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SPECIAL DATA COLLECTION SYSTEM EVENT REPORT NTS
EVENT 'OBAR', 30 APRIL 1975

J. R. Woolson, et al

Teledyne Geotech

Prepared for:

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8 September 1975

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**SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
NTS Event "OBAR", 30 April 1975**

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September 1975

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VELA Seismological Center

312 Montgomery Street, Alexandria, Virginia 22314

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SDCS Event Report No. 4

NTS Event "OBAR", 30 April 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:

	Origin Time	Latitude	Longitude	m_b	M_s
NORSAR	15:00:06	38 N	116 W	4.7	4.5
LASA	14:59:40	36.2N	118.0W	4.5	
Hagfors Array, Sweden	14:59:59	37 N	117 W	5.4	4.9

Using SDCS stations, LASA and NORSAR, the epicenter location becomes

SDCS & Arrays	15:00:01	37.3N	116.3W	4.7	4.0
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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.

Data from WH2YK is presented with a questionable time correction due to poor radio reception; in addition, the short-period vertical waveform does not appear "typical" for this hypocenter. NORSAR long-period radial and transverse components were deleted when an insufficient number of channels were available for proper beamforming.

Two hypocenter determinations have been included with the data summary, one with LASA included and one without LASA data. The reported source parameters were determined with LASA included.

STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES		ELEVATION METERS	INSTRUMENTATION	
		DEG	MN SECS		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

Notes:

Details of the program used to obtain beamed vertical, radial and transverse data at LASA, ALPA and NORSAR are in the process of being reviewed. Vertical beams are probably valid, horizontal beams at the LASA and NORSAR are questionable. Horizontal beams at ALPA are probably invalid.

FN-WV, RK-ON, WH2YK and HN-ME horizontal instruments are oriented radial and transverse to the Nevada Test Site. CPSO is oriented N-S and E-W. LASA, NORSAR and ALPA beams have been rotated to radial and transverse with respect to the event location.

HYPOCENTER DETERMINATION

INPUT FOR EVENT 30 APR 75
 15:00:00.0 37.000N 116.000W OKM.

STA.	ARRIVAL	RESIDUALS		DIST.	AZ.
		CALC	REST		
LAO	15 02 52.6	0.1	0.1	12.0	35.2
RK-ON	15 04 45.7	-0.2	-0.1	21.1	42.7
WH2YK*	15 05 20.1	-16.8 *	-17.0 *	26.3	339.1
CPO	15 05 21.7	-0.9	-0.9	24.7	84.5
PN-WV	15 06 02.3	1.5	1.5	28.9	76.1
HN-ME	15 07 07.7	-0.5	-0.5	36.6	60.4
NAO	15 11 32.4	0.0	0.0	73.2	24.1

67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
14:59:59.2	37.221N	116.305W	-10. CALC	0.8	3	6
15:00:01.0	37.256N	116.256W	0. REST	0.8	3	6

CALC			REST		
0	.1		0	.1	
0	.	0	0	.	0
0	0.3	2	0	0.3	2
.
0	0.0	0	0	0.0	0
0	.	0	0	.	0
0	.0		0	.0	

CHI2 COVERAGE ELLIPSE: 95 PER CENT CONF..LEVEL, SDV= 1.73
 MAJOR 90.4KM. MINOR 55.1KM. AZ= 75 AREA= 15636 SQ.KM. REST

HYPOCENTER DETERMINATION

INPUT FOR EVENT 30 APR 75
 15:00:00.0 37.000N 116.000W 0KM.

STA.	ARRIVAL	RESIDUALS		DIST.	AZ.
		CALC	REST	REST	REST
LAO *	15 02 52.6	2.4 *	0.3 *	12.0	35.2
RK-ON	15 04 45.7	0.1	-0.0	21.0	42.7
WH2YK*	15 05 20.1	-13.9 *	-17.1 *	26.3	330.1
CPO	15 05 21.7	-0.7	-0.9	24.7	84.6
FN-WV	15 06 02.3	1.4	1.5	28.9	76.1
HN-ME	15 07 07.7	-0.8	-0.5	36.6	60.4
NAO	15 11 32.4	0.0	-0.0	73.1	24.1

67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
14:59:39.0	37.028N	116.729W-126.	CALC	0.9	7	5
15:00:01.2	37.280N	116.238W	0. REST	0.9	2	5

CALC			REST		
0	.1	0	0	.1	0
0	0.1	3	0	0.2	2
0	0.0	0	0	0.0	0
0	0	0	0	0	0
0	0	0	0	0	0

CHI2 COVERAGE ELLIPSE: 95 PER CENT CONF..LEVEL, SDV= 1.34

MAJOR 96.1KM. MINOR 54.1KM. AZ= 46 AREA= 16331 SQ.KM. PEST

DATA SUMMARY

INPUT FOR EVENT 30 APR 75
 15:00:00.0 37.000N 116.000W 0KM.

STA.	PHASE	ARRIVAL		INST	PER	A/T	MAGNITUDE		DIR	DIST
		TIME					MB	MS		
LAO M	EP	15 02	52.6	AB	0.9	32.	5.30			12.0
LAO	E	15 07	52.0	IAB	0.0	0.				
RK-ON	+IP	15 04	45.7	SPZ	0.8	258.	5.22			21.1
RK-ON	E	15 04	51.0	SPZ	1.1	216.				
RK-ON	E	15 13	27.0	LPR	13.0	27.				
CPO	EP	15 05	21.7	SPZ	0.9	22.	4.48			24.7
CPO	LR	15 15	16.0	LPZ	15.0	58.		4.28		24.7
WH2YK*	EP	15 05	20.1	SPZ	1.3	45.	4.78			26.3
WH2YK	LQ	15 14	52.0	LPT	22.0	13.				
WH2YK	LR	15 16	54.0	LPZ	17.0	31.		4.03		26.3
PN-WV	EP	15 06	02.3	SPZ	0.9	10.	4.30			28.9
PN-WV	LR	15 17	41.0	LPZ	15.0	49.		4.27		28.9
ALPA	LP	15 21	32.0	LAB	16.0	143.		4.80**		33.6
HN-ME	EP	15 07	07.7	SPZ	0.8	34.	4.77			36.6
NAO	EP	15 11	32.4	AB	0.8	14.	4.73			73.2
NAO	LR	15 43	26.0	LAB	14.0	36.		4.54**		73.2

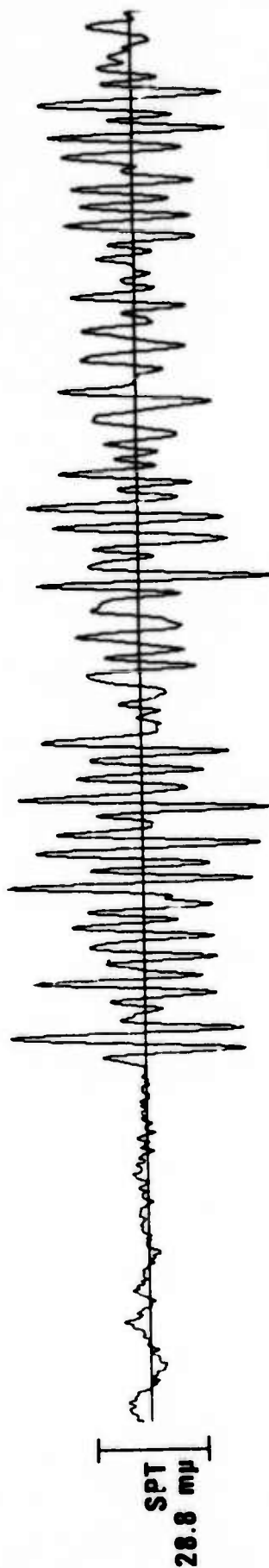
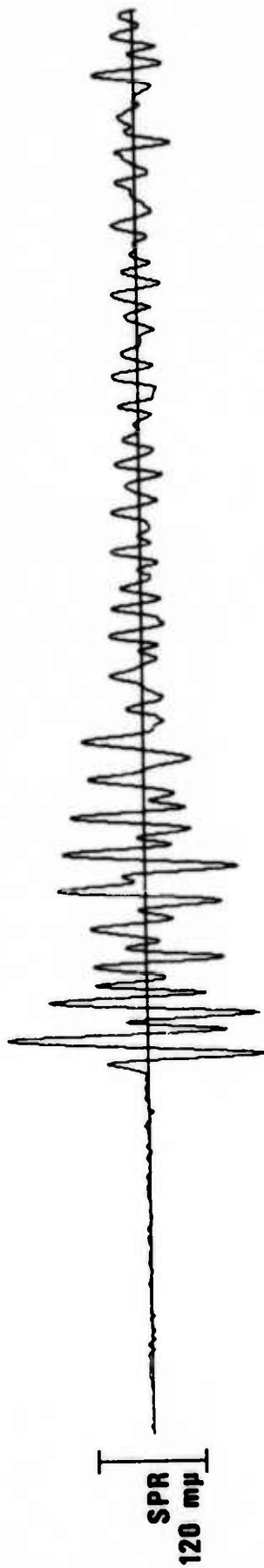
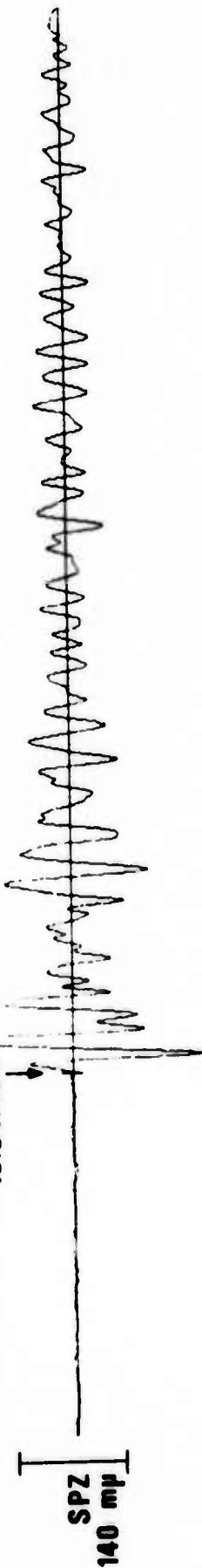
ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPMAG	LPSDV	LPSTA
14:59:59.2	37.221N	116.305W	0. CALC	4.70	0.35	5	4.03*****		1
15:00:01.0	37.256N	116.256W	0. BEST	4.70	0.35	5	4.03*****		1

**MAGNITUDE DETERMINATION QUESTIONABLE DUE TO UNRESOLVED SCALING PROBLEMS.

NOTE: Differences between m_b for LASA and NORSAR in Summary and those published by the stations are attributed to differing distance correction applications.

RK-ON 30 APRIL 75

15:04:45.7

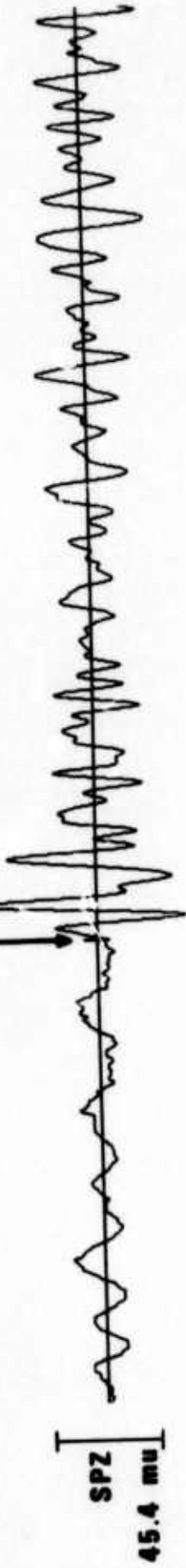


10 sec

∞_Λ

CPSO 30 APRIL 75

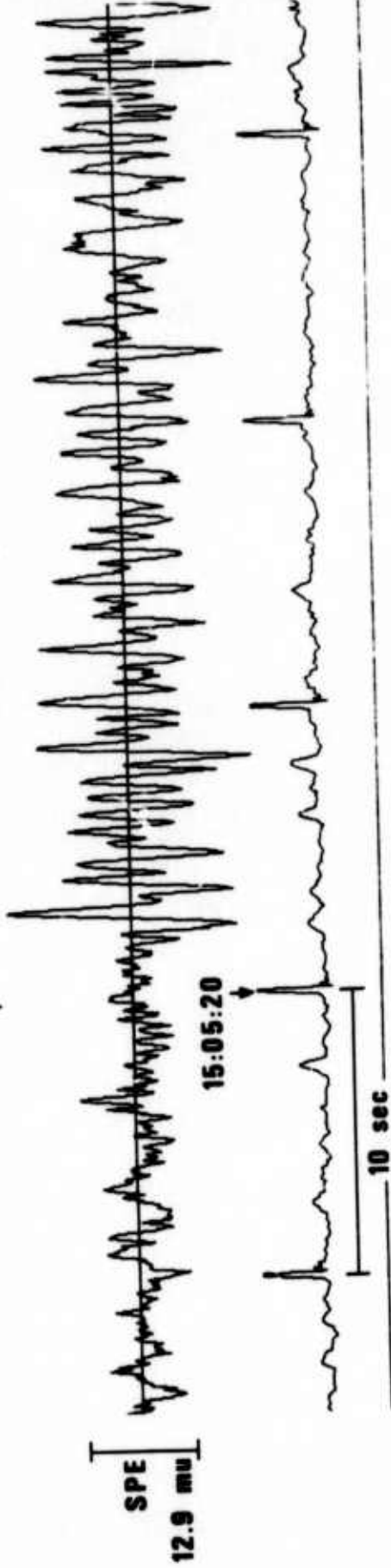
15:05:21.7



SPZ
45.4 mu



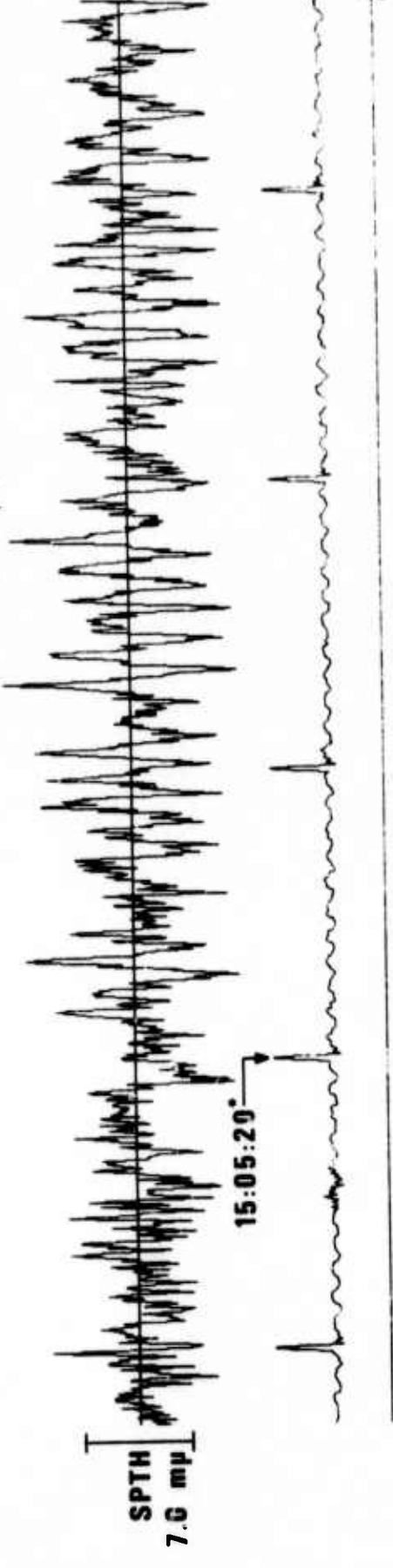
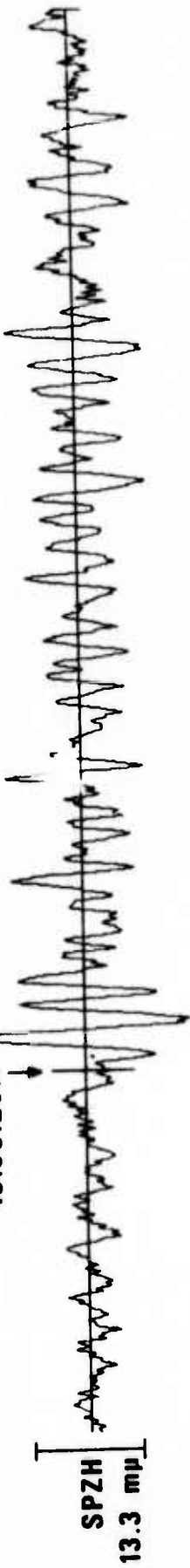
SPN
9.87 mi



SPE
12.9 mu

WH2YK 30 APRIL 75

15:05:20.1*

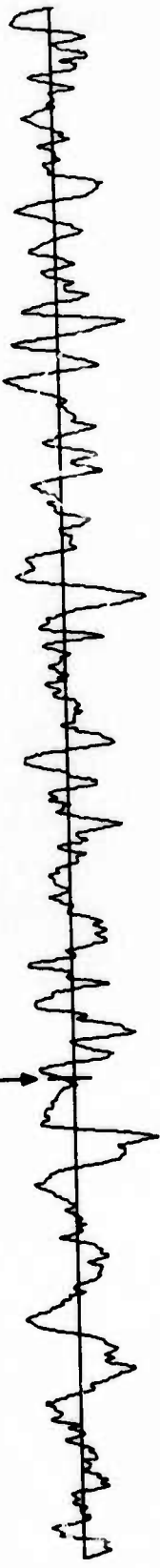


10 sec

* time questionable

FNWV 30 APRIL 75

15:06:02.3



SPZ

17.6 mpμ



SPR

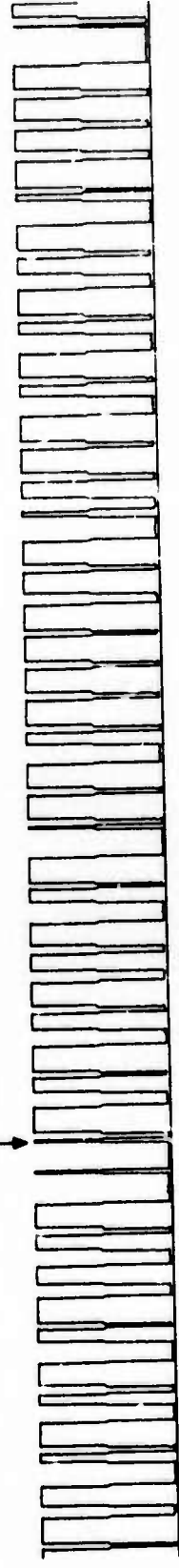
66.9 mpμ



SPT

47.5 mpμ

15:06:00



T

10 sec

HNME 30 APRIL 75

15:07:07.7



SPZH
29.2 mp



SPRH
15.8 mp



SPTH
14.7 mp

15:07:00



T

10 sec

1 30 APR 1975

2 .14 59 38 36.2N 118.0W

3 15 2 50.2 LAO P

LASA

03 B 4.6 40 CALIFORNIA-NEVEDA BORDER

11.3 1.0 8.3 13.6 224.5

EPX 57657

ABN 5.1

15:02:40.2

BP-B 0.6-2.0 HZ

AB 23

FAB 9.8

PAB1 36

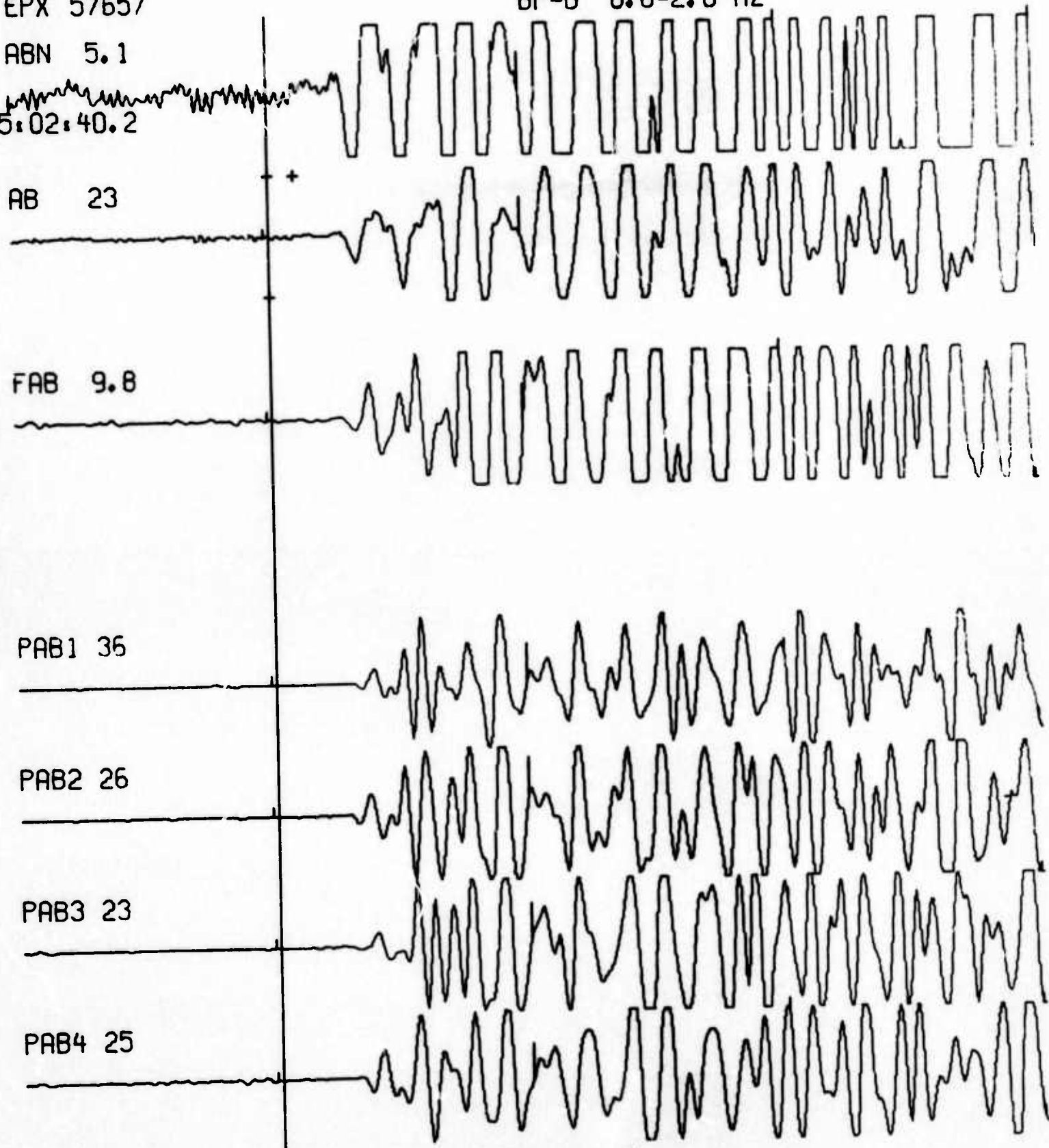
PAB2 26

PAB3 23

PAB4 25

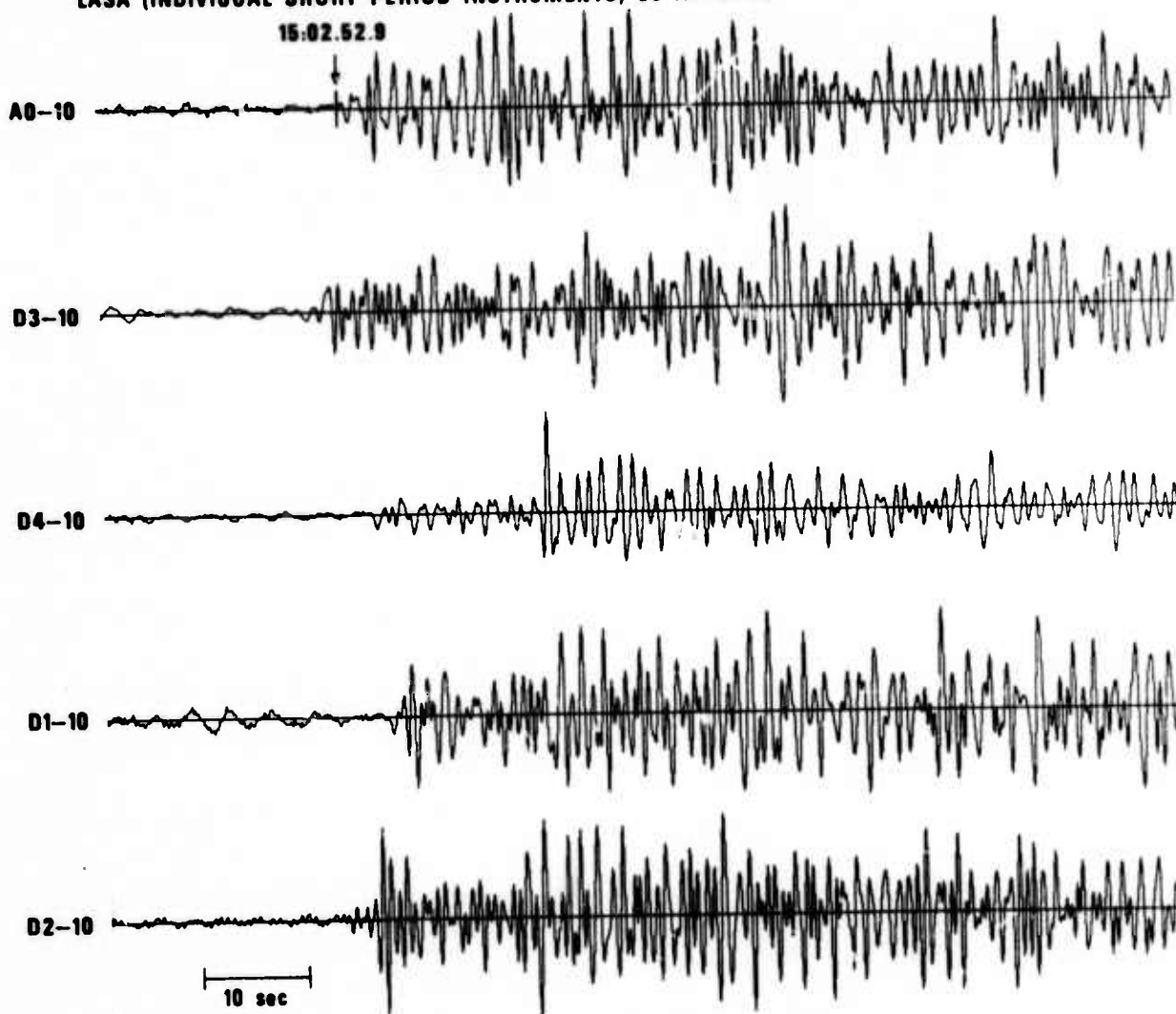
10 sec

13<



LASA (INDIVIDUAL SHORT PERIOD INSTRUMENTS) 36 APRIL 75

15:02.52.9



(No amplitude determinations made due to unresolved scaling problems.)

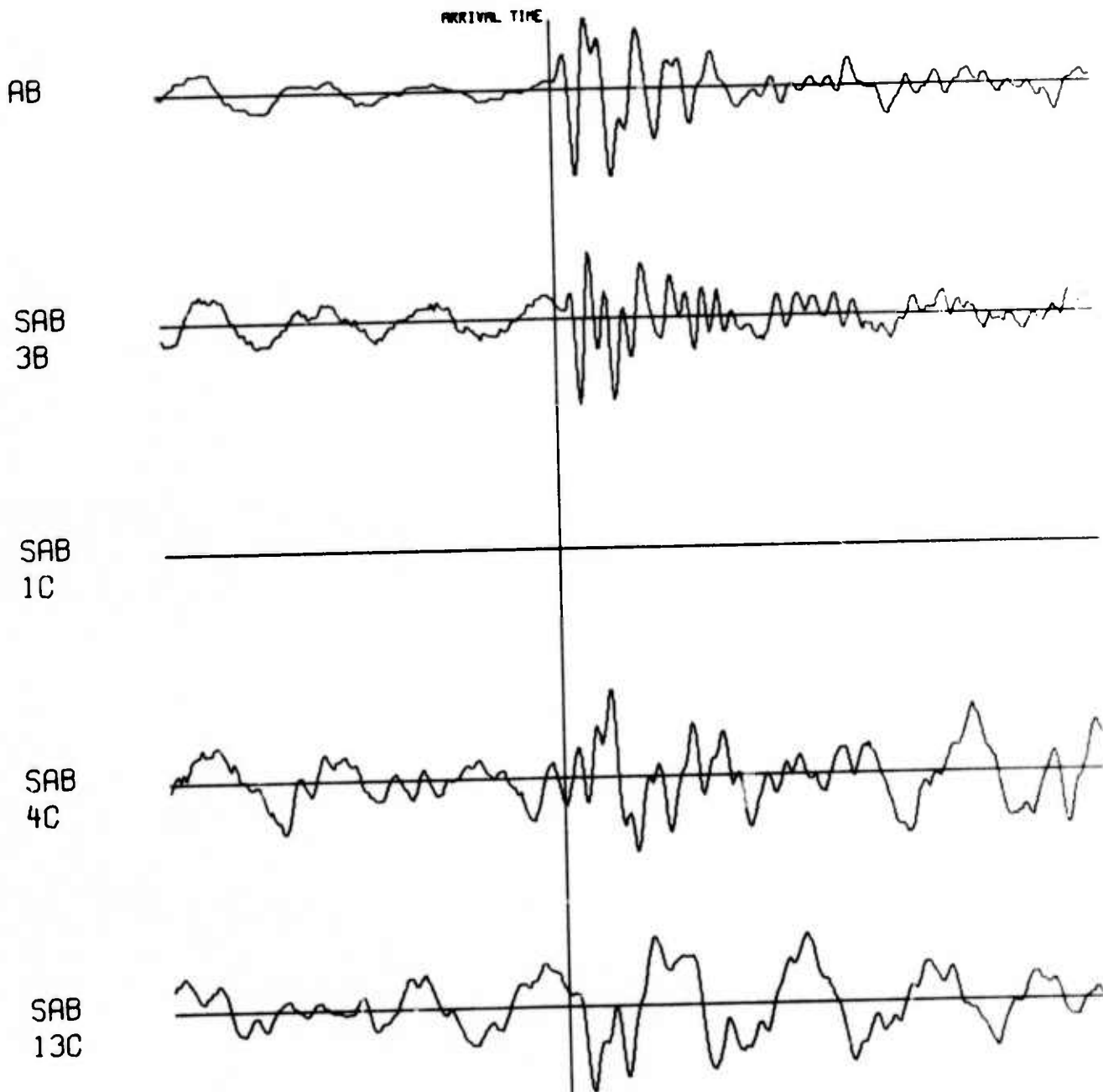
NORSAR EVENT FILE

1975 APR 30

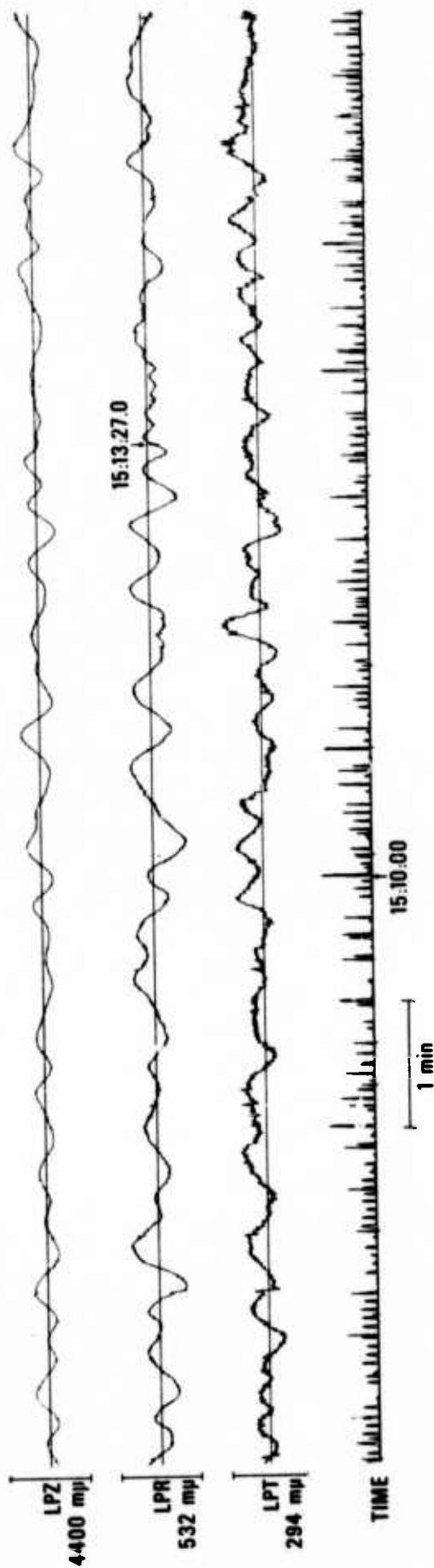
EPX NO. 14650 ARR. 15.11.32.3 38.2N 115.6W 4.7MB 33KM

DIST = 72.1 AZI = 318.2 AMP = 10.9 PER = 1.2 UMETH 2

—|—| = 5 SECONDS

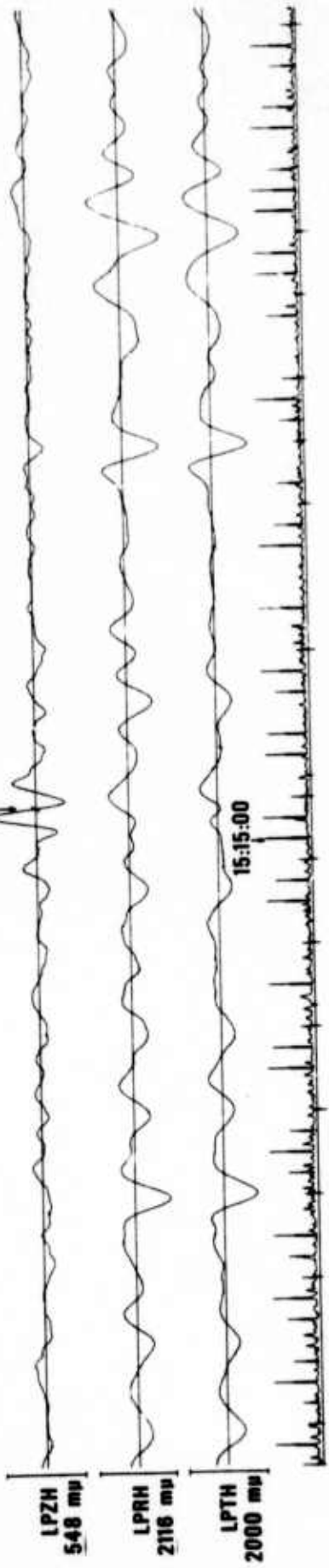


PK-ON 30 APRIL 75



CPSO 30 APRIL 75

15:15:16



WH2YK 30 APRIL 75

15:16:54*

LPZH
361 mμ

LPRH
490 mμ

LPTH
275 mμ

15:14:52*

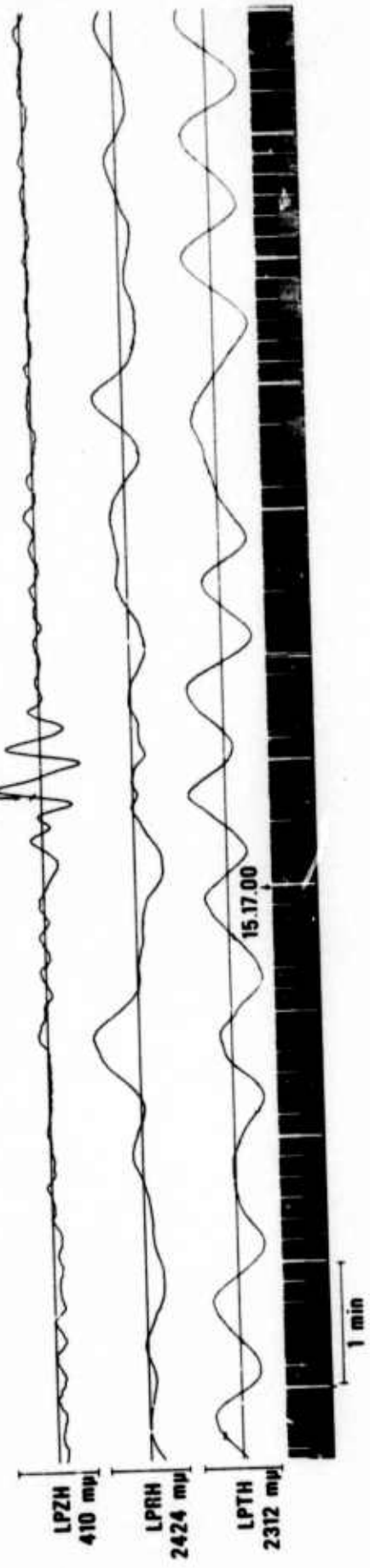
15:15:00*

* time questionable

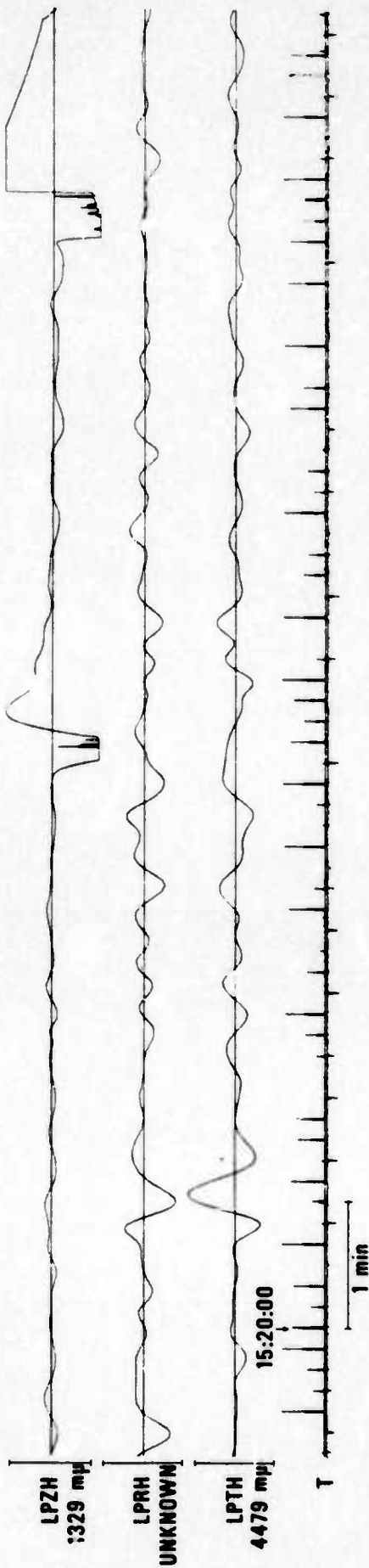
1 min

FNWV 30 APRIL 75

15:17:41



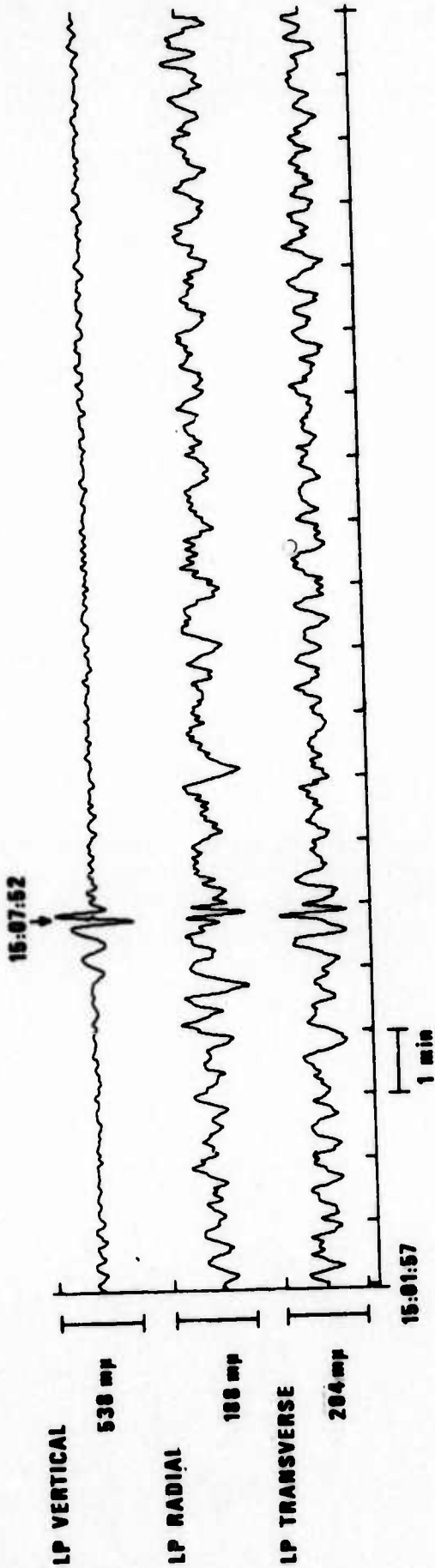
HNME 30 APRIL 75



20 V

LASA LONG PERIOD BEAMS

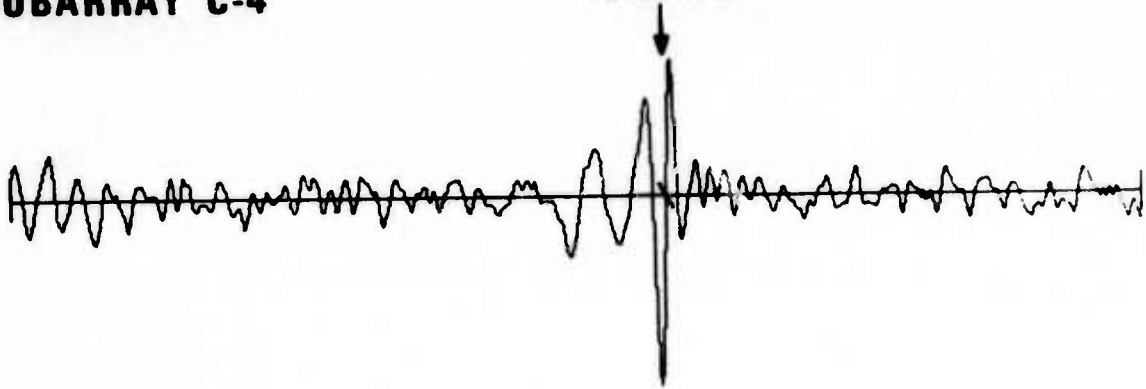
30 APRIL 75



LASA 30 APRIL 75
SUBARRAY C-4

15:07:49

LPZ



LPN



LPE



2 min

(No amplitude determinations made due to unresolved scaling problems.)

ALPHA LONG PERIOD BEAMS

30 APRIL 75

LP VERTICAL

150 mV

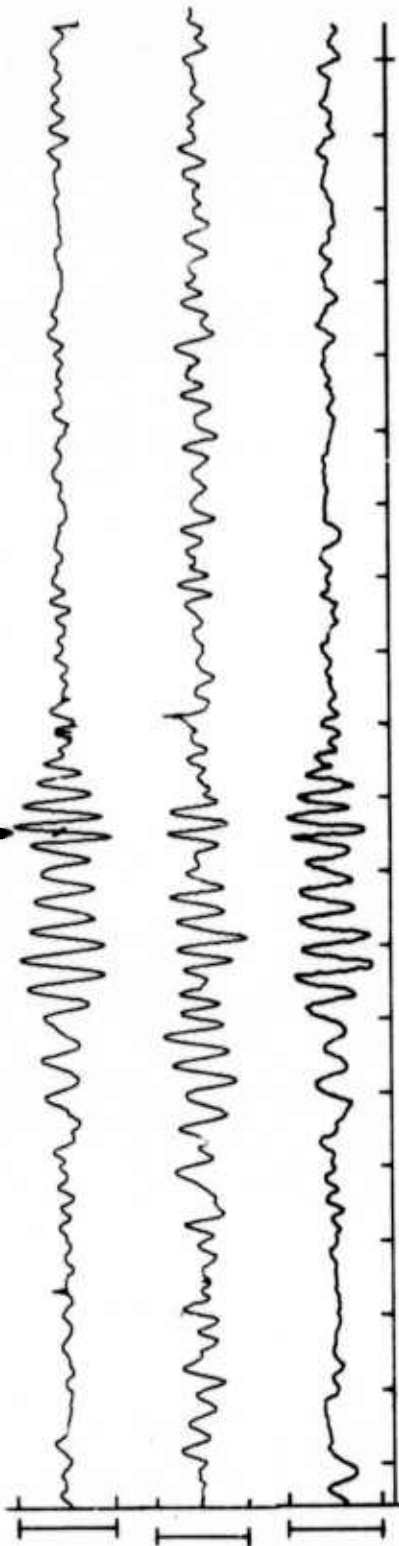
LP RADIAL

100 mV

LP TRANSVERSE

134 mV

15:21:32



15:12:26

1 min

23
63
A

NORSAR LONG PERIOD BEAM

30 APRIL 75

15:43:26

234 mu

15:33:16

1 min



24