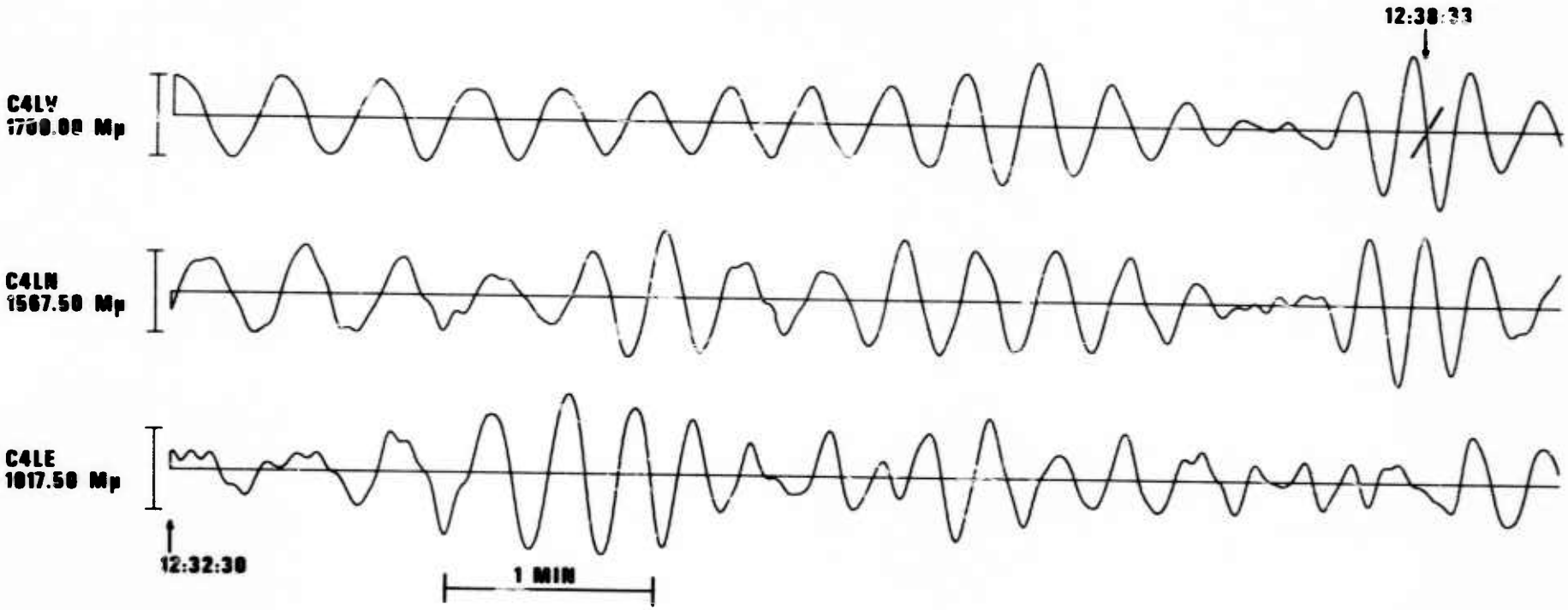

FN-WV 21 OCT 75
12:40:36
LPZ
1118.79 Mp
LPR
918.37 Mp
12:33:52
LPT
623.25 Mp
TIME
2 MIN
12:40:00
UCT


CPSO 21 OCT 75
12:42:15
LPZ
1042.98 Mμ
LPR
428.71 Mμ
12:38:24
LPT
628.54 Mμ
TIME
2 MIN
12:40:00

LASA LONG PERIOD C4 SUBARRAY (SEGMENT 1) 21 OCT 75



LASA LONG PERIOD C4 SUBARRAY (SEGMENT 2) 21 OCT 75



ARRAY LONG PERIOD VERTICAL BEAMS 21 OCT 75