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SPECIAL DATA COLLECTION SYSTEM (SDCS) EVENT REPORT,
NOVAYA ZEMLYA, 18 October 1975

K. J. Hill, et al

Teledyne Geotech

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**SPECIAL DATA COLLECTION SYSTEM EVENT REPORT
Novaya Zemlya, 18 October 1975**

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January 1976

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SDCS EVENT REPORT NO. 51

Novaya Zemlya, 18 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	09:04:24.1	08:59:55	71 N	054 E	6.6	N/A
Hagfors	09:04:20.2	09:00:20	72 N	047 E	N/A	5.1

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

08:59:50.2 69.6N 055.3E 6.6 4.9

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. Rotation of horizontal SP channels at RK-ON could not be accomplished because the SP transverse channel was inoperative. NORSAR data were obtained from their bulletin; the TAL transmission was not recoverable.

Long-period signals were recorded at all SDCS stations, ALPA, LASA and NORSAR. Horizontal LP channels at CPSO, FN-WV, HN-ME and RK-ON were rotated. At WH2YK horizontal LP channels were not rotated due to signal clipping on the LP radial channel. Validity of the ALPA and NORSAR long-period vertical beams is uncertain. LASA long-period array data are recoverable in 6 minutes 40 seconds segment lengths; two segments are included in this report. There were not enough data points to allow recovery of the 23-17 seconds period Rayleigh signal at LASA.

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

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	20.6 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 18 OCT 75
 08:59:55.0 71.002N 54.000E 0KM.

STA.	ARRIVAL	RESIDUALS		DIST.	AZ.
		CAIC	REST		
NAC	09 04 24.1	-0.0	-0.2	20.1	266.2
WH2YK	09 08 42.6	-0.1	-0.3	49.8	6.6
HN-ME	09 09 38.4	0.1	0.1	57.3	316.3
RK-CN	09 09 40.3	-0.5	-0.8	57.7	337.2
LAC	09 10 19.3	0.6	0.6	63.2	345.8
FN-WV	09 10 45.5	0.6	0.8	67.2	322.8
CFC	09 11 09.7	-0.7	-0.3	71.2	327.1

67 HERRIN TRAVEL TIME TABLES

CRIGIN	LAT.	LCNG.	DEPTH (KM)	SDV	IT	STA
08:59:42.7	69.993N	54.840E	-65. CAIC	0.5	5	7
08:59:50.2	69.630N	55.254E	0. REST	0.6	4	7

CALC			REST		
2	.	1	2	.	1
3	.	0	3	.	0
0	0.	0	0	0.	0
.
0	1.	0	0	1.	0
0	.	0	0	.	0
0	.	0	0	.	0

CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 1.15
 MAJOR 262.6KM. MINOR 27.9KM. AZ= 144 AREA= 23006 SQ.KM. REST

DATA SUMMARY

INPUT FOR EVENT 18 OCT 75
 08:59:55.0 71.002N 54.000E OKM.

STA.	PHASE	ARRIVAL		INST	PER	A/T	MAGNITUDE		DIR	DIST
		TIME					MB	MS		
NAC	EP	09 04	24.1	AE	0.6	3781.	6.29			20.1
NAC	LR	09 12	13.0	LPZ	17.0	1014.		5.43		20.1
AIFA	LR	09 26	22.0	LPZ	21.0	26.		4.18		44.5
WH2YK	EP	09 08	42.6	SPZ	1.2	9999.				
WH2YK	LQ	09 26	35.0	LPT	25.0	35.				
WH2YK	LR	09 29	25.0	LPZ	23.0	35.		4.36		49.8
HN-ME	EP	09 09	38.4	SPZ	0.8	9999.				
HN-ME	LR	09 35	10.0	LPZ	18.0	81.		4.79		57.3
RK-CN	EP	09 09	40.3	SPZ	1.0	9999.				
RK-CN	E	09 29	31.0	LEF	20.0	99.				
IAC	EP	09 10	19.3	SAB	0.8	1057.	6.64			63.2
FN-WV	EP	09 10	45.5	SPZ	0.8	9999.				
FN-WV	LQ	09 33	12.0	LPT	30.0	31.				
FN-WV	LR	09 41	48.0	LPZ	18.0	223.		5.30		67.2
CFC	EP	09 11	09.7	SPZ	0.8	1776.	6.85			71.2
CFC	LQ	09 37	18.0	LPT	27.0	67.				
CFC	LR	09 44	52.0	LEZ	17.0	157.		5.17		71.2

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	IPMAG	LPSDV	LPSTA
08:59:42.7	69.993N	54.840E	0. CALC	6.75	0.15	2	4.87	0.5	6
08:59:50.2	69.630N	55.254E	0. PEST	6.59	0.28	3	4.87	0.5	6

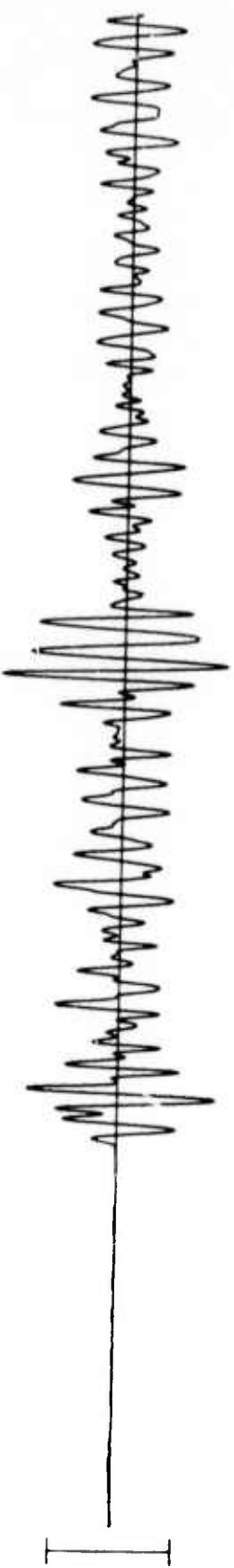
NAO NOT USED IN CALC RUN SP AVG. MAG.

WH2YK 18 OCT 75

SPZ
486.80 MHz



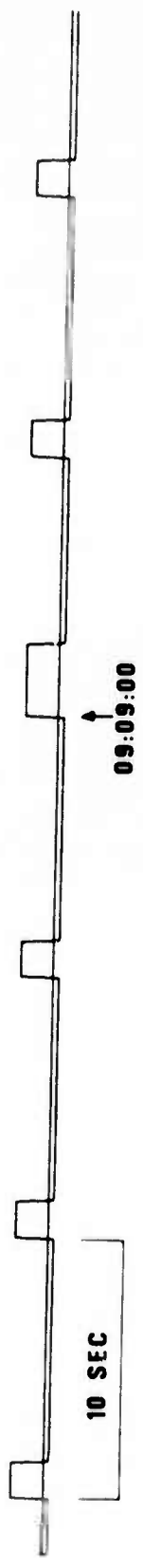
SPR
638.36 MHz



SPT
464.38 MHz



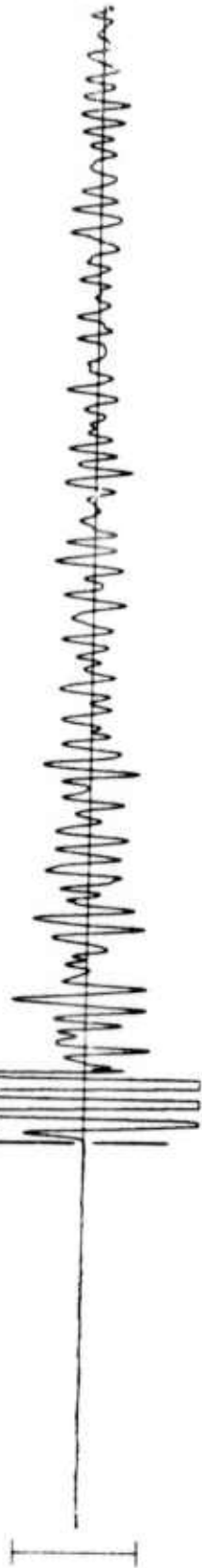
TIME



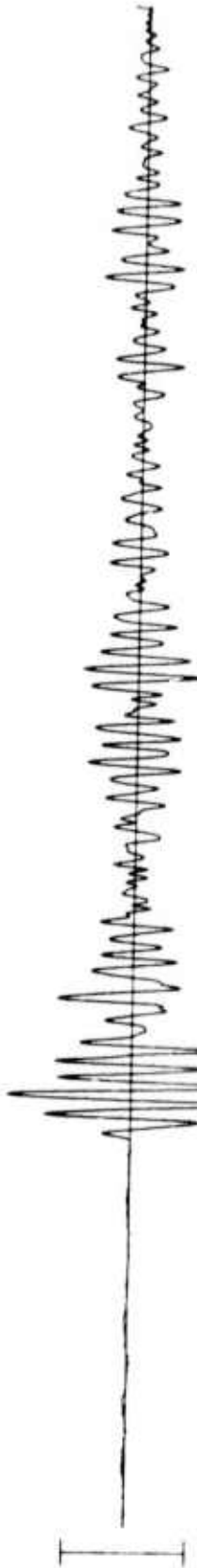
HN-ME 18 OCT 75

09:09:38.4

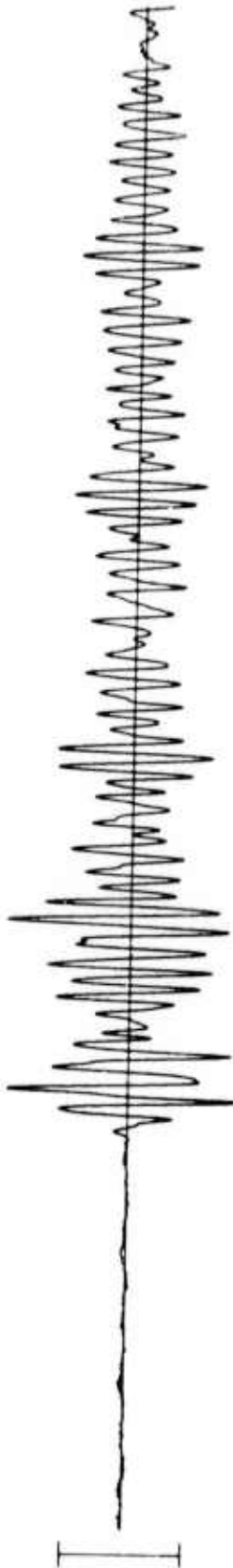
SPZ
1051.00 Mμ



SPR
803.25 Mμ



SPT
414.80 Mμ



TIME



RX-ON 18 OCT 75

09:09:40.3

**SPZ
648.95 mμ**



**SPR
749.03 Mμ**



**SPT
INOPERATIVE**

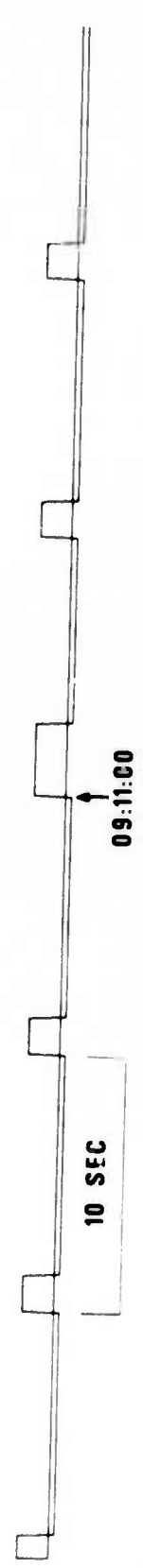


TIME



7<

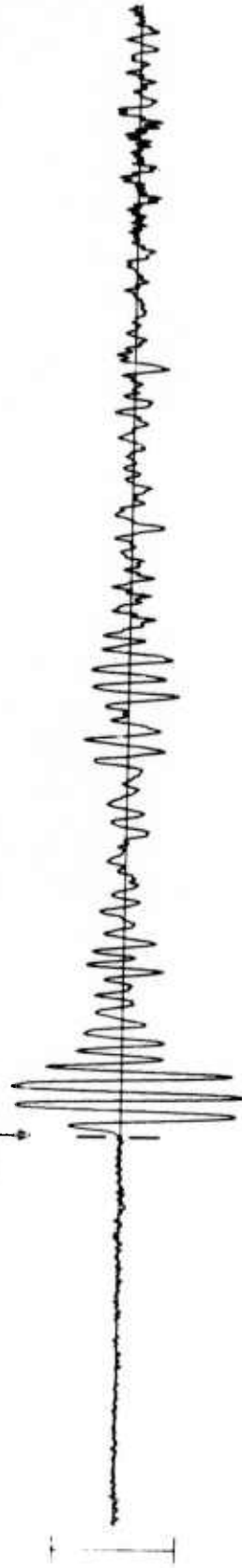
FN-WV 18 OCT 75



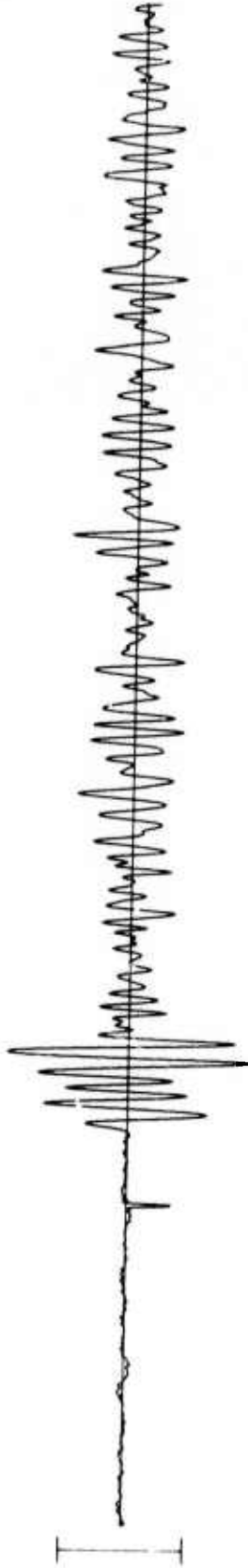
CPSO 18 OCT 75

**SPZ
1009.40 M μ**

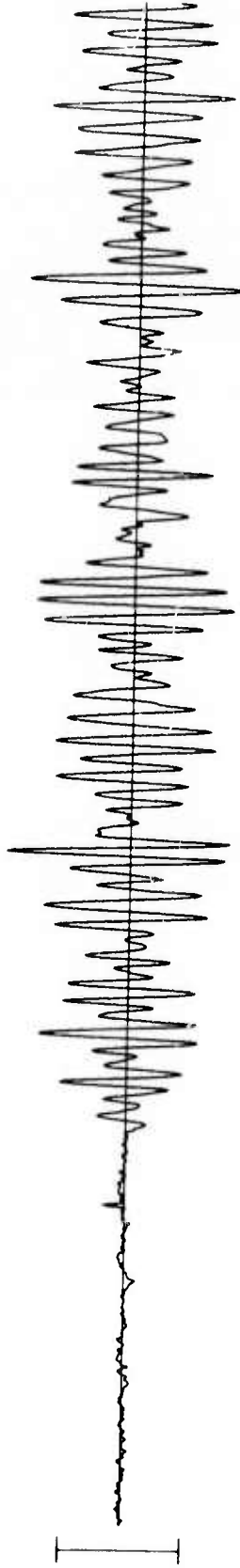
09:11:09.7



**SPR
267.63 M μ**



**SPT
141.65 M μ**



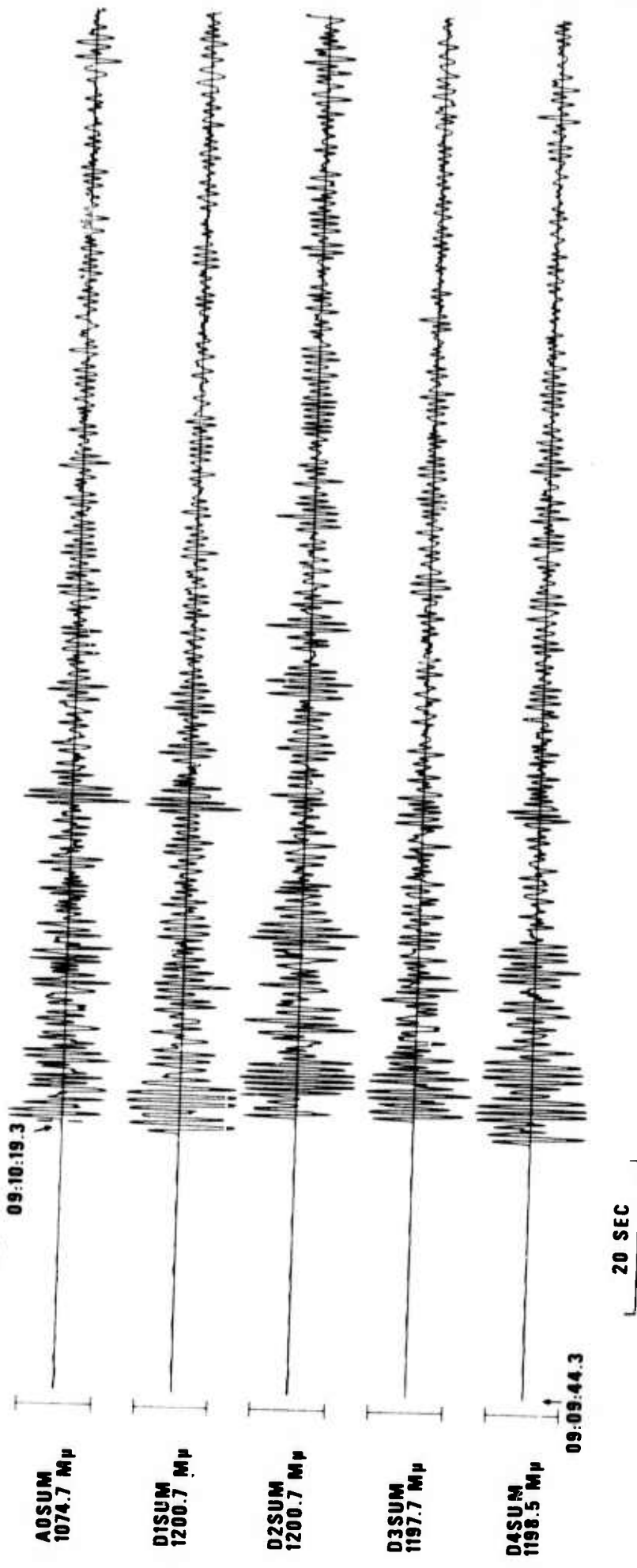
TIME



10 SEC

09:11:30

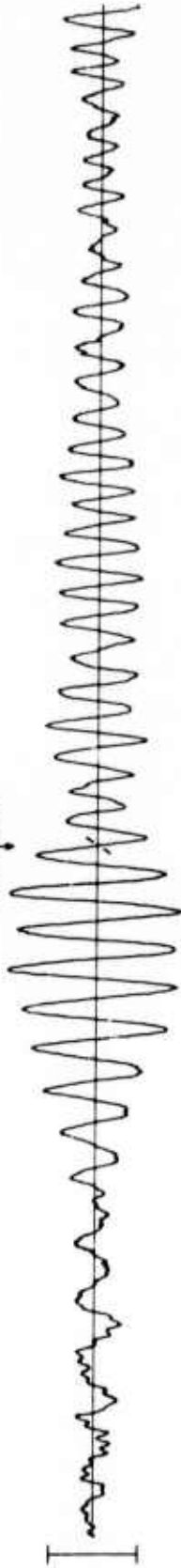
LASA 18 OCT 75



WH2YK 18 OCT 75

LPT
649.28 MHz

09:29:25



LPR
500.62 MHz

09:26:35



LPT
471.98 MHz



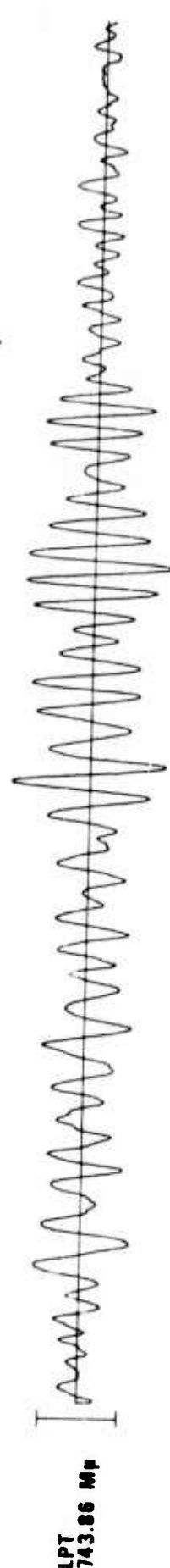
TIME



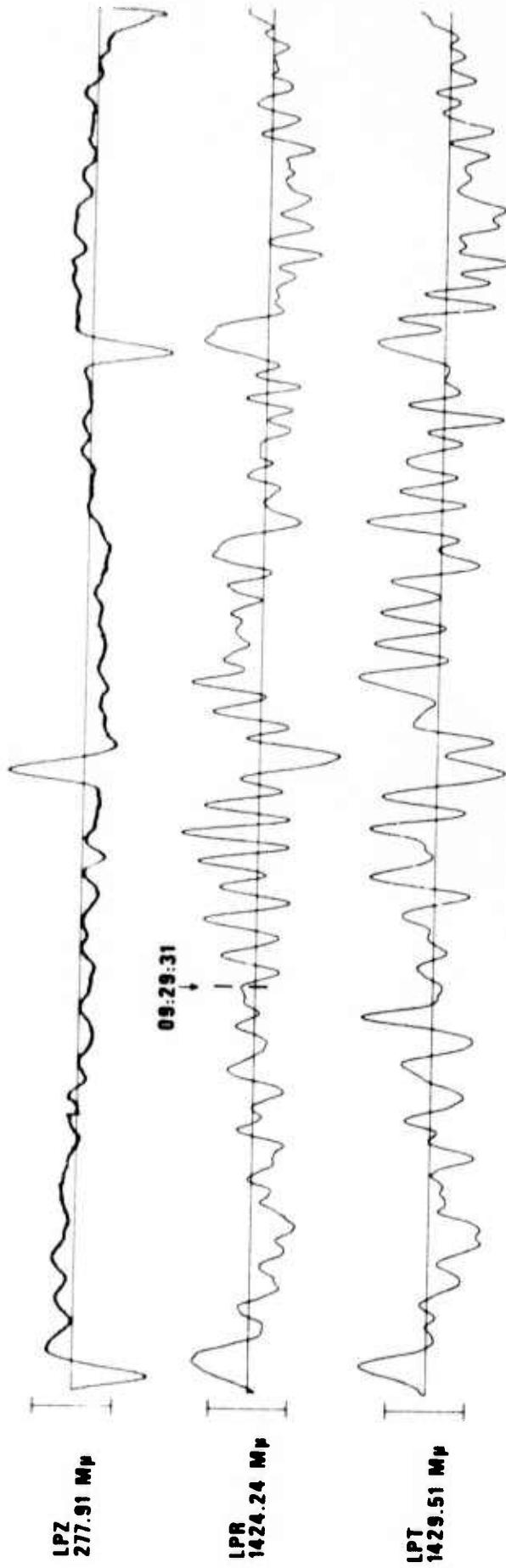
2 MIN

09:30:00

HN-ME 18 OCT 75



RK-ON 18 OCT 75



FN-WV 18 OCT 75

LPZ
1627.43 MHz

09:41:48



LPR
1229.28 MHz

09:33:12



LPT
601.96 MHz

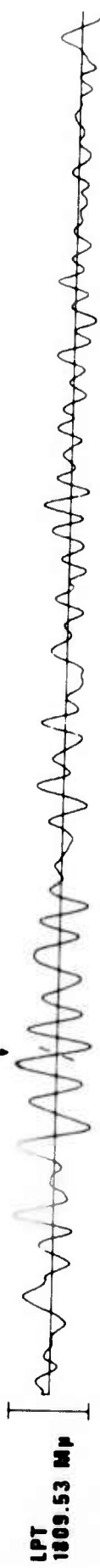
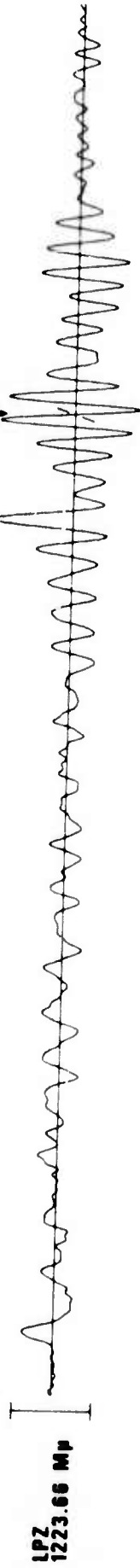


TIME

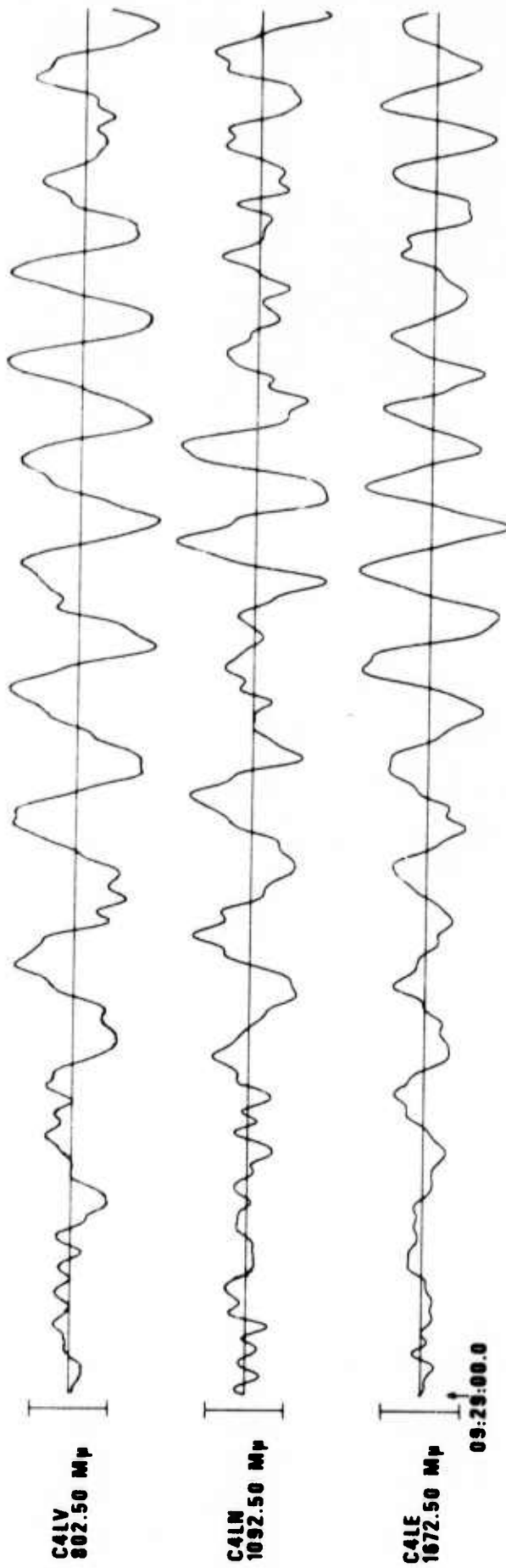


09:40:00

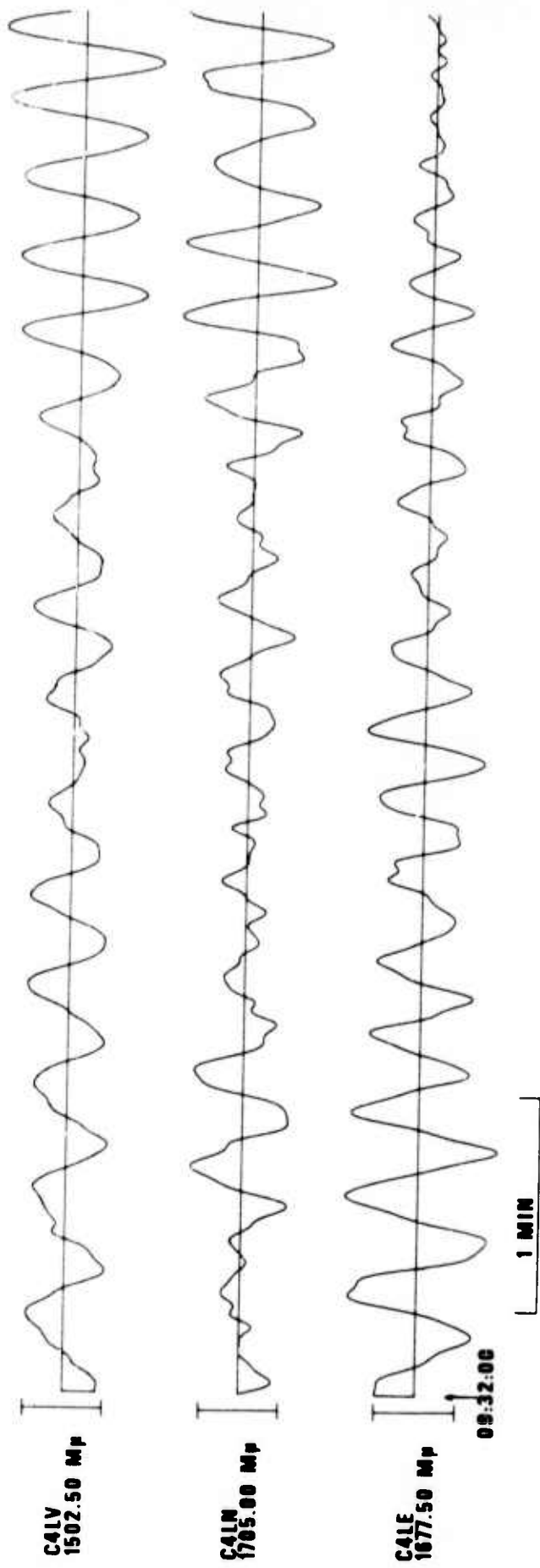
CPSO 18 OCT 75



LASA LONG PERIOD C4 SUBARRAY (SEGMENT 1) 18 OCT 75



LASA LONG PERIOD C4 SUBARRAY (SEGMENT 2) 18 OCT 75



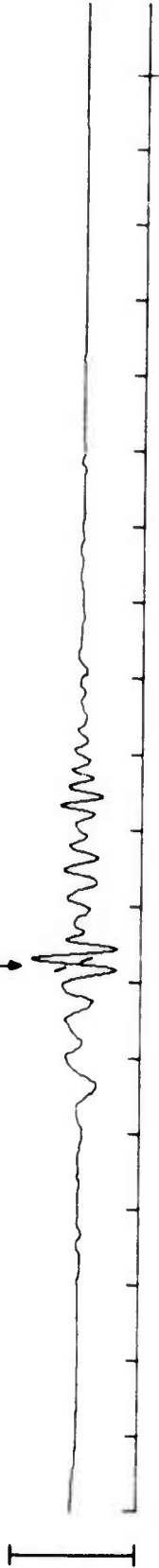
ARRAY LONG-PERIOD VERTICAL BEAMS 18 OCT '75

NORSAR

LP VERTICAL

20466.32 M μ

09:12:13



09:04:56

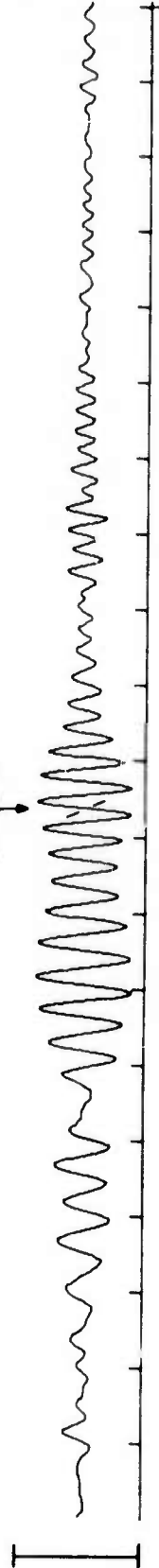
1 MIN

ALPA

LP VERTICAL

710.56 M μ

09:26:22



09:17:00

1 MIN